



“SUSTAINABLE AND COMPETITIVE HOTELS
THROUGH ENERGY INNOVATION
NEARLY ZERO ENERGY HOTELS 2015”

24 JUNE 2015
AT NICE CONVENTION CENTRE, NICE (FRANCE)

INTERNATIONAL CONFERENCE HIGHLIGHTS



*Hotel BEST WESTERN
Ajaccio Amirauté, France*



Hotel Amalurra, Spain



Hotel Cubix, Romania

www.nezeh.eu



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The neZEH Partners:



Technical University of Crete,
Renewable and Sustainable Energy
Systems Lab
Greece
Project Coordinator



United Nations World
Tourism Organization



Federation of European Heating and Air
conditioning Associations



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Spain



ENERGIES 2050
France



Energy Institute Hrvoje
Požar
Croatia



Sustainable Innovation
Sweden



Network of European
Region for a Sustainable
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Introduction

The nearly Zero Energy Hotels 2015 International Conference - “Sustainable and Competitive Hotels Through Energy Innovation” - **neZEH 2015** - aimed at sharing challenges and opportunities of energy innovation through nearly zero energy strategies, as a means to enhance sustainability and competitiveness in the accommodation industry.

The neZEH 2015 conference was organized in the framework of the European initiative neZEH (nearly Zero Energy Hotels), co-funded by the European Commission under the Intelligent Energy Europe Programme and gathering a consortium of 10 partners from 7 European countries, among them the World Tourism Organization (UNWTO), the Network of European Regions for a Competitive and Sustainable Tourism (NECSTouR) and the Federation of European Heating, Ventilation and Air Conditioning Associations (REHVA). The neZEH project aims to accelerate the rate of refurbishment of hotels into nearly Zero Energy Buildings (nZEB).

Find out more about the neZEH project in Annex 1.

The neZEH 2015 conference was an opportunity to initiate a dialogue amongst different stakeholders and enhance the understanding between the tourism sector, sustainable buildings and energy efficiency professionals, EU policy makers, representatives from national, regional and local authorities, as well as other relevant stakeholders. By bringing together stakeholders working in these different fields, the event created a platform of exchange and inspiration for further work, which will help to better identify a path for a sectorial approach to nZEB.

The objectives of the neZEH 2015 Conference can be summarized as follows:

- raise interest on the neZEH approach from:
 - o hotel owners (economical/marketing side),
 - o public authorities in charge of supporting sustainable tourism (local, regional and national),
 - o stakeholders involved in energy efficiency in the building sector,
 - o the consumers (environmental responsibility of hotel customers)
- demonstrate the feasibility of nZEB projects in the accommodation industry
- promote and increase visibility of the neZEH pilot hotels aiming to inspire and drive replications
- contribute to enlarging the neZEH network by encouraging a wide acceptance of this approach to increase hotel energy performance

Topics addressed

The main issues and topics addressed during the conference are the following:

- Climate, energy and tourism
- The energy efficiency challenge for the hotel sector
- The neZEH initiative actions to demonstrate lighthouse examples of nZEB projects in the tourism sector within Europe
- Promoting hotels’ engagement towards environmental and energy performance: the neZEH hotels and tools developed
- European policies towards nZEBs and their impact on the tourism industry
- Financing hotels’ energy excellence: opportunities and tools

- The client at the heart of the process
- The way forward: the need to develop appropriate support schemes to scale up market development

Target audience

Given the purpose of the neZEH 2015 Conference, and in light of the several topics addressed, this event did not only focus on the tourism sector, but targeted more generally all relevant stakeholders involved in the different topics addressed by the neZEH approach (tourism; energy efficiency; building sector; financing and support mechanisms., etc.), and thus contributing to enhance the dialogue among these key players.

More specifically, this includes:

- Hotel Associations-Hotel owners
- European Commission representatives
- Existing relevant initiatives on nZEB
- International federations and European networks
- Trade associations (energy efficiency sector)
- Tour operators
- Tourism market actors
- Research centres
- Policy / Decision Makers
- Financial institutions
- Local and regional authorities' representatives
- Customer associations

Poster display

In order to showcase the multiple opportunities of energy innovation for the hotel industry, while promoting research studies, initiatives/projects/case studies, strategies, innovations, technologies, a call for posters was organized prior to the Conference. The selected posters were displayed in a dedicated area within the Conference venue. The posters and their abstracts can be viewed on the following link: http://www.nezeh.eu/nezeh2015conference/call_for_postersconf/index.html

All **presentations and video recordings of the neZEH 2015 conference** can be found on the Conference's dedicated webpage: <http://www.nezeh.eu/nezeh2015conference/>

Organising Committee

The neZEH 2015 Organising Committee consisted of the following partners:

- ENERGIES 2050
- Technical University of Crete, Renewable and Sustainable Energy Systems Lab, Project Coordinator
- World Tourism Organization (UNWTO)
- Network of European Regions for a Sustainable and Competitive Tourism (NECSTouR)
- Federation of European Heating, Ventilation and Air-conditioning Associations (REHVA)

Scientific Committee

The Scientific committee included experts from the different sectors targeted by the neZEH project and the neZEH 2015 Conference (both tourism sector and energy efficiency/building sector).

Stefano CORGNATI, Prof., Ph. D., REHVA Vice-president, Co-Chair Educational Committee, Associate Professor - Politecnico di Torino

Jarek KURNITSKI, Prof. Dr. Eng., REHVA Vice-president, Co-chair of Technology and Research Committee, Estonian delegate, CA-EPBD NZEB core group, Professor - Tallinn University of Technology, Adjunct Professor -Aalto University

Stéphane POUFFARY, Founder and Honorary President of ENERGIES 2050 Founding member of the United Nations Environment Programme, UNEP's Sustainable Buildings and Climate Initiative. Member of the Multi-stakeholder Advisory Committee of the 10YFP Programme on Sustainable Buildings and Construction (SBC)

Marina MALINOVEC PUČEK, Senior Researcher, Energy Institute Hrvoje Požar, Department for Renewable Energy Sources and Energy Efficiency

Matheos SANTAMOURIS, Professor, Director of Building Energy Research Lab, University of Athens. Visiting professor at Cyprus Institute, Metropolitan University of London, Tokyo Polytechnic University, Bolzano University, Brunel University, National University of Singapore. Editor in Chief of the Energy and Buildings, Elsevier. Member of the Editorial Board of seven additional journals in the area of Sustainable Energy and Buildings. Editor of the Series of Book on Buildings, Energy and Solar Technologies by Earthscan Science Publishers

Theocharis TSOUTSOS, Professor, Graduate Programme Director - School of Environmental Engineering of the Technical University of Crete, Renewable and Sustainable Energy Systems Lab Director, neZEH Project Coordinator

Zoritsa UROSEVIC, UNWTO Representative to the United Nations in Geneva, Coordinator of Hotel Energy Solutions Initiative and UNWTO Lead Officer of the neZEH project

Supporters



The neZEH 2015 International conference took place within the framework of several EU and international events:

Pre-COP21 event



The neZEH 2015 Conference was subscribed as a preparatory event to the 21st Conference of the Parties (COP21) under the United Nations Framework Convention on Climate Change (UNFCCC) which will take place in December 2015 in Paris, France.

The Conference received the “PARIS 2015 – COP21/CMP11” label, as part of an event of the week on “Sustainable buildings, cities and territories to face the challenges of climate change” organized by ENERGIES 2050 and its international partners.

http://energies2050.org/nos-actions/2015-2/conferences2015_nice/?lang=en

EUSEW Energy Day



The neZEH 2015 Conference, as a contribution to the exchanges and debates taking place throughout Europe during the whole month of June in the framework of the EU Sustainable Energy Week (EUSEW), was subscribed as an “Energy Day”.

The EUSEW “showcases activities dedicated to energy efficiency and renewable energy solutions. It is designed to spread best practices, inspire new ideas and build alliances to help meet the EU’s energy and climate goals”.

<http://www.eusew.eu/about/about-eusew>

Innovative city 2015



The neZEH 2015 Conference was organized and hosted within the Innovative City 2015 Convention. This major European and International event in the area of smart and sustainable cities attracted more than 3 000 visitors during the 2014 Edition. As the tourism sector is an important topic to take into account when working on sustainable cities and territories, it was decided to link the neZEH 2015 Conference to this larger event.

<http://www.innovative-city.com/>

1. Highlights of the Conference, session per session

Welcoming speeches

Stéphane POUFFARY - Founder and Honorary President - NGO ENERGIES 2050



Mr. Stéphane POUFFARY opened the International Conference, as a member of the neZEH consortium and as the hosting partner of the conference, which is part of a week dedicated to the sustainable built environment, labelled “Paris 2015 COP21”.

The energy-efficient building in the tourism sector contributes to regional dynamics; tourism is one of the pieces of a vast puzzle that is the built environment. This week of events gathers stakeholders from the city, building and territorial sectors, as well as stakeholders involved in the climate transition (context of the binding agreement to find with the COP21: need to move into actual action, the construction industry and tourism allow this realization). The scope of this week is also enlarged to the United Nations and to the Francophone area, with the attendance of many representatives of these countries, as well as the director of the Institut de la Francophonie pour le Développement Durable (IFDD).

The nearly Zero Energy Hotels project in question may sound trivial but is actually complex to implement; it is a real engagement. The energy reduction is not to be seen as an end but as an opportunity. The neZEH project fosters innovation because it involves heavy renovations. The energy issue is an opportunity to go further by acting on the hotel occupancy rate, the tourist attractiveness and by generating economic activities. It is important to recall this global and systemic perspective.

Michel TSCHANN - President of the Nice Côte d'Azur Hoteliers Syndicate



After welcoming the participants to the International Conference, Mr. Michel TSCHANN started by presenting the issues of the Provence-Alpes-Côte d'Azur (PACA) region. From a tourist point of view, this is an exceptional destination; but the territory is complex because it is wedged between sea and mountains. This geographical constraint has an impact in the transportation network, which characterizes for its inadequate railway system and saturated highways. This is a major issue since tourism requires good connectivity infrastructures.

Environment matters; often romanticized and associated with the future of our children, but also carries an economic discourse. In tourism, customer demand is essential and it is increasingly seeking environmental commitments; there is a significant market opportunity related to this topic in Northern Europe, where corporate social responsibility policies are more developed and widely integrated and companies include as part of their practices and commitments to travel with an eco-friendly approach.

Travel agencies ask for eco-friendly hotels. However, it is difficult to present the efforts of hoteliers. There are too many environmental labels, which are not well known but are essential to support / put in evidence hotels. It is also evident the need for more and better training for hotel staff in environmental questions. However, these training measures are not always perceived as very useful as they do not have a direct impact in the welcoming guests – as it would be the case of language courses. In hotels, the main means of savings (both financial and energetic) are related to energy consumption reductions via installation of efficient lighting, insulation, heat pumps for air conditioning or waste management.

Working session I - TOWARDS NEARLY ZERO ENERGY BUILDINGS IN EUROPE – OPPORTUNITIES FOR THE HOTEL SECTOR

Moderator: Ms. Anita DERJANECZ – REHVA



This first session aimed to introduce the nZEB concept as well present the objectives, methodology and expected results of the neZEH project, as a contribution to the EU EPBD Directive and 2020 objectives. This session also intended to highlight the challenges and opportunities of nZEB, from the perspective of the accommodation industry and through a concrete example of an nZE Hotel.

The session was moderated by Ms. Anita Derjanecz and counted with the interventions of:

- Mr Philippe Moseley, Executive Agency for Small and Medium-sized Enterprises (EASME), who presented the Commission point of view, the funding available and the projects currently ongoing on the same topic.
- Ms. Stavroula Tournaki, Technical University of Crete (TUC), who briefly introduced neZEH's objectives and methodology and presented the project results.
- Mr Christian De Barrin, European Association Hotels, Restaurants, Cafés (HOTREC), who gave the point of view of the hotel industry.
- Mr Francesco Nesi, Zero Energy and PassivHaus Institute for Research (ZEPHIR), partner of the EuroPHit project, who gave advice on energy efficient refurbishment and construction of buildings, and presented some good examples from Italy.

