



Hotels4Climate Webinar – Good practices in the Cypriot, German and Greek hotel industry

Monday, 30th November 2020

On behalf of:



Federal Ministry
for the Environment, Nature Conservation
and Nuclear Safety



European
Climate Initiative
EUKI

of the Federal Republic of Germany



Agenda



Time in CET	Subject	Speaker
10:30-10:35	Introduction to Hotels4Climate project and Good Practices online platform	Anthi Charalambous Director of Energy & Environment Department OEB
10:35-10:50	Presentation of selected Good Practices and GHG reduction initiatives in Cyprus	Panayiotis Kastanias Energy & Environment Officer OEB
10:50-11:05	Presentation of selected Good Practices and GHG reduction initiatives in Germany	Jessica Weir Analyst adelphi
11:05-11:20	Presentation of selected Good Practices and GHG reduction initiatives in Greece	Soteris Mylonas Expert INSETE
11:20-11:25	Next steps in Hotels4Climate project (Virtual hotel tool, Green recovery report, Upcoming workshops)	Madeline Schneider Senior Manager adelphi
11:25-11:30	Wrap up and Q&As	Anthi Charalambous Director of Energy & Environment Department OEB



Introduction to Hotels4Climate project and Good Practices online platform

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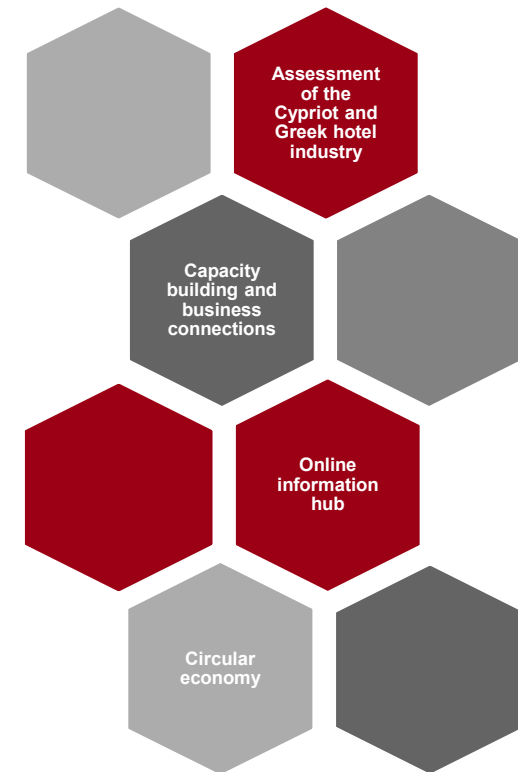
Hotels4Climate project overview



The objective of the Hotels4Climate project is to facilitate the reduction of greenhouse gas (GHG) emissions in the hotel industry in Greece and Cyprus, through various activities.

Project activities include:

- **Assessment of the current situation** of the hotel industry in Cyprus and Greece in terms of **energy use**;
- **Energy and GHG emissions savings** and selection of **good practices**;
- Opportunities for **networking** with financial institutions, stakeholders and hotel executives;
- **Capacity building and training** workshops for hotels on possible GHG reduction measures and energy saving practices;
- Development of a **platform** to showcase good practices, a **virtual hotel tool** to learn about and assess GHG reduction potentials, and an **online information hub** for information exchange.





Good practices platform



Hotels Climate
HOTELS climate
επιχείρω για το κλίμα

OEB INSETI adelphi

HOTELS List

Filter Sort

Cavo Maris Beach Hotel

Napa Mermaid Hotel & Suites

Country: Cyprus
Name: Napa Mermaid Hotel & Suites
Phone: +357 23721606
Address: Kriou Nerou 45, 5343 Ayia Napa
Website: <https://www.napamermaidhotel.com/contact-us>
Email: reservations@napamermaidhotel.com

Good practices information #

Close

NAPA MERMAID HOTEL & SUITES

General Information

Country: Cyprus
Hotel's name: Napa Mermaid Hotel & Suites
Address: Kriou Nerou 45, Ayia Napa 5343, Cyprus, P.O. Box 30005
Telephone number: +357 23721606
Website: <https://www.napamermaidhotel.com/contact-us>
Email: reservations@napamermaidhotel.com

Specific Information

District/Region: Ayia Napa
Classification: 4 star
Area in m²: 11.000
Number of rooms: 150
Number of beds: 360
Year of construction: 1999

Annual energy consumption in kWh:
The total annual energy consumption of the hotel was 1.795.916 kWh in 2018 corresponding to 1.046.411 kg of CO₂ equivalent. Breakdown of total energy consumption:

- Electricity: 1.202.212 kWh
- LPG: 117.225 kWh
- Heating Diesel: 470.158 kWh
- Postal (Transport): 6.361 kWh

Certification: ISO 14001, ISO 9001

Facilities: 1 Outdoor Swimming pool, 1 Indoor Swimming pool (heated), 1 restaurant, 1 kitchen, 1 bar, 1 laundry, 1 gym, 1 spa, 1 sauna, 1 steam bath, 1 jacuzzi, tennis court.

Climate protection measure(s) implemented

Lighting:

- Description: Replacement of approximately 80% of the hotel's conventional bulbs & scintillators with LED
- Date of implementation: Gradually from 2014 until 2018
- Investment costs (per): € 20.000
- Annual energy savings: approx. 70% reduction of the electricity consumption for lighting reduced by LED corresponding to 164.200 kWh
- Estimated annual GHG emissions savings: 116.000 kg CO₂eq
- Annual cost savings: approx. € 26.200
- Simple Payback period: 1 year

Autonomous PV:

- Description: The autonomous PV system was installed in 2012 and has a capacity of 14kW. It is intended for the operation of 3 x 1 swimming pool pumps
- Date of implementation: 2012

<https://www.oeb.org.cy/hotels4climate/>



Selected climate protection good practices and GHG reduction initiatives in the Cypriot hotel industry

