



GUIDANCE AND SOLUTIONS
TO RAISE ENERGY EFFICIENCY
IN THE EUROPEAN
HOSPITALITY INDUSTRY



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MISSION

HOTREC is the umbrella Association of Hotels, Restaurants, Bars and Cafes and similar establishments in Europe, which brings together 44 National associations in 30 countries, and is the voice of the hospitality industry in Europe.

HOTREC's mission is to:

- Represent and champion its interests towards the EU and international institutions, as well as to all kind of relevant stakeholders;
- Foster knowledge sharing and best practice among its Members, in order to further promote innovation;
- Act as a platform of expertise for the European hospitality industry.



The One Planet Network is the network of the 10 Year Framework of Programmes on Sustainable Consumption and Production.



FOREWORD BY MR. ZURAB POLOLIKASHVILI, SECRETARY GENERAL OF UNWTO

I commend Hotels, Restaurants & Cafés in Europe (HOTREC) for this outline of how to increase energy efficiency and more sustainable resource use.

HOTREC: European Hospitality Industry Guidelines to Improve Energy Efficiency

As globalization and digitalization drive global change, travel and tourism now represents the unifying power of a more connected, informed and outward-looking world. More than 1.3 billion people per year travelling abroad have left almost nowhere in the world untouched by tourism. Europe, the world's leading region in innovation, connectivity and technological advances, is also the world's largest tourism market, with 8% growth in international tourist arrivals in 2017.

As the world population continues to grow, energy use is one of the key areas to address if we want to ensure truly sustainable economic growth as we move

towards the 2030 Agenda for Sustainable Development and its 17 Goals. Of these, Sustainable Development Goal 7 aims to ensure universal access to clean and affordable electricity. All economic sectors should contribute to efforts to achieve it.

Like any sector and almost any human activity, tourism has an impact on energy use. But as the world's third-largest export category, tourism has great responsibility and potential for positive change. Tourism can make a meaningful difference to protection of natural resources and must play its part in wider sustainable development planning. This means tourism businesses, policymakers and stakeholders encouraging clean energy – and at the same time taking real action to manage resources more sustainably.

In an effort to reduce buildings' energy consumption from current levels of around 40% of total energy consumed in Europe, 'nearly-Zero Energy Buildings' regulations have been introduced for all EU Member States to meet by 2020. To assist hospitality businesses to take action, I commend Hotels, Restaurants & Cafés in Europe (HOTREC) for this outline of how to increase energy efficiency and more sustainable resource use. It builds on Nearly Zero-Energy Hotels (neZEH), an online toolkit released in 2016 for the European hospitality segment to evaluate energy performance and identify options for energy efficiency.

UNWTO was a partner in neZEH and has also collaborated with HOTREC. HOTREC is a signatory of the UNWTO Global Code of Ethics, was an official partner of the 2017 International Year of Sustainable Tourism for Development developing guidelines to help the hospitality sector reduce food waste, and has recently applied to be a partner of the One Planet - Sustainable Tourism Programme, for which UNWTO is the lead agency.

We look forward to continuing working together to seize opportunities that the digital transformation provides to enhance sustainability and energy efficiency. I trust that these guidelines can inspire the hospitality segment in Europe to increase quality, efficiency, sustainability and competitiveness.

Zurab Pololikashvili

Secretary-General, World Tourism Organization (UNWTO)



FOREWORD BY MR. DANIEL CALLEJA, DIRECTOR GENERAL OF DG ENVIRONMENT, EUROPEAN COMMISSION

Tourism is one of Europe's most valuable economic assets. Europe is the world's prime tourist destination. In 2016, it registered more than 619 million inbound international tourists, corresponding to a share of about 51% of the global market for international travel. While the cultural and environmental quality of the European natural and cultural heritage is clearly a competitive advantage, it could be endangered by its own attractiveness.

At the same time, contributions of tourism to global CO₂ emissions range from 3.9-6% of human emissions. Where emissions from transport and the build environment account for more than 90% of mentioned emissions.

Climate change puts tourist destinations at more and more risk, therefore we need to invest in resilient infrastructure that is sustainable, liveable and designed, built and managed in resource efficient manner. It was accounted that for some building it takes 20-30 years takes to pay off the energy that was invested in only constructing them, not even counting the energy and resources used for producing the construction products.

We should build on the existing good initiatives to implement further action and to move our tourism industry to a more sustainable model. A model, where business operators, authorities collaborate and also empower the tourists e.g. labelling or other form of transparent and accountable information empowers consumers, who are increasingly aware about environmental and climate concerns.

In 2015, the EU adopted the Circular Economy package, which profiles a new development paradigm that aims at reconciling economic growth objectives and environmental sustainability, capitalising on the actions of everyone. The Commission is convinced that the transition to a more circular economy will help creating secure jobs in Europe, promoting innovations that give the European business industry a competitive advantage while providing a high level of protection for humans and the environment. The two most practical tools for such information with a direct impact on environment and energy efficiency in tourism are the Eco-Management and Audit Scheme (EMAS) and the EU Ecolabel.

EMAS helps tourism operators to improve the environmental performance of their operations, while the EU Ecolabel provides reliable guidance to both providers and consumers on sustainable tourism services. It helps businesses to make savings when it comes to energy consumption and improve the CO₂ footprint and overall to stand out amongst other hotels in terms of environmental excellence and corporate social responsibility.

These instruments therefore lead to a win-win-win situation, benefitting consumers, enterprises and the environment.

We support the initiative of HOTREC that is addressing energy efficiency issues and encourages hotels to become low-carbon business examples as it could contribute to generalising sustainable practices in the sector. Our common goal is to raise the awareness amongst the tourism operators and to provide them with the right tools and support to initiate more sustainable practices in order to ensure the sustainability of such vitally important sector.

We support the initiative of HOTREC that is addressing energy efficiency issues and encourages hotels to become low-carbon business examples.

Daniel Calleja

Director General of DG Environment, European Commission

MESSAGE FROM THE PRESIDENT AND FROM THE CEO OF HOTREC



WHAT BRINGS US TOGETHER?

Sustainability has become for all sectors alike a duty of care and even a responsibility to sustain future generations, which brings us together. As far as its environmental footprint is concerned, the hospitality industry has been considering three main pillars: the reduction of food waste, the development of energy efficiency and sustainable energy and last but not least the reduction of the use of water.

HOTREC & its Members have been taking actions to meet these goals through awareness raising campaigns and participation to projects, e.g. neZEH, the European initiative Nearly Zero Energy Hotels aimed to accelerate the rate of large-scale renovations of existing hotels into Nearly Zero Energy Buildings (nZEB). Most recently, in the framework of the circular economy, HOTREC developed guidelines to reduce food waste and develop food donations together with the European Federation of Food Banks and the support of METRO.

Today, considering that building account for nearly 40% of greenhouses gas emissions, HOTREC is happy to present and commit on a voluntary basis to measures and best practices aimed at improving energy efficiency in the hospitality sector, and promoting the use of sustainable energy.

To achieve this goal and make sustainable tourism a reality, HOTREC has brought together UNWTO, SMEUnited, EUROCOMMERCE, NECSTouR, EuroAce, the Alliance To Save Energy, METRO AG, the European Tourism Association and ETC to sign a charter thus demonstrating that only a multi-stakeholder approach can be part of the answer. We are thankful to our many project partners for their support and we look forward to keep building a better and sustainable Europe.

Susanne Kraus-Winkler
President of HOTREC

Jens Zimmer Christensen
President elect of HOTREC

Christian de Barrin
CEO of HOTREC

HOTREC SUSTAINABILITY CHARTER: PROMOTING THE USE OF SUSTAINABLE ENERGY AND IMPROVING ENERGY EFFICIENCY IN THE HOSPITALITY SECTOR



Tourism is the third socio-economic activity in Europe and a major driver for jobs and growth. With 1.9 million businesses active in Europe providing 11.5 million jobs, hospitality is the main constituency of the tourism sector, representing 80% of the total EU tourism workforce. Tourism is furthermore one of the economic sectors which contribute the most to advancing entrepreneurial and digital innovation. This economic and transformative dimension gives the sector the social responsibility and real opportunity to respond to climate change and reduce tourism's environmental footprint. While the sector already engaged in reducing food waste together with the European Federation of Food Banks, and in accelerating the rate of large scale renovations of existing hotels into Nearly Zero Energy Buildings (nZEB) through the European initiative Nearly Zero Energy Hotels (neZEH), it today takes another step ahead in favour of the use of energy efficient products and of sustainable energy.

Through the signature of the present Charter, HOTRECⁱ, UNWTOⁱⁱ, the European Travel Commission (ETC)ⁱⁱⁱ, the European Alliance of Companies for Energy Efficiency in Buildings (EuroACE)^{iv}, EuroCommerce^v, METRO AG^{vi}, NECSTouR^{vii}, SMEUnited^{viii}, the European Alliance to Save Energy (EU-ASE)^{ix} and the European Tourism Association^x intend to take this societal commitment one step further and to implement the voluntary commitments set-out below for the benefit of the broader tourism value chain and of society.

In particular, the signatories undertake to coordinate their efforts to promote the use of sustainable energy, to cooperate with the view to share best-practices on how to improve energy efficiency, and use renewable energy sources efficiently, with the overall objective of significantly reducing the industry's environmental footprint.

HOTREC commits to:

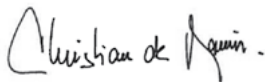
- Inform its member associations of existing actions developed by ETC, EuroACE, EuroCommerce, METRO AG, NECSTouR, SMEUnited, EU-ASE and the European Tourism Association in order for them to evaluate the possibility to either join them on a voluntary basis or to develop similar actions at local level which will help to improve energy efficiency in local businesses and therefore reduce greenhouse gas emissions by generating energy savings (and costs savings);
- Exchange with ETC, EuroACE, EuroCommerce, METRO AG, NECSTouR, SMEUnited, EU-ASE, the European Tourism Association and UNWTO existing best-practices on the implementation of sustainable energy solutions and set-up, when possible and/or feasible on a voluntary basis, facilitate the establishment of partnerships which will help to improve energy efficiency and reduce greenhouse gas emissions in local businesses;
- Promote energy efficient products and renewable energy solutions developed by ETC, EuroACE, EuroCommerce, METRO AG, NECSTouR, SMEUnited, EU-ASE, the European Tourism Association to its members which will allow volunteering local businesses to improve their energy efficiency, use adequate sustainable sources of energy and therefore reduce their greenhouse gas emissions.

