

Nearly Zero Energy Hotels (neZEH): A successful story

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Presented by: Adriana Villoslada

avp@creara.es Phone: +34 600 032 287

**Gestión energética
Ingeniería
Consultoría
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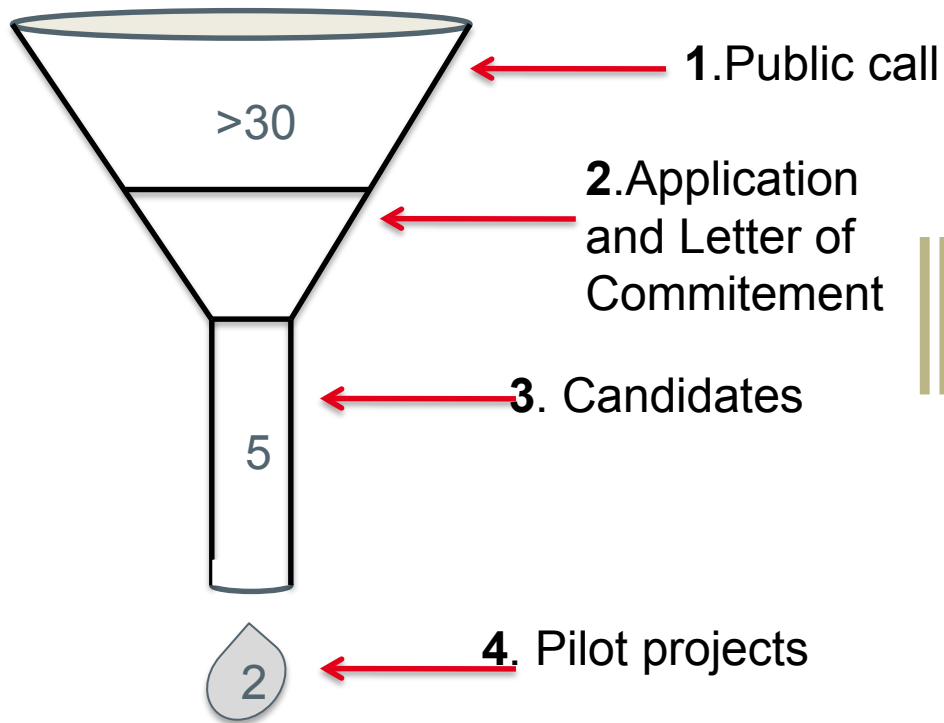
- **neZEH Project**
- **Success Story: Hotel Corona del Mar**
- **The EU experience**
- **Focus on financing**

A nearly zero energy hotel is a hotel with a very high level of energy efficiency

- The amount of energy demanded by the hotel should be covered to a large extent by **renewable energy sources, including on-site generated energy.**
- The European initiative Nearly Zero Energy Hotels (neZEH) aimed to **accelerate the rate of large scale renovations of existing hotels into Nearly Zero Energy Buildings (nZEB)** by:
 - providing technical advice to committed hoteliers
 - demonstrating flagship nZEB projects in the European hospitality sector
 - undertaking training and capacity building activities
- Pilot hotels benefited from the support in **analyzing the energy balance of their facilities and identification of energy efficiency measures to reduce their energy consumption. They also benefited from free promotional support.**



The selection process resulted in two pilot projects to become neZEH



How was the process?

- 5 hotels were shortlisted
- Pre feasibility studies were conducted
- The most appropriate hotels were selected
- Selected hotels were audited
- Feasibility studies of the hotels to develop the saving measures
- Communication and Outreach support for the selected projects

4 stars hotel, located at first line beach in Benidorm (Alicante), 129 rooms, open 365 d/y, and committed to the environment

- Restaurant
 - Cafe
 - SPA
 - Indoor pool, jacuzzi
 - Outdoor pool, jacuzzi
 - Sauna
 - Gym
 - 24h Front desk
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- ISO 14001
 - EMAS
 - Carbon Footprint calculation ISO 14064-1