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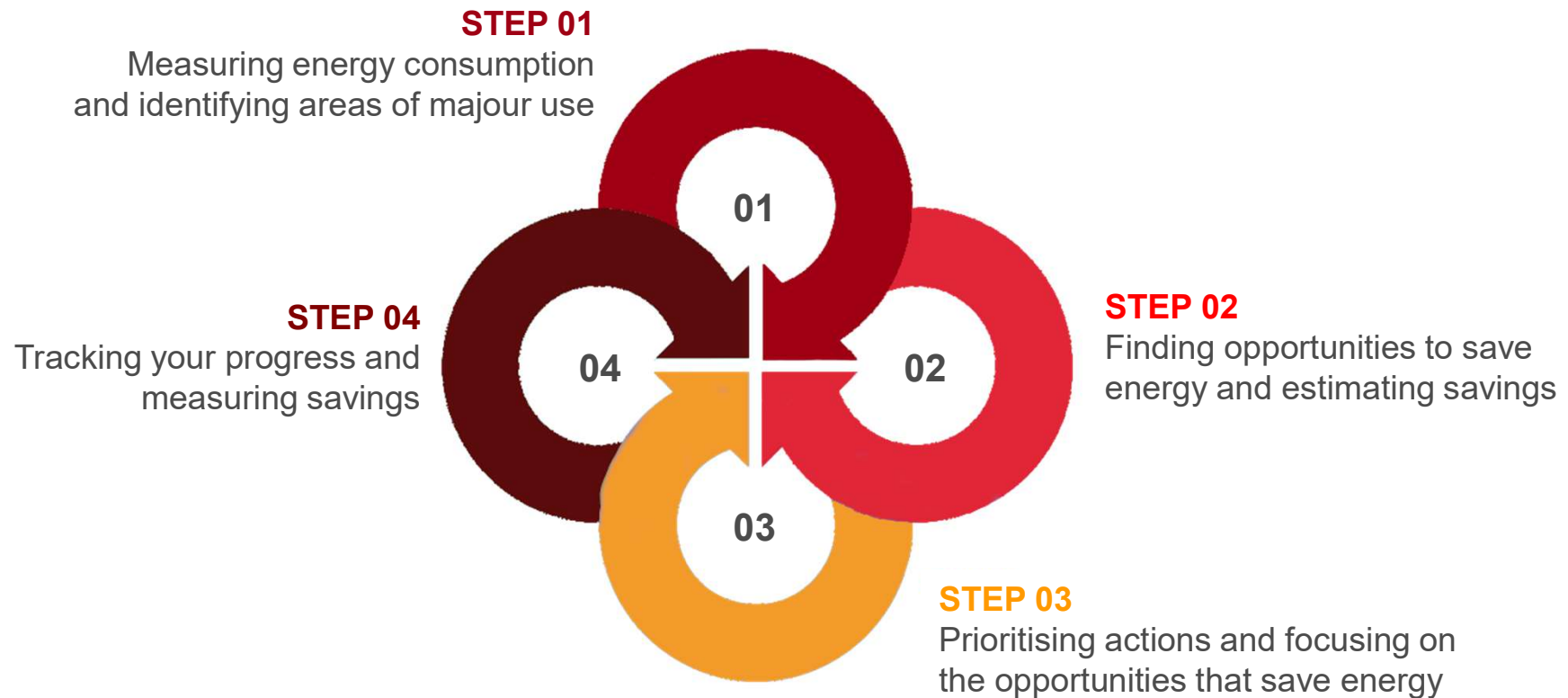


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Four steps of the Energy Management Process

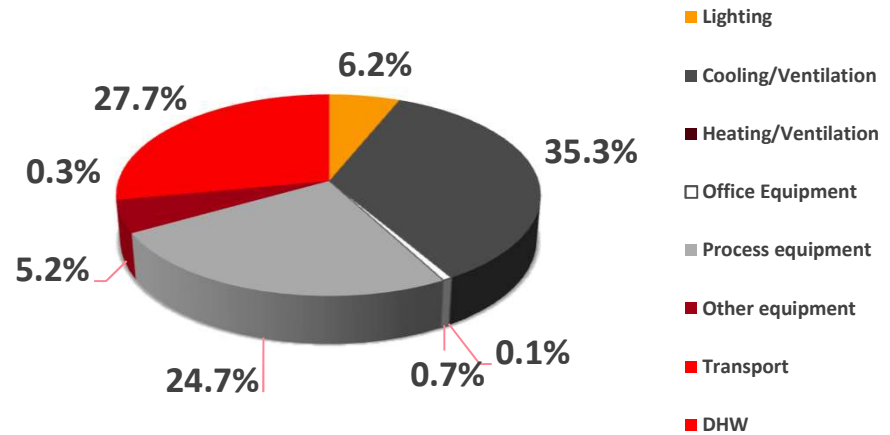




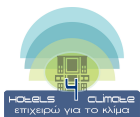
Main energy users in hotels' facilities



- **HVAC systems** are considered the largest consumers of energy in hotels, accounting for approximately 40% of the total energy consumption. Energy efficiency (SCOP, SEER), indoor temperature set-point, thermal insulation of the building envelope, floor area and weather conditions are among the main factors affecting energy consumption of the HVAC systems.
- **DHW** is usually the second largest consumer, accounting for up to 25-30% of the total energy consumption.
- **Process equipment** have also a large percentage of the total energy consumption. The process equipment includes kitchen (Meals' preparation, refrigeration), room, laundry, gym, saloon, spa and pool (sauna, steam bath, pumps) equipment. The process equipment share in the total energy consumption is related to the hotels facilities (hotels star-rating)
- **Lighting** can vary between 5-15% of the total energy consumption, depending on the lighting technology.



Distribution of energy consumption in a typical hotel (seasonal) in Cyprus



Map of good practices



Ayia Napa, Famagusta

Napa Mermaid Hotel & Suites
Faros Hotel

Paphos

Amavi Hotel
Aliathon Resort



Napa Mermaid Hotel & Suites *Ayia Napa, Famagusta District*



- Replacement of approximately 90% of the hotel's conventional bulbs & spotlights with LED.
- In 2018, installation of autonomous PV system in 2012 with a capacity of 14kW. It is intended for the operation of 3 swimming pool pumps.
- Solar thermal panels on the hotel roof were replaced by new ones. The hot water produced from these panels covers a significant proportion of the hotel needs.
- Replacement of the diesel fired boiler with a wood pellet boiler of 90% energy efficiency and 180 kW heating capacity.
- Hotel staff and clients participate in Recycling campaigns/ programs every year.
- Thermal insulation was installed in 20% of the hotel rooms.
- Food and garden waste composting.





Faros Hotel ★★★★★ *Ayia Napa, Famagusta District*



- Replacement of approximately 98% of the hotel's conventional bulbs & spotlights with LED.
- In 2018, 60 solar thermal panels were installed on the hotel roof, covering a significant proportion of the hotel needs for hot water.
- Along with the installation of these panels, the chiller was replaced by a VRF system, which was combined with a hydrofree system. HydroFree, combined with a 3-pipe Set Free Sigma VRF system, offers the possibility to have free hot water production by recovering energy produced by the air conditioning system. The entire hotel needs for hot water are covered by the solar panels and the hydrofree system. The oil-fired boiler is no longer in use.
- During the period 2014-2019 all single glazed thermopanenes were replaced with double glazed thermopanenes.
- Building Management System (BMS) and KNX system were installed to automatically control the electromechanical equipment and the lighting, respectively.





Amavi Hotel ★★★★★ *Yeroskipou, Paphos District*



- Amavi hotel is classified as high energy efficiency building with a class A Energy Performance Certificate (EPC).
- Installation of indoor shading that opens and closes automatically to control the room temperature.
- All rooms were equipped with occupancy sensors determining human presence in a room in order to control the room electrical equipment.
- BMS and KNX system were installed to automatically control the electromechanical equipment and the lighting, respectively.
- Installation of a six-pipe simultaneous chiller that covers the hotels needs for space cooling and heating, producing at the same time domestic hot water with no additional energy consumption.





