

# **Producing practical guidelines, basis for standards, and more R&D outputs for scientific foundation**

- **IEA Energy in Buildings and Communities (EBC) Technology Collaboration Programme (TCP) Overview -**

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# The International Energy Agency (IEA)

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## **Mission:**

“The IEA works with governments and industry to shape a secure and sustainable energy future for all.”

## **IEA’s affiliated groups:**

“The IEA TCP is a series of about 40 international partnerships ... to share research on breakthrough technologies, to fill existing research gaps, ... and carry out deployment or demonstration programmes.”

Source: <https://www.iea.org/about>

## IEA's Areas of work

- Promoting energy efficiency
- Ensuring energy security
- International collaborations
- Data and statistics
- Training
- **Technology collaboration**
- Global engagement



### Explore Technology collaboration

[Buildings](#)

[Electricity](#)

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[Transport](#)

[Renewable energy](#)

[Fossil fuels](#)

Source: <https://www.iea.org/about>

# EBC's Mission

→ Energy efficiency is key

To support the acceleration of the transformation of the built environment towards more energy efficient and sustainable buildings and communities, by the development and dissemination of knowledge, technologies and processes and other solutions through international collaborative research and open innovation.



# EBC's High Priority Themes

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- Theme #1: Integrated planning and building design**
- Theme #2: Building energy systems**
- Theme #3: Building envelope**
- Theme #4: Community scale methods**
- Theme #5: Real building energy use**

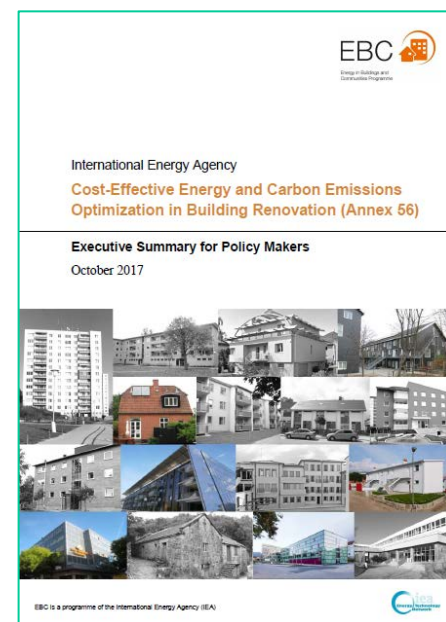
# #1: Integrated planning and building design

## – Annex 56 Cost-Effective Energy & CO<sub>2</sub> Emissions Optimization in Building Renovation (2010-2017)

**Note: The target of Annex 56 is to develop tools for cost effective combinations of energy efficiency and renewable measures, and to supply examples to encourage decision makers.**

Representative deliverables:

- 1) Review of existing tools for energy calculation, LCA and LCC, and development of new tools
- 1) Guidebook for owners of residential buildings
- 2) Guidebook for policy makers
- 3) 18 shining examples
- 4) 6 detailed case studies

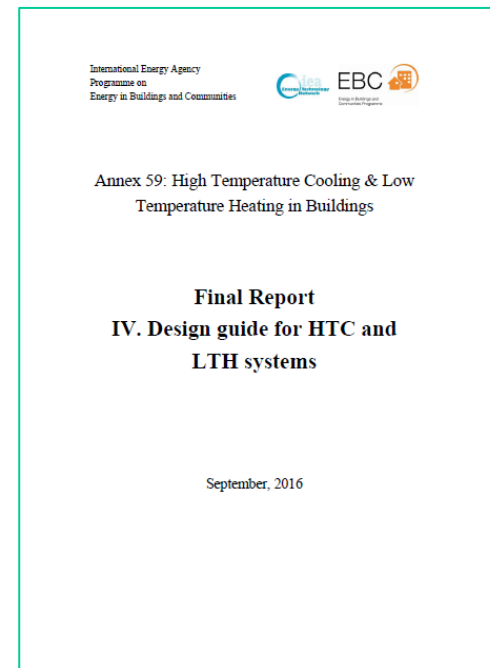


## #2: Building energy systems

### – Annex 59 High Temperature Cooling and Low Temperature Heating in Buildings (2012-2016)

#### Deliverables:

- 1) Guidebook of new analysis method with entransy for HVAC system
- 2) Demand and novel design of indoor terminals in high temperature cooling and low temperature heating
- 3) Analysis on novel flow paths of outdoor air handling equipment
- 4) Design guide for high temperature cooling and low temperature heating in buildings



## #3: Building envelope

### – Annex 65 Long-Term Performance of Super-Insulating Materials in Building Components and Systems (2013-2018)

**Note: Vacuum insulation panels, gas filled panels and aerogel based products are targeted. They can reduce insulation thickness up to a factor of five, but should be checked for durability and optimal use.**