Nearly Zero Energy Building Challenges – Inspiration from European projects

Speaker: Philippe MOSELEY (Project advisor) - European Commission, EASME



Main topics and highlights of his presentation:

- The funding priorities for the Energy Efficiency call of 2014-2015 within HORIZON 2020, were: buildings & consumers, heating & cooling, industry & products and finance for sustainable energy.
- Short overview of the new HORIZON 2020 framework for funding European projects related to energy use in buildings, giving particular attention to training and skills, capacity building of local authorities and communication and awareness-raising activities.
- List and short description of EU initiatives and on-going EU projects aiming at improving the energy performance of the building stock, focusing in renovation and step-by-step methods:
 - NeZeR (involves renovation cities; 6 city action plans in 5 countries)
 - TOTAL CONCEPT (major energy reduction in existing non-residential buildings)
 - STEP-2-SPORT (emphasizes on step by step process)
 - MORE-CONNECT (parts prefabrication)
 - BERTIM (timber prefabricated panels)
 - RIBuild (interesting for the hotel sector, research project for internal insulation of historic buildings)
 - EPC_PLUS (Energy Performance Contracting)
 - BUILD UP Skills (improving skills of construction workers on site): 22 ongoing projects
 - MLEI (a series of projects focusing on EPC-will result to guaranteed energy savings).

The results from projects such as these, are fed back to the European Commission to provide input for future funding priorities for energy. Information for each project can be found on IEE and CORDIS databases.
- Particular attention should be given to ensure that the current renovations are not compromising the future ones and that in the case of historical buildings inherent limitations are taken into consideration.
- Energy performance contracting is a way to come around the problems of financing that SMEs constantly have to face.

The European Initiative Nearly Zero Energy Hotels

Speaker: Stavroula TOURNAKI (Senior expert, neZEH Project Manager) – Technical University of Crete, Renewable and Sustainable Energy Systems Lab



Main topics and highlights of her presentation:

- Hoteliers face business challenges such as 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.
- The national and European policies calling for zero energy buildings are also another kind of challenge, with many implications.
- neZEH project can help hoteliers in solving the energy-related challenges they will have to face as it aims to accelerate the rate of refurbishment of existing hotels into nearly zero energy buildings by:
 - providing technical advice to hoteliers for nZEB projects,
 - 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 (16 hotels are moving towards neZEH).
- Motivations to become a neZEH are related to energy, branding and added value to the business.
- 16 pilot hotels in the 7 neZEH countries are currently working their way to becoming nearly Zero energy Hotels.
- Being a neZEH implies acting in 3 keys areas: energy efficiency measures, behavioural change, and renewable energy sources.
- Interested stakeholders from the hotel sector, market and technology players, policy makers, financing bodies and others can join the neZEH network on the project's website.

Challenges and Opportunity on nZEB strategies for the Accommodation Sector

Speaker: Christian DE BARRIN (CEO) – HOTREC



Main topics and highlights of his presentation:

- HOTREC includes 1,8 million businesses; 99% of hotels and restaurants are Small Medium Enterprises and 91% of them are Micro Enterprises (<10 employees).
- Sustainability is a motive for the tourists to choose Europe in the future (EU tourism share worldwide is reduced - from 60% in 1980 it came down to 51% now and projections show 40% in 2030).
- HOTREC agreed to support responsible and high quality accommodation businesses and elaborated a position paper on sustainability and a catalogue for best practices in EU.
- There are obvious advantages for hoteliers in improving their businesses' energy performance, however this sector is mainly made up of small and low performant buildings which have to face big challenges in order to be part of the sustainable tourism sector: lack of funding opportunities, difficulties and limits in refurbishing existing buildings, lack of skills, and cost of energy efficiency measures.
- List of successful green initiatives in the hotel sector throughout Europe and examples of low energy or nearly Zero Energy hotels:
 - Malta: pan-European project to reduce water consumption
 - Belgium: training for hospitality businesses supported by the Flemish government
 - Spain: awareness raising campaigns (by ITH)
 - Turkey: Greening Hotels
 - Examples of hotels: Boutiquehotel Stadthalle (Austria), Hotel Haikko (Finland), Scandic Hotels (Norway/Sweden), Barceló Hotels (Spain).
- In existing buildings, an energy retrofit towards nearly Zero Energy can be very challenging and not always possible. Nonetheless, actions to minimize the energy use as much as possible have to be undertaken (with public funding available as a pre-condition). New buildings, built under strict sustainability criteria are closer to nearly zero energy, comparing to historical buildings that need financial support, due to renovations being extremely costly.

Example towards a neZE Hotel. The step-by-step deep retrofit approach

Speaker: Francesco NESI (Director of ZEPHIR-Passivhaus Italia) – EuroPHit Project



Main topics and highlights of his presentation:

- Short presentation of the EU EuroPHit project, aimed at a step-by-step approach to retrofit of existing buildings.
- Principle behind the step-by-step approach: in the current situation of general lack of funding, small but carefully planned retrofit actions can be implemented in order to achieve a significant reduction of energy use in the long term. As the financial risk is high at the beginning for banks, measures are applied one-by-one; the saved money from one step can be used to invest on the next measure/or money coming from the bank can be used. The idea is to design the renovation process.
- Good practice: easier to finance smaller initial investments; components should be used until the end of their lifetime.
- 2 Italian case studies were presented:
 - A newly built hotel, Eco Hotel Bonaparte, 1st Passivhaus hotel in Italy, 2nd in the world. Advantages of this hotel are spotted in terms of guests' satisfaction, reduced running costs, high occupancy and market appreciation of the brand.
 - An existing hotel with restaurant, Hotel Pizzeria Valcanover. The project is under development in the framework of EuroPHit project and the Passivhaus standards for an existing hotel are being defined.
- Limitations faced were mainly related to the non-hosting operations (specially the restaurant), the need to keep the comfort of the guests in particular in a special geographical area such as by a lake, mountains or forests (which are also an asset that attracts guests to a particular destination and hotel).
- Monitoring all performances ends up being a low cost solution.
- Upcoming projects: LEAF, low energy action for B&B hotel in Apulia, Italy.

Debate



What was the Return of Investment for the Valcanover Hotel?

- The return of investment is not yet calculated but it is for sure longer than the one of the same retrofit project done in a “one-shot” approach. (*Francesco NESI*)
- The step-by-step approach to retrofit is highly appreciated by HOTREC, because it’s economically feasible. In their opinion, the high energy saving potential is in existing hotels. It is not crucial if they do not reach the neZEH status as long as they significantly reduce their energy consumption. We already can save a lot of energy starting now. (*Christian DE BARRIN*)

There are policies at EU and national levels targeting tourism on one hand, and energy on the other. How do you see this?

- The main focus of next European energy policies is the existing building stock. The issues concerning hoteliers are wider than energy and building, also waste etc. For the EU Commission, the existing buildings are the main issue-therefore refurbishments-, whereas in developing places new buildings are the main issue.
- HOTREC is working closely with the European Commission, especially in existing buildings where the bigger problem remains: reaching nearly zero energy is very difficult whereas it is easier for the new construction. Hotel building stock may be benefitting from these policies. There is a very strong need of funding to allow hotels to become “green”. Accommodation industry is one of the most regulated industries, but it is clear that to engage in sustainability it is important to have the appropriate funding available – thus, it is necessary to have support for SMEs as they cannot make it on their own.
- In Italy, the top-down approach -asking from policy makers to invest on energy efficiency- does not work. The bottom-up approach is more effective: building networks among associations can allow to act as a “critical mass” able to be noticed and taken into account by policy makers.
- Another aspect to be considered is the need of technical capacity, beside that of funding. EU should also address this issue.

Isn't the neZEH goal too ambitious? Can we really reach zero energy in a hotel?

- The nearly Zero Energy target is ambitious, but projects need to push the innovation further. Moreover, in new buildings it is feasible, especially if using a holistic approach since the early design stage.
- The term “nearly” allows every EU country to set a limit according to their specific features; the word acts as a buffer to make the goal achievable; it is up to the member states to set their own targets and give priority to measures according to their climate etc.
- African countries may benefit from European funding, such as the Horizon 2020 project, in which they can take part with an EU partner.

You mentioned cost in your pilot projects and maximizing profits, but how will tomorrow's customer benefit from this? Do you think these isolated initiatives have advantages for the great mass of the people? What are the added economic gains?

- Hoteliers have to present the costs undertaken for energy efficiency measures as an investment to improve guests' comfort.
- Hotels clearly have economic benefits; customer is taking an interest and is concerned about the management of natural resources. Also, guests are becoming more and more demanding in terms of sustainability.
- The role of energy retrofit of hotels can enhance the motivation for the large mass. Indeed, they can experience that energy efficiency actions are feasible and profitable and they also provide very good comfort quality.
- Investing in sustainability of and in tourism has a spill over effect in the consciences of people and motivates them to take action, to learn about what is being done; what they can do at home.

Moderator conclusion

It is important not to forget the characteristics of the accommodation sector in EU – composed mainly by micro- and small –enterprises – and the special needs for technical assistance and financial incentives to engage in this path.

Furthermore, nearly Zero Energy will be soon a reality, as the nearly Zero Energy level becomes mandatory.

Working session II - DEMONSTRATING THE FEASIBILITY AND HIGHLIGHTING THE OPPORTUNITIES

Moderator: Rodrigo MORELL (Managing Director) - CREARA

The second working session was specifically dedicated to inspiring hoteliers to engage towards an nZEB status, by promoting some of the project’s pilot hotels and putting forward the many opportunities of action available: both in terms of technical solutions and funding. The round-table on “Building up on the frontrunners experiences – How to make it happen” was designed to give concrete examples of these opportunities.



The session was moderated by Mr Rodrigo MORELL, Managing Director of CREARA, an energy efficiency consultant company. The session presented real cases, testimonies of hoteliers – from different countries and different types of hotels (rural, costal and urban) – that have taken the decision to join the neZEH project and the reasons that triggered this decision:

- The first speaker, Mr Nigel Claridge, presented the pilot projects and the work being developed with them;
- Mr Ancuța Măgurean represented Cubix hotel, located in Romania;
- Ms. Yosune Badiola Goenaga presented the Hotel Amalurra in Spain;
- Ms. Joséphine LEDOUX spoke about the BEST WESTERN Ajaccio Amirauté, France

The neZEH pilot hotels: approach and tools

Speaker: Nigel CLARIDGE (Senior Adviser EU funding/project manager) - Sustainable Innovation



Main topics and highlights of his presentation:

- Pilot projects are the heartbeat of the neZEH project. They will prove that it is feasible and also teach us lessons we could not foresee when developing the project.
- There is a current shortage of lighthouse pilot examples in Europe.
- Difficult to make hoteliers commit to the project before explaining the benefits. After doing so everyone are very interested.
- Financing is a central issue for the neZEH pilot hotels. It will be a challenge for the project but also an opportunity for policy makers in the future to address in order to achieve acceleration within this market.
- Very important to communicate the results from the renovation process in order to market the hotel.
- The selection process has given five candidate hotels in each region before selecting the final two or three pilot hotels per region.
- A hotelier has to think neZEH in all aspects of their business. This includes a strong focus on behavioural change, also of staff and guests.
- The idea of an independent comprehensive assessment has been necessary in order to gain the hoteliers' trust.

The story of three neZEH front runners - neZEH Pilot hotels:

1. Cubix hotel, Romania

Video: the Cubix hotel's story



The movie showed the level of ambition and motivation of Mr Dan CHIVU, the CEO of the hotel Cubix. The Cubix Hotel is located in the business district of Brasov (Romania), which has already started making changes. They also envisage big investments and many measures to be taken.

Speaker: Ancața MĂGUREAN, neZEH assigned energy auditor for Cubix hotel



The Cubix hotel pilot project is the work of a multi-disciplinary team. All hotels have their own issues according to the characteristics of the buildings, and not all aspects can be drastically improved.

2. Hotel Amalurra, Spain

Speaker: Yosune BADIOLA GOENAGA - Hotel Amalurra, Spain



The Amalurra is a small hotel in Spain, known for being an ideal place for relaxation and recreation. They are open since 20 years, refurbishing the old buildings – one of the buildings is classified as historical. The beauty of nature and surroundings is a particular feature of the hotel that has influenced the philosophy of the company, but it is also a problem especially in what concerns water; there is a river, rain, humidity – and the solutions found mixed renewable energy technologies and traditional practices: draining systems, planting trees.

