



Business Case for Sustainable Hotels

March 2020



Responsible hospitality for a better world

In collaboration with



Creating Markets, Creating Opportunities



About Sustainable Hospitality Alliance

Sustainable Hospitality Alliance brings together engaged hospitality companies and uses the collective power of the industry to deliver impact locally and on a global scale. They work with the leading hospitality companies to address environmental and social challenges, share expertise and develop practical resources and programmes to enable the wider industry to operate responsibly and grow sustainably. They are a non-profit organisation with members represented by senior executives from the leading hospitality groups with a global reach of over 30,000 hotels and 4.5 million rooms. For more information, visit www.sustainablehospitalityalliance.org.

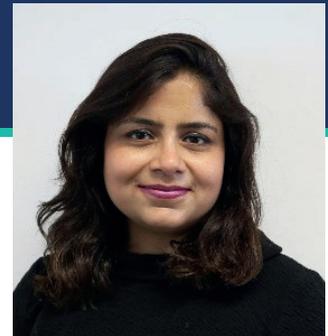
About IFC

IFC – a sister organisation of the World Bank and member of the World Bank Group – is the largest global development institution focused on the private sector in emerging markets. They work with more than 2,000 businesses worldwide, using their capital, expertise, and influence to create markets and opportunities in the toughest areas of the world. In fiscal year 2018, they delivered more than \$23 billion in long-term financing for developing countries, leveraging the power of the private sector to end extreme poverty and boost shared prosperity. IFC's Green Buildings Market Transformation Program is funded by the UK Government with original funding by Switzerland's State Secretariat for Economic Affairs (SECO). For more information, visit www.ifc.org.

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01 Introduction



Madhu Rajesh
Director, Sustainable
Hospitality Alliance

1.1 Foreword

Climate change is a global challenge that continues to require an urgent co-ordinated response at an international level. Global emissions grew more quickly between 2000 and 2010 than in each of the previous three decades,¹ and every decade since the 1960s has been warmer than the one before.² But through technological, behavioural and institutional changes, reducing our growing impact is possible.

Like other industries, the hotel sector is a growing industry that needs to limit its carbon emissions. To better understand the current and projected climate impact of the sector, we carried out research to identify the actions required to align with the targets set by the Paris Agreement. We identified that the industry needs to reduce its carbon emissions by 66 per cent per room by 2030 and 90 per cent per room by 2050 to ensure that the predicted future growth in the industry does not lead to a corresponding increase in carbon emissions.³

To increase our chances of achieving this target, we consulted with the industry to determine the barriers to operating more sustainably. This identified that the complex business model – whereby hotels are built and owned by different businesses or individuals than the brands and companies that run them – can hinder the ability to implement sustainable solutions or operate more sustainably.

There is a need to engage across the industry value chain from owners and investors to brands, operators and franchisees, to encourage a more joined up approach to building, refurbishing and

operating a hotel. We have therefore prepared this business case so the benefits of sustainability – financial, reputational and regulatory – can be fully recognised for every stakeholder and fully implemented as a consequence.

To support the development of the business case, we have partnered with IFC (International Finance Corporation), a member of the World Bank Group. IFC has provided insight based on their extensive experience in resourcing sustainable building projects and developing their free software (EDGE) to support the design of resource-efficient buildings.

As the UN Sustainable Development Goals have shown, the risks of not acting are too big to overlook, but so too are the opportunities to reduce costs, increase revenue, and future proof your properties and investments. IFC's 2019 *Green Buildings* report estimates a USD 1.5 trillion opportunity for investors to build sustainable hotels and restaurants in emerging markets between now and 2030.⁴

The recommendations in this business case provide evidence and tangible actions, often simple and low cost, to enable every stakeholder in the hotel sector to act more sustainably. We call on all areas of the industry to use this business case to support conversations with their business partners, and create a more joined up approach to building, refurbishing and operating sustainable hotels.

1.2 Executive summary

Far from being an impediment to business, sustainable hotel design in new builds and retrofits offers considerable benefits for all stakeholders.

This research analyses the business case for sustainable hotels under six categories, and provides recommendations, evidence and actions for each partner in the property value chain.

1. Boost profit margins through utility savings

A sustainable building is at least 20% more resource efficient, which reduces utility costs.⁵ Savings can be shared between owners and operators through green leasing agreements.

Sustainability upgrades have a typical payback period of less than one year in utility savings for new builds and from one to ten years for retrofits (IFC)



2. Increase revenue through satisfying consumer preference and reducing reputational risk

Demand among individual and business travellers for greater environmental sustainability is increasing and travellers are looking for more transparency to inform their decisions. Businesses are increasing scrutiny on sustainability during RFPs and reviews of hotel companies.

3. Future proof investment strategies

Investing in hotel portfolios with strong environmental, social and governance (ESG) metrics and brand reputation mitigates future risk to revenue and opens doors to green finance mechanisms such as ESG-linked loans and green bonds created by financial institutions (e.g. IFC), banks and REITs.



IFC has financed \$5.4 billion in green buildings, of which almost \$1 billion were green hotels

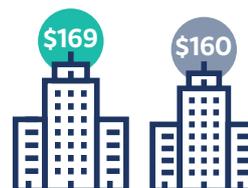
Mandatory national schemes such as NABERS in Australia have saved \$870 million in energy bills since 2010 for commercial building owners and managers

4. Safeguard against regulatory risk and benefit from incentives

Governments and cities worldwide are introducing a wide variety of penalties such as carbon taxes or restrictive water policies, and inducements such as VAT forgiveness, expedited permitting and property tax incentives to encourage sustainable design.

5. Increase value and validation through certification

Certifying hotel buildings increases their value and competitiveness today and for the future, ensuring their alignment with the latest sustainability requirements, while also providing credible evidence for government schemes and customers.



Average daily room rate of hotels in the United States (CHR)

Commercial PV system cost decrease between 2010 and 2018 (NREL)



6. Ensure a long-term energy supply

Most renewable energy sources are now cheaper than fossil fuels,⁶ and investing in hotels' on-site renewable power can increase security and control over supply and costs.

Recommendations for hotel investors and asset managers

- 1 Include ESG metrics in your investment analysis** > Environmental, social and governance (ESG) metrics enable you to identify the performance of your current and future hotel assets and correlate to a better risk-adjusted ROI in the long term. Since 1990, sustainability-based indexes have provided better long-term returns than traditional indexes.
How? Start with guidance from the CDC ESG Toolkit for hospitality.
- 2 Use the opportunities provided by sustainable finance** > Green investment needs to double to meet the Paris Agreement 2030 targets. Issuances of green bonds are in high demand.
How? Select projects aggregated at portfolio level, which have higher eligibility to receive green finance. See UN Principles for Responsible Investment for more information.
- 3 Prioritise green incentive schemes** > Prioritise investment in countries and cities with government green incentives supporting owners' and developers' sustainable investments.
How? Use IFC's review of government incentives in developing markets, and cities among the C40 cities global network.
- 4 Prioritise investment in sustainable building** > Sustainable hotels are at least 20 per cent more resource efficient compared to their local market. Investors can develop a well-diversified portfolio of sustainable properties that expands across geographies.
How? Use benchmarking reports such as the *GRESB Real Estate Assessment* and Cornell Hotel Sustainability Benchmarking Index to identify hospitality companies and owners that are committed to improving the sustainability of their portfolio.
- 5 Inspire long-term action** > A building ownership changes through its lifetime. Investors can play a role in setting a sustainable pathway for the property's entire lifecycle.
How? Introduce sustainability criteria and reporting requirements for your assets for the various phases from design to asset sale.

Recommendations for hotel owners and developers

- 1 Integrate sustainability from design phase to find best cost-efficiency** > Most sustainable solutions represent only a 0–10 per cent cost increase.
How? IFC's free software, EDGE, evaluates the performance of an existing building or the design of a new building and identifies areas for improvement. Engage with peer networks such as Sustainable Hosputa and Hotel Owners for Tomorrow to learn best practice.
- 2 Evaluate your environmental efficiency** > Benchmark your portfolio to estimate future energy usage and compare potential options for carbon emissions reduction.
How? Use the CHSB Index, the GRESB Portfolio Analysis Tool, or Nearly Zero Energy Hotels e-toolkit for hotel feasibility study and engage hotel operators using IFC's research on ROI for green buildings.
- 3 Invest in green building certification** > Certification will increase asset value and support ongoing compliance with social and environmental regulations.
How? Review existing certifications in your portfolio, set your own baseline and targets, and identify which properties need certification. EDGE, LEED, BREEAM and DGNB are globally recognised schemes.

4 Use green financing for new builds and retrofits



Owners can benefit from lower interest rates, or leverage corporate green bonds or green bonds from local financial institutions.
How? Find local incentives from IFC's information on Green Buildings Banking or contact edge@ifc.org, and see UN Principles for Responsible Investment for information on issuing green bonds.

5 Use green clauses with hotel operators



Green leases can align the financial and energy benefits and help to share the costs and responsibilities between owners and operators.
How? Use the UK Better Building Partnership's green lease toolkit or take inspiration from the UK Soft Landings scheme to solve the gap between building design and operational performance.

Recommendations for hotel operators

1 Invest in sustainable solutions for immediate savings



Sustainable practices costs are lower than perceived, often providing immediate financial savings, or payback periods of less than one year.
How? Use IFC's research on ROI for green buildings to understand the sustainability measures you can implement and the free EDGE software to design a green building specifically with your criteria.

2 Mainstream sustainability in new developments and retrofits



The earliest development stages are the most cost-efficient point to incorporate sustainable design to ensure operational efficiency, long-term asset value and alignment with your brand's sustainability targets.
How? Identify and communicate the person responsible to discuss sustainability at owner level. Train and equip your development teams to consider sustainability from the start of projects.

3 Measure, report and analyse your resource usage



Evaluate energy and water usage to identify inefficiencies.
How? Use Sustainable Hospitality Alliance's free tools on carbon and water, and Cornell's Hotel Sustainability Benchmarking to identify areas with high impact on usage and cost savings to engage with owners. See also Carbon Trust's resources.

4 Switch your energy and electric supply to renewable sources



Renewable energy is one of the most efficient ways to quickly decarbonise your properties with little or no cost increase.
How? Power Purchase Agreements (PPAs) are currently the most rapidly growing corporate procurement tool. Contact your local energy supplier about available options. Look into local tax credits and incentives using KPMG Green Tax Index.

5 Communicate your sustainability goals and actions



Positive examples will encourage further support from your business partners, particularly building owners, and enables customers to see your sustainability values when making their booking selection.
How? Position your property using IFC's Marketing Toolkit.

Recommendations for franchisees

1 Pick a franchisor that aligns its brand fully to sustainable operations



A sustainable brand association leads to better sentiment score reviews which is reflected in guest satisfaction and repeated service.
How? Review the brand standards for sustainability criteria when selecting a franchisor and work with your franchisor's corporate teams to benefit from their sustainability experience and resources.

