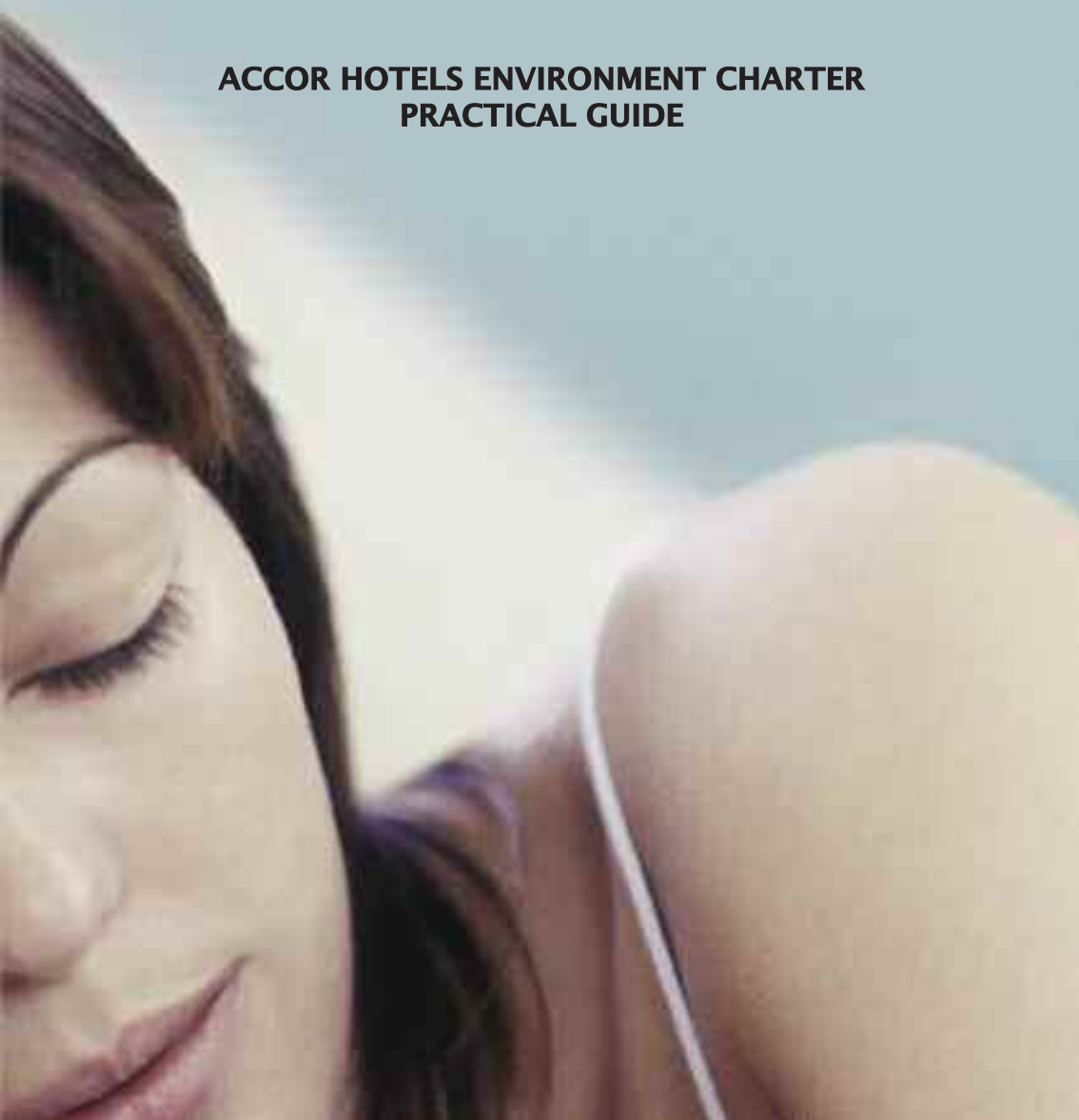
as guests of the earth, we welcome the world

ACCOR HOTELS ENVIRONMENT CHARTER
PRACTICAL GUIDE



“Earth Guest” : An ambitious program for Our Sustainable Development Strategy.

As we work in the service of men and women everywhere in the world, we are building the future. That is the concept of the Earth Guest program which strives for the well being of man and respect for the environment.

No universal solution for conserving the Earth’s resources exists. However, experience has shown us that certain practices can be beneficial everywhere and for everyone. Our Environment Charter offers a common foundation for your own approach. Through join effort, the proposed actions have all proven their effectiveness within the hotel in the group. You can implement them without hesitation whenever applicable to your local community. It is up to each of you, within your brand and your country, to identify your priorities and to find a balance between these guidelines and your local initiatives.

With these practices, we will improve the perception of our service around a common ambition: to leave our childeren a more beautiful planet.

Our Hotels Environment Charter, a pillar of the "Earth Guest" program

"While NGOs (non-governmental organizations) and public actors at all levels are launching appeals for changing production and consumption patterns and are working to reduce the pressures being brought to bear on the planet, our Hotels Environment Charter, a pillar of ***our*** *Earth Guest program, offers a constructive alternative. Based on more than 60 possible actions for better using the environmental resources, it is, from the start, a rational approach for us.*

The Charter places us and our associates in a virtuous circle for the men and women of the planet. Protecting the earth's resources is essential for the health and living conditions of billions of human beings. It is also vital for protecting the value of the places where the group is expanding.

Our Hotels Environment Charter gives you the opportunity to show your guests in concrete terms that another way of consuming is possible*, combining environmental demands and quality of service. Companies are key-players to prove that solutions exist, that they are coherent with economic logic and that they simply need to be better known in order to be fully applied. The visibility you give your actions will encourage their distribution, in particular in developing countries, which is vital for the future of our planet.*

For several years, the United Nations Environment Program has been working with us to develop sustainable tourism. This cooperation will continue during the years to come and will, I hope, allow us to seize other opportunities to work together for a sustainable development."

This Guide is intended for all hoteliers. It consists of two parts: a
> general presentation of the Charter (page 3);
> a presentation of each Environment Charter action (page 8).

For each action, this guide indicates:
> its environmental advantage
> the general method of implementation
> when an action is regarded as complete

Contents

The Sustainable Development team, with the help of hoteliers representing all geographical regions, developed this document.
We would like to thank the experts from the United Nations Environment Program and the BirdLife association who contributed to its writing.

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How to use the Environment Charter

Why a new Environment Charter?

The first Environment Charter was introduced in 1998 in our hotels. It covered 15 environmental actions. Designed, originally to be deployed in Europe, it was eventually adopted more widely around the world and its implementation has been monitored every year through the intranet. After seven years of application, it is now necessary to upgrade it, making it more ambitious in scope and allow specific local features to be taken into account.

The innovations of the Environment Charter concern:

- **the environmental actions;**
- **the implementation, particularly the choice of priority actions;**
- **the communication to the clients.**

The environmental actions

This new Environment Charter expresses our willingness to accelerate the reduction of its environmental impacts. The 65 actions presented in the Environment Charter are already implemented in some hotels and should be progressively implemented throughout the network.

The dynamic

The Charter is the benchmark tool of the group for managing the environment in the hotels: **the hotel is central in this process**.

In the hotel, the general manager directs its implementation.

> He/she knows which actions have been defined as priorities in his/her region (see below).
> He/she supervises the carrying out and monitoring of these actions in his/her hotel.
> He/she ensures that the newly implemented actions are reported in the Environmental Management Tool (OPEN).

The deployment of the Charter in the hotels requires the collaboration of all the operational and support departments (marketing, maintenance, purchasing…). The hotels will be assisted by their Directors of Operations, the support departments and the Sustainable Development department in implementing these actions.

The Directors of Operations with the support of their environment coordinators play an essential role in this dynamic.

> They determine each year the **priority actions** of the Charter to be implemented in their hotels and share them with the hotel teams.
> They organize assistance to the hotels through the support departments.

This dynamic can be implemented through a regional Environment / Sustainable Development Committee.

The Support Departments (marketing, maintenance, purchasing…).

> They help the hotels to implement the priority actions.
> When possible, they propose "turnkey" solutions.

The Sustainable Development department.

> It exchanges each year with the environment coordinators about their priority actions, informing them about concrete solutions applied in other regions.
> It consolidates the results of the application of the Charter and communicates them to the environment coordinators.
> It spreads good practices.

Communication to guests

A poster dedicated to communication to guests has been produced by the sustainable development team. To guarantee the Charter's credibility, **the hotel should display this poster to its guests only when it has implemented:**

> **the compulsory actions** for raising the awareness of the hotel staff (action 1), for setting objectives in limiting water and energy consumption (actions 5 and 24) and for analyzing the latter (actions 6 and 25);

> **a minimum number of actions** (including the five compulsory actions):
- 15 actions for budget hotels
- 20 actions for mid- to upmarket hotels

> at least **one action visible to the clients** (ref. table on next pages: it concerns actions with a red square in the "client" column).

The criteria may change in the coming years.

In addition, the hotel can provide any interested client with the list of implemented actions. This list can be printed directly from the intranet (OPEN).

Our Hotels Environment Charter 65 actions

The table below presents the 65 actions detailing the level of managerial involvement, technical expertise and guests' visibility.

