

**Project Overview:****Standards in Energy Efficiency in Buildings and Terms of Reference for a Joint Task Force with the Committee on Housing and Land Management****i. Introduction**

During the twenty-third session of the Committee on Sustainable Energy (the Committee), member States underlined the necessity to enhance the uptake of energy efficiency in the buildings sector, notably through a better understanding and greater uptake of standards. The Committee was approached by the United Nations Economic Committee for Europe (UNECE) Committee on Housing and Land Management to collaborate given the mandate of the Group of Experts on Energy Efficiency. The Committee subsequently “noted the study on standards related to energy efficiency in buildings undertaken by the Committee on Housing and Land Management (ECE/HBP/2014/4) and requested the secretariat, in collaboration with the Committee on Housing and Land Management, to distil possible measures that could be included in a matrix on best-practices on energy efficiency.”

This document describes joint activities over the past year, culminating in the proposal for a joint task force between the Committee and the Committee on Housing and Land Management to carry out targeted work. The Committee is asked to endorse this proposal.

**ii. Background**

Houses define our living environment, and much of our leisure time is spent at home. Thus, our standard of living and quality of life depend largely on the quality of our homes. In the UNECE region, buildings are responsible for approximately one third of total energy consumption and account for almost 40 per cent of carbon dioxide emissions from combustion.<sup>1</sup>

Achieving energy efficiency in buildings is a challenge for many countries in the UNECE region whilst solutions exist already today: available technology can reduce a building’s energy consumption by up to 50 per cent with moderate investment costs.<sup>2</sup> Moreover, improving the energy performance of a residential building goes hand-in-hand with an increase in living comfort and a reduction of energy bills. It contributes to reducing fuel poverty and mitigating greenhouse gas emissions, while creating employment. Hence, energy efficiency measures can deliver economic, social and environmental benefits.

Global energy efficiency investment in buildings is estimated to have been USD 90 billion (+/- 10%) in 2014. In Germany, energy efficiency investments exceeded USD 17 billion with 75% directed towards residential buildings and more than 60% targeting energy efficiency retrofits. Global energy efficiency investment in buildings is projected to increase to over USD 125 billion by 2020, driven in part by expanding efficiency-targeted policies. In the United States, energy efficiency is considered the largest domestic energy resource, as today’s energy consumption would be 55 per cent higher if there had been no efficiency improvements since 1973.<sup>3</sup> As energy efficiency codes, standards and programmes are improved and more widely implemented, per-building efficiency investment is projected to increase across most national building markets in the Organization for Economic Co-operation and Development (OECD).

<sup>1</sup> Green Homes. Towards energy-efficient housing in the UNECE region, available at: [www.unece.org/index.php?id=30772](http://www.unece.org/index.php?id=30772) (last access 1 Sep. 2015)

<sup>2</sup> Levine, M., Ürge-Vorsatz, D., Blok, K., Geng, L., Harvey, D., Lang, S., Levermore, G., Mongameli Mehlwana, A., Mirasgedis, S., Novikova, A., Rilling, J., Yoshino, H. (2007): Contribution of Working Group III to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change, [Metz, B., Davidson, O.R., Bosch, P.R., Dave, R. and Meyer, L.A. (eds.)] Cambridge University Press, Cambridge, United Kingdom and New York, NY, U.S., at: [www.ipcc.ch/publications\\_and\\_data/ar4/wg3/en/ch6.html](http://www.ipcc.ch/publications_and_data/ar4/wg3/en/ch6.html)

<sup>3</sup> Energy Efficiency Market Report 2014, International Energy Agency

### iii. How standards harmonize markets and foster economic development

Standards are documents based on voluntary compliance, established by consensus, and approved by a recognized body. They provide, for common and repeated use, rules, guidelines or characteristics for activities or their results, aimed at achieving the optimum degree of order in a given context. They should be based on the consolidated results of science, technology and experience, and aimed at promoting community benefits.<sup>4</sup> Standards may be international or national and the benefits of their use are widely recognized. Their application:

- Promotes the harmonization of common practices, procedures and product specifications to allow compatibility across borders, in the case of international standards, and within countries, in the case of national standards.
- Enables the creation of harmonized, stable and globally accepted frameworks for technologies, best practices and agreements, which support sustainable development.
- Reduces the risk of the proliferation of non-compliant and often dangerous goods and practices and increases safety through harmonized and up-to-date processes and measures..
- Encourages better access to new technologies and best practices by reducing costs and complexity, opening markets and promoting broader access to products and services.
- Supports the use of clear and transparent rules, which improve consumer confidence and protection and safeguard the interests of key stakeholders.

