

Welcome to the fourth (and final!) newsletter of the international project on the *Refurbishment of the Public Building Stock Towards Near Zero Energy Buildings – RePublic_ZEB*.

Visit the project website at www.republiczeb.org

What is RePublic_ZEB?

RePublic_ZEB is a European Commission funded project that brings together partners from the South-Eastern European countries to develop and promote Near Zero Energy Building (nZEB) tools. The aim of this two-and-a-half year project is to provide the means of reducing energy consumption in public buildings to near zero, in accordance with Article 9 of the EU's Energy Performance of Building Directive. The project's target countries are Bulgaria, Croatia, Former Yugoslav Republic of Macedonia (FYROM), Greece, Hungary, Italy, Portugal, Romania, Slovenia and Spain (Catalonia Region). This project is now drawing to a close and all of the outputs will be available on the project website.

[Read More](#)

Update on project activities



The final project team meeting was held in Lisbon in June 2016. All of the partners met to discuss the project's progress and how we would manage the delivery of the final deliverables in order to achieve a successful completion of the project.

Our partner, LNEG, held the meeting in its "Solar XXI" building which is a low-energy building, designed to maximize solar energy and free-cooling techniques for its heating and conditioning. Solar energy is converted through PV panels and thermal collectors (for hot water production). Free-cooling is delivered through underground pipes together with natural and forced ventilation.

[Further details](#)

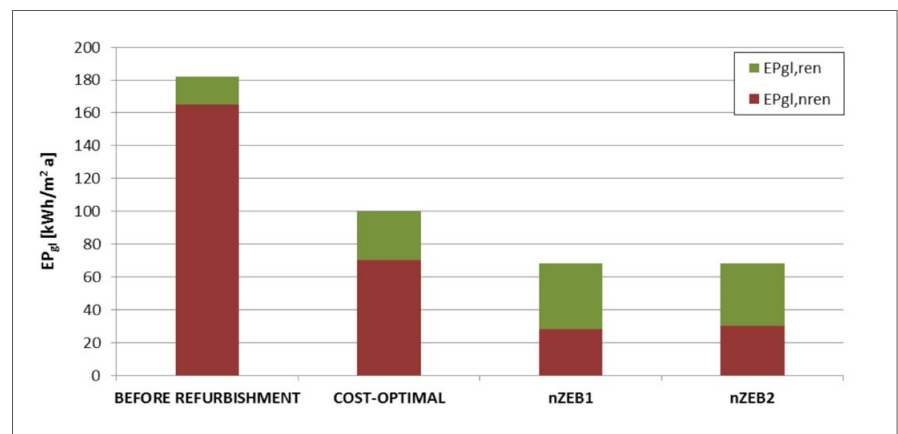
Costs/benefits analysis of the "packages of energy efficiency measures" for the refurbishment towards nZEB (Work Package 4)

The main aim of WP4 was to undertake a cost optimal evaluation of the nZEB packages of measures in the reference buildings identified in the project. The idea is to increase builders' confidence in the packages of measures by providing them with quantitative results in terms of saving energy and corresponding cost benefits. We have just published the final two reports.

The [first report](#) describes the results of the analysis for all of the reference buildings. The energy performance

(kWh/m²/year) of each building was calculated before refurbishment and the cost-optimal and nZEB refurbishment packages identified. The global cost for each scenario was also calculated.

Overall, the nZEB primary energy factors were typically about 120 kWh/m²/year with a renewable energy share of around 50%, although there is wide variation about both of these figures reflecting the different building types (e.g. offices, schools, hospitals etc.) in each country as well as the climate conditions. In the majority of cases the nZEB solutions are cost-effective in the 30-year period considered.



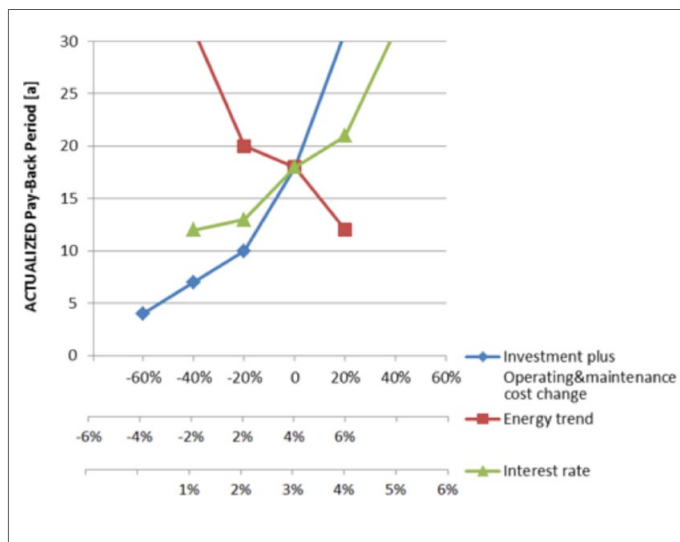
Example energy performance of nZEB refurbished building

The [second report](#) is a sensitivity analysis of the results. The partners agreed on the key economic variables which were: investment and the operating and maintenance costs, energy costs and the discount rate. The report describes how changes to the global cost and the pay-back periods for each nZEB package altered with variations to these key variables.

In this example if the investment costs fall then the payback is much quicker (less than 10 years), but if they rise by 20% or more the package is no longer cost effective.

Overall, the investment, operating and maintenance cost was the most important variable. If this can be reduced then, in many cases, an nZEB package becomes cost-effective.

Together these two reports provide guidance and robust evidence to demonstrate to all stakeholders that the packages of energy efficiency measures can deliver nZEB in a cost-effective manner.