ETC, EuroACE, EuroCommerce, the European Tourism Association, METRO AG, NECSTouR, SMEUnited, EU-ASE commit to:

- Inform HOTREC of its activities and products which are relevant to help improve energy efficiency and consequently reduce greenhouse gas emissions in the hospitality/tourism sector;
- Inform HOTREC of its existing programmes developed where the participation of the hospitality industry would be welcome;
- Provide to HOTREC relevant contacts at national level to help develop local partnerships on energy efficiency, sustainable energy use and the reduction of greenhouse gas emissions in local businesses.

UNWTO commits^{xii} to:

- Provide support to HOTREC to help hospitality businesses improve energy efficiency and use renewable energy;
- Share within its network of affiliate members information on the activities developed by HOTREC, which will help to reduce the tourism sector's environmental footprint;
- Inform HOTREC of its activities which would help local tourism businesses to implement cost-effective solutions to raise energy efficiency and/or reduce their greenhouse gas emissions.



Christian de Barrin
CEO of HOTREC



Zurab Pololikashvili
Secretary General of the World
Tourism Organisation (UNWTO)



Adrian Joyce
Secretary General of EuroACE



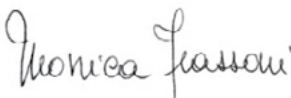
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ⁱ www.hotrec.eu ⁱⁱ <http://www2.unwto.org> ⁱⁱⁱ <http://www.etc-corporate.org> ^{iv} <https://www.euroace.org> ^v <https://www.eurocommerce.eu>
^{vi} <https://www.metroag.de> ^{vii} <http://www.necstour.eu> ^{viii} <https://smeunited.eu/en> ^{ix} <http://euase.net> ^x <http://www.etoa.org>

^{xii} As a specialized agency of the United Nations, UNWTO's institutional support is subject to the following: (1) The support does not represent a financial implication or commitment, in which case a specific agreement between UNWTO and HOTREC shall be signed; (2) It does not imply any exclusivity on the activities covered and both entities may collaborate on similar activities with other partners; (3) Both entities shall implement their activities in accordance with their respective rules, regulations and policies; (4) The use of the name, acronym, flag and emblem of UNWTO will need prior written authorization from the Secretariat and agreement to its terms and conditions (5) The support does not represent a waiver of the privileges and immunities of UNWTO. (6) It shall not be construed as establishing a joint venture, agency, exclusive arrangement, or other similar relationship implying any joint liability between UNWTO and HOTREC.

ENERGY EFFICIENCY AND HOSPITALITY: THE BIG PICTURE

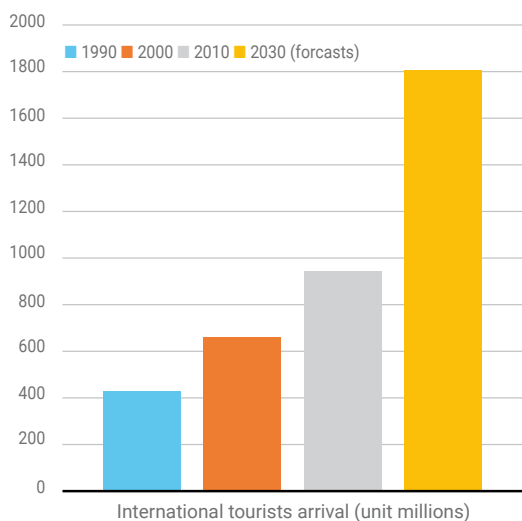
International consensus on the threats posed by global warming and climate change means that a major shift towards a sustainable low carbon and resource efficient economy is underway. As pointed-out by the Intergovernmental Panel on Climate Change (IPCC), global warming must be limited to a rise in global temperatures to no more than 2° Celsius compared to pre-industrial era's temperatures to avoid the most catastrophic climate change impacts. This will require strong governmental and industry actions to achieve a 50-80% reduction in global greenhouse gas emissions on average. As a result of this assessment, 195 countries around the world agreed in Paris in December 2015 to limit global temperature rises to well below 2°C, based on this global emission reduction target.

To fulfil its share of the Paris climate agreement objectives, the hotel industry will need to reduce its greenhouse gas emissions per room per year by 66% by 2030 and by 90% by 2050.

The International Paris Climate agreement will inevitably lead to a series of new public policies and regulations around the world, while all major industries will need to revisit their business models and practices to adapt to this new reality. Tourism and hospitality in Europe is not escaping this phenomenon, as already clear from the recent EU Directives on the energy efficiency of buildings which makes it mandatory for all new buildings, including hotels, to be Nearly Zero Energy Buildings (NZEB) by 2020, while even existing buildings may have to retro-fit car parks with electrical charging stations in the future.

It is currently estimated that tourism accounts for about 5% of global emissions, hotels being responsible for 20% of that share. In the context of an ever expanding world tourism market where international tourist arrivals will increase by 43 million a year on average between 2010 and 2030, the hospitality sector clearly faces a strong challenge to adjust to this reality, as the Paris agreement means that future growth in tourism cannot be met any longer by a growth in carbon emissions.

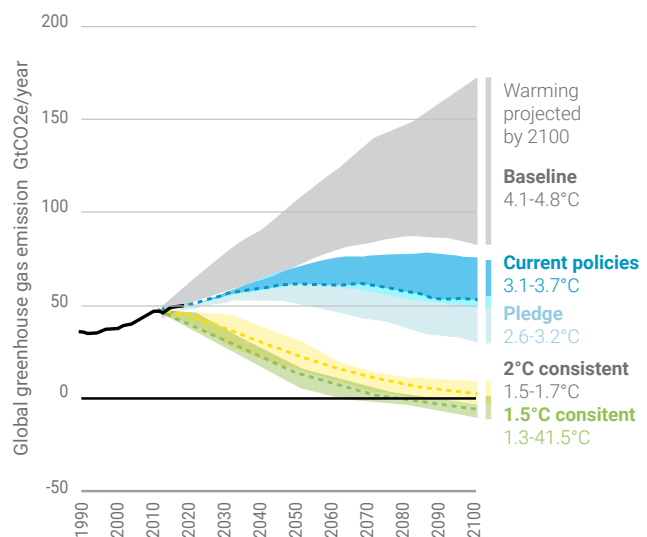
International Tourist Arrivals 1990-2030 (forecast)



*Source: UNWTO

Global greenhouse gas emission projections by 2100

The Paris agreement aims at limiting global temperature rises well below 2°C.



*Source: Climate Action Tracker

The International Tourism Partnership, a non-competitive platform for hotel industry leaders which includes 14 major international hotel chains, reckoned in a recent study that to fulfil its share of the Paris climate agreement objective, the global hotel industry will need to reduce its greenhouse gas emissions per room per year by 66% by 2030 and by 90% by 2050 compared to 2010 levels. Still according to the International Tourism Partnership, half of the reduction efforts will need to be achieved internally by 2030. This is a herculean task to which the hospitality sector has to prepare for.

HOTREC therefore decided to take further action to help the 1.9 million enterprises active in the hospitality sector (90% of which being micro-enterprises) adopting a robust energy policy which will result in lowering their emission levels while generating cost-savings.

This brochure presents the key aspects of a good energy management policy. It also contains guidance to generate energy savings with little investments and identifies long-term energy saving solutions requiring more important investments, while presenting the HOTREC charter to promote the use of sustainable energy and improving energy efficiency in the hospitality sector. Finally, this brochure presents the UNWTO's nearly Zero Energy hotels (NeZEH) initiative, which HOTREC fully supports, together with a selection of best-practice initiatives across Europe and examples of energy efficient hotels and restaurants, all showing that the hospitality sector is already accompanying this major shift towards sustainability.

These guidance, if implemented, shall result in major cost-savings, as energy accounts for 5% to 10% of total costs in the hotel industry, therefore increasing hospitality businesses' economic sustainability and profitability. This also offers a unique opportunity to communicate to clients the positive actions hospitality businesses are taking, therefore responding to an increasingly important request from consumers across Europe for a more sustainable tourism.

The scale of the reduction in emission levels that hospitality businesses will be required to achieve by the middle of the century represents a gigantic task, especially for SMEs and micro-enterprises in the tourism sector, justifying a need for EU and public funding and incentives. However, by implementing early a robust energy efficiency policy, hospitality businesses can turn this challenge into a clear economic and marketing opportunity, therefore giving them a major competitive advantage.

“One of the world’s largest economic sectors, tourism is especially well-placed to promote environmental sustainability, green growth and our struggle against climate change through its relationship with energy”

*Ban KI-MOON,
Secretary General of the U.N,
World Tourism Day 2014*

5 good reasons why a hospitality business should have an energy efficiency strategy:

- Good energy management practices generate immediate cost-savings
- Medium term investments help raising long-term profitability
- A good energy monitoring allows to reward loyal customers with sustainable behaviours
- It improves your reputation with customers and gives you a competitive advantage
- It fosters a positive image of tourism destinations and help preserving tourism destinations from catastrophic climate change impacts on tourism

1. Directive 2010/31/EU of the European Parliament and of the Council of 19 May 2010 on the energy performance of buildings

2. See agreement of the European Parliament and of the Council on the proposal to amend Directive 2010/31/EU on the energy performance of buildings and Directive 2012/27/EU on energy efficiency

3. Tourism Towards 2030 - Global Overview, UNWTO

4. Hotel Global Decarbonisation Report, International Tourism Partnership, November 2017



KEY ASPECTS OF A GOOD ENERGY MANAGEMENT POLICY

However well a building hosting a hospitality business is constructed, a constant commitment is needed to raise both short and long-term energy efficiency and obtain continuous economic returns. Such efforts can only be sustained if a hospitality establishment adopts a holistic and systemic energy management policy. This chapter explains the key aspects which should be part of it.

