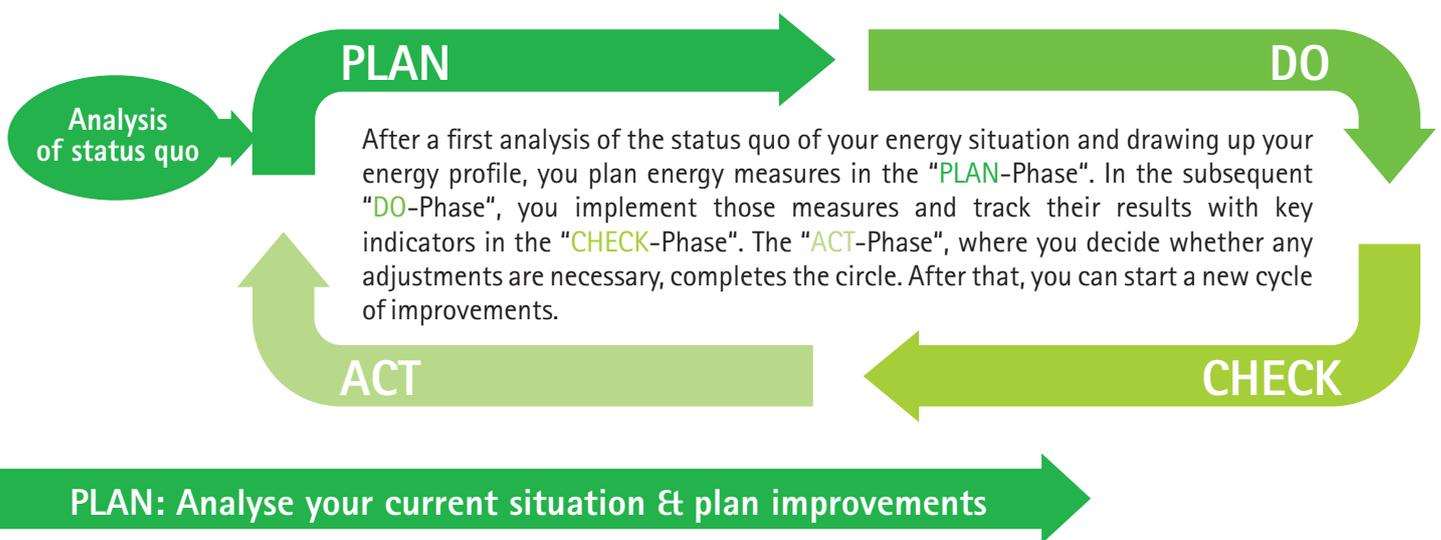


# ENERGY EFFICIENCY FACT SHEET

## HOTELS & TOURISM

This fact sheet provides you with an overview of how to quickly and easily reduce the energy consumption in your business and how to become more energy efficient. The fact sheet is structured according to the four phases of a continuous improvement process:



### STEP 1:

#### Collect energy data

Where do you find energy data for your business?

- Invoices for electricity, gas, district heating, diesel, etc.
- Records of meter readings
- Additional data from energy provider, either upon request or via internet customer portal
- Possibly readings of individual machines or devices
- Estimations (based on the equipment list)

### STEP 2:

#### Develop an equipment list and identify your main consumers

Document the type and number of your main devices with the following information per machine:

- Age
- Rated power
- Operating hours
- Actual power

In hotels, the most energy is commonly used in the following areas. You can focus on these first:

- Heating
- Hot water
- Cooling and air conditioning
- Lighting
- Pumps and fans
- Other electrical devices
- A pool and spa area is usually a major energy consumer!

### STEP 3:

#### Create your energy profile

With the help of indicators for your sector (see page 3), you can make an initial estimate of whether potentials for improvement exist for your business. If your electricity supplier provides load profile data (e.g. 15-minute intervals), you can track energy guzzlers during off hours or periods of closure and optimise the connected load.

### STEP 4:

#### Plan energy efficiency measures

You can find a list of measures that are often relevant for hotels on page 2. An energy check or audit carried out by an external consultant can help you evaluate your overall situation, choose which measures are economical for your business and propose a suitable order for the implementation. Inform yourself about the availability of financial support for the consultant cost and for investments!