2 Communicate sustainable practices to consumers



Positive examples will encourage further support from your business partners, particularly building owners, and enables customers to see sustainability values when making their booking selection.
How? Evaluate how you are communicating your sustainability goals and actions with your customers and stakeholders. Use IFC's Marketing Toolkit for guidance on communicating your sustainability.

02 Context

2.1 Climate crises and the hospitality industry

Rising carbon emissions are accelerating climate change with considerable impacts across communities and ecosystems, businesses and economies. The hospitality industry is particularly exposed, with extreme weather events increasing the cost of operations whilst simultaneously decreasing the popularity of some destinations across the world.

Rising sea levels will be a major threat to tourism, with 80 per cent of all tourism taking place in coastal areas.⁹ Increasing extreme storms are also having a significant impact. The hurricane season in 2017, for example, resulted in an estimated loss of over 800,000 visitors to the Caribbean, which could have generated over USD 740 million and supported over 11,000 jobs.¹⁰ Meanwhile, changing weather patterns and rising temperatures are causing extreme water shortages. Energy-poor countries are raising prices on electricity. The water crisis in Cape Town in 2018 led to up to a USD 65 million shortfall in the region's hospitality industry.¹¹ These examples provide a stark illustration of direct risks to businesses if we fail to adequately prepare for sustainability-related crises.

The hotel sector is a growing industry that is made up of almost 200,000 hotels containing over 18 million rooms globally. Increasing 17.7 per cent

from 2008 to 2018, and with a global pipeline of 2.4 million new hotel rooms in development, the impact of this growth must be managed.¹² The hotel industry accounts for around 1 per cent of global greenhouse gas (GHG) emissions (nearly equivalent to South Africa's annual emissions).¹³ However, buildings more broadly generate 19 per cent of energy-related GHG emissions and consume 40 per cent of electricity globally.¹⁴

The Paris Agreement¹⁵ and the United Nations Sustainable Development Goals (UN SDGs)¹⁶ of 2015 provide both a framework and an urgent call to action against building-related emissions. The technologies exist today to fully decarbonise the hospitality sector, but industry leaders will need to collaborate more to evolve their approach toward investing capital, operating hotel sites, and communicating their action.

Action is not just necessary to protect destinations and communities but, as this research reveals, will be the only way to ensure hotels and operations are future proofed and will yield considerable benefits for all stakeholders in both the short and long term.

2.2 What is a ‘sustainable’ hotel?

Sustainable hotels belong to a larger universe of sustainable buildings: the practice of creating and using more resource-efficient models of construction, operation, maintenance, renovation, and demolition of buildings. A sustainable hotel is more efficient – pursuing technology and guest behaviour modifications for reduced resource usage in construction and operations – and uses more renewable energy – producing and/or sourcing more renewable energy on-site or through off-site partners.

There is a growing consensus in the international finance community around the specific definition of green buildings and green hotels. For example, the 2019 IFC report *Green Buildings: A Finance and Policy Blueprint for Emerging Markets* defines a green building as satisfying all three of the following criteria:¹⁷

1. Certified as green under one of the internationally recognised certification standards or an approved national standard (see section 3.5).
2. At least 20 per cent more resource efficient than a baseline building without resource-efficient design.
3. Able to quantitatively report impact metrics, such as energy, water and materials savings, and greenhouse gas emissions reductions.

Energy intensity

The *GRESB Real Estate Assessment* provides insights for investors into how sustainability impacts the real estate sector, including hotels, using data reported by 1,005 property companies and REITs, covering more than 100,000 assets.¹⁸

The 2019 GRESB assessment shows that hotels have a very high energy intensity compared to other building uses (figure 1).

The hotel industry must set science-based carbon reduction targets to reduce its greenhouse gas emissions per room (across all hotel operations) by 66 per cent from 2010 levels by 2030, and by 90 per cent by 2050 to align with the Paris Agreement.¹⁹ The Net Zero Carbon Buildings Commitment by World Green Building Council sets a pathway that will contribute to this objective calling for all new buildings to be net zero carbon by 2030 and all retrofitted buildings by 2050.²⁰ Hotel portfolio owners Bouwinvest Dutch Institutional Hotel Fund N.V. (Bouwinvest REIM) and Host Hotels & Resorts, Inc. have emerged as early adopters of this commitment. But much of the industry still needs to follow.

Average energy intensity per property type

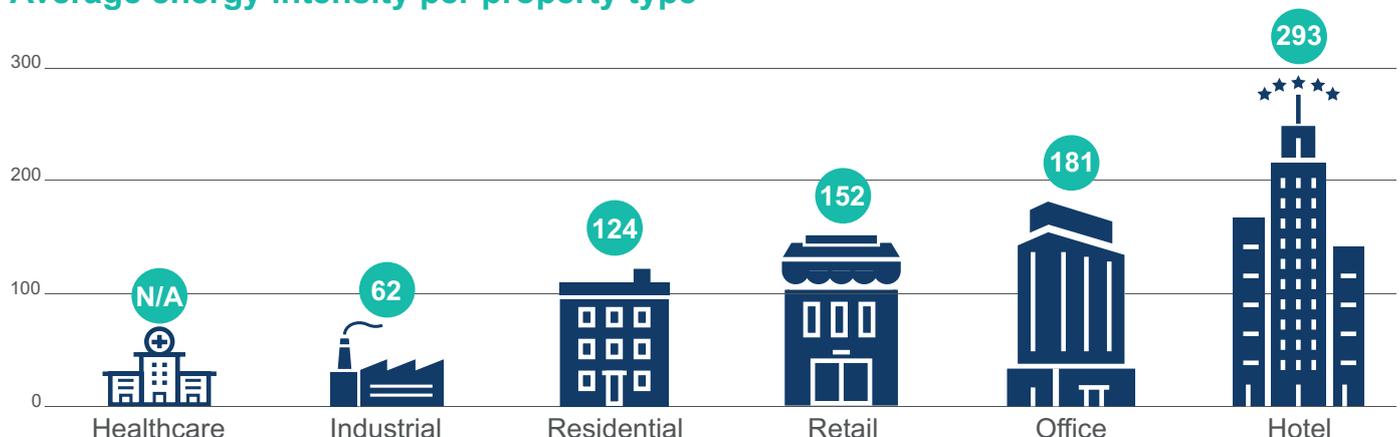


Figure 1: Average energy intensity per property type, 2019 GRESB Real Estate Assessment.²¹

2.3 Collaborating across the value chain

The hospitality sector is complex with many stakeholders whose interests diverge. Multiple partners can influence the development or retrofitting of a property. For example, a property can be owned and managed by different stakeholders, each with their own mix of investors.

The following mapping (figure 2) illustrates the different stakeholders that can invest in, own and operate a hotel. Multiple combinations can apply e.g. private investor owns shares in a real estate investment trust, which owns properties run by a franchisee under a hotel brand.

When there are fewer parties in the value chain, it can be easier to incorporate sustainability into hotel design (for example, owner operators can have more control over a property than one that is owned and run by two different stakeholders). However, it can also be the case that additional stakeholders increase the demand for sustainable inclusions (for example, sustainability is an increasingly important topic for investors, which impacts the projects they

are willing to invest in). Therefore collaboration across the value chain is key. This is particularly relevant with the franchised business model which has a high number of different stakeholders.

Current market analysis reveals trends emerging in these scenarios:

- From 2014 to 2019, about 70 per cent of global hotel investments were made by general investors with diverse portfolios.²²
- Private equity investments and real estate investment trusts (REITs) constituted the majority of 2018 transactions, with a notable increase in portfolio acquisitions instead of single-asset purchases.²³
- Foreign investment is strong in the hotel sector, with cross-border investment increasing 18 per cent to USD 4.5 billion from 2017 to 2018.²⁴
- Among the largest hotel chains less than 10 per cent are owner-operated.²⁵

Investors	Private investors (e.g banks, companies)	Institutional investors (e.g. pension funds)		
Owners	Owner operator	Real estate investment trust (REIT)	Holding company/ asset manager	Independent/ individual owner
Operators		Hotel brands	Hotel management company	
Franchisees	Franchisee			

Figure 2: Simplified hotel ownership stakeholder mapping.



“As a global real estate investor, we have committed to achieving net zero carbon by 2050 across our real estate portfolio. Acting now to establish the necessary pathways will future-proof our portfolios and protect and enhance investment performance for our clients. We call on all stakeholders to engage and collaborate to meet the challenges ahead.”

Dan Grandage, Head of ESG,
Real Estate Aberdeen Standard Investments

03 Business case for sustainable hotels

As nations are showing their commitment to a more sustainable future through the Paris Agreement and United Nations Sustainable Development Goals, the corporate sector has a responsibility to play its part towards achieving these Global Goals. But far from being an impediment to business, sustainable hotel design in new builds and retrofits offers considerable benefits for all stakeholders.

The business case for sustainable hotels can be analysed in six broad categories:

1. Boost profit margins through utility savings
2. Increase revenue through satisfying consumer preference and reducing reputational risk
3. Future proof investment strategies
4. Safeguard against regulatory risk and benefit from incentives
5. Increase value and validation through certification
6. Ensure a long-term energy supply

3.1 Boost profit margins through utility savings

Savings potential

Owners of conventionally built hotels typically spend more than USD 2,000 each year per room on energy and water consumption, representing anywhere from 6–20 per cent of operating costs.²⁶ Sustainability and efficiency measures will therefore go a long way in creating cost savings on a hotel's expenditure.

According to a study on US hotels, HVAC and lighting are responsible for up to 45 per cent of hotel energy usage (3 per cent for heating, 16 per cent for ventilation, 13 per cent for cooling and 13 per cent for lighting), representing large areas for intervention and savings.²⁷

The potential for reduction of utility costs also applies in the developing market, with utility costs representing almost 20 per cent of expenditure in cities such as Santiago, Manilla and Mumbai (figure 3).

