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## THE IMPORTANCE OF GREEN TECHNOLOGIES IN THE SUSTAINABLE DEVELOPMENT OF HOTELS

**Annotation:** *the article mainly discusses the importance of green technologies in the sustainable development of the hotel. Because green technology is one of the urgent issues in today's developed hospitality business. Also, the importance of the article is that with the help of green technologies, hotel enterprises can positively affect the productivity of their economy and the environment. In addition, the article analyzes several hypotheses based on foreign experience, and its development prospects are described on the example of hotels in our country.*

**Keywords:** *hotel, green technology, economy, eco-system, sustainable, quality services.*

### MEHMONXONALARNING BARQAROR RIVOJLANISHIDA YASHIL TEKNOLOGIYALARNING AHAMIYATI

**Annotatsiya:** *maqolada asosan mehmonxona xo'jaligining barqaror rivojlanishida yashil texnologiyalarining ahamiyat haqida fikrlar bildirilgan. Chunki hozirgi kunda yashil texnologiyalar mehmonxona biznesida dolzarb masalalaridan biri sifatida e'tirof etilmoqda. Shuningdek, yashil texnologiyalarning ahamiyati shundaki, ular mehmonxona iqtisodiyoti va atrof-muhiti samaradorligiga ijobiy ta'sir ko'rsatadi. Bundan tashqari, maqolada xorijiy tajribaga asoslangan bir qancha farazlar tahlil qilinib, uning rivojlanish istiqbollari mamlakatimizdagi mehmonxonalar misolida bayon etilgan.*

**Kalit so'zlar:** *mehmonxona, yashil texnologiya, iqtisodiyot, eko-sistema, barqarorlik, xizmatlar sifati*

### ЗНАЧЕНИЕ ЗЕЛЕННЫХ ТЕХНОЛОГИЙ В УСТОЙЧИВОМ РАЗВИТИИ ГОСТИНИЦ

**Аннотация:** *в статье преимущественно рассматривается значение зеленых технологий в устойчивом развитии гостиничного бизнеса. Потому что на сегодняшний день зеленые технологии признаны одним из важнейших вопросов гостиничного бизнеса. Также важность зеленых технологий заключается в том, что они положительно влияют на экономику и окружающую среду отеля. Кроме того, в статье анализируется несколько гипотез, основанных на зарубежном опыте, и описываются перспективы ее развития на примере гостиниц нашей страны*

**Ключевые слова:** *отель, зеленые технологии, экономика, экосистема, устойчивость, качество услуг*

### INTRODUCTION

One of the most urgent issues is the occurrence of constant changes and ensuring sustainable development in the current modern hotel business. Such technologies are an integral part of the hotel business and require constant changes. Because these updates are important for hotel companies to keep their place in the competitive market. The application of these processes remains one of the criteria in demand in the entire global hotel market, and these technologies are at a level that allows for an individual approach to customers. Many hotels are developing hotel management systems to ensure sustainability, while other hotels are mainly providing services in return for development. The impact of the pandemic on the entire world industry did not bypass

the tourism and hospitality industry. First of all, the number of hotels coming out of this decline is increasing, and secondly, the rate of reduction of resources (electricity, gas, etc.) is increasing. It is of course important to ensure stability in exchange for economical use of resources as much as possible.

It is also widely discussed in the decree of the President of the Republic of Uzbekistan on the "UZBEKISTAN-2030" strategy. In paragraph 51 of the decree, the transition to the "Green economy", a sharp increase in the indicators of the use of renewable energy, which is its basis, and in paragraph 65, within the framework of the wide introduction of "Green Energy" technologies, the electricity consumption of pumping stations reduction tasks are indicated [1].

The initiative to introduce green technologies for hotel enterprises allows to find innovative solutions to optimize services consumed in the enterprise and reduce excess costs. To date, management systems based on the following green technologies are being used in hotel enterprises to save electricity and optimize services as much as possible. Examples of these are electricity control systems-72%(ECS), individual control systems in hotel rooms-65%(ICSOH), hotel property management-80%(HPM) and building security control systems-75%(BSCS).

In recent years, hotel customers have been choosing hotels according to the level of use of green technologies. Because mainly international guests who come to our country are informed about environmental degradation and global warming. Taking into account these criteria, hotel companies use hi-tech technologies to gain advantage among competitors, to maintain stability in the future and, most importantly, to maintain the respect of customers. Also, if we rely on the information of the booking.com site, 75% of customers pay attention to green technologies when choosing a hotel. It is not for nothing that this online booking system marks hotels using ecologically clean and green services with a special symbol on its platform.

Also, by introducing smart technologies, the hotel provides double comfort for businesses. Each incoming customer has started to show interest in the service based on smart technologies. According to the data of UNWTO, 65% of the current hotel enterprises are trying to introduce services based on green technologies, and 55% of hotels are highly valued for the introduction of green technologies through investment. Taking this into account, we considered that the use of green technologies in maintaining stability in hotel enterprises is relevant for many hotels today [4].

