

# Renovation of Non-Residential Buildings towards NZEB standards

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Frankfurt 3. April 2014

## **Motivation for renovation:**

- More than half of the existing building stock will still be standing in 2050
- Buildings are much more frequently renovated than replaced
- More than 50% of the building stock in many OECD countries < 1970
- 200.000.000 residential dwellings in OECD countries will **have to be renovated to new energy standards** to reach the *+2 degrees goal*

## **The previous SHC task 37 has shown:**

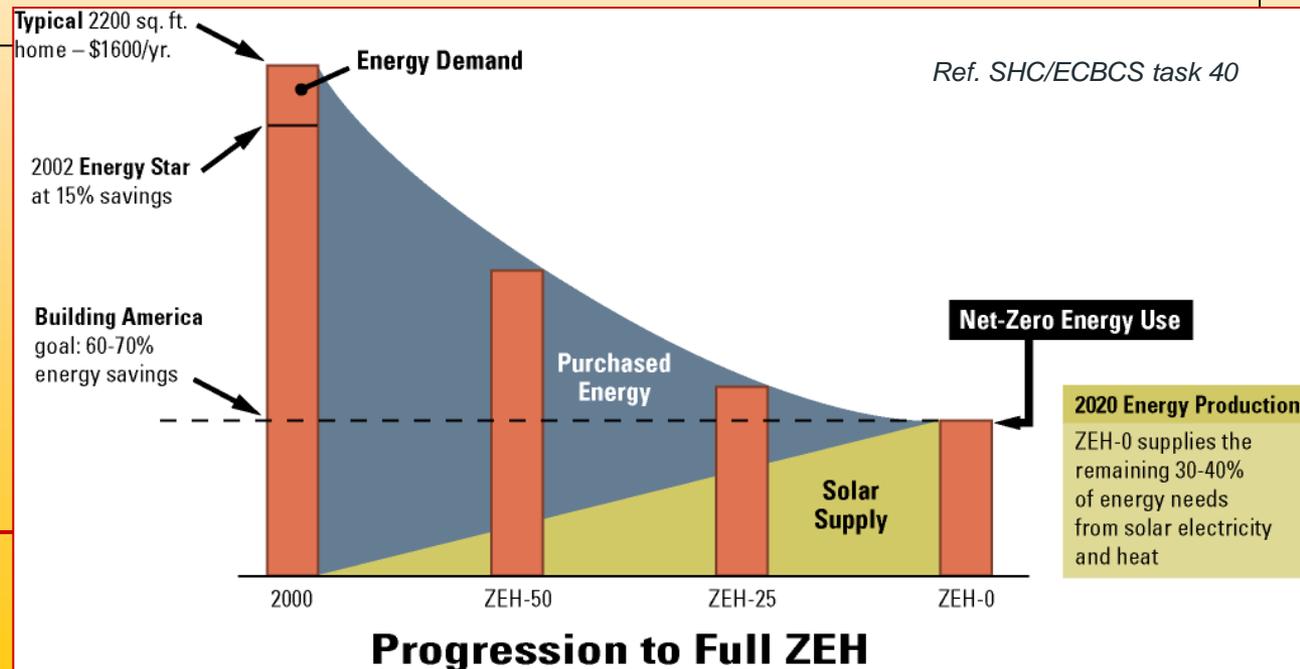
- A dramatic decrease in energy demand in existing houses is possible
- 60 demo-projects show reductions from 62 - 95% for space heating and DHW, average 75%.

## Task 47:

# Renovation of Non-Residential Buildings towards Sustainable Standards

## Why renovation in the SHC Program:

- Solar energy important to reach NZEB standards
- Solar heat for space heating and hot water
- Solar PV panels for light, electric appliances and heat pumps
- Solar air conditioning and refrigeration
- Daylight systems



## ***Task 47:***

# ***Renovation of Non-Residential Buildings towards Sustainable Standards***

***Duration: January 2011 - June 2014***

## ***Objectives***

- Develop a solid knowledge base on how to renovate non-residential buildings towards the NZEB standards (Net-Zero Energy Buildings) in a sustainable and cost efficient way.
- Identify the most important market and policy issues as well as marketing strategies for such renovations.

