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From Linear to Circular: A Study of Hospitality Industry's Shift towards Sustainability

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ABSTRACT

Circular Economy (CE) has gained significant focus in recent years as an innovative model for sustainable development, especially in industries that strongly impact the environment, such as hospitality and tourism. This study explores the application of CE strategies—reduction, reuse, recycling, redesign, replace, and rethink—in the realm of the hospitality sector. The study explores ways major players in the industry, including Indian Hotels Company Limited (IHCL), EIH Limited, and ITC Limited, are adopting these strategies to reduce waste, conserve resources, and enhance sustainability. Using a business case analysis method, the research investigates the practical implementation of CE practices and their impact on operational efficiency, cost reduction, and customer satisfaction. The study findings show that adopting CE principles not only promotes environmental sustainability but also ushers competitive advantages in an increasingly eco-conscious market. Although, challenges such as high initial investment costs, a lack of standardization across the industry, and the need for stronger regulatory frameworks remain barriers to widespread adoption need to be addressed. The study proposes managerial implications through recommending policy interventions and collaborative efforts across stakeholders to foster a more sustainable future for the hospitality industry.

Keywords: Circular Economy, Green Practices, Hospitality Industry, Sustainability, Tourism.

Introduction

Based on European Commission (2020) report the worldwide consumption of resources and yearly waste creation are anticipated to be double by 2050, so the shift to a higher focus on sustainability in production and economic processes is a key necessity (Liu, Q., Trevisan, A.H., Yang, M. and Mascarenhas, J., 2022). The present economy is dominated by linear model which is driven by consumption in large amounts of easily available resources and energy, making it inappropriate in the real situations it is used in. (United Nations, 2015). The effort based on efficiency-based approach to reduce resources and fossil energy consumed by every economic vehicle would not change their finite trait, however will postpone the unavoidable, therefore needing other fundamental shifts (Pamfilie, R., Firoiu, D., Croitoru, A.G. and Ionescu, G.H.I., 2018). However, this shift towards sustainability is a complex phenomenon. The key strategy to accomplish this shift is the circular economy approach (Huysman, S. et. al, 2017). Circular economy refers to a cyclic approach of production process i.e. produce, use, recover, recycle, and remanufacture (RR). Usually, 3R's (recycle, reduce, and reuse) are considered as the crux of a circular economy. The role of block chain technology in circular economy practices to improve organizational performance (Rehman Khan, et. Al,2022). As per Preston (2012), they refer to the open production techniques where the sources are obtained, used to develop goods and turn into waste after consumption of the good and hence ought to be switched by methods which do reusing and recycling of sources and conserve energy (Huysman, S. et. al, 2017). In hospitality industry, there is growing affinity amongst the customers towards environmentally friendly processes, and hence has led to increase in demand for environmental friendly products and services. As a result

the increasing number of hospitality companies have started adopting Green Practices and approaches of Circular Economy Julião, J., Gaspar et. Al, 2018).

The adoption Circular Economy practices have gained momentum in production and manufacturing, however there is limited research on their application in hospitality industry. Hence the present study fills this gap by exploring the principles of circular economy and its application in the hospitality industry.

Circular Economy concept

Tenets of a Circular Economy (CE) are aligned to serve sustainable development through eliminating various sorts of wastages (Marsh, A.T., Velenturf, A.P. and Bernal, S.A., 2022). The motive of CE is to bring harmony in both conserving the environment and growth in economy by contemplating several perspectives, which include levels of analysis and life cycle stages (Julião, J., Gaspar et. Al, 2018). It is about approaches where economic growth is decoupled from environmental damage. A move towards a CE shows a switch from a take-make-dispose economy and shift in the direction of a regenerative economy (Bjørnbet, M.M. et. Al., 2021). CE has attained wide recognition as a potential paradigm to uncouple economic progress from resource annihilation (Liu, Q., Trevisan, A.H., Yang, M. and Mascarenhas, J., 2022). The organizations have initiated their contributions to CE by aligning their business processes. Amidst its growing significance, standards have emerged such as British Standard BS 8001:2017 presented a

"Framework for implementing the principles of the Circular Economy in organizations" (BSI, 2017; Marsh, A.T., Velenturf, A.P. and Bernal, S.A., 2022). CE is therefore described as an industrialized method that is exemplified by restoration or regeneration through intent and design (Julião, J., Gaspar et. Al, 2018).

Literature Review

Sustainability in tourism refers to development and maintenance in a region, society and environment, in a manner and extent which stays feasible infinitely and does not undergo degradation or alteration of the environment where it is existent to the extent that it forbids progress associated with other events and processes (da Silva, P.M., da Silva, L.M. and Echeveste, S.S., 2021).

Ghisellini et al. (2015) proposed that CE arises by three main activities, which are also called as 3R principles- Reduction, Reuse and Recycle (Manniche, J., Larsen, K.T., Broegaard, R. and Holland, E., 2017)

The Reduction principle- Its objective is to reduce use of energy, materials and waste by improving efficiency in processes involved in producing or consuming. It can be achieved through various ways such as using advanced technology, efficient products, simple no frills package, smart household appliances, a simple style of living, etc. Making efficient use of resources implies using less resources and improving well-being both economically and socially.

