Indian Real Estate's ESG Landscape and Its Progress To A Sustainable Future

REPORT

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The growing clamor surrounding ESG is actually a reaffirmation of an old adage – a business cannot exist in isolation. As the world around us changes, financial and economic feasibility are not the only metrics that are linked to a business's success today. Climatic, societal and ethical issues are now taking the limelight, a trend that got accelerated due to a combination of events - the COVID-19 pandemic, severe weather mishaps and the COP26 conference. As a result, businesses are now increasingly finding it imperative to develop forward-looking strategies that take these factors into account, causing ESG to evolve from a peripheral balance sheet issue to a key component of investment decision-making.

For those of us in the real estate business, the need to imbibe ESG principles is not just a moral imperative, but also a fiduciary responsibility. With increased scrutiny on ESG, CRE stakeholders need to understand, improve, and leverage their performance on this front to drive value and stay competitive. The essential question is no longer what to do, but rather how to do it.

Our report, **Indian Real Estate's ESG Landscape and its Progress to a Sustainable Future,** is an analysis of how ESG would be the driving force for Indian CRE stakeholders going forward. From a business perspective, it is also a compendium of CBRE's commitment towards these principles and its knowhow of this fast-evolving domain. I hope you find it an engaging read.

Foreword

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World over, ESG is fast becoming embedded into the collective conscious of businesses and investors. For the real estate industry, the spotlight is increasingly on developer and occupier strategies to deliver net-zero targets and contribute to the larger cause of climate change. As commitments to decarbonize rise, demand for sustainable buildings is expected to follow suit.

Our analysis of the certified built environment in India shows that this transformation is already underway. The past five years have seen a pronounced push towards green buildings; the period saw a 37% increase in the supply of certified buildings, with the addition of ~ 78 million sq. ft. of certified stock, compared with the previous five years (2012-2016). Moreover, developers are now seeking nationally and internationally recognised green certifications such as LEED and IGBC that would be popular among their potential tenants.

Going forward, we believe that regulatory requirements around ESG adoption would continue to tighten, and sustainability reporting standards and benchmarks would gather more steam. As a result, markets with a proactive approach and a continuous focus on sustainability and climate risk mitigation strategies will be frontrunners as investment destinations. We have covered more of these futuristic trends and strategies in greater detail in our first publication on this buzzing segment, **Indian Real Estate's ESG Landscape and its Progress to a Sustainable Future.** I hope you find it a worthy guide for your organization's ESG journey.

Chapter 1

Introduction

1.1 Defining ESG

ESG incorporates Environment, Social and Governance factors into business functioning, both internally and throughout their supply and value chains. The ESG canvas goes beyond traditional strategies such as vigilant resource consumption, reduction in CO2 emissions and climate resilience. It hinges on factors as varied as equity and inclusion to the social impact of business activities, transparency in corporate governance policies and board diversity.

Achieving an organisation's ESG goal requires efforts across the enterprise, with real estate being an important (although not a singular) pillar of the overall strategy. The following figure demonstrates the ESG approach that could be considered by an enterprise.

Figure 1.1.1: Major elements of an ESG strategy

Environment (E)

- Minimising carbon footprint
- Developing climate resilience
- Preferring environment-friendly materials for construction
- Reducing resource consumption
- Protecting natural resources and biodiversity

Social (S)

- Improving Diversity, Equity and Inclusion (DE&I)
- Implementing policies that impact people (employees, clients and consumers)
- Understanding the social impact of the company's products
- Ensuring health, wellness and safety of labor and employees
- Increasing community-based engagements

Governance (G)

- Developing clear corporate governance
- Inculcating responsible corporate behavior
- Ensuring inclusivity of the board
- Instituting whistleblower protection policies
- Enhancing transparency in reporting
- Integrating data protection and privacy policies across the value chain

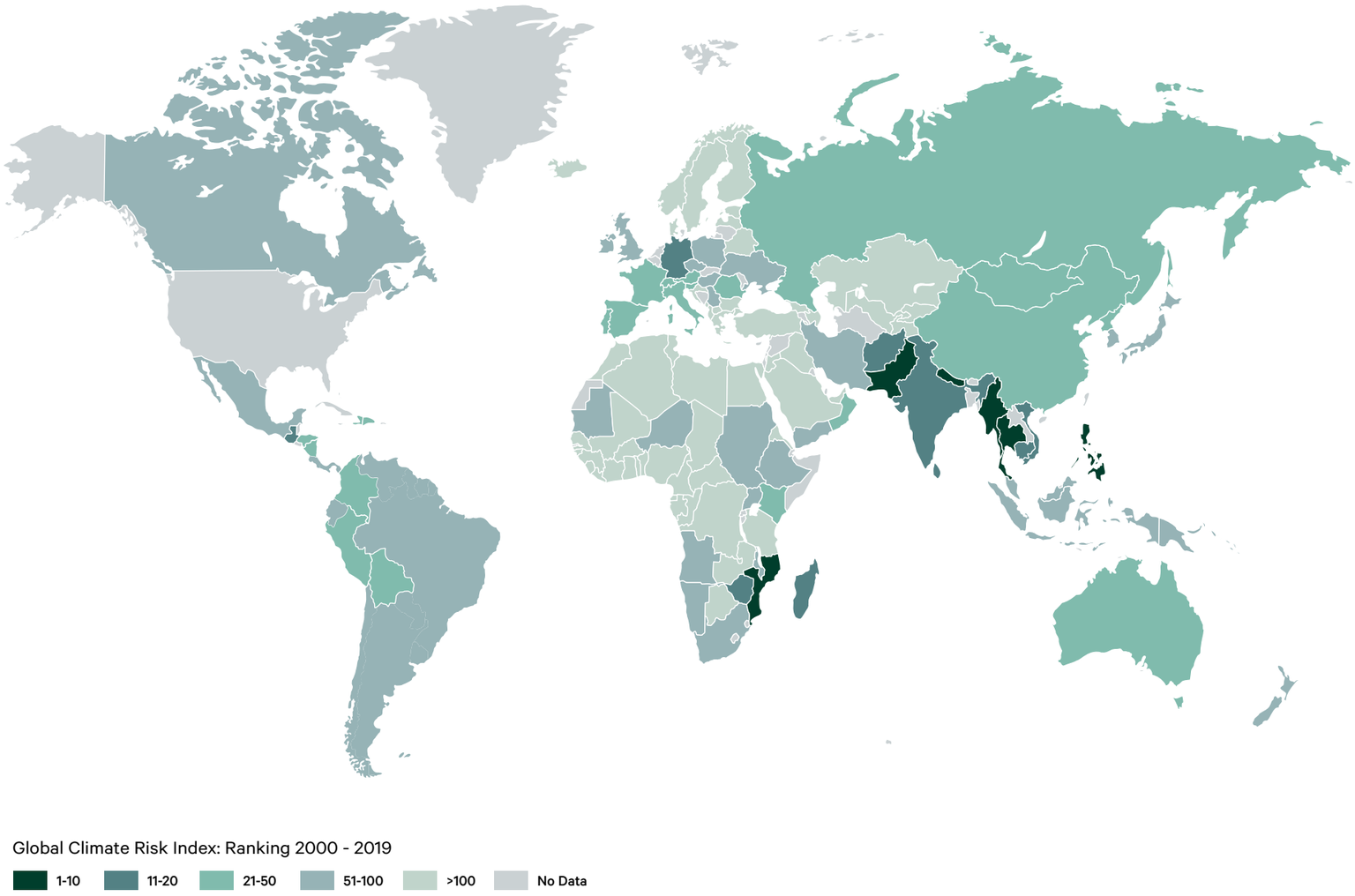
Source: Real Estate's Role in the Environmental, Social and Governance (ESG) Agenda, 2021 CBRE Global, September 2021; CBRE India Research, Q1 2022

1.2
ESG – A moral imperative or a fiduciary responsibility?

As per the Intergovernmental Panel on Climate Change (IPCC), the world is now nearly 1° Celsius warmer than at any point of time in the past nearly 200 decades, and it is anticipated to become warmer by 1.5° Celsius by 2040. In order to limit the global warming to 1.5° Celsius, the world would need innovative and bold solutions to enable industrial decarbonization and eliminate approximately 40% of the global emissions.

For India, given our size and population, the climate risks have grown manifold. **The country ranked among the top 20 nations globally on the GermanWatch's Global Climate Risk Index Rankings 2000-2019; in 2019**, it was among the 10 most vulnerable nations ranked on this index in terms of climate risks.

Figure 1.2.1: Global Climate Risk Index Rankings (2000-2019)*



*Data from 180 countries was analysed from 2000 to 2019 to arrive at these consolidated rankings.
Higher the ranking for a country, higher would be the climate risk

Source: GermanWatch; CBRE India Research, Q1 2022

A majority (42%) of the respondents to the World Economic Forum's Global Risk Perception Survey 2021-22 ranked **'climate action failure' as the number one long-term threat** to the world and its associated risks as having the most severe impact over the next decade. To counter the growing climate threat, businesses need to consider both direct and indirect emissions. Below is a detailed account of the types of emissions that corporates need to manage:

Figure 1.2.2: Scope 1, 2 and 3 carbon emissions*

***Scope 1** emissions are direct emissions from owned or controlled sources.
Scope 2 emissions are the firm's indirect emissions from the generation of purchased energy.
Scope 3 emissions comprise 15 other categories of indirect emissions (not included in scope 2) that occur in the value chain of the reporting firm, including both upstream (supply chain) and downstream emissions (customers).

CO_2- Carbon Dioxide | PFC_s- Perfluorocarbons | CH_4 - Methane | SF_6 - Sulphur Hexafluoride | N_2O - Nitrous Oxide | HFC_s - Hydrofluorocarbons

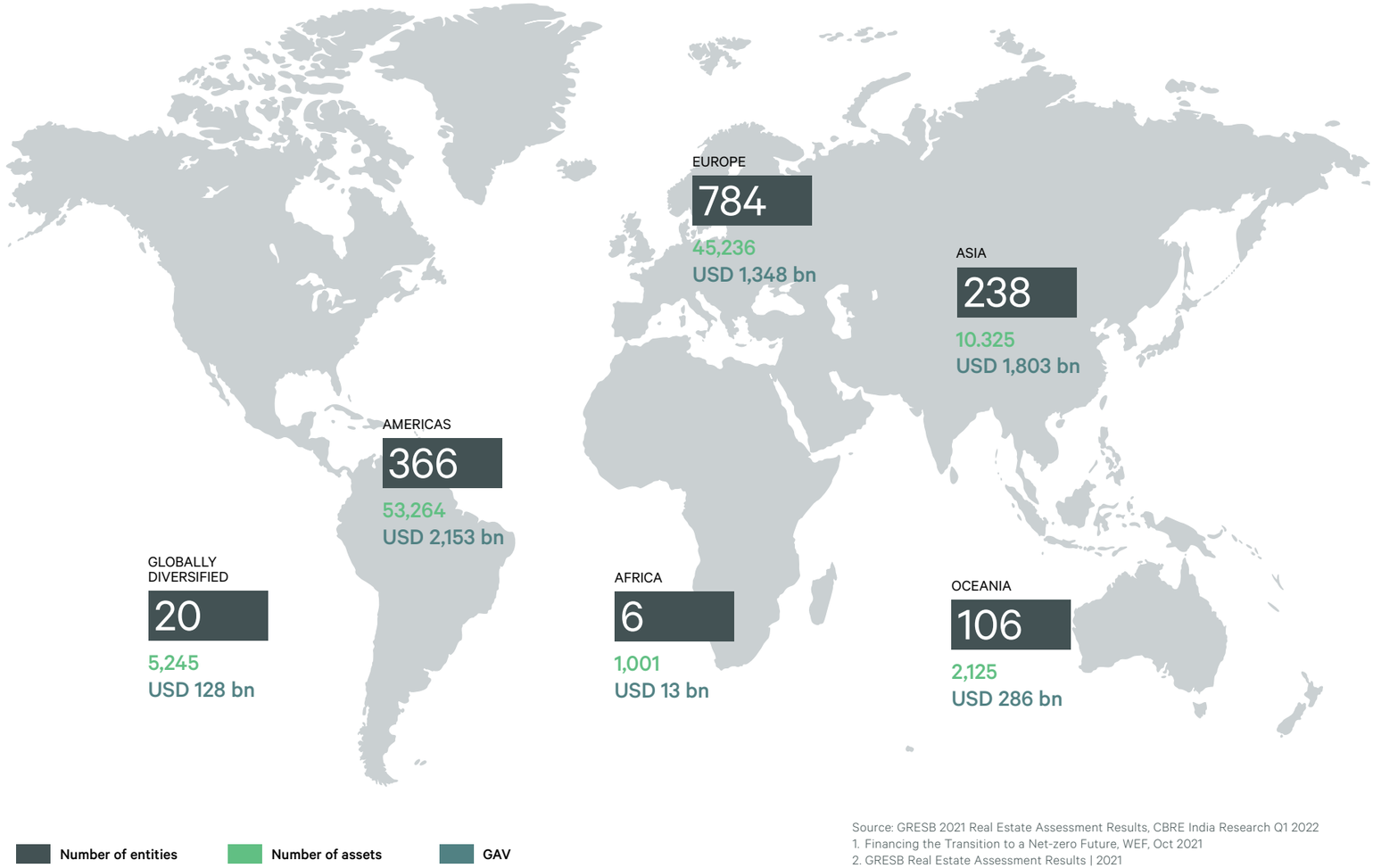
Source: IEA; UNFCC; Plan A Academy; CBRE India Research, Q1 2022

As the ultimate target for both governments and businesses is to achieve **net zero emissions***, it is estimated that an incremental investment of approximately **USD 50 trillion would be required by 2050**[1] to meet this goal. The adoption of alternative sources of energy such as solar will drive emission reductions until 2030; however, beyond 2030, breakthrough technologies such as energy-efficient solutions, hydrogen-based fuels, bioenergy and carbon capture / utilization / storage solutions among others will have to play a key role in reducing carbon emissions.

According to the World Economic Forum, **buildings account for nearly 40% of global greenhouse gas emissions and 40% of raw material use.** Therefore, assessing and imbibing ESG into real estate and construction is paramount for countries to be able to achieve their sustainability goals.

As of today, with the growing understanding of ESG, the real estate sector has also started imbibing it into its corporate and functional strategies. According to the Global Real Estate Sustainability Benchmark (GRESB) 2021 Real Estate Assessment Results, **over USD 2.1 trillion worth of ESG-compliant developments are located in the Americas, and USD 1.3 trillion in Europe.** The largest increase in value was seen in Asia, from USD 1.1 trillion worth of Assets Under Management (AUM) in 2020 to USD 1.8 trillion in 2021[2]. Also, The UN-backed Principles for Responsible Investment (PRI) has seen its signatories grow from 63 with USD 6.5 trillion in AUM in 2006 to over 4,375 as of September 2021 representing over USD 121 trillion in AUM.

Figure 1.2.3: GRESB 2021 Real Estate Assessment Results



Source: GRESB 2021 Real Estate Assessment Results, CBRE India Research Q1 2022
1. Financing the Transition to a Net-zero Future, WEF, Oct 2021
2. GRESB Real Estate Assessment Results | 2021
GAV - Gross Asset Value

* As per the IPCC, net zero emissions are achieved when anthropogenic emissions (emissions resulting from or produced by human activities) of greenhouse gases to the atmosphere are balanced by anthropogenic removals over a specified period.

1.3 Why should real estate players adopt ESG?

Listed below are a few benefits which ESG-compliant real estate stakeholders can derive:

1.3.1

Fetch higher rents, sale price

Real estate projects with green certification, WELL certification etc. are now exceedingly being preferred by tenants. International mature markets have shown that such buildings have fetched higher rents and higher sale price as well as witnessed lower vacancies as compared to traditional projects. In India, the focus on better air quality over the past couple of years has meant that sustainable and green is not only a long-term strategy, but also that some of these parameters are translating into immediate, almost tangible benefits for occupiers.

In numerous global markets, the gap between green and brown rental discounts has been widening, thus creating a better business proposition for building more sustainable and livable spaces. Our inhouse analysis (refer Chapter # 3) demonstrates that across real estate developments, **certified green projects are commanding a higher rental than non-certified projects.**

Hence, ESG-complaint buildings make for more attractive investment propositions in terms of asset values and rents. Such projects show lower degree of obsolescence and improved tenant satisfaction, thereby providing scope for higher lease renewal rates.

1.3.2

Ease of doing business and safeguards from regulatory processes

By making the 'G' aspect more transparent, governing authorities of a company also build trust, which helps stakeholders in getting approvals and licenses smoothly. Hence, a real estate stakeholder with positive positioning can expand into existing markets and tap new ones effortlessly.

With India moving towards completing its COP21 commitments and pledging to COP26, central / state governments are expected to bring in more stringent regulations to achieve the targets. **The government's focus on sustainability was quite evident in the Union Budget 2022-23,** and in our view, developers and investors following ESG compliance can smoothly sail through this phase and operate without any impediments.

1.3.3

Lowering of long term costs; elongate asset life

The real estate sector is directly exposed to the physical impact of climate change. Extreme weather events can lead to higher insurance premiums, capital expenditure and operational costs, as well as a decrease in liquidity and value of buildings. Therefore, contributing to a reduction in carbon emissions indirectly helps real estate stakeholders reduce their long-term operational costs. In our **November 2021 CBRE Europe report titled 'Is Sustainability Certification in Real Estate Worth It?',** the study of 12 countries demonstrated that sustainable buildings have shown lower operating costs over the years, which in turn is helping developers fetch premium rentals over traditional buildings[3]. Also, incorporating ESG at building / initial stages is much more cost effective than retrofitting of buildings as per ESG norms.

1.3.4

Supports better financial growth for corporates

ESG improves financial performance by maintaining a good public reputation which in turn helps the firm to retain talented employees for the long term. According to a McKinsey survey in 2020, respondents confirmed that ESG increases shareholder value by strengthening the organization's competitive position in the market and meeting the society's expectations for good corporate behaviour[4]. Hence, it helps to earn top line growth overtime.

The aforementioned benefits, such as higher rents, lower vacancies, lower operating costs help real estate stakeholders improve their profits. Moreover, with a higher retention of the talent pool, the firm can generate greater income in a more efficient way; thereby improving the firm's margins.

This argument has further been strengthened by RICS, which has included the evaluation of a company's ESG standards in its Red Book, effective from 31st January 2022. The aim is to provide a framework for delivering on ESG reporting requirements in professional valuation advice. Therefore, ESG compliance will further strengthen among real estate stakeholders.

