EBC

Energy in Buildings and Communities Programme

Factsheet

Towards Net Zero Energy Solar Buildings

ANNEX 52 / TASK 40

The project has successfully studied current net zero, near net zero and very low energy buildings and is now close to completion. Over the past five years it has developed a common understanding, a harmonized international definitions framework, tools, innovative solutions and industry guidelines. This was achieved primarily by documenting and proposing practical net zero energy building (NZEB) demonstration projects, with convincing architectural quality. These exemplars, supported by a sourcebook, guidelines and tools, are viewed as essential for industry adoption.

The project has investigated the cost effective equalisation of the small annual energy needs of such buildings through building integrated heating and cooling systems, power generation and interactions with utilities. It has learnt from recent industry experiences with net zero and low energy solar buildings and the most recent developments in whole building integrated design and operation. This joint international research and demonstration

PROJECT OBJECTIVES

1. establish an internationally agreed understanding of NZEBs, based on a common methodology,
2. identify and refine design approaches and tools to support industry adoption,
3. develop and test innovative, whole building net zero solution sets for cold, moderate and hot climates with exemplary architecture and technologies that would be the basis for demonstration projects and international collaboration, and
4. support knowledge transfer and market adoption of NZEBs at a national and international level.

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activity has addressed concerns of comparability of performance calculations between building types and communities for different climates. Further, it has produced solution sets intended for broad industry adoption.

The scope has included major building types (residential and non-residential), new and existing buildings in various climatic zones represented by the participating countries. The work has linked to national activities and has focused on individual buildings, clusters of buildings and neighbourhoods. It has been based on analysis of existing examples, leading to the development of innovative solutions to be incorporated into national demonstration buildings.

INTERNATIONAL ENERGY AGENCY

The International Energy Agency (IEA) was established as an autonomous body within the Organisation for Economic Co-operation and Development (OECD) in 1974, with the purpose of strengthening co-operation in the vital area of energy policy. As one element of this programme, member countries take part in various energy research, development and demonstration activities. The Energy in Buildings and Communities Programme has co-ordinated various research projects associated with energy prediction, monitoring and energy efficiency measures in both new and existing buildings. The results have provided much valuable information about the state of the art of building analysis and have led to further IEA co-ordinated research.

EBC VISION

By 2030, near-zero primary energy use and carbon dioxide emissions solutions have been adopted in new buildings and communities, and a wide range of reliable technical solutions have been made available for the existing building stock.

EBC MISSION

To accelerate the transformation of the built environment towards more energy efficient and sustainable buildings and communities, by the development and dissemination of knowledge and technologies through international collaborative research and innovation.

Project duration

Ongoing (2008 - 2014)

Operating Agents

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Participating countries

Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Italy, Republic of Korea, New Zealand, Norway, Portugal, Spain, Sweden, Switzerland, United Kingdom, USA
Observer: The Netherlands

Further information

www.iea-ebc.org
www.iea-shc.org/task40

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