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Energy and Water Management Practices in Green Hotels: A Circular Economy Approach towards Environmental Sustainability

S. Saju Kumar

Assistant Professor

*Army Institute of Hotel Management & Catering Technology (AIHM&CT)
Bengaluru, Karnataka, India*

Abstract

Hospitality business is widely known as a high-intensity consumer of energy and water, thus, making a great contribution to the degradation of the environment and the rapid process of climate change. Green hotels have come into the scene in response to these challenges as the key to ensuring environmental sustainability because of their adoption of innovative energy and water management practices in line with the principles of the circular economy. The Author has drawn the study based on six day professional training on sustainability in hospitality operations and independent research and field observations of sustainability practices that have been applied in hotel settings. This paper will discuss how energy-saving technologies and sustainable water management systems are critical towards promoting environmental conservation in green hotels. It covers the integration of renewable energy, energy-saving lighting and HVAC systems, smart energy monitoring, rainwater collection, greywater reuse, low flow fixtures and water saving lan=:a

to the hotel sector by utilising the elements of resource optimisation, minimisation of waste, water conservation reuse and regeneration with the implementation of circular economy forming part of the hotel operation processes so that the finite resources are not exhausted and the environmental impact is not as much as possible. The paper also details the benefits of the practices to the economy and operation, which include the reduction of costs, complying with the regulations, good brand image, and customer satisfaction. Exploring the best practices and sustainability models, the study identifies managing commitment, policy support, and involvement of stakeholders as the most suitable essential in the long-term sustainability objective achievement. The outcome of the findings indicates that being sustainable in terms of energy and water use could not only assist in environmental protection but also in increasing the resilience, competitiveness as well as innovations within the hospitality sector. The study can be of great help to the hotel operators, policymakers, and researchers to take sustainable and circular practices in the hospitality sector, as well as illustrating how the strategies of environmental responsibility can lead to long-term profitability and environmental accountability on the global stage.

Keywords: Green Hotels, Energy Management, Water Conservation, Circular Economy, Environmental Sustainability, Smart Energy Monitoring

Introduction

The concept of sustainability is no longer just the trend or the term that is actively used: this is a serious practice that requires regularity, patience, and a high level of responsibility towards the country and the environment. The activities performed today are crucial towards not only sustaining the current generation but also protecting the resources of the future generation. Hotels are 24 hours in operation and hence they use energy and water in terms of lighting, climate control and operation. Hence, the productivity of these resources in use is critical in the solution of increasing issues pertaining to a lack of resources. In this regard, the current paper examines how the green hotels practice energy and water management that leads to environmental sustainability based on the application of the principles of a circular economy.

Objectives of the Study

Sustainable operation of businesses not only helps to preserve the natural environment, but also helps to promote the local communities and farmers through improving livelihoods and facilitating inclusive economic growth.

Green hotels have experienced a tremendous growth not only in line with the market trend, but also as a way of meeting the shared responsibility of hotel operators and guests towards green and sustainable environment. Although the main role of the hotel management is to design and implement sustainable standard operating procedures (SOPs) the guests also have a critical role to play by adhering to and aiding these environmental friendly practices. In the green hotel activity, energy saving and water management is viewed as an important element since it plays a key role in reducing carbon emission, saving of water resources, responsible waste disposal, and encouragement of green sourcing. Green hotels prioritize the environmental preservation to the core of their operation, making the natural environment one of the major stakeholders whose protection is central to the provision of sustainable hospitality services by taking a circular economy approach.

Concept of Energy Management Practices in Green Hotels

Green hotels embrace the use of integrated energy management approaches to maximize the use of energy in the guest rooms, the general areas, and the working areas. Solar energy systems are used to power lighting, warm water as well as chosen in-room functions, which minimizes the reliance on traditional sources of power. Lighting systems that are automated such as motion sensors and timers are used to ensure that lighting systems are turned on only when needed to reduce needless use of energy. To save more energy and water, there are restricted laundry programs that are encouraging guests to use laundries and towels. The introduction of efficient HVAC systems and LED lighting systems have a major impact in saving electricity and ensuring the comfort of the guests. The temperature is controlled through automated climate control air-conditioning systems which are set according to the occupancy and pre-set standards. Also, intelligent energy surveillance systems allow real time monitoring of the energy used in the hotels and the hotel can detect areas of waste and ma±&\$!