1.3.5

COVID-19 fuels the adoption of ESG compliance

The COVID-19 pandemic has further underscored the need to keep sustainable development at the very core of any development strategy. The increased flexibility and comfort of working from home has meant that offices, malls and other commercial set ups will have to go the extra mile and provide the same level of safety and comfort to encourage employees / shoppers to move out of their homes for long periods of time.

In the past one decade, the focus of stakeholders was primarily on the 'E' aspect, with little emphasis on 'S' and 'G'. However, COVID-19 has thrown existing inequalities into greater focus, thereby encouraging action to address them; at the same time, it has highlighted the necessity to think harder about the changes required in working practices and employee wellbeing. **According to the Berenberg ESG Survey Exploring Investor Sentiment 2021,** 47% of total respondents considered the 'S' as the most important element, followed by 35% choosing 'E' as important and only 18% selecting 'G'[5].

With countries moving towards achieving COP21 targets, operating rules for the real estate sector are expected to become stringent. Therefore, stakeholders would need to be more accurate in their disclosures and transparent in their functioning to safeguard themselves from any future scrutiny.

3. Is sustainability certification in Real Estate worth it? | 2021
4. The ESG premium: New perspectives on value and performance | 2020
5. Berenberg ESG Survey Exploring Investor Sentiment | 2021

Chapter 2

Why the focus on ESG: Paris Agreement and Sustainable Development Goals

2.1 Paris Agreement and India's aim for 2030

The Paris Agreement is an international treaty and a legally binding document on climate change. It has been ratified by 193 parties# till now and was adopted at the Conference of the Parties (COP) 21 in 2015 in Paris and came into force on 4 November 2016. Its goal is to limit global warming to well below 2° Celsius, with intended efforts to limit the increase to 1.5° Celsius, compared to pre-industrial levels.

Action plan to achieve the goals

Countries will aim to reach **global peak of greenhouse gas emissions** as soon as possible to achieve a climate neutral world by 2050.

Implementation of the agreement is planned on a 5-year cycle basis, with increasingly ambitious climate actions, which are to be carried out by countries and detailed in a submission of their plans called **Nationally Determined Contributions** (NDCs)*.

Focus on technology development and transfer that can help curb global greenhouse gas emissions and build resilience to climate change.

Countries are also required to submit their **Long-Term Low Greenhouse Gas Emission Development Strategies** (LT-LEDS)**.

Developed countries are encouraged to provide financial assistance to other countries that require help, while each party should focus on **climate finance*****.

Emphasis on **capacity building** for developing nations to be able to deal with the challenges of climate change.

According to the latest UNEP FI – Global ESG Real Estate Investment Survey Results 2019, 85% of respondents are highly or very highly motivated to imbibe ESG principles due to lowered risk. The survey further showed that 80% of Asia-Pacific respondents were highly motivated to use ESG criteria in their functioning.

This includes 192 states (191 UN member states as well as the Cook Islands and Niue) and one supranational union (the European Union).

* As per the United Nations, Nationally Determined Contribution, is a climate action plan to cut emissions and adapt to climate impacts. Each Party to the Paris Agreement is required to establish an NDC and update it every five years.

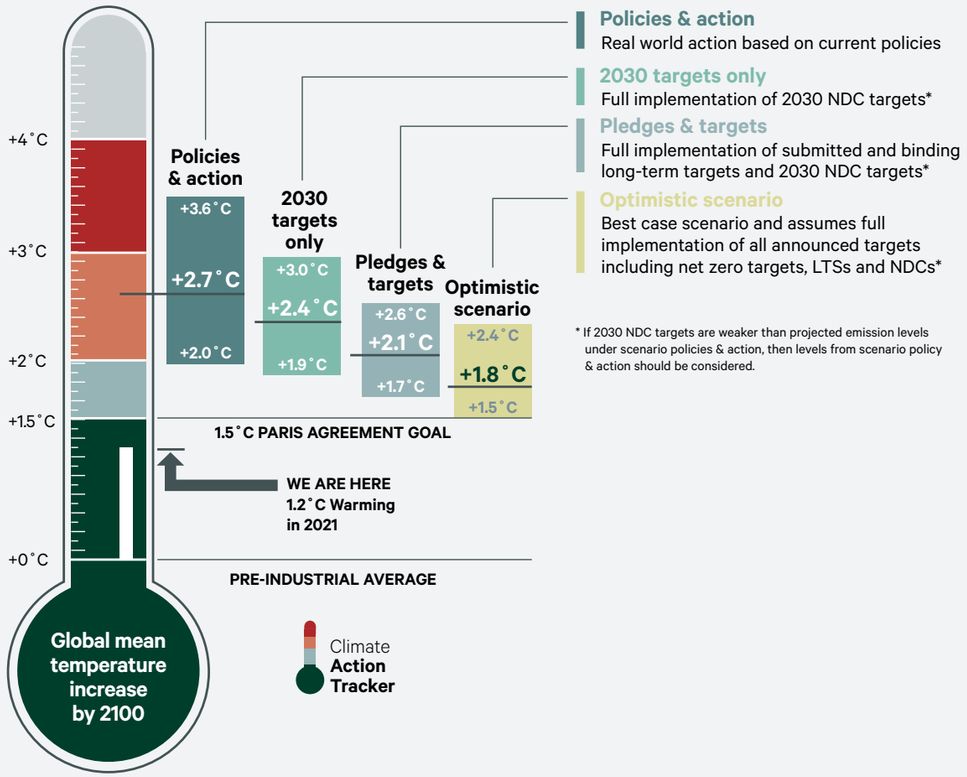
** As per the World Resource Institute, these strategies are created to set out long-term goals for climate and development and it also aims to direct short-term decision-making to make the required modifications to bound global warming. Hence, they are regarded pivotal to achieve the goal of reaching net-zero global emissions, restraining warming, and averting negative impacts of climate change.

*** As per the UNFCC, climate finance refers to local, national or transnational financing—drawn from public, private and alternative sources of financing—that seeks to support mitigation and adaptation actions that will address climate change.

Where is the world now?

An independent scientific research platform called the 'Climate Action Tracker' was created by two organisations – 'Climate Analytics' and 'New Climate Institute' – with the help of other collaborators to track government climate actions and measure it against the goals set by the Paris Agreement. The platform has created warming projections for the year 2100 based on the net zero emissions target adopted / under discussion in 140 countries, as shown in figure 2.1.1.

Figure 2.1.1: Projected global temperature increase by the year 2100**



Source: Climate Action Tracker, November 2021; CBRE India Research, Q1 2022

** The numbers at the top and bottom of every bar depicting the four climate scenarios are the upper and lower limits of the temperature change that could happen by the year 2100. The numbers highlighted in bold in these bars are the median warming estimates by 2100 under each scenario if the associated conditions are met.

Tracking India's progress on the Paris Agreement

The Climate Action Tracker rates countries' efforts toward meeting the tenets of the Paris Agreement on a five-point scale (in fig. 2.1.2).

Figure 2.1.2. Climate Action Tracker rating scale

01	02	03	04	05
Critically Insufficient	Highly Insufficient	Insufficient	Almost Sufficient	1.5° Celsius Paris Agreement

Source: Climate Action Tracker

India's overall rating is 'Highly Insufficient'. The rating is further divided into individual parameters of 'Policies & Action' where India is 'Almost Sufficient', 'Internationally Supported Target' where it is 'Critically Insufficient' and 'Fair Share Target' where it is 'Highly Insufficient'.

India has recently announced its 'Net Zero Target' in the COP-26 summit at Glasgow. Though the second five-yearly NDC of 2020 is yet to be submitted, new targets have been announced in the summit:

- 2070 – Achieve net zero emissions by 2070
- 2030 Agenda
  - Carbon intensity reduction by 45% over 2005 levels
  - Non-fossil fuel electricity capacity of 500 GW
  - Obtaining 50% of energy needs from renewable sources
  - Reduction of 1 billion tonnes of projected emissions from now

Further, under the Copenhagen Accord India had set a target to reduce the GDP (total amount of greenhouse gas emissions emitted for every unit of GDP) by 20-25% by 2020 from 2005 levels and achieved the target by cutting emissions by 21%.

However, it is to be noted that these targets can be achieved through multiple mitigation and adaptation strategies, climate change finance instruments, external / international cooperation, technology transfer and support, and capacity building. In this respect, there are numerous policies in effect under the **National Action Plan on Climate Change (NAPCC)#** which include National Missions for solar, enhanced energy efficiency, sustainable habitat, water, Green India, sustainable agriculture, sustaining the Himalayan eco-system, and strategic knowledge for climate change.

Other focus areas that **impact cities and real estate** would include schemes under Smart Cities Mission, Atal Mission for Rejuvenation and Urban Transformation (AMRUT), and National Heritage City Development and Augmentation Yojana (HRIDAY).

Released in June 2008, the National Action Plan on Climate Change outlines a national strategy that targets to enable the nation to adapt to climate change and enhance the ecological sustainability of India's development path.

2.2 UN Sustainable Development Goals can help define and shape ESG outcomes

The Sustainable Development Goals (SDGs), created by the UN and adopted in 2015, are the blueprint to achieve a better and more sustainable future for all. Though not legally binding, the SDGs address the global challenges we face, integrating social, economic, and environmental dimensions of development into 17 categories and associated 169 targets. Globally, 193 countries have adopted SGDs, of which 192 countries have submitted NDCs outlining planned climate actions and targets.

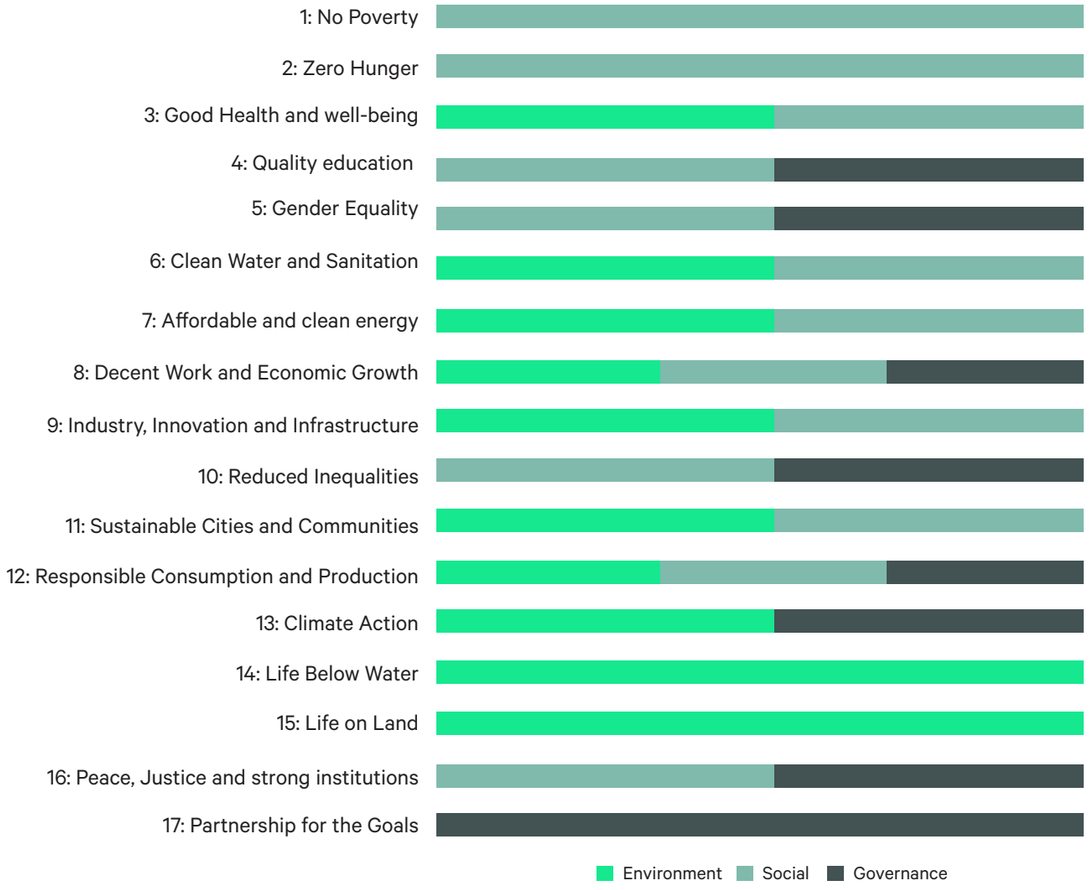
Figure 2.2.1: Sustainable Development Goals

Source: UNDP; CBRE India Research, Q1 2022

Aligning ESG with the SDGs for a sustainable future

The UN's SDGs are increasingly being recognized worldwide as a foundation for responsible investment as the focus shifts more seriously on ESG. **Hence, it is not surprising that almost all 17 SDGs are associated with one or the other element of ESG.**

Figure 2.2.2: Commonalities between SDGs and ESG



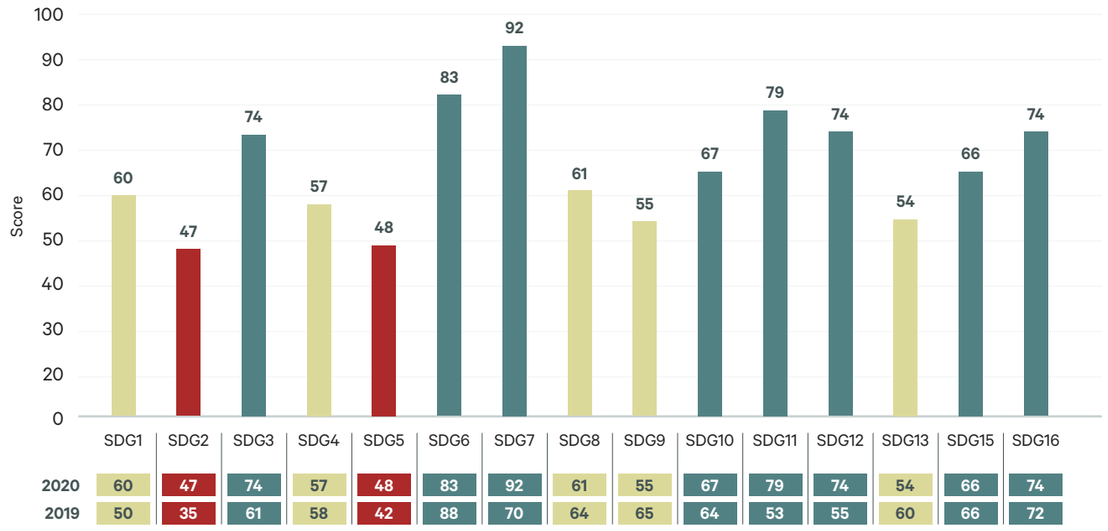
Source: ESG Considerations Beginning To Re-Shape Investment Management, Citibank; CBRE India Research, Q1 2022

Tracking India's progress on SDGs

The Inter-Agency and Expert Group on SDG indicators (IAEG-SDGs), comprised of regional and international agencies as observers, was established to create and implement the Global Indicator Framework (GIF) for tracking the goals of the 2030 Agenda.

Responding to national priorities, India also committed to implementing the SDGs based on the nationally defined indicators. **The National Institution for Transforming India (NITI) Aayog has mapped the SDGs with centrally sponsored programs of different central departments (Refer Annexure – II).** From covering 13 goals in the first edition when the SDG Index and Dashboard was launched, the third edition covers all 17 goals, 70 targets and 115 indicators. Figure 2.2.3 depicts the composite score of India as per the SDG India Index 2020-21. Further, the Ministry of Statistics and Programme Implementation (MoSPI) has developed a National Indicator Framework (NIF) containing 306 parameters accompanied by data sources, that has published multiple reports through 2019-2021. According to the latest progress report, India has shown improvement on most parameters under 17 SDGs in comparison to 2015-16. (For more details on localisation of SDGs and progress in key states, please refer Annexure – II)

Figure 2.2.3 Composite score of India on the SDG India Index 2020-21



Source: SDG India – Index and Dashboard 2020-21, Niti Aayog; CBRE India Research Q1 2022

*Note: The composite score ranges from 0 to 100 and denotes the overall achievement of India in achieving the targets under the goals. A score between 65 to 99 implies that India has progressed forward towards achieving the targets set for 2030; a score between 50 and 64 indicates that there is a scope for significant improvement; whereas a score below 50 implies that such goals require special attention of the policymakers.

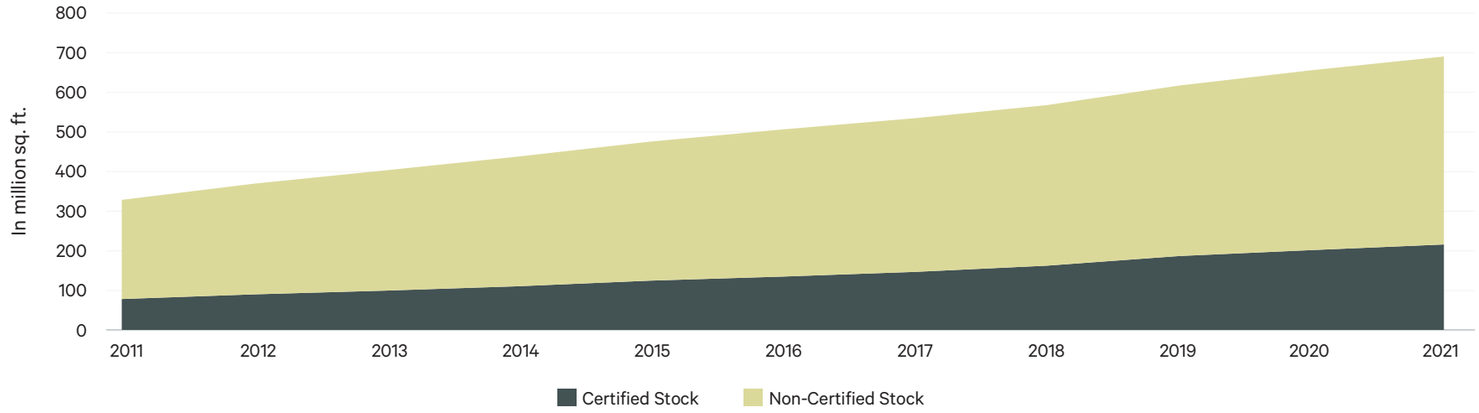
Chapter 3

Analyzing the Certified Built Environment in India

Since buildings form an integral part of any country trying to achieve sustainability goals, **we analyzed our office stock for the top six cities in India** (NCR, Mumbai, Pune, Hyderabad, Bangalore and Chennai) to ascertain the status of green-certified stock in these cities and also whether certified projects have been able to reap any additional benefits for the asset owners. While we understand that ESG is a wider concept that goes beyond just green and sustainability, however for the purpose of standardization and an equitable comparison, we have restricted our analysis to certified green office buildings in this section. The data leveraged for this analysis throughout is as of September 2021.