The new buildings were constructed with natural, local materials, cork isolation and use natural light emphasizing the philosophy of the owners – emotional ecology - and praising harmony with the surroundings.

The next steps will be to introduce PVs, other green construction materials, continue working on their own gardens, as well as using the outside landscape when building houses.

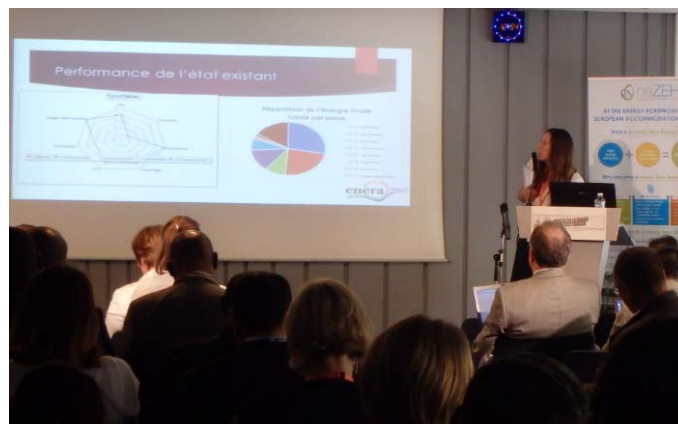
3. BEST WESTERN Ajaccio Amirauté, France

Video: The BEST WESTERN Ajaccio Amirauté's story



The video highlighted the environmental engagement of the hotel, by presenting actions that have already been implemented. It also presents the first results of the energy audit and the potential refurbishments that can be made to reach a neZEH status.

Speaker: Joséphine LEDOUX – (Energy expert) ENERA Conseil



The auditing methodology in France is very advanced since energy targets are already in place since a long time. Thus, when built in 2007, the hotel was aligned with the technology of its time and is already quite performant. Nonetheless, further works will be done: doors and windows will need to be improved while the boiler and air conditioning also need to be upgraded.

The hotel plans to introduce energy efficiency measures, “low hanging fruits”, first and then consider the RES.

Debate



How credible is to use nearly Zero Energy? What benchmark (energy use, energy efficiency) is being used?

- When benchmarking, it is necessary to compare similar areas. The benchmarking is usually done at regional level, having as starting point theoretical measurements and studies.
- In the case of the Cubix hotel, the Romanian methodology was used, as it is regulated in the law and follows the European norms. Ministry of Planning is also doing measurements and follow up. The next step will be to monitor and update the benchmarks.
- Each building is individual and thus it is necessary to discuss each different hotel instead of trying to find a similar methodology for all hotels.

Which are the expectations regarding the clients? How ambitious are hoteliers? Will the pilots, in a few years, try to become positive energy hotels?

- Hotels are already noticing the difference in customers. It pays to engage the clients and it is a strategy to follow.
- The awareness of the hotel passes to its guests, people will notice that they are staying in a hotel that is different and will ask what is going on. The hoteliers are given an opportunity to share their experience with their guests.
- The neZEH pilot hotels in Sweden are dedicated to commit to this project. It is not something to be done in a few years' time, but it is not impossible that they will continue on to further challenges after finishing this. The neZEH partners consider the legacy of the project as central and are thinking of how they can continue helping hoteliers when the project is over.

Round table - BUILDING UP ON THE FRONTRUNNERS EXPERIENCES - HOW TO MAKE IT HAPPEN?

Moderator: Peter HUG (Managing Director) - eu.ESCO (European Association of Energy Service Companies)

The aim of the roundtable was to show the multiple opportunities available for hotels to engage towards a nearly Zero Energy approach: how deep retrofits are possible, financing opportunities, innovative funding mechanisms, support mechanisms from local/national authorities, etc.



The session was moderated by Mr Peter HUG, who also explained in a nutshell what an ESCO is: a contract between a client and the energy company, allowing the client to install /refurbish without upfront cost and when it starts producing its own energy the profits will be shared.

The panellists made a short presentation on how they are working to achieve nZEB projects and how people can be motivated to invest in efficiency technology down to make nZEB. The presentations were then followed by a discussion.

Panellist: Reka CSEPELI (Responsible for Sustainable Development) - Regional Tourism Committee of Ile-de-France



Main topics and highlights of her presentation:

- Paris Region facing the climate change challenge: 47 million tourists a year visit Paris; which means 184 million guest-nights in hotels.
- Sustainable tourism in the world's number one destination is a must. It is necessary to educate the tourism stakeholders to the thematic.
- A study analysed the economic value of the sector and its vulnerability: 17,5 million teqCO₂ of GHG emissions due to the tourism activity. Turns out in Paris, 30% of the region's total GHG emissions come from tourism (this includes the travels to and from Paris). The carbon footprint study was done using the system *Bilan Carbon*, developed by ADEME.
- Within the framework of COP21, the web tool *Malice* was developed, used in the daily work with hoteliers, helping in environmental assessment and displaying.

Question – For the carbon emission figures, do you consider the leisure tourism and business alike?

- The Region of Paris worked with very wide indicators and included the return of the travellers, the departures from Paris, and worked for the recreational and business independently.

Panellist: Simon CAMAL (Project engineer) - LA MAISON PASSIVE - EuroPHit Project



Main topics and highlights of the presentation:

- La "maison passive" is an association which federates passive building players in France and which represents the EuroPHit project for France.
- The EuroPHit project is an IEE project dealing with how it is possible to achieve ambitious targets with a step by step approach.
- With the partners in France, the consortium worked on developing reproducible solutions with comprehensible construction details which can be applied to different projects, as a way to go faster.
- With the step by step approach, it's important to see what can be the first step in terms of energy savings.
- Another important point is to convince banks to accompany and be able to answer their requirements: a holistic approach, reliable calculation tools, certification systems, creditworthiness and risk management.

Question – How does the certification platform work?

- The idea is that as a certifier, we analyse a lot of drawings, sometimes papers and as this is very long, we need to centralize all. It is important to gather information and to be sure you have the right one. We can centralize all the analyses from the certifier and that's important in a step by step approach to have it for free and during a long time.

Panellist: Julien Thuilliez (Assistant Director) - Ethic Etapes, Cannes Jeunesse



Main topics and highlights of his presentation:

- The 25.000 guest-nights and 50.000 meals mean a big footprint.
- The ecolabel system raises awareness in customers. Thus, they already have an Eco-label which specifies over 100 different topics.
- It was decided to choose the Ecolabel system since it represents a global brand that many hoteliers know. Unfortunately it increases their costs with 5-15%. So today the argument is more an idealistic one than an economical.
- “Dehydrate” project aiming:
 - 1. To reduce kitchen waste,
 - 2. To reduce the waste boat’s travels,
 - 3. To teach people more about this system.
- Identified needs: Energy, waste management

Question - Does the Ecolabel constitute a mandatory requirement by EU and if not, why do you feel the need to get that label?

- Not obligatory, but this label is usually preferred because it represents a global action.

Plenary session – FROM NEARLY ZERO ENERGY BUILDING POLICIES TO SUSTAINABLE TOURISM AND CITIES

Moderator: Stéphane POUFFARY (Founder and Honorary President) - ENERGIES 2050

The plenary session, featuring most of the high-level speakers of the neZEH 2015 Conference, aimed to open the scope of the discussions to a more global approach. This session aimed to anchor the neZEH project in the wider European and International contexts, with presentations on EU policies as well as on Initiatives and Programmes of the United Nations, covering both the topics of buildings and sustainable tourism. The objective of the session was to make the link between the building unit and the whole territory, hotels being part of a wide touristic destination. Hence it advocated the need for a sustainable approach.



The session was moderated by Mr Stéphane POUFFARY, Founder and Honorary President of the Non-Governmental Organization ENERGIES 2050.

The session was organized as follows:

- Mr Philippe Mosley, representing the European Commission, started the session, by presenting European policies to promote energy efficient buildings
- Pr. Theocharis Tsoutsos, of the Technical University of Crete, then exposed the need of policies to support the transition towards nearly Zero Energy Hotels
- Arab Hoballah, representing the United Nations Environment Programme (UNEP), spoke about the issues of the built environment
- Zoritsa Urosevic, in the name of the World Tourism organization (UNWTO), presented the role of tourism within the 10YFP on Sustainable Consumption and Production.
- The last speaker, Jean-Pierre Ndoutoum, Director of the Institut de la Francophonie pour le Développement Durable (IFDD), introduced the Francophonie's Initiative for Sustainable Cities.

European Policies and Energy Efficient Buildings

Speaker: Philippe MOSELEY (Project advisor) - European Commission, Executive Agency for Small and Medium-sized Enterprises (EASME)



Main topics addressed during his presentation:

- There are 4 important EU Directives relevant to buildings: Energy Efficiency Directive, Energy Performance of Buildings Directive, Ecodesign Directive and Energy Labelling Directive.
- For 2020 the goals are the known 20-20-20 whereas for 2030 the goals are: reducing greenhouse gas emissions by at least 40%, increasing the share of renewable energy to at least 27% and improving energy efficiency by at least 27% (subject to future review), while a new governance system will be in place; EPBD is the main instrument – the target is that every new building becomes nZEB.
- The EPBD is the main instrument addressing building efficiency, the approach being: minimum performance standards for buildings with strengthened requirements for existing stock, Energy Performance Certification and nearly zero-energy building targets for new buildings.
- The building codes seem to have a measured impact: dwellings built in 2009 consume 40% less energy than the ones built in 1990.
- There was a decoupling of economic growth and energy consumption, partly through improved energy efficiency.
- However we still need to strengthen the enforcement of regulations, especially in local and regional level. This includes ensuring that consumers are accurately informed of the energy performance of buildings for sale or rent and making full use of available financing in particular ESIF.
- Energy efficiency can improve that value of the property, both in prices and rents.
- Other key challenges are: difference between 'designed' and 'built', demand response, behavioural aspects, renovation rates, workforce skills, financial support.
- Energy efficiency actions through Horizon 2020 focus at establishing demonstration projects on a larger scale, also addressing renovation of existing buildings, developing workforce skills, ideally through national strategies and planning (financial) support measures to stimulate NZEBs and market development.
- Useful websites – buildup.eu and managenergy.net

Policies to enforce the transition to neZEH

Speaker: Theocharis TSOUTSOS (Professor, neZEH project coordinator) - Technical University of Crete- Renewable and Sustainable Energy Systems Lab



Main topics and highlights of his presentation:

- EU tourism is growing in slower rate comparing to other parts of the world; we need to address the new product, the eco approach of the tourist product of Europe.
- 1% of total GHG emissions are coming from hotels, but at the same time we know that hotels can reduce their energy consumptions by as much as 70%.
- The EU policy sets ambitious targets to drive the market and countries to adapt. Every new building has to be nZEB from 1.1.2021; this means that national authorities, municipalities, market, suppliers and engineers should be ready for this. From EED we also know that Member States should establish renovation plans for their building stock.
- A nearly zero energy hotel is not a zero energy hotel, one that does not need energy. Hotels will always need energy, but the consumption can be NEARLY zero with proper energy efficiency measures and this is our approach.
- The majority of the hotels are SMEs. Being green is a market tool for them, but they need assistance as the cost is high for them.
- Around 13 EU countries now have numerical definitions for nearly zero energy buildings, but in the rest of the countries people do not know what can be considered as such.
- neZEH offers technical support to hoteliers for nZEB renovations.
- Country specific benchmarks have been developed by neZEH, also for refurbished hotels, in order to know our targets. neZEH is developing a tool for ranking the EE/RES technologies and will be used for improving the HES e-toolkit.
- We need harmonized policies for hotels and better coordination between authorities.
- Hotels staff and management need awareness raising and capacity building.
- Public support is needed not only economically, but institutionally as well.

The potential of the building sector in sustainable and low-carbon strategies

Speaker: Arab HOBALLAH (chief) - Sustainable Lifestyles, Cities, and Industry - United Nations Environment Programme (UNEP)



Main topics and highlights of his presentation:

- Investment potential is huge: international tourism arrivals grew from 165 million in 1970 to 1,8 billion in 2030. The future is urban and tourism will be an important part of this.
- 10% of global GDP is building sector and employs 111 million people (in next 10 years – nearly 100 trillion USD will be spent in construction). Energy in buildings: the approach is differentiated by region but the goal of reducing consumption is the same.
- Resource efficiency is very important. Several barriers are encountered however - very little funding or little information are available / accessible. The lack of a specific policy to promote is also a constraint.
- Investing in buildings requires a political system and general actions to accompany the stakeholders and educate.