Management involvement	Technical expertise	Guests' visibility	
			INFORMING AND RAISING AWARENESS
■	■	■	01. Raise the hotel's staff awareness of the environment
■	■	■	02. Integrate the preservation of the environment in all jobs
■	■	■	03. Make our guests aware of environmental issues
■	■	■	04. Offer our guests less polluting means of transportation
			ENERGY
■	■	■	05. Set objectives for limiting consumption
■	■	■	06. Monitor and analyze consumption every month
■	■	■	07. List potential technical improvements
■	■	■	08. Organize preventive maintenance
■	■	■	09. Ensure optimal use of plant and machinery
■	■	■	10. Install an efficient façade lighting
■	■	■	11. Use low energy lamps for permanent lighting
■	■	■	12. Use low energy lamps in bedrooms
■	■	■	13. Use LEDs (Light Emitting Diodes) for external illuminated signs
■	■	■	14. Use LEDs for the emergency exit signs
■	■	■	15. Use energy-efficient refrigerators in bedrooms
■	■	■	16. Insulate pipes carrying hot/chilled fluids
■	■	■	17. Use energy-efficient boilers
■	■	■	18. Recover energy from the main ventilation system
■	■	■	19. Use energy-efficient air-conditioning systems
■	■	■	20. Recover energy from air-conditioning systems
■	■	■	21. Install solar panels for production of domestic hot water
■	■	■	22. Install solar panels for heating swimming pools
■	■	■	23. Promote use of renewable energies
			WATER
■	■	■	24. Set objectives for limiting consumption
■	■	■	25. Monitor and analyze consumption every month
■	■	■	26. Install water flow regulators on basin faucets/taps
■	■	■	27. Install water flow regulators on the showers
■	■	■	28. Install water-efficient toilets
■	■	■	29. Use efficient laundry equipment
■	■	■	30. Propose to guests to reuse towels
■	■	■	31. Propose to guests to reuse sheets
■	■	■	32. Eliminate mains water-cooled refrigeration systems
■	■	■	33. Recover rainwater
			WASTEWATER
■	■	■	34. Collect and recycle used cooking oil
■	■	■	35. Separate and collect grease from food stuffs
■	■	■	36. Treat waste water or have it treated
■	■	■	37. Recycle grey water

Level of involvement/expertise/guests' visibility level

- low
- medium
- high

This level may vary according to local context.

Management involvement	Technical expertise	Guests' visibility	
			WASTE
■	■	■	38. Recycle paper/cardboard packaging
■	■	■	39. Recycle papers, newspapers and magazines
■	■	■	40. Limit the use of disposable packaging for the hotel supplies
■	■	■	41. Recycle glass packaging
■	■	■	42. Recycle plastic packaging
■	■	■	43. Recycle metal cans
■	■	■	44. Organize sorting of waste in bedrooms
■	■	■	45. Limit individual packaging of hygiene products in bedrooms
■	■	■	46. Recycle restaurant organic waste
■	■	■	47. Recycle garden green waste
■	■	■	48. Dispose safely of hotel batteries
■	■	■	49. Dispose safely of guests' batteries
■	■	■	50. Recycle electrical and electronic equipment
■	■	■	51. Recycle ink cartridges
■	■	■	52. Dispose safely of fluorescent bulbs/tubes
			OZONE LAYER
■	■	■	53. Eliminate appliances containing CFCs
■	■	■	54. Check that appliances containing CFCs, HCFCs or HFCs are leak-proof
			BIODIVERSITY
■	■	■	55. Reduce use of insecticides
■	■	■	56. Reduce use of weed killers
■	■	■	57. Reduce use of fungicides
■	■	■	58. Use organic fertilizers
■	■	■	59. Water plants in a rational way
■	■	■	60. Use plants locally adapted
■	■	■	61. Plant at least one tree every year
■	■	■	62. Participate in a local action for the environment
			GREEN PURCHASES
■	■	■	63. Use ecological paper
■	■	■	64. Favor Ecolabel products
■	■	■	65. Favor organic products
			CERTIFICATION
■	■	■	ISO14001 Certification

INFORMING AND RAISING AWARENESS

Key figures

The tourism industry in the world:
> 600 million tourists each year.
> 200 million jobs.

01 Raise the hotel's staff awareness of the environment

Why?

The **mobilization** of the whole team is essential: it should be initiated by the general manager with possibly the help of an "environment facilitator". Raising employees' awareness also provides the opportunity to review implemented actions and to identify how to go further.

How?

Making the hotel staff aware of the issues involves:

> an annual presentation to all the hotel employees on:
- the environmental impacts of the hotel (ref. intranet). You can also call for **external speakers** (experts, associations, suppliers…) on specific subjects;
- the **implementation of the Environment Charter**: actions taken and actions planned;

> **a presentation to every new employee;**

> information communicated **to the staff on the dedicated billboard.**

Compliance?

When all these actions have been implemented. The staff awareness is proportionate to the hotel/brand resources.

02 Integrate the preservation of the environment in all jobs

Why?

Apart from having a general awareness of the environmental issues, all members of staff **can take steps to limit their environmental impact.**

How?

Through simple actions ("turn off the light when leaving an empty room") and **specific practices depending on the job** (e.g. for cooks: "don't leave the gas burners on"). A list of these specific practices per post is available on the Intranet. Each **Head of Department** reviews them and is responsible for their good application.

Compliance?

When the simple actions and the specific practices are known by all and applied in the hotel. They are documented, regularly reminded, displayed and communicated to all employees.

03 Make our guests aware of environmental issues

Why?

Our clients are increasingly sensitive to environment preservation: they practice open-air sports, sort their waste… work in companies that apply corporate social responsibility. This topic can bring out **constructive discussion**. However, the approach should not be moralistic or pessimistic but **positive and enthusiastic**.

How?

> Presentation of the **value** of the local **natural surroundings** with its fragile aspects and how to protect it. This can lead to discovery activities organized with **associations**.

> Presentation of **simple actions** that can be adopted "in hotels as in the home" to limit environmental impact; this awareness-raising approach can be undertaken within the framework of national or international programs.

Compliance?

When one awareness-raising event is undertaken during the year.

04 Offer our guests less polluting means of transportation

Why?

Transportation represents over **one quarter** of the world's energy consumption and emissions of greenhouse gases. The number of vehicles on the road (700 million in 2005) has increased **tenfold in the last 60 years**. Car is the most used form of motorized transportation, ahead of bus or train.

How?

The hotel can facilitate **public transportation by:**

> providing **detailed information on how to get to the hotel** by public transportation on the hotel reservation website;

> giving **bus and tube maps** to guests.

The hotel can also propose **alternative means of transportation:** bicycles, electric car, rollerblades…

Compliance?

When the hotel encourages the use of public transportation or provides alternative means of transportation.

ENERGY

Key figures

> The world's total primary energy supply has doubled in 35 years.
> Buildings represent 40% of this consumption.
> 16,000 billion dollars of investments will be necessary to satisfy the world energy demand in 2030.

"Energy manifests itself in different forms: heat, light as well as mechanical, electrical, chemical, and nuclear energy. It is stored in a number of primary energy sources (oil, coal…), to produce secondary energy sources. The latter ones can be easily moved, stored, and delivered to consumers. Electricity is the most common secondary energy source.

Primary energy sources can be divided into two groups:

> renewable energy (hydropower, solar, wind, geothermal and biomass) that can be replenished in a short period of time;
> non-renewable energy (oil, natural gas, coal and uranium ore) for which it takes millions of years to be replenished.

According to the latest forecasts by the International Energy Agency, non-renewable energy sources will continue to dominate the world's energy supply. Indeed, oil, natural gas and coal alone will account for over three-quarters of the projected increase (estimated at around 60%) in world primary energy demand between 2002 and 2030. The earth's energy resources are adequate to meet this growth. However, the capital costs required to finance the infrastructures needed to extract and deliver these additional energy resources to consumers are huge (some 16 trillion dollars over the period 2003-2030).

Consuming less energy and adopting energy-efficient technologies reduces the need for investment in energy infrastructure and increases the competitiveness of businesses. It can further bring about environmental benefits in the form of reduced emissions of global warming gases and local air pollutants. Not least, it can offer social benefits by improving energy security – through reduced reliance on fossil fuels, particularly when imported."

Key Figures

> 40% of worldwide emissions of the main greenhouse gas, carbon dioxide, originate from buildings.

> The earth's average surface temperature rose by 33° F (0.6°C) during the 20th century.

> The greenhouse effect is expected to lead to a temperature rise of anything between 35 and 42° F (1.4 and 5.8°C) during the 21st century. In comparison, the average temperature during an Ice Age is 41°F (5°C) lower than current temperatures.

The greenhouse effect is a natural phenomenon which is vital for life on Earth, and without which the average surface temperature would be around 0°F (-18°C). Certain gases in the atmosphere, known as greenhouse gases, trap the sun's infrared radiation; in so doing, the atmosphere acts like the panes of a greenhouse.

Human activities however are tending to increase the amount of greenhouse gases in the atmosphere thus causing the planet to warm up more than it would otherwise; it is this additional greenhouse effect which worries the international community.

According to the IPCC (Intergovernmental Panel on Climate Change), the increase of the greenhouse effect during the 20th century has already resulted in a decline of the snow cover and the size of glaciers as well as a rise of the average sea level. During the 21st century, the impact on humans will inevitably increase: more heat waves, impoverishment of ecosystems and arable lands, increased prevalence of infectious diseases, etc.

In order to stave off this planetary phenomenon, the Kyoto protocol (1997) sets a target for cutting greenhouse gas emissions by at least 5% by 2012 relative to 1990 levels for the 40 industrialized countries. This target, which will be followed by more ambitious targets, already calls for significant changes to our way of doing things."

05 Set objectives for limiting consumption

Actions 5 and 6 cover both water and energy.

Why?

Setting clear objectives on energy and water enables the general manager to share them with all the team.

How?

The objectives:

> take into account the **anticipated events** during the year: renovation works, replacement of equipment, introduction of new services (spa, etc.). The objectives are not necessarily to reduce consumption;
> are drawn up in relation **to relevant consumption ratios**, depending on the activity of the hotel and after consulting the regional technical department;
> **are communicated to all employees** and displayed in the back office;
> are accompanied by an action plan.

