



# Achieving sustainability through sound environmental management

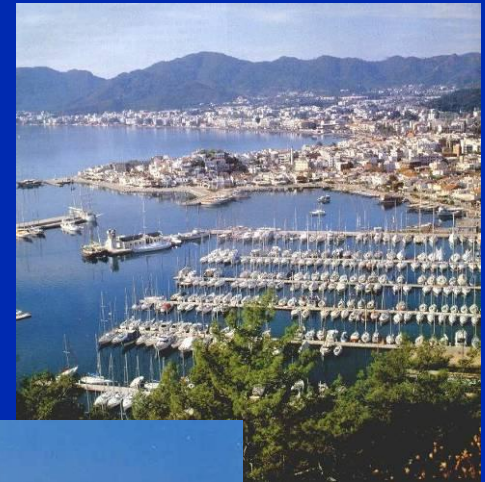


# Environmental impact of the hotel industry

- ❑ How significant is the environmental impact of a hotel?
- ❑ Why be concerned with the environmental impact of the hotel industry?

# Why be concerned?

- ❑ Tourism lives off the environment
- ❑ Resources are not unlimited
- ❑ Competitiveness and profitability of companies
- ❑ Climate change





# Financial impact of environmental management

- Sound environmental management calls for:
  - The efficient use of resources - water, energy, chemicals, materials
  - Pollution prevention rather than control, treatment and disposal
- Environmental management is a profitability tool



# Financial impact of environmental management

- Environmental management assessment conducted in a 300-room, 5-star hotel:
  - 115 recommendations focused mainly on:
    - Energy and water conservation
    - Efficient use of chemicals and materials
    - Waste reduction
  - Benefits
    - 35% reduction in domestic water consumption
    - 70% reduction in irrigation water consumption
    - 30% reduction in electricity consumption
    - significant reduction in off-site solid waste disposal
  - Financial savings from the 30 quantifiable recommendations  
**= €150.000 /year**

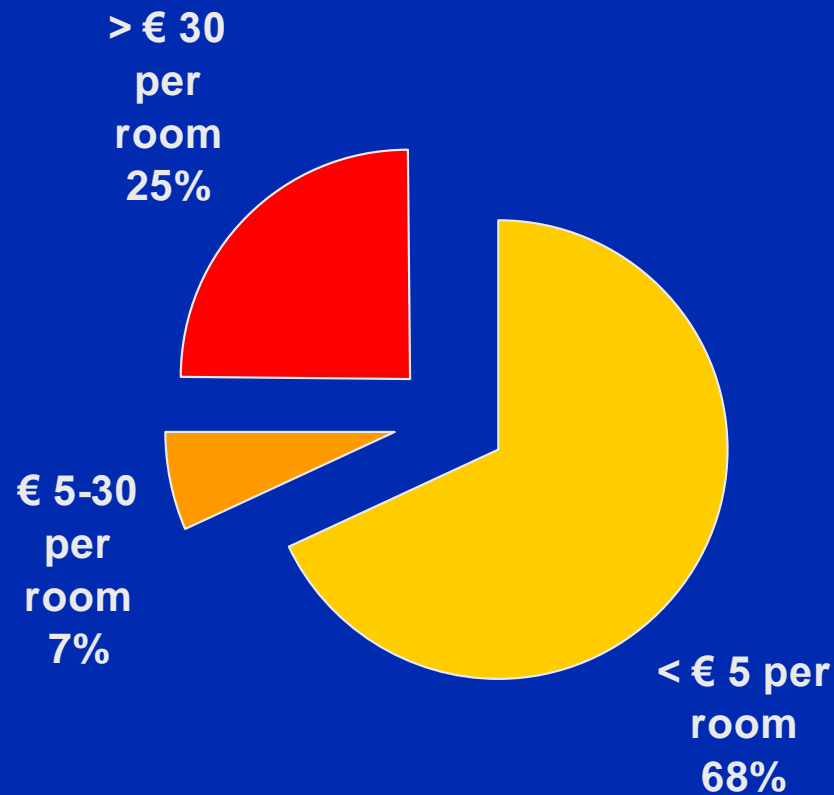


# Financial impact of environmental management

- ❑ What did it take to achieve those savings?
- ❑ “Top 6” recommendations
  - Reduce the output of showerheads to 9 L/min
  - Repair toilet leaks
  - Reduce the wattage of exterior decorative lights and turn them off at 1:00 AM
  - Improve the towel reuse program
  - Irrigate the grounds early in the morning
  - Optimize the backwashing of pool filters
  