1. Appoint a responsible person and a dedicated team

Energy efficiency and sustainability is a shared responsibility between all those who work in a hospitality establishment. However, it is most important that one person is given overall responsibility to ensure that all aspects related to energy efficiency in the business are dealt with satisfactorily and coherently. The responsible person should coordinate the energy management policy and should supervise a dedicated team in charge of monitoring energy consumptions, implementing procedures to raise energy efficiency and/or decrease unnecessary consumption and collect data to evaluate the progresses achieved.

2. Assess your energy profile

The starting point of any energy management policy consists in determining the energy profile of the business. This requires to monitor energy consumption by tracking energy bills over time. When possible, sub-metering can help to monitor more precisely which zone or building system use more energy. This assessment will help assessing the performance of the building/business, of the equipment and systems and allows to create a baseline against which future objectives to reduce energy consumption and raise energy efficiency will be assessed. This energy profile helps evaluating what are the best possible technical solutions and the possible returns on investment.

3. Frame your energy policy

The energy policy is a key document which explains how the relevant issues related to the energy usage of the business/building will be managed in order to raise energy efficiency and decrease energy consumption.

It shall be a simple document containing the following aspects:

- Clear and measurable energy performance goals to be achieved;
- Target dates for achievements of the goals;
- An action plan with a roadmap for achievements of the goals, including the technical steps to be implemented and the allocated resources (human, financial);
- All relevant features should be included: from the daily operational routine to possible future interventions on building equipment, systems or thermal insulation.

In cases where the action plan contains measures requiring investments, the issue of the funding should be considered at this stage already. A regular (i.e. annually) update is recommended to take into account recent achievements, change in energy patterns, and new priorities.

4. Train and engage your staff

Active participation of the staff and management is an essential aspect of any strategy to increase energy efficiency and reduce consumption. Behavioural change is the most cost-effective way and a major step to reach objectives in this field.

Staff information and training on energy efficiency and sustainability needs to be provided. This will help ensuring that every staff will be equipped to assist in implementing the energy policy and achieving the energy performance goals when carrying-out daily operational activities. This is essential to ensure that the hospitality business make the most of the investments made and to eliminate all avoidable energy losses.

Staff training has a direct and immediate positive impact on energy consumption and efficiency. Besides, it also has a highly positive inspirational impact on staff given the clear societal commitment it entails, leading to additional professional motivation. Information and training should ideally cover various fields, such as: awareness of the environmental impact of the business activities, how to contribute concretely to making energy savings and raising energy efficiency during daily activities, monitoring savings, how to communicate to guests the enterprise's efforts in energy efficiency and how guests can help to support sustainability, etc. This could be part of HR planning for employees.

5. Regular maintenance of equipment

It is essential that all the business/building's technical equipment are regularly inspected, serviced and maintained. Some of this will be carried out under regular maintenance agreements but simple inspections may be carried out by staff during their normal duties. A regular servicing and maintenance of the business/buildings technical equipment is crucial to ensure that energy performance remains high.

6. Implement energy efficient operational practices without any costs

Many improvements can be brought at no costs simply by implementing energy efficient practices into daily operational activities affecting guest rooms, kitchens, laundry, front office, etc. A good energy management policy will ensure that these practices are concretely implemented. Examples of such energy efficient operational practices are provided in this brochure (see pages 13-16).

7. Engage your guests

Guests have an important role to play to decrease energy consumptions. Therefore, it is important to communicate to them that the hospitality business they choose is committed to sustainability and energy efficiency, and how can they easily contribute to the goal of having a more sustainable hospitality experience.

A good energy management policy will consider how to engage guests by raising their awareness about the environmental/energy policy of the business and will encourage them to adopt simple sustainable actions about heating/cooling, window opening, switching lights off, electricity, etc. A variety of communication means may be used (e.g. leaflets in the room, stickers on appliances or switches), as long as the information is not too technical.

8. Evaluate progresses

Based on the energy profile established initially, and on the actions taken as part of the energy management policy, it is important to evaluate progresses made towards achievements of the goals set in the energy policy. It will imply measuring results so far, analysing current performances and compare them to the baselines. This will allow to evaluate the effectiveness of your action plan, review it accordingly and share with staff best-practices.

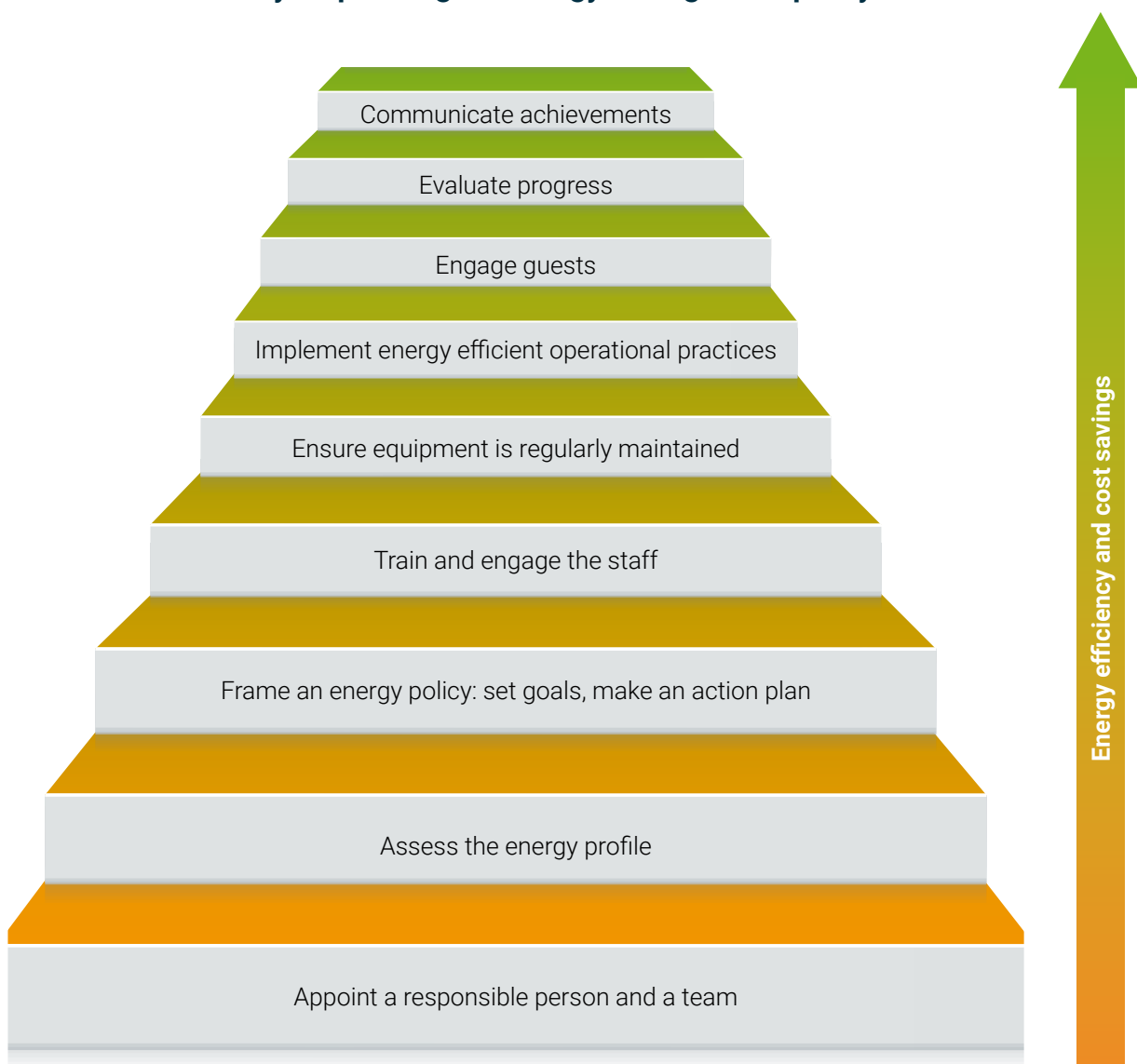
9. Communicate your achievements

Recognising achievements is essential for two reasons:

- it further engages the staff as it sees that efforts are yielding results;
- It helps gaining a competitive advantage by marketing you performance.

It is therefore advised to adopt a clear communication strategy to inform guests and staff about key successes in making the hospitality business more resource efficient and sustainable. This is also an opportunity to gain additional exposure in the media and to distinguish further the business in a very competitive market, therefore giving the potential to attract new clients and gain a competitive advantage that will generate returns on investments.

The 9 key steps of a good energy management policy



TIPS FOR ENERGY SAVINGS WITH LITTLE INVESTMENTS

Many improvements to energy efficiency can be brought at no or very little costs simply by implementing good energy practices into daily operational activities. Active engagement of the staff is critical to improve energy efficiency and make energy savings. Therefore, it is important to raise staff's awareness about these aspects to ensure that they will be applied.

This chapter provides a non-exhaustive list of tips which will help hospitality businesses generating energy savings at low or no costs. While some advice may apply only to hotels, other apply to both hotels and restaurants. To facilitate implementation, this list is divided by the types of area that one can find in a hospitality establishment.