3.1 Certified green office stock grew by 177% to 212 mn sq. ft. in Q3 2021 from under 80 mn sq. ft. in 2011

Figure 3.1.1: 135 mn sq. ft. of green building stock added since 2011

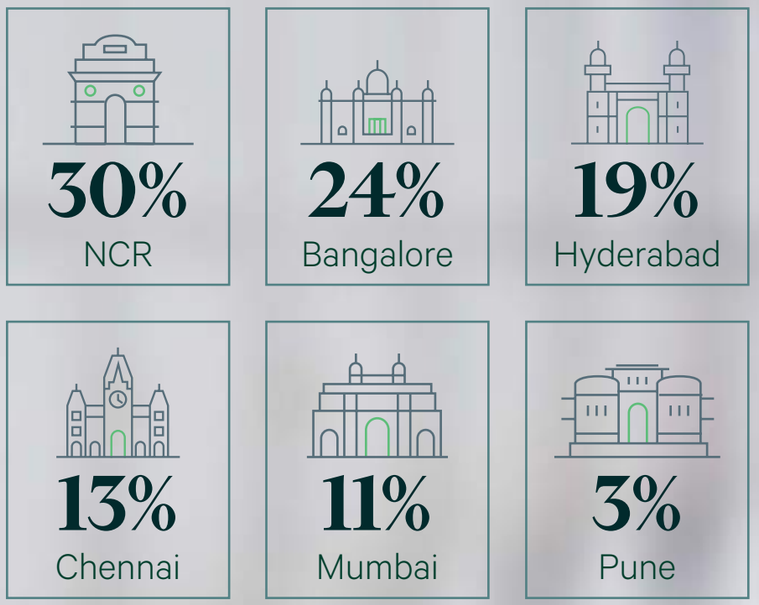


Source: CBRE India Research, Q1 2022

Over the past decade, green real estate assets have grown tremendously, with their share in the total office stock increasing from 24% in 2011 to 31% in 2021. Certified stock has also increased substantially, growing at a CAGR of 10.7%, compared to 7.7% for overall stock, since 2011.

The past five years saw a pronounced push towards green buildings; the period saw a 37% increase in the supply of certified buildings, with the addition of ~ 78 million. sq. ft. of certified stock, when compared with previous five years (2012-2016). This indicates that the Indian real estate sector is becoming more aware of its responsibility towards ESG principles and moving rapidly towards imbibing sustainability in its assets.

Figure 3.1.2: NCR and Bangalore lead the share in total certified stock



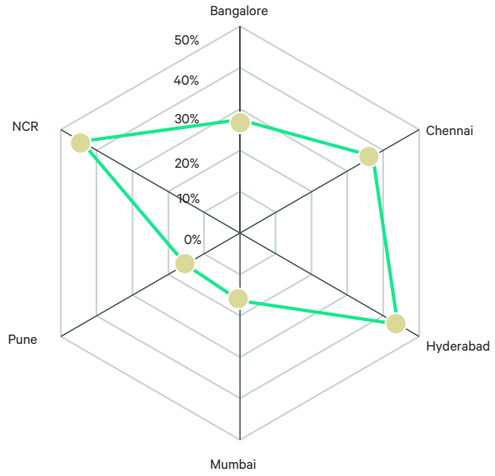
Source: CBRE India Research, Q1 2022

The analysis clearly shows that NCR and Bangalore are ahead of the curve and together account for ~ 54% of the total certified office stock of India.

To promote higher adoption of green certified projects, the state and the central government could incentivize developers and asset owners in the form of monetary and non-monetary benefits such as higher FSI, lower statutory fee and lower incidental taxes, etc. In addition, common platforms such as regular industry events could be organized to promote awareness about the importance of sustainable buildings in the long-term.

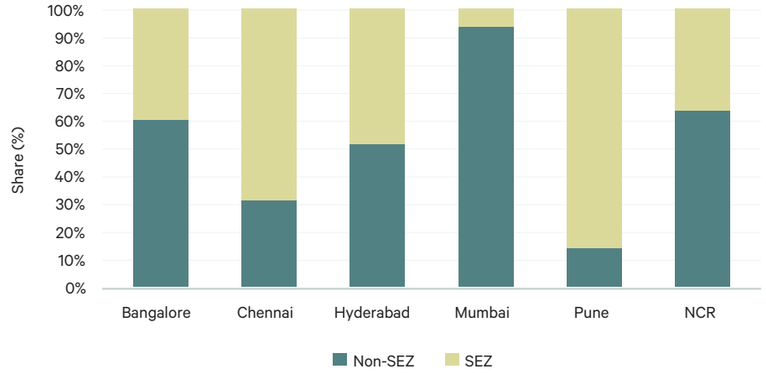
3.2 NCR and Hyderabad lead in terms of certified completed stock

Figure 3.2.1: What percentage of a city's total office stock is green certified?



NCR and Hyderabad lead the fray in terms of the share of certified buildings in their respective total stock, with a 44% share each; followed by Chennai at 37%. Meanwhile, Mumbai (16%) and Pune (15%) have a significant potential to improve their share on this parameter.

Figure 3.2.2: How is the Certified Green Stock Split across development types



Cities such as Bangalore, Mumbai and NCR have a higher proportion of certified stock in their non-SEZ projects whereas Chennai and Pune showed higher share of certified stock in their SEZ projects.

Source: CBRE India Research, Q1 2022

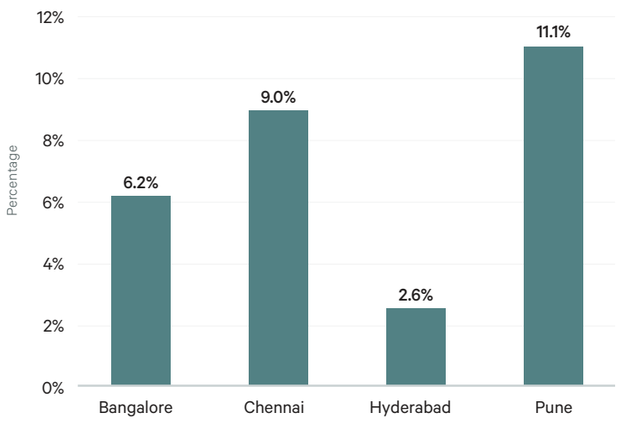
3.3 Certified green projects command rental premium over non-certified projects

CBRE India Research undertook an analysis of the prevailing rents in completed green-certified and non-certified buildings across cities. The study of rents has been done with an assumption - keeping other factors same. While factors such as location, quality of asset and backing of a strong developer or investor, etc. could always lead to a higher rental premium, but today with ESG coming into major play, green certification has also become an important metric for tenant decision making. Hence, examining the rental premium from this lens also becomes equally important.

It is also important to note that while we've seen an increase in certified stock in the past decade, its share in overall leasing has also been increasing in cities such as Bangalore, NCR and Hyderabad. Certified assets have also witnessed relatively lower vacancies as compared to non-certified ones. While this may not be entirely due to sustainability certification, as several other factors such as asset quality, location, amenitization could also be at play; nonetheless, occupier appetite to locate themselves out of such certified assets is definitely strengthening.

Sustainability certifications definitely have a fundamental impact on the characteristics of a building, and thus also influences the asset value, but it could be challenging to accurately pinpoint the sustainability premium. We could though argue whether it is the certification itself or the special features of the building achieved through the certification or location that are the drivers of value creation.

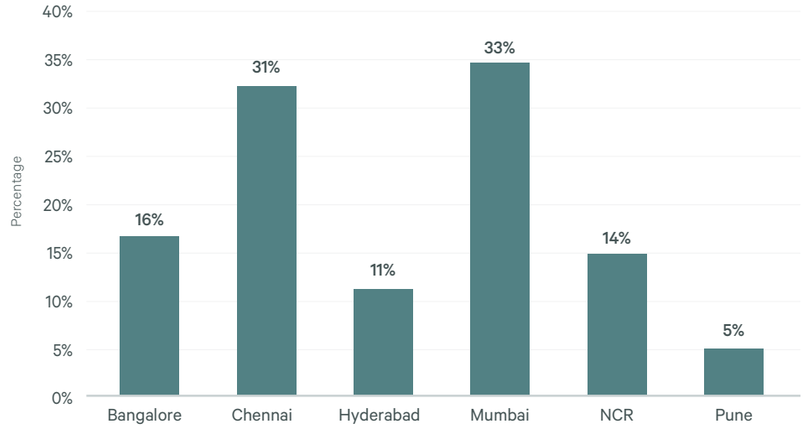
Figure 3.3.1: Premium commanded by certified projects (SEZ category) in various cities*



Source: CBRE India Research, Q1 2022

* As Mumbai has a limited number of certified SEZs, we have excluded the city from this particular analysis. One city that stands out on this parameter is NCR, where the entire SEZ stock is certified green, thus making it a benchmark for other cities.

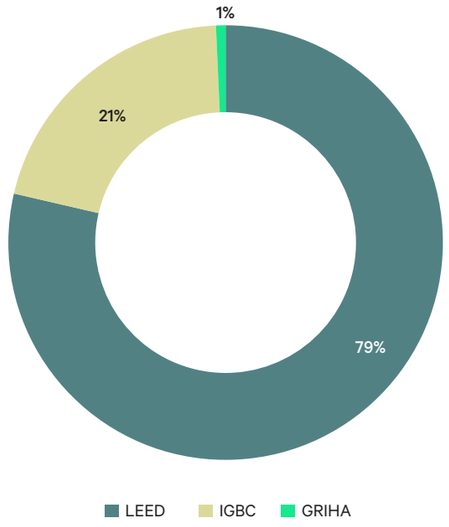
Figure 3.3.2: Premium commanded by certified projects (non- SEZ category) in various cities



Source: CBRE India Research, Q1 2022

3.4 LEED certification dominates total certified stock in India

Figure 3.4.1: Share of various green certifications in total certified stock



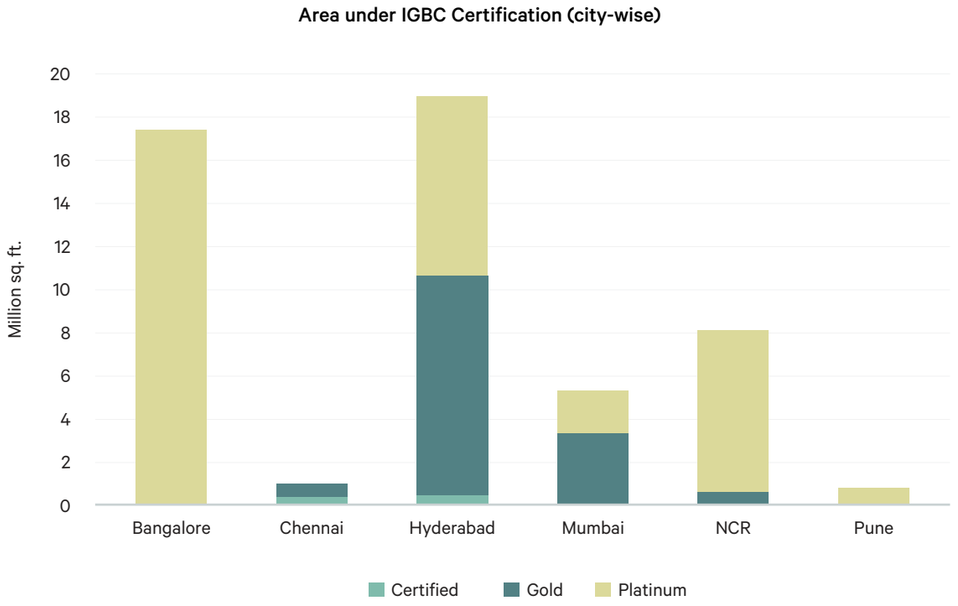
Source: CBRE India Research, Q1 2022

As international occupiers make a beeline for Indian shores, developers are now seeking international green certifications that would be popular among these potential tenants.

Our analysis also showed that several developers have taken certification from both LEED and IGBC to meet international standards.

Figure 3.4.2: City-wise LEED and IGBC certified stock

Source: CBRE India Research, Q1 2022

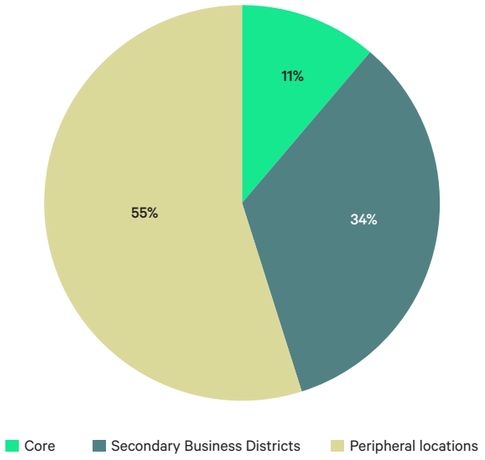


Source: CBRE India Research, Q1 2022

3.5 Certified green stock majorly concentrated in peripheral areas of cities

Indian cities have followed a different development trajectory compared with their international counterparts. Internationally, city centers primarily witness a high concentration of Grade A office spaces while peripheral locations are either residential or home to small, often inconsequential, workspaces. However, in India, city centers are often historical sites dotted with old office stock (sometimes with restrictions on refurbishment or structural changes) and residential / retail spaces, which has caused Grade A office spaces to primarily be concentrated in the peripheral locations. As a result, most of the certified stock can be found in peripheral business districts of Indian cities.

Figure 3.5.1: Concentration of Certified Stock by Business District

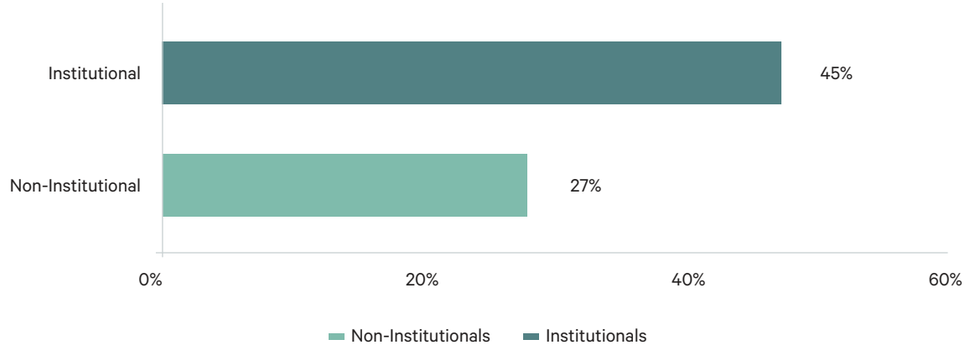


Source: CBRE India Research, Q1 2022

Our analysis also showed that developers continue to believe that constructing a sustainable building is more efficient than refurbishing existing stock. As a result, India is witnessing a trend wherein PBD has the highest share in green buildings, followed by SBD; CBD has the lowest number of green buildings as it is usually a hub of older projects.

3.6 Institutional investors ahead of the curve

Figure 3.6.1: Share of certified stock by stakeholder type

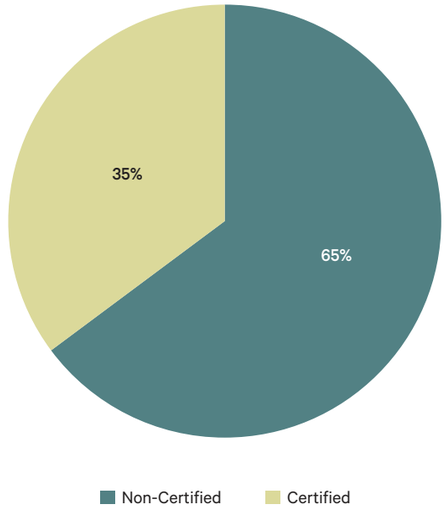


Source: CBRE India Research, Q1 2022

Institutional asset owners are ahead of the curve as even though they own only 22% of the total office stock in India, almost 45% of it is green certified. On the other hand, non-institutional asset owners hold a 78% share (539 million sq. ft.) in the total stock, but only 27% of it is green certified.

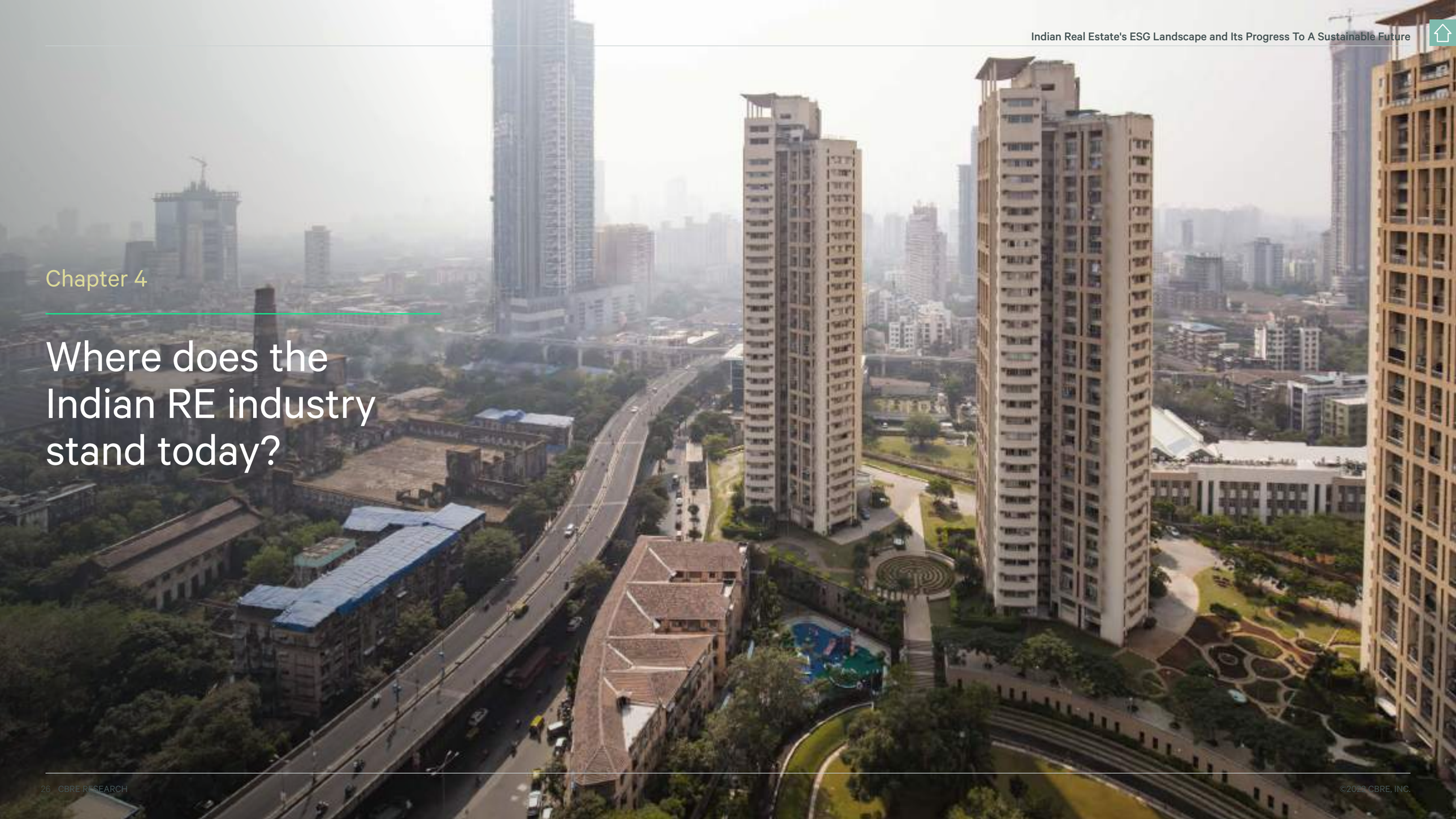
3.7 Certified green stock of REIT assets to rise with evolving policy and regulatory ecosystem

Figure 3.7.1: Share of certified stock in listed REITs in India



Source: CBRE India Research, Q1 2022

With the growing importance of ESG in real estate and an anticipated tightening of the regulatory compliance with respect to ESG reporting, the share of green certified REIT assets is expected to increase in India in the coming years.