- Financial savings                    **= € 78.000 /year**
- Implementation cost                **= € 8.000**
- Return on investment                **> 900%**

# Financial impact of environmental management

Breakdown of recommendations by implementation cost





# Benefits of environmental management

- ❑ In addition to saving resources and money, environmental management can:
  - Increase the service life of existing equipment
  - Reduce future expenditures in equipment
  - Reduce the hotel's workload
  - Reduce the generation of waste and pollutants
  - Reduce waste handling, treatment and disposal requirements



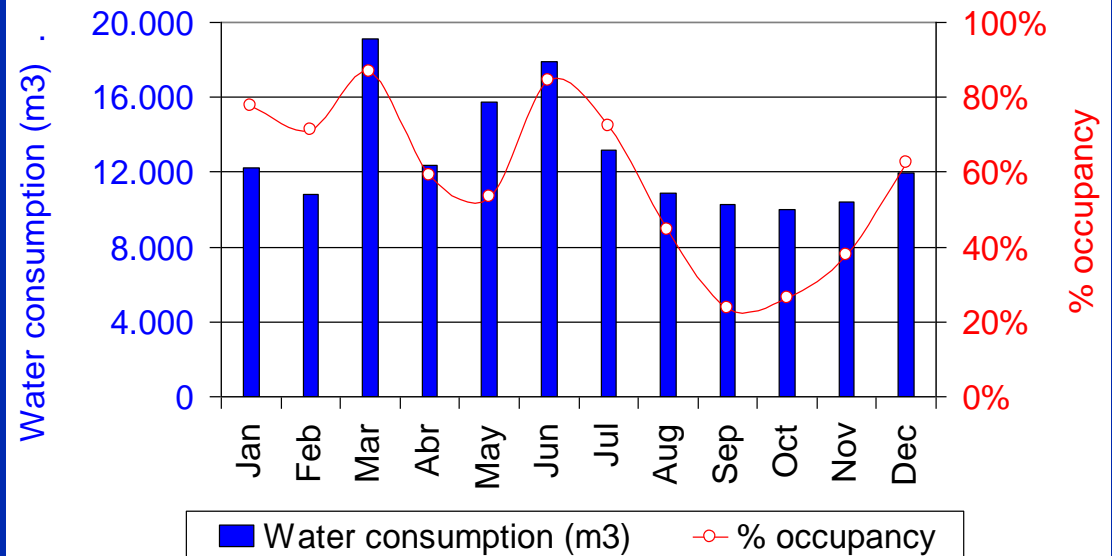


# Monitor your performance

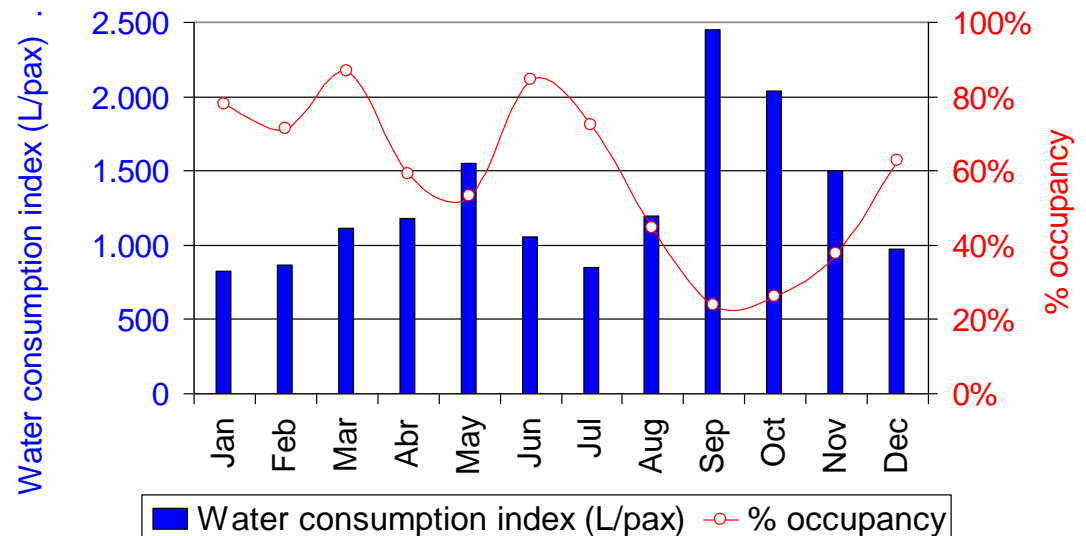
- ❑ You can't control what you don't measure
- ❑ Many hotels track their expenditure in energy and water but overlook their energy and water consumption
- ❑  $\text{Expenditure} = (\text{unit cost}) \times (\text{consumption})$
- ❑ Monitoring consumption allows a hotel to measure changes in its energy and water use performance
- ❑ What should you monitor?
  - Total consumption
  - $\text{Consumption index} = (\text{total consumption}) / (\text{occupancy})$