The Reuse principle – The objective is to observe resources which are not waste could be used again for the equivalent purpose they were made for. This brings enormous benefit to environment by needing lesser resources, energy, and manpower in comparison to manufacturing of new products. Reuse of material prevents the discharge of elements that are hazard to environment.

The Recycle principle- The objective is to reduce waste by reprocessing organic material. By this material which can still be used can be utilized and amount of waste could be reduced hence reducing the impact on the environment.

These 3Rs, however, were extended to the 6Rs, stated as Reuse, Recycle, Redesign, Remanufacture, Reduce, and Recover (Manniche, J., Larsen, K.T., Broegaard, R. and Holland, E., 2017).

Figure 1-Sustainability management sub-processes in tourism and hospitality (Jones, P. and Wynn, M.G., 2019)

Drive for Circular Economy model

CE is deemed as a potential solution to challenges, such as the growing universal demand for resources, climate changes and high levels of pollution (Rodríguez-Antón, J.M. and Alonso-Almeida, M.D.M., 2019).

Hospitality sector had shed concerns on sustainability for years. The inclination towards adoption of environment friendly practices has been existent in hospitality sector since 21st century. Primary cause is allegations of its adverse effects in various forms like high resource utilization including water, energy and the extensive creation of solid and water waste. In addition, tourism is accountable for roughly 5% of worldwide CO2 emissions, predominantly because of transportation, along with hospitality. Still, with every trip that happens, it aggravates the damaging consequences on the planet. Yet another challenge is Over tourism. Over tourism imbalances the ecology and harms heritage. Also creates sense of undesirability in minds of local residents largely due to congestion, noise pollution, discourteous travelers behavior and the shortage of basic facilities in in holiday destinations. CE is believed to be promising solution to alleviate these issues (Rodríguez-Antón, J.M. and Alonso-Almeida, M.D.M., 2019). As per Pacific Gas and Electric's Food Service Technology Center (FSTC), usage of energy is approximately 5 times higher per square foot in hotels in comparison with any other business premises.

Consumers have growing awareness and concerns related to pollution and waste, and therefore seek out hotels which follow sustainable practices. In order to cater to such evolving demands, hotels have begun considering approaches to have goods and services which are eco-friendly. Consumers also exhibit the tendency to pay higher prices to have rather an eco-friendly service, are willing to sacrifice comfort and for such processes. Hence consumer behavior also has exerted a positive influence towards use of CE practices by the hotel industry. Therefore, the use of green practices is having increasing interest and attention in the hospitality sector (**Julião, J., Gaspar, M., Tjahjono, B. and Rocha, S., 2018).**

Green practices in hospitality sector

In hospitality sector, the focus has largely been on energy, water and recycle measurements to boost sustainability. Even though such estimates per se cannot be accounted as CE initiatives, some of these may well be regarded as forerunners in circular tourism. Analysis presented by Manniche et al. (2017) on position of CE in the South Baltic Region concluded that the hotels have been exercising sustainability approaches for a number of years and their shift to circular methods were embraced chiefly as strategy of reduction (Rodríguez-Antón, J.M. and Alonso-Almeida, M.D.M., 2019).

Increasing number of hotel brands, both big and small, have been committing themselves to environment conservation like reduction in use of energy and water and reducing waste outputs. Due to such practices, concept of 'green hotels' has emerged. It is reported by many such hotels that green practices had led to cost efficiencies, staff loyalty, and consumer retention, and attaining of short-term operational targets (**Julião, J., Gaspar, M., Tjahjono, B. and Rocha, S., 2018)**.

Analysis of eco-innovations used in four industries studies by Alonso-Almeida et al. (2016) in tourism showed hospitality was the greatest amongst them. Many of these reported eco-innovations may perhaps be considered as CE approaches like storage of rainwater and geothermal energy or the using electric motor vehicle for internal transportation. Few of CE approaches in hospitality are used in building and construction, refurbishment and redecoration, and operational services. In fact, it is suggested that initial services that shifted from linear to circular were energy and water and at a less level, waste (Rodríguez-Antón, J.M. and Alonso-Almeida, M.D.M., 2019).

Methodology

The study followed qualitative approach. First literature review was done on CE and its application in the hospitality industry. The case study was performed and employed to four relevant international Indian hotel chains. Business case study facilitated in-depth analysis at specific issue where knowledge is inadequate (Bryman and Bell, 2003).

Case 1-Indian Hotels Company Limited (IHCL):

The Indian Hotels Company Limited (IHCL) was incorporated in 1899 by Mr. Jamsetji Tata, founder, Tata Group with The Taj Mahal Palace, Bombay (now Mumbai as its first hotel in 1903. At present, it is the World's Strongest Hotel Brand and India's Strongest Brand across sectors as per Brand Finance Hotels 50 Report 2022 and India 100 Report 2022 and a well-known conglomerate that contains 30 operating companies across 10 diverse industries including steel, automotive, consumer and retail, infrastructure, financial services, tourism and travel, aerospace and defense, telecom and media, and trading and investments. IHCL is operating in more than 100 countries across six continents with and revenue of over $110 billion (IHCL Annual report 2020-21).

IHCL is South Asia's largest hospitality group with Indian origins, having 221 hotels in over 100(operational & pipeline) locations globally offering 19,425 total rooms as per and employing more than 25,906 people (IHCL FY 2020-21). Among its most prominent hotel brands include- Taj, SeleQtions, Vivanta, The Gateway, Ginger, Expressions, and TajSATS.