For example, Profit Impact

By increasing operating profit directly, energy costs may be reduced by 30-40 percent with energy-efficient lighting, HVAC systems, and solar integration.

Water Management Practices in Green Hotels

One of the focuses of green hotel operation is sustainable water management. A lot of hotels use natural stream or mineral water in their in-house water purification systems that are served in reusable glass bottles to prevent plastic waste. Water that is almost approaching the end of its shelf life is reused conscientiously to green landscaping and gardening. Ecological balance and aesthetic value of the natural water bodies like streams or waterfalls within the hotel premises are conserved instead of consuming the water. The use of rain water harvesting systems is done to gather and store rainwater and use it in non-potable purposes. Greywater recycling systems recycling sinks and shower wastewater to use in flushing and irrigation. The low-flow fixtures installed do not limit the consumption of water at the expense of functionality. Water-efficient landscaping can also be used to minimize freshwater usage by planting native and drought-tolerant plants, effective irrigation systems and soil-moisture conservation methods., moreover, the daily water usage control, which can be seen in the public information boards, can create awareness among guests and staff and encourage resgIcHbH

Profit Impact

Efficient fixtures and recycling systems usually cut down the water bills by 35-45%.

Circular Economy Application in Hotel Operations

Circular economy principles applied to the hotel operations focus on the effective use of energy and water resources based on the reduction, reuse, and recycling procedures. Hotels reduce wastage and maximize the use of resources which means that in addition to preventing the depletion and scarcity of the essential resources, there is also the indirect economic gain of saving costs and enhancing operational efficiency. With a circular framework of energy and water management, sustainable operations are supported and it builds long-term environmental and economic resilience.

Economic and Operational Benefits

Proper management of energy, water and material wastes creates indirect revenue in terms of saving on costs and at the same time makes sure that the environmental resources are not damaged. Sustainable practices also help hotels to receive known environmental awards like LEED and Green Globe, which boosts the credibility of the institutions and competitiveness in the market. Moreover, sustainability programs make the management, employees, and visitors feel responsible and adopt an ecologically aware attitude. The same commitment helps to enhance job satisfaction because employees are proud of the fact that they are actively involved in the protection of the environment and its sustainable development.

Methodology

- The data was collected through two sources primary and secondary.
- The primary data was collected through work shop attended in Tamara Group of resorts, Coorg & field visits to various properties such as The Leela Palace, Bengaluru and Marriott Hotels, Bengaluru.
- The secondary data was resourced from articles, books & internet.

Findings of the Study

- The study reveals overall reduction in the wastage of energy, water which protects the ecosystem.

- Less pollution & increases energy efficiency through conservation of various sources of energy.
- Results in employee & customer satisfaction and increased productivity.
- Cost efficiency.

Conclusion

The research on Energy and Water Management Practices in Green Hotels: A Circular Economy Approach towards Environmental Sustainability is grounded on the observations and insights acquired during working with several hotels in Coorg and Bengaluru, as well as the experience that was gained during sustainability-oriented workshops. The results show that although a number of hotels are doing genuine activities to attain comprehensive sustainability with good management of energy and water use practices, others are implementing these practices, not to fully apply them in day-to-day operations but to comply with the current trends of sustainability. To ensure that the long-term environmental sustainability is achieved, it is important to commit and to be truly engaged by the hotel management, staff, guests and policy-makers. Through collective efforts to ensure that the practices adopted in hospitality industry are responsible and circular, the industry can make a significant contribution to the protection of the nature and to a safe and sustainable environment.

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