EBC

Energy in Buildings and Communities Programme

Factsheet

Energy Flexible Buildings towards Resilient Low Carbon Energy Systems

EBC ANNEX 82

The energy flexibility of a building is its ability to manage its demand and supply according to local climatic conditions, occupant and operator needs and energy network requirements.

The completed EBC Project, 'Annex 67: Energy Flexible Buildings' revealed areas where further work is needed to ensure that energy flexibility from buildings will actually be an asset for future energy networks. The purpose of this project is investigate these research areas that include:

- scaling from single buildings to clusters of buildings (aggregation);
- energy flexibility and resilience in multi-carrier energy systems (electricity, district heating / cooling and gases);
- acceptance / engagement of the stakeholders; and
- development of business models.

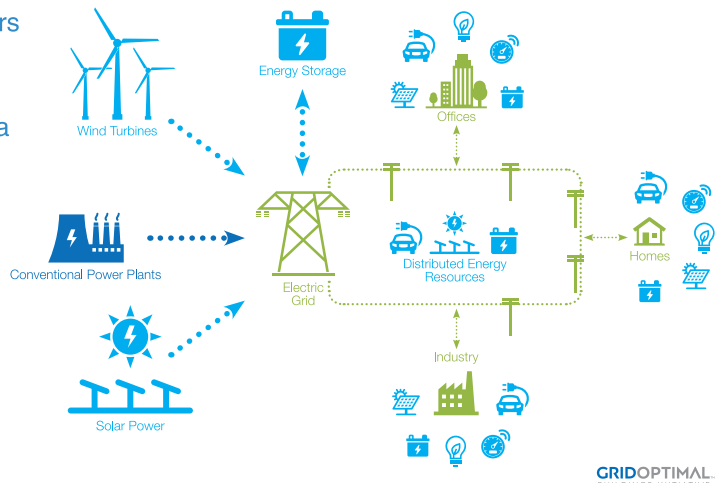
PROJECT OBJECTIVES

1. investigation of the aggregated potential of energy flexibility services from buildings and clusters of buildings located in different multi-carrier energy systems
2. demonstration of energy flexibility in clusters of buildings through simulations, experiments and field studies
3. mapping the barriers, motivations and acceptance of stakeholders associated with the introduction of energy flexibility measures
4. investigation and development of business models for energy flexibility services to energy networks
5. recommendations to policy makers and government entities involved in the shaping of future energy systems

GridOptimal empowers players on both sides of the meter to actively support the transition to a carbon free grid

GridOptimal Technologies and Strategies:

- renewable energy
- energy efficiency
- electric vehicle
- energy storage
- smart connected controls



The GridOptimal™ Buildings Initiative project is developing metrics by which building features and operating characteristics that support more effective grid operation can be measured and quantified. This supports the least-cost decarbonization of the grid through better integration of both distributed energy resources (DER) and utility-scale wind and solar energy. newbuildings.org/resource/gridoptimal

Source: New Buildings Institute

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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.

The planned deliverables from this project are:

- a common methodology for characterization of energy flexibility,
- services offered to (multi-carrier) energy networks,
- stakeholder viewpoints,
- a collection of case studies,
- business models, and
- recommendations for policy makers and government entities involved in the shaping of future energy systems.

Project duration

Ongoing (2019 - 2025)

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Participating countries

Australia, Austria, Belgium, Canada, P.R. China, Czech Republic, Denmark, Finland, France, Germany, Ireland, Italy, the Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, Türkiye, UK, USA

Further information

www.iea-ebc.org

Published by: EBC Executive Committee Support Services Unit