Case 2-EIH Limited

Rai Bahadur M.S. Oberoi laid foundations of the Oberoi Group in 1934 which has grown into 20 extraordinary hotels under the luxury Oberoi Hotels & Resorts brand and 10 five-star properties under the Trident Hotels brand. At present, EIH limited has 30 hotels having 4,499 rooms as per and employing more than 9,105 people. The major hotels under its umbrella are Clarkes Hotel, Shimla and Maidens Hotel, New Delhi, a luxury motor vessel in Kerala, two luxury River Nile cruisers in Egypt(EIH FY 2021-22).

Case 3-ITC Limited

ITC limited entered in hotel business in 1975. Being premier chain of luxury, ITC acts as trailblazer in Responsible Luxury in Indian hotels, with 115 hotels across 80 destinations with six distinct brands over 10,700 rooms under four distinct brands – 'ITC Hotels' in the Luxury segment, 'Welcomhotel' in the premium segment, 'Fortune' in the Mid-market to Upscale segment and 'WelcomHeritage' in the Leisure & Heritage in India (ITC Sustainability & Integrated Report 2022).

Analysis

To perform analysis, the Global Reporting Initiative (GRI) report were. Using this report, the actions taken by the respective organizations and their outcomes such as economic, social, environmental influence like on climate, human rights, corruption and governance. So the report provides detail on the actions taken by the organization in CE at universal manner. The significance of this report is that it provides a baseline, a comprehensive measure of initiatives taken and is also preferred by researchers (Marimon, F.et. Al, 2012 ; Alonso-Almeida et. Al, 2016)

The method used to conduct analysis through GRI report was as follows :

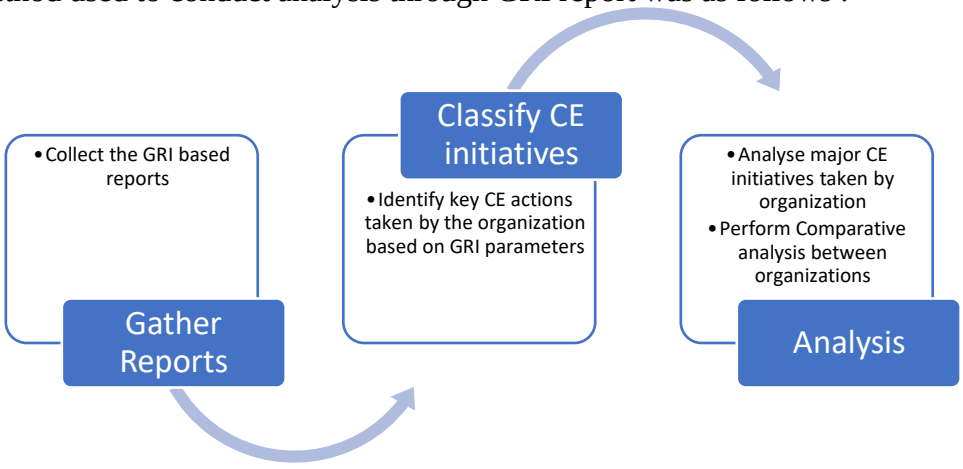


Figure 2. Procedure to analyse the information found in the GRI reports. Source: Our own elaboration.

Case Analysis 1.) Indian Hotels Company Limited (IHCL)