Standards can be used to show compliance with the requirements set by technical regulations and help minimize inconsistencies between countries. In particular in the buildings sector, compliance with a set of minimum standards has proven records of successful policy making that enables an increase in energy efficiency. California, for example, has reaped substantial energy-savings benefits thanks to policies that can be easily adopted elsewhere: next to research and development of new technologies, utility programs to help consumers lower their bills, guidelines for minimum standards that ensure new buildings and appliances are not energy guzzlers<sup>5</sup>.

### iv. Need for action

The number of national and international standards related to energy efficiency in buildings is continuously increasing. This generates confusion among policy makers, organizations, businesses and consumers concerning which standards have the highest impact and are more relevant for their country. UNECE member States recognize the importance of approaching standards on energy efficiency in buildings strategically, and for this reason, in March 2015, a questionnaire was sent to member States with the aim to identify areas and activities in the field of building standards and regulations where the UNECE could best support member States. The results of the survey (CSE-24/2015/INF.15)<sup>6</sup> are briefly discussed below.

### v. Results of the survey on building standards and regulations

The results of the survey suggest that UNECE should focus on the following topics:

- **Thermal performance of buildings and their building components**
- **Construction materials**
- **Minimum habitable standards for healthy and safe living**

Regarding the role of the UNECE in supporting its member States, respondents state that the priority activities could be:

- Mapping of existing energy-efficiency standards in buildings.

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<sup>4</sup> International Organization for Standardization (ISO) website, at: [www.iso.org/sites/ConsumersStandards/1\\_standards.html#section1\\_1](http://www.iso.org/sites/ConsumersStandards/1_standards.html#section1_1) (last access 1 Sep. 2015)

<sup>5</sup> California's Energy Efficiency Success Story (2013): NRDC Factsheet accessed on October 2015 via <http://www.nrdc.org/energy/files/ca-success-story-FS.pdf>

<sup>6</sup> [http://www.unece.org/fileadmin/DAM/energy/se/pdfs/comm24/rd/Outcome\\_SurveyBSBR\\_UNECE.pdf](http://www.unece.org/fileadmin/DAM/energy/se/pdfs/comm24/rd/Outcome_SurveyBSBR_UNECE.pdf)

- Establishing partnerships with different international bodies and professional organizations that deal with building standards in the UNECE region.
- Establishing a database and network of experts and platforms for the exchange of experience and the development of guidance.
- Developing best-practice guidance on inspection and enforcement of regulations.

National and local governments can play a key role in addressing this challenge by creating the conditions that enable homeowners, residents, banks and the private sector to take action toward energy-efficient housing. However, without a comprehensive overview on existing standards that enable energy efficiency in housing this challenge is likely to be not overcome.

#### vi. **Expert Consultation on Energy-Efficiency Standards in Buildings and suggestions for the roadmap**

In April 2015, the two Committees jointly organized an expert consultation on Energy-Efficiency Standards in Buildings.<sup>7</sup> Representatives of relevant stakeholders, including from the Group of Experts on Energy Efficiency, and main international organizations dealing with energy and standards came together to discuss the way ahead for promoting the use of standards to enhance energy efficiency in the building sector, starting from the current international initiatives and analyzing the needs of the UNECE member States in parallel with the survey.

Experts highlighted that standards are most effective as part of a set of instruments and measures, such as good practices and guidelines. Participants recommended establishing a **Joint Task Force on Energy-Efficiency Standards in Buildings** between the two Committees to increase the implementation of potential projects and allow building on a larger network of experts. Possible areas of work could include the list of priority areas as listed under v. above.

Draft terms of reference for the Joint Task Force (see the Annex) are presented to the Committee for endorsement. They will also be presented to the seventy-sixth meeting of the Committee on Housing and Land Management on 14-15 December 2015 for endorsement, so that, if member States so decide, the secretariat can proceed with the implementation of the Joint Task Force.