Sustainable tourism: toward sustainable consumption and production, the United Nations Year Framework Programme (10YFP)

Speaker: Zoritsa UROSEVIC (UNWTO Representative to the United Nations in Geneva) - World Tourism Organization (UNWTO)



Main topics and highlights of her presentation:

- Tourism makes 9% of GDP. Tourism is responsible for 5% of global CO₂ emissions and the accommodation sector 1% of CO₂.
- Emerging economies destinations surpassed the advanced destinations in 2015.
- Hotel Energy Solutions tool – easy to use, 1450 users and 10.925 visits worldwide
- 10 years framework of programmes on Sustainable Consumption and Production (SCP) – 10YFP – Sustainable Tourism Programme is a multi-stakeholder joint effort to accelerate the shift towards SCP. It functions around 4 key areas:
 - Integrating SCP patterns in tourism related policies and frameworks
 - Collaboration among stakeholders for the improvement of the tourism sector’s SCP performance
 - Fostering the application of guidelines, tools and technical solutions to improve, mitigate and prevent tourism impacts and to mainstream SCP patterns
 - Enhancing sustainable tourism investment and financing for SCP
- It is expected that the COP21 will have a 4-6 pages policy recommendations from neZEH.

Enabling a systemic approach for sustainable urban strategies

Speaker: Jean-Pierre NDOUTOUM (Director) - Institut de la Francophonie pour le Développement Durable (IFDD)



Main topics and highlights of his presentation:

- Presentation of the IFDD. City and countries in the “Francophonie” area.
- The problem of the increase of urban population in developing countries, especially in Africa, and in energy demand, which is higher than supply in these countries.
- The bigger percentage of buildings (around 70-80%) that will exist in 2030 in developing countries will be new buildings.
- High price of energy sources that are blocking the development of countries.
- Issues of energy efficiency - Low interest in developing countries, difficulty to make policies and investments evolve
- Training and dissemination of information on the control of energy, energy efficiency, market promotion

Debate

What is the role of architects in these projects?

- It is important to have trainings about energy challenges in architecture schools on how to make buildings both useful and energy efficient; and on how to use smart systems and bioclimatic architecture.
- To have an efficient building, the architect has to work together with the engineers from the beginning; consider the materials' types, market mechanisms to see what can be done for energy efficiency.
- Architects need to work differently now than in the past. Now must work together, integrating architecture and engineering, it is the only way to achieve the necessary performance.
- It is necessary to ensure that architects are retrieving ancient know-how: in old villages the buildings are adapted to the climate. With modern living, there is a break that does not consider this ancient knowledge, we must learn to re-use some materials.

The French President has established a legislation to reduce by 25% greenhouse gas emissions for 2020; then how the tourism sector could avoid more regulations if it already overregulated?

- If a head of state takes a new legislation, it is because the local markets allow reducing by 25%. They can do it, that's why the legislation is strong.
- The tourism sector is not overregulated. What we have seen in the pilots is that in the refurbishment projection, the business model proposed had a bad payback; however the possible increase of the occupancy rate was not taken into account. This is something that should be included in the policy recommendations.

Even if the architects have the best proposals, the deciding factor has to do with the market and the availability of the proposed technologies.

- 20 years ago, architects were sceptical about PVs for example, whereas now they are more sensitive. About the hotel chains: they have technical assistance, they have ways to make the investment, but small companies, which are the majority, do not have the capacity. The neZEH pilots will be example for all the other SMEs.

About the neZEH approach, it is surprising that it focuses on small hotels, whereas big hotel chains would have more impact.

- 90% of tourism enterprises are micro and small enterprises. The e-tool can be used by SMEs and big hotel chains, available to anyone.
- The neZEH approach is a good example for new buildings, especially in developing countries.

Conclusion by the Moderator

Many different stakeholders are making efforts to mutualize tools and multiply initiatives because we are no longer in the time of advocacy but in the time to testimony about concrete opportunities, to show that it works.

Working Session III - SUSTAINABILITY AS A MARKETING OPPORTUNITY IN THE HOTEL SECTOR – A GROWING AWARENESS IN CLIENTS BEHAVIOR

Moderator: Ulf Sonntag, NIT (Institute for Tourism Research, Kiel, Germany) – NECStouR

The last session was designed to highlight the marketing opportunities associated with engaging in a sustainable and environment friendly approach. It therefore aimed to present the evolution of client criteria with an intensification of environmental consciousness, as well as to showcase initiatives developed by various tourism stakeholders to support hotels engaging on this path, and notably through a roundtable on “*Making the hotel’s engagement visible: Sustainability as a selection criteria*”.



This session was moderated by Mr. Ulf SONNTAG who started by explaining that the next discussions would focus on clients and mainly the tourist, how to have returns – this is a topic often neglected in conferences. The speakers of the Working Session explained what customers are expecting and how to make them care about sustainability.

How to talk to travellers about sustainability

Speaker: Helena EGAN (Director of Industry Relations) - TripAdvisor



Main topics and highlights of her presentation:

- Presentation of the GreenLeaders’ programme which is not a certification but a mechanism that helps travellers to book a greener trip; largest green hotel program in the world with over 8.200 businesses.
- Green leaders is not an independent programme, it is fully integrated into TripAdvisor (2 persons every second on TripAdvisor site).
- According to a 2013 TripAdvisor survey, 81% of travellers place importance on properties implementing eco-friendly practices and 88% of U.S. hoteliers indicate that they currently have green practices in place.
- The outcome was that 60% of all green reviews related to four attributes: recycling, “general” green comments, towel reuse, and linen change (simple things the traveller could see).
- Consumers only notice a limited set of activities, but feel positively about them, green initiatives that are interactive are most noticed and green practices like sustainable food add value to the consumer experience and can improve the overall experience – and potential revenue.
- Hoteliers have the opportunity to increase communication of green initiatives to build emotional connections and increase satisfaction.
- There is a transparent application process, with some minimum criteria. They encourage hotels to showcase their GreenLeader inclusion. Big brands participate, such as Hilton etc.

Montenegro: Towards a low carbon tourism destination

Speaker: Jelena JANJUSEVIC (director) - Center for Sustainable Development, Government of Montenegro/United Nations Development Programme (UNDP)



Main topics and highlights of her presentation:

- Short presentation of Montenegro (population, capital, area...) a touristic country with more than 2 million international tourists per year.
- Presentation of the GEF project (Global Environment Facility) towards Carbon Neutral Tourism in Boka Bay (on Unesco List of World Cultural and Natural Heritage) and Old Royal Capital Cetinje. The aim of the project is to reduce the GHG emissions of Montenegro in tourism

sector by promoting development and adoption of policies and measures to reduce carbon (CO₂); establishing sustainable funding mechanisms to support low carbon infrastructure; support development and implementation of major financial investments in tourism infrastructure with low CO₂ emissions and communicating on Climate Change - Connecting Communications to Action.

- The expected economic and social benefits of the project are:
 - pollution will decrease (Montenegrin GREEN reputation will be strengthened);
 - re-branding of the Ecological state (competitive advantage);
 - sustainable economic growth (generate export earnings, and help Montenegro become more internationally connected);
 - prosperous green businesses, new sources of income (generate income and create new employment opportunities);
 - a unique and sustainable tourism experiences;
 - greater social equity (improving energy productivity would ease the burden on the poor - helping narrow the economic and social divide) and
 - innovative strategies to communicate climate change.
- The project will be developed around four dimensions:
 - 1- To create a favourable business environment to attract new investment and financing mechanisms; help design the policy instruments;
 - 2- to facilitate low carbon investments in transport infrastructure;
 - 3- Innovation: New carbon offset mechanisms and Climate Fund for tourism; help motivate market incentives and investment vehicles to mobilize the entrepreneurialism and finance to focus on the low-carbon challenge;
 - 4- Awareness Programme related to the harmful effects of CO₂ emissions from this sector, the possibility of their reduction and measurement and regular monitoring of GHG emissions in tourism.
- Save the date: International Conference on Low carbon tourism in Montenegro 9-10 Oct 2015.

Debate

How to talk to travellers about sustainability?

- There are two possible ways: how to talk to travellers about green trips and how they will highlight it on the site. Advises are coming from 2 directions. The customers talk to each other though the reviews, we help the hoteliers talk to their potential customers.

You want foreign investors to support your project, what's the point? Are there no skills in Montenegro that can drive up the project?

- Investors can be both, national and international. But if we want big investments we don't have companies in Montenegro which are big enough.

We heard previously that tourists were very interested about the green profile of hotels, but eventually that is not translated in their choices. Do you have some numbers?

- To make all efforts visible, people need to see things, even when it's recycling and seems ugly. There's a need to educate the consumers, to make them want green trips. It is true that all are interested that the hotel has a green profile, but when it comes to choosing, other parameters come in mind. The 900 green businesses TripAdvisor has are not a big statistical sample compared to the million the search engine has online, so it is not possible yet to come to a safe conclusion.

ROUND TABLE: “Making the hotels’ engagement visible: Sustainability as a selection criteria”

Moderator: Zoritsa UROSEVIC (UNWTO Representative to the United Nations in Geneva) - World Tourism Organization (UNWTO)

The aim of this roundtable is to exchange on the marketing opportunities and associated benefits related to the environmental and sustainable engagement of hotels, thanks to concrete examples; how this reflects to the hotel guest’s choice, which is the added value and how it can turn to a business competitive advantage.



Ms. Zoritsa UROSEVIC moderated the round table that counted with experts dealing with marketing, invited to present their own experience on how they identify means of communication and marketing that are different.

Panellist: Michel TSCHANN (President) - Nice Côte d’Azur Hoteliers Syndicate



Main topics and highlights of his presentation:

- For the hotel industry, the question was which label to push for. It was difficult because some hotels are in international chains and they have an internal policy that determines the label choice.
- Finally it was decided to concentrate in 3 main labels – Eco-label, Green Globe and Green Key - thus making sure that the hotels of the PACA region become members of one of them.

- In the hotel industry what the competitors are doing has a great influence in the decisions finally taken; if one gets a label, all hotels want one.
- The EU Ecolabel is not properly promoted by the European Commission; why not promote it to Asia and elsewhere?
- The moderator of the session agreed with M. Tschann: Europeans are the majority of the outbound customers and they would feel comfortable with seeing a label they recognise in hotels around the world.

Panellist: Fiona HUMPHRIES (Relationships Manager) - Travelife



Main topics and highlights of her presentation:

- Presentation of Travelife: international sustainability certification scheme for all types of hotels; currently it has 1.200 members in 43 countries. It is a step-by-step process, adaptable to different sizes.
- The standard is divided in four sections going beyond the ecological aspect: management, environment, community and supply chain.
- Travelife performs audits on-site. Once hotels are certified, they receive a plaque to display in the property and can use the certification mark in marketing and advertising; the hotels will also have a profile page on Travelife site.
- Intense communication of Travelife to show customers and hoteliers the advantages of green trips.
- The work is done in cooperation big, international Tour Operators like Thomas Cook, TUI etc. Hoteliers use Travelife in their brochures. Also online booking systems – such as booking.com and Expedia - promote Travelife labelled businesses.
- www.makeholidaysgreener.org.uk

Panellist: Anya NIEWIERRA (General Director Tourist Board South Limburg) - Limberg Region, Netherlands



Main topics and highlights of her presentation:

- Presentation of the region of Limburg and the hotels in Holland: small accommodations engaging for sustainability in a mature tourist destination (less than 20 rooms in hotels). Little hills in Limburg which are rare in Holland, very famous touristic destination.
- The Limburg region needs to ensure the 4A's act in harmony: area; access; attractions; accommodation. This is essential to ensure sustainability within the destinations.
- The majority of the Dutch customers choose based on price and location, not based on green profile.
- A green hotel has to be combined with a *green region*, otherwise the guest does not feel the sustainability.
- In the Netherlands, the windmills are installed in industrial areas, in order to not affect tourism areas, which are mainly based on the natural assets: the landscape.
- To support small hotels, the Tourism Board starts by analysing what hoteliers are able to do and invest for sustainability. The Tourist Board provides financing opportunities because it is essential for small hotels to invest in sustainability and then they offered incentives (like funding programmes for solar energy charging point for E-bikes). Finally, they gave visibility to their actions.
- The region developed a full sustainability-program for small and medium accommodations (as they represent in fact the majority of the region accommodation) which is effected in 5 phases: research, raising awareness, sustainability handbook, implementation and monitoring, and promotion.