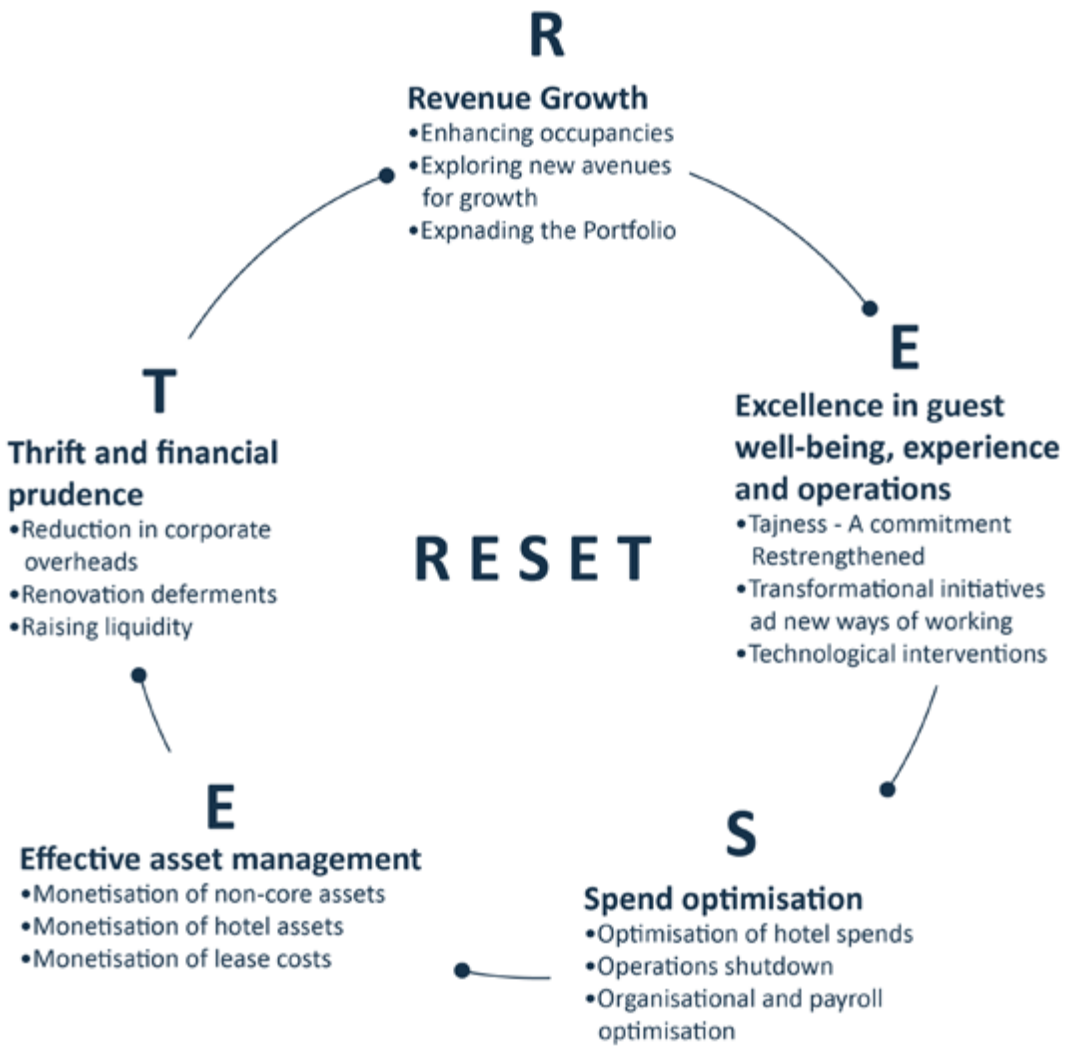


Figure 3-IHCL-R.E.S.E.T 2020 Strategy.

Shift from 3M approach (Manoeuvre, Manage and Multiply) to R.E.S.E.T 2020. IHCL in terms of sustainability and EC follows six-pillared ESG framework called Paathya.

IHCL focus on practices on reduction of water use, minimize use of energy and other resources, and limit carbon emissions and waste. They endeavour use of natural resources, minimize and manage waste effectively, using renewable energy sources and food that sourced from locals. They follow Precautionary Approach employed to every aspect of their business, which states sustainable practices would be integrated into every business decision and process, and through life cycle of every product and service. Such measures are employed by following appropriate evaluation of environment and social in the start-up and pre-opening period of every new hotels efforts to maximize, having LEED certifications for properties, using

- The delivery of over 57,000 Qmin meals to flood-affected families across 17 villages in Assam
- The establishment of 10 heritage sites in collaboration with UNESCO to preserve India's intangible culture
- Obtaining 29% of energy at IHCL's hotels from renewable sources