# Monitor your performance

Total  
consumption



Consumption  
index



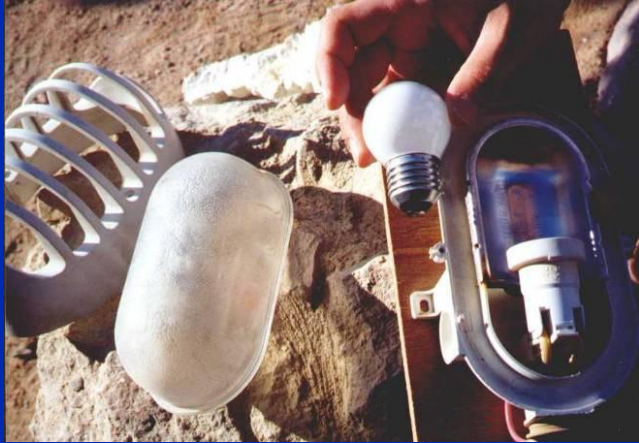
# Use energy efficient lamps



Incan- descent lamp	Equivalent CFL	Savings over an 8000- hour CFL life	
		(kWh)	(€)**
40 W	10 W	240 kWh	€ 24
60 W	15 W	360 kWh	€ 36
75 W	20 W	520 kWh	€ 52
100 W	25 W	600 kWh	€ 60

\*\* For a cost of € 0,10 /kWh

# Ensure lighting fixture are efficient



# Use decorative lighting wisely

- 1 x 80W, 7 h/day



=



- 2 x 80W, 7 h/day



=



- 32 x 50W, 6 h/day



=



- 12 x 300W, 7 h/day



=





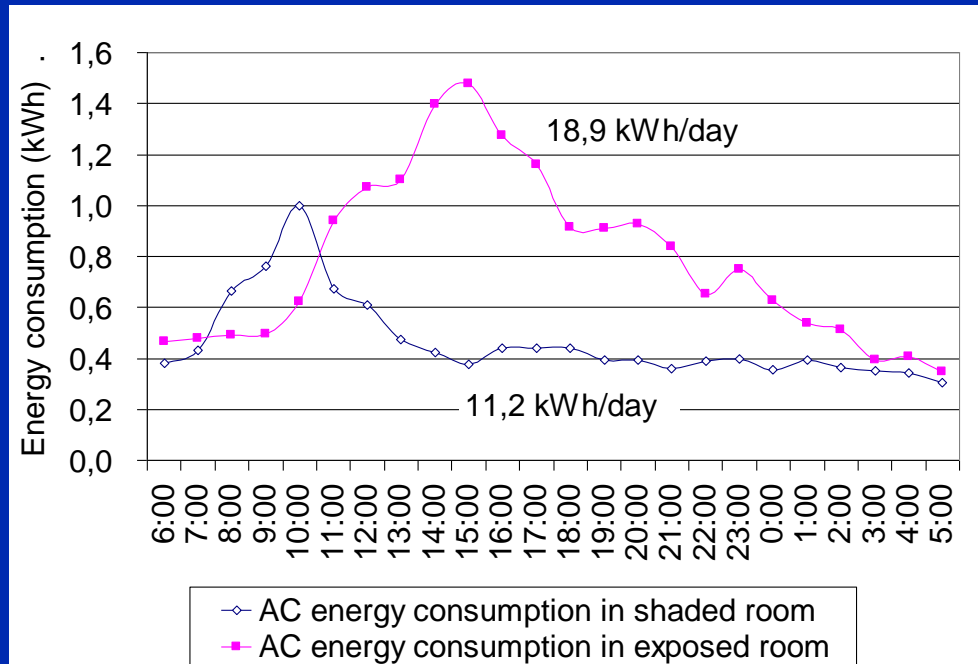


# Lighting - General considerations

- ❑ In most cases, the same effect can be achieved with energy efficient lighting
- ❑ Architects and interior decorators don't pay your electricity bills

# Minimize solar heat gain in air conditioned areas

- ❑ Power density of direct sunlight = 800 to 1000 W per square meter
- ❑ Only a small portion of the energy contained in direct sunlight is blocked off by standard windows