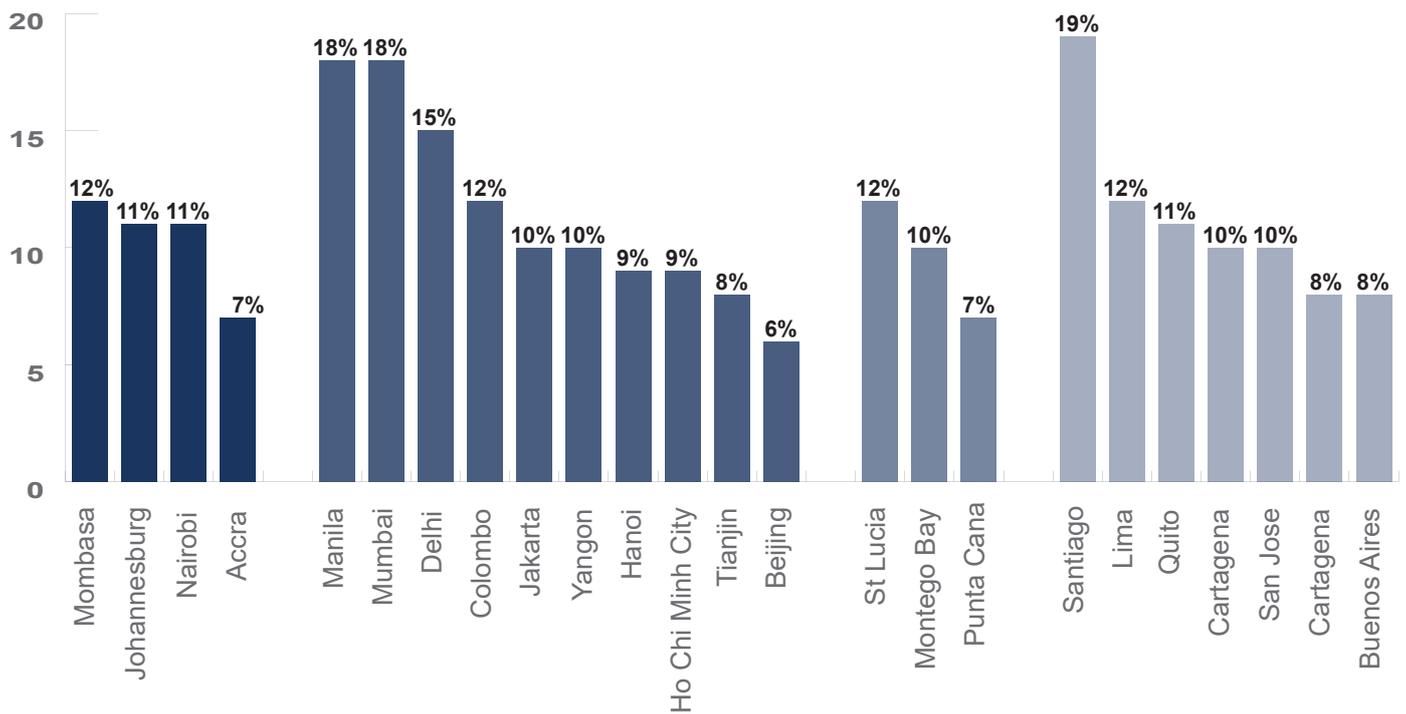


Figure 3: Utility cost projections for hotels in emerging markets. The utility cost data was simulated using IFC’s EDGE software, with revenue and RevPAR data adapted from STR Global.²⁸

Case study – Host Hotels & Resorts Inc.

Host Hotels & Resorts Inc. is one of the largest hotel owners and real estate investments trusts (REITs) in the world with 52,944 rooms across 96 properties. By 2017, three years prior to their 2020 target, Host Hotels & Resorts had met and, in most cases, exceeded their reduction targets across greenhouse gas (GHG) emissions, energy, water and waste.²⁹

Sustainability measures

The company implemented a range of energy and water saving initiatives across their portfolio. This includes the implementation of an on-site wastewater recycling laundry system, which is estimated to use 70 per cent less water than conventional laundry systems.

Return on investment

These initiatives have resulted in a USD 30 million expected annual saving from combined investments from 2015 to 2018, and USD 40 million ROI from energy and water saving projects.³⁰ They have received numerous awards and recognitions demonstrating their commitment to their principles of ‘Responsible Investing, Environmental Stewardship and Corporate Citizenship’.

8 LEED properties

35% GHG reduction per square foot

\$40m return on investment

Cost perception gap

A significant utility savings potential has not been realised due to the high perceived cost of implementing sustainable measures. The World Green Building Council's study on this 'perception gap' shows that actual cost premiums for sustainable building are significantly lower than the industry estimates – with actual cost premiums ranging from -0.4 to 12.5 per cent versus perceived cost premiums ranging from 0.9 to 29 per cent.³¹

The perception gap is influenced by historical data and a lack of awareness of the rapidly lowering costs of technologies today. Higher upfront capital costs for sustainable buildings tend to be proportional to the increased level of environmental certification. These costs are often offset by a decrease in long-term lifecycle costs (see figure 4 and 5).³²

The process of creating a sustainable hotel is easier for new hotel construction, where early planning can mitigate upfront costs for resource efficiency measures. The latest *World Green Building Trends 2018* report gives us key insights to evaluate that cost:³³

- The highest percentage of respondents (43 per cent) report payback periods for new sustainable buildings are between six and ten years.
- 36 per cent of respondents find that the payback period is between one and five years, and that percentage has been steadily growing since 2012.
- Lower operating costs is a decision trigger in only 23 per cent of the cases reported for building sustainable buildings which ties to the ROI for upfront costs.

According to the US Green Building Council (USGBC), owners of sustainable buildings reported that their ROI improved by 19.2 per cent on average for existing building sustainable projects and 9.9 per cent on average for new projects.³⁴ This shows that sustainable buildings don't always need very high capital expenditure and long payback periods.

There are many resources, including building design tools, benchmarking tools, and certification processes, outlined in this research, which can assist hotel owners in finding the best resource-efficiency solutions for their site to ensure best cost-efficiency for their investment.

Case study – Hyatt Regency Minneapolis, Minnesota, USA

Hyatt Regency Minneapolis is a 644-room convention hotel in downtown Minneapolis, Minnesota.

Sustainability measures

In 2016–17, the hotel implemented the following strategic capital and operational improvements, which were identified through an ASHRAE Level II Audit, water and energy self-audits and staff engagement:

- Occupancy sensors for guestroom thermostats
- LED lighting retrofit in guestrooms
- Guestroom shower head replacement
- Ice machine replacements
- VFD replacement
- Building automation system upgrade

Return on investment

With an average ROI of 1.75 years, these improvements resulted in 4.3 per cent decrease in energy consumption and a 12.4 per cent decrease in water consumption compared to the previous year. This saved the hotel nearly 3 per cent year-on-year in utility costs.



1.75 year
payback period

3% annual
utility cost saving

4.3% and
12.4% reduction
in energy and water
consumption

New buildings

New hotels have the clearest path for incorporating sustainability measures with minimal upfront cost through comprehensive planning during design and construction. IFC reports that most new hotels in emerging markets could reach a sustainable building standard with very little incremental cost.³⁵ The USGBC report states that the cost to develop a LEED certified hotel is no more than 2 per cent above a conventional hotel's cost.³⁶ In many countries, a sustainability standard can be reached through passive design measures (see examples in endnotes³⁷) and simple mechanical interventions, for a typical payback period of less than one year, and in some cases only a few months, with the opportunity of annual utility savings as high as USD 170,000.

A sample of the IFC study demonstrates the savings in emerging markets (figure 4).

The World Green Building Council suggests ways to keep costs down during the design and construction of a sustainable building, among which:³⁸

- Including sustainable criteria in the budget from an early stage: bolt-on strategies are more expensive whereas early integration can generate 40 per cent more savings and 40 per cent better performance compared to add-ons to traditionally planned buildings.³⁹
- Using an Integrated Design Process (IDP) in which clients (e.g. hotel brands) take on a more active role and all consultants are engaged from the very beginning.

	Incremental cost for 20% efficiency (USD)	Annual CO ₂ saving (tonnes) ⁴¹	Annual utility saving (USD)	Payback period (years)
Angola	142,100	640	417,000	0.3
Costa Rica	127,700	270	120,000	1.1
Indonesia	74,500	600	111,600	0.7
Peru	53,000	2,050	168,000	0.3
Philippines	27,700	850	264,000	0.1
South Africa	170,000	1,020	169,300	1.0
Sri Lanka	152,800	780	158,400	1.0
Turkey	85,000	390	147,600	0.6
Thailand	35,000	600	57,600	0.6

Figure 4: IFC study on efficiency, savings and payback periods for sustainable hotels in emerging markets.⁴⁰

Case study – Crowne Plaza Copenhagen Towers, Denmark

Owned and operated by BC Hospitality Group, the 366-room hotel was designed and built with sustainability in mind. Using state-of-the-art technology, the hotel was certified as Low Energy Standard Class 2, making it Denmark's first carbon neutral hotel building.

Sustainability measures

The hotel uses 60 per cent less energy than comparable buildings as a result of various sustainability measures, including building-integrated solar panels, a variable ventilation system and intelligent lighting. One of its significant features is the groundwater heating and cooling system (Aquifer Thermal Energy Storage), which pumps groundwater to cool the hotel during the summer and stores excess heat for use during winter.

Return on investment

The EUR 1.6 million groundwater system reduces the hotel's heating and cooling energy usage by up to 90 per cent, with a 6.7-year payback period.

€1.6m

investment

90% reduction of heating and cooling energy use

6.7 year

payback period

Retrofits

Our research into CDP climate change reports (disclosing environmental impact) from major hotel companies shows that operators typically invest in retrofits improving energy efficiency through building services, HVAC systems and equipment improvements, lighting, refrigeration and building controls. These measures bring considerable reductions in energy use and carbon emissions, with ROI periods ranging from one to ten years. The following examples illustrate these measures, costs and payback periods for hotel operators (figure 5):

	Investment required (USD)	Annual CO ₂ savings (tonnes)	Annual savings (USD)	Payback period (years)
Lighting improvement projects	13,204,000	25,800	6,631,000	2.0
HVAC and building systems improvement	6,256,000	9,400	1,657,000	4.0
Rooftop solar PV systems	81,500	70	17,000	4.7
Building controls (energy efficiency) – integration of building automation systems (BAS)	4,670,000	12,300	1,675,000	2.7
Refrigeration – energy efficiency	355,000	900	188,000	1.8

Figure 5: Examples of measures for different hotel retrofits taken from CDP reports with their costs and payback periods, CDP.⁴²

Case study – Hilton Cape Town City Centre, South Africa

Sustainability measures

In May 2019, Hilton Cape Town City Centre installed a large hybrid Photovoltaic and Thermal (PVT) system with a heat pump element on a trial basis from Solarus Sunpower.

With an initial trial period of 12 months, the project obtained owner support. If the installation did not yield the supplier claims in the first year of operation, the hotel would have the option of having it de-installed.

Return on investment

The performance guarantee, together with the ROI of 4.5 years and a projected internal rate of return (IRR) of 26 per cent, made the system a low risk investment likely to deliver short-term benefits and in the long term, reductions in operational costs.

In the first five months, the hotel saved USD 8,000 in electricity costs and it is estimated that over a 20-year period this installation will save the hotel approximately 6.5 times more than the initial investment.



4.5 year
payback period

a **26%**
projected internal
rate of return

\$8k electricity
costs saving over
first five months



Case study – Radisson Blu Hotel, Frankfurt, Germany

With more than 400 rooms and suites, Radisson Blu Frankfurt has enormous energy needs, which had previously been covered entirely by the power grid. In 2017, Radisson partnered with E.ON to become a low-carbon property and the first hotel in Europe with a fuel cell of industrial size.