## **METHODOLOGY**

The article mainly uses the method of data analysis based on observational analysis, comparison and foreign experience. In addition, the author's opinions are expressed in the article using the scientific works of scientists working on this topic. Also, information was collected based on the data of online booking systems, and the ratio of dependence of green technological services on other services of customers was determined.

## **LITERATURE REVIEW**

However, the authors studies show that the most widely used green practices were, on the whole, using showerheads with reduced flow, using energy-efficient lightbulbs (LED), sorting hotel waste using colored bins and clearly labeled containers for collecting recyclables, and putting cutting-edge technologies in place to monitor energy usage. Therefore, hotel managers must proactively incorporate sustainable energy solutions into their operations in order to improve the energy-related environmental performance of hotels. Furthermore, the government's incentives (such as tax reductions) to encourage hotel operators to be more environmentally conscious should be carefully considered [2].

The hospitality industry is currently at the stage of forming and popularizing the ecological trend. At the same time, successful experience in operating eco-hotels has been accumulated in the national markets of many countries of the world, which can stimulate the further development of this industry on a global scale. Foreign experience in the development of eco-hotels shows that this industry is in high demand and is important in solving the environmental and social problems of humanity. In addition, those who are willing to pay extra for an environmentally friendly product, to protect themselves and our natural ecosystem, The environmental culture of consumers who have realized the damage caused by the modern technological society to the natural environment is increasing[16].

Ecotourism is a key component of Uzbekistan's efforts to execute national goals and objectives in the area of sustainable development, as well as the country's transition to a "green" economy. In this approach, which grows in harmony with nature, there is still much to be done and a lot of unrealized potential. One of our key goals in this respect is the growth of ecotourism as a significant sector of the "green" economy and the creation of our nation's ecotourism image by luring cutting-edge international experiences and cutting-edge technologies to the industry. In Uzbekistan, the processes for establishing recreational zones will be streamlined, and ecotourism will grow [17].

"Green" or ecologically conscious hotels: potential business. The hotel's profitability can be increased by actively switching to environmentally friendly practices, such as recycling, using renewable energy sources, and taking a protective attitude toward natural resources. efficient use of resources, enhance social justice, promote human well-being, and maintain stability with a marked reduction in ecological risks and environmental degradation in the long run.

In addition to cutting costs and lessening environmental impact, hotels that practice social responsibility will increase demand from higher-paying guests to stay in eco-friendly lodgings. Hotels using antiquated technology have a terrible impact on the natural world, but they also run the risk of losing out on bookings due to fierce competition. The biggest risk is that they could experience an international disaster. The adoption of green technology is currently a hotel company's primary competitive edge, and more quickly hotels adopt these technologies, the better off they will be in a highly competitive marketplace [3].

Given that the hotel industry makes up a sizable portion of the tourism sector, its competitiveness is essential to maintaining the sector's sustainable growth. A key requirement for attaining competitiveness in the tourism industry is operating a firm using sustainable development concepts. It is becoming more and more unavoidable that all facets of the supply and demand for tourism will incorporate the sustainability idea. In order to satisfy environmentally conscious travelers and to comply with the notion of sustainable development, hotels are implementing a variety of methods, which are the focus of this paper's investigation. Thus, the purpose of the author's research is to illustrate how the hotel industry has a problem in the modern business environment due to green building and green business practices [6].

The study conducted by the author investigates the potential for improving the environmental performance of a hotel through the adoption of sustainable development methods as a business model. The report employs a thematic analysis of the evidence practices to uncover seven significant sustainable development practices that the hotel has employed to reduce operating costs while enhancing the social environment. Therefore, in a number of ways, technology and sustainable development strategies may have a big impact on the best performance evaluation. Especially, there aren't many studies on sustainable development that have been done to find any sustainable development practices in the nation's service sector—more especially, the hotel industry—or to suggest the best practices that should be put into place from the managers' point of view. Lastly, this article can assist academics in understanding sustainable development and identify areas that require additional investigation [8].

## **RESULTS AND DISCUSSIONS**

The latest research shows that 65% of the respondents should have a visual, environmental and acoustic architectural plan before building a hotel. Because in order to ensure the stability of the hotel business, it is necessary to reconsider its business based on green technologies from the beginning or try to reconstruct the building.

Hotels need a lot of water, energy, chemicals for upkeep and cleaning, and also produce a lot of wastewaters. As a result, the focus on green building and green business meets the needs of a growing number of tourists who are aware of environmental issues and value this type of business, while also fostering a positive attitude toward the environment and approaching the goals of the sustainable development concept. In addition to promoting ecologically conscious behavior, the hotel's green architecture and construction also provide a luxurious setting and economic viability [6].

