AGENDA

IEA Experts' Dialogue on Materials trends in Buildings Construction

9 March 2018

Saint Gobain, 18 avenue d'Alsace, 92400 Courbevoie

The International Energy Agency (IEA) is embarking in a project to analyse material efficiency strategies and material use trends in different sectors of the economy. The project aims at studying the demand of key materials in the context of 2°C ambitions, as well as the resulting system-level impacts on energy demand and related CO_2 emissions. To provide strategic insights to this analysis, the IEA is organising a full-day experts' meeting on 9 March 2018 in Paris looking at material trends in the buildings sector.

This meeting will bring together leading experts on materials production and buildings construction to discuss future trends of materials use in buildings construction, and the adaptation strategies of materials manufacturers to new construction needs.

8:30	**Registration**
9:00	**Welcome – John Dulac, IEA**
9:15	**IEA analysis objective, scope and timeframe** – John Dulac and Araceli Fernandez Pales, IEA This session will provide an overview of IEA's current role within sustainable buildings initiatives and our upcoming project on materials trends in buildings construction. Topics to be covered include: - the IEA's collaborations to date with stakeholders in the buildings communities - background on the IEA's modelling framework for the buildings sector - the broader context and scope of the IEA's analysis of material trends - the objectives of the day's meeting, how the day's discussion will feed into the IEA's analysis on buildings, and opportunities to forge ongoing collaborations on materials use in buildings
9:30 – 12:30	**Materials use and manufacturing trends in buildings construction** ***Moderator:*** Emmanuel Normant, Saint-Gobain
	This session will look at current and future trends of material use in buildings and how improved building design and construction techniques could lead to better services and improved materials use efficiency. **9:30 – 11:00 Presentations** *Michael Scharpf, LafargeHolcim:* Resource efficiency in concrete construction - strategies and trends *Thomas Matschei, HTW Dresden*: Pathways to reduce the material impact in construction *Henk Reimink, World Steel Association:* Steel initiative on buildings construction *Da Yan, Tsinghua University:* Current status and reduction potential for materials use in buildings construction in China *Catherine De Wolf, École Polytechnique Fédérale de Lausanne:* Efficient use of materials in building design **11:00 - 11:30 Coffee break**
	11:30 – 12:30 Discussion Building on the morning's presentations, we will open the floor to dialogue and input. Questions to consider include:

	- Are there common expected trends from material users and producers' perspectives, in terms of material intensities, building frame market shares, and prospects for material efficiency gains? - What are the observed and expected regional differences in material use in buildings? What the key drivers of these trends? - What can we learn from case studies (i.e. real-life building examples) where material demand has been assessed? How can we extrapolate from individual case studies to overall broader trends? - What is the relative importance of different material efficiency strategies in terms of material demand impact, and what is their expected roll-out? Examples include, using less material for a given application, reducing material losses in the construction phase, longer-lasting buildings, and considering reusability/modularity in design stages. - To what extent will future construction techniques reshape the buildings materials demand landscape? This includes consideration efforts to reduce energy use of buildings.
12:30 - 13:30	**LUNCH**
13:30 – 17:00	**Analysis on materials demand for buildings construction in long-term scenarios** ***Moderator***: Kate Simonen, University of Washington
	This session will focus on methods for assessing material use in buildings, including the interactions between materials assessment from the level of individual buildings to the overall buildings sectors, and how material use trends can be integrated into long-term scenario modelling. **13:30 – 15:00 Presentations** *Jannik Giesekam, University of Leeds*: Modelling the material demand of buildings: approaches and applications *Nina Khanna, Lawrence Berkeley National Laboratory:* Bottom-up assessment of material demand in buildings: China case study *Niko Heeren, Yale University:* Deriving material inventories using big data methods *Thibaut Abergel and Tiffany Vass, IEA*: Preliminary assessment of material demand needs for buildings construction in a 2DS world **15:00 - 15:30 Coffee break** **15:30 – 17:00 Discussion** Building on the afternoon's presentations, we will once again open the floor to dialogue and input. Questions to consider include: - What datasets currently exist with regards to key parameters, including materials use quantities and building stocks broken down by construction frames? How can these be expanded, coordinated, and improved? - What strategies should be pursued to fill remaining data gaps, both with regards to the IEA's analysis and broader analyses of materials use in buildings? - What synergies exist between life-cycle assessment and energy systems modelling? - What are the strengths and weaknesses of different methodologies for assessing materials use in buildings? - What feedback do you have on the IEA's preliminary analysis? What should we do differently? What resources should we consult? Who else should we engage in our discussions?
17:00	**Next steps and closing remarks – John Dulac, IEA** We will wrap up the day with discussion of key insights from the day's meeting and possible directions for continued collaboration among stakeholders and the IEA.
17:30	**End of meeting**