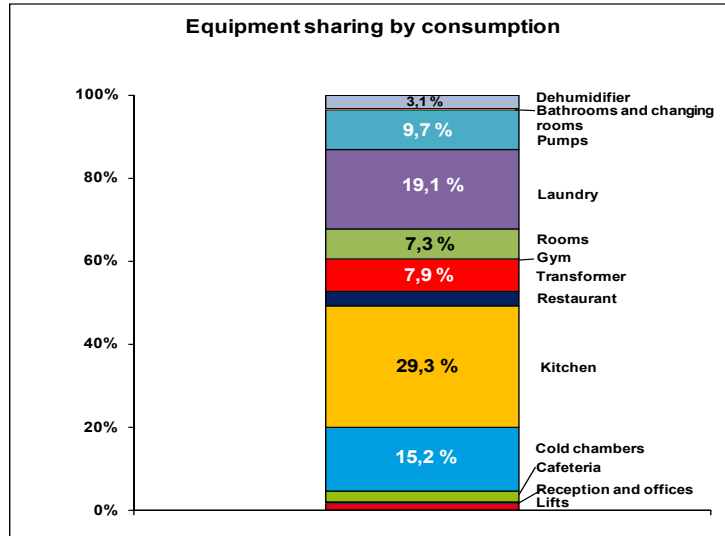
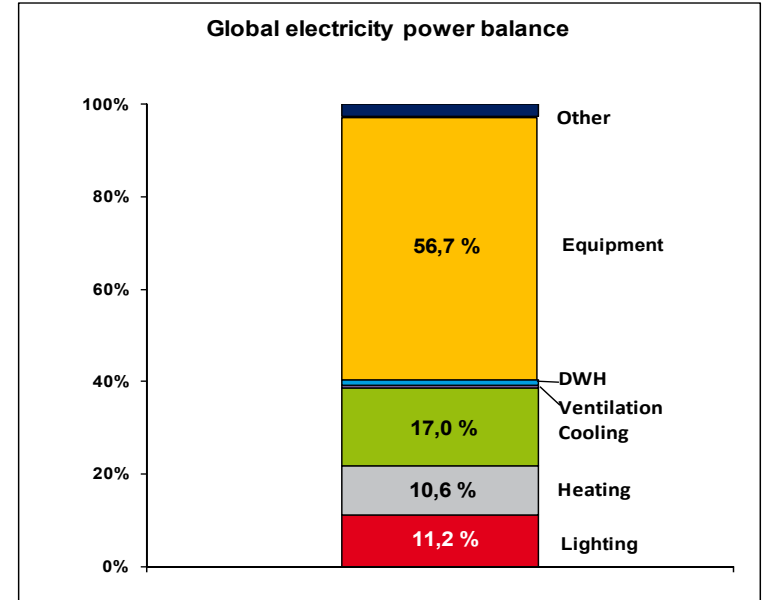
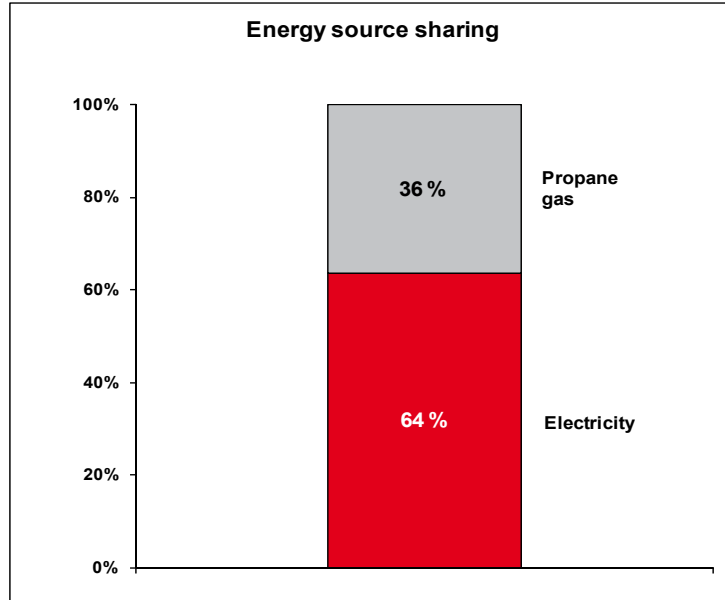
**Hotel Data
Overview**

CONSTRUCTION YEAR	[-]	1969
ENERGY CONSUMPTION	[kWh]	1.697 MWh
N° ROOMS	#	129
N° OF STAYS	#	93.888
OCCUPANCY	%	>78

Main facilities

Lighting		HVAC		SHW	Equipment	
Type	%	Type	Nu m.	Power (kW)	Zones	
LED	4%	Boilers	6	28,5	SPA	
Metal Halure	6%	Water pumps	5	1,5	Gym	
Halogen	19%	Fan coil	142	0,04	Sauna	
Fluorescent	38%	Chillers	1	122	Restaurant	
CFL	33%				Conference room	
					Kitchen	