Debate



There seems to be a competition between different labels: is that not confusing for consumers?

- Yes, but consumers are looking for things that will make them feel good rather than a label. And it goes beyond a logo, communication is crucial, for example to advise customers to take public transport and others. (*Fiona Humphries, Travelife*)

Confusion about label is not so bad for customers but it is for an hotelier because they are looking for advice. When they want to go green, they don't know how to do this. How are you informing hoteliers and working with them?

- We try to help hoteliers to understand the standing and to promote their green labels. But it is still hard for them to know which schemes are for them. The cost and the efficiency of a label are important for hoteliers. (*Fiona Humphries*)
- The situation varies depending on the country and region. Thus, it is important to consult with the local authorities that are often ready to help hoteliers on that topic. All hoteliers need help.

Working with the neZEH cases, we noticed that the ones that have already labels are more eager to listen and have more commitment. What are the energy efficiency criteria in Travelife?

- Travelife requires that the members have an energy management system, set targets, indicators, monitor their energy, kWh/night; above that the award of excellence will be launched soon, that will have more specific targets. (*Fiona Humphries*)

Conclusion and adjournment

Theocharis TSOUTSOS (Professor, neZEH project coordinator) - Technical University of Crete, Renewable and Sustainable Energy Systems Lab



First of all, it seems that the neZEH project is important, and that we are in correct line. We have to be pragmatic in what we do. In parallel we need some help with policies for example in funding. We have to remember that the future is now; all new hotel buildings have to be zero energy.

Stéphane POUFFARY (Founder and Honorary President) - ENERGIES 2050



Partnerships such as the neZEH consortium would not exist without the European Commission. Thank you to the partners of this project, to the United Nations Environment Programme (UNEP), to the IFDD (Institut de la Francophonie pour le Développement Durable) and to Innovative City.

2. Brief summary of the day's discussions

Why talk about nearly Zero Energy Hotels?

Tourism sector and the accommodation industry in particular, have a major role to play in acting against climate change (Tourism is responsible for 5% of global CO₂ emissions and the accommodation industry for 1% of CO₂ emissions attributed to the sector).

There is a huge potential of energy savings, and therefore of reducing CO₂ emissions in the building sector, and mostly in existing buildings. Moreover, the investment potential is rather vast (the building sector represents 10% of global GDP and employs 111 million people; in the next 10 years nearly 100 trillion USD will be spent in construction).

Energy efficiency is an issue all around the world, and even though the regional contexts are different, the target is the same: reduce the energy consumption. In the developing countries, the high prices of energy sources are blocking the countries' development. In these countries, around 70-80% of buildings that will exist in 2030 will be new buildings. In developed countries, such as European member states, the existing buildings are the main target for reducing the energy consumption.

Buildings are an important target of the EU Energy strategy (4 important EU Directives: EED, EPBD, Ecodesign Directive and Energy Labelling Directive). The EU objectives 2030 are: reducing greenhouse gas emissions by at least 40%, increasing the share of renewable energy to at least 27% and increasing energy efficiency by at least 27% (the last being under review). The target is that every new building becomes a Nearly Zero Energy Building (NZEB). Useful websites: buildup.eu and managenergy.net

What are the challenges for the accommodation industry?

The hotel industry is mainly represented by small and low performant buildings which have to face big challenges when refurbishing:

- Lack of investment opportunities;
- Difficulties and limits in refurbishing existing buildings;
- Lack of understanding and skills;
- Expensive Energy Efficiency measures.

Environmental issues are not generally seen as a priority. For example, the staffs' training needs on environmental awareness are not considered as useful as English lessons.

Furthermore, there are difficulties in making visible the hotels' environmental efforts. There are many labels which creates confusion to both guests and hotels.

What are the opportunities for the Hotel sector?

Reducing the energy consumption is one of the main means for making economic savings in the Hotel sector.

Sustainability is a motive for the tourists to choose hotels. According to a 2013 TripAdvisor survey, 81% of travellers place importance on properties implementing eco-friendly practices and 88% of U.S. hoteliers indicate that they currently have green practices in place.

Improved brand, improved sustainability, improved guest comfort.

neZEH contributes to disseminating the nZEB concept: the guests can experience that energy efficiency actions are feasible and profitable and they also provide very good comfort quality.

What are the means to overcome these barriers?

Energy efficiency solutions and tools

The step-by-step approach to retrofit existing buildings: in the current situation of general lack of funding, small but carefully planned retrofit actions can be put in place in order to achieve a significant reduction of energy use in the long term. As the financial risk is high at the beginning for banks, measures are applied one-by-one; the saved money from one step can be used to invest on the next measure/or money coming from the bank can be used.

The “Hotel Energy Solutions” online tool: an easy-to-use online tool that allows hoteliers to assess the situation of a property in terms of energy use, where it stands comparatively with its peers and what can be done to improve the situation. 1.450 users and 10.925 visits worldwide <http://hotelenergysolutions.net/>

Marketing solutions and tools

EU Ecolabel: Label recognized by all EU member states, but would also need to be promoted beyond the EU.

GreenLeaders by TripAdvisor: this is not a certification programme, but aims to help travellers book a greener trip. It is the largest green hotel program in the world with over 8200 businesses.

Travelife: international sustainability certification scheme for small and medium hotels. 1200 members in 43 countries.

Malice tool (presented by the Regional Tourism Committee of Ile-de-France region –Paris-): environmental audit tool and environmental display tool for hotels

The importance of public support

Impact of building codes: dwellings built in 2009 consume 40% less energy than the ones build in 1990

Financial support is crucial for small and medium sized hotels, as well as for old/historical buildings which generally face more financial and technical challenges than the rest.

Informational and Technical support. For example, some local authorities give support towards reaching an environmental/quality label. Also, support for training the hotel's staff is crucial.

Some good practices

Behavioural change is a crucial aspect of a building's energy performance. This needs to be implemented both by hotel's staff and guests.

Green initiatives that are interactive are most noticed and green practices like sustainable food add value to the consumer experience and can improve the overall experience – and potentially revenue.

The importance of a territorial approach: the majority of customers choose based on price and location, not always based on green profile. Therefore, a green hotel has to be combined with a green region, otherwise the guest does not feel the sustainability.

Are there examples of successful cases or hotels already engaged?

- The neZEH project currently has 12 pilots hotels officially engaged in becoming nearly Zero Energy.
- Eco Hotel Bonaparte, 1st Passivhaus hotel in Italy, 2nd in the world. Advantages of this hotel are spotted in terms of guests' satisfaction, reduced running costs, high occupancy and market appreciation of the brand
- Hotel Pizzeria Valcanover. The project is under development in the framework of EuroPHit project and the Passivhaus standards for an existing hotel are being defined. The refurbished building will have 120 kWh/m²/y primary energy use, with a cost of 1.926.400 euros.
- Upcoming projects: LEAF, low energy action for hotel B&B in Apulia, Italy
- Other example of hotels: Boutiquehotel Stadthalle, Hotel Haikko (FI), Scandic Hotels (Norway/Sweden), Barcelo Hotels (Spain)

Are there any related on-going initiatives in the tourism sector?

Many successful green initiatives in the hotel industry and examples of low energy hotels throughout Europe (not exhaustive):

- Regional Tourism Committee of the Ile-de-France region (Paris, France): towards a low-carbon destination
- Montenegro Center for Sustainable Tourism: GEF project, Towards Carbon Neutral Tourism in Boka Bay and Old Royal Capital Cetinje
- Limberg region, Netherlands: Tourism Board's support for hotels to invest in sustainability
- HOTREC elaborated a position paper on sustainability and developed a catalogue for best practices in EU
- pan-European project to reduce water consumption
- Belgium: training for hospitality businesses supported by the Flemish government
- Spain: awareness raising campaigns (by ITH)
- Turkey: Greening Hotels

3. Conclusions

The nearly Zero Energy Hotels (neZEH) European project addresses very relevant issues, in a context where:

- it is more than urgent to implement concrete actions against climate change, as the International agenda reminds us (the 21st Climate Conference will take place in Paris at the end of the year, with a major objective of setting a new universal binding agreement)
- the building and construction sector represents huge opportunities of reducing the energy consumption and the CO₂ emissions, and holds an important investment potential as it represents 10% of global GDP
- European tourism is facing growing competition on the International level
- Nearly Zero Energy Buildings are the future of buildings in Europe (all new public buildings should be nearly Zero Energy by 2018, and all new private buildings by 2020). For the private sector, this requires anticipating a new business plan for instance.

When speaking about refurbishment into nearly Zero Energy Hotels, it is crucial to remain pragmatic and to understand there are many challenges to overcome, mainly for Small and Medium sized hotels. The diversity of participants to the Conference showed the need for a multidisciplinary and integrated approach. Reaching the neZEH status through refurbishments requires a set of solutions and conditions that are complementary:

- Technical solutions (energy efficiency, renewable energy, specific methodologies)
- Behavioural change (training of staff, raising awareness of hotel guests/tourists)
- Financial solutions (funding schemes, support mechanisms, etc.)
- Legislation (regulation, incentives)

The public sector has an important role to play in supporting hotels towards a better energy performance of their buildings. Currently, tourism legislation and energy legislation are separated. It is necessary to have policies supporting economic activities that also take into account energy issues. Local authorities have room to play a more relevant role in this matter, by informing hotels on regulations, technical solutions, on labels, etc.

neZE Hotels, and more generally, environmental friendly and sustainable hotels have various opportunities of promoting their engagement through their marketing strategy, some of which were presented during the neZEH 2015 Conference. As there are many labels, it seems crucial that both tourists and hotels are well informed about these labels and what they mean in order for them to be effective in terms of a marketing tool. Also, when focusing on communication, it appears critical to include guests in the process, propose an interactive communication and offer an experience to the guests.

Even though there are many challenges on the road towards nearly Zero Energy Hotels, the neZEH 2015 Conference highlighted the many opportunities that exist and brought a source of inspiration through the numerous initiatives that were presented or listed during the day.

By bringing together the demand (hoteliers) and the supply (energy efficiency/buildings professionals) sides, as well as the funding and policy making side, this Conference resulted in interesting and very rich exchanges which will provide fertile grounds for further action both for

public and private stakeholders.

With the forthcoming launch of the neZEH online tool (planned at COP21 in December 2015) and a major conference in Madrid during FITUR GREEN, EU member states and operators in the accommodation sector will be able to engage and position the EU as a very committed region to climate change on the planet.

ANNEX 1 – The European initiative neZEH



The European initiative Nearly Zero Energy Hotels (neZEH) aims at accelerating the rate of refurbishment of existing hotels into Nearly Zero Energy Buildings (nZEB) by:

- Providing technical advice to committed hotel owners
- Demonstrating the profitability, feasibility and sustainability of investments towards nearly Zero Energy
- Undertaking training and capacity building activities
- Promoting front runners at national, regional and EU level to increase their market visibility.

neZEH is a response to the European Directive on the energy performance of buildings (2010/31/EU, EPBD recast), contributing directly to the EU 2020 targets and supporting EU Member States in their national plans for increasing the number of nZEBs. The neZEH initiative will run for three years (2013-2016) and is co-funded by the Intelligent Energy Europe Programme (IEE) of the European Commission.

The neZEH activities will result to:

- 10-14 pilot projects in 7 countries (Croatia, Greece, France, Italy, Romania, Spain, Sweden) to prove the feasibility and sustainability of neZEH projects; demonstrating successful examples will challenge much more SMEs to imitate
- An EU neZEH network, to facilitate exchanges between the supply (building professionals) and the demand side (SME hotel owners)
- A practical e-tool, for hotel owners to assess their energy consumption status and to identify appropriate solutions for energy efficiency improvement
- Technical and informational materials to support the implementation and uptake of nZEB projects
- Tailor made marketing guidelines and promotional tools to assist front runners to communicate efficiently their business to potential customers
- 15.000+ hotel owners informed; methodology and results available to any hotel for scaling up.

