Local initiative extrapolated to nation

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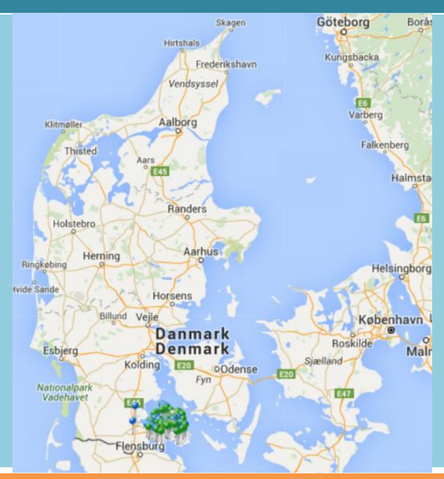
SCOPE

SCALE	Local scaled to national level
NUMBER OF DWELLINGS	2 636 586
NUMBER OF BUILDINGS	1 547 037
NUMBER OF INHABITANTS	5 678 348
m² NATIONAL REFERENCE AREA	304 749 000 m² – gross heated floor area
m² EPISCOPE REFERENCE AREA	259 036 650 m²

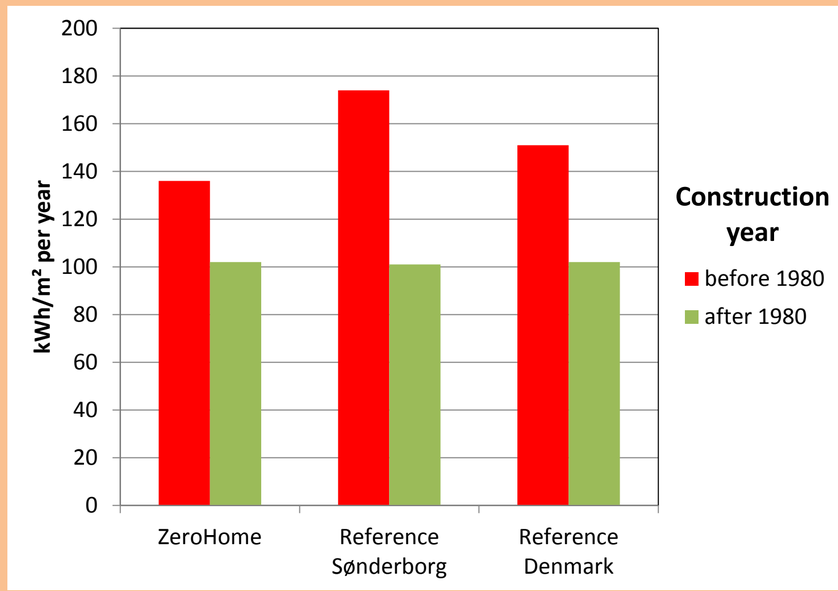


OVERVIEW OF ACTIVITIES

In the municipality of Sønderborg, in the southern part of Jutland, there is a shining example initiated in 2007, ProjectZero, of a local initiative that have resulted in extensive energy savings in residential buildings and at the same time created local workplaces. The intension with the pilot is to investigate the possible energy reduction in Denmark if the same approach was made for the entire Danish building stock.

Deployment of this methodology on national scale will not be straight forward as it requires strong local support. In Sønderborg the local business and clean-tech companies have strongly supported the project. Additionally, one of the driving forces has been the creation of something unique among the local residents and feeling to be able to create local unity. This cannot easily be made nationally.

