Nearly Zero-Energy Building Strategy 2020

ZEBRA2020

Sustainability of the European society and economy will be based on renewable energy and resource efficiency. For the building sector, this implies the large scale deployment of nearly Zero-Energy Buildings (nZEBs). The technology is available and proven; however the large scale uptake of nZEB construction and renovation is still a challenge for all market actors and stakeholders involved. A substantial gap in reliable data on current market activities made it difficult for policy-makers to evaluate the success of their policies. Therefore, the key objective of ZEBRA2020 was to monitor the market uptake of nZEBs across Europe and to provide data and as well as recommendations on how to reach the nZEB standard. Data and strategies were made accessible via online tools for nZEB data, market tracking and scenarios until 2050. Recommendations have been derived on national and EU level. ZEBRA2020 covered 17 European countries and almost 90% of the EU building stock and population. Thus, it was actively contributing to meeting the ambitious target of 100%-share of nZEBs for new buildings from 2020 and a substantial increase of deep nZEB renovations.

Results

- The online data tools (www.zebra-monitoring.enerdata.eu [1]) provide unique information regarding nZEB market development and nZEB characteristics. New approaches have been developed in order to allow for a better comparability of national data, for instance the major renovation equivalent and the nZEB radar. The collected data was accessed over 4500 times during the project duration. Further, 15 official commitments from market actors and policy makers show the need for future nZEB market tracking.

- The online nZEB tracker (http://zebra2020.ecofys.com [2]), based on a set of criteria, assesses the nZEB market maturity and visualises the national nZEB markets dynamically. Results on national and EU level can be aggregated. On EU-level, the tracker shows a substantial gap of market maturity that still has to be closed until 2019/2021. Though market conditions appear to improve throughout the EU, nZEBs are still rare in most EU Member States. Approximately 900 requests from the nZEB-tracker during the project duration show the importance of the topic.

- A quantitative comparison of national nZEB definitions is complex due to different system boundaries, calculation methodologies, applied factors etc. However, our analysis indicates that a significant share of nZEB definitions does not meet the intention of the EU directive on energy efficient buildings (EPBD) that the energy consumption should be “nearly zero or very low amount” and the remaining part “should be covered to a very significant extent by energy from renewable sources”. Thus, the new EPBD require clear definitions of terms and thresholds, and gaps should be closed.
• Cross-country comparisons of barriers, drivers and best practices, especially for economic aspects, have been made. Typical nZEB features in different climatic zones were investigated. Based on collected data, business as usual and ambitious policy scenarios of the nZEB market transition by 2020, 2030 and 2050 were developed (http://eeg.tuwien.ac.at/zebra [3]). Recommendations to accelerate the nZEB market transition are provided for 17 target countries and on EU level. Policy makers and industry representatives discussed these recommendations in 36 stakeholder workshops.

• 908 workshop participants discussed the outcomes of ZEBRA2020 and 120 national and regional policy makers were continuously involved in the project. The outcomes have been presented in many conferences and more than 70 articles on ZEBRA2020 have been published.

Lesson learned

• Even if a broad range of building data is available for most European countries, the absence or difficult accessibility of key data and in particular of non-residential and existing buildings as well as renovation remains an important obstacle. There is a strong need for European harmonisation for solid cross-country comparisons and tracking of the transition to nZEBs. The revised EPBD should include unambiguous, clear definitions of terms and thresholds. Further, it is important to distinguish between new buildings and renovations – despite of a common nZEB definition for both cases.

• The EU committed to limit global warming well below 2 degrees Celsius and the related climate targets clearly indicate that CO\textsubscript{2}-reductions of 80-95% will be required in the building sector by 2050. The ZEBRA2020 scenarios reach CO\textsubscript{2}-reduction levels of around 80% only in the ambitious cases. An achievement of the 2050 energy and climate goals require policy ambitions, going beyond the assumed actions of the ambitious policy scenarios, which were developed together with policy makers. Immediate action and radical policy innovations are required to reach the energy and climate targets.

• A considerable part of the heating systems installed in the next 10 years will still be in place in 2050. Thus, an absolute phase out of new fossil heating systems would be required within the next 5-10 years to reach strong decarbonisation levels in 2050.

• Please visit our final report [4] to learn more our findings!

Partners and coordinator

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Ecofys Germany GmbH [8] Germany
International Centre for Numerical Methods in Engineering [9] Spain
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Budget

Overall budget: 1.677.905,00 € (EU contribution: 75,00 %)

In brief

Sector: Buildings

Duration: 01/04/2014 to 30/09/2016

Contract number: IEE-13-675

Website: http://zebra2020.eu/

Tags:

building
nearly zero-energy buildings (NZEB)

Related projects

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- [AVASH] Advanced Ventilation Approaches for Social Housing
- [ENPER EXIST] Applying the EPBD to improve the ENergy PErformance Requirements to...
- [ASIEPI] Assessment and improvement of the EPBD Impact (for new buildings and...
- [BESTFACADE] Best Practice for Double Skin Facades
- [BUILDING ADVENT] Building Advanced Ventilation Technological examples to demonstrate...
- [CEPH] Certified European Passive House Designer
- [CHECK IT OUT!] Check and improve the energy performance of schools and disseminate best...
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• [EPEE [44]] European fuel Poverty and Energy Efficiency
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• [ENFORCE [46]] European Network for the Energy Performance Certification of Buildings
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• [SURE-FIT] Sustainable Roof Extension Retrofit for High-Rise Social Housing in Europe
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Videos and Photos

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Links:
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