Compliance?

When all the above points are carried out including internal communication.

06 Monitor and analyze consumption every month

Why?

The monthly analysis of consumption has two objectives:

> to detect **leaks** or malfunctions;
> to validate objectives for **limiting** consumption.

How?

> **The monthly ratios**, based on readings of meters, are compared with those of the previous year;
> Any **significant variations** are explained;
> Specific analyses are carried out if necessary (i.e. installing sub-meters);
> Consumption data is **communicated** to all the hotel staff and displayed every quarter in the staff areas.

All the water inlets (including **direct pumping** from the groundwater) must be taken into account. The Environmental Management Tool **(OPEN)** facilitates the monitoring of consumption at all operational levels.

Compliance?

When all the points listed above are carried out.

07 List potential technical improvements

Why?

Improving your water/energy **performances** may require changes in the facilities or the buildings (particularly insulation). These investments must be clearly **identified/anticipated so they may be scheduled**.

How?

A **file** containing the complete list of improvements likely to generate water/energy savings is drawn up, updated regularly (at least once a year) and used for the investment plan.
It mentions for each **improvement**: expected savings on water/energy consumption and return on investment. The information is also provided for every new investment that may have an impact on water and energy consumption.
The proposed improvements take into account consumption analysis, identified malfunctions, present condition of the hotel systems…
It relies on the expertise supplied by **regional technical department**.

Compliance?

When the file has been created with the proper information and is regularly updated.

08 Organize preventive maintenance

Why?

Preventive maintenance of building services has several objectives:

- **to avoid incidents** that could impair people comfort and safety;
- to ensure optimal **functionality** of the hotel systems.

Preventive maintenance can contribute significantly to consumption reductions.

How?

The **preventive maintenance plan** is established with your regional technical department.

Compliance?

When the hotel has set up a preventive maintenance plan.

09 Ensure optimal use of plant and machinery

Why?
The incorrect **operating** of plant and machinery can lead to over-consumption. It is recommended to use **diagrams** showing the main parameters to check and adjust, to ensure optimal operation. The hotel technical staff must also be trained to use these diagrams.

How?
The hotel must keep available:
> **outline diagrams** showing how each system operates;
> **operating instructions** for each system;
> **troubleshooting sheets** to help find the cause of breakdowns and incidents.

These documents are available for **heating, air-conditioning and hot water systems.**

Compliance?
When the above specified documents are available in the hotel and users have been trained.

10 Install an efficient façade lighting

Why?
Façade lighting can often be optimized. Depending on the nature of the bulbs used, as well as the design chosen, it can also affect the level of **light pollution**.

How?
Façade lighting can be optimized by choosing:
> **high efficiency lamps** (above 50 lumen/Watt);
> low **ultraviolet** (UV) emitting lamps to reduce harm to insects and birds. The low ultraviolet emission may be an intrinsic feature of the bulbs or can be obtained with UV filters.

A specialized consultant can help optimize the design of façade lighting.

Compliance?
When all the bulbs used for the external façade lighting comply with the above listed requirements.

11 Use low energy lamps for permanent lighting

Why?

7-Watt compact fluorescent spotlights can now replace the 50-Watt dichroic halogen spotlights. These spotlights have a lifetime **five times longer** than traditional spotlights. Return on investment is around 4 months, not to mention savings on maintenance.
These spotlights provide a more diffuse light so they are perfectly suited to permanently lit areas (lobbies, corridors, etc.), which account for up to 80% of the lighting or **20%** of the total electricity consumption of the hotel.

How?

If your 50-Watt diachronic spotlights are 220V, you can simply change the bulb.
If they are 12V, you may have to change the spotlight itself (bulb + fitting + wiring).
Spots with a decorative function should be 35W instead of 50W.
Back office areas, parking lots and basement areas should also be fitted with high-performance tubes or compact fluorescent lights.

Compliance?

When over 80% of bulbs (with no decorative function) in permanently lit areas are low energy type.

12 Use low energy lamps in bedrooms

Why?

Electricity consumption for lighting bedrooms is far less important than for permanently lit areas. Nevertheless, the use of low energy bulbs is still advantageous in terms of limiting consumption and raising the clients' awareness on this issue.

How?

The **lighting comfort** of the guests is an important aspect of the quality of the hotel. The light fittings must be **designed** to take into account the light provided by fluorescent bulbs. This action should be carried out in conjunction with your marketing department.
These bulbs are not necessary when turned on only for a very short time (bathroom, toilets).

Compliance?

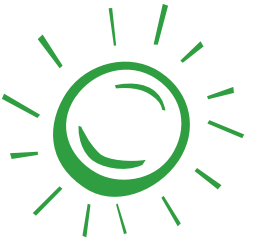
When 80% of the bulbs used in bedrooms (excluding bathroom, toilets) are low energy type.

13 Use LEDs (Light Emitting Diodes) for external illuminated signs

Why?
LEDs are **high-performance light sources** that are developing fast and can be used for external signs. They reduce electricity consumption by at least **80%** and last **2.5 times** longer than standard high voltage lighting.

How?
This should be implemented in agreement with the instructions from your brands technical and marketing departments.

Compliance?
When all external illuminated signs of the hotel are fitted with LEDs.



14 Use LEDs for the emergency exit signs

Why?
LEDs can also be used for emergency exit signs, thus generating energy savings of 80% compared with standard systems.

How?
When replacing the emergency exit signs, use LEDs.

Compliance?
When all the emergency exit signs are fitted with LEDs.

15 Use energy-efficient refrigerators in bedrooms

Why?

Refrigerators in hotel rooms are on 24h per day. It can represent up to 10% of the total hotel electricity consumption.

How?

A refrigerator used in an hotel guestroom is regarded as energy-efficient if it uses less than:

> **0.8 kWh/24h** (models with solid door);
> **1kWh/24h** (models with glazed door).

The refrigerator electricity consumption mentioned on its technical data sheet must have been checked by an independent body.

Compliance?

When bedrooms are only equipped with refrigerators that comply with the above performance criteria.

16 Insulate pipes carrying hot/chilled fluids

Why?

The transportation of hot water used for heating through a non-insulated piping system over 110 yards long (100 meters) loses about **6%** of the energy used to heat it from 149°F to 176° F (65°C to 80°C). Standard insulation reduces this loss to **1.5%**.

How?

The pipes carrying hot/chilled fluids (domestic hot water, heating, air-conditioning) must be identified (ref. action 9). The existence of non-insulated pipes must be noted in the improvements file (ref. action 7) for progressive implementation. This action is undertaken after consulting the regional technical department in order to identify when it is relevant.

Compliance?

When all the pipes carrying hot/chilled fluids are insulated.

17 Use energy-efficient boilers

Why?

Depending on the climate, the energy consumed in a hotel for domestic hot water and heating can represent **70%** of its total energy consumption. Highly energy-efficient boilers have been on the market for the past 10 years.

How?

A boiler is regarded as energy-efficient if the efficiency level is over **93%** (based on the Net Calorific Value of the fuel).
You can learn about heat efficiency level of your boilers by having it measured.
Compliance with the temperatures laid down by the hotel Brand guarantees your guests' comfort and limits your consumption.

Compliance?

When the boilers supplying over 80% of the heating and hot water needs of the hotel have an efficiency level over the 93% threshold.

18 Recover energy from the main ventilation system

Why?

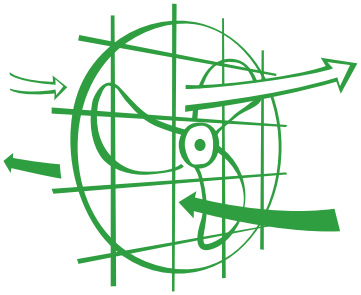
Air ventilation is centralized in many hotels. Exterior air (fresh air) is filtered, then cooled or heated depending on the season, circulated around the hotel and extracted mechanically from the building. Extracted air can be used to **pre-heat/pre-cool the incoming fresh air** through the use of heat exchangers. Energy consumption for heating or cooling fresh air can then be reduced by at least **15%**.

How?

If the energy contained in extracted air is not recovered, possible use of a heat exchanger must be considered at a next refurbishment.

Compliance?

When an energy recovery system between extracted air and fresh air intake is installed in at least one of the main air-handling units of the hotel.



19 Use energy-efficient air-conditioning systems

Why?

More and more hotels are equipped with air-conditioning in order to offer **optimal comfort** to their guests whatever the climatic conditions. This leads to increased energy consumptions.

How?

The table below gives the power efficiency levels that air-conditioning installation must fulfill.
United States and Europe use two different measurement systems. The "European" one is used in most other countries of the world. The efficiency levels given here for air-conditioning systems are based on their EER (Energy Efficiency Ratio):

Type of air-conditioning	European system	Coefficient	American system
Centralized air based air-conditioning	>2.5 (kW cold/kW absorbed)	US= 3.517/Europe	<0.71 (kW absorbed/ton cold)
Centralized water based air-conditioning	>3.9 (kW cold/kW absorbed)	US= 3.517/Europe	<1.11 (kW absorbed/ton cold)
Individual air-conditioning	>2.9 (kW cold/kW absorbed)	US= 3.412*Europe	>10 (Btu absorbed/wh)

To ascertain the energy-efficiency levels of your equipment, you should consult the corresponding technical data sheets or contact the manufacturer.

The quality of the **design** of the air-conditioning installation is essential for optimizing the whole system. Knowing how to operate the equipment correctly, the use in daytime of **passive protection from the sun** (curtains, blinds) and compliance with the comfort temperatures defined by the brands also contribute to limiting the energy consumption.

Compliance?