1. General tips for hospitality establishments

- Exterior lightening should be turned off during daylight hours.
- Make use of natural sunlight: artificial lights can be turned off when ambient light level is sufficient.
- Keep lighting systems clean.
- Label switches to avoid having them turned on un-necessarily.
- Use low-energy lighting, in particular recent T5 tubes, compact fluorescent tubes or LED maps.
- For replacement of electrical equipment, use products with EU ecolabel or the top energy label classes whenever possible.
- All equipment not used should be turned-off. Be aware that some equipment might actually be on stand-by and can be fully turned-off.
- Doors and windows should be kept shut when the heating/cooling system is on.
- External doors and windows should close properly or be serviced. Close doors to un-heated or un-cooled areas.
- Thermostats should be set at a reasonable temperature for the season. In particular do not set them too low in summer (e.g. 22-24°C) when air conditioning system is on.
- Do not heat/cool low traffic areas, hallways or unoccupied rooms.
- Do not operate the heating and cooling systems simultaneously.
- In summertime, a free cooling system can be obtained from natural ventilation when the outside temperature is lower than inside temperature.
- Air-conditioning should be turned-off in banquet hall, function rooms or restaurants as soon as they are closed.
- Back of house temperature can be set at a lower level than front-house temperatures.
- Regularly monitor energy consumption of your equipment. Consider installing electricity meters to monitor energy use more precisely.
- Adjust air-ventilation to avoid over-ventilation (which increase energy consumption) and under-ventilation (which negatively affects health and comfort).





2. Guest rooms in hotels

- Room thermostats should be set to correct levels to avoid the need to open doors/windows.
- In unoccupied rooms, lights should be switched-off.
- In unoccupied rooms, windows and curtains should be closed.
- Cleaning and housekeeping staff should take advantage of natural daylight (with curtains open) when cleaning/servicing the room, if ambient light level is appropriate.
- When leaving the room, cleaning and housekeeping can further help reducing energy consumption by routinely checking the key energy related aspects of guest rooms. See specific separate box for a list of items to be checked.
- During unoccupied periods, the fan coil may operate with time intervals of fifteen minutes to preserve the balance between energy savings and the prevention of moisture.

Special focus on routine checks by cleaning and housekeeping staff in guest rooms:

- Doors and windows should be closed.
- TV should be off and not only on stand-by.
- Lights must be switched-off.
- Temperature/fan speed/thermostat settings shall be appropriate for the room.
- Curtains of windows exposed to sunlight should be closed in summertime.
- All power in the room should be off when guests have checked-out.



3. Kitchen

- Kitchen appliances should be turned-off when not in use.
- Cooking appliances should be regularly cleaned, serviced and maintained.
- Run dishwashers only when fully loaded.
- Refrigerators should be located away from high temperature areas. Good ventilation and lower ambient temperature reduce refrigerators' energy consumption.
- Fridges, freezers and mini-bars should be defrosted regularly. Inform maintenance of any fridge doors that do not close properly.
- Fridge doors should be kept closed as much as possible.

- Fully load a cooling chamber before starting filling-in another one. This will avoid unnecessary energy consumption.
- For an optimal functioning of cellar cooling equipment, ensure that cellar doors are closed and that there is no heat producing equipment in the cooled cellar.
- Cooking pans and pots should be adequate to the size of the fire.
- When cooking, if recipe allows, cover pans and pots to avoid heat losses.
- If recipe allows, turn-off stove to finish cooking with residual heat.
- Do not store hot food in cooling chambers.
- Fully list (and label) the content of your cooling chamber. This will avoid opening it (and therefore save energy for cooling) to check what is inside and will help you controlling better expiry dates of products, therefore avoiding food waste as well.
- For replacement of old refrigerators/freezers, choose if possible A++ units (for information, the energy labelling in the EU will evolve and A++ or A+++ will be replaced by A grades only. Double check that the energy label corresponds to the most energy efficient system).
- For electric chafing dish heaters, check their operation times and think about installing a programmable clock to their plug. This will avoid energy consumption outside of serving periods.

4. Reception/front office

- Entrance door should be closed to avoid air infiltration / loss of heat.
- Shut down computers completely at the end of the day (no stand-by).
- For computers, set screensavers, so that screen turns off after 5 or 10 minutes.
- Old equipment tend to consume more. At the end of their lifespan, change them to new and more energy efficient ones.
- Provide information to guests on the hospitality business energy policy and how they can contribute to make the service more sustainable.



5. Laundry

- Washing machines and dryers should be operated with full loads (to minimise number of operations).
- Water temperature/amount should correspond to manufacturer's instructions.
- When possible, wash at lower temperature and air-dry linen.
- When the laundry is not in use, lights and ventilation/air conditioning should be turned-off.
- Ensure regular maintenance of laundry machines. Check and clean regularly dryers filters.





6. Swimming pool / Spas

- Use a pool cover to reduce evaporation in summer and heat loss in winter. When not in use, installing a thermal cover allows to make further savings.
- Use large water jets on a timer to make them run at regular intervals instead of continuously.
- Hours of operation of water slides should be controlled, in order not to run all day.
- Proper functioning of heaters can be made through regular checks of the water temperature

7. General maintenance of HAVC, steam pipes, boilers and calorifiers



- For proper functioning of the HAVC equipment, have a regularly updated manual with operating methods and instructions.
- Regular maintenance and servicing of heating and air-conditioning equipment is fundamental. Particular attention should be paid to the following:
 - Proper activation of control valves.
 - Clean monthly filters of ventilation and air-conditioning in guests room and public areas.
 - Clean annually fan coil units, air handling units and cooling units.
 - Clear and check cooled air ductings. Seal leaks.
- Regular maintenance and servicing of steam pipes (e.g steam ovens, dryers, washing machines, etc.) helps them maintaining efficiency.
- Check and service your boiler regularly and beware of leakage of fuel or smoke or CO emissions. Regularly check their pipes insulations.
- Do not over heat hot water: 55°C-60°C is ideal to kill legionella bacteria and avoid un-necessary energy consumption.
- Check calorifiers regularly.

For further information and advice

This list of tips and recommendations has been elaborated on the basis of publications from the UNWTO NeZEH initiative, the Hotel Energy Solutions, the European Commission EMAS reference document on best environmental management practice in the tourism sector and the materials developed by HOTREC's network of 44 national hospitality associations in Europe.

This list is not exhaustive. Hospitality businesses wanting to learn more about how to further reduce their energy consumption and improve energy efficiency should contact their relevant national hospitality association for advice (a list of these associations is available at the end of this brochure). Further advice can also be obtained from energy audit companies or from specialised brochures. An indicative bibliography is available at the end of this brochure.

LONG-TERM ENERGY SAVING SOLUTIONS REQUIRING INVESTMENTS

Many tips can be implemented in daily operations at no or little costs to deliver significant energy savings on the short term. However, major additional energy savings can be further realised on the medium to long-term through an intelligent use of technologies. In order to achieve significant reductions on CO2 emission on the long-term, as induced by Paris Climate agreement signed by 195 countries around the world, hospitality businesses will also need to contemplate, and prioritise, further investments in energy savings solutions.

This chapter provides a non-exhaustive overview of the key aspects that can be considered in a medium to long-term strategy to raise energy efficiency, maximise energy and financial savings and reduce overall CO2 emissions.

1. Upgrade the building's thermal performances

The first element to consider to further raise energy efficiency and decrease overall energy consumption on the long term is to invest in solutions that will increase the building's overall thermal performances. This is all about raising insulation, decreasing thermal shocks and avoiding infiltrations.

Windows insulation

Windows insulation is a key aspect that can easily generate savings which will rapidly offset initial investments. A hospitality business that has simple glazing windows can save 20% on heating bills by replacing the windows with doubled glazed units with high insulation properties.

Wall insulations

Wall insulations is an important element of the building's thermal performances, especially in older buildings. A hospitality business with cavity walls can improve the wall's insulation by filling the cavity with insulation, generating up to 35% energy savings on space heating. Several technical solutions exist in this case.

External walls insulation is another alternative to raise the building's thermal performances. In this case, an additional layer of insulation is placed on the exterior of the wall. It helps reducing temperature variations and eliminate cold bridges at the junction of walls, floors and openings. This solution is often more costly, but deliver excellent results in terms of energy savings.

Additional insulation can also be placed on the interior of the walls, but such a solution reduces the space available inside the building and is not always achievable, because of thermal bridging issues.





Roof insulation

In any building, an important part of the heat is lost through the roof. Improving roof insulation is therefore an efficient way to make important and long-term energy savings. Although a costly investment, improving roof thermal insulation will generate returns on investments on the medium-term. When combined with external walls insulation, this measure can result in up to 50% savings on space heating.

Reducing thermal shocks

In summertime, external temperature and sun exposure may raise temperature inside the building, therefore raising cooling needs. If this is the case, such needs can be reduced through the installation of shading devices for exposed windows. Moreover, solar shading can also be achieved by planting trees or local plants.

Reducing air infiltration through automated doors

The positive effect of a good building insulation can be partly offset by the impact of unwanted air infiltration. Besides usual prevention tips (e.g. replace leaky joints and ensure that weather stripping on windows and doors are in order), the installation of automated door will have a beneficial impact.

2. Optimise HVAC systems

A well-functioning and optimised HVAC (heating, ventilating and air-conditioning) system is a critical aspect to maximise energy efficiency and reduce energy consumption in any hospitality business. All aspects of the HVAC can be enhanced to reach high efficiency levels. Installing products with top energy labels will allow to achieve the best results in decreasing energy consumption.



Heating system investment

Install a high efficiency equipment for space heating, water production and/or space cooling. Older boilers tend to over-consume, while electric heating is costly and not energy-efficient. Up to 30/35% energy savings on space heating can be reached through the renovation of an old (more than 10/15 years) heating system. Low temperature heating systems (e.g. working with low temperature flows systems) deliver excellent results in energy savings. Good insulation of boilers and pipes should be ensured to maximise return on investments and energy savings.

Cooling system investment

Install a high efficiency (centralised or semi-centralised) cooling equipment (some equipment can deliver both space heating and cooling). Older cooling systems over-consume. Installing recent energy efficient systems can help delivering major energy savings. Thermal insulation of pipes is necessary and can be done when installing/renovating the cooling system.

Regulation of heating/cooling needs

The installation of thermostatic controls (i.e. in hotel rooms) helps deliver savings through individual controls of the needs. Ideally, this should be installed together with an automatic control of the heating (and air-conditioning) system. Return on investments for such solutions is rather quick. Occupancy-linked controls and automatic devices to switch on/off heating/air-conditioning helps regulating better the energy consumption.

