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Policies to enforce the transition to neZEH

- Theocharis Tsoutsos, Professor
Technical University of Crete


SUSTAINABLE AND COMPETITIVE HOTELS THROUGH ENERGY INNOVATION - NEZEH 2015
L'INNOVATION ÉNERGÉTIQUE AU SERVICE D'UN TOURISME DURABLE ET COMPÉTITIF
HÔTELS PRESQUE ZÉRO ENERGIE – EDITION 2015
 24 June, 2015 – Nice ACROPOLIS

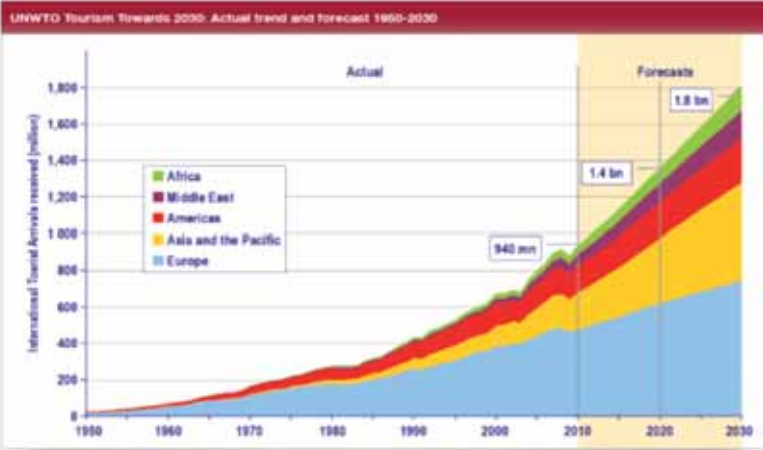
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UNWTO Tourism Towards 2030: Actual trend and forecast 1950-2030




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Hotels and climate change




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



Hotels may save up to **70%** of their energy consumption



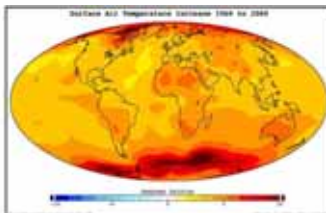


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Fossil fuels-climate changes



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Nuclear power plants – no GHGs emissions

Fukushima Crisis

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nZEB European Policy

Year	Policy Event
2012	EPBD - National implementation nZEB - MS report on progress EED - Entry into force
2013	EPBD - Application between 9/01/2013 and 9/07/2013 EED - National implementation
2014	EPBD - MS list of measures and instruments RES Directive - Minimum levels of RES EED - Assessment of national transposition
2015	nZEB - MS report on progress
2017	EPBD - MS updated list of measures and instruments
2018	nZEB - All new public buildings nZEB - MS report on progress
2020	nZEB - All new/refurbished buildings

EPBD recast

- By 31 Dec 2020, all new buildings are nZEBs
- After 31 Dec 2018, new buildings occupied and owned by public authorities are nZEBs
- MS should give numerical definitions for nZEBs that reflect their national, regional or local conditions

EED

- MS shall establish a long-term strategy for mobilising investment in the renovation of the national stock of residential and commercial buildings, both public and private

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Near Zero Energy Hotel ?



Only energy ?

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Is this a NEAR ZERO ENERGY HOTEL ?



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Sustainable
LEADER

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INNOVATIVE CITY



Are LED an energy efficient solution???



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INNOVATIVE CITY





Which choice is more efficient???



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**PEOPLE NEED ENERGY
ENERGY IS A SIGNIFICANT PART OF THEIR
QUALITY OF LIFE**




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near Zero- net Zero- Low Energy....




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Typical characteristics of the accommodation industry in neZEH countries

- 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 significant **increase of operational costs** vs the competition from neighbourhood countries
- 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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Transposition of EPBD in EU MS National numerical definitions of nZEB

i) for new buildings in the neZEH countries

Country	Primary energy indicator (kWh/m ² y)	RES share (%)	Building type
Croatia	33-41	20	Residential coastal-continental
France	50 -70 -110	-	Residential – Office - Office with AC

ii) for refurbished buildings in EU Member States

Country	PE new building (kWh/m ² y)	PE refurbished building (kWh/m ² y)	Percentage increase (%)	Building type
France	50	80	60	Residential
Croatia	41 - 33	51 - 52	25 - 58	Residential (continental - coastal)
Estonia	210	270	29	Hotels

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

- **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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The EU Initiative neZEH

neZEH aims at accelerating the rate of refurbishment of existing hotels to become nearly Zero Energy Buildings (nZEBs)



Methodology

- 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
- **showcasing best practices** and promoting front runners.