Consumption share by use and fuel type



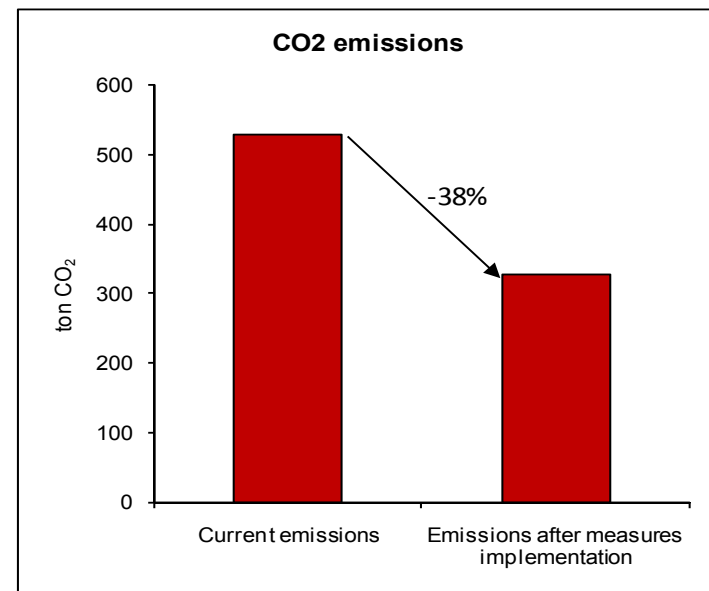
- Propane gas is used for the kitchen and the hot water
- Largest consumption are: kitchen equipment, laundry and cold chambers

Once the hotel was audited, Energy Saving Measures were detected. Potential savings reached 37% of the energy consumption.

Energy Efficiency Measures	Usage	% Savings	Investment	Payback
Boilers replacement (for heating pumps)	Clima	10 %	105.250	8,4
Ozone system for laundry	Equipment	5,5 %	7.080	1,0
Aereators	SHW	4,9 %	1.648	0,3
Replacement of pumps for more efficient ones	Clima	4,1 %	71.315	11,8
Wind generation	RES	3,6 %	206.060	39,4
LED	Lighting	3,1 %	19.388	3,9
Presence detectors	Lighting	2,1 %	1.350	0,4
Minibars	Equipments	2,1 %	32.250	10,7
Others	All	8,7%	135.500	8,5
TOTAL		37 %	580.000	11,1

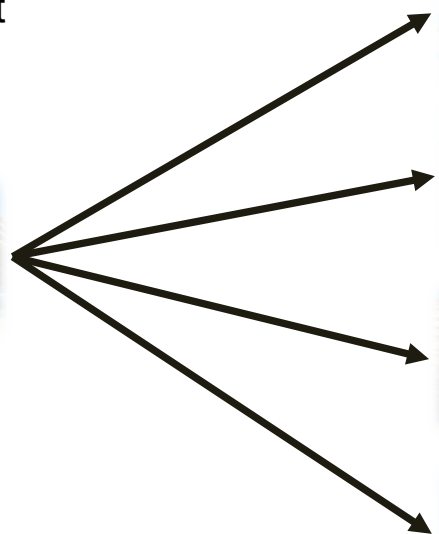
To sum up, after implementing the energy saving measures, Hotel Corona del Mar, achieved:

- Energy savings equal to 623.310 kWh / year
- Around 37% reduction on total energy consumption
- That means 51.830 € / year
- The amount of investment needed was 577.639 €



Thanks to the achievements in Corona del Mar, the hotel chain RH will start an energy efficiency improvement plan for 17 hotels