For businesses where different building areas have different building needs, the installation of a zone regulation for heating/cooling can be considered. This will allow to set different temperatures for different zone and further reduce energy consumption, while maximising comfort (e.g. 20-21° for occupied hotel room, but lower temperature for unoccupied conference rooms).

Ventilation control

When renovating the ventilation system, ventilation control can be optimised through the installation of outdoor air supply control or economiser cycle (which use outdoor cooler air to reduce cooling needs and save air-conditioning needs).

3. Investing in equipment to raise control of lighting and water systems

Controlling properly the lighting and water systems help raising cost-savings through a decrease of electrical and water consumption. Specific systems can be installed to achieve such control.

Investments in the lighting system

Lighting zone control helps optimising energy consumption. This can be made possible through the installation of equipment which automatically switch-on/off lights of some parts of the building at pre-set time, or when a room is occupied/un-occupied. Some devices also dim light when there is enough natural daylight in a room.

It is also possible to optimise (at the conception stage) building design and interior layout to maximise use of natural light and minimise impact of glazed areas on heating/cooling needs.

Investments to better manage water consumption

Hotel bathrooms can be equipped with low-flow showerheads. Moreover, hot water closed loops help making saving, as the hot water used returns to the water heater. It is also possible to install equipment to use heat waste from air-conditioning to pre-heat water.

When the hotel structure requires long pipe runs for the hot water supply, think about installing local instant water heaters (this should be considered when installing/renovating the hot water system).





4. Consider heat-pumps, geothermal heating/cooling and renewables

When renovating the heating/cooling system, consider installing air heat pumps or equipment that use renewable energy sources of energy such as ground water pumps, solar panels, biomass, on-site geothermal energy generation etc. Such sources can be used for all-kind of energy needs. For instance, solar panels can be connected to boilers for heating water and/or for producing basic electrical needs of a hospitality establishment. Eco-labelled equipment and products help achieving high savings goals.

For further information and advice

This list of areas where energy savings can be made through (longer-term) investments has been elaborated on the basis of publications from the UNWTO NeZEH initiative, the Hotel Energy Solutions, the European Commission EMAS reference document on best environmental management practice in the tourism sector and the materials developed by HOTREC's network of 44 national hospitality associations in Europe.

This list is not exhaustive. Hospitality businesses wanting to learn more about how to further reduce their energy consumption and improve energy efficiency should contact their relevant national hospitality association for advice (a list of these associations is available at the end of this brochure). Further advice can also be obtained from energy audit companies or from specialised brochures. An indicative bibliography is available at the end of this brochure.

Focus on the UNWTO Nearly Zero Energy Hotels (neZEH)

The Nearly Zero Energy Hotels (neZEH) project has created an online toolkit released in 2016 for the European hospitality segment to evaluate energy performance and identify options for energy efficiency.

Buildings consume 40% of the total energy and emit 36% of greenhouse gases in the European Union (EU), therefore represent a high potential for energy savings. Accommodation is responsible for 21% of the tourism sector's CO₂ emissions. While there is immense potential for savings, the hospitality sector's fragmented nature poses challenges to seizing it. In response to its commitments on energy efficiency and climate change (2020 and 2050 targets), the EU has committed to transform Europe's building stock into Nearly Zero Energy Buildings (nZEB). The hospitality sectors of all EU Member States have to comply with nZEB directives by 2020.

The neZEH initiative, supported by the Intelligent Energy Europe Programme of the European Commission, was created to assist Europe's hotels in this process by reducing their carbon footprint and energy use to Nearly Zero Energy levels. A ten-partner, pan-European research consortium developed neZEH by building on the World Tourism Organization (UNWTO)'s successful Hotel Energy Solutions (HES) project, concluded in 2011.

HES established the online e-toolkit that neZEH has adapted for the specific purpose of allowing European hotels to assess how close their property is to compliance with nZEB regulations, and what improvements are needed. The e-toolkit mainly targets SME hotels, which represent 90% of the European hospitality market, but can be used by all types of enterprise. Aside from the e-toolkit, the initiative has also provided hotels with tailored technical advice and practical training, shared good practices, and undertaken capacity building related to energy renovations.

Between 2013 and 2016 the initiative implemented renovation projects for 16 Nearly Zero Energy Hotels across seven EU member states. Championing an approach that can lead to a reduction in energy consumption of up to 70%, these innovators serve as an inspiration towards a more sustainable hospitality sector.

SELECTED EXAMPLES OF ENERGY EFFICIENT HOTELS AND RESTAURANTS

Austria: Hotel Mondschein (Vorarlberg)

<http://mondschein.com>

The Hotel Mondschein only uses LEDs as light sources and “green” power plugs. The establishment provides powerless minibars without fridge, therefore reducing energy consumption. Instead, the hotel offers free room-service in order to provide cold drinks and snacks. The hotel regularly measures the air-tightness and operates an energy-monitoring-system. When leaving the guest-room the power is deactivated apart from the green plugs. The building features a 28 cm thermal insulation and in addition to the exterior insulation a triple glazing. Hotel Mondschein has the following certifications/labels: klimaaktiv, Austrian Eco-Label (green hotel), EU Eco-Label.

Austria: Café Corso (Carinthia)

www.corso-dafranco.at

Café Corso recently topped up and extended the existing building by adding more than two additional floors with prefabricated wooden building elements. In order to keep the thermal needs/heat consumption as low as possible, the building envelope is insulated by 20 to 40 cm EPS or cellulose. For the heating system, Café Corso payed special attention to internal heat sources. For the water/water heat pump the heat from the lake (Wörthersee) is used. The establishment uses ventilation with heat-recovery. Exhaust air from kitchen and pizzaoven is used as room air heating via heat exchangers. This building project has been constructed/renovated according to the “klimaaktiv-gold“-building standard and meets passive house standards. Café Corso carries the following labels: klimaaktiv, Austrian Eco-Label (green hotel)

Austria: Skirestaurant Masner (Serfaus in Tirol)

[https://www.serfaus-fiss-ladis.at/en/winter/bergrestaurants/skih%C3%BCtte+masner+\(winter\)_infrastructure_97707](https://www.serfaus-fiss-ladis.at/en/winter/bergrestaurants/skih%C3%BCtte+masner+(winter)_infrastructure_97707)



The Skirestaurant Masner located at Serfaus in Tirol invested in energy efficiency through the installation of 120m² solar panels support the heating of water and room air. Together with a highly insulated envelope of the building and a ventilation system with heat recovery, the annual heating requirement is reduced to a quarter compared to a conventional building.

Belgium: restaurant Den Hoorn (Kapelle-op-den-Bos)

<https://www.brassieriedenhoorn.be>

Yves De Sloovere, manager at Den Hoorn, started investing in energy efficiency using a monitoring system and the services of a consultancy specialised in energy. With the collected data and the advice of the expert Yves De Sloovere implemented different energy efficiency measures:

- A complete switch to LED-lighting inside and outside the building, resulting in 20% energy reduction.
- A change over from cooking with gas to induction, resulting in 25% energy reduction and less maintenance and cleaning.
- A central flow regulated cooling system with a cooling compressor with frequency control that resulted in 30% energy reduction.

In the future, other actions are foreseen to further raise energy efficiency and generate energy savings, such as the optimization of the heating and hot water system or the installation of super isolated windows.



Denmark: Crowne Plaza (Copenhagen)

<http://responsiblehospitality.dk/Default.aspx?AreaID=3>



Hotel Crowne Plaza Copenhagen Towers is one of the world's leading sustainability hotels and is awarded with Green Key.

The hotel opened on 16 November 2009 as Denmark's first CO₂-neutral hotel and with the Nordic region's largest solar cell system integrated into the south facade. It is part of the Copenhagen Towers project. At the beginning of 2014, Crowne Plaza Copenhagen Towers merged with the Bella Center Group, currently BC Hospitality Group. The hotel attracts many students, business tourist and journalist that is interested in the sustainable hotel.

Everything in the hotel - from the custom-made Danish design furniture to Danish organic cuisine and the hotel's energy consumption - not only gives the environment, but also the guest a priority. So guests can enjoy fully their 4-star stay with green conscience.

Denmark: Restaurant BARK (Copenhagen)

www.restaurantbark.dk

BARK is nestled inside the beautiful atrium of Hotel Crowne Plaza Copenhagen Towers, among 60 full-grown trees and no less than 4,500 green plants. All energy comes from renewable sources, such as the facades of the building, which is covered with solar panels. The heating and cooling groundwater installation means that the building is using 65% less energy compared to other similar structures. The chefs rely on local ingredients, handpicked for quality and sustainability. Food is prepared on energy efficient induction stovetops and served by a staff, which is trained to be passionate sustainability ambassadors.



Denmark: Green Solution House (Bornholm)

<http://www.greensolutionhouse.dk/en/>



Green Solution House is a newly renovated hotel on Bornholm with 4 stars and with environmental label Green Key. It wants to inspire visitors by offering a comfortable stay in a healthy and creative environment. The building and landscape show a holistic approach to sustainable design, emphasising regenerative solutions including healthy indoor climate, renewable energy sources, active materials and recyclability.

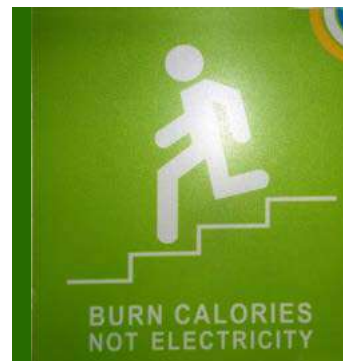
The design of the building itself is based on several parameters to show a holistic approach to sustainability. The building is certified to the standards of the recognised German Sustainable Building Council (DGNB), based on the criteria of the Active House vision and inspired by the Cradle to Cradle® framework. When choosing materials and products for Green Solution House they have to meet or exceed high standards.

France: The Solar Hotel (Paris)

<http://www.solarhotel.fr/>

The Solar Hotel Paris has chosen to be the first green, affordable and activist hotel. Since 2009, it has involved its 34 rooms in a greening process: the carbon footprint is assessed and worked to obtain green certifications (European Ecolabel & Green Key). The hotel aims to prove that ecology means investing, not spending.