Chapter 4

Where does the Indian RE industry stand today?

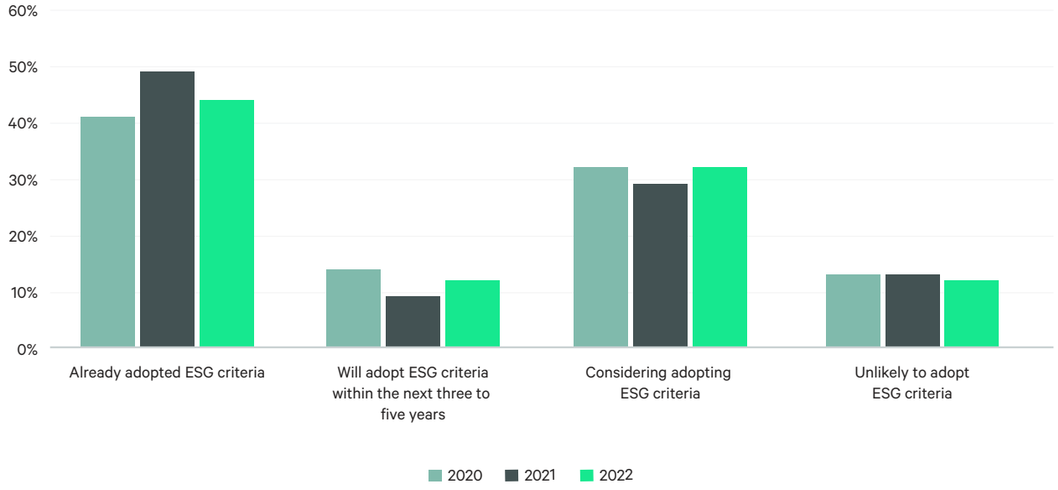
4.1 Top considerations for investors in India and their sustainable initiatives

Investors continue to find imbibing ESG metrics in their strategies beneficial, driven not only by a need to comply with regulatory requirements and environmental protection regulations, but also to preserve future asset value and enhance brand image.

Almost 60% of respondents of CBRE's 2021 Global Investor Intentions Survey (released in May 2021) stated that investors have already adopted ESG criteria as a part of their investment strategies, with the Americas, EMEA and Asia-Pacific displaying a stronger focus on these issues than in previous years.

According to CBRE's Asia Pacific Investors Intentions Survey, released in January 2022, an increasing number of large investors are integrating ESG criteria into their strategies. Some of the approaches include prioritising the purchase of buildings with green certifications and retrofitting existing properties to enhance energy efficiency, water usage and wellness.

Figure 4.1.1: Higher focus from investors towards adopting ESG criteria into their investment strategies



Source: Asia Pacific Investors Intentions Survey, January 2022; CBRE India Research, Q1 2022

Figure 4.1.2: Key considerations for investors

- **Energy-saving / net-zero goals** are the new normal
- The gap between **green rental premium and brown rental discount** is widening
- Effective **risk and cost management** can enhance resilience
- Health & wellness is influencing **building design and operations**
- **Benchmarking and reporting** will be essential
- **Technology** is critical to achieving ESG goals
- **Green construction materials** are available and viable
- **Corporate social responsibility** is key to good governance
- **Regulatory requirements** will continue to tighten

Source: CBRE Global Research, ESG & Real Estate: Top 10 Things Investors Need to Know, October 2021;
CBRE Global Research, Global Investor Intentions Survey 2021, May 2021;
CBRE's Sustainability Starts with Energy Management, August 2021

Figure 4.1.3: Examples of sustainable initiatives of key institutional investors / asset owners in India and globally#

Investor	HQ	AUM (USD bn)*	Sustainable Initiatives
GIC	Singapore	744	GIC achieved its goal of becoming carbon neutral across global operations in its 10 offices in FY 2020-21. It launched its Sustainable Investment Fund (SIF) in July 2020 as a dedicated portfolio to accelerate sustainability integration across all asset classes.
Blackstone	US	731	Blackstone targets to reduce carbon emissions by 15% across all new investments where it controls energy usage.
ADIA	UAE	700	ADIA remains a committed participant in the One Planet Sovereign Wealth Fund Working Group, fostering dialogue and taking action with other global investors to align with the goals of the Paris Agreement.
Brookfield	Canada	650	Brookfield supports the goal of net zero greenhouse gas emissions by 2050.
APG Asset Management	Netherlands	650	APG has reduced the carbon footprint of its equity portfolio by nearly 40% since 2015. It has expressed its ambition to achieve net zero emissions by 2050.
CPPIB	Canada	542	By the end of FY23, CPPIB plans to achieve carbon neutrality for its internal operations in terms of Scope 1 and 2 emissions and business travel emissions. It is committed to net zero emissions across its portfolio and operations for all scopes by 2050.
Hines**	US	165	Hines aims to work towards its aim of net zero operational carbon emissions (for Scope 1 and 2) by 2030 and advocate for net zero carbon emissions (Scopes 1-3) by 2050.
CapitaLand Investment	Singapore	90	The fund unveiled its 2030 Sustainability Master Plan in October 2020 with an aim to reduce its carbon emissions intensity by 78%

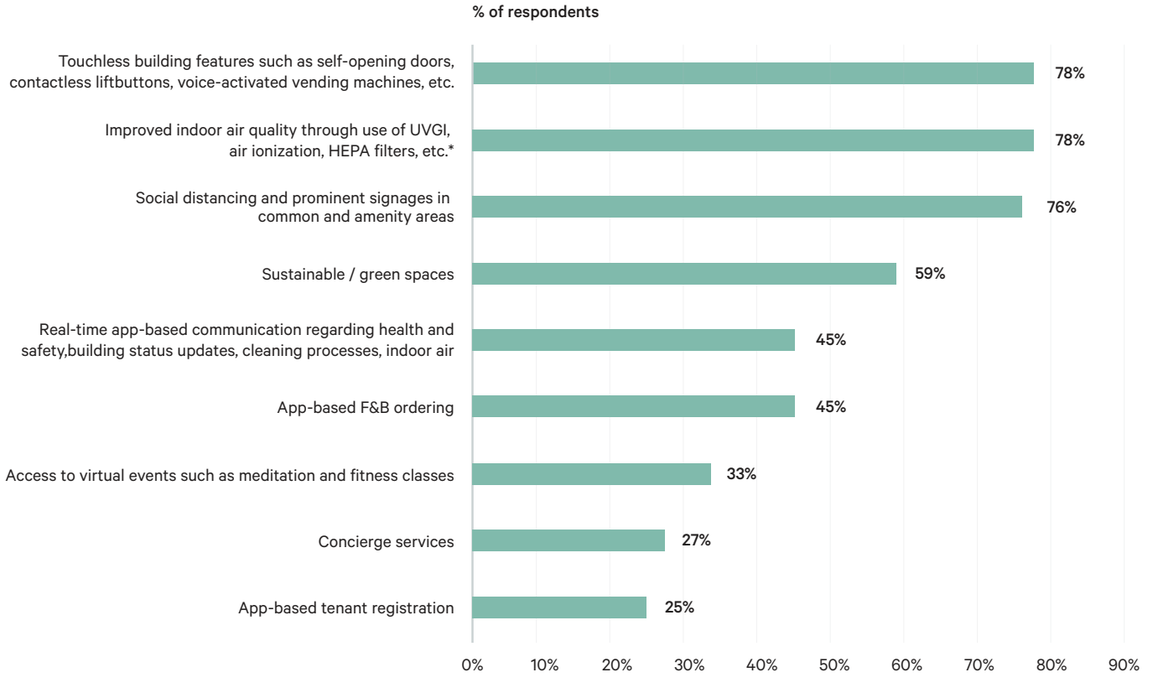
Source: Corporate websites; CBRE India Research, Q1 2022
* As of September 2021
** Hines European Core Fund
# The details have been provided as per the information available in the public domain. CBRE confirms that information contained herein, has been obtained from sources believed to be reliable. While we do not doubt their accuracy, we have not verified them and make no guarantee, warranty or representation about them. Whilst all reasonable care has been taken to ensure that facts stated are accurate and the opinions given are fair. Neither CBRE, nor any director or employee of CBRE shall in any way be responsible for the accuracy of the data obtained from reasonable sources.

4.2 Top considerations for occupiers in India and their sustainable initiatives

Occupiers are the main drivers for the development of a green real estate ecosystem. The demand intensity for sustainable projects will define how quickly we see a transformation in the sector. According to the Energy and Climate Intelligence Unit (ECIU), at least **one-fifth (21%) of the world's 2,000 largest public companies, with sales of USD 14 trillion, have committed to meeting net zero emission targets[6].**

Further, CBRE India's 'The India Future of Office Survey 2021' (December 2021) highlights that factors such as wellness (by way of improving air quality and focusing on social distancing and touchless technologies) and sustainability (preference for green, open spaces) are among the top five expectations that occupiers have from developers as they formulate return to work strategies.

Figure 4.2.1: Asset enhancement initiatives to focus on wellness, user experience and sustainability



Source: The India Future of Office Survey 2021, December 2021; CBRE India Research, Q1 2022

[6] Taking Stock: A Global Assessment of Net zero Targets, Energy & Climate Intelligence Unit, University of Oxford, March 2021

Figure 4.2.2: Key considerations for occupiers

- Evaluating the **climate risk profile** of prospective locations
- Incorporating **sustainability certification** as a site selection criterion
- Creating a **renewable energy** and r**esponsible material sourcing strategy**
- Supporting **easy and sustainable commute**; influencing employee behavior
- Considering health & wellness, community impact and diversity, equity & inclusion aspects in **RE strategies**
- **Improving reporting** of transparency, committing to a living wage and whistle-blower protection
- Conducting **sustainability audits** to identify operational improvements
- Using **flexible spaces** to reduce underutilization and green leases to incentivize sustainability

Source: CBRE Global Research, Purpose-Driven: Corporate Real Estate's Role in the ESG Agenda, September 2021

Figure 4.2.3: Examples of Net zero emission targets of key occupiers in India*

Occupier	Sector	HQ	Net zero carbon target
TCS	Tech	India	2030
Accenture	Consulting	Ireland	2025
IBM	Tech	US	2030
KPMG	Consulting	Netherlands	2030
Amazon	E-commerce	US	2040
Microsoft	Tech	US	2030 (Carbon Negative)
Google	Tech	US	2030
Siemens	Engineering	Germany	2030
L&T	Engineering	India	2040
Reliance Industries	Diversified	India	2035
Cognizant	Tech	US	2030
British Telecom	Telecom	UK	2030 (internal operations); 2040 (for supply chain and customer emissions)
BA Continuum	BFSI	US	2050
American Express	BFSI	US	2035

Source: Corporate websites; CBRE India Research, Q1 2022

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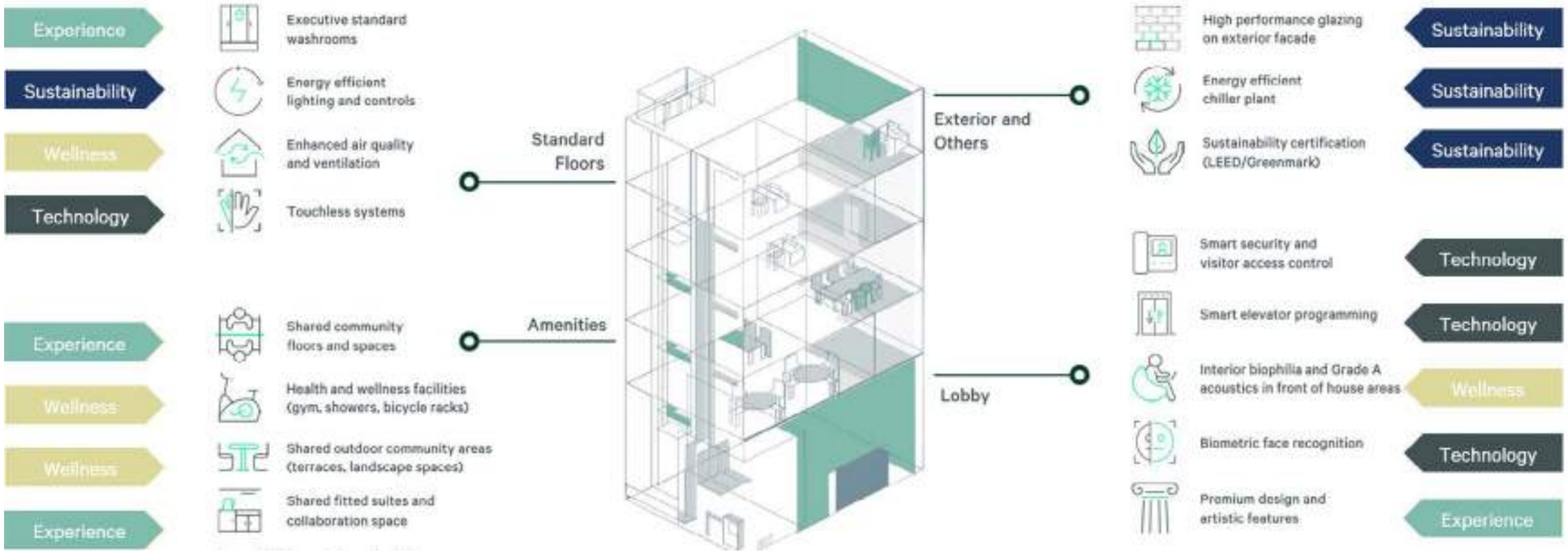
4.3 Top considerations for developers in India and their sustainable initiatives

With ESG now playing a more prominent role in how companies operate, investors and developers across the board are embedding ESG considerations into every stage of the property lifecycle – from due diligence to acquisitions and from leasing to asset management.

Figure 4.3.1: Key considerations for developers



Source: CBRE Global Research, ESG & Real Estate: Top 10 Things Investors Need to Know, October 2021;
CBRE APAC Research, Exploring Office Enhancement Strategies –Pandemic-Era Real Estate Investment, September 2021

While international asset owners / developers such as Blackstone, Brookfield, CapitaLand already have ESG commitments, most leading Indian developers have also pledged compliance with ESG norms. Developers such as Tata Realty, Embassy Group, Shapoorji Pallonji, Mahindra Lifespaces, Hiranandani, Oberoi Realty amongst others are making commitments across asset types and taking concrete steps towards carbon neutrality. Below are some instances of Indian developers and their sustainability initiatives in the recent past.

Figure 4.3.2: Examples of sustainable initiatives by key developers in India*

Developer	Category	RE portfolio (mn. sq. ft.)#	Sustainable Initiatives
DLF	Listed	330	• 100% sites are zero water discharge across rental portfolio since FY2018-19. • Aiming to ensure that atleast 90% of its rental portfolio is Green Building certified. • Aiming to reduce energy intensity in its rental portfolio by 15% using FY 2019-20 as baseline.
Godrej Properties	Listed	187	A water-positive and carbon-neutral company (across Scope 1 and 2 GHG emissions), it is working towards minimizing its waste-to-landfill footprint proactively across its operations.
Prestige Estate	Listed	144	The Group continues to work on social impact initiatives such as rejuvenation of Ulsoor Lake, Bangalore: spending on healthcare and education.
Macrotech	Listed	81	• Achieved 100% waste water recycling. • Committed to net carbon neutral by 2035. • Plans to formalize decarbonization with SBTi by FY2022-23. Initiated Green Certification of entire portfolio. • All upcoming developments are being being provided EV infrastructure.
Sobha Ltd	Listed	61	Reduced energy consumption by 20-30% and water consumption by 30-50% in last one decade.

Source: Developers corporate websites; CBRE India Research, Q1 2022

As of September 2021

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Chapter 5

Policy ecosystem in India to embrace ESG and SDG goals

5.1 India's policy timeline with respect to sustainability reporting

2008

In 2008, the **National Action Plan on Climate Change (NAPCC) was formulated** with a vision to outline the broad policy framework for mitigating the impact of climate change.

2011

The **Climate Change Finance Unit (CCFU) was formed** in 2011 within the Ministry of Finance as a coordinating agency for the various institutions responsible for green finance in India.

2012

The Securities and Exchange Board of India (SEBI) made it **mandatory for the top 100 listed entities based on market capitalisation** at BSE and NSE **to publish annual business responsibility report (ABRR).**

2013

The Ministry of Corporate Affairs imposed **mandatory reporting of the progress on Corporate Social Responsibilities** (CSR) under the Companies Act, 2013.

2017

In May 2017, **SEBI issued guidelines for green bond issuance** specifying the disclosure requirements.