When the equipment producing over 80% of the cooling in the hotel has energy-efficiency levels higher than the thresholds in the above table.

20 Recover energy from air-conditioning systems

Why?

All refrigerating equipment (refrigerator, air-conditioning) also generates heat. When the air-conditioning operates for a large part of the year, recovering this heat for the **production of domestic hot water** becomes advantageous. In countries where hotels use air-conditioning all year round, recovering this energy can cover their total needs in domestic hot water.

How?

Installing a system to recover the heat energy from the air-conditioning systems requires a **centralized** A/C system. The feasibility of the project must be determined through engineering analysis.

Compliance?

When an energy-recovery system is installed on the air-conditioning central equipment (chillers).

21 Install solar panels for production of domestic hot water

Why?

Heating of domestic hot water can represent 25% of the energy consumption of a hotel. **Using solar energy can reduce this consumption by more than 40%**. Developed in our hotels for several years now, thermal solar panels have demonstrated their reliability, effectiveness and easy maintenance.

How?

A solar system for the production of domestic hot water consists of:

> solar panels that heat a fluid;
> a heat exchanger in which the fluid heats the domestic hot water;
> a tank for storing the hot water produced;
> a back-up system for less sunny days.

A solar system for the production of domestic hot water can be installed in an existing hotel, after a feasibility study to be carried out by a specialist consultant.

The cost-effectiveness of this system depends locally on the yearly sunshine level, energy costs, costs of solar panels and the possibility to obtain financial grants. Each case must be examined individually.

Compliance?

When solar panels are installed and cover at least 40% of the production of domestic hot water.

22 Install solar panels for heating swimming pools

Why?

Heating a swimming pool with solar energy is simpler than for the production of domestic hot water. The cost is therefore much lower.

How?

The **solar panels** used for a swimming pool consist generally of black tubes in which the swimming pool water circulates and is heated. The system can remain connected to a classic hot water production system, as a back-up, to guarantee the guests' comfort whatever the climatic conditions may be. This equipment may be installed in an existing hotel if there is enough space for the panels. A feasibility study must be carried out by a **specialist consultant**.

Compliance?

When solar panels to heat the swimming pool are installed.

23 Promote use of renewable energies

Why?

Energy (including electricity) production generally generates pollution and/or greenhouse effect. Hotels could help reducing overall environmental effects by purchasing energy produced from renewable sources.

How?

By purchasing electricity or district heating which is produced from at least 21% of renewable energy (hydroelectricity, wind, solar, tidal energy, geothermal, biogas...) or produced from waste combustion. Timber is also considered as a renewable energy if supplied from sustainable managed forests.

Compliance?

When at least 21% of the energy consumed in the hotel (electricity or heat) is produced from renewable sources or waste combustion.

24 and 25 Actions 24 and 25 for limiting water consumption are presented in the Energy section.

WATER

Key figures

> 97% of Earth water is undrinkable salt water, 2% is part of glaciers and less than 1% of water resources is accessible freshwater.
> 300 conflicts are linked to water resources issues (United Nations).
> Water consumption has increased four times in the 50 last years (whereas Earth population doubled).
> By 2050, 4 billion people will live in countries facing water shortages.

"In Africa, over 70% of the population lives with less than 10 gallons (40 liters) per day. In many developed countries, the figures are much higher ranging between 50 to 100 gallons (200 to 400 liters) per day. With changing lifestyles, urbanization and availability of piped water, the consumption rates are increasing enormously.

Although global water consumption per capita is still less than the per capita availability, areas with the highest population are not necessarily the areas where water is most available.

For example, in west Asia, the consumption surpasses the availability (34000 versus 18000 cubic ft annually), which causes groundwater exhaustion. Water scarcity is not limited to arid zones; India, China, and the United States are also confronted by depleting water resources. For example, in China, Beijing faces critical water shortages and the water table has been dropping roughly two meters per year.
A country is said to be "water stressed", when annual water supplies drop below 60,000 cubic ft per inhabitant. It leads to chronic shortages of freshwater that threaten food production, hinder economic development, and damage ecosystems.
The number of water-stressed countries is increasing. In 1995, there were 31 countries with only 0.46 billion people. By 2025, it is estimated that there will be 48 such countries with 2.8 billion people."

26 Install water flow regulators on basin faucets/taps

Why?

Flow regulators on basin faucets ensure a constant water flow rate whatever pressure variations in the mains. A flow rate of **1.6 US gallons per minute (6 liters/min)** on the faucets (excluding bath) guarantees the comfort of the guest while limiting the impact on the water resources.

How?

The selection of **a suitable regulator** must be made by the regional technical department. Certain parameters of the hotel must be taken into account, particularly the pressure of the water in the mains.
"Flow limiting" devices (aerator, etc.) are not recommended, as they can affect guest's comfort. This is not the case with regulators as they do not systematically reduce the flow rate: they guarantee a fixed flow rate thanks to a membrane system.

Compliance?

When all the accommodation basin faucets/taps (excl. baths) are fitted with 1.6 US gallons/min (6 liters/min) flow regulators.

27 Install water flow regulators on showers

Why?

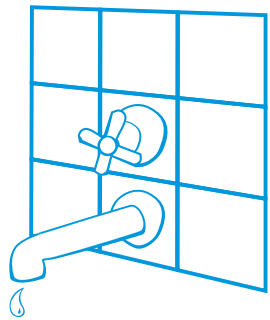
As for basin faucets, water flow regulators on showers ensure a constant flow rate of **3.2 US gallons per minute (12 liters/min)**. Reducing the flow rate from 20 liters/min to 12 liters/min on a five minute-shower **saves 40 liters**. This saving represents over 10% of the daily consumption per room.

How?

The principle of a shower flow regulator is similar to those used on basin faucets/taps. The selection of the appropriate regulators must be made by the regional technical department.

Compliance?

When all the accommodation showers are fitted with flow regulators of **3.2 US gpm (12 liters/min)**.



28 Install water-efficient toilets

Why?

Water consumption in toilets can represent over 30% of the total hotel consumption. Efficient WC flushing systems based on **1.85 US gallon-cisterns (7-liters)** are available.

How?

Installing low capacity cisterns may require the complete replacement of the toilets to make the flushing system efficient with this flow rate. In the case of **dual flush toilets**, the largest flush volume must be less than 7 liters.
The installation of water-saving toilets is possible during bathrooms' renovation. The choice of products of the hotel Brand must be respected.

Compliance?

When all the accommodation toilets have a cistern capacity inferior to 1.85 US gallons (7 liters).

29 Use efficient laundry equipment

Why?

Washing sheets and towels indirectly generates a high consumption of water. If the linen for a room weighs about 4 kg, it can require up to 10.6 US gallons (40 liters) to launder it.

How?

Consuming less than 1.6 US gallons (6 liters)/kg of linen. Several solutions should be examined to reach this objective:

> **Sorting** the linen so that the dirtiest linen can be washed separately;
> **Choosing the adapted washing program** depending on the particular level of dirtiness;
> Using washing machines at **full capacity**: folded linen takes up less space than loose linen;
> More technical options: adding an **ozone** system to existing laundry equipment can shorten the washing program.

Compliance?

When the consumption of water in the laundry is less than 1.6 US gallons (6 liters)/kg of linen.

30 Propose to guests to reuse towels

Why?

Towels are normally changed daily, which results in high usage of water for washing. This action allows guests, if they wish, to limit their indirect consumption of water.

How?

> **A communication** presenting this option to the guests (e.g. leaflet in bedrooms);
> **Training and support for housekeepers**: they must be convinced that it does not reduce the service provided to guests but, on the contrary, that it is a better response to their needs. This action is backed up by clear instructions (how to put back the linen that is not to be changed, what to do if a towel is dirty, etc.).

Before involving guests, you should first have already set up an internal overall policy designed to limit the hotel's consumption of water (actions 24 and 25).

Compliance?

When this option is communicated to guests and is complied with by the housekeeping.

31 Propose to guests to reuse sheets

Why?

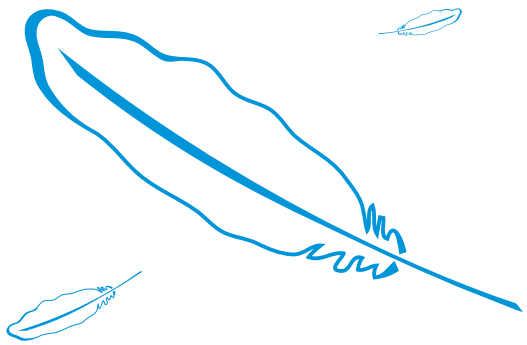
When a client stays for several days in a room, the sheets are changed regularly, every day or every two days, depending on the brands. Guests may wish this change to be less frequent if it does not diminish their comfort.

How?

See previous action.

Compliance?

When the option is displayed in the rooms and implemented by the housekeepers.



32 Eliminate mains water-cooled refrigeration systems

Why?

The heat emitted by a domestic refrigerator is evacuated by the surrounding air. The appliance must not be located **close to other heat sources**. In a restaurant, the cooling production systems for kitchen cold rooms or ice machines are cooled either by air or by water. In the latter case, a water-cooled system uses a very considerable amount of water. When possible, these systems must be eliminated.

How?

Eliminating mains water-cooled systems requires a change of the entire system. The possibility of replacing it with an air-cooled system depends on the location of equipment. In certain cases, it may be necessary to wait for a complete renovation of the kitchen.

Compliance?

When no water-cooled refrigeration systems using mains water are any longer used in the hotel.

33 Recover rainwater

Why?

> To limit the consumption of **fresh water**;
> To limit the **flow of rainwater** outside the hotel grounds.
This water can saturate the sewage treatment plant.
The rainwater can be used for toilets and to water green areas.