Sustainability measures

E.ON installed a fuel cell that generates electricity and heat in a non-combustion process which is virtually absent of pollutants such as nitrous oxide or fine dust particles. FuelCell Energy Solutions supplied the fuel cells for the project. The use of fuel cell technology allows the Radisson Blu hotel to generate 80 per cent of the hotel's energy requirements.

Return on investment

The project received a subsidy from the combined-heat-and-power legislation and EUR 800,541 through the “National Hydrogen and Fuel Cell Technology Innovation Program” from Germany’s Federal Ministry of Transport and Digital Infrastructure.

In the first year of commissioning of the plant, the hotel achieved an energy cost saving of approximately EUR 60,000. These savings are secured through an annual availability guarantee (8,000 hours) by E.ON and the 10-year contract is estimated to make a saving of around EUR 750,000.

fuel cell
generates
80% of
hotel energy

carbon
emissions
reduced by
600t

estimated saving
of **€750k**
after 10 years

Case study – Kinseth Hospitality Companies

Kinseth Hospitality Companies is a full-service hotel management company based in the United States. They partnered with Ecolab to assess the cleaning operations of one of their hotel properties. A site survey revealed that the laundry service was running a significant number of rewash loads at high water temperatures.

Sustainability measures

Ecolab recommended the Aquanomic™ Low-Temp Laundry Solids Program. The innovative chemistry cleans thoroughly in shorter wash cycles using water at 100°F (40°C) compared to 120°F (50°C) and higher.

Return on investment

Ecolab conducted a two-month trial and, after annualising potential savings across their 70-property portfolio, Aquanomic™ is expected to save 227,000 therms of energy and 33.3 million gallons of water. This results in an annual cost saving of USD 446,000.

227k
therms of energy
saved

33.3m
gallons of water
saved

annual
cost saving of
\$446k

Using green leases for shared responsibility and savings

One of the biggest obstacles for implementing sustainable improvements often lies within the contractual relationship between property owners and tenants. Typically, upfront capital expenditures (CAPEX) made by owners create operational savings for operators, thus creating challenges in the cost/benefit analysis for a project – referred to as “split incentives barriers”. Green leasing is a way to remove these barriers and create mutually beneficial sustainability investments.

Green leasing (also known as energy-efficient leases or high-performance leases) formalises responsibilities between tenants and landlords with respect to a building’s sustainability measures and practices. By aligning the financial and energy incentives of building owners and tenants, both can work together to save money, conserve resources, and ensure the efficient operation of buildings.

An essential part of green leases is data and information. GRESB (the environmental, social and governance (ESG) benchmark for real assets) recommends introducing “information sharing”

clauses in lease agreements to allow more performance data to be shared from tenants, and therefore better environmental management.⁴⁷ The following initiatives are good examples of this approach, and can help in establishing these clauses:

- Better Building Partnerships in the UK has created a green toolkit in order to establish a framework for dealing with the environmental performance of a building.⁴⁸ This is a model that can be used for the hotel industry to establish a partnership between hotel owners and operators through green leases (legally binding) or memorandum of understanding (non-legally binding).
- The Australian Government published a factsheet on overcoming split incentives barriers for HVAC in commercial buildings.⁴⁹
- The Soft Landings scheme in the UK is a joint initiative between The Building Services Research and Information Association (BSRIA) and UBT (Usable Buildings Trust) and helps to solve the potential performance gap between design intentions and operation.⁵⁰

3.2 Increase revenue through satisfying consumer preference and reducing reputational risk

Consumer awareness and demand for greater environmental sustainability across various sectors are increasing from both individual and business travellers. This is only expected to grow with continued public support of social movements and increasing availability of information such as a hotel’s “sustainable” rating at the time of booking.

Individual guests

Several studies show that, globally, sustainable hotels attract more consumers and command a higher willingness to pay. For example, a Cornell University study found that the sample of LEED-certified hotels in the United States had a higher ADR (average daily rate) (USD 169 versus 160) and RevPAR (Revenue Per Available Room) (USD 110 versus 109) over non-certified hotels.⁴³

A report by Booking.com indicates that the sustainable travel trend continues to increase, with a vast majority of global travellers (87 per cent) stating that they want to travel sustainably, but only 39 per cent confirming that they often or always do so.⁴⁴ A similar study by the TUI Group found for European travellers, only 1 in 10 people book environmentally friendly holidays, but more than half would book more if they were more readily available.⁴⁵ Perceived extra cost remains the top barrier for travellers wanting to travel more sustainably, but two-thirds report a willingness to spend at least 5 per cent more on their travel to ensure minimised environmental impact.⁴⁶

Business travel

Some of the largest corporations in the world are showing ambitious commitment to sustainable practices. For example, companies such as Apple, Citi, Coca-Cola, Google, Landsec, Nike and Unilever are signatories of the RE100 initiative, committing to 100 per cent of their operations being powered by renewable electricity. Once these companies implement initiatives in their internal operations, they are likely to turn to the operations of their partners, such as business travel.

Travel Management Companies such as American Express Global Business Travel, BCD Group, and Carlson Wagonlit Travel focus on corporate business travel programmes that allow companies to achieve their sustainability goals. These types of sustainable travel programmes have become increasingly accessible in the past few years.⁵²

53% of North American companies have corporate sustainability programmes that affect their decision to contract with a travel supplier (Global Business Travel Association)⁵¹

Case study – Hilton

Hilton is a leading hospitality company with nearly 6,000 hotels in 113 countries and territories – making up more than 954,000 rooms. The company was one of the first in the industry to join The Climate Group's EP100 campaign, committing to implement an Energy Management System (EnMS) across all operations and to improve energy productivity by 40 per cent by 2030.

Sustainability measures

LightStay was developed in 2008 to manage Hilton's environmental performance across every hotel in its portfolio. The cloud-based system provides a digital touch-point that makes it easy for each hotel to track its utility consumption, identify and implement best practices, and work towards annual reduction targets.

Return on investment

Through LightStay, Hilton has significantly reduced energy, carbon, water and waste, and saved over USD 1 billion in cumulative utility costs by operating sustainably.

In addition to the resource and utility cost savings, Hilton's corporate responsibility program creates intangible value for the company by driving loyalty amongst its Team Members and increased value for its guests. In a 2018 guest survey, the company found that roughly one third of respondents took the social and environmental efforts of a hotel into consideration before booking a room.



over **\$1b** in utility cost saving since 2008

a **38%** energy productivity improvement

1/3 of people consider sustainability when booking a room

3.3 Future proof investment strategies

Global green finance

More than 370 investors with over USD 35 trillion in assets now collectively ask major corporate emitters to reduce emissions and address climate risks.⁵³ The investor community realises the importance of environmental, social and governance (ESG) metrics in financial performance and brand reputation and is increasingly looking for quality sustainable projects to finance. Developing a portfolio of certified sustainable projects within a hospitality company offers opportunities for both investors and operators: it reduces long-term risk of investments and allows hotel groups to diversify their investor base and attract both international and local sustainable financing.

A demonstration of this mutually beneficial opportunity is the link between insurance rebates and lowered interest rates for green certified projects.⁵⁴ For example, Colombia's SURA insurance company offers a refund of 10 per cent on the construction and compliance insurance premium to policy holders with EDGE-certified projects.⁵⁵ In turn, banks such as Bancolombia (Colombia's largest commercial bank) provide a construction financing rate of up to 1 per cent less than market rates for green projects.⁵⁶

The Task Force on Climate Related Financial Disclosures is an initiative by the Financial Sustainability Board to develop climate-related financial risk disclosures for companies to provide information to investors, lenders, insurers and other stakeholders.⁵⁷ Moody's rating agency recently purchased a climate data firm, signalling new scrutiny of climate impacts in their ratings.

Hotel companies with non-sustainable properties could find themselves with a large portfolio of stranded assets that could affect their credit rating, insurance premiums or ability to raise funds.

ESG benchmarking for real assets

GRESB, the ESG benchmark for real assets, was launched in 2009 by a group of large pension funds who wanted to have access to comparable and reliable data on the ESG performance of their investments.

The results of the GRESB assessment are used by more than 100 institutional investors, representing USD 22 trillion in assets under management, to monitor investments, engage with managers, and make decisions that lead to a more sustainable real estate industry. Beyond sustainability, using an ESG benchmark is also a way to improve investment performance: overall, a 3 per cent fund return uplift was observed between the lowest and highest GRESB scoring funds.⁵⁸

Investors should particularly enquire about energy consumption, water consumption and waste management, which are key indicators of environmental performance in hotel asset portfolios. Implementing efficiency measures is one of the most effective ways to improve the performance of an asset and a portfolio.⁵⁹

When assessing hotel performance against ESG benchmarks, investors can use the UN Sustainable Development Goals (SDGs) as a reference for progress. For example, SDG target 7.3 aspires to double the energy efficiency improvement rate of the global economy by 2030. In order to meet this target, energy efficiency will need to improve with a 2.6 per cent annual rate between 2010 and 2030.⁶⁰ The GRESB research shows that in 2018 the actual like-for-like energy consumption by GRESB participants has fallen behind the SDG target for the first time since 2010 (figure 6).

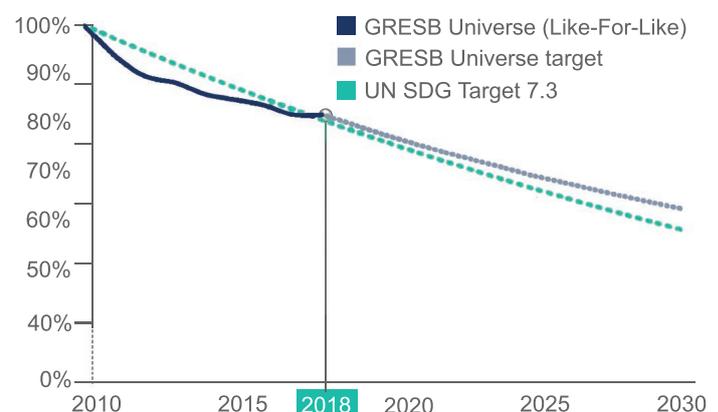


Figure 6: Actual and projected like-for-like energy consumption by GRESB participants, 2010–2030, GRESB 2019 Real Estate Results.⁶¹

Green finance mechanisms

The availability of financial mechanisms depends on the contractual relationship between hotel owners and brands, their level of transparency and collaboration on sustainability, and whether the hotel is a new build or a refurbishment.

Green finance mechanisms can be grouped into three main categories below. They can be debt instruments (e.g. green bonds) that finance institutions can invest in, or innovative methods to invest in hospitality projects to support their sustainability performance:

- 1. Loans through local financial institutions:** Hotel owners can secure project finance with loans given for each asset under refurbishment. The improvements would align with brand standards, with green building certification as a means of compliance and the resulting utility savings would repay the loan. Multilateral Development Banks and climate agencies can provide credit lines to the local banks for on-lending or providing a risk-sharing facility.