## Scope

- The task deals with several types of non-residential buildings, including protected and historic buildings:
  - Office buildings
  - Educational buildings
  - Nursing homes
  - Hotels
  - Super markets and shopping centers
- Depending on available projects among the participants: hospitals, industrial halls and indoor swimming pools.
- A broad range of technologies will be included and solar energy will play a significant role in bringing the use of primary energy down to NZEB - standards.

## Task 47:

# Renovation of Non-Residential Buildings towards Sustainable Standards

## *Participating countries*



Australia



Austria



Belgium



Denmark



Germany



Italy



Norway



## Task 47:

### Renovation of Non-Residential Buildings towards Sustainable Standards

## Task 47 has four subtasks:

### **Subt. A: Advanced Exemplary Projects (Norway)**

- Documentation of the design, performance, process and motivations of exemplary building renovations

### **Subt. B: Market and Policy issues and Marketing Strategies (Norway)**

- Building stock analysis
- Decision making processes - barriers and driving forces

### **Subt.C: Assessment of Technical Solutions and Operational Management (Germany)**

- Detailed description of two best case buildings (school and office building)
- A technical report with recommendations

### **Subt.D: Environmental and Health Impact Assessment (Belgium)**

- A booklet on sustainable and advanced renovation of schools.



SHC Task 47

## Solar Renovation of Non-Residential Buildings

[About Project](#)[Participants](#)[Meeting / Events](#)[News](#)[Publications](#)[Resources](#)[Member Area](#)[Contact](#)

## Solar Renovation of Non-Residential Buildings

### Overview

Buildings are responsible for up to 35 % of the total energy consumption in many of the IEA participating countries. The EU Parliament approved in April 2009 a recommendation that member states have to set intermediate goals for existing buildings to fix minimum percentage of buildings to be net zero energy by 2015 and 2020.

A few exemplary non-residential renovation projects have demonstrated that total primary energy consumption can be drastically reduced together with improvements of the indoor climate. Because most property owners are not even aware that such savings are possible, they set energy targets too conservative. Buildings renovated to mediocre performance can be a lost opportunity for decades.

The objectives of this new Task are to develop a solid knowledge base on how to renovate non-residential buildings towards the NZEB standards (Net-Zero Energy Buildings) in a sustainable and cost efficient way and to identify the most important market and policy issues as well as marketing strategies for such renovations.

<http://task47.iea-shc.org/>

### Task Information

#### DURATION

januar 2011 — juni 2014

#### OPERATING AGENT

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### What's New

[NEWS](#)[MEETINGS](#)[PUBLICATIONS](#)

[Public task 47 Symposium in Frankfurt 3.April 2014](#)

[SHC 2014 is Now Open for the Submission of Abstracts](#) - The SHC 2014 website is now live and open for the submission of abstracts — deadline May 30, 2014.

[Solar Update February 2014 Now Online](#) - The latest issue of the IEA SHC Programme's newsletter, Solar Update is now online. This issue has articles covering a variety to topics ranging from solar thermal activities in Canada to lighting retrofits to SHC publications to download and read.

## Task 47:

# Renovation of Non-Residential Buildings towards Sustainable Standards

### Time schedule:

- Task started January 2011
- To be finished June 2014
- Reports to be finalized and uploaded on the public website by December 2014

All reports will be available in pdf-format for free downloading

## Information plan

- Database for exemplary renovation projects – *18 available*
- Three seminars presenting task work
- “Lessons learned summary” from the exemplary projects of sub t A.
- Publication describing decision making processes, non energy benefits as well as barriers and driving forces from the case studies of sub t B.
- Publication summarising renovation policies and strategies, sub t B.
- Technical report with recommendations and conclusions from sub t C
- “Guideline for designers and planners – focusing on schools” from sub t D.

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