Aliathon Resort ★★★★★ *Yeroskipou, Paphos District*



- 17 kW autonomous PV system was installed in 2011 to cover the consumption of 11 swimming pool pumps.
- 20 kW of PV system was installed in 2016 under the net-metering scheme.
- 100 kW of PV system was installed in 2015 under the self-consumption/net-billing scheme.
- 361 solar panels were installed on the roof of the hotel, satisfying a significant proportion of the hotel needs (domestic hot water and laundry).
- All rooms were equipped with occupancy sensors determining human presence in a room in order to control the room electrical equipment.
- Thermal insulation was installed in 60% of the hotel envelope.
- Installation of voltage optimization system, which optimises the incoming voltage by a set amount in order to match electrical equipment requirements on-site providing energy consumption savings.
- Replacement of approximately 95% of the hotel's conventional bulbs & spotlights with LED
- Use of water-saving devices that reduce daily water consumption through flow-restrictors and infrared detectors.
- E-cube in large walk-in refrigerators





1

- 1) Solar panels
- 2) PV systems
- 3) E-cube in large walk-in refrigerator
- 4) Chiller 6-pipe
- 5) Voltage optimization system
- 6) Wood pellet boiler



3



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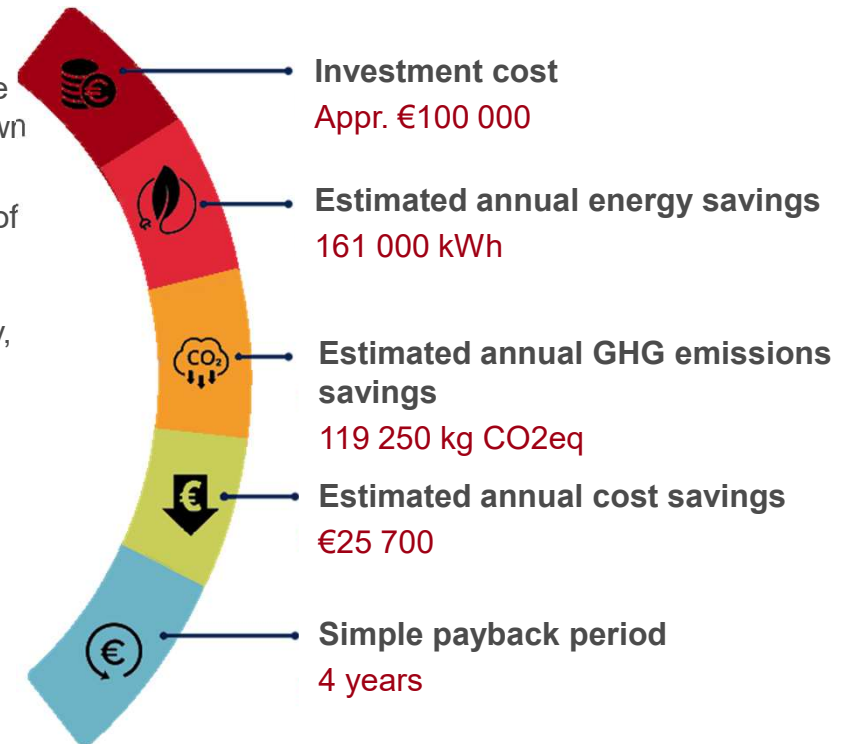


100 kW Net-Billing PV system

Aliathon Resort



- The net-billing PV system was installed in 2015.
- Net-billing is a scheme related to the installation of PV systems or Biomass Electricity Systems (BES) which are implemented only in the premises of SMEs for the purpose of generating electricity for their own use.
- If the cost of exported electricity (from PV) does not exceed the cost of imported electricity (from the grid), then the consumer will pay the difference for each billing period. Respectively, in the case where the cost of the exported electricity exceeds the cost of imported electricity, the surplus amount will be credited to the next billing period.

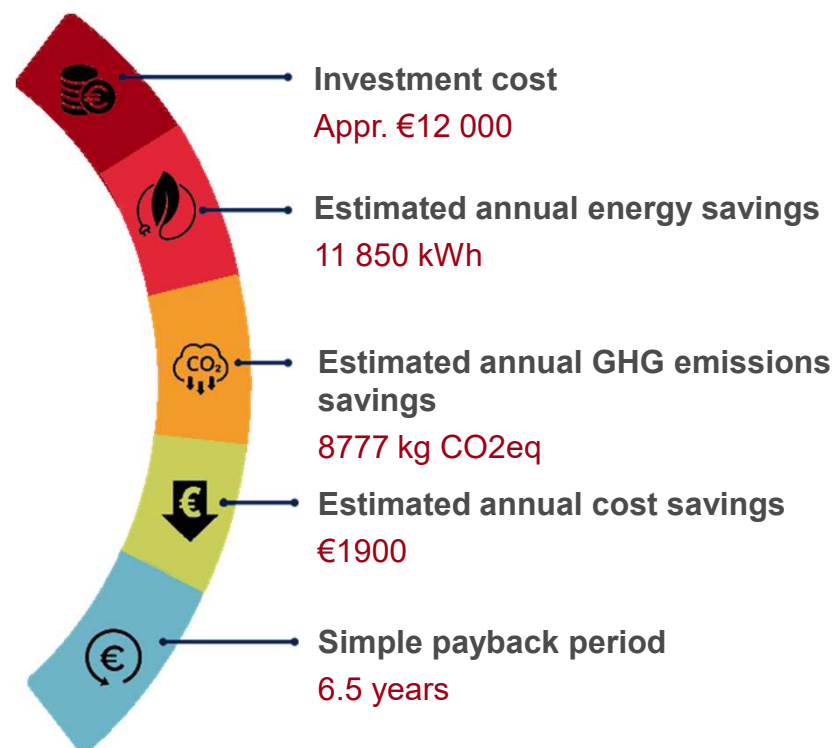




7,35 kW Autonomous PV system

Cavo Maris

- The autonomous PV system was installed in 2012
- Capacity of 7,35kW
- Covers the consumption of 4 pool pumps.

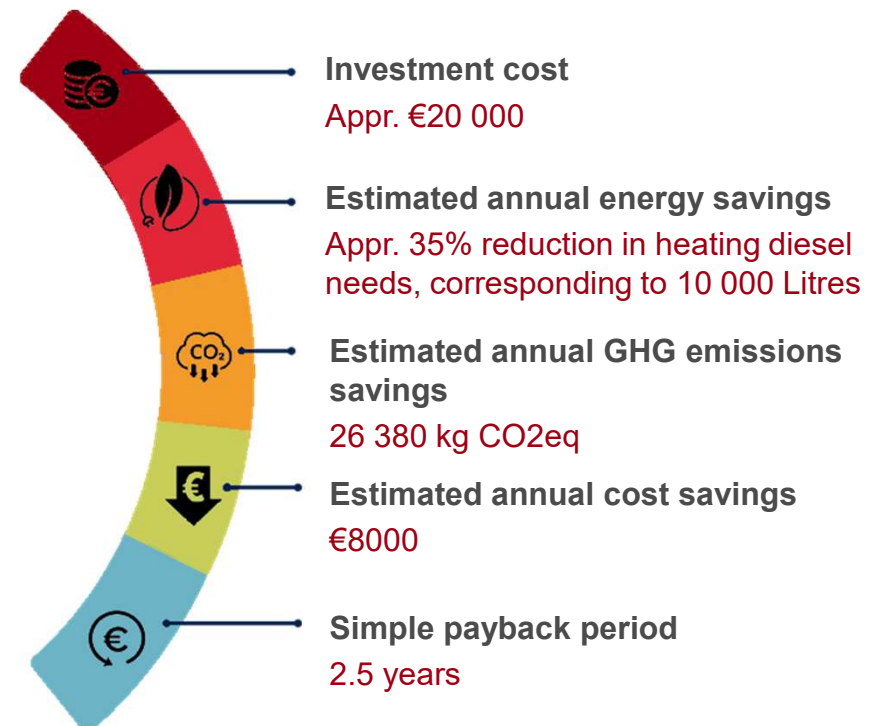




80 Solar thermal panels for hot water

Napa Mermaid

- In 2018, 80 solar thermal panels were installed on the hotel roof.
- The hot water produced from these panels covers a significant proportion of the hotel needs.