# Minimize solar heat gain in air conditioned areas

- ❑ To reduce the heat load in air conditioned rooms, ensure South- and West-facing windows and glass doors are protected from direct sunlight
- ❑ During the warmer months of the year, block out direct sunlight but allow diffuse daylight in



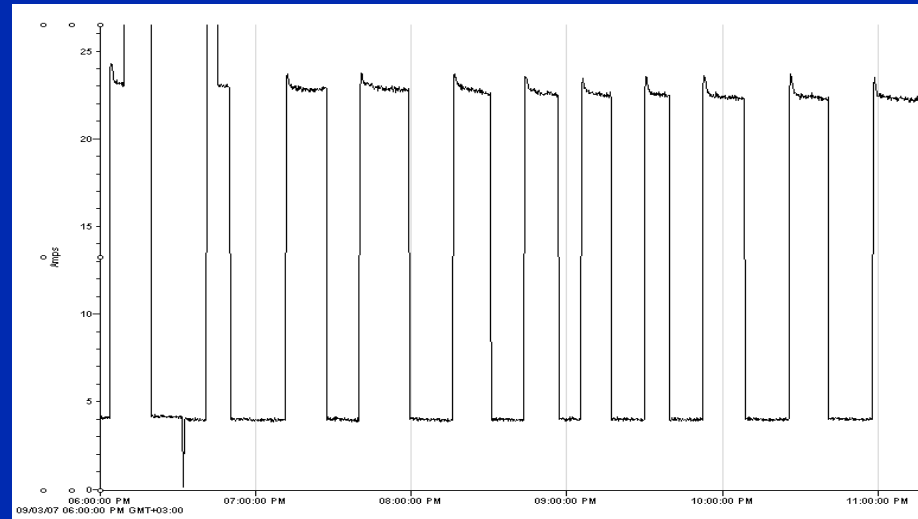
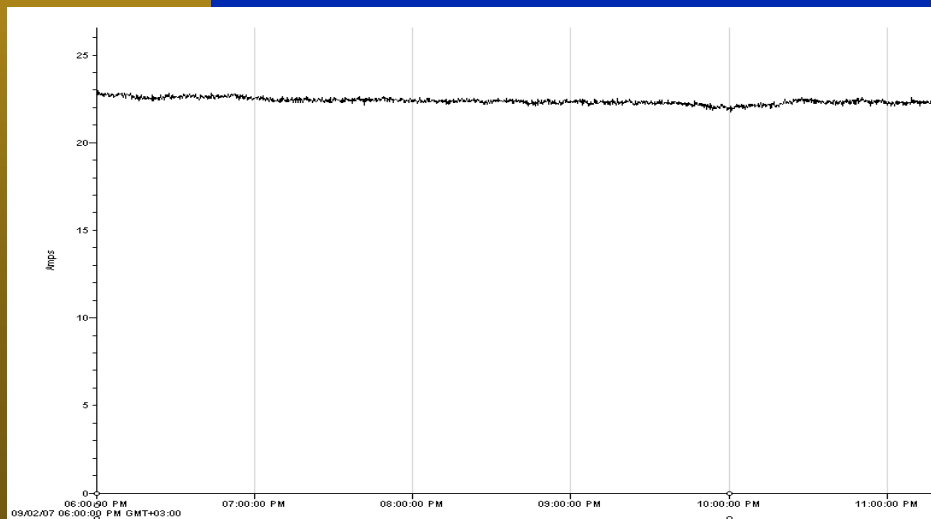


# Maintain a reasonable temperature setting in air conditioned areas

- ❑ Comfort temperature for air-conditioned areas = 24°C
- ❑ Air-conditioned public areas are often maintained at much less than 24°C
- ❑ Example: energy consumption of a restaurant chiller which is set to maintain an indoor temperature of:

20°C

24°C



# Reduce the laundry's workload

❑ 80-room, 5-star hotel in Portugal

## ❑ Recommendations

- Optimize laundry operations
- Modify property's linen change policy
- Put in place a voluntary towel reuse program
- Use laminated place mats

## ❑ Results

- Reduced the workload on the laundry by 10.000 kg/year
- Eliminated 510 washer loads/year
- Eliminated 1.350 dryer loads/year





# Final thoughts ...

- ❑ Get the information you need on efficiency improvements and environmental management
- ❑ Evaluate and monitor your performance
- ❑ Evaluate the cost and impact of inefficiencies
- ❑ When needed, get advice from qualified professionals



# Thank you

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