The hallways, lounges and rooms are all exclusively lit using energy-saving LED and fluorescent compact bulbs. The landings are equipped with motion sensor lights. Some of the outdoor lighting is powered with solar panels. The goal is to reduce electricity consumption by 75%. Thanks to its energy provider, the hotel only buys 100% renewable electricity.





France : Hôtel Martinez (Cannes)

www.hotel-martinez.com

Between 2016 and 2018, the hotel implemented many actions to reduce its energy consumption. They installed more energy-efficient equipment, such as a more efficient water chiller for the air conditioning of the entire building and more efficient motors for the elevators, which are also capable of energy recovery. The lightning of the building's façade has been equipped with LED. During renovation works, low-energy light bulbs have also been installed throughout the entire hotel, the insulation of exterior walls has been improved and the brightness of the corridors' lighting is dimmed by half automatically by night and by day with a motion detector. A temperature management system has been put to control the rooms' temperature, depending on whether they are occupied or not.

An energy recovery system has also been installed on the exchanger of the water chiller to preheat the domestic hot water used by their clients, which allows them to reduce substantially their gas consumption.

As part of the Departmental Climate Plan, the Hôtel Martinez received in November 2017 a Climate Energy Trophy in the "Development and Creativity" category by the president of the departmental council. The Hôtel Martinez has been Green Globe-certified since 2010 and has adopted more sustainable practices in all of its activities. Regarding water consumption, the clients can choose the frequency of cleaning for their bed linen and their towels. The hotel installed next-generation faucets equipped with aerators in the bathrooms and dual flush toilets. The hotel is also largely engaged in waste sorting, recycling and partnership with charitable organizations. In 2015, the hotel also invested in a dehydrator of organic waste, which allows them to reduce organic waste volume by almost 90%. In regards with safeguarding biodiversity and safeguarding bees in particular, the hotel sponsors a beehive located in the Gorges de Daluis (Alpes-Maritimes) with the association "Un toit pour les abeilles" (A roof for bees).

France: NOMAD Hotel Le Havre Gare (Le Havre)

www.nomad-hotels.com



Environment is a priority at NOMAD Hotels, with the objective to reduce as much as possible the environmental footprints of their hotels, from their construction until their exploitation. Their air handling unit is equipped with an energy recovery system. The parking area is illuminated with LED light poles. The domestic hot water is heated by two complementary systems: 120 m² of solar panels on roofs and high-temperature heat pumps. By design, the elevators were also equipped with an energy recovery system. To prevent the loss of energy from the building fabric, the windows are double glazed and the concrete walls and the insulation are very thick.

Opened in 2015, the Nomad Hotel Le Havre has been designed to be environmentally responsible.

To reduce their potable water consumption, WC in hotel rooms and communal areas are supplied with filtered rainwater, they are also equipped with dual-flush toilets and mixing faucets. The hotel uses recycled and recyclable materials such as PEFC-certified timber for their floor and furniture, tempered glass shower enclosures with recyclable aluminum joinery and recycled fishing net for their carpet. Their employees are also made aware of good practices related to water and energy consumption.

Their clients are also motivated to be part of their environmental policies. The price of their stay can be reduced before their arrival if they choose not to use air conditioning, not to change their bed linen and towels daily and not to have their room cleaned every day. During their stay, they can monitor their energy and water consumption with a digital tablet.



Germany: Gutshof Ziegelhütte (Edenkoben)

<https://www.gutshof-ziegelhuette.de>

The Gutshof Ziegelhütte restaurant uses a combination of heat and power plant with photovoltaic - two techniques of energy generation that complement each other perfectly. While the combined heat and power plant runs from about October to March, the photovoltaic system only produces a couple of kilowatt hours of electricity at this time of the year. In the period from April to September, the photovoltaic system covers the needs of electricity. Since no heating is needed in the summer, the combined heat and power plant can only run about 3-4 hours per day, in order to fully charge all the buffer tanks. This covers the need of hot water in the restaurant and hotel. Electricity surplus is buffered in the in-house electricity storage (capacity: 10kW).

Germany: Restaurant “Lippeschlößchen” (Wesel)

www.lippeschloesschen.de

The Lippeschlößchen restaurant has installed three combined heat and power plants and a thermal water treatment; LEDs were installed in the whole restaurant area and motion sensors in the outside area to reduce energy consumption. These equipment have allowed to raise significantly the restaurant’s energy efficiency



Italy: Cyprianerhof Dolomit Resort (Tires)

<https://www.cyprianerhof.com/en/hotel-in-the-dolomites/1-0.html>

The Cyprianerhof Dolomit Resort has made it its goal to contribute to a sustainable and clean environment. That is why, it has chosen the European eco-label. The Hotel works together with its employees and its suppliers on a daily basis to comply with the 85 criteria of the European eco-label.



The Hotel asks its guests to remember to turn off the lights whenever they leave their room. Guests should open the window completely for five to ten minutes and then close it again. This ensures good air and helps to save energy. Guests are asked to let the Hotel know, if they notice leaky faucets, toilets, showers, etc. and not to throw any waste into the sewer. Guests are asked to put the towels on the floor, if a change is desired. The fewer the changes, the more the guest supports the Hotel to save energy, water and detergents. Guests should not throw waste or hygienic articles into the toilet, but use the intended waste container instead. Furthermore, they should separate paper, glass, cans and biological waste by throwing it into the respective container provided by the Hotel. Guests should turn off the tap, if they don't need any more water. By the way: well a quarter of the water is used by toilets.

The Hiking Hotel Cyprianerhof is located in the heart of the Dolomites, a UNESCO World Natural Heritage Site, and is surrounded by woods, meadows and nature. The environment is the Hotel's greatest asset and therefore, its protection is of utmost importance to the Hotel. The Hotel's efforts to conserve energy as well as resources have been rewarded with the EU Eco-label award.

Italy: Grand Hotel Palace (Ancona)

www.grandhotelpalaceancona.com



Beautifully situated on the sea front and in Ancona city centre, within walking distance from boarding terminal, Grand Hotel Palace is an example of innovation and tradition where luxurious furnishings join the comforts of technology. A wise restyling has transformed an entire building from the first 800 in a 4-star business and leisure Hotel with 39 ways to sleep and 4 variations of luxury. Comfortable and functional staying. Grand Hotel Palace refinement has been thought with the main idea of realizing a technological and ecofriendly space, focusing on energy efficiency, sustainability and easy access facilities for customers and professionals. For this purpose have been used exclusive materials and advanced technologies like domotics and renewable energy sources. The domotic system or building automation allows the total control of the building and the monitoring of even remotely consumption.

Italy: Autogrill Villoresi Est

<http://www.autogrillvilloresiest.it/en>

Autogrill Villoresi Est is an example of Italian restaurant strongly engaged in energy efficiency. The service area embodies a number of innovative, expert solutions that optimize energy consumption and resource use while safeguarding nature and the environment. These are based on the international best practices for environmental protection. Villoresi Est is made of eco-friendly, recyclable building materials, and the entire skeleton of the building is constructed of PEFC-certified glued laminate timber from sustainable forests. The building is constructed of eco-friendly, recyclable materials. Villoresi Est features numerous technological innovations including a solar roof that harvests energy from the sun and a closed-circuit geothermal plant whose 25-meter-deep geothermal probes can supply 380 kilowatts of geothermal energy. The building is equipped with a system to collect and recycle rainwater and groundwater, which are used in the air conditioning, green irrigation, toilets and fire protection system.

Spain: HIPOTELS Bahía Cala Millor Hotel (Mallorca)

www.hipotels.com

The reform consists of the conversion of an apartment building with 30 years of antiquity into a 4* hotel. A dining room for clients, a cooking show and a central kitchen are added. Reorganize noble areas and delete the apartments on the ground floor and basement to the new spaces. The envelope of the building is sought by replacing windows and covering cone partition walls Insulation around the exterior perimeter, achieving energy certification level B.

The addition of the thermal envelope suggests that will lead to a decrease in losses of 25% by heat transmission of the exterior facades. Of the same way the losses by windows and large windows they will be reduced by 35%. The combination of both measures implies a reduction 28.30% of the thermal losses due to the envelope of the building. Heat recovery from boiler fumes provide us with a 9% reduction in the cost of fuel, going from 96% to 105% over PCI, using energy according to its quality, there where is able to provide the highest performance.

The high temperature heat recovery of the refrigerating machines allows reaching a reduction 15% in fuel expense being indicated for heating ACS and any other use that requires high quality of energy. The solar panels allow a 20% annual reduction in consumption of energy, since its use is not only for production of ACS but it is distributed where it is needs according to the level of energy produced.





Spain: Hotel Catalonia Granada (Granada)

www.cataloniahotels.com/es

The building has been renovated with the Passivhaus philosophy, that is, the envelope has been treated to be a building very well isolated, with very low demand energetic. For this, the facades have been treated to eliminate thermal bridges, has been coated with Sate facades to interior patios, and the main one has been insulated and covered with a ventilated façade superimposed. The windows and enclosures have one of the lowest thermal transmittances available.

For the improvement in the efficiency of the use of the building, to use a system and centralized control of air conditioning allowing to optimize the consumption energy of the main cause of consumption; the air conditioning, which can be between 50 and 60% of total.

As for the reduction of energy consumption it is going to implement a home automation control, centralized, ventilation with heat recovery, 100% led lighting, limitation of control of temperature by the client within a range of comfort. VRF gas systems and recovery stage for general sanitary hot water through waste heat. There is a manual of good environmental practices and the corporate sustainability guide good practices are audited by the Internal Quality Department. For water consumption, flow reducers will be installed in showers limited to 9 l / min. faucets at 6l / min. Double download of cisterns. Awareness of clients through reminders in the bathroom and to employees through

Spain: Silken Palacio Uribarren Lekeitio (Lekeitio)

www.hoteles-silken.com

The existing building was built based on the regulations of the time. Around 1996 an improvement intervention was made, the current intervention based its adaptation to the existing regulations, many of which contribute a value of improvement to the building, both to its envelope and to its inside.