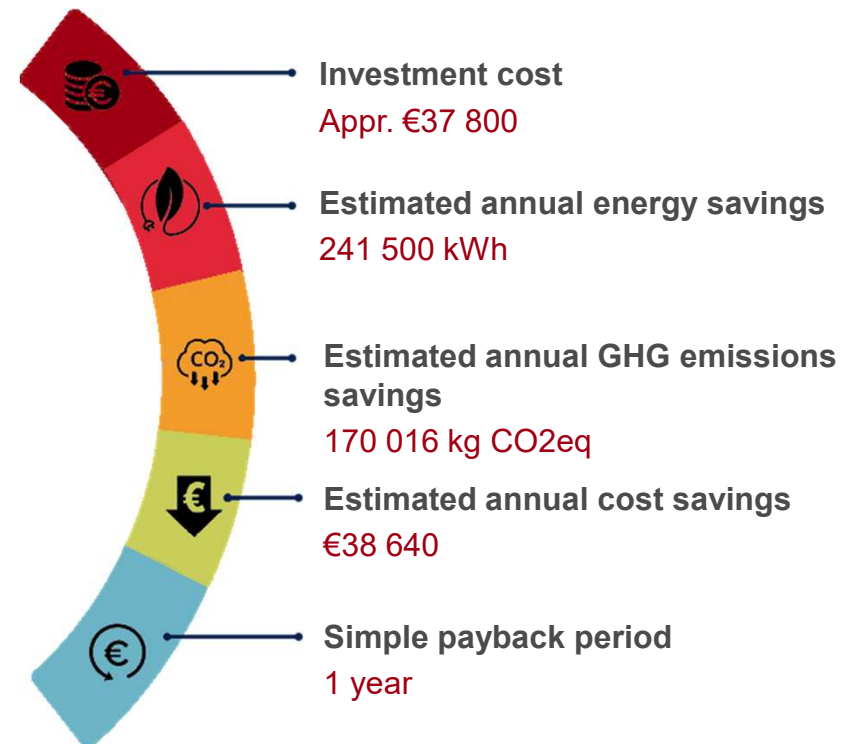




Energy Efficient lighting

Rodon Mount Hotel Resort

- Replacement of approximately 3.150 conventional bulbs (incandescent, halogen) & spotlights (halogen) with LED, corresponding to 75% of the hotel's total lighting.
- Gradually from 2016 until 2019

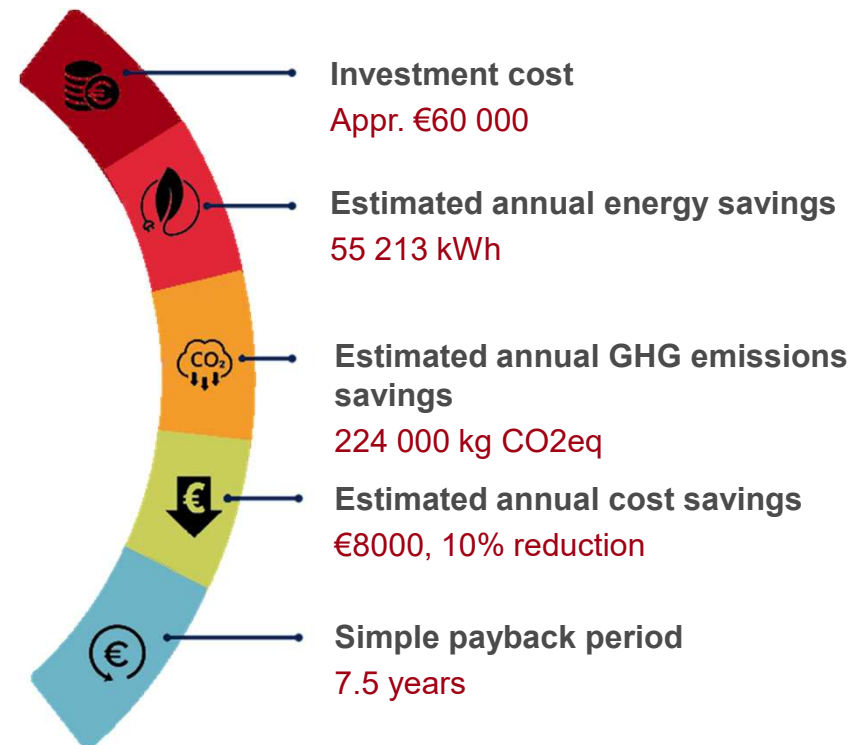




Wood pellet boiler

Rodon Mount Hotel Resort

- Replacement of the two gas boilers with a wood pellet boiler of 90% energy efficiency and 1MW total heating capacity.
- Around 237 tonnes of pellets are used annually to cover the needs for hot water and space heating of the hotel.





Environmental Measures (I)

Aphrodite Hills Resort by Atlantica

- **Recycling:** The hotel collects and recycles paper, PMD, glass, batteries, cooking oil, lamps, toners, electrical and electronic equipment.
- **Replacement of single-use plastic cups, plastic cocktail stirrers and plastic straws with paper and biodegradable ones.**
- **Bus card is provided to all personnel:** The hotel covers the expenses for the bus card of the personnel in an attempt to encourage them to use public transport to get to the hotel.
- **Replacement of guest guidance catalogue with Mobile application:** In 2019, the guidance catalogue that was provided to the hotel guests, has been replaced by a mobile application. That led to hundreds of paper savings.
- **Plastic caps campaign:** The resort collects hundreds of bottle caps on a daily basis, with the aim of giving them to a local charity and turning them into wheelchairs for people with disabilities. Guests, visitors and personnel are encouraged to place the plastic caps in special baskets.
- **Beach and local area cleaning.**





Environmental Measures (II)

Aphrodite Hills Resort by Atlantica



- **Olive tree planting:** A favourite wedding tradition at Aphrodite Hills Hotel is to provide wedding couples an olive tree planting opportunity. The actual planting takes place on the hotel grounds nearby the signature hole of the National Golf Course.
- **Christmas tree decorated with recycled and sustainable materials:** The 2019-2020 Christmas tree was decorated with handmade star ornaments made from recycled paper embedded with wildflower seeds. After Christmas, all the tree ornaments were used to grow a special wildflower garden that will be dedicated to “One Dream, One Wish” foundation for children battling cancer.
- **Participate in World Environment Day:** In 2019, Aphrodite Hills Hotel participated towards this global movement by GoingDark for 1 hour, engaging their guests into various activities to make their stay at the hotel special and memorable, contributing at the same time towards energy saving. The total estimated energy savings by this action account for 1000kWh.