- Carbon Footprint calculation
- Energy Audit



- ESCO
- NZE

In most of the cases, the results were even better than neZEH targets

			BEFORE	AFTER			
Country	Facilities	% Occupancy	Av. primary energy use (kWh/m ² /y)*	% Savings*	% RES share*	Investment	Payback (years)
France	lounge, piscina, spa	82% (every year)	306,5	68%	35%	€ 803.003	5,2
Greece	Kitchen, Restaurant, 3 pools	72 % (May-Oct)	292.5	62%	50%	€ 536.000	10.7
Italy	Spa	32 % (Jun-Sep)	100	52%	85%	€ 23.760	2 (BEP)
Romania	Restaurant, conference rooms	64% (every year)	378,8	76%	37,3%	€ 414.389	1,9
Spain	Spa, pool	22% (every year)	181	47%	85%	€ 305.900	8,2
Sweden	Kitchen & restaurant, sauna	49% (every year)	760	74.3%	58%	€ 86.084	3,9

Different types of financial instruments can be used to finance a neZEH project

- Own and banking resources

- EU and national financial instruments



National and international
authorities programs

- Energy services



Energy Performance Contracting
(EPC)

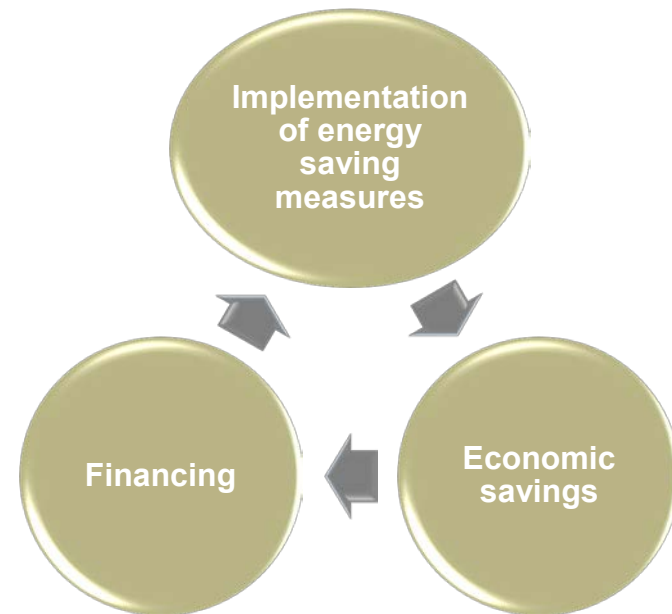
Energy Performance Contracting (EPC)

- Investments in energy efficiency measures are recovered by the savings expected by the level of energy efficiency improvement agreed by contract.

Benefits:

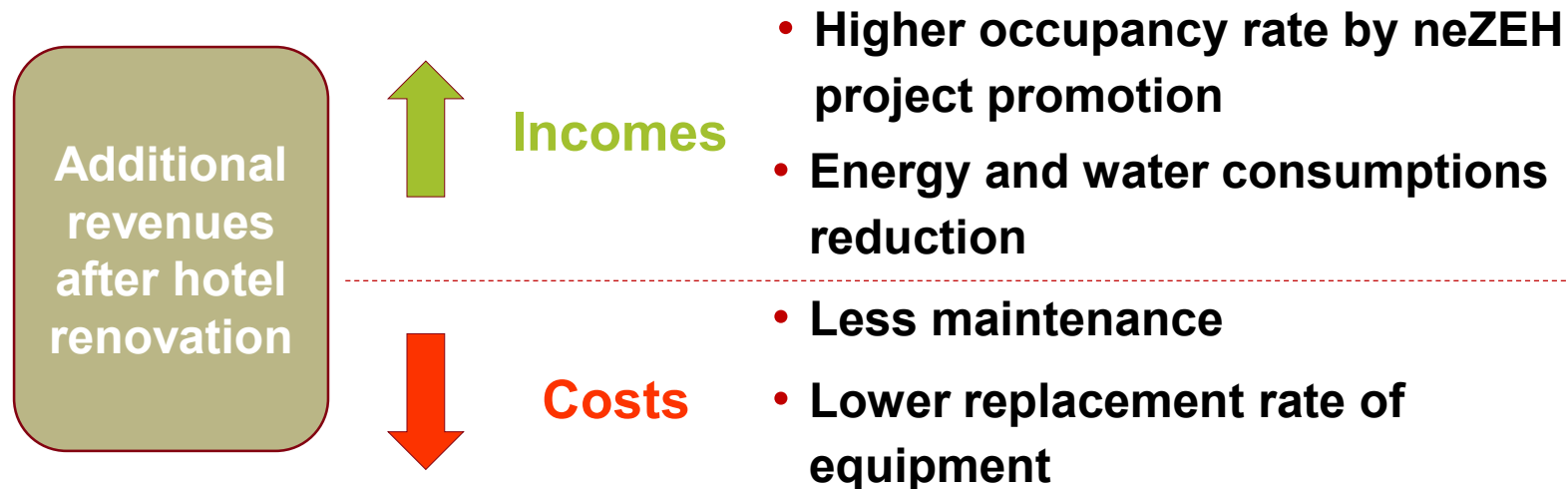
- Guaranteed energy and economic savings
- No investment risks
- Energy operational and management performance improved