#### vii. **The work on standards of the UNECE**

At the UNECE, work on standards is very well established. In the case of energy efficiency, standards are covered by the three entities below:

- **The Committee**<sup>8</sup> oversees UNECE work on sustainable energy with a view to improving access to affordable and clean energy for all and helping reduce greenhouse gas emissions and the carbon footprint of the energy sector. Its Group of Experts on Energy Efficiency focuses on regulatory and policy dialogue addressing financial, technical and policy barriers to improve energy efficiency and on sharing experience and best practices in the field of energy efficiency.
- **The Committee on Housing and Land Management (CHLM)**<sup>9</sup> provides policy advice and expert assistance on sustainable housing development, land administration and spatial planning. Since its establishment in 1947, it has actively promoted building codes and standards.
- **The Working Party on Regulatory Cooperation and Standardization Policies (WP.6)**<sup>10</sup> serves as a forum for dialogue among regulators and policy makers. It addresses technical regulations, standardization, conformity assessment, metrology, market surveillance, and risk management. It promotes a holistic partnership in all phases of regulatory action, from standards-setting to regulatory enforcement.

<sup>7</sup> More information on the Expert Consultation can be found at [www.unece.org/index.php?id=38865#/](http://www.unece.org/index.php?id=38865#/)

<sup>8</sup> More information can be found at [www.unece.org/energy.html](http://www.unece.org/energy.html)

<sup>9</sup> More information can be found at [www.unece.org/housing.html](http://www.unece.org/housing.html)

<sup>10</sup> More information can be found at [www.unece.org/trade/wp6/welcome.html](http://www.unece.org/trade/wp6/welcome.html)

## Annex

# Draft terms of reference for the Joint Task Force on Energy Efficiency Standards in Buildings of the UNECE Region for 2016-2017<sup>11</sup>

## I. Background

1. The United Nations Economic Commission for Europe (ECE) Committee on Housing and Land Management (CHLM) agreed on its seventy-fourth session the programme of work for 2014–2015, which included the preparation of a study on energy efficiency standards in buildings, and on facilitating the maintenance, management and refurbishment of existing housing stock (item 1.5. of the programme of work) (ECE/HBP/2013/10). The CHLM programme of work was approved by the Executive Committee (EXCOM) on 6 February 2014.
2. After its seventy-fifth session, the CHLM Bureau and the secretariat discussed cooperation with the ECE Working Party on Regulatory Cooperation and Standardization Policies (Working Party 6), the ECE Committee on Sustainable Energy, and other international organizations. During these discussions, the secretariat of the CHLM suggested establishing a Joint Task Force on Energy Efficiency Standards in Buildings and invited these organizations to join forces in the establishment thereof.
3. According to its Terms of Reference, the Group of Experts on Energy Efficiency (GEEE), a subsidiary body of the Committee on Sustainable Energy concentrates on: (a) Regulatory and policy dialogue addressing financial, technical and policy barriers to improve energy efficiency; and (b) Sharing experience and best practices in the field of energy efficiency in the ECE region, including on strengthening institutional capacity in energy efficiency to reduce greenhouse gas (GHG) emissions. The GEEE, according to its mandate, is well positioned to participate in the proposed Joint Task Force on Energy Efficiency Standards in Buildings.
4. In March 2015, the secretariats of the CHLM and the Committee on Sustainable Energy sent a questionnaire on building standards and building regulations to member States with the aim to identify areas and activities in the field of building standards and regulations where the ECE can support member States. The results of the survey suggest that ECE should focus on the following topics: thermal performance of buildings and their building components, construction materials, and minimum habitable standards for healthy and safe living. The survey also identified activities that the Joint Task Force may perform.
5. To analyze and discuss the results of the survey, the CHLM and the Committee on Sustainable Energy organized an Expert Consultation on Energy Efficiency Standards in Buildings in Geneva on 20–21 April 2015 to discuss ECE's activities related to energy efficiency standards in buildings. The participants of the Expert Consultation strongly supported the proposal to establish a Joint Task Force on Energy Efficiency Standards in Buildings.
6. The Joint Task Force on Energy Efficiency Standards in Buildings is established by the CHLM and the Committee on Sustainable Energy with the participation of the Working Party 6 for the period of 2016–2017 with a possibility of extension.