Case study

International Finance Corporation (IFC) has financed over USD 5.4 billion in green buildings, out of which almost USD 1 billion is for green hotels, through own account and syndicated loans.

Case study

HSBC UK's Green Hire Purchase, Lease and Asset loan product facilitates the financing of green assets and has already provided Green Loans valuing GBP 600 million to UK businesses as part of the pilot, including:

- Green Arranger as part of a club funding package for UK property developer Argent to support the development of Facebook's new UK headquarters in London, one of the world's greenest buildings.
- A GBP 175 million Green Loan for Edwardian Hotels London to ensure its new 'Super Boutique' hotel, The Londoner, in Leicester Square, will be one of the greenest hotels in the UK.⁶²

- 2. ESG performance linked loans:** These loans incentivise companies by directly linking the financial terms of a loan to predetermined sustainability targets. They have the potential to improve companies' environmental management whilst building an investor's sustainable loan portfolio.

Case study

In 2019, Swire Properties secured its first sustainability-linked loan in agreement with Crédit Agricole Corporate and Investment Bank (Crédit Agricole CIB) to convert an existing five-year revolving credit facility of HKD 500 million (USD 63.9 million) into a sustainability-linked loan, with the interest rate indexed against the company's year-on-year ESG performance.

Within this loan structure, Crédit Agricole CIB will grant a reduction in interest rate each year based on Swire Properties' retention of its listing on the Dow Jones Sustainability World Index (DJSI World) and their achievement of a target reduction in energy use intensity (EUI, measured in units of kWh/m²) each year for its Hong Kong portfolio.⁶³

Case study

In 2018, AccorHotels announced an agreement with a consortium of 15 banks for a new EUR 1.2 billion Revolving Credit Facility, the margin on which will be notably dependent on the Group's ESG performance. This performance was benchmarked by an ESG research and ratings agency and used to assess future performance improvements.⁶⁴



3. Capital markets: Hotel projects offer an attractive fit for green bonds, as the investment needs are typically large enough for the purposes of a bond issuance and utility savings can be channelled into quicker repayment. Green bonds for hotels can be issued on a corporate level or part of a financial institution's investment portfolio.

After the refurbishments show an initial level of success, green certification can unlock finance and assist in securitising the loan portfolio and selling it to institutional investors who have pledged action after the Paris Agreement. The labelled green bond market grew to USD 389 billion in 2018, though the universe for climate-aligned bonds could be as large as US 1.45 trillion.⁶⁵

For projects focusing on water efficiency, the Water Infrastructure Criteria lays out the requirements that water infrastructure assets and/or projects must meet to be eligible for inclusion in a Certified Climate Bond.⁶⁶ The criteria includes:

- Compliance with a mitigation component – projects on water efficiency shouldn't create additional GHG emissions.
- Compliance with an adaptation and resilience component – projects should be resilient to climate change and have sufficient adaptation to address climate change risks.

Case study

Japan Hotel REIT Investment Corporation issued a green bond in July 2019 for JPY 2 trillion (USD 19 million) with the use of proceeds channelled to the renovation of existing hotels for water and energy improvements. The funds are used to repay loans borrowed for the renovation of the Oriental Hotel Fukuoka Hakata Station (formerly Hotel Centraza Hakata) (including electric and air conditioning equipment, and water use efficiency) and will fund efficiency measures for the construction and renovation of other hotels.

Case study

In 2017, City Developments Limited launched the first green bond by a Singapore company. The two-year senior secured green bond raised SGD 100 million (USD 74 million) at 1.98 per cent fixed rate with investors comprised mainly of financial institutions and fund managers. Proceeds of the green bond were allocated to the repayment of a SGD 100 million loan to upgrade Republic Plaza – one of Singapore's tallest skyscrapers. In total, this operation translates into more than SGD 1.2 million (USD 0.9 million) of savings from annual energy and water consumption.⁶⁷

3.4 Safeguard against regulatory risk and benefit from incentives

Current and planned policies

GHG emissions policies

As part of the Paris Agreement, national governments set policy plans to steer their economies onto a low-carbon path. So far, 132 national policies explicitly mention the building sector, with positive incentives for sustainable assets and penalties (e.g. a carbon tax) for brown assets.⁶⁸

In addition to national plans, 9,130 cities have explicitly committed to buildings-related action, often going beyond national plans.⁶⁹ Mayors of 19 cities in both developed and emerging economies have committed to all new buildings operating at zero carbon by 2030 and all existing buildings by 2050.⁷⁰ To date, more than 25 US cities have adopted energy-benchmarking policies, as have the states of California and Washington.⁷¹

New York City is an early leader in climate policies, having recently passed comprehensive legislation to achieve 80 per cent emissions reduction by 2050, with supporting benchmarks. New York City is also the first jurisdiction to attach a financial fine to non-performers. Starting from 2030, buildings larger than 2,300m² will be taxed for emissions over the carbon cap, with non-performers paying annual penalties of more than USD 1 million.⁷² This also represents a large investment opportunity, as building owners will need to invest in their infrastructure to comply with the law.

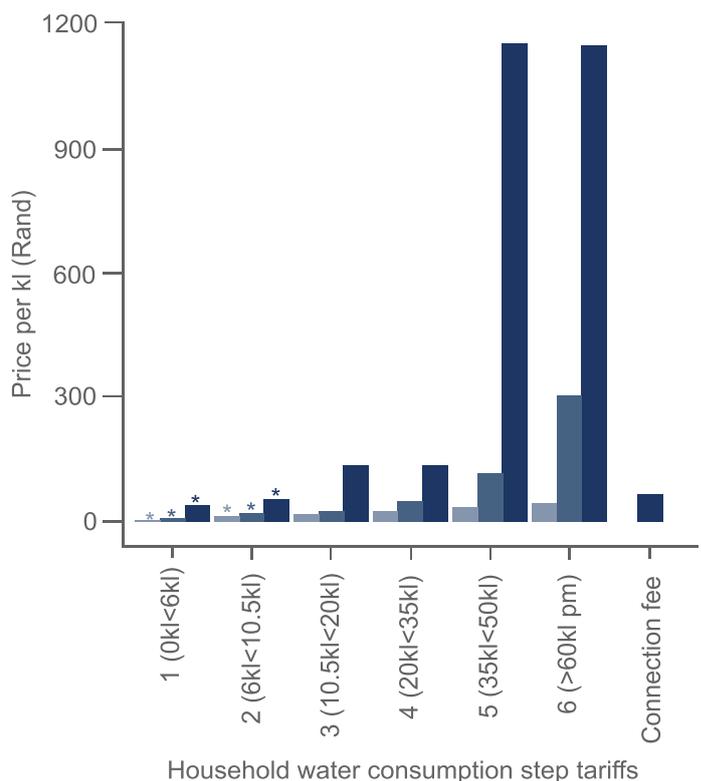
Water policies

Water crises have been identified as the fifth most impactful global risk by the World Economic Forum *Global Risks Report 2020*.⁷³ The same report states that climate action failure is now the highest most impactful global risk, ranking higher than the impact of weapons of mass destruction.

Water scarcity affects more than 40 per cent of the global population⁷⁴ and countries forecast with the highest water stress are amongst those with the greatest tourism growth.⁷⁵ In most countries, water consumption per guest in hotels vastly exceeds that of the local population – up to eight times more in certain locations.⁷⁶

Faced with water shortages, local governments are forced to pass restrictive water policies. Water policies are usually enacted quickly, pushing hotels to equip themselves with upgraded infrastructure and systems. Only one in four hotels currently use rainwater capture, grey water reuse or leak detection. Such practices can bring significant savings for a limited investment.⁷⁷

In Cape Town, water tariffs soared with increased usage and with different levels of restriction set by local authorities in 2016, 2017 and 2018, showing a clear business case for hotels to invest in their long-term water efficiency and resilience (figure 7).



Level of restriction:

■ 2016 (level 1) ■ 2017 (level 4) ■ 2018 (level 6)

Figure 7: Step tariff charges for water usage during different restriction levels imposed by the City of Cape Town municipal government. Prices marked with a star (*) are free for indigent households, Imperial College London.⁷⁸



Incentives for sustainable buildings

In addition to national buildings regulation, governments can use a wide variety of incentives to stimulate sustainable building growth. Governments can choose between non-fiscal incentives, such as height bonuses and expedited permitting, or fiscal incentives, such as property tax incentives, to make sustainable design economically viable for developers and residents (see Singapore example⁷⁹).

The KPMG Green Tax Index gives a detailed overview of these incentives globally.⁸⁰ IFC has conducted a mapping of incentives available in emerging markets.⁸¹ For example, Colombia offers exclusion of VAT and income tax deduction for project design services and technical solutions, while in Lima, the municipality of Miraflores offers 15 per cent extra floor area ratio (FAR). In both cases, buildings must have a sustainable certification in order to comply.

In the United States, Property Assessed Clean Energy (PACE) loans are a financing mechanism that enables low-cost, long-term funding for sustainability projects. PACE financing is repaid as an assessment on the property's regular tax bill and is processed the same way as other local public benefit assessments. This mechanism, for example, supported Dusit D2 Constance Pasadena Hotel's USD 6.8 million renovation, financed through a 100 per cent long-term, fixed-rate financing, to be repaid through property tax.⁸²

More specific to commercial buildings, including hotels, the Australian NABERS scheme helps building owners to understand the impact of their assets on the environment using a rating system. The scheme is legally required for commercial owners and managers of buildings over 1000m². Users have saved AUD 870 million (USD 600 million) in energy bills and avoided 6 million tonnes of CO₂ emissions – enough to power 93,000 homes for a year.⁸³

Case study – Hampton Inn & Suites Roseburg, Oregon, USA

The owner of the 84-room Hampton Inn & Suites Roseburg, Oregon, incorporated sustainability early on in the design and build phase of the property.

Sustainability measures

The hotel implemented a variety of sustainability measures including energy efficient heating and cooling systems, low-flow fixtures, LED lighting and a rooftop solar PV system, which was developed in partnership with a local Oregon solar provider.

Return on investment

By utilising federal tax credits and key energy incentives, over half of the cost of the USD 275,000 solar-power system was offset. The solar panels also exceeded the property's annual power production targets, producing 115 MWh of clean electricity per year.

The result is a six-year payback period, an 18 per cent rate of return on investment, and expected lifetime electric bill savings of over USD 410,000.

