



International Energy Agency
Energy Conservation in
Buildings and Community
Systems Programme

Towards Net Zero Energy Solar Buildings

ECBCS / SHC Project Factsheet Annex 52 / Task 40

Energy use in buildings worldwide accounts for over 40% of primary energy use and 24% of greenhouse gas emissions. Energy use and emissions include both direct, on site use of fossil-fuels and indirect use from electricity, district heating and cooling systems and embodied energy in construction materials. Several International Energy Agency (IEA) countries have adopted a vision of so-called 'net zero energy buildings' as long-term goals of their energy policies. However, what is missing is a clear definition and international agreement on the measures of building performance that could inform 'zero energy' building policies, programmes and industry adoption worldwide.



The objectives of the project 'Towards Net Zero Energy Solar Buildings' are to study current net zero, near net zero and very low energy buildings and to develop a common understanding of a harmonised international definitions framework, tools, innovative solutions and industry guidelines. To achieve these objectives the project will document and propose demonstrations of practical net zero energy buildings (NZEBS) with convincing architectural quality.

The project will cover new and existing major types of building, both residential and non-residential, for the climatic zones represented by the participating countries. Individual buildings, clusters of buildings and small settlements will be considered. It will support the conversion of the NZEB concept from an idea into practical reality in the marketplace. Demonstrating and documenting real projects will also lower industry resistance to adoption of these concepts.



Planned Outcomes

- A source book, targeting specific groups such as national policy makers, industry and industry associations, utilities, academic and funding programme managers
- An international education network
- Expansion of the US DOE High Performance Buildings Databases with 'as-designed' and 'as-achieved' case studies
- Knowledge transfer portal via a website

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Status: Ongoing (2008 - 2013)

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www.ecbcs.org/annexes/annex52.htm
www.iea-shc.org/task40

ECBCS Mission

To develop and facilitate the integration of technologies and processes for energy efficiency and conservation into healthy, low emission, and sustainable buildings and communities, through innovation and research.

ECBCS Vision

The vision of ECBCS is for near-zero primary energy use and carbon emission solutions to be adopted in buildings and communities, where energy is produced on demand.

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:
Netherlands

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 Conservation in Buildings and Community Systems Programme has sponsored various research Annexes 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 sponsored research.



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