Countries: Greece, Spain, Italy, Sweden, Romania, Croatia, France, additionally EU, globally

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Our team





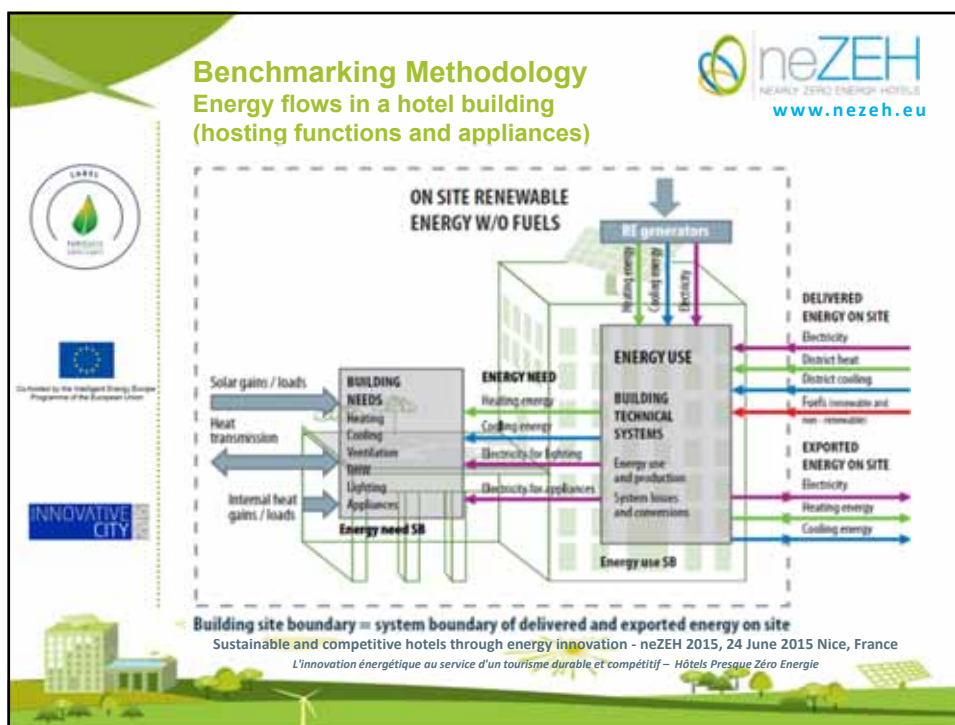







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Country-specific nZEH benchmarks





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 nZEH numerical definitions for refurbished buildings in EU Member States

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Technologies Ranking Tool

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

A software tool has been developed to rank – at national level - the identified solutions according to three ranking aspects:

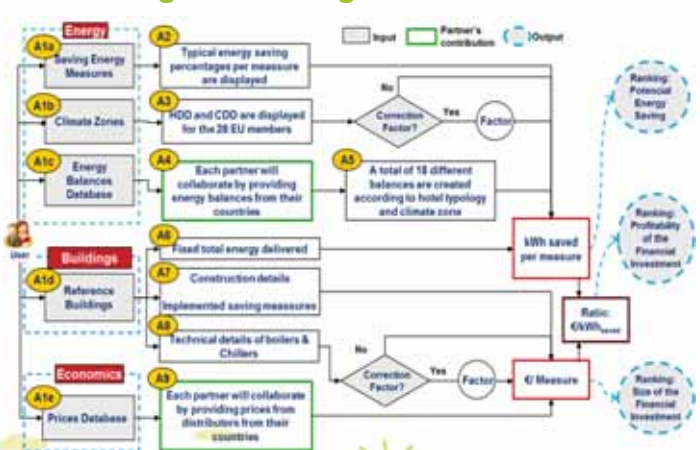
1. potential energy savings
2. size of the financial investment a
3. profitability of the financial investment

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Technologies Ranking Tool



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POLICY RECOMMENDATIONS BASED ON neZEH NATIONAL DISCUSSION PLATFORMS

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EU level policy recommendations

IMPROVED EU AND NATIONAL/REGIONAL POLICIES

1. **Need for nZEB definition at EU level** to enable MS the correct transposition to the national and regional legislative and normative system; different nZEB criteria for refurbished buildings and building type of hotels
2. **Tailored energy efficiency policies** for hotel buildings to help the accommodation industry to prepare and begin accomplishing nZEB goals; tailored financial support schemes and incentives to help SME hotels to overcome the potentially high initial investment costs of ambitious nZEB renovations.
3. **Improved harmonisation among tourism sector and buildings energy efficiency policies** to ensure the exploitation of synergies.
4. **Better coordination among the different policy levels (national, regional and sub-regional support schemes) and authorities in charge** of the implementation of related support policies in order to achieve ambitious targets
5. **Facilitation of the set-up of regional and local financial schemes** (e.g. revolving funds, guaranteed or supported loan programmes, EPC schemes) to ensure the financial necessary resources; e.g. EU Sectorial Operational programmes (2014-2020)

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EU level policy recommendations

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.

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EU level policy recommendations

AWARENESS RAISING AND CAPACITY BUILDING

- Tailored awareness raising campaigns** to demonstrate the economic viability and competitive advantage of becoming a nZEH. Synergies with the existing engagement of hotels in different green hotel certification schemes have to be exploited
- 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

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Conclusions

- Towards neZEH the **accommodation sector** needs to be activated ASAP to be able to meet the European policies
- The main **benefits** from a deep renovation are minimized operational cost, improved marketing image within a highly competitive market sector, as well as CSR
- To create frontrunners wide **public support** is required (technically, economically, institutionally)
- **MS** should harmonize their institutional instruments to facilitate the required processes
- **neZEH initiative** helps already the sector in 7 EU Member States

THE FUTURE IS NOW!

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Thank you for your attention

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