Selected climate protection good practices and GHG reduction initiatives in the German hotel industry

On behalf of:



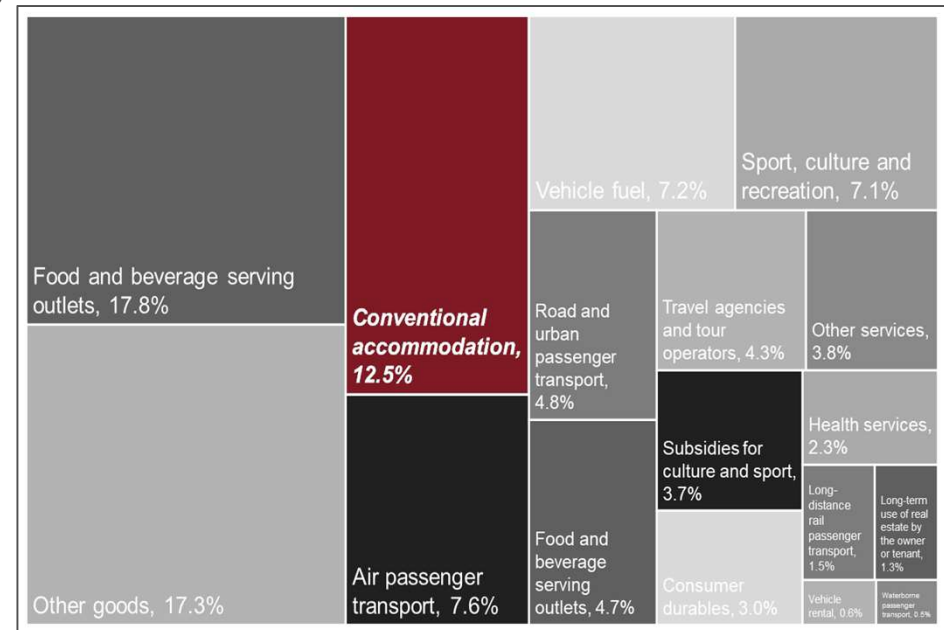
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- Tourism contributes about **10.7% of GDP** with a **growth rate of 3.5%** in 2019
- **€ 33 billion** in revenue in 2019
- Large proportion of SME hotels
- As many as **90%** of German hotels have implemented some sort of **EE improvement measures**
- SME hotels tend to invest in optimisation measures, while building renovation and other higher investment measures are more common for larger hotels



Map of good practices



Berlin

- Hotel Zoo Berlin

Hesse

- Lindengut

Bavaria

- Creativhotel Luise

Baden Württemberg

- Schwarzwald Panorama
- Mawell Resort



Creativhotel Louise ★★ ★ *Bavaria*



- Renovation was carried out according to the **Cradle-to-Cradle principle**
- **Sustainable hotel room**: all elements of the rooms are either 100% biodegradable or 100% recyclable
- Showers save up to 90% of water and 80% of energy
- Zero waste breakfast buffet
- Co-founder and member of **Klimahotels**
- Existing building has been modernised to make it energy efficient and to create new **green areas** for guests

Rooms: 93 | Year of construction: 1956 | Annual energy savings: Up to 80% | Certification: NACHWACHSENDE HOTELZIMMER®



Mawell
RESORT

Mawell Resort
Baden-Württemberg



INSETE



- Satellite **cogeneration plant (biogas)** directly on site
- Peak loads are covered with a **wood chip heating system**
- **Photovoltaic system** on the roof of the reception building
- Rain and well water is treated on site through ultrafiltration, **rainwater used for natural pool**
- Regulated/**performance-based** heating pumps, local heating network, motion-controlled lighting, demand-driven ventilation, EC fans and heat recovery

Rooms: 76 | Year of construction: 2013 | Area in m2: 120,000 | Awards: Energiepreis des Landes Baden-Württemberg



Schwarzwald Panorama *Baden-Württemberg*



- Balance residual CO₂ emissions through global climate projects
- **Green meetings:** resource-efficient materials of fair-trade origin, regional and seasonal catering, organic capsules from wood for coffee machines
- **Motion detectors**
- New position "**Development of Sustainable Consciousness**" was created at the beginning of 2018
- Ecoboard with monthly changing topics
- **Suppliers pushed to consider more sustainable practices**



Hotel Zoo Berlin ★★★★★ *Berlin*



- Continuous **monitoring** of water and energy use
- **Heat exchangers** used for both air and water
- **Green roof** absorbs up to 80% of rainwater and balances temperature
- **Behavioural measures** for employees and guests
- Ensure suppliers' fleet is equipped with **fuel-saving** or even **eco-certified vehicles**
- Work with **suppliers** who offer and take back reusable products, reusable packaging, transport containers and pallets



Lindengut Hesse



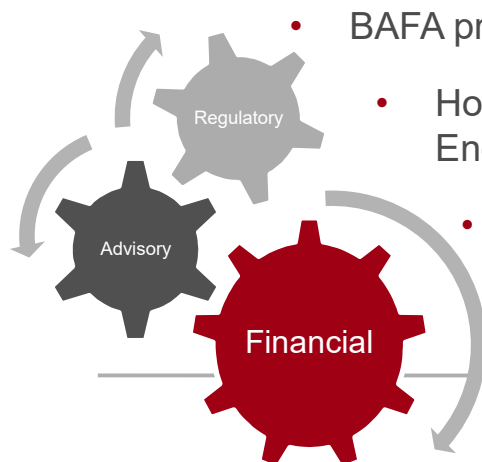
GUESTHOUSE



- Closely monitor their principles along the value chain to ensure **climate neutrality** of the hotel
- Purchase of credits to **offset remaining CO2 emissions**
- To **reduce the consumption of water**, single lever mixer taps as well as flow controllers are used
- **Constructed wetland**
- Serve only organic food from local suppliers, or from their **own certified organic agriculture**

Rooms: 10 | Last renovation: 2015 | Annual energy consumption in kWh: 45.000 | Certification: DE-ÖKO 006, EMASeasy™ concept (for SMEs)

- **Legislative support** at the national level promotes GHG emission reductions through various strategies and regulations
- National Programme for Sustainable Consumption **encourages hotels with green certifications to be highlighted on booking platforms**
- NAPEE outlines need for awareness raising activities of **DEHOGA's Energy and Climate Protection Campaign**
- Market Incentive Programme (MAP) grants **funds for EE and RE projects** that provide heating or cooling



- BAFA provides SMEs with 80% of **audit costs**
- Hotels recording consumption data can receive funds from the BMWi through the Energy Savings Metre Programme
- Loans and grant are available through the KfW, Deutsche Bank and Triodos



KfW's Energy Efficient Refurbishment Programme

Loan / Grant



Businesses of all sizes and from all sectors can apply for the loan through their regular bank. **Hotels are eligible for the Energy-Efficient Construction and Renovation loan (credit 276).**