In October 2017, the Report of the Committee on Corporate Governance proposed that the board of directors shall meet at least once a year to specifically discuss strategy, budgets, board evaluation, risk management, ESG and succession planning.

2018

The **NITI Aayog designed and developed the SDG India Index** which measures the progress in the journey of meeting the global goals and targets at a national and state level. The index covers all 17 goals, 70 targets and 115 indicators.

2021

In 2021, SEBI adopted Business Responsibility and Sustainability Reporting against the backdrop of ESG (refer Annexure – III). This is an update on the previously used Annual Business Responsibility Reports (ABRR) which was a part of the disclosure requirements of the 'National Voluntary Guidelines on Social, Environmental and Economic Responsibilities of Business' (NVGs).

Source: Green Finance in India_Progress and Challenges_RBI Bulletin_Jan 2021; CBRE India Research, Q1 2022

Certifications and reporting standards (Annexure IV)

5.2 Benefits and policy incentives for certified green buildings

The central and state governments in India are offering various incentives to promote green buildings under different rating systems. The Government of India (GoI) offers 30% of the installation cost of the rooftop solar panels as subsidy to the institutional, residential and social sectors in most states. In addition, beneficiaries can avail a generation-based incentive wherein they can receive INR 2 per unit of generation, if the generation exceeds 1100kWh- 1500kWh per year. Further, the excess power can be sold at a tariff set by the government.

Table 5.2.1: Sustainability incentives offered by governments across the country

	IGBC	GRIHA
Central government	• **Ministry of Environment, Forests, and Climate Change** (MoEFCC): Fast-track environmental clearance for projects pre-certified or provisionally certified by the IGBC.	• **MoEFCC**: Fast-track environmental clearance for projects which are pre-certified or provisionally certified by GRIHA. • **SUNREF* India** (affordable green housing): Financial incentives under SUNREF India would be provided to GRIHA-certified 4- and 5-star projects. (For homebuyers, PLIs, housing project developers). • Ministry of Urban Development notification for local authorities: Incentivize and provide 1 – 5% extra ground coverage and FAR for projects with more than 3,000 sqm. plot size on the basis of GRIHA evaluation.
Delhi	NA	• **MPD 2021:** 1 – 5% extra ground coverage and FAR; to be provided by local bodies based on the rating criteria prescribed by GRIHA for green buildings.
Uttar Pradesh	• **Housing and Urban Planning Department**, Government of Uttar Pradesh: Additional 5% FAR free of charge for projects rated gold or above by the IGBC. • **Greater Noida Industrial Development Authority** (GNIDA): Additional 5% FAR free of charge for projects rated gold or above by the IGBC.	• **Housing and Urban Planning Department,** Government of Uttar Pradesh: Additional 5% FAR free of charge for projects with 4- or 5-star GRIHA rating. • **NOIDA and Greater NOIDA**: Additional 5% FAR free of charge for projects of plots size 5,000 sqm and above with a 4- or 5-star GRIHA rating.
Haryana	• **Town & Country Planning Department,** Government of Haryana: Additional FAR of 9%, 12% and 15% for green buildings rated Silver, Gold and Platinum by the IGBC, respectively.	• **The Haryana Building Code 2017,** Government of Haryana: GRIHA-rated projects can have additional FAR of up to 15%. • **Government of Haryana:** 3%, 6%, 9%, 12% and 15% additional FAR for all buildings (except plotted residential developments) with 1-, 2-, 3-, 4- and 5-star GRIHA rating, respectively.

	IGBC	GRIHA
Maharashtra	• **The Department of Urban Development:** Additional FAR of 3%, 5% and 7% for green buildings rated silver, gold and platinum by the IGBC, respectively. • **Pune Municipal Corporation** (PMC) and **Pune Metropolitan Region Development Authority** (PMRDA): Additional FAR of 3%, 5% and 7% for green buildings rated Silver, Gold and Platinum by the IGBC, respectively.	• **The Department of Urban Development** (under Unified Development Control and Promotion Regulations): Additional FSI of 3% for 3-star, 5% for 4-star and 7% for 5-star rated buildings on submission of Green Building Certificate from GRIHA. • **Government of Maharashtra:** Minimum 3-star GRIHA rating mandatory for all buildings belonging to government, semi-government and local bodies as well as public sector undertakings.
	• **Public Works Department** (PWD), Government of Maharashtra: All new government buildings in Maharashtra or renovation of existing buildings to be carried out as per the suitable IGBC Green Building Rating system or GRIHA rating system. • The state also has a Green Building Policy.	
Andhra Pradesh	• **Industries & Commerce Department:** 25% subsidy on total fixed capital investment of the project (excluding cost of land, land development, preliminary and preoperative expenses, and consultancy fees) for buildings which obtain a green rating from the IGBC (applicable for MSMEs and large industries). • **Municipal Administration and Urban Development Department:** 20% reduction on permit fees; additionally, if the property is sold within 3 years, one-time reduction of 20% on duty on Transfer of Property (Surcharge on Stamp Duty) on the submission of Occupancy Certificate issued by the local authority.	• **Industrial Development Policy 2015 – 2020** by the Government of Andhra Pradesh: GRIHA Incentives: The government will provide 25% subsidy of up to INR 50 crore on total fixed capital investment of the project (excluding cost of land, land development, preliminary and pre-operative expenses, and consultancy fees) for industries which obtain green ratings from GRIHA.
Telangana	• While the government is in the process of bringing a green building code for new as well as existing warehouses and data centres, there are no current policies in the state that incentivize green buildings under any rating systems.	
Karnataka	• Though Karnataka ranks at the top of The State Energy Efficiency Index 2020 [developed by the Bureau of Energy Efficiency (BEE) and Alliance for an Energy Efficient Economy (AEEE)] which includes ECBC- compliant construction as one its parameters, the state does not have specific policies to incentivize green buildings.	
Tamil Nadu	• **Industries Department,** Government of Tamil Nadu, (TN Industrial Policy 2021): 25% subsidy on the cost of setting up environmental protection infrastructure, (with a limit of INR 1 crore) for industrial projects that obtain IGBC green certification. The incentive will be available for projects establishing or expanding industrial units, industrial parks, R&D projects, warehousing, and logistics parks.	• **Industrial policy:** 25% subsidy on the cost of setting up environmental protection infrastructure for industrial projects with a GRIHA rating.
West Bengal	• **Department of Municipal Affairs,** Kolkata Municipal Corporation: Additional 10% FAR for projects which are pre-certified/ provisionally certified as gold or above by the IGBC. • **New Kolkata Development Authority:** Additional 10% FAR for projects pre-certified/ provisionally certified as gold or above by IGBC.	• **Department of Municipal Affairs,** Kolkata Municipal Corporation: 10% additional FAR for green buildings as per the rules notified by Kolkata Municipal Corporation. Sanction of building plans and grant of additional FAR to be allowed on the basis of pre-certification by the agencies.

*SUNREF India – For promoting affordable green housing, in 2017, the National Housing Bank (NHB) and the French Development Agency (AFD) signed a Credit Facility Agreement for a non-sovereign loan of EUR100M, and a Grant Facility Agreement of EUR12M financed by the European Union's Asia Investment Facility (AIF), in favour of affordable green housing.

Source: IGBC, GRIHA India, Various state government policies, CBRE India Research Q1 2022

5.3 Sustainable Finance Collaborative

Before COVID-19, it was estimated that India needs over USD 2.6 trillion to meet the SDG targets by 2030. In this regard, India's Department of Economic Affairs (DEA) and Ministry of Finance (MoF), in collaboration with the United Nations Development Programme (UNDP) India, launched the Sustainable Finance Collaborative (SFC) on 26 August 2020.

In September 2021, amid the growing global focus on the economic impact of ESG, the government set up a key task force under the economic affairs secretary to lay out a concrete roadmap to bolster India's sustainable finance architecture. As a part of this initiative, a survey is being undertaken with the help of the UNDP (India) to assess climate and ESG resilience in India's financial sector.

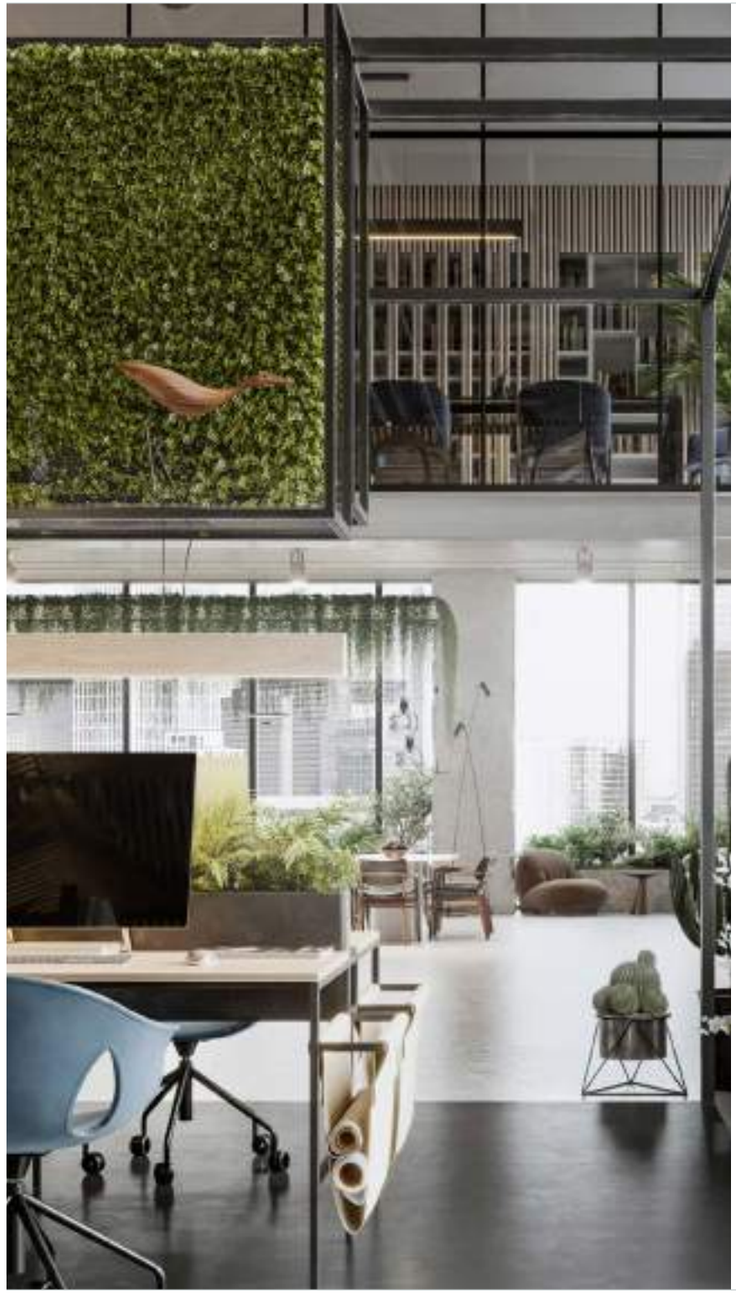
5.4 Energy Conservation Building Code (ECBC)

Since building and construction accounts for over 35% of the energy consumption in India, there is a huge potential of energy conservation in this field, as over 200 million sq. ft. of only office space is expected to enter the market by 2025. Recognizing this potential and to bring energy efficiency in commercial buildings to the mainstream, the Government of India, through the Bureau of Energy Efficiency (BEE), launched the Energy Conservation Building Code (ECBC) in 2007 and has developed a rating for existing projects. Until December 2016, 10 states had made ECBC mandatory for commercial buildings through a notification in their state gazettes while another 10 states were in advanced stages of making it mandatory[7].

7 Rolling Out Energy Conservation Building Code (ECBC), UNDP GEF and BEE

Chapter 6

Understanding global sustainability reporting standards and best practices



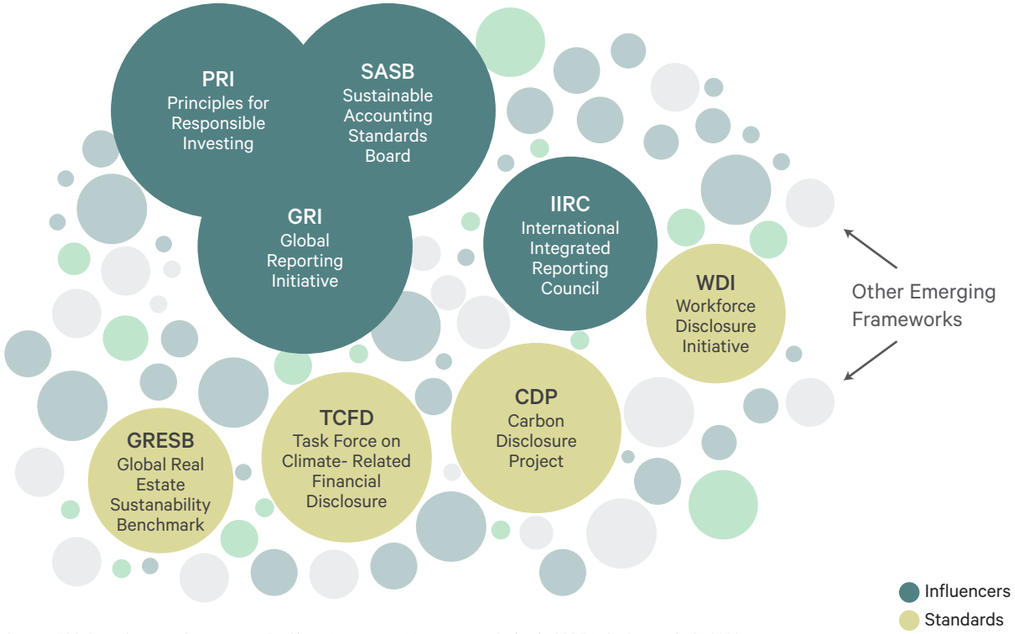
6.1 Global best practices on policies for reporting standards and frameworks

Across the world's 50 largest economies, **there are now over 730 hard and soft law policy revisions across the 500 policy instruments**[8] that support investors in their consideration of long-term value drivers, including the ESG factors.

Voluntary Global Frameworks Gaining Traction

A number of NGOs globally are encouraging asset owners, asset managers and corporates to voluntarily adopt ESG standards, the largest of which are UN PRI, SASB and the GRI. Further, **there is an evolving regulatory framework anchored by the EU Sustainable Finance Disclosure Regulation (SFDR) and UK Sustainability Disclosure Requirements (SDR) alongside associated taxonomy legislation** (which essentially defines investments that can be environmentally sustainable). The European Commission is eventually expected to endorse industry-appropriate SFDR regulatory technical standards that will apply from July 2022.

Figure 6.1.1: Standards and influencers in the voluntary reporting framework ecosystem



Source: ESG Considerations Beginning to Re-Shape Investment Management, Citibank; CBRE India Research, Q1 2022

8. ESG Considerations Beginning to Re-Shape Investment Management, Citibank

6.1.1. United Nations' Principles for Responsible Investing (UN PRI)

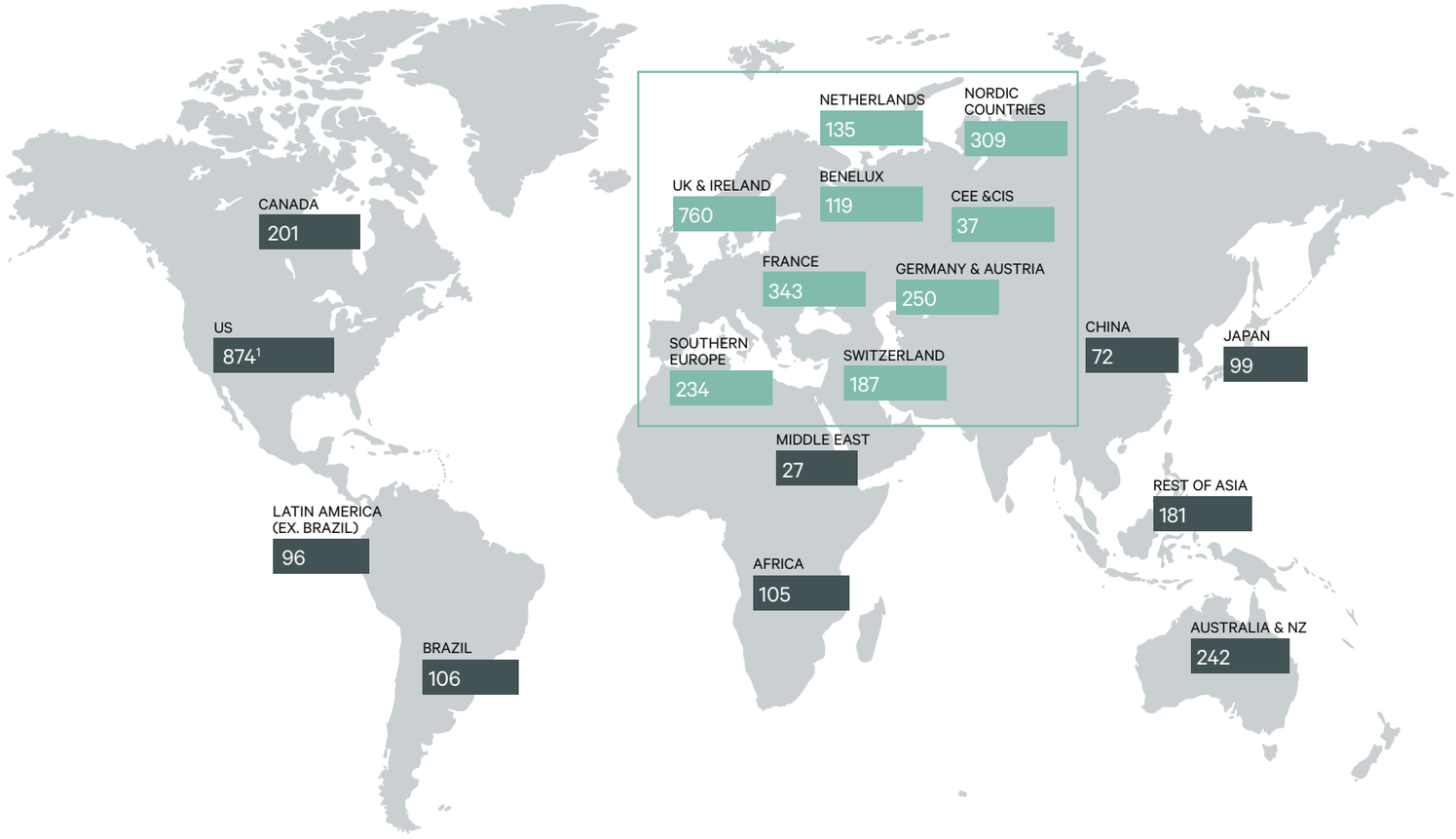
Headquartered in the UK, the PRI is an investor initiative in partnership with UNEP Finance Initiative and UN Global Compact. It works to understand the investment implications of the ESG factors. It also supports its signatories in incorporating these factors into their investment and ownership decisions.