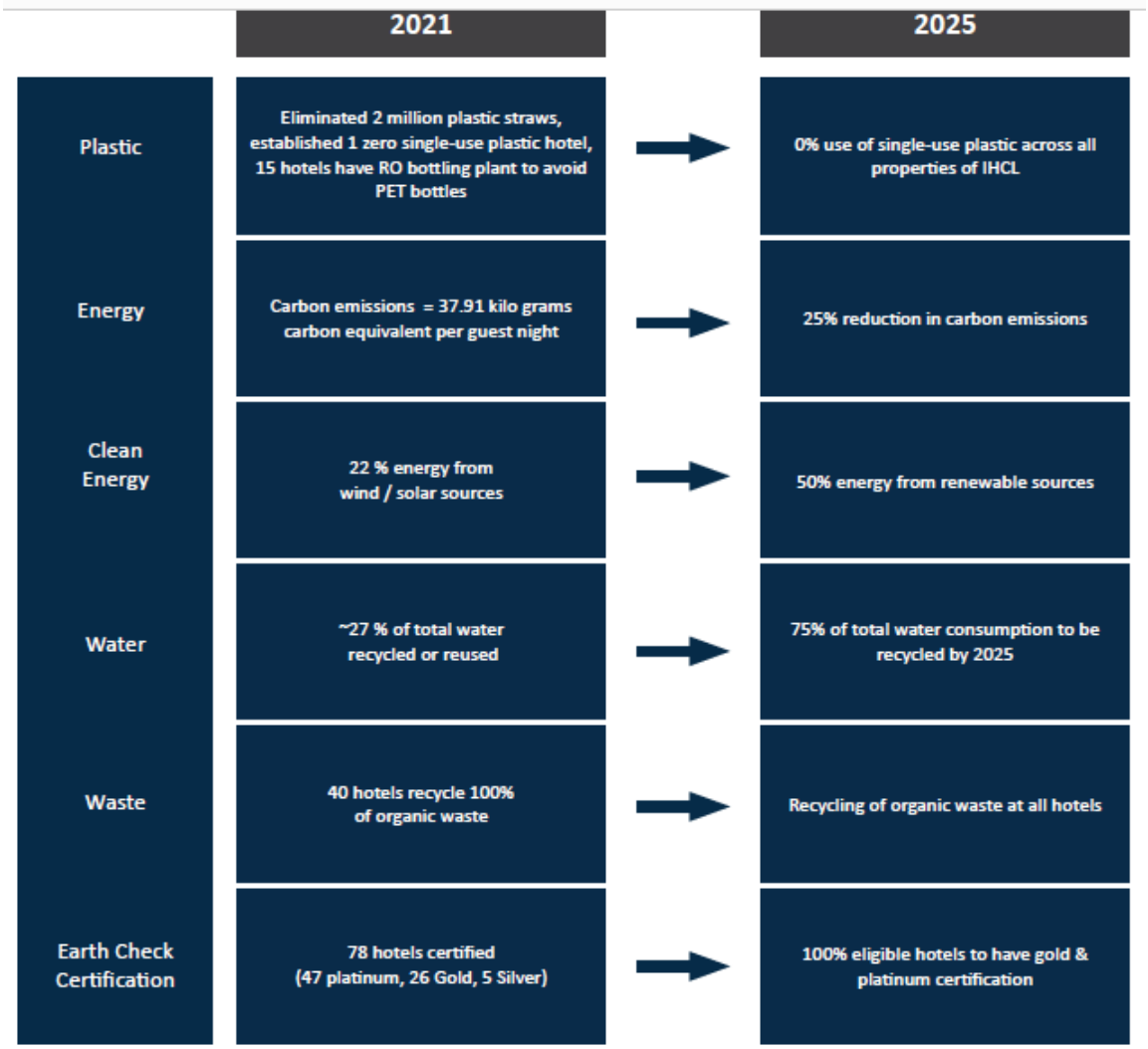


Figure 4- IHG-Green Engage Strategy

IHG, in the field of sustainability and EC, aims to reduce its impact on the environment by using a digital sustainability platform, called IHG Green Engage. This platform is a global standard applicable to the entire group; it helps hotels to manage and control their energy consumption, CO2 emissions, water use and waste generation through more than 200 green solutions and implementation plans that strive for profitability while minimizing its environmental impact.

Company	Year	Initiative	Sustainability Focus
IHCL	**2020-21**	**5-point strategy** (Focus on Revenue growth, Excellence in Operations, Spend Optimization, Effective Asset Management and exercising Thrift & Financial Prudence.)	**1.1-Energy** **1.2-Water** **1.3-Waste**
EIH Limited	**2020-21**	**Strategic Priorities** Endure Flourish Revitalise	**2.1 Energy** **2.2 Water** **2.3 Waste**

ITC	**2020-21**		**3.1 Energy** **3.2 Water** **3.3 Waste** **3.4 Sustainable agriculture** **3.5 Biodiversity Conservation** **3.6 Sustainable - Livelihoods**

Table 1- Details of Company wise Initiatives for Sustainability

1.1 Energy

The prime focus is placed on right use energy through use of technology and innovative approaches. IHCL in partnership with IFC installed energy efficient systems such as use of LED lights, using VFDs on high power motors in condensers, exhaust fans, cooling tower fans and air handling units. These along with basic changes such as enhanced insulated hot water lines.

1.2 Water

Efficient use of water is facilitated by recycling, recycling percentage from 2019-20 increased 27% to 2020-21 through prudent use of resources such as use of aerators, upgrading STP & using STP recycled water in cooling tower, using the chillers in optimum condition.

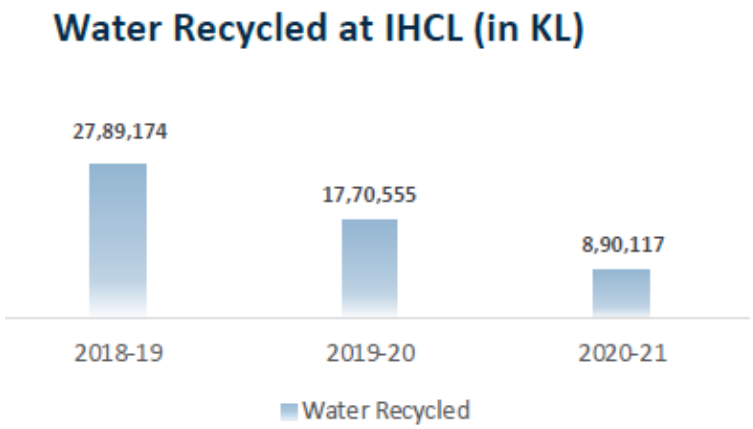


Figure 5-(Source-IHCL Sustainability report 2020-21.)

1.3 Waste

Waste management has been practiced at IHCL through installation of in-house composters at 40 hotels that led to prevention of 1410 tonnes of organic waste from going into landfill. Circular Economy. In addition, practices such as converting waste kitchen oil into Biodiesel & Glycerin, generating compost and biogas from organic waste were implemented. The harmful wastes such as burnt oil and lubricant oil were safely disposed by offering these to the approved vendors. Every type of e-waste produced in the hotel premises was offered to recycling agent which have certifications by the Pollution Control Board. Sewage treatment is ensured prior to dispose of the water in municipality sewers. The water undergone treatment is reused. Furthermore, IHCL has been practicing the phase out of single-use plastics

And discontinued use of plastic straws, PET bottles and is committed to use only biodegradable package for food delivery (IHCL Sustainability report 2020-21.