On the outside, the work is on thermal and acoustic insulation and the conditioning of its exterior carpentry; and in terms of facilities. As for the generation of DHW and the heating of the building, it will change its contribution from the existing diesel to propane gas. Change of management of electric power, LED lighting, etc.

All the staff of the Silken chain, maintenance and waiters, they are aware of the responsible use of both the building and the energy used, electricity, water, etc. So this hotel will maintain the same policy regarding the efficient sustainability of the building.

On the other hand, active solutions will also be implemented to control and reduce energy consumption, such as changing the way the hotel is heated to energy efficient solutions, LED lighting, management systems with presence detection, timers, change of existing hydraulic elevators by electric, greatly reducing the overall consumption of the hotel.



BEST-PRACTICE INITIATIVES BY HOTREC MEMBERS

Improving energy efficiency is necessary for many hospitality businesses across Europe in order to save costs and adjust to the new climate change paradigm. To help their Members facing this challenge, national hospitality associations have developed many initiatives and tools. This section offers a first insight at some selected best-practice examples and initiatives which concretely help hospitality businesses maximising energy and financial savings.

Austria: Guidelines on energy management in the hospitality sector



Together with the former Federal Ministry for science, research and economic affairs and the Austrian Hotelier Association (ÖHV), APHA and APRA prepared Guidelines on energy management in the hospitality sector which is already the third edition on this topic and has been published in May 2015.

The Guidelines cover the legal provisions of the EU-Directive on energy efficiency (2012/27/EU) which has been implemented into national law by the Austrian Energy Efficiency Act (entered into force on 1. January 2015).

Besides the legal situation, chapter 4 of the brochure contains many energy-efficient measures. With the help of a rating system (expenditure of time, costs, complexity and benefit) the brochure should help hotels and restaurants to evaluate those measures.

Other chapters contain details on financing and promotion of energy-efficiency improvements. The last part of the Guidelines presents a number of good-practice-hotels and restaurants in Austria.

For more information: <https://www.wko.at/branchen/tourismus-freizeitwirtschaft/hotellerie/Energiemanagement-in-Hotellerie-und-Gastronomie.pdf>

Belgium: launch of the Energy Friendly Horeca project

Energy is a high cost for Horeca entrepreneurs. There are different obstacles explaining why entrepreneurs do not easily take environmental oriented initiatives. There is a lack of energy efficiency knowledge. The entrepreneurs do not have the time to train themselves or they think that the matter is over-complicated. Another reason is the fact that many entrepreneurs do not own their infrastructure. So it is difficult to persuade them to invest into someone else's building.

Horeca Vlaanderen distributed in 2014 an inspiration brochure concerning energy efficiency. The brochure contained best practices of Horeca entrepreneurs that successfully implemented environmental oriented initiatives and the financial advantages. It was a nice brochure but it did not result in many energy efficiency actions.

The Flemish Energy Agency (Flemish Government) organised a study (KOALA) where they did screenings of buildings with a touristic core business: amusement parks, meeting locations, hotels, etc. Many of these buildings also have Horeca facilities. The conclusions were that there are a lot of quick wins: small energy initiatives that do not cost a lot of effort and investment for the entrepreneur and have a large return on investment.

With the knowledge from the results of the inspirational brochure and the KOALA study, Horeca Vlaanderen and the Flemish Energy Agency joined forces for a new project: Energievriendelijke Horeca (i.e. Energy Friendly Horeca). Horeca Vlaanderen unburdens the entrepreneurs and offers quick wins in environmental oriented initiatives at beneficial rates.



By unburdening the entrepreneurs, this makes the energy efficiency matter very transparent for them. Horeca Vlaanderen does all the work behind the scenes and offers tutorials, tools, tricks, information, financial advices, help in the choice of quick wins, etc. This tackles the obstacle of the lack of knowledge about energy efficiency. Quick wins are small initiatives that do not cost a lot of effort for the entrepreneur and require a rather small investment. Within 1 to 2 years the entrepreneur has earned back the investment and starts to make profit. This also helps tackling the obstacle for many entrepreneurs who do not own there infrastructure. A return model within max 2 years can be interesting for them.

This project will be launched in May 2018 and is aimed at persuading 1000 entrepreneurs to implement energy efficiency quick wins by the end of 2019.

For more information: www.energievriendelijkehoreca.be

Denmark: Green Key - an Eco-label of the Tourism Industry



Green Key is an internationally available eco-label awarded to leisure organisations, such as hotels, hostels, conference and holiday centres, campsites and leisure facilities.

Green Key was invented in 1994 in Denmark, but at this point it has expanded to 57 different countries and is awarded to more than 2.700 tourist establishment. Most of Europe is part of Green Key, but recently the eco-label has travelled to Mexico, Kenya and South Africa.

To obtain a Green Key label the business has to limiting the production of waste and decrease the use of water and electricity, which also lead to reduction of cost. But the criteria also include requirements on policy, action plans, education and communication, that can attract sustainable customers.

Green Key is an initiative created by the Industry for the Industry in a joint venture with environmental organizations and public institutions based on a pragmatic and trustworthy model. It has created a unique non-profit environmental certification which focuses on the collaboration between the companies involved in the program where the company itself sees the rationale in taking the lead.

For more information: www.greenkey.global

France: a guide on sustainable development for the sector and a new environmental tag



Energy efficiency is an important part of many other actions that hospitality establishments can put in place to reduce their environmental impact. GNI is very engaged on sustainable development and proposes to its members many tools and tips to help them. GNI has published a Guide on Sustainable Development. It contains real measures easy to implement for all kind of hospitality establishments. Among these, 11 recommendations concern energy savings or efficiency.

The Guide (in French) can be found here:

https://www.synhorcat.com/IMG/pdf/guide_pour_impression.pdf

In the same goal, GNI has actively supported the French Agency for Environment (ADEME) and the Ministry of Environment which have developed an initiative called "Etiquette environnementale" (Environmental tag).

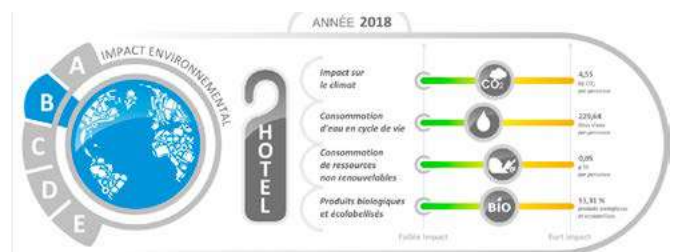
Hotels are evaluated and given a score through a letter (as for energy efficiency of electronic products), considering 4 impacts:

- on climate
- on water consumption
- on consumption of resources non-renewable
- on biological products and ecolabels

Thanks to the official tag, the hotel can promote its environmental action.

For more information:

https://www.synhorcat.com/IMG/pdf/communiqu_e_de_presse_vf.pdf



Germany: the Energiekampagne Gastgewerbe

The Energiekampagne Gastgewerbe was implemented in 2006 by the German Hotel and Restaurant Association (DEHOGA Bundesverband), the DEHOGA regional associations (DEHOGA Landesverbände), German Hotel Association (IHA) and supported by the Federal Ministry for the Environment. It offers a comprehensive Internet information portal on energy saving, tailored to the needs of the industry, free of charge for registered Users.

The aim is to support the companies in the hotel and catering industry to reduce their energy costs. Extensive information is available for free on the website www.energiekampagne-gastgewerbe.de for registered hotels and restaurants (e.g. energy saving sheets, checklists).

They inform about worthwhile energy-saving measures in the hotel industry and cover all relevant operating areas and building techniques. A new tool that depicts the operating areas of a hotel and a restaurant is the interactive, virtual building (<http://www.virtuelles-hotel-und-restaurant.de/>). Here you will find typical energy consumption points and tips for saving energy.

For more information: www.virtuelles-hotel-und-restaurant.de



Turkey: the Greening Hotel certificate

TÜROB (Hotel Association of Turkey) launched in 2009 the Greening Hotels Certification. The project promotes the greening of tourism facilities to make tourism more sustainable and aims to increase the number of Greening accommodation facilities as a common Project of TÜROB, Sustainability Academy and Bureau Veritas.

It aims to increase environmental awareness and motivation in the tourism sector, and in particular in accommodation facilities, as an important path to increase competitiveness. The Greening Hotels project also aims to increase the number of clients having environmental awareness when travelling.

The Greening hotels certification allows to:

- Contribute to sustainable environmental policy by the improvements in energy and water management, indoor air quality, waste reduction and recycling;
- Improve the quality of service by reducing the operating costs;
- Reduce the environmental impact of the services provided by the hotels
- Both raising awareness and creating a trust through certification.
- Being one step ahead as a business which achieved a differential and quality service in the forthcoming period.



Applicants are evaluated through four main areas in order to get the Greening Hotels Certification: Energy Management, Water Management, Improving Indoor Air Quality and Waste Reduction and Recycling.

This 4 main fields are evaluated and audited with many different criteria. To be successful, hotels need to achieve the necessary requirements in the checklist of criteria to be granted the certificate: accommodation achieving 60 percent are considered as Bronze, those achieving 75 percent as Silver, and 90 percent as Gold. The certificate is valid for two years and is renewable with an audit.

Concerning energy management, the criteria includes the measurement of energy consumption, the identification of energy sources, actions to reduce consumption, requirements for class A of electrical equipment, etc. Hotels having Greening Hotels Certificate will be the leaders about developing the sustainability awareness and the energy management in the sector.

There is also a strong emphasis on improving indoor air quality as one of the most important criteria of the Greening Hotels Certificate. Besides, the certificate also takes into consideration other important criteria such as waste reduction and recycling, or water management, in order to minimise the hotel environmental footprint on all major aspects.

