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

<table>
<thead>
<tr>
<th>Partner</th>
<th>Country</th>
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<tbody>
<tr>
<td>Vienna University of Technology (Technische Universitaet Wien) [5]</td>
<td>Austria</td>
</tr>
<tr>
<td>ENERDATA SA [6]</td>
<td>France</td>
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<td>Narodowa Agencja Poszanowania Energii S.A. [7]</td>
<td>Poland</td>
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<td>Ecofys Germany GmbH [8]</td>
<td>Germany</td>
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<td>International Centre for Numerical Methods in Engineering [9]</td>
<td>Spain</td>
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<tr>
<td>European Academy Bolzano [10]</td>
<td>Italy</td>
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<tr>
<td>SINTEF - Stiftelsen for industriell og teknisk forskning ved Norges tekniske høgskole [12]</td>
<td>Norway</td>
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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

- [EPLABEL] A programme to deliver energy certificates for display in public buildings...
- [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...
- [DATAMINE] Collecting data from energy certification to monitor performance...
- [COMMONCENSE] Comfort monitoring for CEN Standard EN15251 linked to EPBD
- [CYBER DISPLAY] Communicate Your Buildings Energy Rating
[CA EPBD II [24]] Concerted Action supporting transposition and implementation of Directive...
[CONSTRUCTION21 [25]] CONSTRUCTION21- A EUROPEAN GREEN BUILDING EXCHANGE
[CERTuS [26]] Cost Efficient Options and Financing Mechanisms for nearly Zero Energy...
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[ROSH [28]] Development and marketing of integrated concepts for energy efficient and...
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[CoolRegion [32]] Energy efficient Cooling in regions of North and Central Europe
[ECOlish [33]] Energy Exploitation and Performance Contracting for Low Income and Social...
[El-EDUCATION [34]] Energy Intelligent Education for Retrofitting of Social Houses
[EPI-CREM [36]] Energy Performance Integration in Corporate Public Real Estate Management
[EPI-SOHO [37]] Energy Performance Integration in Social Housing, a strategic approach for...
[ENSIC BUILDING [38]] Energy Saving through promotion of Life Cycle analysis in Building
[INTELLIGENT METERING [39]] Energy Savings from Intelligent Metering and Behavioural Change
[ESAM [40]] Energy Strategic Asset Management in Social Housing Operators in Europe
[E-TOOL [41]] Energy-toolset for improving the energy performance of existing buildings
[EDUCATE [42]] Environmental Design in University Curricula and Architectural Training in...
[EPEE [44]] European fuel Poverty and Energy Efficiency
[EULEB [45]] European High Quality and Low Energy Architecture
[ENFORCE [46]] European Network for the Energy Performance Certification of Buildings
[E-SEAP [47]] European Sustainable Energy Award for Prisons
[AUDITAC [48]] Field benchmarking and Market development for Audit methods in Air...
[GREENBUILDING [49]] GREENBUILDING
[HARMONAC [50]] Harmonizing air-conditioning inspection and audit procedures in the...
[IMPLEMENT [51]] IMPLEMENT - The EPBD in Action
[IMPACT [52]] IMProving energy Performance Assessments and Certification schemes by Tests
[ISEES [53]] Improving the Social Dialogue for Energy Efficient Social Housing
[ILETE [54]] Initiative for Low Energy Training in Europe
[INOFIN [55]] Innovative Financing of Social Housing Refurbishment in Enlarged Europe
[CENSE [56]] Leading the CEN standards on energy performance of buildings to practice....
[GREENBUILDINGPLUS [57]] Leveraging the GreenBuilding Programme (GBP) to promote energy-efficiency...
[LCC-DATA [58]] Life-Cycle-Cost in the Planning Process. Constructing Energy Efficient...
[ENERGY TROPHY+ [59]] Magnify success: Extension of the European Energy Trophy competition to 18...
[PASSIVE-ON [60]] Marketable Passive Homes for Winter and Summer Comfort
[IDES-EDU [61]] Master and Post Graduate education and training in multidisciplinary teams...
[NIRSEPES [62]] New Integrated Renovation Strategy to improve Energy PErformance of Social...
[NZB2021 [63]] NZB2021 ‘Doors Open Days’ – sharing experiences from low energy buildings...
[SOUTHZEB [64]] nZEB training in the Southern EU countries – Maintaining building...
• [FACTOR 4 [65]] Programme of actions Factor 4 in existing social housing in Europe
• [COOL ROOFS [66]] Promotion of cool roofs in the EU
• [PEP [67]] Promotion of European Passive Houses
• [NEZER [68]] Promotion of smart and integrated NZEB renovation measures in the European...
• [NORTHPASS [69]] Promotion of the Passive House Concept to the North European Building...
• [RE-CO [70]] Re-Commissioning - Raising Energy Performance in Existing Non-Residential...
• [REPUBLIC_ZEB [71]] Refurbishment of the Public building stock towards nZEB
• [REQUEST2ACTION [72]] Removing barriers to low carbon retrofit by improving access to data and...
• [RESHAPE [73]] Retrofitting Social Housing and Active Preparation for EPBD
• [SAVE@WORK4HOMES [74]] SAVE@Work4Homes - Supporting European Housing Tenants in Optimising...
• [STABLE [75]] Securing The Take-off of Building Energy Certification: Improving Market...
• [KEEPCOOL [76]] Service Buildings Keep Cool: Promotion of "sustainable cooling"...
• [SMART-E BUILDINGS [77]] Smart-e buildings - yes we canEnable the building sector to contribute to...
• [SHARE [78]] Social Housing Action to Reduce Energy Consumption
• [STEP-2-SPORT [79]] STEP-by-STEP renovation towards nearly zero energy SPORT buildings
• [SAVE AGE [80]] Strengthening Energy Efficiency Awareness Among Residential Homes for...
• [SENTRO [81]] Sustainable Energy systems in New buildings- market inTROduction of...
• [SURE-FIT [82]] Sustainable Roof Extension Retrofit for High-Rise Social Housing in Europe
• [TACKOBST [83]] Tackling Obstacles in Social Housing
• [TOTAL CONCEPT [84]] The Total Concept method for major reduction of energy use in non-...
• [THERMCO [85]] Thermal comfort in buildings with low-energy cooling
• [E-RETROFIT-KIT [86]] Tool-Kit for "Passive House Retrofit"
• [BUILDING EQ [87]] Tools and methods for linking EPDB and continuous commissioning
• [TOWARDS CLASS A [88]] Towards Class A - Municipal Buildings as Shining Examples
• [TREES [89]] Training for Renovated Energy Efficient Social housing
• [REE_TROFIT [90]] Training on Renewable Energy solutions and energy Efficiency in...
• [KEEP COOL II [91]] Transforming the market from "cooling" to "sustainable... 
• [TABULA [92]] Typology Approach for Building Stock Energy Assessment
• [USE EFFICIENCY [93]] Universities and Students for Energy Efficiency

Videos and Photos

<table>
<thead>
<tr>
<th>Attachment</th>
<th>Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>ZEBRA2020 tool for data visualisation [94]</td>
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Links
[4]