Representative deliverables:

- 1) Laboratory scale characterization of materials and components
- 2) Practical applications to building retrofit
- 3) Life cycle cost and life cycle assessment covering embodied energy
- 4) Case studies of materials and components





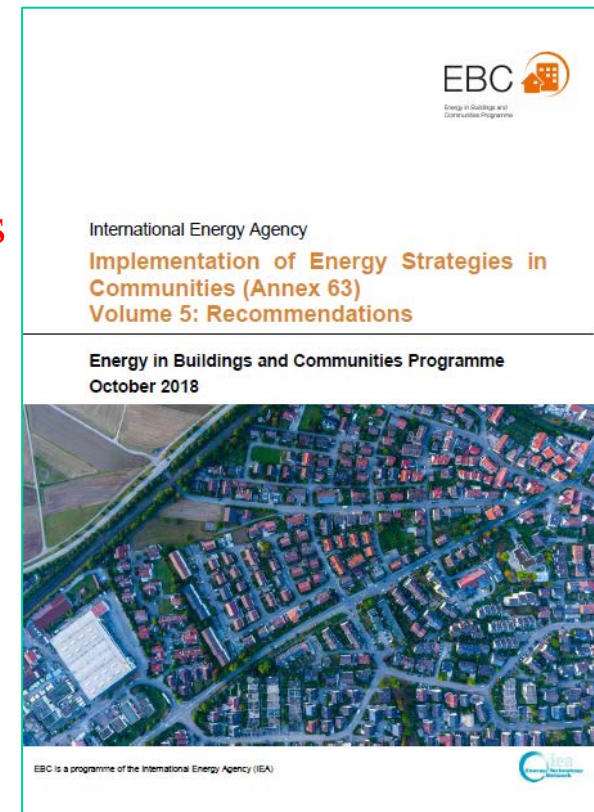
## #4: Community scale methods

### – Annex 63 Implementation of Energy Strategies in Communities (2013-2018)

**Note: The target of Annex 63 is to identify strategies that can unify urban planners and energy planners and allow both parties to engage in the process to change to reach long term targets.**

Deliverables:

- 1) Inventory of measures
- 2) Development of strategic measures
- 3) Application of strategic measures

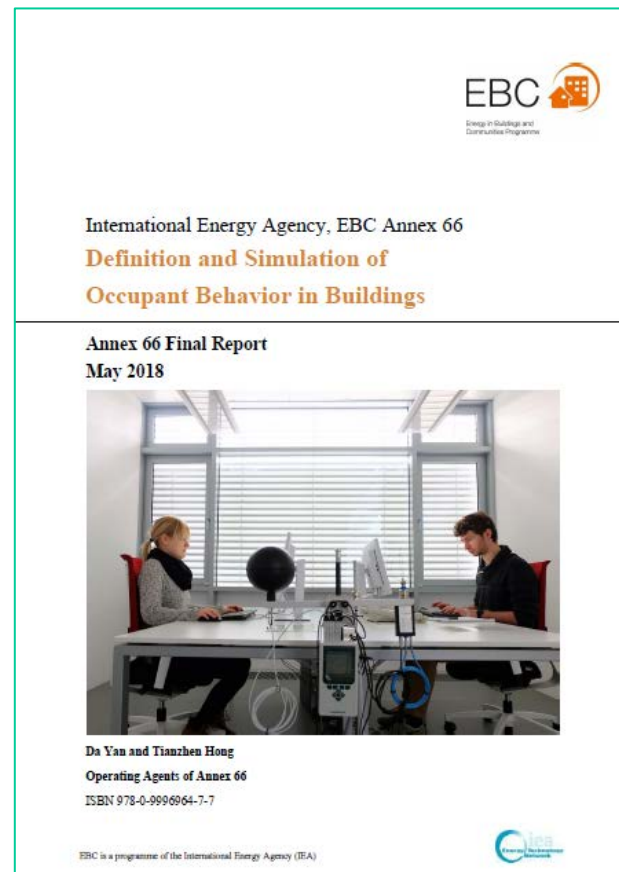


## #5: Real building energy use

### – Annex 66 Definition and Simulation of Occupants Behaviour in Buildings (2013-2018)

Representative deliverables:

- 1) Guideline for occupant behaviour modelling and evaluation
- 2) Guidebook on monitoring, data collection and modelling for occupant behaviour research



## Outreach

- Collaboration with the **IEA secretariat and IEA Energy Technology Network**
- Collaboration with **other IEA TCPs:**
  - Organising joint research and joint meetings
  - Organising IEA Future Building Forum every five years
- More collaboration with **standardisation bodies** (ISO, CEN, ASHRAE, and so on)

## Further Information

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**Thank you**

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