For more information: <http://www.yesillenenoteller.com/?lang=en>

Special focus on EMAS and the EU Ecolabel



The EU Eco-Management and Audit Scheme supports organisations in 'greening' their operations. EMAS registered tourism operators decrease their water and energy consumption, lower their emission into the air and can better manage their waste and impacts on biodiversity.



EU Ecolabel – the official Type 1 label provides reliable guidance to providers and consumers on tourism services. The label is based on trustworthy environmental criteria, revised in January 2017, to better match new environmental priorities such as Europe's transition to a circular economy. It helps businesses to make savings in water and energy consumption, reduce waste production, improve the CO₂ footprint and overall to stand out amongst other hotels in terms of environmental excellence.

ACKNOWLEDGEMENTS

HOTREC would like to thank its 44 member associations across Europe for their active contribution to this brochure, which shows that the European hospitality industry is committed to do its best to adopt sustainable policies, improve energy efficiency and reduce its environmental footprint.

HOTREC also thanks the World Tourism Organisation (UNWTO) for its continued commitment to sustainable tourism development and for all its activities meant to help the tourism and hospitality sector to engage on the path of energy efficiency. Many aspects of this brochure would not have been made possible without the numerous materials developed by the UNWTO over the year on this field.

Hospitality businesses, as well as any other interested party, wishing to learn more about how to further reduce energy consumption and improve energy efficiency in the hospitality sector are strongly encouraged to consult the materials listed in the indicative bibliography below or to consult their national HOTREC member.

Indicative bibliography:

- Energiemanagement in der Hotellerie und Gastronomie, WKO
- EMAS Sectoral reference document on best environmental management practice in the tourism sector, European Commission, 2016
- Nearly Zero Energy Hotels in Europe - Flagship projects and tools for hoteliers - Final Report,
- neZEH Practical guide for pilot hotel owners, 8 March 2016
- Energy Efficiency tips for hotel staff – supporting SME hotels to achieve Nearly Zero Energy status, March 2016
- Hotel Energy Solutions (2011), Key Energy Efficiency Solutions for SME Hotels, Hotel Energy Solutions project publications
- ITP – Hotel Global Decarbonisation report – November 2017

Key websites:

- <http://ec.europa.eu/environment/ecolabel/>
- http://ec.europa.eu/environment/emas/index_en.htm
- <https://www.tourismpartnership.org/>
- <http://www.greenhotelier.org/>
- www.nezeh.eu
- <http://hotelenergysolutions.net/>
- <https://energievriendelijkehoreca.be/>
- www.energiekampagne-gastgewerbe.de
- www.virtuelles-hotel-und-restaurant.de
- <http://www.greenkey.global/>
- https://www.synhorcat.com/IMG/pdf/guide_pour_impression.pdf
- <http://www.yesillenenoteller.com/?lang=en>

For more information about energy efficiency and sustainability, **please contact Mr. Alexis Waravka, Public Affairs Manager at HOTREC.**

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Email: alexis.waravka@hotrec.eu

ACCESS THE MEMBERSHIP

FULL MEMBERS

AUSTRIA

APHA-Fachverband Hotellerie

www.hotelverband.at

President: Susanne Kraus-Winkler

CEO: Mag. Matthias Koch

APRA-Fachverband Gastronomie

www.gastronomieverband.at

President: Mario Pulker

CEO: Dr. Thomas Wolf

VVAT-Austrian Professional Copyright Users Association

www.vvat.at

President: Mario Pulker

CEO: Mag. iur. Andreas Hüttner

BELGIUM

Fed. Ho.Re.Ca. Bruxelles-Brussel

www.horecabruxelles.be

President: Yvan Roque

HORECA Vlaanderen

www.horecavlaanderen.be

President: Filip Vanheusden

CEO: Matthias De Caluwe

Fédération HoReCa Wallonie

www.horecawallonie.be

President: Thierry Neyens

Secretary General: Pierre Poriau

CROATIA

UPUHH-Association of Employers in Croatian Hospitality

www.upuhh.hr

President: Ivan Sabljic

CEO: Dr.sc. Iva Bahunek

THE CZECH REPUBLIC

AHRCR-The Czech Association of Hotels and Restaurants

www.ahrcr.cz

President: Ing. Václav Stárek

General Secretary: Ing. Klára Stárek Zachariášová

DENMARK

HORESTA-Association of the Hotel, Restaurant and Tourism Industry in Denmark

www.horesta.dk

President: Jens Zimmer Christensen

CEO: Katia K. Østergaard

ESTONIA

EHRA-Estonian Hotel and Restaurant Association

www.ehrl.ee

President: Verni Loodmaa

General Manager: Maarika Liivamägi

FINLAND

FHA-Finnish Hospitality Association

www.mara.fi

President: Tomi Lantto

CEO: Timo Lappi

FRANCE

GNC-Groupement National des Chaînes

www.umih.fr

President: Jean-Virgile Crance

Vice-President: Samuel Lacombe

GNI - Groupement National des Indépendants Hôteliers et Restauration

www.synhorcat.com

President: Didier Chenet

Advisor to the President, Director Public Policy &

Communication: Franck Trouet

UMIH-Union des Métiers et des Industries de l'Hôtellerie

www.umih.fr

President: Roland Heguy

Director General: Philippe Delterme

GERMANY

DEHOGA-Deutscher Hotel-und Gaststättenverband

www.dehoga.de

President: Guido Zöllick

CEO: Ingrid Hartges

IHA-Hotelverband Deutschland

www.hotellerie.de

President: Otto Lindner

CEO: Markus Luthe

GREECE

HCH-Hellenic Chamber of Hotels

www.grhotels.gr

President: Alexandros Vassilikos

CEO: Dr. Agni Christidou

HUNGARY

HHRA-Hungarian Hotel and Restaurant Association

www.hah.hu

President: László Könyvid

Secretary General: István Kovács

IRELAND

IHF-Irish Hotels Federation

www.ihf.ie

President: Michael Lennon

Chief Executive: Tim Fenn

RAI-Restaurants Association of Ireland

www.rai.ie

President: Liam Edwards

Chief Executive: Adrian Cummins

ITALY

FEDERALBERGHI-Federazione delle Associazioni Italiane Alberghi e Turismo

www.federalbergghi.it

President: Bernabò Bocca

Director General: Alessandro Massimo Nucara

FIPE-Federazione Italiana Pubblici Esercizi

www.fipec.it

President: Dott. Lino Enrico Stoppani

Director General: Roberto Calugi

LATVIA

AHRL-Association of Latvian Hotels and Restaurants

www.hotels-restaurants.lv

President : Janis Valodze

Acting President: Jannis Pinnis

CEO: Mag. Santa Graikste

LITHUANIA

LHRA-Lithuanian Hotel and Restaurant Association

www.lvra.lt

President : Evalda Siskauskiene

Managing Director: Egle Lizaityte

LUXEMBOURG

HOESCA-Fédération Nationale des Hôteliers, Restaurateurs et Cafetiers du Grand-Duché de Luxembourg

www.hoesca.lu

President : Alain Rix

Secretary General : François Koepf

MALTA

MHRA-Malta Hotels and Restaurants Association

www.mhra.org.mt

President: Tony Zahra

CEO: Andrew Agius Muscat

THE NETHERLANDS

KHN-Dutch Hotel, Restaurant and Café Association

www.khn.nl

Chairman of the Board: Robèr Willemsen

General Director : Rob Bongenaar

POLAND

IGHP- Chamber of Commerce of the Polish Hotel Industry

www.ighp.pl

President: Ireneusz Węglowski

Secretary General: Marcin Mączyński

ZPHoReCa-Association of Employers HoReCa

<http://www.zphoreca.pl>

President & CEO: Marcin Zawadzki

SLOVAKIA

AHRS - The Slovak Association of Hotels and Restaurants

www.zhrs.sk

President: Tomáš Ondrčka

Secretary General: Marek Harbuľák

SLOVENIA

TGZ-Tourism and Hospitality Chamber of Slovenia

www.tgzs.si

President: Andrej Prebil

Director: Klavdija Štalcer

President of Slovenian Hotel Managers Association: Gregor Jamnik

SPAIN

CEHAT-Confederación Española de Hoteles y Alojamientos

Turísticos

www.cehat.com

President : Juan Molas

Secretary General: Ramón Estalella

FEHR-Federación Española de Hostelería

www.fehr.es

President: José Luis Yzuel Sanz

Secretary General: Emilio Gallego Zuazo

Gremi d'Hotels de Barcelona

www.barcelonahotels.org

President: Jordi Clos Llombart

Secretary General: Manel Casals

SWEDEN

VISITA-Swedish Hospitality Industry

www.visita.se

President: Maud Olofsson

CEO: Jonas Siljhammar

ASSOCIATE MEMBERS

ICELAND

SAF-Icelandic Travel Industry Association

www.saf.is/en/

President: Grímur Sæmundsen

CEO: Jóhannes Þór Skúlason

LICHTENSTEIN

LHGV-Liechtensteiner Hotel & Gastronomieverband

www.lhgv.li

CEO: Walter Hagen

NORWAY

NHO Reiseliv-Norwegian Hospitality Association

www.nhoreiseliv.no

President: Ole Warberg

CEO: Kristin Krohn Devold

OBSERVERS

GEORGIA

HOREKA-Georgian Hotel Restaurant Café Federation

www.horeka.ge

President: Ketevan Meladze

SWITZERLAND

GASTROSUISSE-Verband für Hotellerie und Restauration

www.gastrosuisse.ch

President: Casimir Platzer

CEO: Daniel Borner

HOTELLERIESUISSE-Swiss Hotel Association

www.hotelleriesuisse.ch

President: Andreas Züllig

CEO: Claude Meier

TURKEY

TUROB-Hotel Association of Turkey

www.turob.com

President: Timur Bayindir

General Manager: İsmail Taşdemir

TTYD - Turkish Tourism Investors' Association

<http://ttyd.org.tr/>

Chair of the Board: Oya Narin

Secretary General: Fatih Tokatli

THE UNITED KINGDOM

UKHospitality

www.almr.org.uk

Chairman: Steve Richards

CEO: Kate Nicholls



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