



Nearly Zero Energy Hotels – from European policy to real life examples

Professor Theocharis Tsoutsos, neZEH project coordinator

11/09/2015, neZEH workshop in CLIMAMED 2015, Paris, France

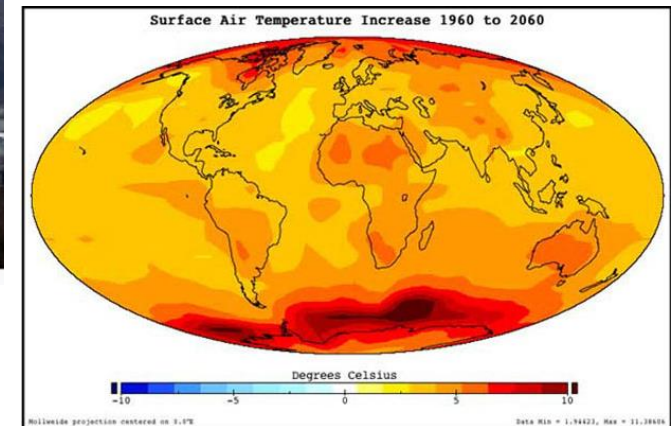


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Fossil fuels-climate changes



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Hotels and climate change



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1% of total **CO₂** emissions
globally is from hotels

Hotels may save up to
70% of their energy consumption



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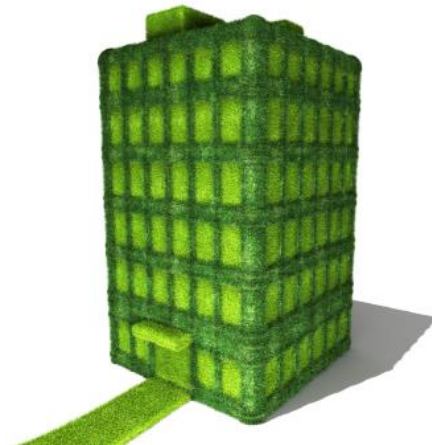


Hoteliere business challenges



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- > Reduction of operational and maintenance cost
- > **Energy** security
- > Market and guests expectations-Competitiveness
- > Regulatory-legislative changes
- > Funding opportunities for renovation
- > **Climate change - environmental footprint**
- > **Sustainability**



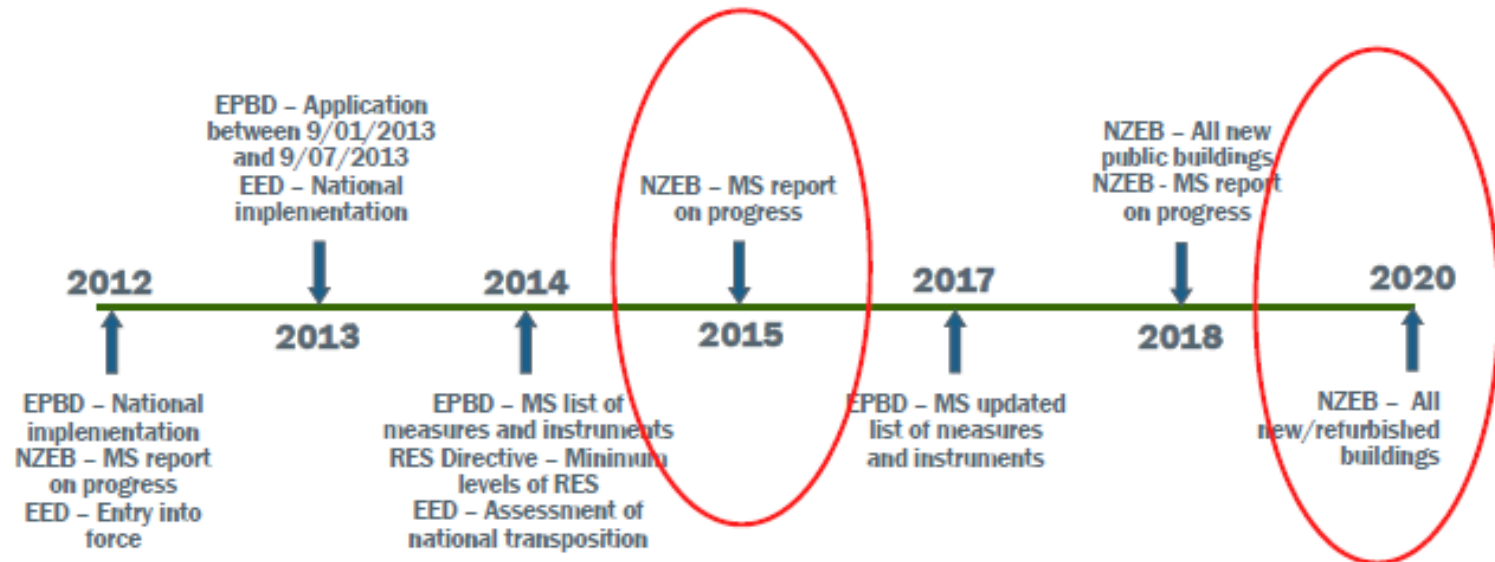
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Energy policies in buildings calls for nZEB