The payment for the services delivered is based (in part or fully) in obtaining improvements in energy efficiency

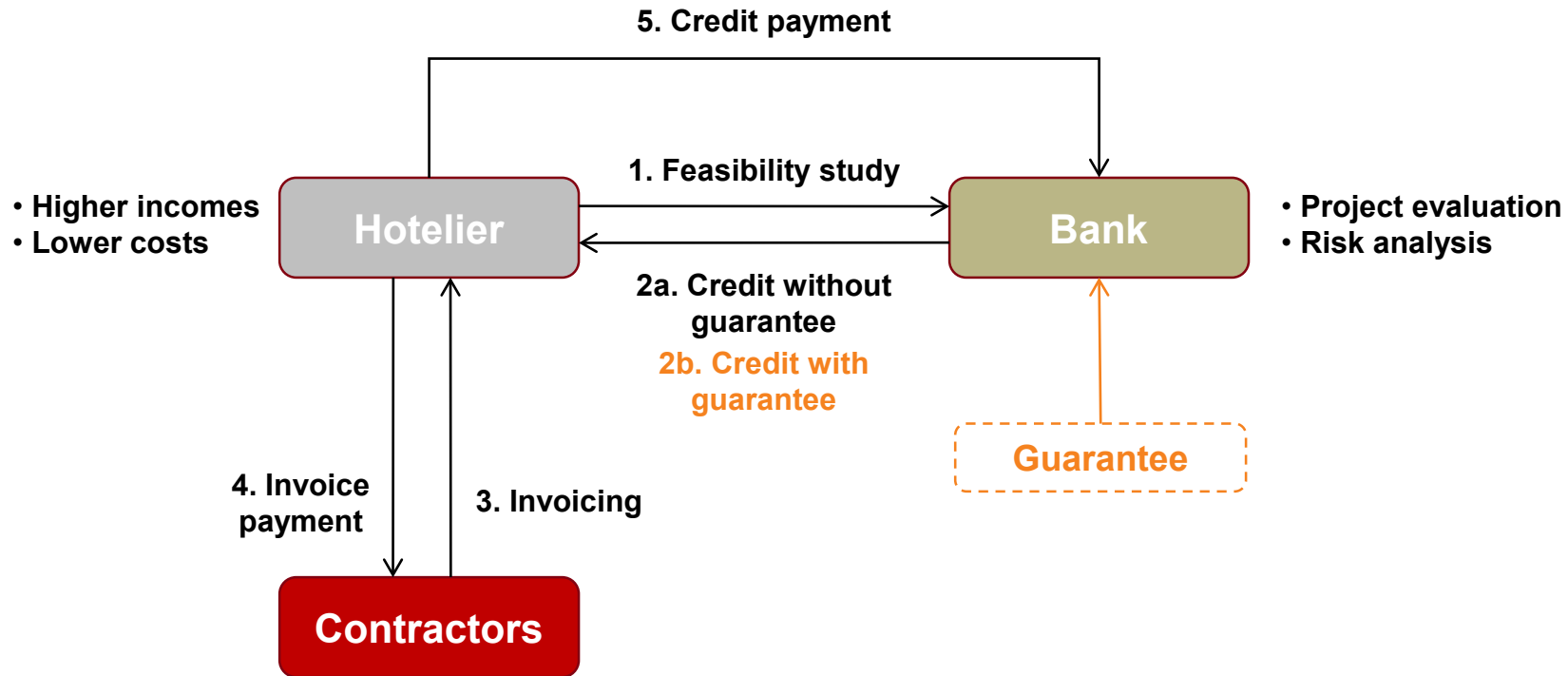


Put simply, a **neZEH project** will be considered **bankable** if lenders are willing to finance it

- **Net Present Value (NPV): higher than 0**
- **Internal Rate of Return (IRR): higher as possible**



Bank process





Engineering

Consulting

ESCO

Software