6 year
payback period

an **18%** rate of
return on investment

over **\$410k**
expected lifetime
electric cost saving

3.5 Increase value and validation through certification

Benefits of certification

Building certifications can unlock multiple advantages for owners renovating and developing properties. Not only do they increase the asset value, they also ensure compliance with the highest social (e.g. health and well-being) and environmental standards on the market, maintaining an asset’s competitiveness in the long term. Figure 8 from the IFC 2019 *Green Buildings* report shows how energy efficiency could increase the valuation of a hotel in India by 6.6 per cent.⁸⁴

Certifications also constitute a credible and demonstrable commitment to sustainability which can be communicated to customers, business partners and investors. Beyond communication, they set standards which can, in turn, create more consistent conventions for the industry.

Certifications can also be the basis for public regulation and incentives. For example, in Nashville, Tennessee, developments that achieve Leadership in Energy and Environmental Design (LEED) certification (or other sustainable certification) in the central business district can obtain a density bonus (increase in the number of buildings, floor area or height) that scales with the stringency of the certification. The introduction of a property tax abatement for LEED or Green Globes certified properties led Nevada to rank sixth in per capita LEED space in 2017.⁸⁵

	Hotel without EE* (USD)	Hotel with EE* (USD)		
Income (annual)			Same net income	This example assumes the same occupancy rates for a green and a regular hotel
Room	503,029.00	503,029.00		
Other	3,595.00	3,595.00		
Gross income (GI)	506,624.00	506,624.00		
Vacancy rate (VR) (35%)	177,318.40	177,318.40		
Net income (NI=GI-VR)	329,305.60	329,305.60		
Operating expenses			Lower operating cost	Energy efficiency measures can save \$10,913/year for a green hotel
Electricity	18,766.00	10,450.00		
Gas	5,447.00	2,850.00		
Other	177,171.20	177,171.20		
Total expenses	201,384.00	190,471.20		
Net operating income	127,921.40	138,834.40	Higher value	Net operating income and therefore the opinion of value will be higher given the savings from energy efficiency
Capitalisation rate	8.75%	8.75%		
Opinion of value	1,461,958.86	1,586,678.88		
EE effect		124,720.00	EE provides +97K	Energy efficiency effect is the difference between opinion of value of two hotels, resulting in \$97k potential ROI for energy efficiency
Additional cost of EE		27,680.00		
Net EE Effect		97,040.00		

*Energy efficiency

Figure 8: Green hotel value example (India)—Effects of energy efficiency (EE) on the value of a hotel, IFC.⁸⁶

Types of certification

The following introduction gives a spotlight on leading international certifications (amongst a wide range of rating tools) providing major operational and brand-value incentives to hotel owners:⁸⁷

- 1. LEED:**⁸⁸ Started in 2000, LEED has become one of the most widely used schemes by major hotel chains and recognisable by consumers.⁸⁹ LEED buildings enjoy an increase in cost savings (typically saving 30–50 per cent in energy usage, 35 per cent in carbon emissions, 40 per cent in water usage, and 70 per cent in solid waste), decrease in annual operating costs, higher ROI for a building and an increase in asset value.⁹⁰ The USGBC report *LEED in Motion: Hospitality* shows that the cost to develop a LEED-certified hotel is only 1–2 per cent above that of a conventional hotel's cost.⁹¹
- 2. EDGE:**⁹² An innovation of IFC, EDGE is an online sustainable building standard and a certification system for over 160 countries mostly in emerging markets. The EDGE application helps to determine the most cost-effective options for designing sustainably depending on the local climate. EDGE can be used for buildings of all vintages, including new construction, existing buildings and major retrofits. A project that reaches the EDGE standard of 20 per cent less energy use, 20 per cent less water use, and 20 per cent less embodied energy in materials compared to a base case building can be certified. Projects with higher levels of efficiency can be certified as EDGE Advanced or Zero Carbon.
- 3. BREEAM:**⁹³ In 1990, Building Research Establishment Environmental Assessment Method (BREEAM) became the first sustainable building rating system in the world.⁹⁴ There are over 2.27 million buildings registered with BREEAM in 83 countries around the world. The international scheme provides independent third-party assessment of the sustainability performance of buildings, communities and infrastructure projects. Like LEED, BREEAM offers ratings and credits for a range of targets and benchmarks. BREEAM is popular in Europe.

- 4. Other international schemes:** BCA Green Mark Scheme from Singapore focuses on an international market in tropical countries.⁹⁵ This scheme complements LEED for their non-residential buildings certification and promotes cost-saving methods for designing sustainable buildings.⁹⁶ The German Sustainable Building Council (DGNB) awards certification for sustainable buildings, building interiors and districts in more than 30 countries, primarily in Europe.⁹⁷ Green Star Africa is used by commercial buildings in South Africa and across the African continent.⁹⁸ The WELL Building Standard (with which environmental schemes above can align), evaluates the benefits of integrating human health and well-being in building design, construction and operations.

Certification among the hospitality industry

Despite the success of these schemes, certification for hotels has a significant potential for further implementation worldwide. Results from the *2019 GRESB Real Estate Assessment* show that significant progress can still be made in hotels, with only 35 per cent of total floor area being certified at design and construction phases, and 61 per cent of total hotel floor area certified for the sustainability of their operations (building efficiency management).⁹⁹ The same study also reveals that developers are increasingly looking to certify their projects in the development phase, with close to 50 per cent of participants reporting that they aim to certify more than 75 per cent of their development projects.

Certification costs

Certification fees depend on the region, complexity of the certification system and the project itself. Certification schemes allow the project to credibly claim sustainable credentials while not adding too much to the overhead costs. Ultimately, the benefits of the certification, including access to green finance and branding exposure, should far outweigh the costs, in particular if they also ensure high standards of health and well-being for building users, such as acoustic comfort, daylight, physical and mental healthcare access, physical activity, social interaction and connection, healthy eating, thermal comfort, inclusive design and indoor air quality.

Case study – AC Hotel by Marriott Veracruz, Mexico

The 164-room AC Hotel by Marriott Veracruz was developed by Fibra Hotel and forms part of its vision of promoting resource-saving practices in Mexico by EDGE-certifying all future hotel projects.

Sustainability measures

The hotel's design maximises the use of income generating spaces while minimising operating expenses and impact on the environment. A range of sustainability measures were implemented during the design phase, with no incremental construction costs. This included:

- Energy-saving lighting across the property
- Reduced window to wall ratio
- Low-flow and single flush sanitaryware
- Facing brick and hollow concrete blocks for external walls

Return on investment

The EDGE certified hotel has an estimated 23 per cent energy saving, a 28 per cent water saving and a 51 per cent reduction in total energy consumed in the production of building materials.



an estimated utility saving of **\$87k** per year

an estimated **23%** energy saving



9.3% of hotel electricity generated by solar power

an expected **10 year** payback period

LEED **GOLD** certified in 2019

Case study – Hyatt Regency Maui, Hawaii

Set upon 40 oceanfront acres on Ka'anapali Beach, Hyatt Regency Maui Resort and Spa is an 806-room upscale hotel on Hawaii's second largest island, Maui.

Sustainability measures

In 2016, the hotel installed one of the largest rooftop solar photovoltaic (PV) systems in Hawaii. The 598 kW DC system generates approximately 893 megawatt-hours of annual production or 9.3 per cent of the hotel's electricity. This project was fully supported and executed by the hotel management team and the hotel's owner, Host Hotels & Resorts. In 2020, the system will be expanded to 710 kW DC that will generate 1,074 megawatt-hours and carry 11.2 per cent of the hotel's annual electric load.

Return on investment

The ROI for the solar PV system is approximately 10 years. The hotel received LEED-EBOM Silver certification in 2014, and the solar PV system supported the recertification of the hotel as the first and only LEED-EBOM Gold certified resort in Hawaii in 2019.

3.6 Ensure a long-term energy supply

The commercial and industrial sectors account for approximately two-thirds of the world’s electricity use.¹⁰⁰ Switching this demand to renewables will transform the global energy market and accelerate the transition to a clean global economy.

Our research shows that the global hotel industry will need to reduce its greenhouse gas emissions per room by 66 per cent from 2010 levels by 2030, and 90 per cent by 2050 to stay in line with targets of the Paris Agreement.¹⁰¹ Renewable energy will be a key way to ensure these targets are achieved.

Hotels will not only need to support carbon reduction with demand for clean energy but also support it with the production of on-site renewable energy.

Sourcing renewable energy

The cost study from International Renewable Energy Agency (IRENA) demonstrates that most renewable energy sources are now cheaper than fossil fuels.¹⁰²

Corporate sourcing of renewable energy can be grouped into four main pathways globally.¹⁰³ Figure 9 highlights where these corporate procurement tools for renewables are available.

- 1. Renewable Energy Certificates (RECs) or Energy Attribute Certificates (EAC):**
Company purchases renewable energy through schemes such as RECs, which is delivered through the electricity grid from a renewable energy resource (one megawatt-hour (MWh) of electricity is one REC).
- 2. Power Purchase Agreement (PPAs):**
Company enters into a contract with an independent power producer and commits to purchasing a specific amount of renewable electricity from a specific asset at a fixed price for an agreed time.
- 3. Renewable energy offerings from utilities:**
Company purchases renewable electricity from its utility provider, through a utility green procurement programme (UGP).
- 4. Production for self-consumption:**
Company invests in its own renewable energy systems, on-site or off-site, to produce electricity primarily for self-consumption.

PPAs offer greater cost savings than EACs, UGPs, and typical electricity prices. They are also beneficial to finance additional renewable energy production. However, they are more difficult for smaller players to access. PPAs are the preferred tool for companies with electricity costs exceeding 15 per cent of operational expenditures.¹⁰⁴