Based on foreign experience, many international hotels are currently using green technologies in practice in order to develop stability and ensure economic growth. Below are examples of several hotels using green technologies:

**Table-1. Foreign experience of using green technology in hotels over the world**

<b>Hotel</b>	<b>Hotel Examples of green practice</b>
Hi Hotel, Nice, France	Green Globe certification has been granted to this hotel for its use of organic food, recyclable paper, eco-friendly cleaning supplies, and paint.
Hix Island House, Isla de Vieques, Puerto Rico	The Hix Island House is powered by solar energy and operated on batteries with an emphasis on the environment. In addition, it was made to capture cooling winds, recycle rainwater, and release gray water back into the environment.
Garonga Safari Camp, Phalaborwa, Africa	Locals can work at this hotel and have the opportunity to advance their careers, and where possible, the food and merchandise are sourced locally. Additionally, visitors are encouraged to help with the planting and growth of Spesbok Trees in the Eastern Cape as a way to offset their carbon footprint.
Lefay Resort & SPA Lago di Garda, Gargnano, Italy	While the hotel's design was created with consideration for the surrounding surroundings and terrain, the interior design makes use of locally sourced materials. The hotel collects rainwater and uses sustainable waste management practices.
Thala Beach Lodge, Port Douglas, Australia, Port Douglas, Australia	One of the highest ecotourism certifications, Advanced Tourism Eco Certified, has been given to this resort.
Park Hyatt Maldives Hadahaa, Maldives	To reduce disruption to the environment, the hotel is divided into many sections that are situated above the Indian Ocean. A silver Earth Check certificate has been awarded to Park Hyatt Maldives Hadahaa.
The Park Hyderabad, Hyderabad, India	Because of Park Hyderabad's gorgeous exterior, less electricity is required because natural light is maximized. Bicycles, electric vehicles, and green transportation are encouraged. The hotel has received Leed Gold certification and blends local culture with outstanding design.
Spice Island Beach Resort, St. George's, Grenada	The resort uses desalination plants, solar heating, and energy-saving technologies in all its forms. The goal is to preserve as much of the island as possible through non-chlorinated pools, community clean-ups, and replanting. Smoking of any form, including electronic cigarettes, is not permitted anywhere within the resort, which emphasizes physical and spiritual rejuvenation.
Alila Villas Soori, Bali, Indonesia	The resort uses rainwater that has been adjusted to meet all of its water needs, making it 100% water-efficient. The majority of ingredients, products, and services are bought locally. The resort was constructed using materials that could be found locally, like sandstone and natural stones. It also uses a lot of plants and native volcanic rock to naturally cool the villas.
Six Senses Con Dao, Con Dao, Vietnam	The Six Senses Con Dao has been named by National Geographic Traveler as one of the best environmental resorts in the world. Constructed using eco-friendly building materials, the resort's architecture optimizes air circulation to minimize the requirement for air conditioning.

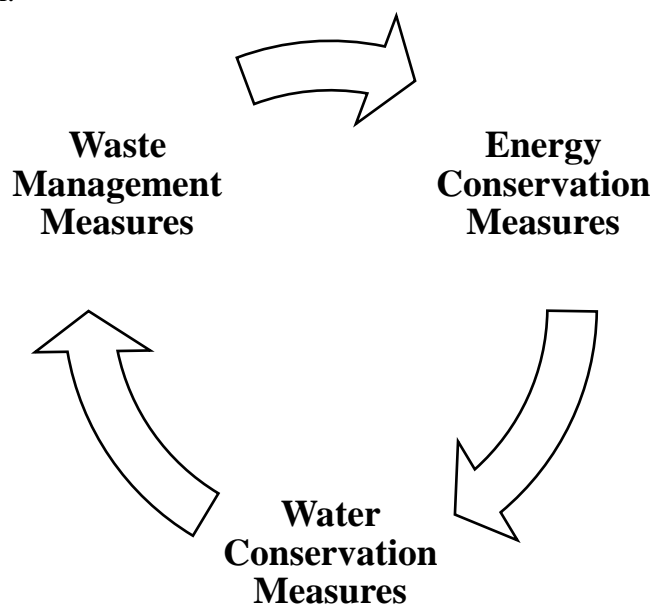
(Source: HotelsCombined, <https://blog.hotelscombined.com/travelling-green-the-worldstop-eco-friendly-hotels/>)

If we analyze this table, hotels around the world have mainly tried to create an eco-friendly environment based on green technologies. Based on the information of many online travel agencies (*Booking.com, Expedia, Trivago, Hotelsbed, etc.*), when choosing a hotel, many customers choose the hotel based on the level of use of environmentally friendly products and the ecological environment there. Because today the measures taken to protect the environment are becoming very urgent. Therefore, it is important to create an ecologically clean environment for foreign citizens to choose hotels in our region.