Also, compare offers of different energy suppliers.

## DO & SAVING TIPS: Get active, implement measures

Experts recommend first implementing the so-called "low hanging fruit" measures. These are mostly organisational measures that are associated with relatively small changes in system settings, processes or staff behaviour. They often require little or no investment (e.g. optimisation of the temperature level in the heating system, switching off equipment when not in use). They can serve as a basis for further improvements that require investments.

The following energy saving recommendations address major energy uses in hotels:

### Organisational measures

- Consider energy efficiency as a criterion for all new purchases
- Compare prices and terms offered by different energy suppliers, consider whether bundling energy purchase with other hotels in the vicinity makes sense
- Install load management to reduce peak loads
- Motivate employees and guests not to waste energy
- Ensure staff know about correct settings for lights, heating and air conditioning and energy efficient room cleaning:
  - Brief and intensive airing, do not leave window tilted after cleaning (tilted windows: 10-20% additional costs)
  - Turn off TV and lights
  - Keep radiators free and not covered
  - Report defects: e.g. dripping taps
  - Cleaning of bathroom: use cold water for rinsing

### Heating

- Optimise the temperature level
- Optimise operating times (summer & winter, off season, night set-back)
- Respect the periodic service intervals for the heating system
- Use thermostatic radiator valves
- Check the heating system (e.g. insulation of pipes, pumps, mountings, appropriate size)
- Separate heating circuits, if appropriate, and control them individually
- Avoid additional electric heating in rooms
- Insulate roof or top floor ceiling, check tightness of windows
- Gutter heating: manual and automatic control (ensure switching it off after winter season)

### Lighting

- Ensure regular cleaning of lamps and fixtures
- Enable separate lighting of specific zones / task lighting
- Use lighting control strategies such as scheduling, occupancy sensors, dimming etc. to turn lights off or down when not needed.
- Equip rooms with hotel card system, to enable disconnection from the mains when leaving the room
- Make greater use of daylight
- Install energy efficient lamps (e.g. LED, use electronic ballasts where appropriate)
- Elevator: Install LED (always on and prevent overheating in summer)

### Refrigeration & Air condition

- Choose optimal location for coolers (away from heat sources, air flow to condenser not obstructed)
- Clean evaporator, cooling fins and condensation drain regularly
- Check insulation of coolers, closing function of door seals and door closers
- Optimise temperature levels and loads in cold storage rooms (-18°C in deep freeze rooms is sufficient)
- Check possibility of heat recovery
- Air condition: use window shades or sun blinds where possible, ensure air conditioners only operate with windows closed, do not cool unoccupied rooms
- Minibars in rooms: cool no colder than 8°C and shut down when room is not occupied

### Pool and spa area

- Define certain operating times
- Indoor pool: Where appropriate, adjust air temperature to 2°C higher than water temperature to prevent excessive evaporation
- Regulate humidity: 45% - 65%
- If possible, use a pool cover during off hours to reduce evaporation and conserve heat

### Hot water

- Limit (hot) water consumption: install energy saving taps in showers and washbasins; at the toilets: two-key system
- Set the flow temperature to 60°C
- Check possibility of using a solar installation for hot water preparation

### Pumps

- Interval operation (with timer, impulse relays, thermostat)
- Variable speed control
- Consider using waste heat to heat water

### Further electrical devices

- **Dryer / Washing machine:** increase spin speed if necessary
- **Washing machine:** Lower the washing temperature from 90°C to 65°C, using modern detergents
- **Dishwasher, washing machines:** Ensure correct filling, check if hot water supply is possible, use appropriate sizes for your needs
- **IT:** Enable power saving mode for all devices, turn off devices when not in use
- **Printer:** standard setting double-sided printing, black-and-white
- **Ovens:** Turn off as soon as possible, use waste heat, if possible.
- **Energy-saving cooking:** use pan and pot covers, iron cooking pots, use hot water, induction cookers, where possible