Benefits for the hospitality sector:

neZEH offers a competitive advantage to SME hotels which represent 90% of the European hospitality market and benefits the whole hospitality industry through energy saving and reduction of operational costs, unique positioning in a highly competitive market, improved image and service among guests, access to a whole new “sustainability” market segment, both

individuals and companies, increased living comfort as an added-value for hotels' guests, corporate Social Responsibility targets met; environmental, social and economic sustainability.

Benefits for the EU Community:

The neZEH will raise awareness and knowledge of the nZEB concept at regional, national and European level and will promote the endorsement of nZEB policies. This way it will contribute to sensitize national authorities to put in practice policies that support SMEs in undertaking refurbishments to become nZEB, 190 M€ investments in sustainable energy by 2020, new green jobs creation, reduction of GHG emissions up to 100.000 tCO₂e/year by 2020.

info@nezeh.eu, www.nezeh.eu

The neZEH Partners:



Technical University of Crete,
Renewable and Sustainable Energy
Systems Lab
Greece

Project Coordinator



United Nations World
Tourism Organization



Federation of European Heating and Air
conditioning Associations



Creara Consultores S.L.
Spain



ENERGIES 2050
France



Energy Institute Hrvoje
Požar
Croatia



Sustainable Innovation
Sweden



Network of European
Region for a Sustainable
and Competitive Tourism



Istituto Superiore sui
Sistemi Territoriali per
l'Innovazione
Italy



Agency of Braşov for
Energy Management and
Environment Protection
Romania

ANNEX 2 – Conference Programme

Sustainable and competitive hotels through energy innovation - neZEH 2015 - 24 June 2015

PROGRAMME

9:00-9:30	Registration and welcome coffee
9:30-9:50	Welcoming speech: - Stéphane POUFFARY (Founder and Honorary president) - ENERGIES 2050 - Michel TSCHANN (President) - Nice Côte d'Azur Hoteliers Syndicate
Working session I - TOWARDS NEARLY ZERO ENERGY BUILDINGS IN EUROPE – OPPORTUNITIES FOR THE HOTEL SECTOR Moderator : Anita DERJANECZ - REHVA	
9:50-10:05	Nearly Zero Energy Building Challenges – Inspiration from European projects. <i>Philippe MOSELEY (project advisor) - European Commission, Executive Agency for Small and Medium-sized Enterprises (EASME)</i>
10:05-10:20	The European Initiative Nearly Zero Energy Hotels. <i>Stavroula TOURNAKI (Senior expert, neZEH Project Manager) - Technical University of Crete - Renewable and Sustainable Energy Systems Lab</i>
10:20-10:35	Challenges and Opportunities of nZEB strategies for the accommodation Sector. <i>Christian DE BARRIN (CEO) - HOTREC, the European trade association of Hotels, Restaurants and Cafés</i>
10:35-10:50	Example towards a neZE Hotel. The step-by-step deep retrofitting approach. <i>Francesco NESI, director of ZEPHIR–Passivhaus Italia - EuroPHit Project</i>
10:50-11:05	Q&As
11:05-11:20	Coffee break
Working Session II: DEMONSTRATING THE FEASIBILITY AND HIGHLIGHTING THE OPPORTUNITIES Moderator: Rodrigo MORELL (Managing Director) - CREARA	
11:20-11:30	The neZEH pilot hotels: approach and tools. <i>Nigel CLARIDGE (Senior Adviser EU funding/project manager) - Sustainable Innovation</i>
11:30-12:00	The story of three neZEH front runners - neZEH Pilot hotels. - Hotel CUBIX , Braşov, Romania - Hotel BEST WESTERN Ajaccio Amirauté , France - Hotel Natural Resort Amalurra , Spain





12:00-12:10

Q&As

12:10-12:50

ROUND TABLE: "Building up on the frontrunners experiences-How to make it happen"

Moderator: Peter HUG (managing director) - eu.ESCO - European Association of Energy Service Companies

Panellists :

- Reka CSEPELI (Responsible for Sustainable Development) - Regional Tourism Committee of Ile-de-France
- Simon CAMAL (Project engineer) - EuroPHit Project
- Julien Thuilliez (Assistant Director) - Ethic Etapes, Cannes Jeunesse

12:50-13:00

Q&As

13:00-14:00

Lunch break

Plenary session – FROM NEARLY ZERO ENERGY BUILDING POLICIES TO SUSTAINABLE TOURISM AND CITIES

Moderators: Stéphane Pouffary (Founder and Honorary President) - ENERGIES 2050 & Philippe MOSELEY (project advisor) - European Commission, EASME

14:00-14:20

European Policies and Energy Efficient Buildings. *Philippe MOSELEY (project advisor) - European Commission, Executive Agency for Small and Medium-sized Enterprises (EASME)*

14:20-14:40

Policies to enforce the transition to neZEH. *Theocharis TSOUTSOS (Professor, neZEH project coordinator) - Technical University of Crete- Renewable and Sustainable Energy Systems Lab*

14:40-15:00

The potential of the building sector in sustainable and low-carbon strategies. *Arab HOBALLAH (chief) - Sustainable Lifestyles, Cities, and Industry - United Nations Environment Programme (UNEP)*

15:00-15:20

Sustainable tourism : toward sustainable consumption and production, the United Nations Year Framework Programme (10YFP). *Zoritsa UROSEVIC (UNWTO Representative to the United Nations in Geneva)- World Tourism Organization (UNWTO)*

15:20-15:40

Enabling a systemic approach for sustainable urban strategies. *Jean-Pierre NDOUTOUM (Director) - Institut de la Francophonie pour le Développement Durable (IFDD)*

Sustainable and competitive hotels through energy innovation - neZEH 2015 - 24 June 2015

15:40-16:00

Questions to panellists by the moderator

16:00-16:15

Coffee break

Working Session III - SUSTAINABILITY AS A MARKETING OPPORTUNITY IN THE HOTEL SECTOR – A GROWING AWARENESS IN CLIENTS BEHAVIOR

Moderator: Ulf SONNTAG, NIT (Institute for Tourism Research, Kiel, Germany) - NECStouR

16:15-16:30

How to talk to travellers about sustainability. Helena EGAN (Director of Industry Relations) - TripAdvisor

16:30-16:45

Montenegro: Towards a low carbon tourism destination. Jelena JANJUSEVIC (director) - Center for Sustainable Development, Government of Montenegro/UNDP

16:45-16:55

Q&As

16:55-17:35

ROUND TABLE: "Making the hotels' engagement visible: Sustainability as a selection criteria"

Moderator: Zoritsa UROSEVIC (UNWTO Representative to the United Nations in Geneva) - World Tourism Organization (UNWTO)

Panellists :

- Michel TSCHANN (president) - Nice Côte d'Azur Hoteliers Syndicate
- Fiona HUMPHRIES (Relationships Manager) - Travelife
- Anya NIEWIERRA (General Director Tourist Board South Limburg)- Limberg Region, Netherlands

17:35-17:45

Q&As

17:45-18:00

Conclusion and adjourn

- Theocharis TSOUTSOS (Professor, neZEH project coordinator) - Technical University of Crete, Renewable and Sustainable Energy Systems Lab
- Stéphane POUFFARY (Founder and Honorary President) - ENERGIES 2050

19:00-20:30

Networking Cocktail - Offered by Travelife

(Upon invitation only, for more information: info@energies2050.org)



ANNEX 3 – Short Biographies of the speakers



Yosune BADIOLA GOENAGA

Health and Treatment Center of the Resort in Amalurra

Yosune BADIOLA GOENAGA is working at the External Relations Department and as a co-director of the Health and Treatment Center of the Resort in Amalurra. She trained as massage therapist in USA where she lived for 13 years. She learned other therapy techniques; Ayurveda (a year in India), shiatsu (Canada), reflexology (Japan), osteopathy, Reiki, etc. Nowadays she has an open clinic in Centro Loratze in Bilbao.



Christian DE BARRIN

HOTREC

Christian DE BARRIN held several senior communication and association management positions in major trade associations for complex industry sectors, including metals, consumer goods, air transport and media. He worked for an EU Think-Tank and delivered trainings at the European Training Institute. He was also Board Member at the European Association of Communication Directors and a columnist at French radio.



Simon CAMAL

LA MAISON PASSIVE - EuroPHit Project

Simon CAMAL is project Engineer; he is certifying buildings to the passive house standard and teaching NZEB design since 2011. He is currently working on step-by-step deep retrofits within the IEE project EuroPHit. He is project leader for France and also in charge of the European dissemination for EuroPHit.



Nigel CLARIDGE

Sustainable Innovation

Nigel CLARIDGE is consultant in the IT industry in the areas of telecommunication, computer software and Internet. He is currently working in the field of energy efficiency and on a European project for Intelligent Energy (neZEH). He is a senior user experience adviser at Advince AB, associate senior usability consultant at Usability Partners AB and senior EU adviser to Sustainable Innovations AB (Sust).



Reka CSEPELI

Regional Tourism Committee of Ile-de-France

Réka CSEPELI is the head of the Sustainable Department in the Office of tourism of the Paris Region since 2010. Since 2008, she has been teaching environmental issues and social responsibility in tourism in several universities, she also participated in several international conferences as an intervener on tourism and sustainability issues and has written several articles in academic journals on these subjects.

**Anita DERJANECZ***REHVA*

Anita DERJANECZ is in charge of EU public affairs, and of the implementation of European projects in the field of buildings energy efficiency and indoor air quality. She is secretary of the REHVA Technical Research Committee and assists the work of the REHVA Task Forces to elaborate technical guidebooks. Before joining REHVA, she worked as Head of Brussels Office of the South-Transdanubian Regional Innovation Agency.

**Helena EGAN***TripAdvisor*

Helena EGAN is destination marketing specialist covering Europe, the Middle East, Africa and Asia Pacific for TripAdvisor since 2008 and director of Industry Relation since September 2014. Prior to joining TripAdvisor, she worked at NORTHSTAR Travel Media in London, Hot Recruit, Euro London, VisitBritain and Tumlare, she has over 16 years of experience in the travel and tourism industry.

**Arab HOBALLAH***United Nations Environment Program (UNEP)*

Arab HOBALLAH is chief of Sustainable Lifestyles, Cities and Industry Branch in UNEP. Previously he worked in the UNEP Regional Seas program as the Deputy Coordinator of the Mediterranean Action Plan and he participated in different projects in several institutions, including the World Bank projects in developing countries. He has created and managed various global initiatives, including on buildings and cities.

**Peter HUG***eu.ESCO*

Directeur Manager VDMA, Fédération Allemande d'Ingénierie. Expert européen en efficacité énergétique des bâtiments, durabilité, finance, technologies propres et maintenance. Il promeut l'automation et le contrôle des bâtiments pour les bâtiments intelligents. Il est en charge de plusieurs projets pour les systèmes industriels propres dans toute l'Europe et étend ses marchés vers l'Inde et la Chine.

**Fiona HUMPHRIES***Travelife*

Fiona HUMPHRIES is relationships Manager at Travelife for Hotels and Accommodations, she commercialises the internationally recognized sustainability certification for hotels and accommodations. She has working for organisations like the British Standards Institution and the London Development Agency and Action Sustainability. She is also an Associate of the Institute for Environmental Management and Assessment.

**Jelena JANJUSEVIC**

Center for Sustainable Development, Government of Montenegro/UNDP

Jelena JANJUSEVIC is professor of Economics and Director of the Centre for Sustainable Development. She is involved in many projects dealing with energy efficiency, renewable energy, macro-economic analysis, capacity building of public administration, etc. She has published several macroeconomic, socio-economic and financial analyses about Montenegro and Regional Development.

**Joséphine LEDOUX**

ENERA Conseil

Joséphine LEDOUX is environmental engineer and energy manager, she is associated to ENERA Council of design office. She carries out energy audits, renewable energy studies, thermal calculations for obtaining energy labels and dynamic thermal simulations. She is fluid prime contractor on renovation and construction projects. She is also consultant for environmental studies and accompanist for projects following the "Mediterranean Sustainable Buildings" initiative.

**Ancuta MAGUREAN**

SERVELECT

Ancuta graduated from Technical University of Cluj-Napoca and has both a degree in civil engineering and a Master in Thermal Rehabilitation of Buildings. Currently, she follows PhD studies on energy efficiency in non-residential buildings and also activates as a certified energy auditor for buildings, being involved in energy efficiency projects, in collaboration with Servelect.