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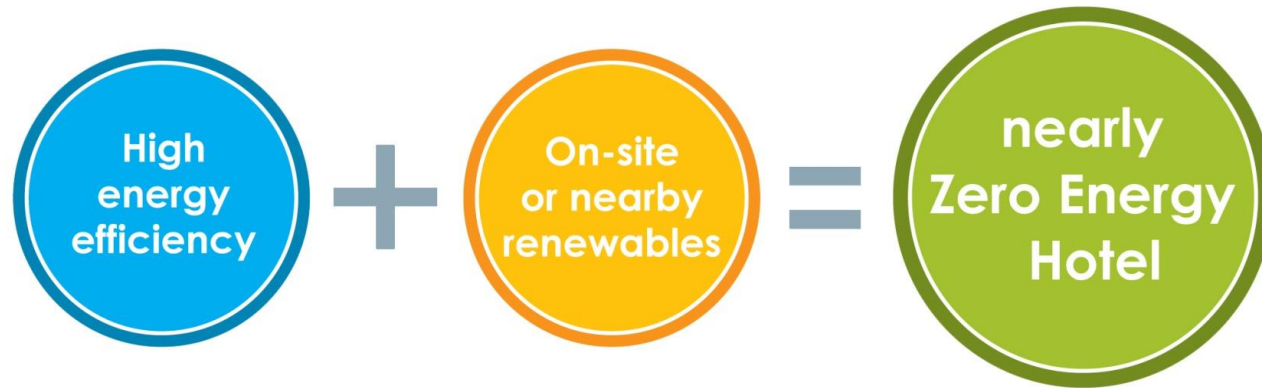


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What is a neZEH hotel



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A nearly Zero-Energy Hotel (neZEH) is a hotel that has a very high energy performance. The nearly zero or very low amount of energy required should be covered to a very significant extent from renewable sources, including energy from renewable sources produced on-site or nearby.

Following the EPBD recast



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Common futures of national policies supporting the improvement of hotels energy performance



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- **Lack of national nZEB criteria** for hotels and refurbished buildings. Most hotels are not considered as a separate building type. Some criteria usually focus on new buildings and not refurbished.
- **National refurbishment roadmaps and action plans** on increasing the number of NZEB are delayed or lack concrete policy ambitious measures, in all neZEH partner countries except for France.
- It is needed **improved coordination of the programmes at local/regional/national level**. The policies supporting infrastructural investments need to be harmonized with the new and upcoming national policies related to nZEB and the refurbishment of the existing building stock.



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To accelerate the rate of refurbishment of existing hotels into Nearly Zero Energy Buildings (nZEBs):