**Additional € 1 - 2.5 billion
made available by the
German government to
boost financing for 2021-
2022.**

- Supports **GHG reductions throughout the life cycle** of a building such as planning, preparation, commissioning, and construction and implementation costs, including **energy management systems**
- Supports investments in **emerging and innovative technologies** for climate protection
- **Minimum technical requirements and energy savings levels** for repayment subsidies play a large role in achieving higher levels of GHG reductions



Selected climate protection good practices and GHG reduction initiatives in the Greek hotel industry

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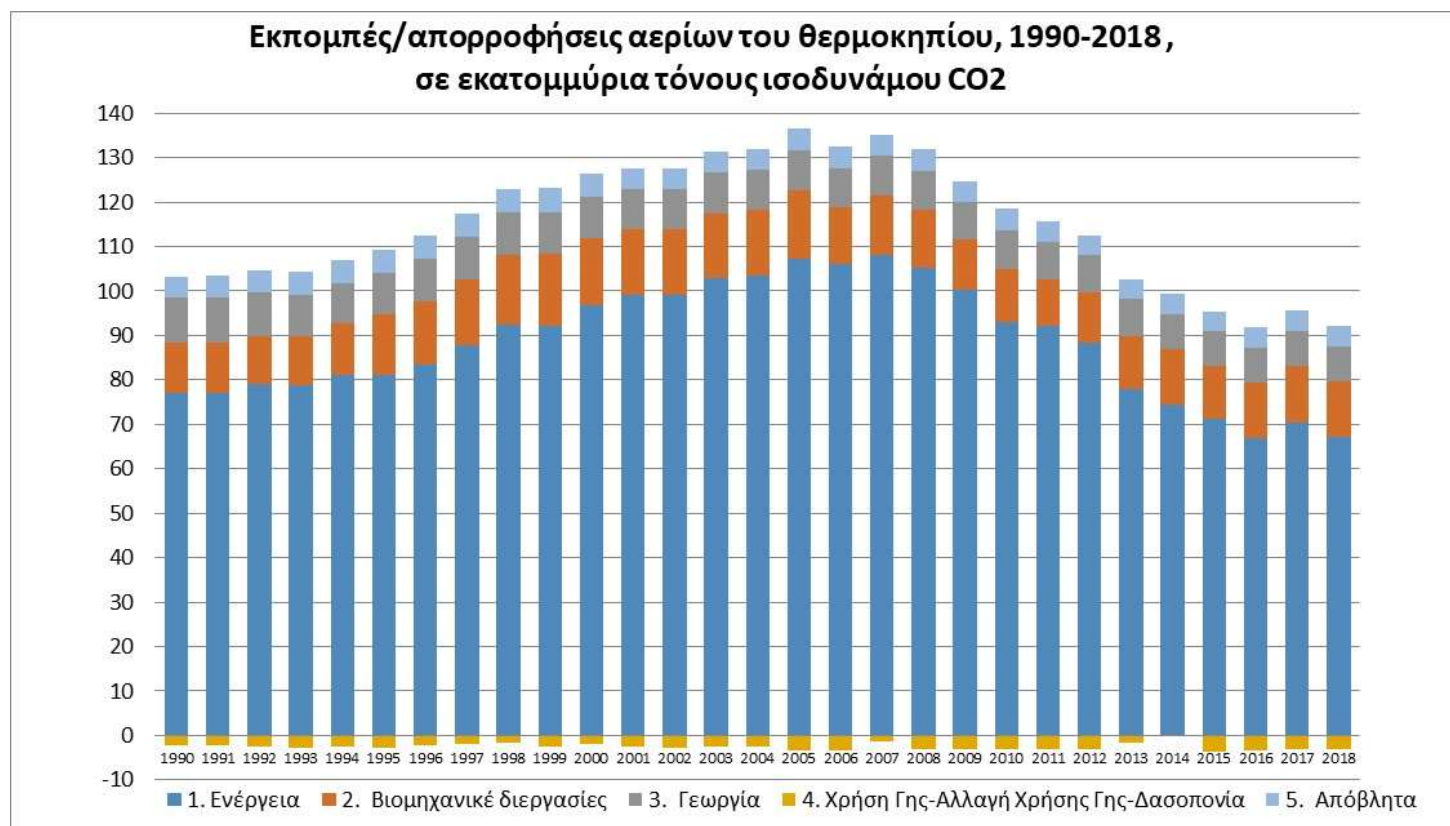


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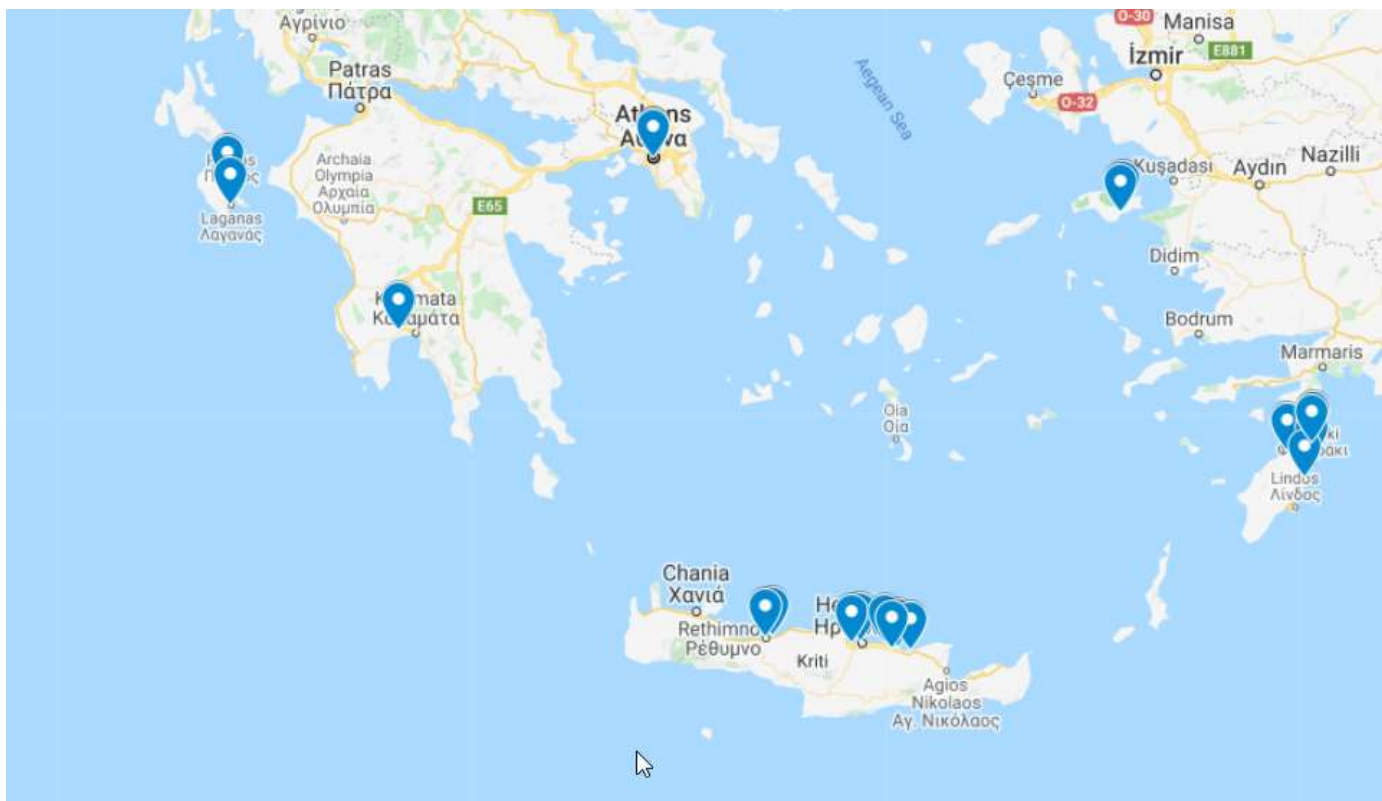