**Rodrigo MORELL**

Creara

Rodrigo MORELL is partner and Director at Creara, leading company in the field of Energy Efficiency. He has been part of the panel of experts that supported the government on the development of Energy Efficiency standards, becoming a member of the Managing Group of the Spanish Energy Efficiency Technical Platform (PTE-EE) and President of the ESCO Association (A3E).

**Philippe MOSELEY**

EASME (Executive Agency for Small and Medium-sized Enterprises)

Philippe MOSELEY is project Advisor at the EASME (Executive Agency for Small and Medium-sized Enterprises) in Brussels, working in the Horizon 2020 Energy Unit and tasked with managing several programmes on behalf of the European Commission. Before, he worked 15 years as an architect and urban designer, delivering energy efficient building projects across Europe.

**Jean-Pierre NDOUTOUM***Institut de la Francophonie pour le Développement Durable (IFDD)*

Jean-Pierre NDOUTOUM, is director of the Francophone Institute for Sustainable Development (IFDD) in Quebec City. He worked for six years for the Ministry of Mines, Energy and Petroleum of Gabon as Education Officer, then as Director of studies on forecasting, economics and finance. In 1996 he joined the IFDD program as a specialist in energy policies (energy, energy efficiency and renewable energy).

**Francesco NESI***EuroPHit Project*

Francesco Nesi is director of ZEPHIR that aims to disseminate the scientific concept of Passivhaus and Zero Energy Building in Italy and Mediterranean countries, offering energy consulting services, certification, and training in this area. Recently, he was elected as member of the jury board for the International Passivhaus Window Award.

**Anya NIEWIERRA***Limberg Region, Netherlands*

General Director of the Tourist Board of South Limburgs since 1993, she has 32 years' experience in tourism. Furthermore she held and holds various supervisory board roles with organizations related to tourism, culture or landscape development. Between 2010 and 2012 she was par exemple chairwomen of EDEN and the first president of the EDEN Association.

**Stéphane POUFFARY***ENERGIES 2050*

Stéphane POUFFARY has been working in the international cooperation field for more than 25 years. He is the founder and Honorary President of the NGO ENERGIES 2050. Prior to that, he has worked for several national and international institutions (ADEME, UNEP). He intervenes in France and abroad in universities, engineering schools, professional training and in many organizations, international associations and networks.

**Ulf SONNTAG***NIT*

Ulf SONNTAG is head of market research and associate director at NIT. The general focus of his work is understanding the dynamics of tourism on regional, national and international levels. Sustainable tourism development has been a core of NIT's research and development projects for a long time. A recent study funded by the German Federal Environment Ministry shows that there is a rising demand for sustainable holidays.

**Michel TSCHANN**

Nice Côte d'Azur Hoteliers Syndicate

Michel TSCHANN is marketing director and director of the hotels Splendid (4 stars), Gounod (3 stars) and the Splendid Spa in Nice that has obtained the European Ecolabel. He is also President of the Syndicate of "hotelkeeper" of Nice Côte d'Azur, elected member of the Chamber of Commerce and Industry of Nice Côte d'Azur and of the Regional Chamber of Commerce and Industry.

**Stavroula TOURNAKI**

Technical University of Crete, Renewable and Sustainable Energy Systems Lab

Stavroula TOURNAKI is head of the EU Projects dpt. at the Renewable and Sustainable Energy Systems Laboratory since 2007); has participated/managed 14+ EU funded projects in the Sustainable Energy field. From 1996 to 2007, she has worked as Business Development and Marketing Director in a number of multinational companies in Greece.

**Theocharis TSOUTSOS**

Technical University of Crete, Renewable and Sustainable Energy Systems Lab

Theocharis TSOUTSOS is the neZEH Project Coordinator, Director of the Renewable and Sustainable Energy Systems Laboratory and Director of the Graduate Programme "Environmental Engineering" at the School of Environmental Engineering. He is activating in the Sustainable Energy field for 30+ years, has worked in 80+ sustainable energy projects and is the author of 300+ articles in International Journals and Conferences.

**Zoritsa UROSEVIC**

UNWTO

Zoritsa UROSEVIC is UNWTO Representative to the United Nations in Geneva. She participated in the formulation of the 10YFP for Tourism and she is involved in the build-up towards the universal Post 2015 agenda and the SDGs. From 1993 to 2004, she worked for the Seychelles at the Ministry of Industry and the Ministry of Tourism and Transport, as Director of International Cooperation at regional and global levels.

ANNEX 4 – Posters

Poster 1

Title:

Energy Performance Simulation of Hotel in Crete using the EnergyPlus software with the aim of upgrading

Authors:

M.E. Papadaki¹ and A. Papisifaki¹, S.P. Pieri¹, I. Tzouvadakis¹

¹ *Department of Civil Engineering, National Technical University of Athens, Athens, Greece*

Abstract:

In the direction of "green entrepreneurship", hotel units have to improve their operational infrastructures and business processes by adopting bioclimatic design solutions. The purpose of this study is the energy assessment of an existing hotel located in Heraklion of Crete with the aim of reducing its electric consumption. The hotel is classified into 3* category, it consists of 4 floors with total area of 4088 m² and, according to the audit, the hotel's monthly electricity consumption for the year 2013 was 160,880.00 kWh (39.4 kWh/m²). The assessment tools used in the study are google SketchUp (version 8.0), Legacy Open Studio plugin for SketchUp and the building energy simulation program Energy Plus (version 8.1). At an early stage of simulation, the building is designed in SketchUp and consequently all necessary parameters are imported in Energy Plus in order to estimate its total electricity consumptions. The parameters include building materials, human activity in the building and the total electricity consumption of the hotel. Total electricity consumption is calculated as the sum of the consumption of the lighting, air-conditioning and electrical equipment used by the hotel. The final sum of electric consumption that comes out is 141,515.00 kWh/year (34.6 kWh/m²/year), which means the results are 87% close to reality. The study proposes different retrofit interventions, each one of which is simulated through the program Energy Plus and evaluates their impact on energy consumption. Initially three different technology scenarios are proposed: the application of nocturnal ventilation, which results in a reduction in electricity by 4.6% /year, the replacement of existing glazing units by low-e (Low-emissivity) glazing, which results in a decrease of 3.36% /year and the placing of a layer consisting of expanded polystyrene plates as an external insulation in the shell of the building giving a decrease of 18.2% /year. The renewable energy (RE) scenario conserves energy, directly, by using an innovative interconnected PV system (net metering) consisting of 94 PV monocrystalline silicon panels of 245 Watt each, placed in a part of the hotel roof resulting in energy saving of 23.7% /year. Finally, the study examines the simultaneous application of all the four above interventions through Energy Plus simulation and results in a total decrease in electricity consumption of 49.9% /year. To conclude, the PV system intervention is the most efficient, individually, however the combination of the four above technologies is the most cost effective plan for the enterprise.

Poster 2

Title:

nZEB Training in the Southern EU countries – Maintaining building traditions / SouthZEB project

Authors:

Maria Betsi¹, Iakovos Kalaitzoglou¹, Vassilis Kostopoulos¹, Polyvios Eleftheriou², Manuela Almeida³

¹ Applied Mechanics Lab / University of Patras, Rio University Campus, Greece

² Cyprus University of Technology, Cyprus

³ University of Minho, Portugal

Abstract:

The SouthZEB project is a pioneering cooperative work co-funded by Intelligent Energy – Europe. Nine partners, addressing 4 target countries (Greece, Cyprus, Southern Italy and Portugal) participate in the project. The recast European Directive 2010/31/EU stipulates that from 2021 (private sector) and from 2019 (public sector) all new buildings shall be nearly zero-energy buildings (nZEB). However, apart from the market barrier that exists nowadays, there are significant barriers regarding the know-how of the professionals of the building industry and decision makers, who will finally be responsible for designing nZEBs or by creating funding framework and incentives for nZEBs and hence creating sustainable cities or inspecting the designs for such buildings.

In some countries, steps have already been taken towards this direction but not in all and especially not in southern European countries. Thus, this project aims at filling-in this gap and addresses the need of developing training and assessment schemes for intermediate and senior professionals involved in nZEB building process (engineers, decision makers, etc.). The expected outcomes of the project are:

- The development of ten training modules, the relative reference material and the assessment exams mainly focusing on the design of nZEB buildings,
- The development of a portal consisting of an e-learning platform and forum for the remote application of the aforementioned training modules, and
- The training of professionals through workshops (1500 trainees and 150 trainers) based on the aforementioned training modules, which will lead to nZEB certification.

It should be noted that the training modules developed will hopefully be adapted to the target countries' legislation and specialties, thus the topics that will be presented aim at maintaining the building traditions of the target countries and simultaneously enable the professionals to integrate effectively new energy efficient technologies in the building sector in order to achieve nZEB criteria. It should be noted that no relevant project has been implemented in these countries and the aid of significant front-runner countries (UK, Austria, Northern Italy) and the expected results are considered to be of great value.

For the time being, the development of the training modules is nearly completed and in a few months the workshops / seminars will be delivered. Till now, professionals and associated organizations have shown great interest in the project's results because of its value not only in

preparing the professionals to face the demands of the new era, but also in creating a knowledge base for producing funding/ promoting schemes for nZEBs.

Poster 3

Title:

Step-by-step retrofitting to Passivhaus standard of a Hotel-Restaurant in Northern Italy

Authors:

M. Larcher¹, F. Ferrario^{1,2}, I. Iannone¹, D. Casagrande², Francesco Nesi¹

¹ ZEPHIR s.r.l. – Passivhaus Italia, Loc. Fratte 18/3 - 38057 Pergine Valsugana (TN), Italy

² Armalam srl., Viale Dante 300 - 38057 Pergine Valsugana (TN), Italy

Abstract:

We present an innovative step-by-step approach to building retrofitting and we show an example of its application to a Hotel-Restaurant.

The concept of step-by-step retrofitting is being developed within the European Project EuroPHit [1] and it consists in refurbishing a building bringing it to the Passivhaus standard [2] in different phases that can be implemented at a distance of years. The different steps can involve the retrofitting/replacement of single components of the building or the retrofitting of single parts of the building. The main idea behind this innovative approach is to set up, from the beginning, an overall refurbishment plan (ORP), that will guide the retrofit through the different steps. Therefore it includes all the steps that bring the existing building to an nZEB. The ORP is of fundamental importance in order to avoid building physics issues, elaborate connection details of components that are replaced in different steps and optimize the economic convenience of the project. The step-by-step approach has the following advantages: first of all, it is easier to finance, and second the components can be used until the end of their lifecycle.

The Hotel-Restaurant Valcanover, located in Northern Italy, represents the first hotel-restaurant worldwide that is step-by-step retrofitted to the Passivhaus standard. The existing building is a masonry construction and its treated floor area is 590 m². The main project challenges are the thermal insulation of the floor slab, due to limited height of the ground floor ceiling, the limitation/removal of the internal heat loads of the restaurant and the fact that the building contains three different destinations of use, hotel, restaurant and residential, that need to be refurbished in different steps. The first step, that will be implemented in autumn 2015, consists in retrofitting the existing masonry construction at the ground floor, improving considerably the thermal envelope and the building services, and in realizing an extension in cross laminated timber. In the following 2 steps, that will be implemented in autumn 2016 and 2017, the upper part of the building will be demolished and reconstructed in cross laminated timber following the Passivhaus principles.

In conclusion we introduce an innovative step-by-step approach to the refurbishment process and we show its practical implementation in a case study project. In this example the step-by-step approach fits perfectly because it gives the possibility to implement the different steps in the winter season when the hotel-restaurant is normally closed.

Poster 4

Title:

Retrofitting an existing hotel, a case study

Authors:

Michail Fyrrillas¹, Eleni Andreou²

¹ Environmental Engineer, Athens, Greece

² Architect, MSc Environmental Design & Engineering, London, United Kingdom

Abstract:

The purpose of the particular project is the reduction of the energy consumption of a case study hotel located in the island of Zakynthos, Greece, taking into consideration some basic sustainability principles with a focus on the operating facilities.

