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### ECONOMIC COMMISSION FOR EUROPE

#### TIMBER COMMITTEE

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Item 2 of the provisional agenda

#### GREEN BUILDING WORKSHOP

#### **Responding to climate change: Wood's place in a global approach to green building**

Note by the secretariat

##### Summary

This document provides background for the Timber Committee's discussion on green building activities. Following a successful 2008 green building workshop, the Committee called on the United Nations Economic Commission for Europe (UNECE) divisions to collaborate and continue to assess the opportunities and constraints for green building in the UNECE region. This document gives background on green building, the 2008 workshop, and information about the green building workshop to be held on Monday, 12 October 2009, i.e. before the formal opening of the Timber Committee. The workshop continues the Committee's work on green building, which not only provides an important market driver for wood products, but also is part of the solution to mitigate climate change. On 13 October 2009, the Committee will be briefed on the outcome of the workshop.

The Committee is invited to discuss the points raised by the expert speakers and give information on related developments in their country; to review and endorse the conclusions and recommendations from the workshop; to consider the needs in the UNECE region and propose further work on green building.

## **I. INTRODUCTION TO GREEN BUILDING**

1. This document is in response to the request by the United Nations Economic Commission for Europe (UNECE) Timber Committee (TC) at its sixty-sixth session to prepare, in accordance with past practice, background documents for its annual session on matters of interest to the Committee (ECE/TIM/2008/9). Following the previous workshop on green building, held during the European Forest Week in October 2008, a second green building workshop is scheduled to take place on Monday, 12 October 2009, immediately preceding the formal opening of the Timber Committee session. Titled “Responding to climate change: Wood’s place in a global approach to green building,” the one-day workshop will advance the work on issues identified in 2008, based on a request by the Committee. On 13 October 2009 in the Committee session, delegates will be briefed on the outcome of the workshop and plans to advance the work in this field into the next stages.

2. “Green” buildings as defined by the UNECE/FAO workshop are designed and developed with much greater consideration for the full lifecycle of the building than conventional ones. Their goal is to minimize construction and environmental impacts, use fewer resources, be healthier during the building’s life, be suitable for recycling and minimize waste. They are designed for long life and adaptable to different uses. The green building concept embraces a number of aspects such as design, choice of materials, building performance as well as interaction with urban and economic development and management. Different approaches are followed according to the local socio-economic context. In some countries, priority is given to resource use (energy, materials, water, and land use), while in others social and economic issues are more determining factors.

3. Building green can make a substantial contribution to mitigating climate change. Up to 50 per cent of all primary energy is used in buildings. Buildings also account for up to 40 per cent of carbon dioxide (CO<sub>2</sub>) emissions. According to current trends, the impact of the building sector is likely to increase by up to 70 per cent by 2050. In addition to direct emissions, another 8 per cent of CO<sub>2</sub> emissions are due to combustion of fossil fuels and biomass for heating and cooling. While unsustainable land-use patterns make urban areas even more carbon unfriendly, it is the building sector that holds the key to reducing emissions. The International Panel on Climate Change estimates that there is a potential to reduce approximately 29 per cent of the projected baseline emissions by 2020 in the residential and commercial sectors, which is the highest potential gain amongst all sectors.

4. In addition to greenhouse gases and other air emissions, direct environmental impacts that result from the construction of buildings include water use and discharge, storm water runoff, impacts related to building materials, solid waste, indoor and outdoor air quality. Secondary impacts are generally associated with building product lifecycles, infrastructure development, and transportation systems.

5. Wood rated by green building systems is usually certified to ensure that it is sustainably produced and social and environmental considerations are respected in the production process. However, other materials are not always held to such stringent requirements. Some rating systems discriminate against certification schemes, which can be a barrier to using wood.

6. It makes sense that when certified construction materials are required or given preference in public procurement policies, such certification or similar requirements should be uniformly applied to all materials. While certified products and chain-of-custody continue to gain traction with architects and builders, these have not yet been incorporated into current building codes apart from the requirements for wood products, which can sometimes be discriminatory, only accepting one given forest certification scheme.

7. When discussing green building, cost is a common consideration. A building's initial construction costs typically represent only 20 to 30% of the building's entire costs over its useful life, underscoring the need to consider the operating costs through the whole life of the building and not only for the first 10 years. A survey by the World Business Council for Sustainable Development found that the costs of green building were often exaggerated by the real estate and construction sectors, at an additional cost of 17% above conventional construction. This was more than triple the true average cost increase of building green of approximately 5%. At 5% the additional costs can be recuperated relatively soon over the life of a building due to energy savings.

8. Green building programmes and their methodologies for assuring a minimized environmental impact and the saving of greenhouse gas emissions are presently under development and review. Some green building programmes in North America use single attributes of materials as indicators of environmental preference (recycled content, renewable, consumption or pollution of water), established intuitively rather than scientifically. Adopting a life cycle assessment methodology would provide a scientific basis.

9. In light of the developments in the green building sector outlined above, it is crucial for the forest sector to work with those who design buildings and set the standards, as well as other communities and sectors which have a contribution to make to more sustainable buildings. The cooperation between the UNECE timber, housing and sustainable energy programmes is an important step in the right direction.