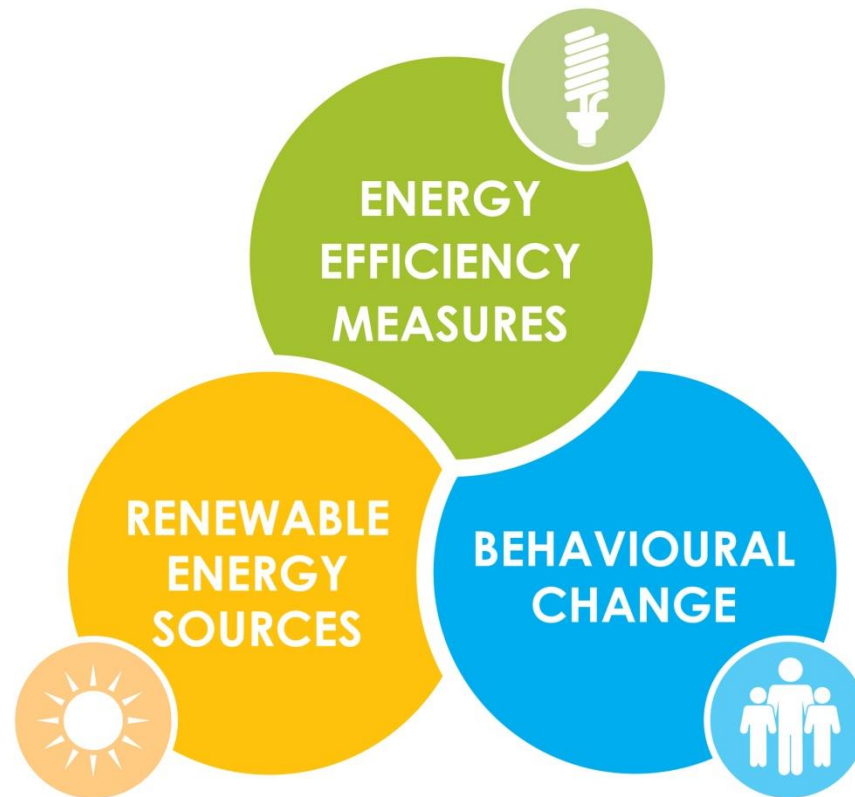
- providing technical advice to hoteliers for nZEB renovations
- demonstrating the competitive advantages and sustainability of nZEB projects
- challenging further large scale renovations through capacity building activities and policy recommendations
- showcasing best practices and promoting front runners.



Being a nearly Zero Energy Hotel implies acting in 3 key areas:



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The neZEH countries

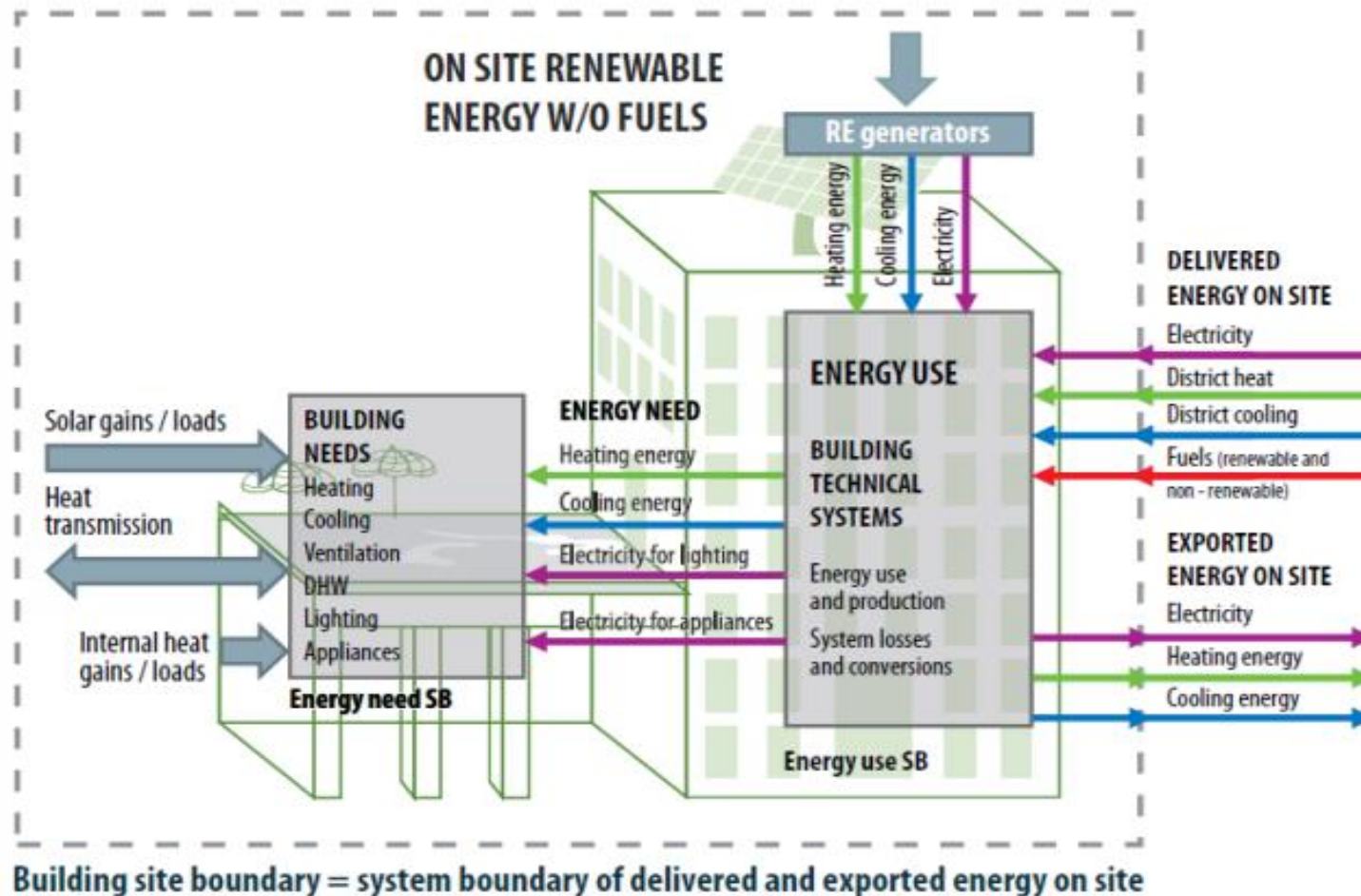


Benchmarking Methodology

Energy flows in a hotel building (hosting functions and appliances)



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Country-specific nZEH benchmarks



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Country	Primary energy indicator for new hotels (kWh/m ² y)*	Primary energy indicator for refurbished hotels (kWh/m ² y)*
Croatia	77	100
France	115	150
Greece	76	122
Italy	71	93
Romania	80	104
Spain	72	94
Sweden	134	175

*Includes hosting functions + appliances

Comparing with the primary energy indicator for hotels 2008 level an average of 75% energy reduction has to be achieved

↑
Correction factors were applied based on nZEB numerical definitions for refurbished buildings in EU Member States



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neZEH Tools available



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- Guidelines for energy audits
- neZEH Energy Survey tool (HES)
- Guidelines for Feasibility studies
- Template for cost scenario estimation
- Guidelines for tendering and contracting
- Training for hoteliers and staff
- Practical tips and guides for hoteliers



Residence L'Orologio, Italy



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Technologies Ranking Tool



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Suitable solutions/techniques, to be implemented in hotels towards nZEB, were grouped in different categories

- energy management
- reduction of heating and cooling demands
- equipment efficiency
- system efficiency
- renewable energy



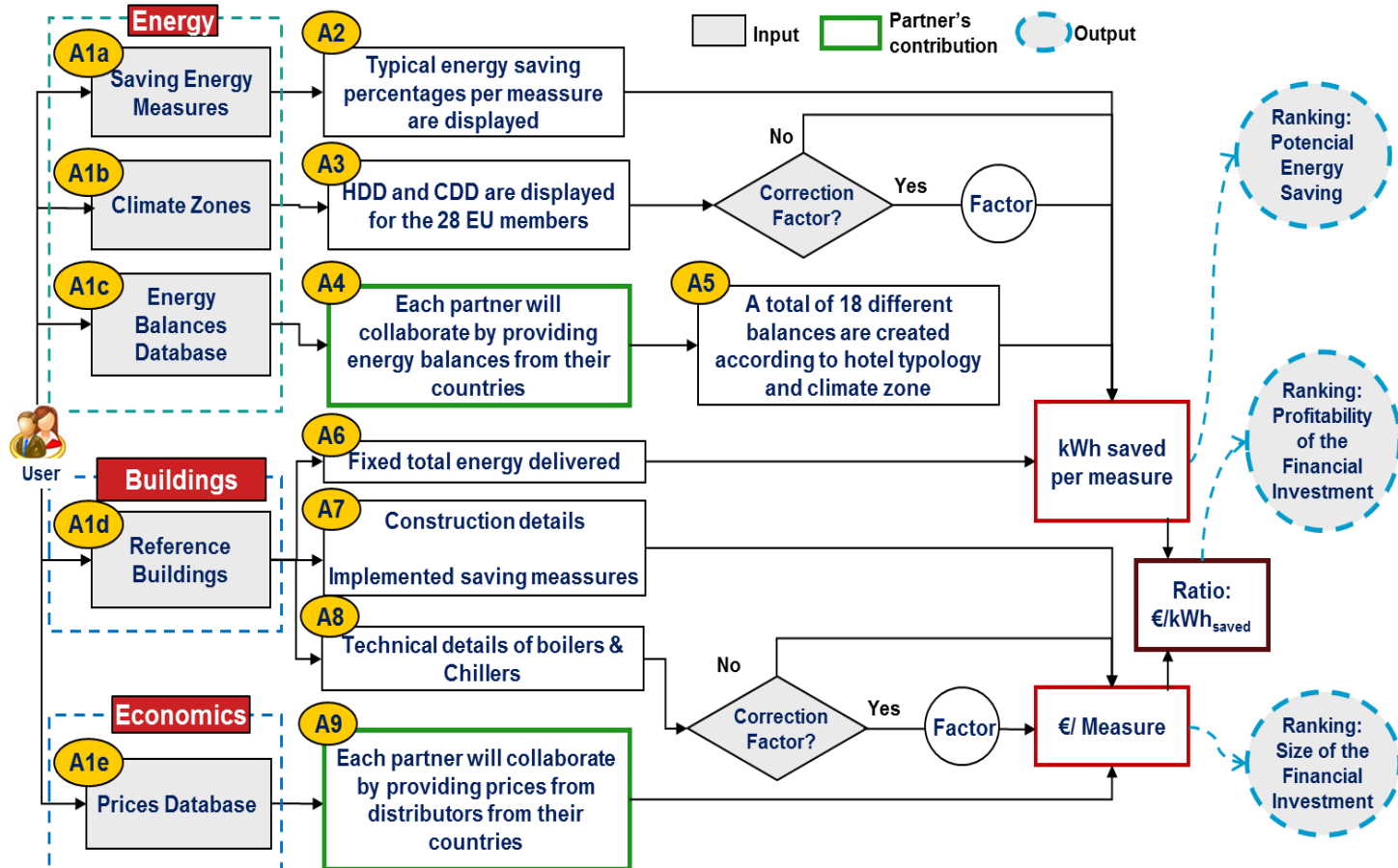
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Technologies Ranking Tool