### Fans / Blowers

- Clean or replace filters regularly
- Shut down outside operating hours
- Use of speed-controlled motors

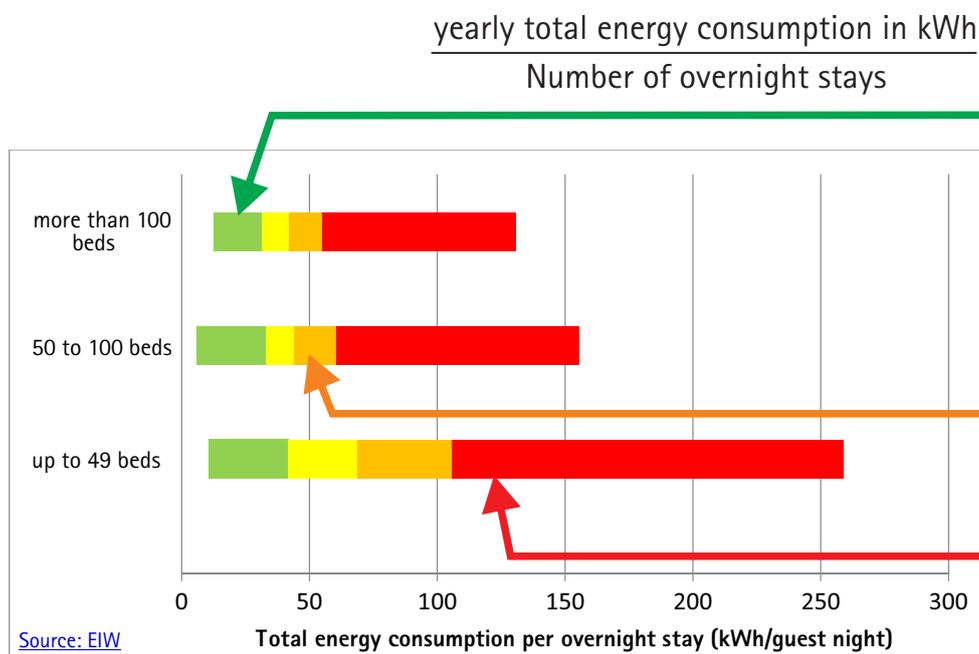
## CHECK: Identify your indicators

Sectoral benchmarks or indicators allow you to make a first comparison of the energy consumption of your business with that of other hotels. Later, you can view the development of your own indicators over time and thus track the results of your energy efficiency efforts.

How to calculate an indicator is explained below, illustrated by an indicator which is based on a sample of Austrian small and medium sized hotels. You can find additional indicators here: <http://eurem.net/display/eurem/Hotels>.

To calculate your total annual energy consumption, add up the consumption of the individual energy sources (electricity, natural gas, heating oil, diesel etc...). Make sure you always consider the same period and convert to the same units (kWh).

### TOTAL ENERGY CONSUMPTION PER OVERNIGHT STAY



If you are in the **GREEN** area, then you probably use energy efficiently. You have no immediate need for action, but think about further improvements nevertheless.