CO2 development 1990-2018





Map of good practices

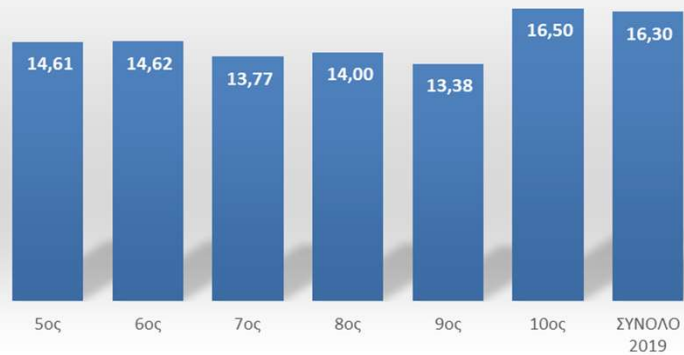




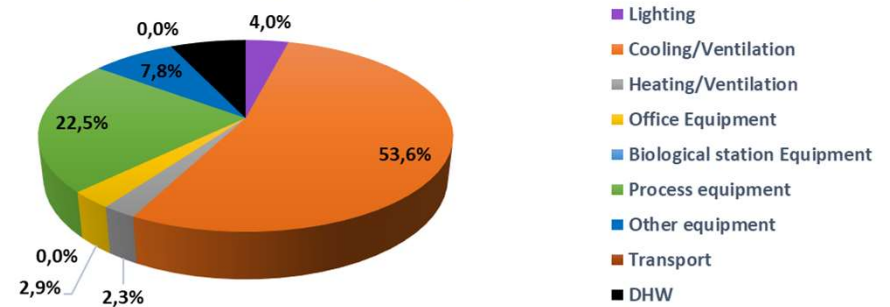
Case studies



average consumption of hotels
evaluated in Kwh/gn



Κατανομή Κατανάλωσης Ενέργειας στο ξενοδοχείο σας/Distribution of
energy consumption in your hotel

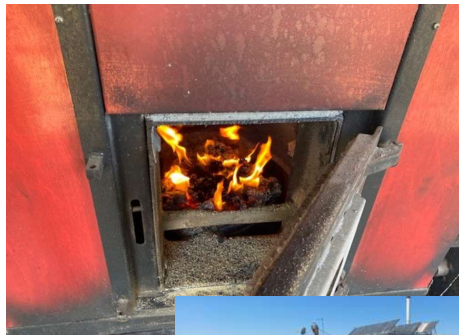




Doryssa Seaside Resort North Aegean Prefecture



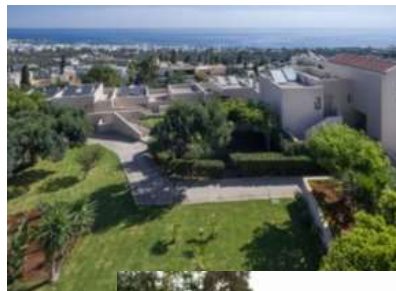
- Heating/Cooling system takes advantage of sea water temp **to pre-heat/-cool the circulation water**, to reduce the amount of energy required by the four chillers
- 1000m² of **solar panels** for the production of DHW, supported by two LPG burners. Almost half of the solar panels are placed over the parking lot to provide shade to the parked cars
- 70% of all lighting has been replaced with **LED lamps**
- **Savings** of 985.000 kWh (appx. 75% reduction); 270.000 L of LPG (appx. 90% reduction); 75.000 kWh (appx. 45% reduction)



- **Biomass burner** has replaced appx. 20 tonnes of heating diesel with 50 tonnes of exhausted olive cake (DHW has always been produced in combination with solar thermal panels). Considering the difference in net calorific value between the two types of fuel, i.e. 13 kWh/kg and 5,2 kWh/kg respectively, it corresponds to 260.000 kWh of annual energy savings.
- **100% LED bulbs:** -40% on annual energy requirements for lighting, i.e. appx. 5.000 kWh.
- **New laundry equipment:** -50% on annual energy requirements for laundry, i.e. 10.000 kWh.
- **PV panels** installation: appx. 35.000 kWh



Sundance Apartments & Suites ★★ ★ *Hersonissos, Crete*



- **Solar panels** for hot water production
- LED in all areas 100%
- **Sensors and timers** to reduce energy usage
- **Monitoring energy** on a monthly basis
- Extensive **training to all staff on energy management**
- **A/C** in rooms with energy efficiency class A++
- **Refrigerators** in rooms with energy efficiency class A++
- A number of measures have been implemented to **save water** i.e. efficient filters, labels placed next to taps to remind guests of water efficiency, auto irrigation in gardens, staff training, monitoring consumption and no bathtubs in the guest rooms



Next steps in the Hotels4Climate project

On behalf of:



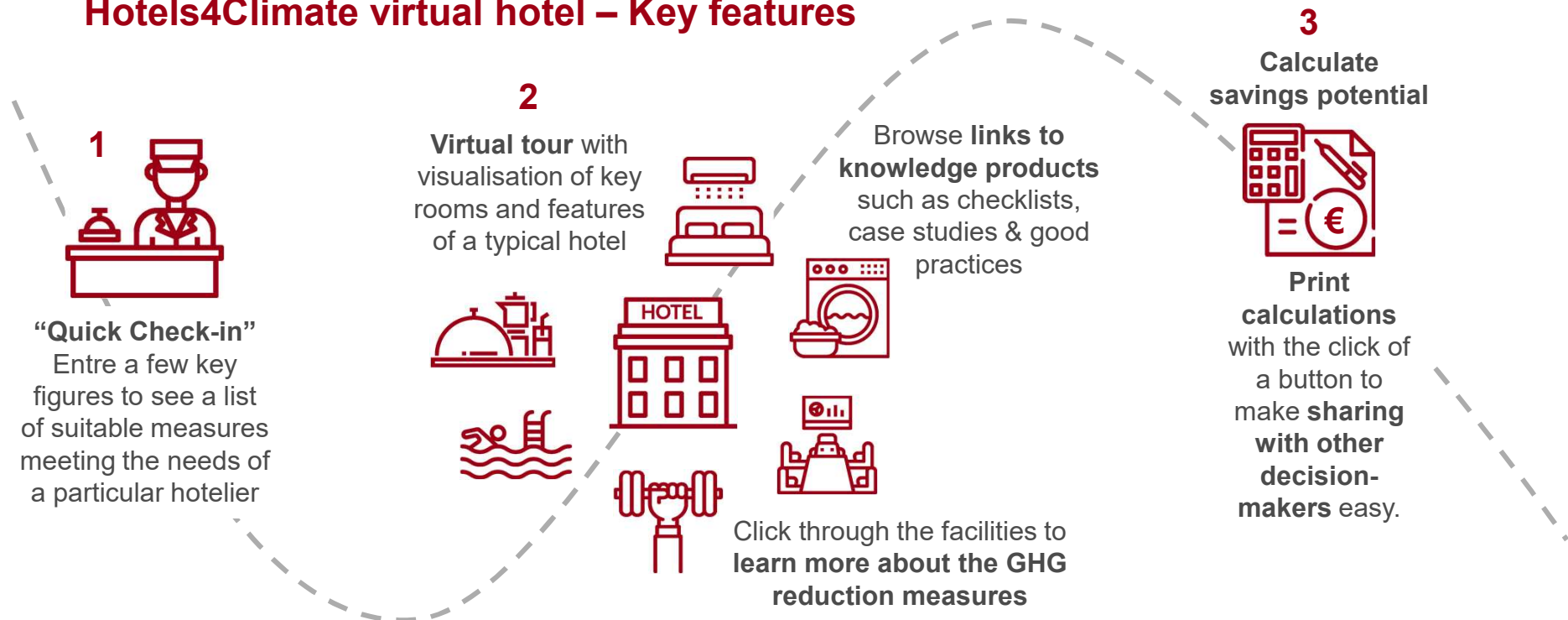
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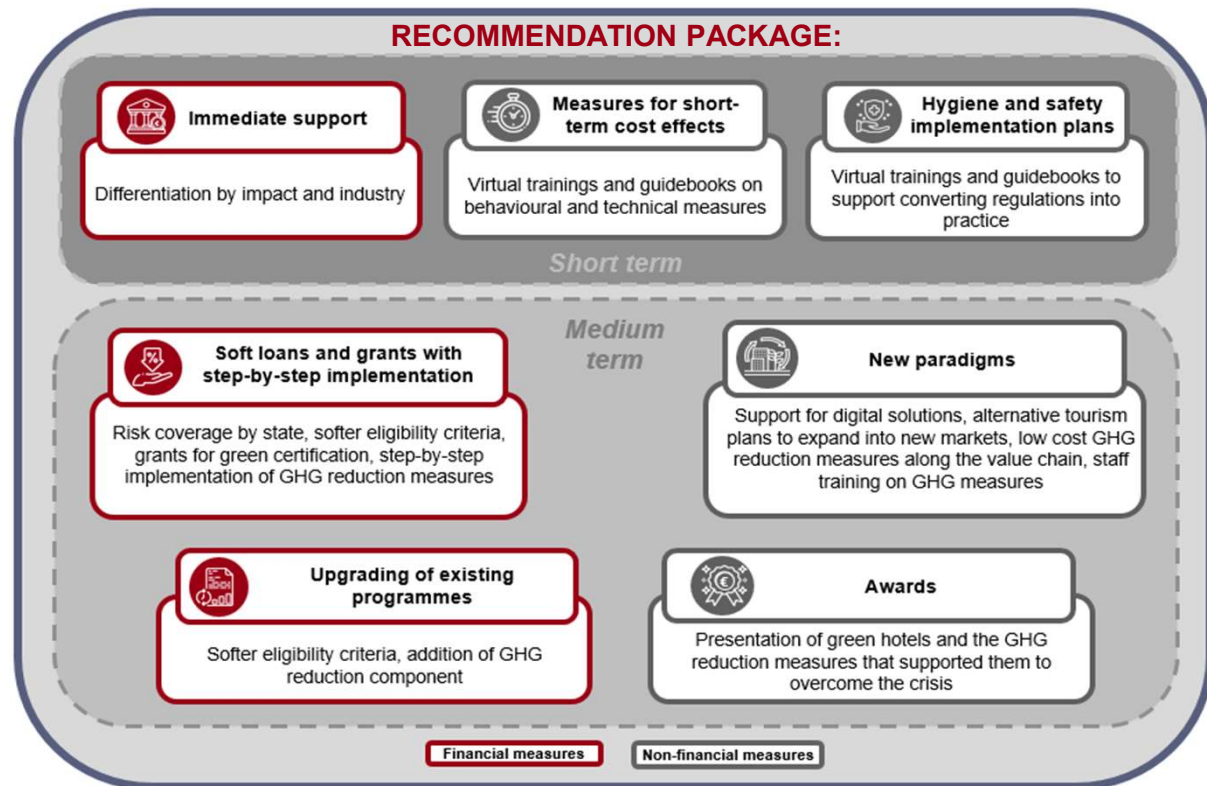
Hotels4Climate virtual hotel – Key features



Objective: To investigate the effects of COVID-19 on the hotel industry and provide insights on opportunities and recommendations for policy makers for a green restart of the hotel sector, with a particular focus on GHG emission reduction measures.



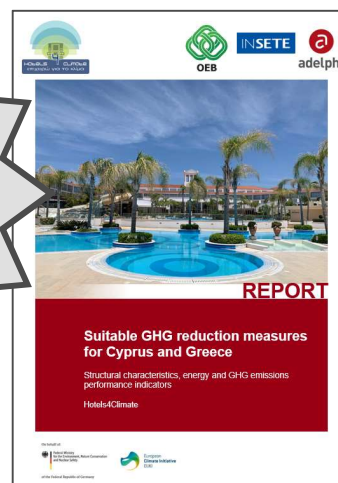
**The full report is now available on the Hotels4Climate website.*



Upcoming reports



Available
end of
Dec 2020



Available
Spring
2021



- General and structural characteristics
- Energy management systems
 - Services and facilities
- Key energy and GHG emissions performance indicators
- Easily implemented GHG Reduction measures
- Associated technical requirements
 - Cost savings potentials
 - Energy savings potentials
- Status of CE in the hotel industry in CY and GR
- Current knowledge and understanding of CE of hoteliers in CY and GR
 - Status of CE in the supply chain
 - Opportunities for promotion of CE

Upcoming events



Capacity building workshops:

Nov/Dec 2020– Workshop *GHG reduction training* for Cypriot and Greek hoteliers

1st Dec 2020 – Workshop *Circular Economy for Climate Neutrality* for Cypriot hoteliers

Date TBD – Workshop *Circular Economy for Climate Neutrality* for Greek hoteliers



Study visits:

March 2021 – *Study visit to Greece* for Cypriot and German hoteliers

June/July 2021 – *Study visit to Germany* for Cypriot and Greek hoteliers



Webinars:

8th Dec 2020 - Presentation of the *Findings of the Green Recovery report* for Cypriot stakeholders

Dec 2020 – Presentation of the *Findings of the Green Recovery report* for Greek stakeholders



Networking events:

Dates TBD, early 2021 – *Networking events* for Cypriot and Greek hoteliers, financial institutions, and other stakeholders

* Some planned events may have to take place virtually due to the COVID-19 regulations.



Wrap-up Questions / comments



On behalf of:



of the Federal Republic of Germany





Thank you!
Danke!
Ευχαριστώ!

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