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14-16 hotels towards neZEH



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Adriatica
Croatia



Hotel Split - Podstrana
(Split)
Croatia



Best Western Hotel
Ajaccio Amiraute
Ajaccio, France



Hotel Terme di
(...), Italy



Residence L'Orologio
Turin, Italy



Balvanyos Grand Hotel
Târgu Secuiesc, România



Cubix Hotel
Braşov, Romania



Kolping Hotel
Braşov, Romania



Hotel Amalurra
Bizkaia, Spain



Corona del Mar
Benidorm, Spain



Hotell St Clemens
Visby, Sweden



Stora Brännbo konferens
och hotell
Sigtuna, Sweden



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RECOMMENDATIONS BASED ON neZEH NATIONAL DISCUSSION PLATFORMS



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Typical characteristics of the accommodation industry in neZEH countries



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- the majority are SMEs (micro and small sized family business) **lacking technical know-how** about energy efficiency in buildings; no skilled technical personnel in the building maintenance or dealing with energy management
- the existing rating and certification schemes for hotels measure resource efficiency and sustainability and go **beyond buildings energy performance**. A **green** certification means is a marketing opportunity
- Hotels cannot be typical non-residential buildings; they include a number of energy intensive operations associated to their customers' comfort and expectations, therefore closely linked with their **competitiveness** and **viability**.



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CREDIBLE & INDEPENDENT TECHNICAL ASSISTANCE

- Hotels need **reliable technical assistance** and **financial incentives** to design a refurbishment project and plan it financially (i.e. “one-stop-shop” or help desks)
- Well **trained and certified technicians** are required, capable to implement Energy Efficiency works and to install high end energy efficiency infrastructure in the hotels to keep standards, eco-friendly and close to the EU Directives,.
- For SME hotels with reduced financial capacity, individual deep renovation roadmaps can be elaborated to achieve the nZEB status in a certain time frame. The roadmaps should specify the individual **cost-optimal renovation steps**, plan their logical timeline and consider the financial feasibility.



CAPACITY BUILDING

- The **staff of the national/regional organizations** should be trained to be familiarized with the existing commitments towards neZB.
- Hotel managers and the hotel personnel need to be **trained** in order to invest in and operate ambitious refurbishment projects on:
 - basic technical knowledge related to energy efficiency
 - economic and environmental advantages

THE FUTURE IS NOW!



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Training and Capacity Building

- Training courses for hotel owners and staff.
- Technical guides, practical informational material.
- Access to experts' advice.



E - toolkit

- Assess your energy performance.
- Find out solutions to minimize your hotel's energy cost and to reach neZEH status.
- Get an estimate of cost and return on investment.



Marketing tools

- Tailor made marketing guidelines and promotional tools for nearly zero energy hotels.
- Visibility at European and national level.



neZEH community

- Be part of a European network.
- Exchange experiences and know-how with other hotel owners.
- Link hoteliers with building professionals and energy companies.

info.nezeh.eu





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Thank you!



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PROJECT COORDINATOR



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