IHCL environmental commitment results			
	2018-2019	**2019-20**	**2020-21**
Energy Consumption			
Fuel Consumption from non-renewable sources(TJ)	979.16	816.68	354.81
Fuel Consumption from renewable sources (TJ)	253.27	13.71	115.86
Total Electricity Consumption (TJ)	1347.57	1433.47	703.97
Total Energy Consumption (TJ)	2580.01	2263.87	1174.65
Water			
Water Consumption (in KL)	10555952.89	36838.3	3393577.59
Water Recycled at IHCL (in KL)	789173.89	770554.91	890116.76
Waste			
Waste by type and disposal method			
Kitchen Waste (Tons)			1410.64
Plastic (Tons)			157.36

Table 2-IHCL environment commitment results

EIH Limited
In terms of sustainability, EIH practices

2.1 Energy
Cautious approach by EIH to ensure the system design and the equipment used for all the hotels demonstrate energy efficiency. They make use of Vapour Absorption Chillers which do not lead to ozone depletion. These efficient chillers are used for air conditioners, pumps, fans, compressors, blowers and other equipment. They also have installed Energy recovery systems and variable speed drives for saving energy. Efficient robust boilers and heaters with energy recovery systems are used for recovering heat wasted. Energy-efficient lighting system is used to make sure the natural lights are used at its fullest.

They also reach out to guests through social media promotions projected towards health, building immunity and healthy recipes. EIH has adopted renewable energy sources such as solar power to meet electricity requirements of its hotels. EIH also eyes towards 30% to 70% power generation through solar energy in hotels owned or managed by them. Their Balasar (Haryana) based solar plant which is based on Polycrystalline technology and has 27,000 produces 7.5 MW of electricity. The performance ratio of plant is set to be 76.5%. Oberoi. To limit CO2 emissions, EIH has made objectives towards reduction ofCO2 emissions by 12,344 tonnes per year.

Through practices driven towards operational excellence towards resource conversation, EIH achieved 34% reduction in Energy consumption with 64.9 mn kWh of total power consumed. In addition, through Restoring ecosystem, EIH achieved 39% reduction Co2 emission (EIH Limited Integrated Annual Report 2020-21).

2.2 Water

EIH has invested heavily in harvesting of rainwater. By installing sewage treatment plants (STPs), the water after treatment is recycled to be used in horticulture and cooling towers. Plumbing fittings which use less water are used for reduction of water consumption. In order to limit the use of water, automated irrigation systems are used (EIH Limited Integrated Annual Report 2020-21).

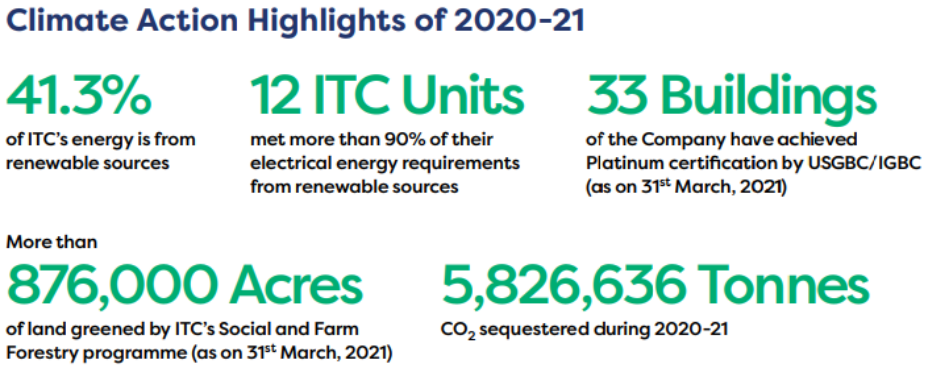
2.3 Wastage

EIH in association with Energy Efficiency Services Limited (EESL) treat wet garbage in organic waste converters and recycle it or use it for feeding animals. Similarly, waste composed of metal, paper and plastic are separated and are recycled. Also, the e-waste is given to authorized agencies based on regulations. Furthermore, they have substituted use of plastic bags with cloth for newspapers and laundry. They have eradicated use of plastic covers for room tumblers. Use of recycle paper is done to prepare business kits and greeting cards. In addition, soaps are sent for recycling and offered for charity. They make use of biodegradable cleaning agents and washing detergent and provide organic nature-based bathroom amenities (EIH Limited Integrated Annual Report 2020-21).

ITC

3.1 Energy

ITC has goal of meeting 50% of total Energy needs from Renewable Sources, by 2020-21 41% target was achieved. It achieved meeting 51% of Total Electrical Energy (Grid Purchased) needs from Renewable Sources. ITC also laid strong focus on Reduction in GHG Emissions (Scope 1, 2) per Unit of Production scoring 7.4% reduction in Paper Business, 21.4% in Foods Business, 4.2% increase in Hotels, 1.1% in Agri Business, 30% in Packaging & Printing and 2.0% reduction in Tobacco. In terms of Energy Consumed per Unit of Production, Reduction in Paper Business was observed to be 5.5%, in Foods Business 20%, Hotels with increase of 14%, Agri Business and Packaging & Printing with reduction of 2.5% and 0.5% respectively. With vision of Sustain and enhance carbon sequestration by expanding forestry projects on wastelands through ITC's Social and Farm Forestry programme and other such initiatives, by 2020-21 they had 394,678 Area under Social Forestry (Acres) (ITC Limited Integrated Annual Report 2020-21).