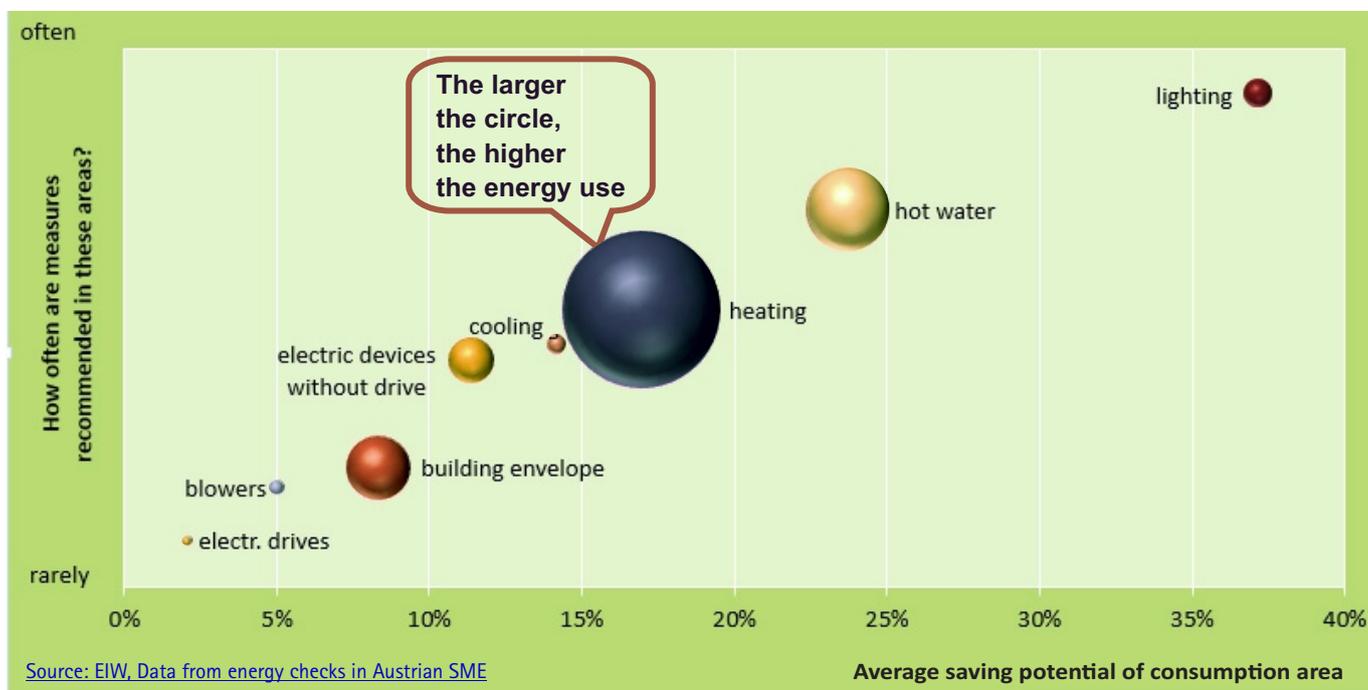
If you are in the **YELLOW-ORANGE** area, then you probably have savings potentials. Inform yourself and plan efficiency measures.

If you are in the **RED** area, this could be an indication of high potential savings. Localise inefficiencies in your business and implement concrete measures.

Example: Your total annual energy consumption amounts to 1000 MWh, the number of overnight stays is 8000. This results in 125 kWh total annual energy consumption per guest-night. For a business of up to 49 beds, this would mean that the value is rather high compared with similar sized companies in the sample, and that savings potentials probably exist. Keep in mind, however, that factors such as climatic conditions, indoor pools/spa, laundry done inhouse or outsourced, or capacity utilisation affect these values and therefore they can only serve as a first rough comparison value!

## ACT: Adjustments & further improvements

When you have successfully implemented the chosen activities, decide whether further measures or adjustments are needed. The following graph shows how often experienced energy consultants have recommended measures in which areas as well as the average savings that were expected in these individual areas. For example: measures in lighting were very often proposed, the saving potential here was on average 37 % of the energy use for lighting. The small diameter of the circle illustrates, however, that lighting typically only accounts for a small part of total energy consumption.



The involvement of your employees is essential for an energy-efficient operation of your business. Value internal communication highly: inform about energy saving behaviour and about reasons for any changes in procedures, invite suggestions, check compliance, communicate and provide recognition for successes. This helps to ensure that efficient use of energy becomes routine and energy consumption is reduced in the long term.

### Additional information

- For additional sector specific resources, including success stories of businesses that have saved energy and costs, please visit the Sector Corner at <http://eurem.net/display/eurem/Hotels>.
- To find out more about opportunities to improve your energy situation, you can also contact the EUREM Provider in your country (<http://eurem.net/display/eurem/Training+Providers>), or an energy agency ([http://managenergy.net/energy\\_agencies](http://managenergy.net/energy_agencies)) near you.

**This factsheet is also available in Croatian, Czech, German, Greek, and Macedonian with country-specific additional information and contacts at the online [Sector Corner](#).**

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