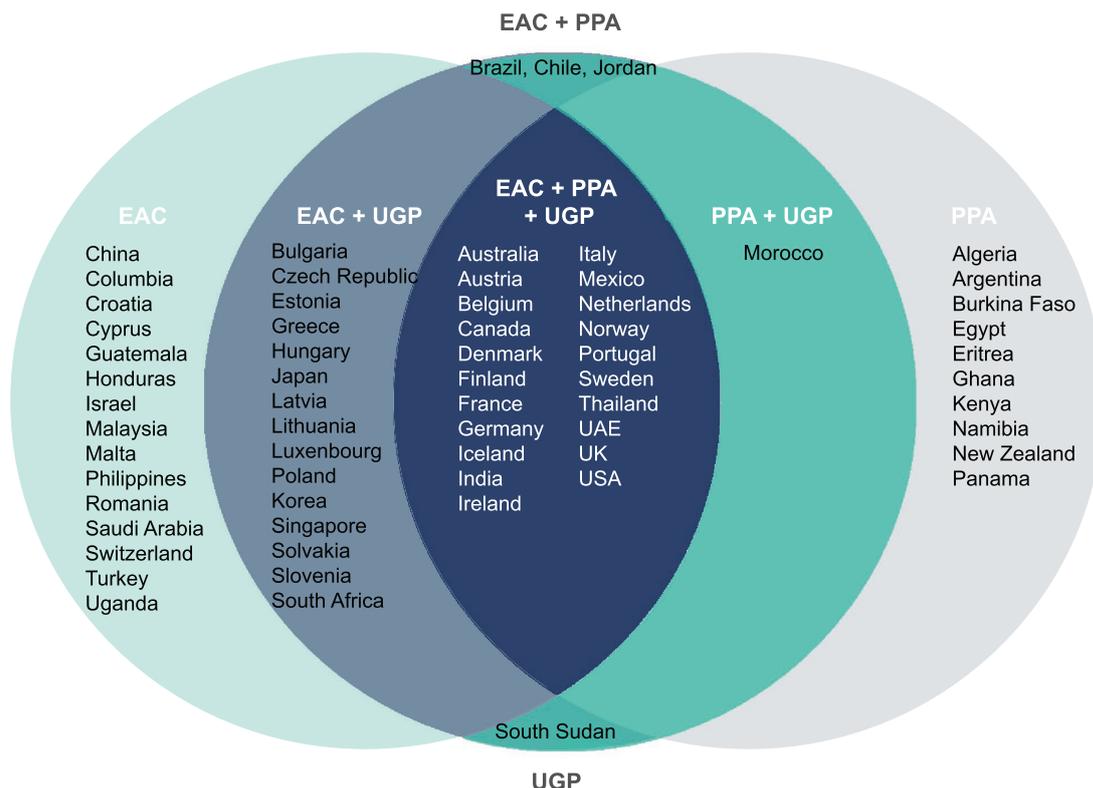


Figure 9: Corporate sourcing of renewables: Market and industry trends, 2018, IRENA.¹⁰⁵

Use of renewable energy in the hotel sector

The 2019 GRESB Real Estate Assessment shows that 51 per cent of their responding commercial building developers have integrated on-site renewable energy generation into project design (figure 10). Solar remains the most widely used source (92 per cent of GRESB participants), whilst others are less widely used.

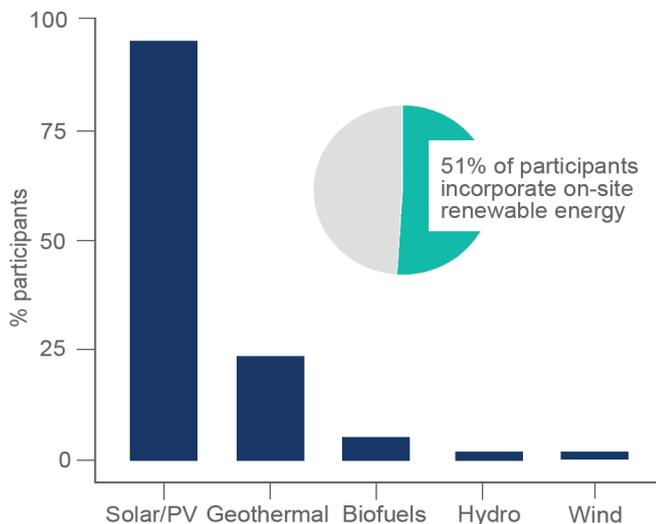


Figure 10: Types of on-site renewable energy integrated into project design in commercial real estate, GRESB.¹⁰⁶

The latest Cornell Hospitality Sustainability Benchmark (CHSB) shows a different trend in the hotel sector, where most of the uptake is yet to be seen.¹⁰⁷ Of over 15,000 properties in the data set, only 130 properties utilised renewable sources to generate energy. On-site renewable energy generation is one practice that deserves wider uptake; it is currently only used by a fifth of hotel properties worldwide.¹⁰⁸

Future proof your energy supply

The business case for producing renewable electricity for self-consumption is growing stronger with innovations in off-grid and storage technologies, and decreasing installation costs.

- **Decreasing installation costs:** Research from the US National Renewable Energy Laboratory (NREL) shows the costs of commercial PV (photovoltaic) systems reduced 66 per cent between 2010 and 2018 (inflation adjusted).¹⁰⁹
- **Price security:** On-site renewable energy may seem like an investment obstacle, but after the initial investment, the price of energy becomes more predictable. In many countries, electricity prices are rising at high rates. In South Africa, for example, the price of electricity will rise 9.4 per cent in 2019, double the inflation rate of 4.5 per cent.¹¹⁰ With renewables, hotels can lock-in prices and ensure a stable supply of electricity at predictable costs.
- **Supply security:** Hotels with on-site renewables also have additional energy security as they control the electricity-producing asset and have fewer risks from the electrical grid, which is still unreliable in many emerging countries around the world. For example, on-site PV solar provides a buffer for disruptions in grid supply while also reducing the need for diesel generators.

Case study – ITC Rajputana, Jaipur, India

ITC Hotels is one of the greenest luxury hotel chains in the world. Each of its luxury collection hotel is LEED Platinum certified. This has been achieved by continuously improving, innovating and executing sustainable initiatives, pioneering the concept of Responsible Luxury.

Sustainability measures

ITC Rajputana has the largest rooftop Onsite Renewable Solar PV Plant in the Rajasthan hospitality sector. This solar project has a capacity of 100 kWp and generates approximately 160,000 units annually.

Return on investment

The USD 100,000 project significantly offset carbon emissions for the hotel, resulting in annual savings of USD 25,000 and a 4-year payback period.

\$100k
investment

\$25k
annual savings

4 year
payback period

Case study – Radisson Blu Hotel, Basel, Switzerland

In 2019 the Radisson Blu Hotel in Basel, Switzerland, completed the Think Planet Kaizen audit, a process to identify the possible energy and water savings in a hotel property and propose sustainable measures based on cost-efficiency.

Sustainability measures

As a result, the hotel invested in a series of solutions, including installing a solar photovoltaic system and upgrading the HVAC supply fan with a VSD (variable speed drive) to reduce energy consumption.

The energy consumption optimisation project was achieved through collaboration with the hotel owner, who agreed to carry out optimisation practices such as facade repairs.

Return on investment

The 30 kW solar installation on the hotel's roof has resulted in an annual saving of 100,300 kWh and approximately EUR 19,000. The hotel aims to reduce consumption by another 15 per cent over 10 years. The Radisson Blu invested EUR 132,600, of which about EUR 30,000 were subsidised by the Swiss government. The overall payback period for the project is 5.6 years.



a NET
investment
of **€103k**

an annual
saving of
€19k

5.6 year
payback period



Case study – Soneva Fushi, Maldives

Soneva Fushi is located on a remote island in the Baa Atoll, Maldives with no access to the electricity grid. It relied on diesel generators to create reliable electricity 24 hours a day, 365 days a year.

Sustainability measures

In 2016, as a step towards a renewable future, Soneva Fushi partnered with solar manufacturer Yingli to install a 624 kWp solar photovoltaic system.

Return on investment

To reduce the resort's capex and investment requirement Soneva Fushi signed a power purchase agreement (PPA) with Yingli Solar. Yingli provided the solar panels at their cost. In return Soneva Fushi purchases the electricity from them at 60 per cent of the price it would cost the resort to produce with diesel generators. As a result, Soneva Fushi lowered its diesel bill by 4 per cent without needing to invest in the asset.

solar generated
electricity is

60% of the
cost of diesel

\$0 investment

04 Key recommendations

4.1 Recommendations for hotel investors and asset managers

Background and key arguments

Responsible investment and profit are no longer mutually exclusive. Investors can now expect stable and strong dividends from REITs that invest in sustainable properties because sustainability measures considerably improve risk management and assessment of a portfolio.

The top institutional and private shareholders of some of the largest hotel chains are deeply focused on sustainability; it is a strategy that yields high returns and mitigates future risk.

Research shows that green REITs shares have higher operational and value benefits through:¹¹¹

- higher cash flows overall (funds from operations and earnings)
- decreased corporate-level expenses (interest), resulting in increased cash flows available for distribution
- trading at a higher relative value (price to net asset value)
- substantially lower volatility experienced than traditional REITs.

Key recommendations for hotel investors and asset managers

1 Include environmental, social and governance (ESG) metrics in your investment analysis

ESG metrics enable you to identify the performance of your current and future hotel assets and correlate to a better risk-adjusted ROI in the long term. Since 1990, sustainability-based indexes (MSCI KLD 400 Social) have provided better long-term returns than traditional indexes.¹¹²



How to do this:

- Start with guidance from the CDC ESG Toolkit for hospitality.¹¹³
- Develop an ESG and climate strategy using recommendations from UN Environment.¹¹⁴

2 Use the opportunities provided by sustainable finance

According to IFC, green investment needs to double to meet the Paris Agreement 2030 targets. Issuances of green bonds by corporates and non-corporates alike has proven to be in high demand among investors.



How to do this:

- Select projects aggregated at portfolio level, which have higher eligibility to receive green finance.
- See UN Principles for Responsible Investment for more information.¹¹⁵

3 Prioritise green incentive schemes

Prioritise investment in countries and cities with government green incentives and use your lobbying power to convince local and national governments to launch incentives in places where these are not currently offered.



- Visit IFC's EDGE website to see which governments are offering incentives in developing markets.¹¹⁶
- See the C40 cities global network to identify the cities committed to addressing climate change.¹¹⁷

4 Prioritise sustainable buildings in your investment strategies

Sustainable hotels are at least 20 per cent more resource efficient compared to their local market, increasing their long-term resilience to both policy and environmental change. Therefore, investors can develop a well-diversified portfolio of sustainable properties that expands across geographies and types of hotels.



- Use benchmarking reports such as the *GRESB Real Estate Assessment*¹¹⁸ and Cornell Hotel Sustainability Benchmarking Index¹¹⁹ to identify hospitality companies and owners that are committed to improve the sustainability of their portfolio.

5 Inspire long-term action

The ownership of a building changes through its lifetime and investors have a unique role in setting a sustainable pathway for the property's entire lifecycle.



- Introduce sustainability criteria and reporting requirements for your assets for the various phases from design to asset sale.

Case study – BlackRock

BlackRock, the largest asset management company in the world, announced in January 2020 that it would put sustainability at the heart of its investment decisions.¹²⁰ Some of the key principles of the BlackRock Sustainability Mission Statement are:¹²¹

- A responsibility to monitor the companies that are part of their portfolio of investments.
- Clients' interests are protected by engaging portfolio companies through private and public channels.
- As a fiduciary investor, evaluating how companies manage the material sustainability-related risks and opportunities within their businesses.
- An intrinsic relationship between risk-adjusted returns and sustainable practices.

BlackRock is one of the top shareholders for brands such as Marriott International, Hyatt and Hilton and widely communicates its commitment to sustainability.

We believe that companies with sound corporate governance practices, including how they manage the environmental and social aspects of their operations, better mitigate risk over the long term, and offer better risk-adjusted returns.

4.2 Recommendations for hotel owners and developers

Background and key arguments

Sustainability directly impacts the asset value for building owners because investments in efficiency create rapid payback and go straight to the asset's bottom line. This improves both Gross Operating Profit (GOP) for the operator and Net Operating Income (NOI) for the owner.