How?

By installing :

> a collection system for rainwater;
> the filtering of the rainwater collected;
> a storage tank;
> a pump to send the filtered water to the toilets or the garden;
> an automatic supply of mains water when rainwater is insufficient;
> for its re-use in the toilets, a separate network of recycled water is necessary.
A feasibility study must be carried out by an engineering consultant.

Compliance?

When a rainwater recovery system to supply either toilets or a garden watering system has been installed.

WASTEWATER

Key figures

> Fewer than 40% of French towns with more than 75,000 inhabitants are equipped with an efficient waste water treatment plant.

> In developing countries, up to 90% of household effluent is not treated.

> 10-40% of household effluent is not treated adequately in Europe.

"An expert testimonial" by Cees VanDe Guchte, Expert on the protection of the coastal and marine environment – United Nations Environment Program (UNEP).

"Cities are, with Industry and Agriculture, a major source of water pollution. Household effluent is laden with organic material, which breaks down in water and suffocates the natural environment, leading to the extinction of many species.

There has been a marked deterioration in aquatic environment worldwide. Untreated household effluent has been identified as one of the main causes of this deterioration, particularly when it comes to the damage caused to coastal seas. Household effluent has a negative impact on delicate habitats such as coral reefs, which also affects biodiversity, agricultural and fishing yields. In Europe, for example, the North Sea, the Baltic Sea and extensive stretches of the Mediterranean Sea are heavily polluted due in large part to the discharge of municipal wastewater.

In developing countries, only around 10% of household effluent is actually collected and only 10% of existing wastewater treatment plants operate properly. Untreated household effluent is released into the environment, and this has a direct effect in polluting drinking water supplies, causing diseases for millions of people each year.
In developed countries, the goalposts are different since the greater financial means available make it possible to treat polluted wastewater to make it fit for drinking. The treatment cannot however remove all traces of pollutants. The water, which is produced therefore, often doesn't meet the requisite standards for clean drinking water.

Important improvements are still to be done in terms of reducing the pollution levels and treatment capacity, taking into account seasonal tourist activities..."

34 Collect and recycle used cooking oil

Why?

When used cooking oil is not collected separately, it is disposed of via the **waste water pipes**. If the waste is transferred to the natural environment without processing, the used cooking oil contributes to the asphyxiation of aquatic sources. Even though the waste water pipes are connected to a sewage treatment plant, it is **rarely capable of treating correctly** used cooking oil from restaurants.

How?

The oil collected should be poured into a **specific container** placed for this purpose outside the kitchens. When full, this container is collected by specialized companies. The oil is then **recycled or can be used for fuel**.
As for the other types of waste, the collecting company must supply record documents on where the collected oil was disposed of with details of process used and location of the processing company.
Waste lubricating oil must not be mixed with cooking oil as its recycling process is very different.

Compliance?

When the hotel collects for recycling its waste cooking oil and control its treatment.

35 Separate and collect grease from food stuffs

Why?

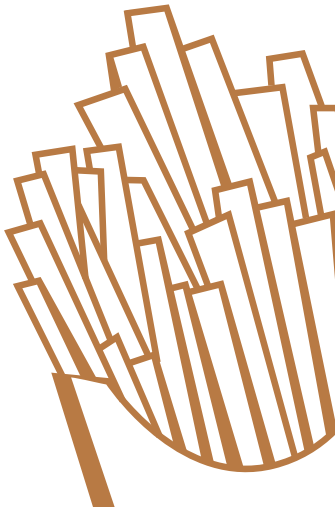
The grease in waste water from the kitchens comes from washing-up of **crockery and cutlery**. Its recovery presents the same ecological advantages as the collection of cooking oil.

How?

The pipes that evacuate the effluents from the kitchen are connected to **grease-separating tanks**, that must be **emptied regularly** to remain efficient. The frequency of the emptying must be determined according to the number of covers and the grease trap capacity. The waste material can be processed organically, thus limiting the emptying frequency and the environmental impact.

Compliance?

When the hotel kitchen is fitted with a grease trap and an appropriate maintenance regime is in place.



36 Treat waste water or have it treated

Why?

Most hotels are connected to a **public sewer system**. In such case, the hotel must ascertain what treatment the wastewater undergoes. When the hotel is located **in an isolated area** and/or is not connected to a collective wastewater treatment plant, the hotel must treat its own wastewater. The treated wastewater can then be recycled, particularly for watering the gardens.

How?

The sewage treatment plant must be designed and **installed** in accordance with the activities of the hotel and its **environment**. The plant must then be operated and maintained appropriately.

Compliance?

> In the case of an **individual plant**: It must be designed, installed and maintained by competent contractors. Records of regular analysis must be kept in the hotel;
> In the case of a **collective plant**: The hotel has to obtain a document from the utility company or municipality explaining how the effluents are processed.

37 Recycle grey water

Why?

Toilets flushing and gardens watering do not require drinking water. The wastewater from sinks, showers and baths (grey water) can be collected by the hotel, stored and recycled for watering the gardens and/or for toilets. This action has the twofold advantage of limiting the use of drinking water as well as the quantity of wastewater.

How?

It requires:

> the separation of the hotel waste water and foul water;
> a water storage tank with appropriate water treatment system;
> pumps to supply the treated water to the toilets or the garden;
> a separate grey water supply pipework installation to distribute the recycled water to each WC cistern;
> an automatic water supply from the mains to back up the recycled water system.

A technical and financial feasibility study must be carried out by specialized consultants under the supervision of the regional technical department.

Compliance?

A grey water recycling system is installed and commissioned.

"An expert testimonial" by Per Bakken, Director of the International Environmental Technology Centre – United Nations Environment Program (UNEP).

"Three leading trends can be identified worldwide:
1. An increase in the quantity of waste produced owing to the proliferation of packaging and ever-shortening product life cycles;
2. Changes in the type of waste being produced, which is less and less organic, i.e. harder to recycle;
3. An increase in the proportion of dangerous waste, which is highly damaging to the environment.

Most domestic waste ends up in landfills, often mixed with dangerous waste. When rainwater seeps through such landfills, it draws down pollutants, which contaminate the ground and the water table. This pollution can then spread through the food chain, causing a threat to human health.

There are several ways to reduce this environmental impact:
> reducing waste production at the source is the most efficient way. This solution avoids the environmental impact caused by the production, use and disposal of products;
> recovering waste by reusing them, recycling them or using them to produce energy."

WASTE

Key figures

> On average 11,6 pounds (5.3 kg) of waste is produced per person per day in OECD countries.
> By 2030, the quantity of waste produced by Asia will double.
> Waste recycling worldwide is below 10%.

How to recycle waste?

Waste can be recycled either by reusing products (e.g. glass bottles), or by recycling the materials (e.g. paper), or by burning to produce energy (e.g. incineration with energy production).

What is a dangerous waste treatment?

Owing to its composition, dangerous waste is extremely harmful to the environment and must be treated in a specific manner. Therefore, sorting by the hotel is indispensable.

How to implement an action to recycle/treat waste?

> Identify the local recycling/treatment solutions;
> Estimate the volume of waste generated in the hotel taking seasonal variations into account;
> Validate the economic and technical feasibility of this recycling;
> Validate the regulatory compliance of the recycling operators by obtaining information about the sites that treat waste;
> Organize the waste collection internally in the hotel.

If the waste is incinerated to produce energy, some actions can be accomplished without any sorting. An action is not achieved, if the sorting does not lead to the recycling.

The percentages provided with the action description are based on the weight of the waste and correspond to efficient sorting.

38 Recycle paper/cardboard packaging

Why?

When dumped, paper/cardboard decomposes and releases methane into the air (contributing to the **greenhouse effect**), and organic matter into the water which **asphyxiates the water ecosystems**. Recycling paper/cardboard limits these impacts.

How?

The relative waste in the hotel consists of cardboard boxes used for transportation and packaging of products. Paper/cardboard packaging is usually **recycled** but it can also be **incinerated to produce energy**: if your supplier **incinerates your household waste** to produce energy, you do not need to sort the paper/cardboard packaging materials.

Comment: it is important to **fold the cardboard boxes** in order to reduce their volume and hence the cost of the waste collection. Depending on volumes, a compactor may be justified.

Compliance?

When at least 80% of paper/cardboard packaging waste produced by the hotel (excluding waste produced by guests in bedrooms) are recycled.

39 Recycle papers, newspapers and magazines

Why?

See previous action.

How?

The waste consists of newspapers and magazines as well as the paper produced by the administrative departments. The workstations that produce paper waste may, for instance, be equipped with a second bin for recycled paper.

Compliance?

When at least 80% of the papers, magazines and newspapers produced by the hotel (excluding waste produced by guests in bedrooms) are recycled.

40 Limit the use of disposable packaging for the hotel supplies

Why?
Packaging represents a large share of the waste generated by a hotel. **Reducing this at source** is advantageous from an **economic and ecological point of view**. It also helps reduce pollution linked to the **manufacture of packaging**.

How?
Its implementation takes place on two levels.
- Optimize purchasing to **limit small orders** which result in a high volume of packaging;
- **Changing packaging** and transportation materials. Cardboard boxes can for example be replaced by **re-usable crates**.

Compliance?
When the hotel has reduced by at least 10% the amount of packaging materials for its supplies.

41 Recycle glass packaging

Why?
The recycling of glass is one of the most beneficial from an economic and ecological point of view. The recycling of a metric ton of glass saves **100 kg of fuel** and it can be recycled indefinitely. Glass bottles may also be re-used.