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<sup>11</sup> See also Annex 2, Report of the Group of Experts on Energy Efficiency on its second session (ECE/ENERGY/GE.6/2015/2).

## II. Reporting

7. The Joint Task Force will report to its parent bodies, the CHLM and the Committee on Sustainable Energy. According to the ECE procedures, the Committee on Sustainable Energy will be invited to approve the proposal for the establishment of the Joint Task Force at its twenty-fourth session, on 18-20 November 2015. The CHLM will be invited to approve the proposal for the establishment of the Joint Task Force at its seventy-sixth session, on 14–16 December 2015.

## III. Objective

8. The objective of the Joint Task Force is to enhance the harmonization of the markets for products and technological appliances that increase energy efficiency in buildings of the ECE member States. It broadens the exchange of experiences and approaches to increased uptake of energy efficiency measures in buildings among the member States. The Joint Task Force is guided by recommendations and decisions of the Committee on Sustainable Energy and the CHLM.

9. The Joint Task Force will facilitate the ECE's support towards the achievement of the targets set by international initiatives such as the Global Goal 7, the Sustainable Energy for All Initiative, and the Geneva UN Charter on Sustainable Housing. All of these initiatives stress the importance of energy efficiency to ensure energy security, mitigate GHG emissions and ensure access to affordable, reliable, sustainable and modern energy for all.

## IV. Planned activities and outputs

10. To achieve its objectives, the Joint Task Force will undertake the following activities:

- (a) Mapping energy efficiency standards in buildings and preparing gap analyses;
- (b) Preparing guidance materials;
- (c) Promoting partnerships with other international organizations;
- (d) Establishing a network of experts on energy efficiency in buildings;
- (e) Developing and organizing training programmes.

11. The Joint Task Force will deliver, in particular, the following outputs:

- (a) Mapping of existing energy efficiency standards in buildings in the ECE region;
- (b) An online database of experts on energy efficiency in buildings tailored for the needs of the ECE region;
- (c) A roadmap for future ECE activities on standards.

12. All of the above mentioned activities and outputs are subject to regular consultations with and between the parent bodies, the CHLM and the Committee on Sustainable Energy, the Working Party 6, partner organizations, donors and members of the Joint Task Force and might be subject to adaptations.

## **V. Funding**

13. The activities of the Joint Task Force are supported by extrabudgetary funds and in-kind contributions. The listed activities will be implemented depending upon the availability of funds.

## **VI. Timetable**

14. The mandate of the Joint Task Force will cover the period from 2016 to 2017 with a possibility of extension.

## **VII. Methods of work**

15. The Joint Task Force is expected, subject to availability of funds, to have four face-to-face meetings during its mandate. The Joint Task Force will also work via various means of electronic communications. Donors are invited to provide voluntary contributions to support its work.

## **VIII. Membership**

16. The Joint Task Force will be open to all ECE member States. Other UN member States are also welcome to participate. The Joint Task Force comprises experts from the CHLM, the Committee on Sustainable Energy, and the Working Party 6, other ECE bodies, international organizations, such as the International Organization for Standardization (ISO), International Electrotechnical Commission (IEC), the International Partnership for Energy Efficiency Cooperation (IPEEC), the Copenhagen Centre on Energy Efficiency (C2E2), the Consortium for Energy Efficiency (CEE), the Pacific Northwest National Laboratory, the National Renewable Energy Laboratory (NREL), the Buildings Performance Institute Europe (BPIE), the Global Buildings Performance Network (GBPN), and other relevant experts, to ensure a cross-sectoral approach to addressing energy efficiency standards and building codes. Independent technical experts on building standards and state of the art technologies will be invited to support the work of the task force by providing written contributions and participating in its meetings.

## **IX. Secretariat support**

17. The Joint Task Force will have two co-chairs representing the CHLM and the Committee on Sustainable Energy. The CHLM and the Committee on Sustainable Energy will jointly service the Joint Task Force. This will include:

- (a) Servicing the Joint Task Force meetings (with interpretation and translation), including the preparation of meeting agendas and reports;
- (b) Preparing background documents and studies for the Joint Task Force at its request;
- (c) Arranging for financial support for members of the Joint Task Force from ECE member States, so that they can participate in its meetings.

18. Provision of the secretariat support is dependent on the availability of additional resources as described in Section V.