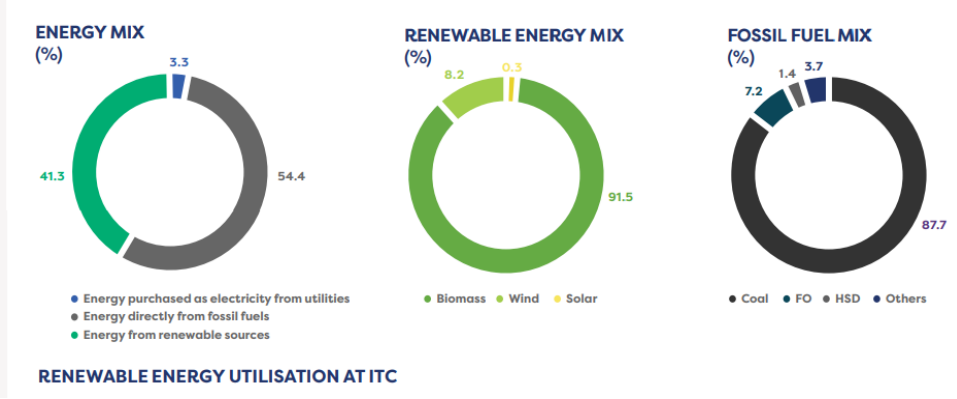


Figure 6-Climate action Highlights 2020-21 (Source-IHCL Sustainability report 2020-21.)

3.2 Water

ITC has focused on reducing the percentage water consumed per unit of production, which they have achieved in terms of reduction of 3.4% in Paper Business, 33% in Foods Business and 4.5% in Tobacco, however witnessed rise in 22.6% in Hotels. ITC also invests in development of Rainwater Harvesting systems that can build potential equivalent to more than 5 times the consumption of Net Water from Operations. They have achieved the 4 times target and aspiring to reach it to 5 times by 2030. In addition, ITC aims to have all of its sites in High Water Stressed Areas have certification according to International Water Stewardship Standard by AWS (Alliance for Water Stewardship) and have got one Site AWS certified by 2020-21. In order to make sure Water Security for every Stakeholder by Watershed Development & Managed Aquifer Recharge, ITC have developed 1,231,251 (cumulative) Watershed Area (Acres), 21,991 (cumulative) Water Harvesting Structures (Nos) and 41.95 (cumulative) Storage Potential (million kl). To enhance Crop Water Use Efficiency in Agri Value Chains through Demand Side Management Interventions, ITC has Saved 208 million kls of Water (Annually) by 2020-21 (ITC Limited Integrated Annual Report 2020-21).

3.3 Waste

In 2020-21, 99.9% (less than 0.1% of Packaging Portfolio of ITC was Non-Recyclable or Hard to Recycle (where the Phase out plans were existent in place). ITC also was found to be actively working to increase the collection and recycling rates for Multi-Layered Plastic (MLP) package waste through implementation of replicable, scalable and sustainable models of solid waste management. They were found to have above 80% of Plastic Packaging Waste Sustainably Managed (ITC Limited Integrated Annual Report 2020-21).

3.4 Sustainable agriculture

With focus towards promotion of Climate Smart Village Approach in Core Agri-business Catchments, ITC had 771,119 (cumulative) Area Covered (Acres) by 2020-21. Their e-Choupal has been country's largest initiative among internet-based interventions in rural India. It caters to more than 4 million farmers in 35,000+ villages by 6,100 kiosks across 10 states in India.

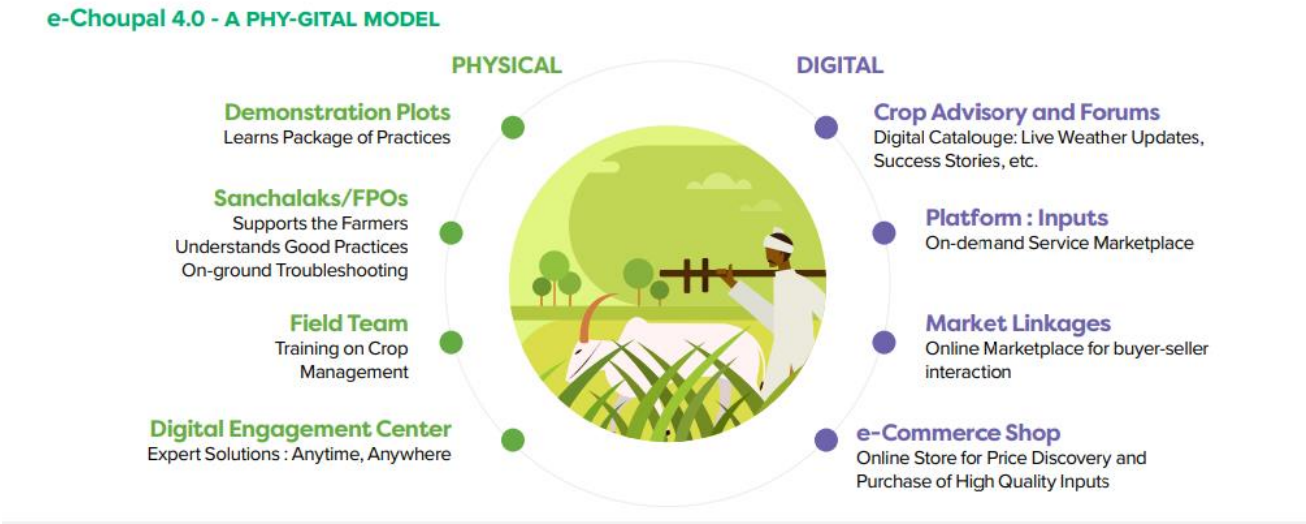


Figure 7-e-Choupal 4.0-A Phy-Gital Model

3.5 Biodiversity Conservation

To Revive & Sustain Ecosystem Services and Products provided by Nature, through adoption of Nature-based Solutions and Biodiversity Conservation, ITC had 44,044 (cumulative) Area Covered (Acres) by 2020-21(ITC Limited Integrated Annual Report 2020-21).