The environmental performance of buildings is key to:

- overall risk management of the property
- retaining asset value and improving financial performance through low operational costs and increased asset life
- securing access to preferential green finance opportunities
- meeting client demands and regulatory standards
- relationship management with operator brands and protecting their reputation and competitiveness as a business.

Key recommendations for hotel owners and developers

- 1 Integrate sustainability from design phase for best cost efficiency**

Appropriate site planning at the development stage offers enormous opportunity to utilise the local environment and climate to maximise resource efficiency, including passive design, building orientation and landscape treatment.



How to do this:

 - Use the free EDGE software to evaluate the performance of an existing building or the design of a new building.¹²²
 - Use reports such as Sustainable Hospitality Alliance's *Destination Water Risk Index* for new and existing developments to better understand the financial implications of local water risk.¹²³
 - Engage with networks such as Sustainable Hospitality Alliance and Hotel Owners for Tomorrow to learn best practice from peers
- 2 Evaluate and enhance your environmental efficiency**

Benchmark your portfolio to estimate future energy usage per occupied room and compare potential options for carbon emissions and water-use reduction to determine where to make investments.



How to do this:

 - Use tools such as the CHSB Index,¹²⁴ the GRESB Portfolio Analysis Tool,¹²⁵ or Nearly Zero Energy Hotels e-toolkit¹²⁶ to carry out a hotel feasibility study.
 - Engage hotel operators using IFC's research on ROI for green buildings.¹²⁷
 - Use software such as IFC's EDGE to understand which resource improvements yield the best ROI.¹²⁸
- 3 Invest in sustainable building certification**

Certification will increase asset value and support ongoing compliance with social and environmental regulations. They can also unlock finance and assist in securitising the loan portfolio, as well as enhancing the company's reputation. EDGE, LEED, BREEAM and DGNB are globally recognised schemes.



How to do this:

 - Use certifications as guidelines from the planning phase to reach higher environmental and social standards.
 - Review existing certifications in your portfolio, and set your own baseline and targets to identify which properties will need certification.

4 Use green financing for new builds and retrofits

Green financing opportunities provide lower interest rates as incentives from commercial banks towards increased sustainability. Owners should also check for local tax deductions and government incentive schemes to benefit from corporate green bonds or green bonds issued by local financial institutions.



How to do this:

- Find local incentives from IFC's information on Green Buildings Banking or contact edge@ifc.org.¹²⁹
- Aggregate projects at portfolio level to increase eligibility for green finance. See UN Principles for Responsible Investment for more information.¹³⁰
- See UN Principles for Responsible Investment for information on raising green bonds.¹³¹

5 Use sustainable clauses with hotel operators

Green leases can help to share the costs and responsibilities of sustainable design between owners and operators and align the financial and energy benefits. These agreements can be legally binding or non-legally binding, providing a framework to operate within sustainable standards, and saving money for operators and owners while increasing property value.



- Use the UK Better Building Partnership's green lease toolkit for guidance to help owners and occupiers work together to reduce environmental impact.¹³²
- Take inspiration from the UK Soft Landings scheme to support the transition from construction to occupation, and manage the gap in performance that can occur between the design plans and operation.¹³³

Case study – Courtyard by Marriott San Diego Downtown, California, USA

The Courtyard by Marriott San Diego, an adaptive reuse of a former bank, is one of Hersha Hospitality Trust's 48 hotels utilising EarthView®, Hersha's sustainability platform. EarthView initiatives are aligned with eight of the 17 UN Sustainable Development Goals (SDGs).

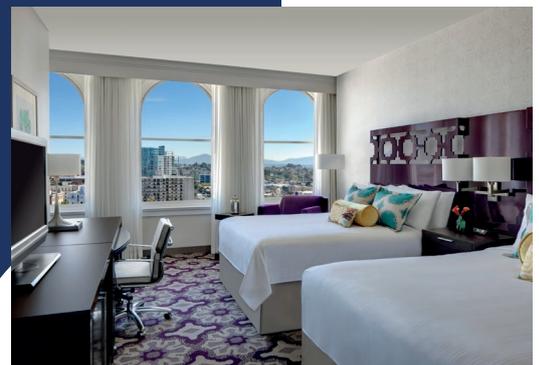
Since inception, Hersha's hotels have reduced greenhouse gas emissions by 41 per cent per square foot and energy usage by 15 per cent through the implementation of energy efficiency initiatives – translating into over USD 14 million in cumulative savings and EBITDA margin improvement. Including topline impact, the platform has created USD 100 million in value across Hersha's portfolio.

Sustainability measures

Hersha's first laundry water reuse system was installed at the Courtyard San Diego in 2018. The hotel washes over 1 million pounds (lbs) of laundry each year and by utilising a series of filters and ozone treatment it is able to reuse 80 per cent of its laundry water for future laundry cycles.

Return on investment

This system has reduced total hotel water usage by nearly 20 per cent. With annual savings in water and natural gas of USD 25,000 and a net investment of USD 80,000 after incentives, this initiative has a 3.2 year payback period and is being expanded to additional hotels across Hersha's portfolio.



a net investment
of **\$80k**
after incentives

3.2 year
payback period

20% reduction
in total water
usage

4.3 Recommendations for operators

Background and key arguments

Operators find themselves in a very competitive environment and therefore have a direct interest in promoting sustainability throughout their planning and operations to keep operational costs low, meet guest demand, and protect brand reputation and business continuity. Incorporating sustainable design also relies on clear communication with other stakeholders in the value chain (owners and investors) to ensure that operational efficiencies can be fully realised.

Key recommendations for operators

1 Invest in sustainable solutions for immediate savings

The costs of sustainable practices are lower than perceived, often providing immediate financial savings, or payback periods of less than one year. These implementations will be able to command a higher Gross Operating Profit per Available Room (GOP PAR).



How to do this:

- Use IFC's research on ROI for green buildings¹³⁴ and Carbon Trust's sector-specific resources¹³⁵ to understand the sustainability measures you can implement.
- Use IFC's free EDGE software to design a sustainable building specifically with your criteria.¹³⁶
- See the American Hotel & Lodging Association's resources on energy-efficient lighting,¹³⁷ and US federal guidance on installing and maintaining green roofs¹³⁸ for more solutions.

2 Ensure sustainability is integral in the decision process of all new properties and retrofits

With new properties and retrofits, the earliest stages of development are the most cost-efficient point to incorporate sustainable design. Engaging early with all parties will ensure that properties will be more operationally efficient, more profitable in long-term asset value, and align with your brand's sustainability targets.



- A common challenge for owners and developers is knowing who to talk to in a hotel company about sustainability standards. Assign a contact to be responsible to discuss sustainability at owner level and communicate this to all parties in the development process.
- Train and equip your development teams to consider sustainability from the start of all projects.

3 Measure, report and analyse your resource usage

Evaluate energy and water usage to identify inefficiencies. This will enable you to identify and prioritise the key areas that would benefit from building owner investment to achieve the greatest impact on resource usage and utility savings, and facilitate investment discussions.



- Use Sustainable Hospitality Alliance's research and tools on carbon and water, and Cornell Hotel Sustainability Benchmarking to identify areas with high impact on usage and cost savings.¹³⁹
- See Carbon Trust's resources¹⁴⁰ and Sustainable Hospitality Alliance's *Environmental Management for Hotels Manual*¹⁴¹ for recommended actions to improve sustainability.

4 Switch your energy and electric supply to renewable sources

Renewable energy is one of the most efficient ways to quickly decarbonise your properties with little or no cost increase.



How to do this:

- Contact your local energy supplier about available options.¹⁴² Power Purchase Agreements (PPAs) are currently the most rapidly growing corporate procurement tool.¹⁴³
- Look into local tax credits and incentives using KPMG Green Tax Index.¹⁴⁴

5 Communicate about your sustainability goals and action

Sharing positive examples that highlight the benefits with business partners, particularly building owners, will encourage further uptake. Effective communication will also increase your chances of winning contracts with corporates that have sustainability procurement criteria, and enable customers to see your sustainability values when making their booking selection.



- Review your interactions with customers and stakeholders to evaluate how you are communicating your sustainability goals and actions.
- Use IFC's Marketing Toolkit for guidance on communicating your sustainable practices.¹⁴⁵

Case study – Caesars Entertainment

Caesars Entertainment is a Las Vegas-based company with facilities spread across seven countries on four continents.

Sustainability measures

In 2003 Caesars established a formal corporate function to make energy efficiency investments and in 2007 the company launched a corporate-wide sustainability programme. Between 2003 and 2010, Caesars invested more than USD 50 million in energy saving initiatives across their portfolio.

Return on investment

Caesars achieved a 163 million kilowatt-hour reduction per year in energy usage, equating to a 2 per cent reduction in electricity use and 5 per cent reduction in greenhouse gases. Their annual water consumption was cut by 200 million gallons by upgrading laundry facilities, offering guests an opt-out linen cleaning options, serving guests water only on request, and by replacing irrigated turf on golf courses with drought-resistant landscaping.

Overall, this investment resulted in more than USD 17 million in annual run-rate savings across 110 projects.



more than
\$50m
invested

\$17m
annual run-rate
savings

5% reduction in
GHG emissions

4.4 Recommendations for franchisees

Background and key arguments

The franchisee model is heavily dependent on the brand reputation of the hotel chain. As both individual and business travellers continue to demand greater environmental practice from the brands they buy into, the sustainability ethos of the brand will have an increasingly greater impact on your property's long-term profitability.

The relative independence of the franchisee is an opportunity to go beyond minimum brand requirements and set properties apart through their environmental excellence. Consumer trends indicate a willingness to pay a premium price for sustainable hotels, therefore franchised properties can increase their RevPAR by communicating with this growing consumer segment.

Key recommendations for franchisees

1 Pick a franchisor that aligns its brand fully to sustainable operations

A sustainable brand association leads to better sentiment score reviews which is reflected in guest satisfaction and repeated service. Franchisees can make the most of their affiliation with brands by using the resources and expertise developed at corporate level (e.g. marketing, brand standards, software, environmental incentives and staff engagement tools).



How to do this:

- Review the brand standards for sustainability criteria when selecting a franchisor.
- Work with your franchisor's corporate teams to benefit from their sustainability experience and resources.

2 Communicate sustainable practices to consumers

Franchisees depend on a dedicated business-to-business sales force that is usually centrally managed and nationally deployed by the franchisor. As companies consider responsible travelling for the business traveller, sales agents need to be aware of your best sustainable practices and responsible travel programmes when presenting your properties to customers.



- Ensure your sales agents are kept informed of your sustainable practices.
- Review your interactions with customers and stakeholders to evaluate how you are communicating your sustainability goals and actions.
- Use IFC's Marketing Toolkit for guidance on communicating your sustainable practices.¹⁴⁶



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