The six principles of the PRI initiative are a voluntary set of investment guidelines that offer a menu of possible actions for incorporating ESG tenets into investment practice.

Figure 6.1.1(a): Six principles of responsible investment

PRINCIPLE #1	Incorporate ESG issues into investment analysis and decision-making processes.
PRINCIPLE #2	Be active owners and incorporate ESG issues into ownership policies and practices.
PRINCIPLE #3	Seek appropriate disclosure on ESG issues by the entities in which companies that are members / signatories of PRI Invests.
PRINCIPLE #4	Promote acceptance and implementation of the principles within the investment industry.
PRINCIPLE #5	Work together to enhance the agency's effectiveness in implementing these principles.
PRINCIPLE #6	Report on activities and progress towards implementing the principles.

Figure 6.1.1(b): PRI: A widely adopted reporting standard globally with 4,375 signatories as of September 2021



Source: PRI Update, Q4 2021, PRI; CBRE India Research, Q1 2022

6.1.2. Taskforce on Climate-related Financial Disclosures (TCFD)

The TCFD was established by the Financial Stability Board (FSB) in December 2015, with an aim to develop recommendations for more effective voluntary climate-related disclosures that could promote more informed investment, credit and insurance underwriting decisions. These decisions could in turn enable stakeholders to understand the concentration of carbon-related assets in the financial sector and the financial system's exposures to climate-related risks.

Drafted in 2017, the recommendations on climate-related financial disclosures are structured around key areas that represent core elements of how an organization operates.

Figure 6.1.2: Core elements of recommended climate-related financial disclosures

Governance	Strategy	Risk Management	Metrics & Targets
Disclose the company's governance around climate-related risks and opportunities.	Disclose the actual and potential impacts of climate-related risks and opportunities on the company's businesses, strategy, and financial planning where such information is material.	Disclose how the company identifies, assesses, and manages climate-related risks.	Disclose the metrics and targets used to assess and manage relevant climate-related risks and opportunities where such information is material.

Source: TCFD 2021 Status Report; CBRE Research, Q1 2022

As part of the taskforce's annual financial and reporting processes, the TCFD's recommendations endeavor to encourage organizations to evaluate and disclose climate-related risks and opportunities that are most pertinent to business activities.

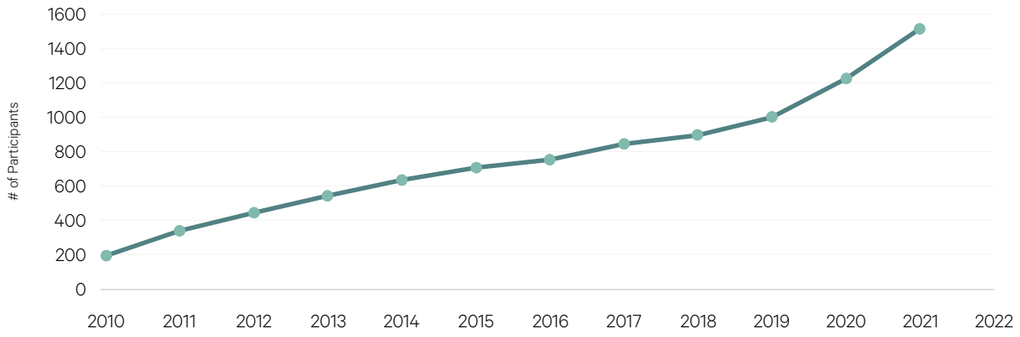
6.1.3. Global Real Estate Sustainability Benchmarks (GRESB)

Incorporated in 2009, GRESB is the global ESG benchmark for financial markets and consists of an independent foundation and a benefit corporation. It collects, validates, scores and benchmarks ESG data to provide business intelligence and regulatory reporting solutions to investors, asset managers and the wider industry. GRESB generates the following ESG benchmarks for the industry:

- Real Estate Benchmark
- Real Estate Development Benchmark
- Infrastructure Fund Benchmark
- Infrastructure Asset Benchmark

In 2021, participants of the Real Estate Benchmark grew by 24% y-o-y to 1,520 from 1,229 in 2020, demonstrating the growing interest among stakeholders. This is the highest percentage increase since 2012 and a new peak in terms of the number of participants. The GRESB benchmark now covers USD5.7 trillion of AUM (up from USD4.8 trillion in 2020) in real estate and infrastructure value including over 117,000 geo-coded assets that are reported at the asset level.

Figure: 6.1.3 Number of participants across the globe



Source: GRESB; CBRE Research Q1 2022

With the available data on ESG, GRESB Real Estate Assessment produces two benchmarks:

+ **The GRESB Real Estate Benchmark, which considers management and performance factors**
+ **The GRESB Development Benchmark, which considers management and development factors**

The real estate assessment involves three parts:

THE MANAGEMENT ASSESSMENT

Measures an entity's strategy and leadership, policies and processes, risk management, and its stakeholder engagement approach.

THE PERFORMANCE ASSESSMENT

Measures an entity's asset portfolio performance drawn from information collected at the asset and portfolio levels.

THE DEVELOPMENT ASSESSMENT

Measures an entity's efforts to address ESG issues during a building's design, construction, and renovation phases.

Chapter 7

Successful international case studies

7.1 Singapore

Across the globe, different countries, states and cities have implemented various policy measures that align with ESG-related goals. One such example is the densely populated Singapore which has managed to be one of the most carbon-efficient economies of the world.

Table 6.1 Country-level case study

SINGAPORE'S GREEN BUILDINGS

Targets

- The country targets to have 80% of its built environment 'green' by 2030
- Overall Net Zero target – as soon as viable in the second-half of the century

Programmes

(specific to construction industry)

- Green Mark Incentive Scheme'
- Super Low Energy programme
- Building Retrofit Energy Efficiency Financing Scheme
- Skyrise Greenery Incentive Scheme
- Quieter Construction Innovation Fund

Key ideas

- All buildings are required to meet a minimum environmental sustainability standard
- Circularity through recycling in construction
- Use of sustainable materials and technologies to reduce emissions, minimize carbon footprint and reduce waste
- Creating an enabling environment through policies

Source: International Good Practice Principles for Sustainable Infrastructure, UN; Monetary Authority of Singapore; CBRE India Research Q1 2022

Along with the requirement of meeting a minimum environmental sustainability standard, these schemes are geared towards addressing a range of environmental, social, and economic considerations. The success of Singapore's green building story can definitely be viewed as a model for other cities of the world.

On individual project level, while quantitative value of implementation of all ESG parameters is not easy to determine, the benefits that the "environmental" aspect brings have been documented for a lot of projects. Here we present some case studies to show the measures implemented and the benefits derived:

Other policies: Green finance action plan:

Strengthen financial sector resilience to environmental risks:

- Develop market and solutions for a sustainable economy
- Harness technology to enable trusted and efficient sustainable finance flows
- Build knowledge and capabilities in sustainable finance

Guidelines on environmental risk management:

- Green and Sustainable Bond and Loan Grant Scheme
- USD 2 billion MAS (Monetary Authority of Singapore) Green Investment Programme
- SGD 1.7 million Global FinTech Innovation Challenge
- Asia-focused Climate Research and Training
- Sustainable Finance Verification, Review and Rating Services

7.2 Netherlands

THE EDGE

YEAR OF COMPLETION
2014

AREA (SQ FT)
430,556

LOCATION
Amsterdam, Netherlands

CERTIFICATIONS
BREEAM NL New Construction (98.3% Score - Outstanding)

DESIGN ELEMENT

- Every workspace is within 7 meters (23 feet) of a window.
- In the building, a new LED lighting system has been co-developed with Philips. The Light over Ethernet (LoE) LED system is 100% IP based and powered by Ethernet. This makes the system centrally controllable through a computer. It also helps in implementing changes quickly and conveniently, without opening suspended ceilings. Each luminaire is also equipped with a 'coded-light' system for highly precise localization via smartphone in comparison to Wi-Fi or beacon systems.
- Anonymous remote tracking of occupancy in the building.
- 30,000 sensors continuously measure occupancy, movement, lighting levels, humidity, and temperature and are integrated with the project's Ethernet-powered LED lighting system, allowing it to automatically adjust energy use.
- Rainwater is collected on the roof and harvested to flush toilets and irrigate the green terraces in the atrium and other garden areas surrounding the building.
- Two 129 m deep wells reach down to an aquifer, allowing thermal energy differentials to be stored deep underground.

Source: The Edge, Amsterdam, BREEAM; CBRE India Research Q1 2022

EFFICIENCY BENEFIT

- The project consumes around 50% energy for cooling in comparison to a typical Dutch office building, as the LED lighting system used reduces the energy requirement by about 50% compared to conventional lighting.
- Heating, cooling, fresh air, and lighting are fully integrated with the Internet of Things (IoT) and controlled by a Building Management System (BMS) per 200 sq. ft. based on occupancy i.e. with zero occupancy, there is next-to-zero energy use.
- Prediction of lunchtime occupancy based on real-time historical data and traffic and weather information to avoid food wastage.
- Unused rooms are skipped for cleaning.
- Over a period of 10 years, the building is estimated to save 42 million kilograms of CO_2 as compared to a typical office building.

7.3 USA

WILLIS TOWER

YEAR OF COMPLETION
1969
(Refurbishment Completed in 2019)

AREA (SQ FT)
3,800,000

LOCATION
Chicago, USA

CERTIFICATIONS
LEED v4.1 Recertification (80 points - Platinum)

DESIGN ELEMENT

- Renovation of the building's LED antenna lighting system.
- Installation of high-efficiency lighting systems with improved controls to reduce energy consumption.
- Indoor bicycle parking, showers, changing rooms, complimentary loaner bikes, helmets, and locks provided.
- Along with the new building automation management system, improvement to the building's HVAC exhaust and return fan dampers enabled better control of temperatures in the building and reduced energy usage.
- Introduction of all new air media, fan gearboxes and fan blades, along with the installation of new variable frequency drives to all four of the building's cooling towers.
- Enhanced integrity of electrical infrastructure through replacement of the building's automatic transfer switches.
- Installed high-efficiency lighting systems with improved controls to reduce the building's energy consumption.
- Retrofitted building restroom lighting with low energy ballasts, bulbs, and occupancy sensors.
- Installed window-shading to reduce cooling needs during warm months and heat loss through the windows during colder months.
- Improved indoor air quality and reduced waste by implementing "green" cleaning program.
- Testing its ability to absorb storm water and reduce urban heat island effect; the building installed a mock-up of the world's tallest "green roof" on the roof of the 90th floor.

Source: USGBC; Willis Tower; CBRE India Research Q1 2022

EFFICIENCY BENEFIT

- In the last 20 years, it has reduced **annual electricity consumption by 34%.**
- Tenants **recycled over 2,103 tons of paper, aluminum, glass, plastic, and construction waste annually,** as part of the building's recycling program.
- Increased building recycling rate from an average of 10 tons per month in 2007 to more than 56 tons per month in 2009.
- Annual saving of more than 10 million gallons of water.
- **16 tons of electronics recycled** in over one year.
- The modernization of HVAC system helped supply the chillers with lower temperature condensing water, resulting in an around 20% saving on the electric energy consumed by the cooling towers.
- Tenant bike riding programs.
- **Tenants driving hybrid vehicles** incentivized through parking discounts.
- Low-flow, high-efficiency units installed on more than 450 sinks, 650 toilets & urinals, **saving around 11 million gallons of water consumption annually** and reducing the building's water usage by 30%.
- Window replacement to improve insulation.
- Enhanced lighting systems and controls, higher efficiency motors and management practices Improved energy efficiency.
- **Use of harmful chemicals reduced** by implementing green cleaning and maintenance programs.
- Implemented new staffing procedure to reduce number of lights on at night for energy savings.

7.4 India

SUZLON ONE EARTH

YEAR OF COMPLETION
2009

AREA (SQ FT)
762,785

LOCATION
Pune, India

CERTIFICATIONS
Platinum LEED India NC and GRIHA 5 - star certified building

DESIGN ELEMENT

- High-performance glazing used. U value – 0.32 Btu/hr.ft2.°F; Solar Factor – 0.26 which is less than 0.3 prescribed by ECBC for moderate climate zones.
- Dimmable ballasts in conjunction with daylight sensors are used throughout the open office space.
- Installed capacity of solar energy: 13.44 KW.
- Installed capacity of wind energy: 18 windmills of 4.75 KW each.
- Use of Siporex fly-ash blocks for better insulation.
- General lighting at 350 Lux.
- The brightness of artificial lights can be increased and decreased from 0% to 100% depending on the adequacy of available daylight to meet the 350lux requirement.
- Task lights have an intelligent built-in occupancy sensor in conjunction with a continuous dimmer.
- Lighting of individual offices is controlled basis the daylight and occupancy sensors.
- 90% of the luminaries in the office space have dimmable ballasts and are either connected to 'Occulux' sensors, daylight sensors or 'Occuswitch' sensors.
- Lighting Power Density (LPD) of the whole building area method is 0.8 W/ sq. ft.
- Flexible variable refrigerant volume system to maintain desired temperature.
- Pre-cooling and heat recovery at Treated Fresh Air (TFAs): A sensible heat exchanger is used as pre-cooler to sink the temperature of incoming air (say 38.4°C DBT approx.) to approx.27.66°C.
- Use of direct-indirect evaporative cooling.
- Dust screens provided around construction areas to prevent air pollution.
- Soil erosion control measures adopted on site.
- The project adopted passive architectural design strategies:
  - The façade of the building faces north, south, north-west, and south-east.
  - External louvers shades 100% surface area on the first and second floor.
  - Partly self-shading blocks.
- Small terraces created in all blocks to promote interaction with external environment.

Source: Suzlon; CBRE India Research Q1 2022

EFFICIENCY BENEFIT

- The campus **saves 65% of energy** by utilizing LED open-air lighting systems.
- 8% of annual energy is produced by photovoltaic boards and windmills with an absolute gradual expense of about 11%.
- **92% of the energy consumed is through sustainable energy modes,** making it a Zero Energy Project.
- **65% reduction in building water consumption** by use of low-flow fixtures.
- 55% water recycled and reused within the complex
- **50% reduction in landscape water consumption** by planting native species of trees and shrubs and by using efficient irrigation systems.
- 250,000 units of electricity generated annually.
- **37% reduction in quantity of structural concrete** by using Post Tension slabs.
- **50% reduction in quantity of structural steel** by using Post Tension slabs.

Chapter 8

The way forward – What to expect in the future?

In Asia and Africa, the total building stock is expected to double by 2050. In addition, the material used is expected to more than double globally by 2060, with building and construction to account for a nearly one-third share[9] . Hence, it will be important for the building and construction sectors to inculcate ESG practices throughout the lifecycle of the projects for a sustainable future.

8.1 Regulatory requirements will continue to tighten

The number of ESG regulations affecting property owners have soared over the past decade, as governments and industry bodies increasingly mandate green reporting standards.

Internationally, the UK's TCFD, a new international standard for reporting climate risks, will be mandatory for all fund managers by 2025. Eight jurisdictions, including the EU, have already adopted the TCFD standards.

In India, SEBI in 2021 issued new sustainability related reporting requirements **'Business Responsibility and Sustainability Report' (BRSR) – for the top 1,000 listed companies by market capitalization.** More such regulations are expected to be passed over time as we proceed from COP21 to COP26 and aim to achieve global sustainability targets.

As the trend towards tighter green compliance accelerates, investors and developers must ensure that they have the expertise to keep pace with a rapidly evolving regulatory environment. Developers and investors who align their working practices with ESG requirements on a pre-emptive basis are expected to stay ahead of the curve and are likely to face minimum hindrances in business operations from a regulatory aspect.

9. 2021 Global Status Report for Building and Construction, Global Alliance of Buildings and Construction, and UN Environment Programme, October 2021

8.2 Benchmarking and reporting will be essential

As pressure on the corporate world to contribute to ESG goals increases, the measurement of that contribution has become more pressing to ensure that everyone is 'doing their bit' and 'playing by the same rules'. As a result, sustainability reporting standards and benchmarks are anticipated to gather steam.

As investors attempt to monitor and evaluate asset-level ESG performance, the use of benchmarking tools such as GRESB will become increasingly prominent.

In India, besides the BRSR framework, there are very few mandatory ESG disclosure requirements for corporates. Currently, ESG reporting remains a focus area for large-listed companies, but it is important that smaller/mid-sized companies start assessing their ESG risks and opportunities.

As investments start to flow in on the basis of ESG compliance/ratings, lenders/investors will rely on reliable information to make informed decisions. This is why reporting and disclosures will gain significant prominence, by all stakeholders, including governments. For instance, the Reserve Bank of India formed a Sustainable Finance Group (SFG) in May 2021 and the group is expected to lay down rules of ESG based lending. Also, the State Bank of India, the country's largest lender is chalking a strategy to disburse loans on the basis of ESG scores.

8.3 Technology will be critical for achieving ESG goals

As the focus on ESG strengthens, technology will play a key role in creating significant and long-lasting change within investors' practices and portfolios by enhancing the collection and reporting of ESG data. These technologies include data management platforms to store and process ESG data, monitoring platforms to streamline ESG review and delivery processes, and PropTech-based platforms to enhance tenant experience.

Enablement technologies to monitor and enhance the energy performance of buildings will also see greater adoption. Technology that can be plugged into a property's Building Management System (BMS), retrieve energy data in real time and arrange and analyze it to determine the best strategy to improve energy efficiency and reduce costs will be crucial.