3.6 Sustainable - Livelihoods

ITC supported 6 million Sustainable Livelihoods by 2020-21 (ITC Limited Integrated Annual Report 2020-21).

Grass-roots Institutions

Intervention	Institution	Nos.	Members	Corpus Fund (₹ lakhs)
Watershed	Water User Groups (WUGs)	3,457	57,171	136
Social Forestry	Vanikaran Sanghas (VSs)	1,790	43,830	183
Agriculture	Agri-business Centres (ABCs)	401	10,283	378
Women	Self-Help Groups (SHGs)	4,192	48,667	1,526
Education	School Management Committees (SMC)	684	4,104	-
		10,524	**1,64,055**	**2,222**

*** Number of ABCs, SHGs and SMCs active/functional in 2020-21 are taken as cumulative**

Table 3-ITC Sustainable Livelihoods Initiatives 2020-21

ITC environmental commitment results			
	2019-20	2020-21	Cum till 2020-21
3.1 Energy			
Energy & Greenhouse Gas (GHG) Emissions			
Total Energy Consumption (Terra Joules)	23,326	23,834	22,369
Renewable Energy Consumption	40.90%	41.20%	41.30%
Total GHG Emissions - exclusing Biogenic Emissions (Kilo Tonnes of CO2e)	1 1,716	1,678	1,576

Biogenic Emissions - CO2 Emissions from Combustion of Biomass (KIlo Tonnes of CO2e)	841	862	816
GHG Removals (Kilo Tonnes of CO2)	5,238	5,394	5,827
3.2 Water			
Water Intake (Million Kilolitre (kl))	33.46	34.21	31.76
Treated Effluent Discharge (Million Kilolitre (kl))	23.12	23.32	21.81
Total Rainwater Harvesting Potential (Million Kilolitre (kl))	2 35.35	38.95	42.953
3.3 Waste			
Total Waste generated (tonnes)	7,11,116	6,84,325	
Waste recycled (tonnes)	7,09,244	6,82,902	
Un-recycled waste (tonnes)	2,341	1,952	
PSPD Tribeni	835	720	
External wastes used as raw materials (tonnes)	85,021	79,390	
Waste recycling footprint (%)*	112	111	
3.4 Sustainable agriculture			
Water Harvesting Structures (No.)	2,370	3,006	21,991
Total Watershed Area (Acres)	1,22,112	97,549	12,31,251
Water Storage Capacity (Mn KL)	3.68	3.95	41.95
Demonstration Plots (Nos.)	8,338	19,921	76,738
Compost Units (Nos.)	5,572	2,801	48,767
Farmer Field Schools (Nos.)	4,786	5,969	5,969
Agri Business Centres (Nos.)	353	401	401
3.5 Biodiversity Conservation			
Breed Improvement			
Artificial inseminations (Lakhs)	1.38	1.08	26.13
Pregnancies (Lakhs)	0.67	0.51	12.73
Calfings (Lakhs)	0.58	0.41	9.1
Vaccination & Health (Lakhs)	0.69	0.72	11.43
3.6 Sustainable - Livelihoods			
Primary Education			
Govt Schools Infra support (Nos.)	273	263	2,105
Children covered Lakhs)	0.84	0.33	8.08
Vocational Training			
Students Enrolled (in lakhs)	0.14	0.12	0.93
Students Trained (in lakhs)	0.12	0.09	0.74
Students Placed (in lakhs)	0.08	0.06	0.49
Individual Household Toilets (IHHT) (Including Convergence)	1,597	640	38,153
Community toilet	19	23	104

Table 4- ITC environmental commitment results

Discussion and Implications

This study explores application of Circular Economy (CE) practices within the hospitality industry. It shows that major leading companies in this industry such as IHCL, EIH Limited, and ITC are actively

incorporating sustainability into their business operations. IHCL is focused on reducing energy and water use, managing waste more effectively, and eliminating single-use plastics. EIH has adopted energy-efficient systems and practices like rainwater harvesting. ITC has integrated renewable energy, improved water management, and championed sustainable agricultural practices. These approaches align with global sustainability goals and help minimize resource consumption and waste.

The success of sustainability practices is strongly tied with growing consumer preference for sustainable services which plays a key role in driving the adoption of these CE practices, with many consumers willing to pay more for eco-conscious options. In addition, technology also plays a significant role, enabling these companies to track and optimize resource use, as demonstrated by IHCL's digital sustainability platform and ITC's energy management systems.

Even though such serious work is progressed towards circular economy, there are challenges such as high initial investment costs and a lack of industry-wide standards which can hinder the transition to a circular economy. To overcome these barriers, policy interventions and stronger collaboration across various stakeholders will be necessary.

The research has highlighted that adopting CE not only reduces environmental impact but also provides businesses with a competitive advantage in an increasingly sustainability-focused market. As these companies set an example, others in the hospitality and tourism industries can be encouraged to embrace similar sustainable strategies.

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