How?
The glass waste in the hotel consists mainly of glass bottles from the bar and restaurant.
Glass must be separated. It is not necessary to remove labels and neckbands or to wash the glass. However, you must remove lids and corks. Materials similar to glass (china, ceramics, porcelain, etc.) or special types of glass (drinking glasses, bulbs, mirrors, opaque glass, crystal, etc.) are not concerned.

Compliance?
When at least 80% of the glass produced by the hotel (excluding waste produced by guests in bedrooms) is recycled/reused.

42 Recycle plastic packaging

Why?

Plastic waste decomposes very little, creating a real problem in the environment. When burned in an incinerator, it increases greenhouse gas emissions. When burnt in an incinerator without adequate smoke treatment, the combustion of PVC is also suspected of generating dioxins.

How?

The concerned plastic waste is plastic bottles (water, soda, etc.), packaging materials from cleaning products other than those that contained dangerous substances, and plastic film used for packaging and transportation of products delivered to the hotel.
Packaging waste is **recycled** or **incinerated with energy production**.
In case of doubt about the treatment of smoke from the incinerator, recycling is to be preferred.

Compliance?

When at least **50%** of plastic packaging waste produced by the hotel (excluding waste produced by guests in bedrooms) is recycled. This lower recycling rate takes into account the difficulty of recycling plastics.

43 Recycle metal cans

Why?

Steel and aluminum are produced from iron ore and bauxite. The world's reserves of these non-renewable mineral resources are diminishing.
The recycling of metals also consumes less energy than their production from ore. For example, the production of recycled aluminum saves **90% of the energy** it takes to manufacture the original aluminum.

How?

The concerned waste in the hotel is food and drink cans from the bar, restaurant and kitchens. You can place specific containers next to drinks' dispensers. Recycling is the only way metal waste can be recovered.

Compliance?

When at least **80%** of cans from the hotel (excluding waste produced by guests in bedrooms) is recycled.

44 Organize sorting of waste in bedrooms

Why?

A significant part of the waste generated comes from bedrooms. Hotel guests can be invited to contribute to the hotel's ecological actions in choosing not to throw all their waste into the same bin. This action gives guests the opportunity to act positively towards the protection of the environment.

How?

Bedroom waste should be sorted in the same way **as other hotel waste** (paper, glass, aluminum, etc.). **Guests must be informed** about how they can recycle by putting separate refuse bins in each bedroom and/or by displaying information. This sorting concerns only the bedroom and not the bathroom.
Housekeepers' trolleys must be adapted and include, for instance, a container for paper and magazines. This sorting must be done at source: housekeepers never sort guests' refuse bins.

Compliance?

When waste separation in bedroom is in place and hotel guests informed.

45 Limit individual packaging of hygiene products in bedrooms

Why?

This action reduces packaging waste and avoids **wastage of hygiene products**.
Often only **30%** of individual hygiene products is used, even less for soap. The rest of the product is not used, and therefore contributes to the pollution of the environment.

How?

The most frequently used system for implementing this action is the use of **dispensers**. The **bactericide properties** of the hygiene products guarantee the hygienic nature of this system.
Depending on local culture, guests may also be offered individual hygiene products as an alternative. Whatever the system is, it is implemented in agreement with the marketing department.

Compliance?

When a system to replace the individual packaging of hygiene products is in place in all bedrooms.

46 Recycle restaurant organic waste

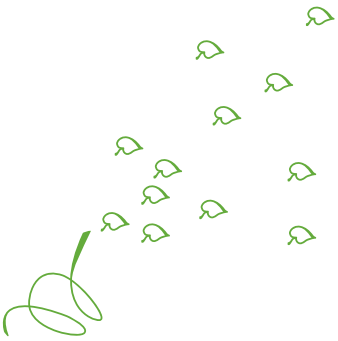
Why?
Organic waste from the restaurant and kitchen (remains of fruits and vegetables, tea bags, eggshells, coffee grounds, coffee filters, nutshells…) can be recycled to produce **garden compost**. This avoids the use of chemical fertilizers and the dumping of organic waste.

How?
A specific container must be installed to collect organic waste. This waste can either be transformed into compost **directly by the hotel**, or collected and recycled by an **external contractor**. Depending on the recycling procedure, it may not be possible to recycle some organic waste.

Compliance
When at least 80% of the organic waste from the restaurant and kitchen is recycled.

47 Recycle garden green waste

Why?
See above action.



How?
The green waste from gardens consists of **grass cuttings, branches, leaves**…
It can either be composted directly by the hotel, or collected and recycled by the suppliers who maintain the hotel green areas. Grass cuttings can also be scattered over the lawn if the lawnmower cuts them finely enough.

Compliance?
When at least 80% of the green waste is recycled.

48 Dispose safely of hotel batteries

Why?

Batteries contain toxic substances, particularly **heavy metals**. One single mercury button battery pollutes 610 cubic in. (1 cubic meter) of soil, or about 100 million times its volume. In addition, mercury and lead pollute water and land ecosystems and can contaminate humans. Ultimately, they can cause serious diseases: Minamata syndrome (mercury) and lead poisoning.

How?

Television remote controls, electronic locks, emergency exit signs, mobile telephones and, more generally, many electronic devices, use batteries. In most countries, this waste is regarded as **dangerous** and is covered by **specific regulations**. Due to its harmfulness it is particularly important to verify the regulatory compliance of the waste treatment company.

Compliance?

When all batteries from the hotel are collected and disposed of through a specific treatment site.

49 Dispose safely of guests' batteries

Why?

See above action.

How?

Batteries can be collected **at the reception** in a specific container.
Information about the collection of batteries must be well **visible**: either a container is placed in the lobby, or guests are informed that they can dispose of their used batteries at the reception.

Compliance?

When guests are clearly informed about collection of batteries and when batteries are disposed of through specific treatment site.

50 Recycle electrical and electronic equipment

Why?

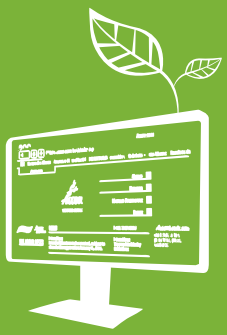
A hotel generates a lot of electrical and electronic waste from **bedrooms** (hair-dryers, telephones, televisions, minibars, etc.), from **kitchens** (ovens, dishwashers, cold rooms, etc.), from **administrative departments** (computers, printers, etc.) and from the **maintenance department** (power drills, etc.). This waste is increasing all the time. Some of these devices contain **dangerous substances**. They also contained materials and components that can be re-used. For these reasons, several countries have adopted **regulations** to ensure this waste is treated appropriately or recycled.

How?

If a hotel wishes to replace electrical or electronic items that **still work**, it should pass them on to associations or schools. It is important, in this case, to draw up a donation document signed by the hotel, which clearly gives the references of the donated devices. The receiver also sends a receipt that mentions the intended use of each of these devices.
If the items are **not re-usable**, the implementation of this action depends greatly on existing recycling facilities at local level.

Compliance?

When at least **80%** of the electric and electronic waste products is recycled or re-used.



51 Recycle ink cartridges

Why?

Cartridges are made of plastic, iron and aluminum. These materials are not biodegradable but they can all be recycled to economize on non-renewable resources. **25% of cartridges are recycled in Europe, compared to 55% in the United States**. Almost 80% of cartridges can be recycled.
For 100,000 recycled cartridges, it saves **10 metric tons of aluminum and 40 metric tons of plastic**.

How?

The concerned waste products are **photocopier, fax machine and printer (laser or inkjet) cartridges**.
Cartridges are disposed of in a specific container. They are either sent to or collected by the service-provider. The recycling of cartridges is **free** in the majority of cases.

Compliance?

When all ink cartridges are recycled.

52 Dispose safely of fluorescent bulbs/tubes

Why?

Fluorescent bulbs/tubes contain **mercury**. The ingestion of mercury leads to severe malfunctioning in human beings: loss of the field of vision, hearing loss, reduction or total loss of movement… The recycling of fluorescent bulbs and tubes separates the mercury from the fluorescent powder in order to re-use it. In France, 15% of tubes are treated correctly.

How?

Fluorescent bulbs/tubes are collected and stored in specific containers. Fluorescent spotlights form part of this waste. Incandescent bulbs can be eliminated in the same way but this is not compulsory.
In most countries, this waste is considered as hazardous. Compliance of the treatment facility with regulations should be checked.

Compliance?

When all fluorescent bulbs/tubes are disposed of through a specific treatment plant.

OZONE LAYER

Key figures

> 189 countries representing over 99% of the world's population are Parties to the Montreal Protocol;
> The ozone layer is expected to recover by 2050 assuming that there is global compliance with the Montreal Protocol;
> Eliminating Ozone Depleting Substances worldwide will avoid an estimated 20 million skin cancers, 335 000 of which are fatal, and 129 million cases of cataracts.

"Expert testimonial" by Rajendra M. Shende, Director of Ozone Action Department – United Nations Environmental Program (UNEP).

"The ozone layer, in the upper reaches of the atmosphere, known as the stratosphere, acts as a vital "life shield" for our planet. This ozone layer that lies between 6 to 31 miles (10 to 50 km) absorbs the most dangerous UV-B radiation emitted by the sun and screens out all of the deadly UV-C radiation. Without the ozone layer, life on Earth would not exist.

The destruction of the ozone layer, together with climate change, is the greatest global environmental risk facing mankind and the world's ecosystems in the 21st century. The thinning of the ozone layer is leading to an increased prevalence of skin cancers, malignant melanomas, cataracts, immune systems deficiencies, diminishing harvests, damage to the oceanic ecosystems and the marine food chain. Protecting the ozone layer therefore is important to alleviate poverty and make our lives healthy and sustainable.