The building industry is responsible for ~40% of energy consumption worldwide and for ~30% of the greenhouse gases emitted into the atmosphere (UNEP, 2009). Specifically, the accommodation industry is estimated to be responsible for around 97.5TWh as measured for 2001, with the average energy use moving within the range of 305-330 kWh/m²yr (Hotel Energy Solutions, 2010). Thus, a strategic initiative for the reduction of the energy consumption -even with the minimum individual effort- seems to be an imperative need and is believed to contribute to a considerable decrease of the associated emissions globally.

The case study hotel is a 3-stars facility with 74 bedrooms, with a gross building area of 2500m², in a site of 4200 m². It is located in Zakynthos, an island of western Greece, and has been built under the standard building regulations. The architectural plans and the energy bills of a 9-month period have been provided.

A basic strategy has been suggested which has been based on two axes. The first axis was the collection of the provided actual energy bills and the estimation of the annual energy consumption. The second axis was an energy simulation of the building using as data some figures that could create a baseline for the energy consumption. Using the specific baseline, a number of potential modifications have been recommended to achieve a significant energy reduction. The simulation software that has been used is eQuest. The deviation of the actual annual energy consumption and the simulated data has been approximately 11%. This deviation may seem considerable but it has to be highlighted that the data provided was only for 9-month period. If the data gathered was for 1 or 2 years, then the results would be more precise. But even in this case, the two curves (actual and simulation figures) are remarkably close in the monthly basis.

Starting with some less intrusive and continuing with other more invasive alterations, the reduction of the energy consumption of the case study hotel is targeted. The suggestions were

related to the change of the thermostat by 1.1°C (2°F), the replacement of the traditional light bulbs with LEDs, the installation of a card key in all rooms, the improvement of the air-conditioning system and lastly, with the application of additional external wall insulation. The energy consumption achieved thanks to each one of the suggested measures is depicted in Table 1.

The basic aim of the particular project was not to prove the efficiency of the recommended modifications but to highlight that each project is unique and that, given the owner's willingness and the design and consultancy team's critical research and study, crucial economic and environmental improvements can be achieved with the minimum effort. Moreover, it has to be emphasized that with the proper design of a long-term plan, the funding of the each measure could easily be succeeded thanks to reduction of the operational costs achieved from the previous measure applied.

Poster 5

Title:

Romanian policies and strategies to enhance the transition towards sustainable tourism through nZEB approaches.

Authors:

Cristina – Maria DABU PhD¹,

¹ IBMC International SRL, Bucharest, Romania

Abstract:

Purpose of the work:

The purpose of the work is to present the conclusions of a study developed by IBMC International SRL regarding the implementation of EU Directives in Romania through policies and strategies in order to enhance the transition towards sustainable tourism through nZEB approaches.

Approach:

The study consists of five parts:

1. EU legislation and policies
2. Romanian legislation and policies elaborated in order to implement in Romania the EU directives and policies
3. Romanian non-governmental organizations implied in sustainable development (projects, policies, results)
4. Pilot projects and private (non NGO) initiatives
5. Conclusions

Originality, innovation and relevance:

The originality, innovation and relevance of the study consist in the follow aspects:

The study provide an extending overview regarding the ways in which Romania implements the European Union policies and strategies on sustainable development and buildings nZEB type, neZEH, both in the administrative structures and civil society.

The study presents the actual state of art in the fields of nZEB and neZEH buildings in Romania.

Results / Lessons learnt/Replicability:

As Results / Lessons learnt, the study presents some cases of nZEB respectively neZEH building achieved in Romania, models that can be the starting points for other initiatives.

Conclusions:

1. At legislative level

There are normative acts through which EU directives and policies regarding the sustainable development and specific technologies nZEB, neZEH are transposed into Romanian legislation.

There are developed strategies for achieving the objectives established at EU level

2. At the level of civil society -

There is interest regarding the sustainable development and nZEB specific technologies and the possibility to implement them in order to enhance the transition towards sustainable tourism through nZEB approaches.

Actions are undertaken to inform and educate the civil society in order to achieve the objective of 20% reduction in CO₂ emissions by 2020 using specific neZEH and nZEB technologies.

There are already completed a number of pilot demonstrative projects and private initiative for the construction of new NeZEH pensions / hotels or to upgrade the existing ones at neZEH level by improving them through adoption of specific nZEB technologies.

Poster 6

Title:

Interactive hotel façade

Authors:

Alexandra Saranti¹, Eli Ntaountaki², Dimitra Mavrommati³

¹ Technical University of Crete, Chania, Greece

² Ariel University, Ariel, Israel

Abstract:

The aim of this project is to optimize the operation and the design of Tel Aviv's David Intercontinental hotel building envelope to reduce its environmental imprint, during the "Architecture Meets Robotics" Symposium, held at Ariel University on April 2015. The symposium was organized by Prof. Beni Levy of AU, Prof. Zvi Shiller of AU and Prof. Konstantinos-Alketas Oungrinis of TU Crete. The team working on the envelope was consisted from Doronn Anhang, Avian Fried, Yarden Hazri, Dani Korotaev, Dimintra Mavrommati, Alon Newman, Elli Ntaountaki, Saranti Alexandra

The project is a multidisciplinary combination of architecture and robotics focusing on transforming the hotel's south façade into an interactive medium of saving energy that takes into account the movement of the sun and the user's needs. The purpose of the work is regulate solar radiation in order to reduce existing thermal loads and use it to support the interaction between the building and the users. This is achieved by integrating Photovoltaic Panels [PVs] in the new transformable façade's design. The parameters that were taken into consideration are environmental, such as the building orientation and the climate, as well as architectural such as

the design of the hotel's envelope and the preferences of the users. By this way a new customizable environment is created that provokes different situations in which the users have the ability to control their room's windows according to their personal choice of the view, temperature and lighting. Methodologically, the new design consists of an additional space, that is referred as "mechanical balcony" [MB] and is placed on the external side of each of the existing rooms. The Mbs containing solar sensors follow the route of the sun having the ability to control the heat transmitted, reflect the sunlight, provide shade and save energy. The solar sensors and the PVs are integrated on the building façade in an almost vertical position, resembling "eyes" which can be opened, closed and folded in order to form larger openings. This particular design is chosen because of the "eyes" capacity to open and close in accordance to sun lighting, ambient lighting, and guest's preference. The *solar sensors* cooperate with *movement sensors* in order to achieve the "eyes" movement. Focusing on the nZEH goal the MBs follow by default the position of the sun. However the user has the ability to change the direction of the balcony, as well as the façade condition (open- closed) according to his needs (for air flow, heat, direct or indirect sunlight, view). By this way the building envelope has an urban imprint and functions as a filter between the inner and outer space, creating an ambient and secure atmosphere. Finally, the innovative part of this research is to highlight new ways of approaching adaptability and personalization of architectural space, with the aid of robotics, in a sustainable and environmentally friendly way. This project is still on research and our future goals will be to run our model simulation and find out its energy imprint.

Poster 7

Title:

CAPITAL MATERA - ZERO ENERGY RESORT

Authors:

Giuseppe Maria Perfetto¹, Francesco Paolo Lamacchia²,

¹ Architect, Vice-President at Network Edifici a Consumo Zero, Torino, Italy

² Ph.D., P.E., President at Network Edifici a Consumo Zero, Matera, Italy

Abstract:

The Poster is addressing to individuate the "Best Sustainable Solution for Tourism and Hotel Buildings Sector", particularly in that areas where is foreseen a huge touristic demand and hotels need. For this purpose, the main technical professionals founders of the First National Network for Zero Energy buildings in Italy (Network Edifici a Consumo Zero), has designed a pilot or case study to replicate immediately in the lands of Matera municipality. Here starting from this year there will be an increasing demand in the accommodation industry due to the attraction of the recent title of European Capital of Culture 2019. In the last thirty years, related European studies in the past cities, capitals of culture, have confirmed that when this title is done, it contributes to the social, environmental and economic growth of that city. So we think to indicate, taking Matera like best

example, a municipal policy to enhance the transition towards sustainable tourism and city development to accommodate potential visitors, through nZEB and also ZEB approaches. It has been chosen a portion of land (14 hectares), currently used for agricultural purposes, far away 3km from Matera's centre, exactly at the doors of the city, attached to the highway towards Bari international airport, and indicated by Urban Development Plan for accommodation and hotel buildings exclusive use. To achieve the goal fixed in the topic of the poster, the designers, grace to their architectural and engineering professional experience background, have conceived, in an holistic approach, a real case or pilot project of an hotel, in the resort formula, showcasing technologies and innovations supporting environmental sustainability, energy efficiency, use of renewable energy, electricity storage by fuel cells, that are tools particularly interesting and applicable in hotels. The replicability of this case study or pilot project will be aligned jointly to the target of Zero Emission and Energy Efficiency, as imposed by EU directives, by harnessing the important European funding measures coming either from H2020 or from FCH-JU and related stakeholders, or investors, in the hydrogen industry.

The strategic position of Matera in Europe, as the hub of mix culture from north and south of the world, the location in a geographical point (Mediterranean basin) full of sun and wind renewable energy power, enabling to ensure the clean energy production, the current interesting development of the hydrogen as energy vector in the buildings, the need of satisfying the accommodation of tourists without high energy costs, and at the same time the presence in the city of Matera of the best example worldwide of ancient and sustainable built environment (Sassi), added to the possibility to insert this poster's topic in the programming of the next cultural events in Matera, will allow to spread and disseminate better the achieved results for a major success of neZEH and Capital Matera Zero Energy Resort.

Poster 8

Title:

Demonstrating integrated innovative technologies for an optimal and safe closed water cycle in Mediterranean tourist facilities (demEAUmed)

Authors:

Eric MINO¹, Maha AL-SALEHI¹, Eve DALLAMAGGIORE²

¹EWMIS, Sophia Antipolis-Nice, FRANCE

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Abstract:

demEAUmed is a European project co-funded by the European Commission under the 7th Framework program (FP7). It demonstrates and promotes innovative technologies for an optimal and safe closed water cycle in Euro-Mediterranean tourist facilities. Using alternative water sources, such as treated groundwater, treated rainwater or the reuse of treated grey water and/or wastewaters within a resort will result in the reduction of fresh water consumption in hotel installations.

The aim of demEAUmed project is the involvement of industry representatives, tourism sector stakeholders, policy-makers and diverse technical and scientific experts to demonstrate and promote:

- Integration of innovative water treatment technologies for an optimal closed water cycle in Mediterranean tourist facilities
- Fresh water consumption minimization
- Safe water management
- Monitoring, control and automation of water cycle
- Dissemination to other Euro-Mediterranean tourist facilities
- Creation of new market opportunities to European industry and SMEs

The DEMO site is Samba Hotel, located in Lloret de Mar, Spain. It is a large resort with 441 air conditioned rooms, green areas and exterior pools, conference rooms, bar and restaurant. It is certified by EMAS and ISO 14001. All inlet and outlet water flows are characterised, treated with appropriate innovative technologies, and reused to reduce overall tap water consumption and also the carbon footprint of water management through an integrated approach at demonstration level.

Eight different categories of innovative water treatment technologies together with a monitoring, control and decision support system will be integrated and demonstrated on the demonstration site: Electrochemical ozonation; 172 NM UV treatment, Solar photo-electro-Fenton process (SPEF); Electrocoagulation-flotation technology (EC-EFI); UVOX technology; Plimmer technology; Vertical Ecosystem and Smart air MBR. They provide cost effective solutions for a safe reuse of treated waste water.

Conclusions:

- The project is facing two key challenges: the importance of tourism economy and the characteristics of water scarcity of the Mediterranean area.
- demEAUmed is a critical platform for promoting the use of sustainable and innovative technologies in other Euro- Mediterranean tourist facilities in light of also the global tourism market.
- demEAUmed innovative technologies integration are expected to reduce the water and carbon foot prints of touristic resorts in the Mediterranean while facilitating access to green hotel labels and resulting in cost savings

neZEH TEAM



Project Coordinator

Technical University of Crete, School of Environmental Engineering
Renewable and Sustainable Energy Systems Lab, Greece



World Tourism Organization



Network of European Regions for a Sustainable and Competitive Tourism



Federation of European Heating, Ventilation and Air-conditioning Associations



Agency of Braşov for Energy Management and Environment Protection, Romania



Creara Consultores S.L., Spain



ENERGIES 2050, France



Energy Institute Hrvoje Požar, Croatia



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