10. Global Alliance for Building and Construction, 03 December 2021

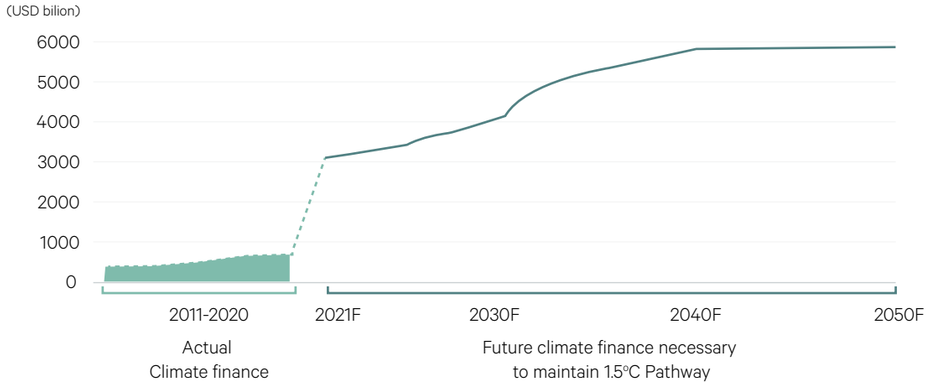
8.4 Green finance will gather steam

The G20 uses the term “Green Finance” as a broad umbrella term that refers to the major shift in financial flows required to support projects that benefit the environment and society by reducing pollution or tackling climate change.

Climate finance (a subset of green finance) refers to any type of financing that is drawn from public, private or alternative sources of financing with the aim of supporting actions that will address or mitigate climate change. The sustainable finance route enables the public or private issuer of sustainable bonds an easy access to low-cost capital to finance their sustainable projects by issuing and listing such bonds on the stock exchanges.

As per the Climate Policy Initiative, global climate finance averaged around USD 630 billion in 2019 and 2020. Further, it is estimated that the transition to a net zero carbon emission world would require investments to increase by nearly eight times from the existing levels, resulting in the requirement of over USD 5 trillion annually as investment through 2030 (Fig 8.4.1).

Figure 8.4.1: Globally Tracked Climate Finance Flows



Source: United Nations; Climate Policy Initiative; CBRE Research, Q1 2022

ESG is no longer a "feel good factor" but now forms the basis of quantifiable, investment decisions. In India, the Assets under management (AUM) of ESG funds in 2021 added upto INR 123 billion (USD 1.63 billion), nearly five times the AUM from two years ago. There are around 10 ESG mutual funds in India (with some of these funds holding shares of RE players as well) today and multiple ESG indexes for investors to benchmark their returns*. Since the traditional methods of financing would not be enough to meet the 2030 and 2050 goals, new and innovative ways of financing such as sustainable finance, climate finance, green bonds, green lending, sustainable bonds etc. would gain traction.

In India, the SEBI had put in place the regulatory framework in 2017 for issuance of green bonds and the corresponding listing requirements of such bonds on the stock exchanges. In 2021, India issued green bonds worth USD 16.5 billion and we expect this number to jump significantly as the focus on green bonds issuance was reiterated in the Union Budget 2022-23. Further, the RBI had liberalized the ECB norms to enable green projects across industries and sectors to tap this window for raising finance.

* Business Standard, December 2021

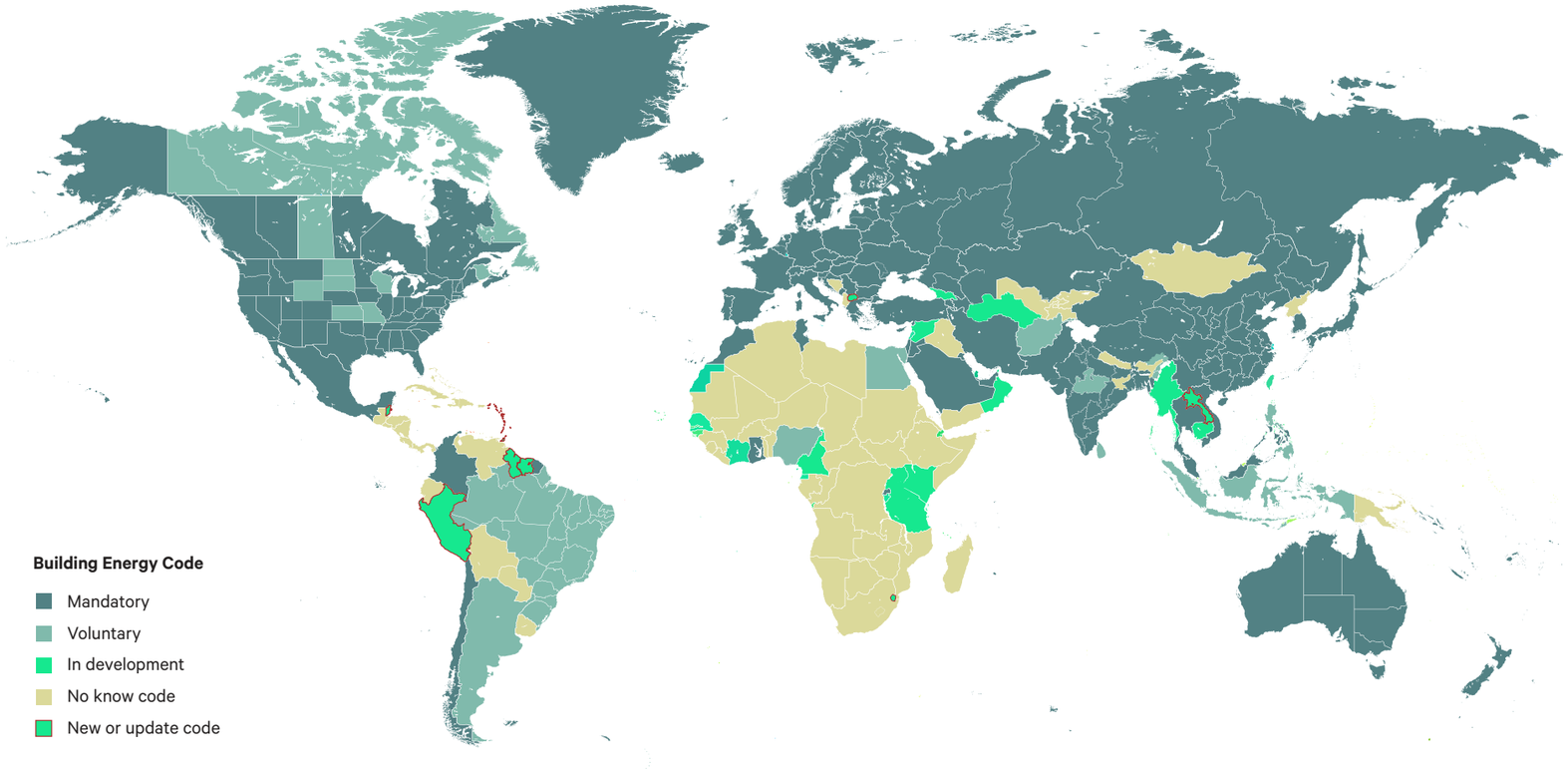
8.5 Focus on energy efficiency in buildings will increase

As per the International Energy Agency's (IEA) net zero energy scenario, it is possible to nearly eliminate carbon emissions from the buildings by 2050 through energy efficiency measures coupled with a higher adoption of renewable sources of energy such as solar, thermal and bioenergy. **It is estimated that electrification and energy efficiency would account for about 70% of the building-related emission reductions until 2050,** followed by the adoption of renewables such as solar, thermal and bioenergy, and behavioral changes.

Against the backdrop of the target to eliminate carbon emissions from the built environment, energy audits are expected to play a critical role in achieving energy and cost savings. These audits go a long way in identifying and designing cost-effective energy savings opportunities.

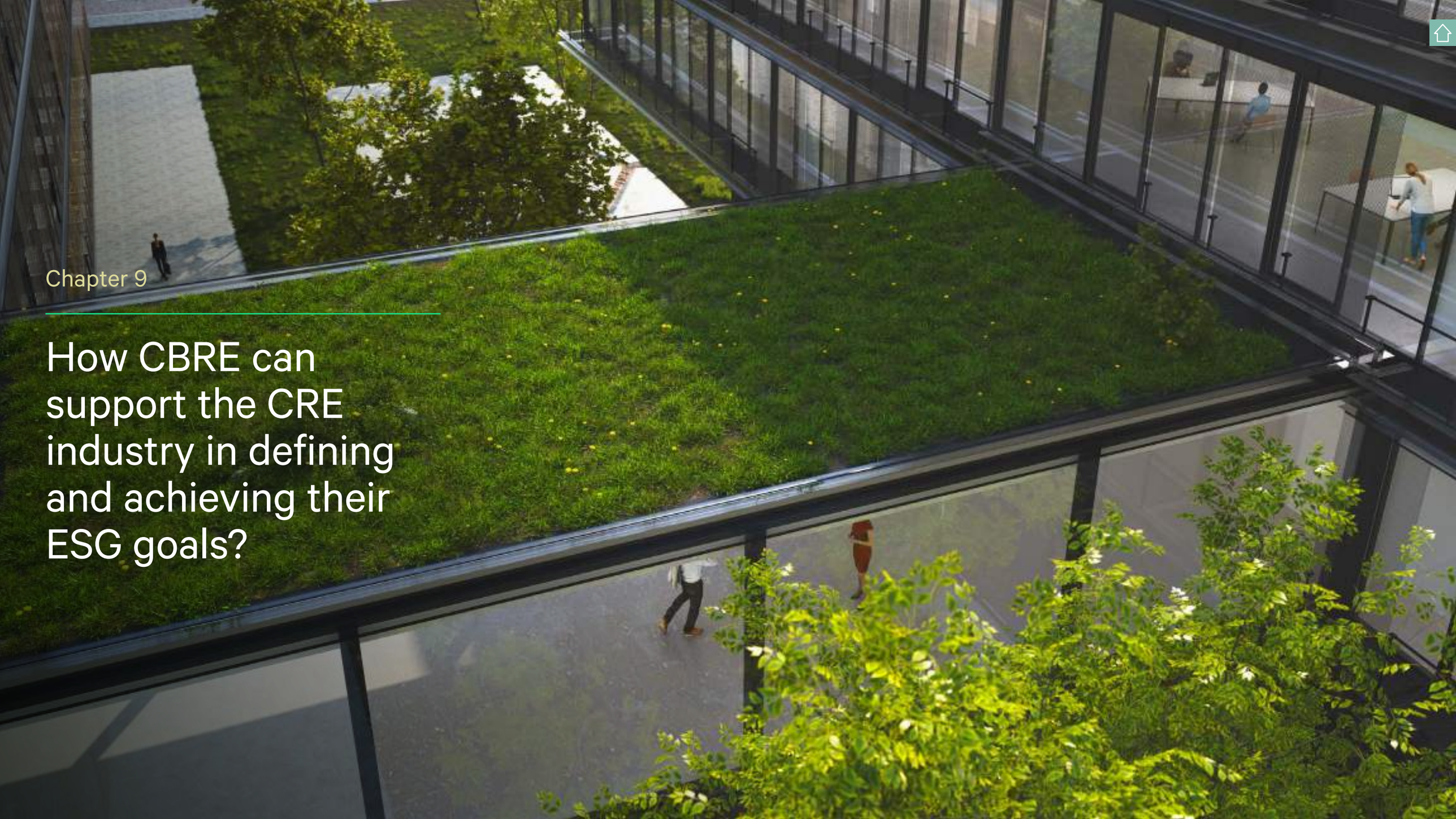
Energy efficiency and energy codes in buildings are the second-most frequently cited actions within all Nationally Determined Contributions (NDC). Since 2015, the coverage of buildings under NDC has gone up from 90 to 136 countries[12], including India. Furthermore, as of November 2021, 80 countries have developed building energy codes, compared to 62 in 2015. The trend is expected to continue going forward too as the policy landscape continues to evolve.

Figure 8.5.1: Status of adoption of building energy codes globally



Source: International Energy Agency; CBRE Research, Q1 2022

12 The Global Risks Report 2022, World Economic Forum, January 2022; CBRE India Research, Q1 2022



Chapter 9

How CBRE can support the CRE industry in defining and achieving their ESG goals?

9.1 CBRE's commitments towards ESG

In recognition of our progress on ESG, we are the only commercial real estate services provider included in the Dow Jones Sustainability World Index. In late 2020, we signed the Business Ambition for 1.5°C commitment by 2040, a campaign led by the Science Based Targets initiative (SBTi) in partnership with the UN Global Compact and the We Mean Business coalition. This encompasses carbon emissions from the properties that we manage for investors and occupiers as well as indirect supply chain emissions. CBRE committed to science-based GHG reduction targets with a goal of cutting own operational emissions by over two-third by 2035. As a part of our 2040 net-zero emissions strategy, CBRE also signed The Climate Pledge, a commitment to achieving net-zero carbon 10 years ahead of the goal stated in the Paris Agreement.

Quantifying our targets

We have committed to achieving 100% renewable electricity by 2025 and transitioning our vehicle fleet to electric vehicles. We will curb emissions in the facilities that we manage for occupiers worldwide by 79% per sq. ft. by 2035. For properties that we manage for investors worldwide, CBRE will reduce emissions by 67% per sqm. over the same time frame. We plan to achieve our Scope 3 target through a partnership with our Global Workplace Solutions (GWS) and Property Management clients. We manage nearly 650 million sqm. of corporate facilities and commercial properties worldwide.

CBRE Achievements

Ranked **#24**
Overall and the top-ranked real estate company on 3BL Media's 100 Best Corporate Citizens of 2021.

Ranked **#22**
on the 2021 Barron's 100 Most Sustainable Companies list.

Earned a spot on the
FTSE4 Good Index
for the eighth consecutive year.

CBRE's industry-leading international green building consulting team is working in conjunction with experienced technical colleagues on the ground to provide our clients world-class green building advisory. Until date, we have certified more than 600 projects using various versions of the green building rating tools, ranging from new and existing buildings, building interiors to occupant wellbeing. CBRE's extensive experience in building marketing & leasing, property and facility management, and green tenant representation allows us to provide clients with a holistic, outcome-oriented approach to sustainability consulting that goes beyond the basic achievement of the certification itself, but also helps the client manage the buildings in environmentally and financially sustainable manner throughout the whole building life cycle.

CBRE supports, endorses and/or engages in a number of external initiatives, including:

- Building Research Establishment Environmental Assessment Method (BREEAM)
- CEO Action for Diversity & Inclusion
- Carbon Disclosure Project
- Environmental Protection Agency (EPA) ENERGY STAR
- Fitwel Standard
- Greenhouse Gas (GHG) Protocol
- GRI Standard
- International Organization For Standardization (ISO) I 4001
- Leadership in Energy and Environmental Design (LEED)*
- Occupational Health and Safety Assessment Series (OHSAS) 18001
- Principles for Responsible Investment (PRI)
- Science Based Targets initiative (SBTi)
- SASB Standards
- Task Force for Climate-Related Financial Disclosures (TCFD)
- United Nations Global Compact (UNGC)
- United Nations Guiding Principles on Business and Human Rights
- United Nations LGBTI Standard of Conduct for Business
- We Mean Business
- Well Building Standard (WELL)
- Women's Empowerment Principles (WEPs)
- World Green Building Council (World GBC) and its Advancing Net Zero program

CBRE is a member of these leading organizations:

- Boston College Center for Corporate Citizenship (BCCCC) and its professional Services Sustainability Roundtable (PSSR)
- Building Owner and Managers Association (BOMA)
- Building Owners and Managers Institute (BOMI)
- Business Roundtable
- Catalyst
- Corporate Eco Forum
- Corporate Electric Vehicle Alliance (CEVA), Led by Cenes
- Global Real Estate Sustainability Benchmark (GRESB)
- Global Reporting Initiative (GRI) Community
- International Council of Shopping Centers (ICSC)
- International Well Building Institute (IWBI)
- NAIOP, the Commercial Real Estate Development Association
- Real Estate Roundtable (RER) and its Sustainability Policy Advisory Committee (SPAC)
- Renewable Energy Buyers Alliance (REBA)
- Sustainability Accounting Standard Board (SASB) Alliance
- U.K. Green Building Council (UKGBC)
- U.S. Green Building Counscil (USGBC)

9.2 CBRE's framework for environmental considerations across an occupier's lease / ownership lifecycle

Across the real estate lifecycle, occupiers arrive at varied decision points to progress on their ESG goals. In our endeavor to steer its clients on this journey, CBRE has arrived at the following framework that explores environmental considerations that occupiers should focus on throughout their property lease or ownership cycle.

Source: Purpose Driven: Corporate Real Estate's Role in ESG Agenda, CBRE September 2021; CBRE India Research, Q1 2022

9.3 How CBRE India can help?

ESG is far beyond mere good intent. It's about creating a tangible plan that achieves real and measurable results. We help clients to tackle the key challenges of today and capture the vast opportunities that the future holds. Enlisted below are some of the key services that we provide to clients to help them achieve their ESG goals:

Design advisory and management

- Vision management
- Design governance
- Project risk management
- Value engineering and management
- Stakeholder management and content coordination
- WELL Building Standard consultancy

Advisory on governance and social aspects

- Management concept development
- Governance process flow design
- Social Impact Assessment
- Social return on investment
- Benchmarking sustainability practices

Sustainability and Smart Building Advisory

- ESG framework preparation
- LEED, IGBC and GRIHA certifications
- GRESB consultancy
- Ashrae audit services
- ISO 50001 certification
- Energy management
- Space utilization and optimization
- Security and safety services
- Location services such as equipment and people tracking
- Operational maintenance
- Carbon footprint reporting
- Rooftop solar consultancy
- EV charging setup & installations
- Smart Eco Industrial Town Development
- Smart energy use in industrial parks
- Defining sustainability/ SDG rating tools and benchmarks for projects

Pre-investment Diligence

Review of ESG compliance by developers as part of pre-investment diligence on behalf of funds / lenders:

- Assessment of environment related compliances
- Assessment of Occupational Health & Safety Compliance
- Assessment of labour & working conditions related compliance
- Social assessment
- Climate assessment

WHY CBRE?

+ Network of inhouse design, architecture, and engineering discipline leads and urban planners
+ Proficient pool of sustainability and WELL certified professionals
+ Usage of value-added tools such as virtual visualization for gap analysis, and Building Information Modeling (BIM) for clash detection
+ Data driven strategy to prioritize activities and identification of areas requiring improvement

Chapter 10

Annexures

Annexure - I

India's Nationally Determined Contributions, 2015 brief

The first Intended Nationally Determined Contribution (INDC) for 2021 to 2030 includes:

- Reduction of emissions intensity by 33–35% from 2005 levels
- Achieving 40% installed capacity of cumulative electric power through non-fossil-based energy resources with international support
- Creating an additional carbon sink of 2.5–3 GtCO2e through additional forest and tree cover.