Ozone layer depletion is the result of the emissions of man-made industrial chemicals, many of which are used in the hotel industry, e.g. as refrigerants in kitchens and minibars, in individual air conditioning systems and large building chillers, and as propellants in aerosol sprays for cleaning products, in fire protection equipment, and in foam mattresses. The use of such chemicals should be carefully controlled by hotel owners and managers and those substances must be gradually replaced by ozone-friendly alternatives. The hotel industry is by its very nature a centre for raising awareness and it has the potential to contribute to protect our protector – the ozone layer."

53 Eliminate appliances containing CFCs

Why?

Chlorofluorocarbons (CFCs) are **synthetic fluids** used in refrigerating appliances. They are the leading culprits identified by the **Montreal Protocol** because they are the most widely used substances that are **most harmful for the ozone layer**. Their production and consumption are strictly controlled and will be phased out in countries that have signed the Montreal Protocol. Several alternative fluids are available.

How?

Firstly, **an inventory of the systems** containing refrigerating fluids must be drawn up, noting the nature of the fluid used (with its quantity, if possible) and **the general condition of the appliance** (particularly the existence or absence of leaks). The concerned systems are chillers, cold rooms, minibars, cold drink dispensers and ice machines.
In **small appliances**, the refrigerating fluid is confined in a sealed system, which cannot be accessed. The risk of leaks is therefore lower.
A replacement plan must be drawn up, with the priority given to appliances containing over 4.5 pounds (2 kg) of CFCs, depending on their age and their general condition.

Compliance?

When the hotel has carried out a full inventory of its refrigerating equipment and when there is no longer any system containing over 4.5 pounds (2 kg) of CFCs.

54 Check that appliances containing CFCs, HCFCs or HFCs are leak-proof

Why?

As long as they remain confined in the appliances, refrigerating fluids such as **CFCs** (chlorofluorocarbons), **HCFCs** (hydrochlorofluorocarbons) and **HFCs** (hydrofluorocarbons) are not dangerous. However, **if they escape** to open air during repair work or because of leaks, they eventually reach the ozone layer and destroy it. Hence, they must be systematically recovered to be recycled or destroyed. To prevent leaks, an **annual check** for leaks is required to detect and then repair any defective equipment.

How?

As for the previous action, the hotel must already have carried out a full inventory of its refrigerating equipment. The installations containing over 2 kg of fluids must be identified. The **check for leaks** can be done internally or sub-contracted out. When it is a **statutory obligation**, it may be necessary to have the inspection carried out by an expert approved by the relevant authorities. All leaks must be repaired immediately.

Compliance?

When the hotel carries out an annual leak detection check on its refrigerating equipment and maintains an updated table to monitor the results of the tests and the repairs carried out.

BIODIVERSITY

Key figures

> 25% of mammals, 11% of birds, 20% of fish and 13% of plants are threatened with extinction.

> The decline in the world's biodiversity over the past 50 years is a phenomenon which has never been equalled.

"Expert testimonial" by Michael Rands, Director & Chief Executive BirdLife.

"The fundamental characteristic of the living world is its tremendous diversity and it is precisely this biodiversity which constitutes the guarantee of survival of species, including our own, enabling them to adapt to varied living conditions.

However, the consequences of the tremendous pressure exerted by humans upon nature are threatening to bring on a sixth mass extinction of species, to add to the five major extinction crises identified by paleontologists over the past six hundred million years.

For humans, the disappearance of living species constitutes the loss of a unique heritage which no one will ever be able to bring back and which threatens to undermine the very conditions of our current existence. 40% of modern drugs are for instance formulated based on active ingredients which are drawn from plant and animal species. At a local level, hotels can contribute to the preservation of their local biodiversity by maintaining for instance their green spaces and by taking positive actions to preserve the environment.

Such green spaces can sometimes act as living barriers for natural ecosystems, not too dissimilar from the inert barriers thrown up by increasing urbanization. The steps that are set out below can help promote a better integration of green spaces within the natural environment. In addition, beyond those green spaces, hotels can take various actions to preserve the natural environment and the plant and animal species which live there."

55 Reduce use of insecticides

Why?

Part of the insecticides used in the garden does not reach its target and stays in the environment. Most products are not very selective and also attack the insects that help green spaces to grow. They can also contaminate **the air we breathe** and **the water we drink**.

How?

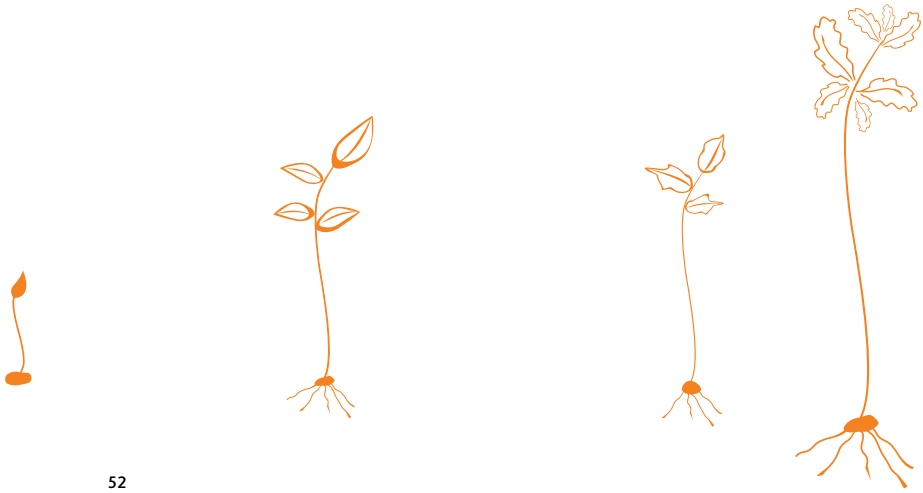
An alternative to this chemical treatment is the **biological solution**. Harmful insects are attacked by other insects introduced by man. The use of biological insecticides thus aims at restoring the functioning of natural and artificial ecosystems.

This mode of treatment is applicable to **indoor and outdoor flowerbeds**. In a **confined environment**, its effectiveness is immediate for a limited time. Outdoors, the result takes longer, as we are reinforcing a biological heritage that will reap the full benefit over the long term. If the plants are not adapted to local conditions, however, this treatment will be more difficult to apply.

This recourse to a biological insecticide may result periodically in a greater number of small insects, which may provoke remarks from hotel guests. It is therefore useful to **explain the aim of this solution** in terms of health and environmental benefits.

Compliance?

When the hotel knows and monitors the amount of insecticides used and has significantly reduced their use **(by at least 50%)**. The objective is ultimately to eliminate the use of all these products.



56 Reduce use of weed killers

Why?

Weed killers pollute the environment and have a negative impact on humans. These chemical products are particularly stable and remain for a long time in the environment.

How?

Several alternatives to the chemical treatment of weeds exist:

- **mechanical solutions:** hoeing, weeding, fencing, etc.,
- **thermal solutions:** burning, infrared, etc.,
- **physical solutions:** pneumatic by vacuuming or blowing. The staff maintaining the green areas must have received specific training in implementing these treatments.

Compliance?

When the hotel knows and monitors the amount of weed killers used and has significantly reduced their use **(by at least 50%)**. The objective is ultimately to eliminate the use of all these products.

57 Reduce use of fungicides

Why?
See previous action.

How?
Fungi often attack **weakened plants**. To reduce this risk, care must be taken not to harm plant tissues, and to treat and close up any tissue damage.
In addition, the various plants must be located **in suitable places and with appropriate exposure to sunlight** to prevent them from suffering from:
> deformation (fading owing to the lack of sunlight);
> stunted growth;
> burns, etc.

If, for example, the gardener adds subsoil to a fill area to create a green space, he makes sure that the quantity of subsoil is sufficient for the growth of the plants and/or that the plants will survive if their roots reach the fill layer.
Reducing the treatment with fungicides can sometimes require a change in the garden layout, and a more appropriate choice of species better adapted to the local conditions and hence more resistant in that environment.

Compliance?
When the hotel knows and monitors the amount of fungicides used and has significantly reduced their use **(by at least 50%)**. The objective is ultimately to eliminate all these products.

58 Use organic fertilizers

Why?
Chemical fertilizers pollute the soil and groundwater more than organic fertilizers made from green waste do. Using organic fertilizers also restores the natural cycle.

How?
Organic fertilizers, from animals and plants, help to form or reinforce **the organic matter of the soil**, which is indispensable for plant life. This organic matter with the clay forms a complex that holds water and the mineral elements, releasing them to the plants according to their needs. Organic fertilizers can totally replace chemical fertilizers.

Compliance?
When **80%** of the fertilizers used are organic fertilizers.

59 Water plants in a rational way

Why?

Watering planted areas can lead to high water consumption. Therefore, the choice of **plants adapted to the locality** – especially in countries where water resources are scarce – is important. Watering must be **reduced to meet the actual plant needs**. Water not absorbed by the plants evaporates and is not reintroduced quickly into the water system.

How?

Adopting a rational watering system implies:

> that the **watering needs of the garden** are understood;
> that the watering duration and frequency are **adapted to rainfall**.

The following **best practices** should be adopted:

> Water when it is not too hot (morning/evening) and when the wind is weak;
> **for plants and trees**: install a low flow rate watering system or one using drip devices instead of a sprinkler system;
> **for lawn areas**: use a sprinkler system that produces large drops of water to limit evaporation.

If local water resources are scarce, it is essential to pick species that consume the least water and to plan out the garden in line with the available water resources.

Compliance?

When the hotel has drawn up a review of the water needs for its gardens, a watering plan for the different areas, and has adopted practices that reduce water consumption.

60 Use plants locally adapted

Why?

The criteria for choosing plants are:

> their aesthetic appeal (colors, structure);
> their odor;
> their biodiversity;
> their adaptation to the local conditions;
> their dynamism;
> their longevity.