**The first hypothesis** that we propose is that the environment of the hotel is primarily nurtured by external factors. Among the most common methods of green hotels are green building perspective, which involves the use of natural materials, the use of renewable energy sources, as well as various forms of material and water recycling. A sustainable approach and acceptance of the fundamentals of sustainable development is demonstrated by these hotels' attention to the employment of locals and their promotion of agricultural production through the usage of locally produced food.

The hotel business is starting to show greater engagement in sustainable development. One of the most significant things that can help hotel firms become more competitive is green business. Hotels are significant users of water, electricity, chemicals for upkeep and cleaning, and sewage emitters. As a result, the focus on green building and green business meets the needs of a growing number of tourists who are becoming environmentally conscious and value this type of business, while also fostering a positive attitude toward the environment and approaching the goals of the sustainable development concept [6].

**The second hypothesis** that we want to analyze is the use of green technologies based on the internal resources of the hotel. For this, we propose the following green technology hotel development model.



**Drawing-1. Development green technology model in hotels**

(source: done by author)

As can be seen from this diagram, hotel companies can ensure sustainability by using green technologies mainly in these three areas. Let's analyze the previous models separately:

**A) Energy Conservation Measures.** Reducing energy consumption and maximizing economy is the main factor in ensuring sustainability for hotel enterprises. Because many hotel enterprises spend a lot of energy during their activities.

Therefore, hotel enterprises should take the following measures for themselves: develop renewable energy programs and participate in proposed projects (water or wind energy), use safe equipment that saves energy as much as possible, digital technologies (continuous monitoring of

energy consumption through thermostats), use of products with low energy consumption, use of sensor technologies that automatically turn off the light.

Based on the above foreign experience, we can use the following hypotheses as suggestions:

- **Use of lighting systems with LED characteristics** (*this system is widely popular in the hotel industry, and it has the feature of energy saving up to 85-90% compared to other lighting systems*)

- **Smart technologies that control the temperature** (*nowadays it is possible to save energy consumption through smart thermostats, these technologies can be expensive, but at the same time, the hotel brings great benefits to the economy*)

- **Maintenance devices that automatically turn off and on electricity** (*this system reduces energy consumption by turning off and on electricity that is mostly forgotten by guests*)

- **Keeping the water heated by electricity at a certain level** (*in many hotels, it is enough to heat the water system at 60-65 degrees, this system is important to maintain this standard, and energy consumption is saved by this method*)

**B) Waste Management Measures.** Considering the amount of waste generated in hotel enterprises, they are mainly divided into two categories: wet waste (ground waste, food scraps and cooking oil waste) and dry waste (cardboard, plastic, metal cans, paper, etc.) and they are sent to landfills.

For this reason, hotel companies use several methods to manage these wastes. That is, it is important to separate the types of waste and collect them separately in boxes. Next, buy more recyclable goods, use as little disposable products as possible (use liquid soaps and shampoos in a large container instead of disposable soaps and shampoos). Use of such leftover products in other economic activities. For example, it is important to use the remaining soaps in washing clothes and to form the education of how to use paper correctly.

From the assumptions given above, we can make the following specific suggestions, which will cause the hotel to reduce the amount of waste for enterprises:

- **Education and training of hotel employees and customers** (*use of disposable items as little as possible, reduction of paper consumption, etc.*)

- **Containers that are convenient for everyone** (*special boxes should be sorted according to the type of waste with a separate sign*)

- **Cooperation with waste processing enterprises** (*with the help of these enterprises, with the reduction of waste consumption, economic efficiency can be achieved*)

- **Active participation** in various seminars-trainings, master classes and similar events that ensure stability

**C) Water Conservation Measures.** The maximum saving of water in hotel enterprises is an important strategy of "green" management. The hotel consumes a lot of water resources depending on the volume of work. Because the use of water will definitely depend on the size of the hotel and its capacity, capacity, service categories and standards. Therefore, the hotel manager will have to take many measures to save water.

Our proposal consists of the following:

- water-saving technologies and devices (installation of low-water consumption, infrared technologies in bathrooms),
- creating a mechanism for repeated use of towels and sheets,
- taking measures to avoid unnecessary water leakage in washrooms, etc.

It is important to separate water resources used for cooking and food.

## CONCLUSION

It is considered important to improve green technologies of hotel enterprises that do not have a negative impact on the environment and guarantee the use of available resources. We believe that there are the following methods of improving technologies that should be developed more effectively for environmental protection in the operation of hotel enterprises:

- use of environmentally friendly technologies in hotel enterprises and introduction of an energy management system that calculates the amount of energy consumed (special devices);

- introduction of green vehicles in hotel enterprises;
- use of green marketing methods and introduction of new types;
- attracting enterprises that supply environmentally friendly goods (products).

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