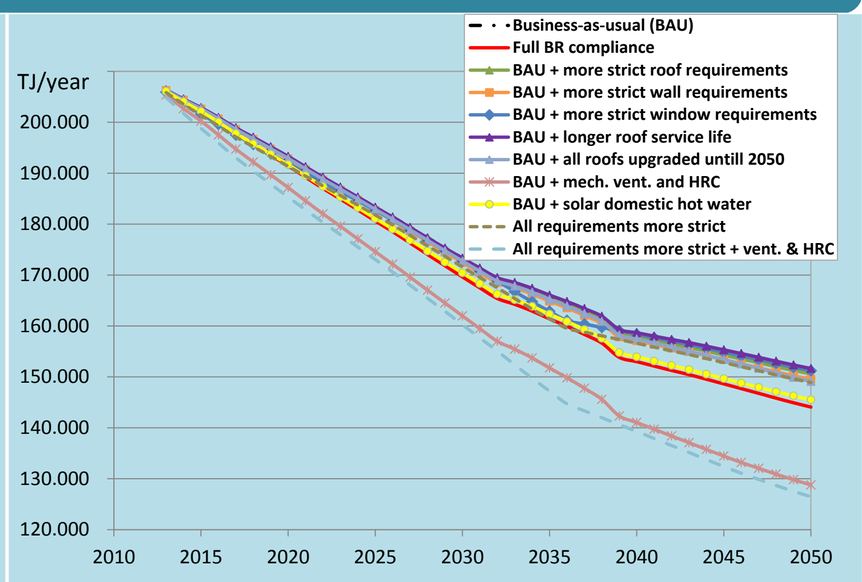
Never the less, playing with the idea about a nationwide dissemination will demonstrate the possibilities for energy savings and creation of local jobs if a community strives for a common goal. It is the aim of the Danish government that Danish buildings should be free of fossil fuels by 2035. To be able to reach that goal, it is estimated that the energy consumption in the existing building stock should be reduced by a minimum of 50 % and business-as-usual may not be sufficient.



FINDINGS OF SCENARIO ANALYSES

Registered energy consumption, in the national Building and Dwelling stock register, in the ZeroHome homes in Sønderborg from the construction period before 1980 show an average energy consumption of 136 kWh/m² per year. The national average for single family homes constructed in the same period is 151 kWh/m² per year. Energy consumption on the ZeroHome group is thus significantly lower than the national average. Compared to the national average, ZeroHome homes, have obtained a reduction in energy consumption of 10%, and compared to the reference group of homes in Sønderborg a reduction of 28%. This is not in line with the needs for energy savings in the Danish tertiary sector until 2050, but in line with what can be expected for energy upgrading of building components when making a renovation according to the requirements laid out in the Danish Building Regulations 2010.

The business-as-usual scenario for energy upgrading of the existing building stock (when replacing or upgrading building elements), will deliver energy savings around 28%. Analyses of impact from various tightenings of the building energy requirements will improve the results significantly. Such tightenings are implemented in the new 2015 Danish Building Regulations.

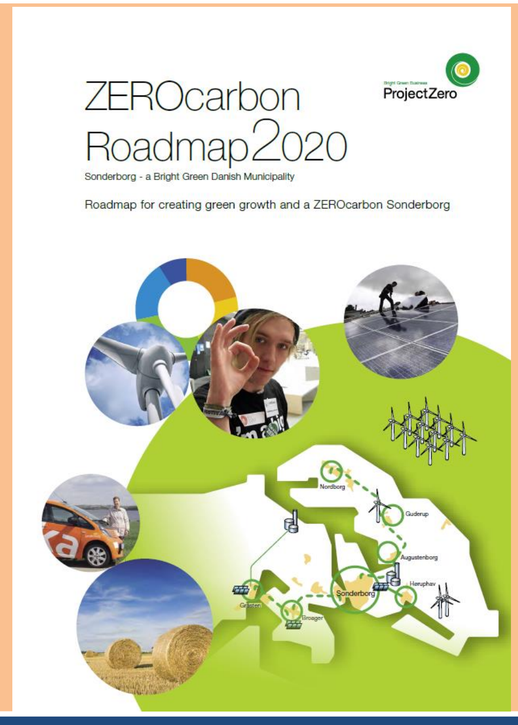


LESSONS LEARNED & RECOMMENDATIONS

The overall goal of ProjectZero is to get the entire Sønderborg-area involved in the vision of creating a CO_2-neutral growth area before 2029, creating and demonstrating new solutions, robust measurable CO_2 reductions, new green jobs and a talented generation of young people. The public-private partnership – ProjectZero – was created to inspire and drive Sønderborg´s transition to a ZERO carbon community by 2029, based on improved energy efficiency, conversion of energy sources into renewables and by creating participation of all stakeholders to reach the ambitious goal: CO_2-neutral growth and sustainable urban development.

Since 2009, about 1,200 home-owners have received free energy advice and more than 900 home-owners have already made contracts with local resources for implementation of building energy upgrading. In total there are about 18,600 home owners in the Sønderborg municipality. Additionally, ProjectZero has attracted significant capital investments from industry and created around 1000 new jobs every year, both in the local area and in Denmark as a whole.

The main reason for success is that the projectZero approaches CO_2-reduction holistically ensuring an unbroken chain: building owner, energy expert, local designers, craftsmen, and banks to ease implementation of energy saving measures in homes.



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