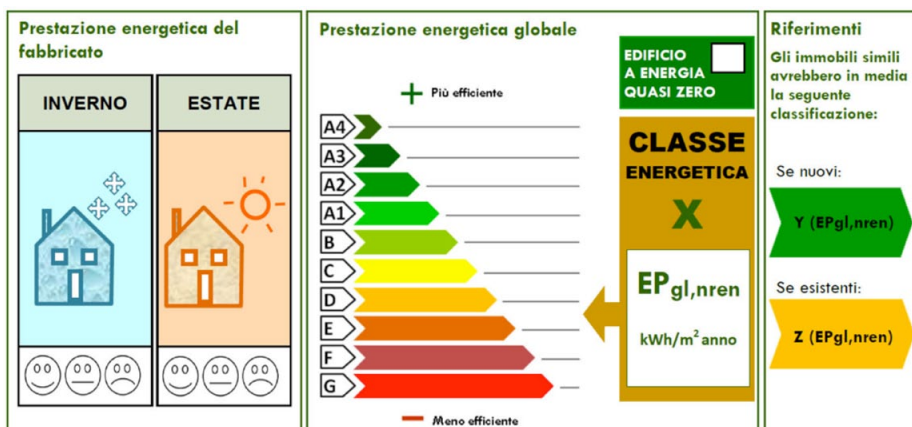
Variation in pay-back of an nZEB package for an office

Strategies and guidelines towards nZEBs (Work Package 5)

In WP5 we brought key stakeholders together to discuss, endorse and promote RePublic_ZEB's outputs as robust solutions to renovate public buildings. The aim is to accelerate the refurbishment of the public building stock towards nZEB; to facilitate this each of the partners have created website 'counters' in their own national languages which give information and material on nZEB. All of these counters can be accessed through the RePublic_ZEB project site [here](#)

All of the WP5 reports have now been published.

The [first report](#) summarises the status of nZEB in each country including definition, primary energy requirements, renewable energy share etc. It also describes partner meetings with national or regional authorities, energy agencies etc. to understand policies that support nZEBs and give recommendations to improve their uptake.

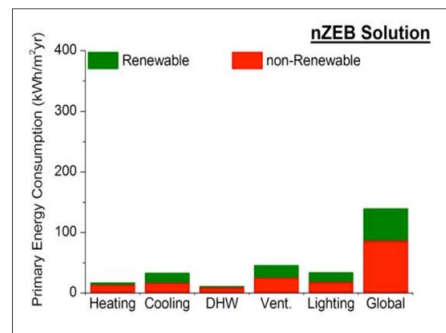


Partial reproduction of the new Italian EPC showing the nZEB classification

The [second report](#) is designed to give stakeholders confidence that nZEB refurbishment can be achieved and that the measures are robust. It presents the headline results for the nZEB packages applied to many of the reference buildings assessed in WP4 including hospitals, schools and offices in the partners' countries. The report also gives a short technical description of each energy efficiency measure and ranks them across a range of indicators including cost, energy saving, thermal comfort, payback etc.



nZEB refurbishment of a Romanian school built 1970-1990

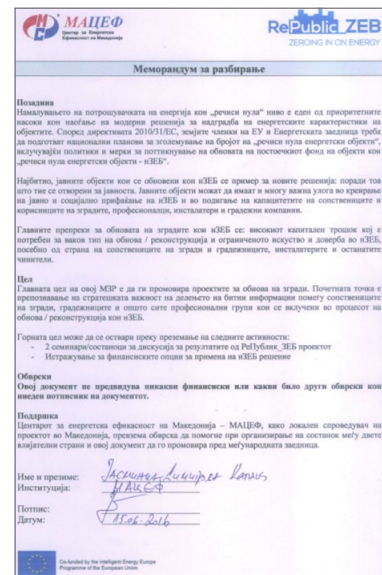


A key requirement of the project is to work with key stakeholders to facilitate nZEB. Each of the project partners have therefore engaged with industry representatives at seminars and workshops and signed Memoranda of Understanding (MOUs) where stakeholders acknowledge the strategic importance of nZEB refurbishment and will endeavour to promote it by undertaking nZEB feasibility studies of projects, holding seminars to discuss nZEB results, visiting nZEB buildings and so on.

In the third report we pulled together all the MOUs that have been signed by representatives in each of the project partner countries. These are available in the national languages as well as English. In total, 99 organisations have signed MOUs and these represent local authorities, energy agencies, energy service companies, builders etc.

This is very encouraging and should hopefully accelerate the refurbishment of public buildings to nZEB.

In the [final report](#) we have produced a template for a model contract to use between building owners/managers and builders. It was developed on the basis of the project partners' experience of Energy Performance Contracts (EPCs) that ESCOs (Energy Service Companies) operate on. The model contract identifies the reference buildings, the headline requirements for primary energy use, renewable energy share etc., and proposes the metrics for which performance levels should be set. The report summarises the experience of EPCs in each country as well as the financing schemes that are available to deliver nZEB.



Example of signed MOU from the FYROM

Executive summaries of all RePublic_ZEB reports

We have prepared short executive summaries of each of the reports produced by the RePublic_ZEB project. Many of the project reports are very detailed, so these summary documents concisely present the key findings. They are available on the [publications page](#) of the website.

Video summary of project

And if you want a quick overview of the whole project we have also produced a 3-minute video summary! Have a look [here](#)



More information?

This is the final issue of the RePublic_ZEB newsletter. Past issues of the newsletter and all of the project's outputs can be found on the project website at www.republiczeb.org

You can also get in touch with us at republiczeb@bre.co.uk

