Contents

1. BECWG overview and opportunities to collaborate
2. Webinars and reports
3. Release of report on practices for codes compliance
4. Highlights from BECWG Annual Symposium
   • National roadmaps that incorporate building energy codes
   • Codes to reduce carbon emissions
BECWG overview and opportunities to collaborate

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Team: Alison Delgado, PNNL; Jack Mayernik, NREL; Jeremy Williams, US DOE

We welcome new members! Feel free to participate in our webinars and get latest news. We would also love to learn about codes in your country. To join our mailing list e-mail: Alison.Delgado@pnnl.gov

Activity 1: Exchange on building energy code practices
• Webinars (~4/year), meetings, annual building energy code symposium

Activity 2: Comparative Analysis
• Reports on topics of shared interest (2 papers/year):
  • Codes to reduce carbon (embodied carbon)
  • New technology integration in codes (e.g., DER technologies)
  • Codes and climate resilience (e.g., extreme weather events and how buildings cope with these events)
  • Codes and regulations for data centers

Activity 3: Dissemination
• Newsletters, publishing results and lessons, outreach and dialog (Annex 80 resilient cooling, new EE Hub) feedback on IPCC WGIII Buildings Chapter, posting key information on the website

BECWG Webinars and Reports

• 2 Reports this year:
  • Building Energy Codes in Existing Buildings
  • Codes Compliance Best Practices

• Recent Webinars (To date, 9 total):
  • “Building Energy Codes and Other Mandatory Policies Applied to Existing Buildings” (June 2021)

Past Webinar and Technical Presentations:
2. “Cross National Comparison” (July 2019)
3. “Building Codes Implementation Practices” (September 2019)
6. “Energy Codes for Existing Buildings” (June 2020)

* First Annual Symposium (Sept. 2020):
  1) Integrating Research and Technology Breakthroughs in Codes, and 2) Adapting/Expanding Code Coverage in Places with Hot Climates
Report on Practices for Codes Compliance (Released 3 Nov.)

- Based on a survey of 38 respondents across 11 countries
- Commonly faced issues related to enforcing code compliance centered around capacity building and training
- Report drew examples of notable practices from different jurisdictions. Major themes include:
  1. Pooling resources to minimize redundant efforts and maximize resources
  2. Requiring accreditations and trainings of inspectors and official government endorsement of third parties
  3. Utilizing a data driven approach to improve code implementation
  4. Utilizing remote inspections to check compliance when beneficial


BECWG @ EBC Webinar 5

BECWG Annual Symposium, 3 Nov.

- Some business (new work plan, lots of activity this year)
- 2 technical panels:
  - Codes to Achieve Carbon Reductions
    - Presentations from China, Japan, and the United States
  - National Roadmaps that Incorporate Building Energy Codes
    - Presentations from Brazil, Canada, and a global roadmap for buildings and construction
- Some highlights of the Symposium follow in next 4 slides

BECWG @ EBC Webinar 6
Global assessment: Key actions for new buildings

Speaker/source: Prof. Ian Hamilton, Univ. College London Energy Institute

Building codes as critical action for new buildings

Speaker/source: Alex Ferguson, Natural Resources Canada

Canada

- Growing emphasis on harmonization
  - “Adapt and Adopt” framework has created a patchwork of energy efficiency requirements
- Four major national research topics:
  - Carbon reductions
  - EUI vs. % better approaches
  - Embodied carbon
  - Existing buildings
China: Analysis of mid- to long-term energy savings and carbon reduction potential

Code improvements over time

Projected carbon emission reductions

Speaker/source: Prof. Shicong Zhang, China Academy of Building Research


Japan: End-use energy targets in 2030 and distribution of Building Energy Index for total energy use

Transition of end-use energy and targets in FY2030

Speaker/source: Dr. Takao Sawachi, Building Technology Research Institute

Sources: FY2019 Energy Supply and Demand Report (Revised Report) (meti.go.jp);
国土技術政策総合研究所 研究資料 (nilim.go.jp)
Thank you!


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Mark your calendars: IEA’s new Energy Efficiency Hub will have a launch event 1 Dec. [www.energyefficiencyhub.org/launch-event](http://www.energyefficiencyhub.org/launch-event)

All are welcome!

Additional Slides
United States: Growing emphasis on deep decarbonization and net-zero codes

- No single approach to codes nationally
- Multiple states and cities have deep decarbonization goals
- Building Performance Standards in 6 Northeast states (e.g., 50% by 2030)
- Stretch codes in 10 states
- Net-zero codes or carbon neutrality zoning growing

Source/speaker: Mr. Darren Port, Northeast Energy Efficiency Partnerships

Brazil: Transition from voluntary to mandatory performance standards

- Carrying out a regulatory impact analysis to make Brazil’s energy performance labeling mandatory
- Building performance standards expected to also have a major role as they are adopted by the building industry
- Growing attention on embodied energy and CO2 in building materials with plans to be incorporated in the asset labeling in the future

Source/speaker: Prof. Roberto Lamberts, Federal University of Santa Catarina

New label incorporating renewable energy: Local energy generation from renewable energy sources. The system must be installed in the assessed building, or in the same area in which it is located. The systems also must be connected to the building’s energy meter, or part of the building they serve.