

Demonstrating Nearly Zero Energy Hotels in Europe

Examples and experiences from the European initiative neZEH

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ABSTRACT

Nearly Zero Energy Buildings (nZEBs) are at the core of the European building policy, with the European Directive on the Energy Performance of Buildings (2010/31/EU, EPBD recast) mandating that new public buildings shall be nZEBs after the end of 2018 and all new buildings from the 1st of January 2021. At the same time, Member States are urged to develop policies and take supporting measures to stimulate large scale renovations towards nZEBs. Currently, there are a few successful demonstrations of near Zero Energy Buildings (nZEBs) in Europe to inspire and drive replications in the private sector. Hotels in specific represent a large challenge, as accommodation accounts for about 21% of total tourism sector CO₂ emissions.

In this frame, the “nearly Zero Energy Hotels” (neZEH) initiative, co-funded by the European Commission through the Intelligent Energy Europe Programme, has been working for the past 3 years to accelerate the rate of refurbishment of existing hotels into nZEBs. The work plan included: technical advice to committed hoteliers, demonstration of the feasibility of investments towards nearly Zero Energy through lighthouse examples, training and capacity building activities and promotion of front-runner hotels at national, regional and EU level, to increase their market visibility.

This paper presents key results from the neZEH project: a) 16 demonstration pilot hotel projects in 7 countries (Croatia, France, Greece, Italy, Romania, Spain and Sweden) acting as "living" examples, b) a practical e-toolkit for hotel owners to assess their energy consumption and get initial recommendations for measures that can help them reach the nearly Zero Energy target, c) policy recommendations, reflecting the opinion and needs of hotel owners about appropriate financing tools and other supporting measures to help this kind of refurbishment projects.

The pilot hotels are considered to be the main legacy, as they will inspire a second wave of neZEH projects. A robust process has been followed for their implementation, consisting of four steps: i) an energy audit ii) a feasibility study and rollout plan, iii) tendering, contracting and financing alternatives and iv) training of management and staff. The preliminary estimation of the positive impacts from implementing the neZEH pilot projects assumes cumulative primary energy savings to reach 1.197 toe/yr, renewable energy production of 166 toe/year, while the cumulative investment is estimated to 21.6 M€. The overall average primary energy reduction reaches to 54% whereas RES share reaches to 44%.