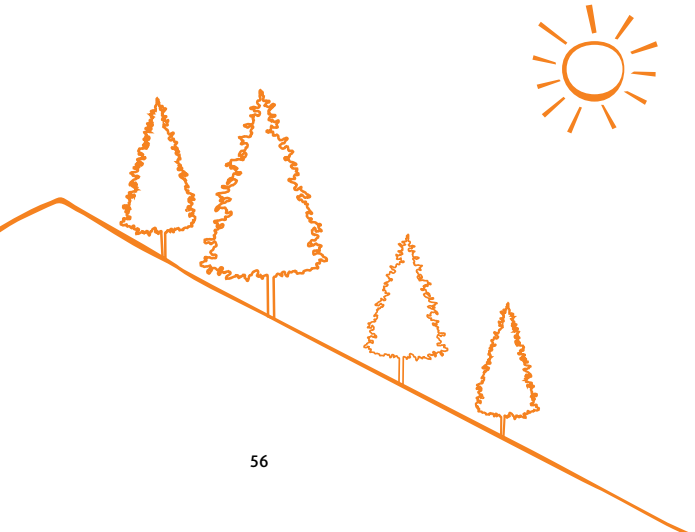
The last four points ensure gardens to be **more dynamic and resistant**, thus making it possible to reduce the maintenance costs and exclude insecticides, herbicides and fungicides.

How?

This action must be implemented **right from the time when the green areas are designed or when a change is decided**. The selection of local species is perfectly **compatible with aesthetic objectives**.
The implementation of this action systematically requires the assistance of a **biologist** to design the garden or to analyze the existing green areas. This expert may come from an association specialized in the protection of nature.

Compliance?

When a landscaping specialist has ratified the appropriateness of the plant species to the local conditions.



61 Plant at least one tree every year

Why?

The foliage of a tree stabilizes pathogenic dust and germs. In its growth phase, a tree develops by absorbing carbon dioxide: this is the **photosynthesis process**. This storage reduces the presence in the atmosphere of this gas that contributes to the greenhouse effect.
Trees are essential elements of our **ecosystem**, forming natural habitats for numerous species. They also contribute to the stabilization of soils, fight erosion and maintain humidity in the air.
Planting a tree **symbolizes** the hotel's commitment to the environment and enables it to mobilize the teams around this commitment.

How?

The hotel can plant a tree in its gardens or outside its grounds. The planting can then be organized **in partnership** with a school, an association, a local authority, etc. and other hotels. The hotel must check that the trees planted make a real contribution to the **improvement of the biodiversity**.

Compliance?

When at least one tree has been planted by the hotel team within the year.

62 Participate in a local action for the environment

Why?

More than any other business activity, a hotel has **a close link with its local environment**. The natural and cultural attractions of a region have a strong influence on the choice of a tourist destination. Yet many operations aimed at preserving the environment still rely on the volunteer work of citizens and businesses.
Participating in actions like these gives the hotel team a more **user-friendly and practical view of their environmental commitment**. It also offers them the opportunity to **share their experience with local partners** (associations, local authorities, etc.) and gain a better understanding of the particularities and value of our natural heritage.

How?

Depending on local opportunities: cleaning beaches, natural spaces, trekking paths, restoring riverbanks, swamplands, etc. It is preferable to work with local partners to identify the most relevant actions.

Compliance?

When one preservation action is undertaken each year.

GREEN PURCHASES

Key figures

> The cultivation of cotton represents 3% of world agricultural area. It uses more than 25% of the total consumption of insecticides and 10% of weed killers. Using biologic cotton reduces these impacts.

> In ten years 50 million hectares of forest were certified FSC (Forest Stewardship Council) for the production of furniture, paper and building construction material.

"Expert testimonial" by Isabella Marras, Program Officer, Production and Consumption Branch – United Nations Environmental Program (UNEP).

"Changing patterns of production and consumption is at the heart of sustainable development. The production, use and disposal of the products we buy as individual consumers or organizations are closely related to global and local environmental concerns, whether this be the emission of harmful and toxic substances into water or the air, the generation of waste, the consumption of natural resources and damage to ecosystems.

UNEP, in the words of its Executive Director, believes that "We should intensify our efforts towards the creation of a life cycle economy and we can do that only if we work together on the demand side as intensively as on the production side. The purchasing practices of both public and private organizations are an essential asset in supporting sustainability and giving the right signals on the market". Sustainable purchasing provides a mechanism for fostering the necessary demand for such products and giving suppliers appropriate incentives to develop sustainable solutions.

Buying green products can therefore contribute to sustainable development. The demand of potential big buyers such as hotels for environmentally sustainable products is increasing. We need to work to convince suppliers and producers to meet these demands.

By opting for more environmentally sensible products, hotels can make a positive impact on the environment. By informing their employees and guests of these choices, they can also contribute to promoting such products among consumers."

63 Use ecological paper

Why?

Paper is an important consumable in all hotels. For several years now, paper manufacturers have reduced the impact of their production. The objective of this action is to favor the purchase of more environmentally friendly paper. Moreover, the quantity of paper used should also be reduced.

How?

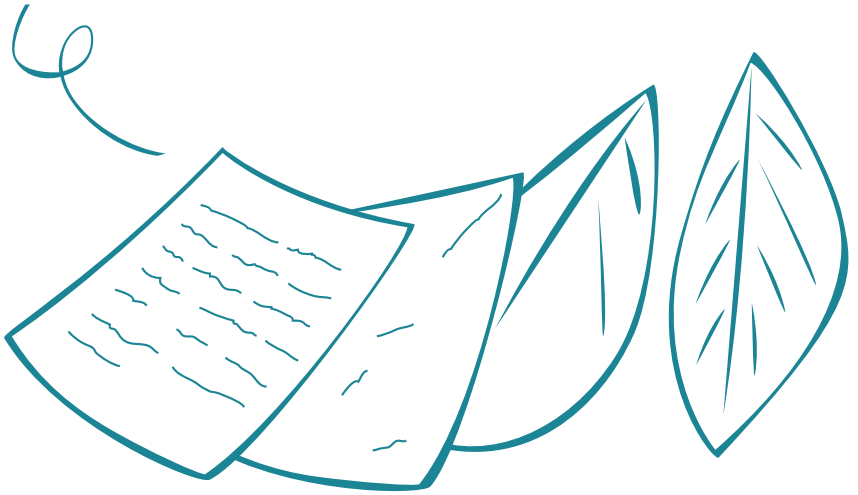
In the framework of this Charter, an **ecological** paper meets the following three conditions:

> It is produced by a **factory with ISO14001 certification** or carries an **ecolabel**;
> It is bleached **without chlorine;**
> It is **100% produced from recycled paper** or from timber from **forests with FSC** certification (Forest Stewardship Council) or **PEFC** (Pan European Forest Certification).

In addition, the hotel must have assessed how much paper it consumes for different usages (bills, reservations, archives, administration, etc.) and have adopted solutions to reduce its consumption.

Compliance?

When the hotel consumes at least **80%** of ecological paper, monitors the amount used and implements reduction solutions.



64 Favor Ecolabel products

Why?

To some extent a hotel uses domestic products, for which there exist in many countries one or more Ecolabel systems. The criteria for granting an Ecolabel are specific to each category of product (paper, linen, etc.). As far as they are set up in collaboration with the public authorities, they guarantee reduced impacts on the environment throughout the lifetime of the product (manufacture, distribution, use, etc.). Their use in the hotel also facilitates their promotion to the public.

How?

This action must be implemented in collaboration with your purchasing department. At first, it involves **identifying the existing Ecolabels** and the **categories of Ecolabel products available**. The labels recognized by us are mentioned on the environment intranet site. The existence of an Ecolabel thus becomes one of the criteria in your next **call for tender** for these categories of products.

Compliance?

When the hotel uses at least three Ecolabel products.

65 Favor organic products

Why?

The use of **chemical products** in agriculture (insecticides, mineral fertilizers, antibiotics for animals, etc.) has an impact on the food that we eat as well as on the environment. As it is difficult to eliminate them, they are sometimes responsible for making water undrinkable. Organic farming provides the guarantee that **no chemical products are used**.

How?

This action must be implemented together with your purchasing and marketing departments. You can share it with your guests proposing on your restaurant's menu, one (or more) organic dish.

Compliance?

When the hotel proposes at least three food products derived from organic farming.

Certification

ISO 14001 certification is an action on a different level to the ones examined previously. It expresses the hotel's global commitment to the environment and an acceleration in its implementation of the Environment Charter. That is why we have not numbered it here. If the hotel team is very small (one to three persons), ISO14001 certification can be more difficult to set up.

Why?
Numerous environmental certifications and labels have been developed for hotels. We have opted for ISO 14001 international certification which ratifies the seriousness of an integrated environmental approach. It also ensures over the long term full compliance with all the regulations and continuous improvement in the hotel's environmental performance. By ensuring the constant monitoring of a management system that is written up and shared by all, it guarantees the lasting effectiveness of the actions undertaken.

How?
Actions in favor of the environment must be an integral part of the management of the hotel. It is structured by the hotel's General Manager and based on the Environment Charter. This action is implemented by the hotel in the framework of the policies adopted by the brands and the regions in order to benefit from the collectively developed tools.

The ISO 14001 certification validates the existence of the following elements:

- **an analysis of environmental impacts including those caused by malfunctions;**
- **a monitoring of regulations involving the environment;**
- **an environmental policy;**
- **objectives for reducing impacts on the environment;**
- **an action plan;**
- **procedures to control the impacts of the hotel activities.**

The Environmental Management System must be audited by an approved external agency once it is set up.

Compliance?
When the hotel has obtained ISO 14001 certification.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