## **II. GREEN BUILDING WORKSHOP 2008**

10. The UNECE/FAO Team of Specialists on Forest Products Markets and Marketing conducted a first workshop in 2008 at the beginning of the European Forest Week. Titled "The roles of wood in green building and green building effect on the forest sector in the UNECE region," it succeeded in raising awareness of the advantages for the forest sector, and beyond, including the potential to mitigate climate change. Workshop participants represented all parts of the forest sector, and had the opportunity to interact with international experts from the spheres of architecture, housing, building standards, wood markets and forestry. The presentations and outcomes from the workshop, which are still valid today, may be found at [www.unece.org/timber/workshops/2008/Green%20Building-Rome](http://www.unece.org/timber/workshops/2008/Green%20Building-Rome).

11. The 2008 workshop:

- (a) Defined green building and the scope for its use of wood as an environmentally compatible building material across the UNECE region;
- (b) Mapped regional attitudes and approaches to greater use of wood in construction;

- (c) Show-cased residential and nonresidential projects in which wood, optimally combined with other materials in novel building systems, overcame planning constraints and demonstrated positive environmental, financial, aesthetic, health, ergonomic and time benefits;
- (d) Signalled the potential for greater use of engineered wood products and innovation in new building systems;
- (e) Compared existing and evolving building rating systems;
- (f) Targeted educational, training and skills needs in the woodworking and building sectors;
- (g) Established the need to communicate messages about wood to key groups outside the sector; and,
- (h) Listed priorities for future actions, including a follow-up workshop in 2009.

12. At its sixty-sixth session, the Timber Committee in noting the success of the workshop directed the secretariat to work together with other UNECE divisions to continue work on the opportunities for and constraints to wider acceptance of green building (ECE/TIM/2008/9, paragraph 30). Over the past year, joint work has been undertaken by the Trade and Timber Division, Environment Division and Sustainable Energy Division. Members of the UNECE/FAO Team of Specialists on Forest Products Markets and Marketing participated in a workshop of the Committee on Housing and Land Management in Sofia entitled “Energy efficiency in housing”. All three divisions were involved in planning this year’s workshop, and are scheduled to participate. Further joint work is envisaged.

### **III. GREEN BUILDING WORKSHOP 2009**

13. Titled “Responding to climate change: Wood’s place in a global approach to green building”, the second workshop on green building scheduled on 12 October 2009 will advance the work on issues identified in 2008. The overall objective of the workshop is to identify wood’s place in green building as the basis of a strategy to increase and enhance its use within a global response to climate change. In essence, to clarify how increasing use of wood can make green buildings “greener”. Specifically, the workshop will:

- (a) Provide updates and clarification of relevant issues for wood from the regional approaches to green building around the world;
- (b) Help ensure a scientific approach to a shared global understanding of green building and its assessment;
- (c) Identify how to put policy into practice. Strategic views of politicians, administrators and architects;
- (d) Examine innovative and successful wood-based solutions for green building;
- (e) Prepare messages and identify practical strategies for the UN Convention on Climate Change in Copenhagen (COP 15) and beyond on the positive contribution wood makes to climate change mitigation.

14. The workshop will be organized in 4 segments:
  - (a) Regional approaches: common problems? Shared solutions?
  - (b) A scientific basis for a shared understanding of and a global approach to green building;
  - (c) Putting policy into practice;
  - (d) Wood solutions for green building.
15. The topics scheduled for presentation and discussion include:
  - (a) Responding to climate change: A strategy for wood in green building;
  - (b) A review of how wood is considered in green building rating systems worldwide;
  - (c) Current situation of wood use in green building rating systems;
  - (d) Green building in Europe;
  - (e) Impact of carbon accounting on green building;
  - (f) Life cycle assessment, water, energy, materials;
  - (g) Carbon-neutral cities;
  - (h) Demand drivers for green building: from policymakers, policy implementers, architects;
  - (i) Urbanization and CO<sub>2</sub> reduction – multi-story wooden buildings;
  - (j) Wood's versatility in new architectural designs;
  - (k) Wood's contribution to the 2010 Winter Olympic and Paralympic Games; and,
  - (l) Messages for the climate change negotiations in Copenhagen in December 2009.
16. Participation in the workshop is open. Pre-registration is required, but there is no registration or other fee. The broad target audience includes: forest products marketing specialists, forest products industry representatives, Governments, trade associations, academia and research, consultants, international organizations, architects, designers, engineering and building companies, green building representatives, standards organizations and others.
17. The outcomes of the workshop will determine the direction for more inter-divisional work within UNECE. They will also help guide the work of the Team of Specialists with partners on green building. The expected outcomes are:
  - (a) Increased collaboration between stakeholders to promote and use wood to tackle climate change through green building;
  - (b) Conclusions and recommendations to be presented at the Timber Committee Market Discussions in Geneva on the following day (workshop participants welcome);
  - (c) Work initiated on a “tool kit” for wood in green building (participants urged to bring electronic examples of their work that might contribute to this project).
  - (d) Further workshops on wood and green building (April 2010 in Canada);

- (e) Dissemination of conclusions and recommendations via a press release;
- (f) Further dissemination of workshop results via a website with presentations and the report from the workshop.

**18. It is expected that conclusions and recommendations will be adopted at the end of the workshop. The Timber Committee is invited to review and consider endorsing these conclusions and recommendations which will be presented to it on 13 October 2009.**

#### **IV. GREEN BUILDING CONFERENCE 2010**

19. The Government of Canada has offered to host a UNECE conference on “Green building and climate change: from science to policies” in 2010. Further information will be available at the workshop in October 2009, which will be a step in preparing the groundwork for the conference.

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