There are numerous policies in effect under the National Action Plan of Climate Change (NAPCC), including National Missions for Solar, Enhanced Energy Efficiency, Sustainable Habitat, Water, Green India, Sustainable Agriculture, etc. Other focus areas include:

- **Developing climate resilient urban centers:** Schemes include Smart Cities Mission, Atal Mission for Rejuvenation and Urban Transformation (AMRUT), National Heritage City Development and Augmentation Yojana (HRIDAY), etc.
- **Smart and sustainable green transportation network:** Schemes include Dedicated Freight Corridors, Jal Marg Vikas, Sagarmala Project, Bharatmala Project, Mass Rapid Transit System (MRTS), Green Highways (Plantation & Maintenance), National Electric Mobility Mission Plan 2020, Vehicle Fuel Efficiency Program, National Policy on Biofuels, etc.
- **Planned afforestation:** Schemes include Green India Mission (GIM), National Agro-forestry Policy (NAP), REDD-Plus policy, Joint Forest Management, National Afforestation Programme, etc.
- **Abatement of pollution:** Schemes include Continuous Emission Monitoring System (CEMS), Common Effluent Treatment Plants (CETPs), Fly Ash Utilisation Policy, National Air Quality Index (AQI), Municipal Solid Waste Management (Management and Handling) Rules, etc.
- **Citizens and private sector contribution in combating climate change:** Schemes include Swachh Bharat Mission, Corporate Social Responsibility (CSR) through Companies Act 2013, India GHG Programme for Indian Industries, Smart Power for Environmentally-sound Economic Development (SPEED), GreenCo Rating System, New Ventures India (NVI), Small and medium-sized enterprises (SME) Cluster Programs for Energy Efficiency, etc.

Further, there are climate finance policies in place which include setting up of a USD 55.6-million National Adaptation Fund, subsidy reduction on fossil fuels (diesel, kerosene and domestic LPG, etc.), significant increase in coal cess, introduction of Tax Free Infrastructure Bonds for funding of renewable energy projects, Finance Commission (FC) incentive for creation of carbon sink, etc.

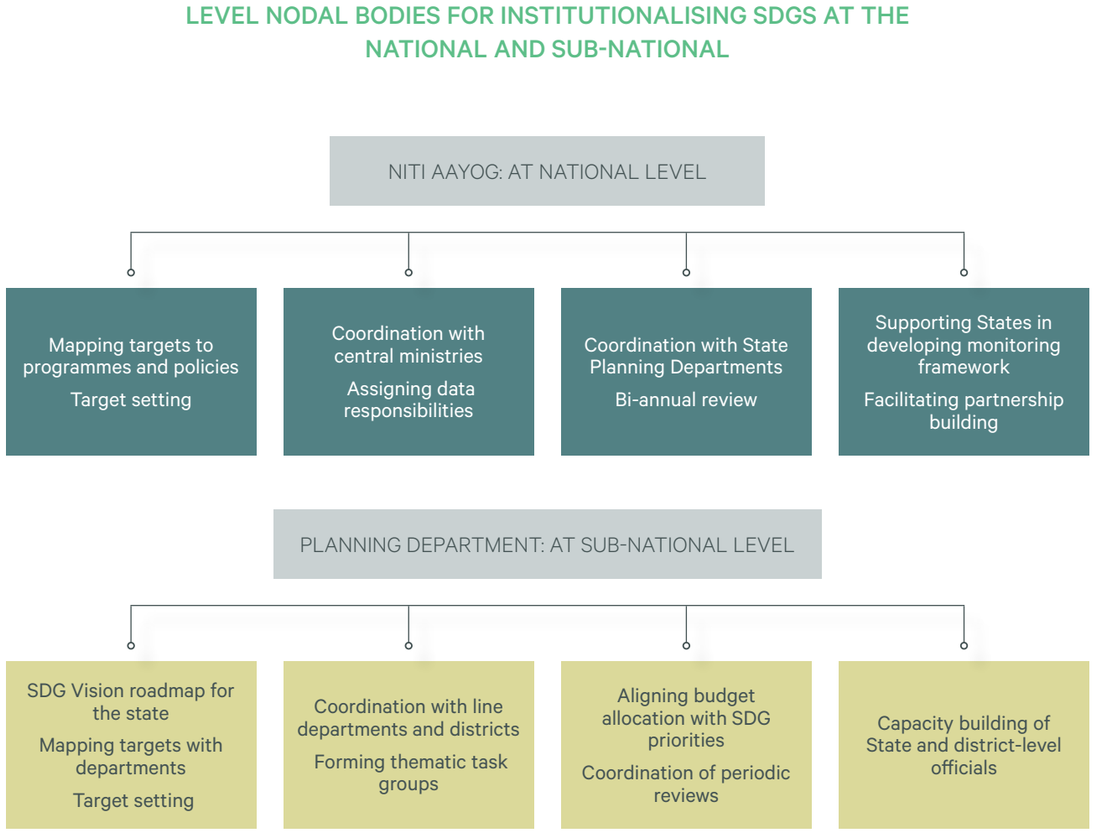
Annexure - II

II.1 Sustainable Development Goals (SDG) India Index by NITI Aayog and UN

As the nodal institution for meeting the SDGs set in the 2030 agenda, the NITI Aayog has been driving SDG localisation, collaborating with states / UTs, instituting monitoring, reporting and reviewing systems, and engaging with the civil society and the private sector by forging partnerships.

Designed and developed by NITI Aayog in 2018, the SDG India Index measures the progress in the journey of meeting the global goals and targets at a national and state level. The index covers all 17 goals, 70 targets and 115 indicators.

Figure II.1.1: Institutional Structure for SDGs at National and Sub-national Level



Source: SDG India – Index and Dashboard 2020-21, CBRE India Research Q1 2022

Table II.1.1. Localisation of SDGs and Progress in Key States

STATE	INSTITUTIONAL	SDG VISION	SDG MAPPING OF DEPARTMENTS & SCHEMES	SDG MONITORING SYSTEM	SDG BUDGETING	'LEAVE NO ONE BEHIND' INITIATIVES
Andhra Pradesh	Nodal: Planning Department Coordinates SDG Implementation at Stage level, facilitates the SDG localisation process, and conducts SDG monitoring. Andhra Pradesh Stage Development Planning Society provides technical assistance	Vision Document revised; Annual Status report prepared.	All department and development schemes mapped.	State Indicator Framework (SIF) prepared; District Indicator Framework (DIF) under preparation. State Dashboard under preparation	Annual Outcome Budget to reflect SDGs.	The "Navaratnalu" (cluster of nine flagship programmes) Implemented to reach out to vulnerable communities across sector, such as, agriculture, health, education, housing, entrepreneurship development and social protection
Delhi	Nodal: Planning Department; Nine Working Groups constituted under the Chairmanship of Administrative Secretaries of line Departments. Overall review and monitoring of SDGs will be done by the Steering Committee headed by the Chief Secretary	Vision 2030 under finalization.	SDG Target-wise mapping of Schemes/ Departments	SIF prepared.	Budget aligned with SDGs. Scheme-wise mapping of SDGs linked with budget allocation.	For evidence-based policy making, the Government of NCT conducted a situation analysis for various social groups through surveys and evaluation studies.
Haryana	Nodal: Swarna Jayanti Haryana Institute for Fiscal Management; State SDG Coordination Centre functional.	Vision document 2030 in place.	SDG Target-wise mapping of State Departments and schemes completed.	State level Monitoring system in place; SIF under approval; An online integrated SDG M&E dashboard being developed.	SDG-wise budget allocation prepared; "District Budget" Booklet prepared for the Aspirational District "Nuh" in alignment with SDGs.	An initiative for allocation of unique 'Family ID' to all families in order to identify vulnerable population groups and provide prioritised support under finalisation. A 'District Vulnerability' Index also proposed to be developed for identifying and supporting vulnerable groups.
Tamil Nadu	Nodal: Planning & Development Department; A High-Power Committee headed by the Chief Secretary oversees SDG implementation; Eight thematic Working Groups constituted; SDG Units formed in every department; A High-Power Committee, Executive Committee and SDG Cell formed in every district.	Vision 2030 under finalization.	SDG Target-wise mapping of Schemes/ Departments completed.	SIF, DIF and Block Indicator Framework finalized. SDG Dashboard yet to be developed.		Child & Gender Budget under finalization; Strategies discussed with various departments on addressing issues related to LNOB; Study commissioned for looking at the Status of readiness to 'Leave No One Behind'.
Maharashtra	Nodal: Planning Department; SDG-Implementation & Coordination Centre (SDG-ICC) functional under the Directorate of Economics & Statistics of Planning Department.	Vision 2030 In place.	SDGs/Targets mapped on 1335 State-Level and 540 District Level Schemes & Programmes.	Monitoring strategies formulated; SIF/DIF under finalization; Maharashtra Plan Information Management System (MPSIMS) web portal integrate State and district level planning and monitoring data; Environment Adjusted Human Vulnerability Index (EAHVI) developed to track progress in 27 most backward Development Blocks.	The MPSIMS links budget outlay on schemes/ programmes to SDGs/Targets.	Gender & Child Budget 2020-21 published in collaboration with UNICEF; Financial support provided to women entrepreneurs through various schemes; Village Social Transformation Foundation (VSTF) set up to promote PPP between the State Government, Corporate sectors and Philanthropic Organizations to bridge development gaps In 1,000 villages; Guidelines for State Annual Plan 2021-22 gives specific instructions to map Schemes/Programmes for beneficiaries with Special Needs defined under the Disabilities Act, 2016.

Source: SDG India – Index and Dashboard 2020-21, CBRE Research Q1 2022

STATE	INSTITUTIONAL	SDG VISION	SDG MAPPING OF DEPARTMENTS & SCHEMES	SDG MONITORING SYSTEM	SDG BUDGETING	'LEAVE NO ONE BEHIND' INITIATIVES
Maharashtra	Nodal: Planning Department; SDG-Implementation & Coordination Centre (SDG-ICC) functional under the Directorate of Economics & Statistics of Planning Department.	Vision 2030 In place.	SDGs/Targets mapped on 1335 State-Level and 540 District Level Schemes & Programmes.	Monitoring strategies formulated; SIF/DIF under finalization; Maharashtra Plan Information Management System (MPSIMS) web portal integrate State and district level planning and monitoring data; Environment Adjusted Human Vulnerability Index (EAHVI) developed to track progress in 27 most backward Development Blocks.	The MPSIMS links budget outlay on schemes/ programmes to SDGs/Targets.	Gender & Child Budget 2020-21 published in collaboration with UNICEF; Financial support provided to women entrepreneurs through various schemes; Village Social Transformation Foundation (VSTF) set up to promote PPP between the State Government, Corporate sectors and Philanthropic Organizations to bridge development gaps In 1,000 villages; Guidelines for State Annual Plan 2021-22 gives specific instructions to map Schemes/Programmes for beneficiaries with Special Needs defined under the Disabilities Act, 2016.
Karnataka	Nodal: Department of Planning, Programme Monitoring and Statistics; SDG Coordination Centre set up in partnership with UNDP provides technical support In SDG implementation; At district level, every Department has a Nodal Officer on SDGs.	Nava Karnataka (New Karnataka) Vision 2025 in place.	SDG Target-wise mapping of State Departments, Agencies, Schemes/ Programmes completed.	SIF prepared; Comprehensive development monitoring involving 1500 programmes/ schemes ensured Panchayat level upward through the digital platform - Avalokana.	New Decision Support System (NDSS)-Avaloka-na: the platform includes SDGs and indicators mapped to Line Departments -with specified financial and physical targets for each scheme, as per the State Budget.	Livelihood opportunities being created for SC/STs, artisans, and women through targeted skill development and market support.
Telangana	Nodal: Planning Department; Centre for SDGs set up at MCR HRD Institute; At the district level, Chief Planning Officer plays nodal function.	Vision 2030 under preparation.	SDG Target-wise mapping of Schemes/ completed.	SIF under finalization. DIF and Dashboard yet to be developed.	Budget allocations for various development schemes mapped to SDGs.	There are schemes (Aasara Pensions) for pensions and financial assistance for vulnerable social groups, such as, widows, disabled, HIV patients, toddy tappers, weavers, etc; housing for poor; assistance for pregnant women and new-borns (KCR Kit scheme), schemes for empowerment of women (e.g. Kalyana Lakshmi, Shadi Mubarak, etc.); Food grains for poor households; Educational support in terms of residential schools and colleges, study abroad scheme for minorities, etc.; skill development and income generation programmes for the poor; Farmers' support schemes, such as Ryuthu Bandhu (Investment support), Rythu Bima (life insurance), etc.
Uttar Pradesh	Nodal: Planning Department; State SDG Cell constituted; SDG Task Force constituted under the chairmanship of the Chief Secretary; Nodal Officer for each Goal nominated; Goal-wise Working Group constituted; Task Force formed at district/division level.	Vision 2030 In place.	SDG Target- and Indicator-wise mapping of Schemes/ Departments completed.	SIF & DIF prepared; SDG Dashboard developed In partnership with UNICEF.		Special initiatives for vulnerable groups Include: educational Incentive programme for child labour (Bal Shramik Vidya Yojana); Financial transfer to girl children for education and empowerment (Kanya Sumangala Yojana); Housing scheme for poor people under Mukhyamantrl Awas Yojana, etc.

Source: SDG India – Index and Dashboard 2020-21, CBRE Research Q1 2022

Annexure - III

SEBI's Business Responsibility and Sustainability Reporting Standards

Overview
In 2021, SEBI adopted Business Responsibility and Sustainability Reporting against the backdrop of ESG. This is an update on the previously used Annual Business Responsibility Reports (ABRR) which was a part of the disclosure requirements of the 'National Voluntary Guidelines on Social, Environmental and Economic Responsibilities of Business' (NVGs). Initially, SEBI had mandated the top 100 listed companies by market capitalisation to file BRR as part of their annual report, which was progressively extended to the top 500 listed entities by market capitalisation in 2015 and subsequently to the top 1000 listed entities in 2019.

In order to align with global developments, like the UN Sustainable Development Goals (SDGs), United Nations Guiding Principles on Business and Human Rights (UNGPs), and Paris Agreement on Climate Change, the NVGs were reviewed and published as the National Guidelines on Responsible Business Conduct (NGRBCs) in March 2019.

Brief
The BRSR emphasize on quantifiable metrics, allowing for comparison across companies and time period. The disclosure on climate and social issues for an entity are significantly improved and made more detailed as compared to previous version. Few of the key disclosures sought for ESG in BRSR includes:

1. Highlight material responsible business conduct issues that are risks or opportunities to the business and approach to mitigate the same along with financial implications.
2. Environment related disclosures:
    - Essential indicators:
        - Resource usage: Energy consumption & energy intensity, water withdrawal and consumption volume
        - Air emissions: Scope 1 and Scope 2 GHG emissions
        - Waste management: Quantum of plastic waste, e-waste, bio-medical waste, construction and demolition waste, battery waste, radioactive waste, other hazardous and nonhazardous waste generated, re-used and recycled along-with waste management practices
    - Leadership indicators:
        - Energy consumption break-up into renewable & nonrenewable sources
        - Water discharge
        - Water withdrawal and water consumption in areas of water stress
        - Scope 3 GHG emissions
        - Reclaimed products
        - Use of innovative technology
        - Impact on biodiversity
3. Social indicators:
    - Employees / workers centric: Details on gender, social diversity including measures for differently abled employees and workers, turnover rates, median wages, welfare benefits to permanent and contractual employees / workers, occupational health and safety, trainings etc.
    - Community related: disclosures on Social Impact Assessments (SIA), Rehabilitation and Resettlement, Corporate Social Responsibility etc.
    - Consumer related: Details on product labelling, product recall, consumer complaints in respect of data privacy, cyber security etc.
4. Governance related disclosures:
    - Role of the Board in sustainability: Statement from the director responsible for the report, to highlight sustainability related challenges, targets and performance.
    - Conduct related: Details on fines and penalties, along-with any action taken by regulatory authorities on any of the principles.

Annexure - IV

IV.1. Environment (E)

Environmental considerations were once seen as tangential pieces of the economic equation, but issues such as climate risk, water scarcity, extreme temperatures and carbon emissions are now threatening to dampen economic growth. The state of the environment can directly affect a company's competitive positioning. Environmental indicators majorly cover contribution of a firm / government towards climate change via CO2 emissions, waste production, energy consumption etc. and how stakeholders are attempting to combat these issues by incorporating various strategies such as decarbonizing, effective waste management, obtaining energy efficiency process etc.

Real Estate Environment Factors

ENERGY CONSUMPTION	WASTE MANAGEMENT	INDOOR ENVIRONMENT QUALITY
GREENHOUSE GAS EMISSIONS	BIODIVERSITY AND HABITAT PROTECTION	POLLUTION PREVENTION
MATERIAL SOURCING	CLIMATE CHANGE ADOPTION	
RENEWABLE ENERGY USE	WATER CONSUMPTION/ CONSERVATION	

According to UNEP FI – Global ESG Real Estate Investment Survey Results 2019, 68% respondents have started considering GHG emission management of potential acquisitions and 91% respondents are using sustainability disclosure frameworks[1]. This shows the readiness of real estate stakeholders to create better environment-friendly processes for developing assets and facilities. This trend is expected to gain prominence in the near future.

CERTIFICATIONS

There are various rating systems available at global level to assess the environmental performance of real estate assets. A few of the prominent certifications have been listed below.

Indian Green Building Council	US Green Building Council	Building Research Establishment Environmental Assessment Method **(BREEAM)**	Excellence in Design for Greater Efficiencies **(EDGE)**
Comprehensive Assessment System for Build Energy Environment Efficiency **(CASBEEE)**	BCA Green Mark Scheme	Green Star	RESET Standard

In India, two prevalent certifications are the Indian Green Building Council Certification and US Green Building Council Certification, also known as LEEDS certification.

IGBC

The Indian Green Building Council (IGBC), a part of the Confederation of Indian Industry (CII), was formed in the year 2001. The council has different norms for all types of assets, ranging from residential projects, townships, data centers and logistics parks to railway stations, and schools. As of April 2021, IGBC had certified a total of 7.77 billion sq. ft. real estate footprint, with about 6,400 projects registered[2].

LEEDS

US LEEDS certification started its pivot testing in 1998 and has grown since then, with the latest LEEDS v4.1 being launched in 2019. This is more inclusive benchmark with updated referenced standards and allows projects to earn LEEDS points through building performance monitoring. It also continues to drive performance, fully integrating performance outcomes supported by new methodologies and a simple data-driven path to measure performance on an ongoing basis. Several US states have now made sustainable, healthy buildings a priority, certifying over 0.4 billion sq. ft. of space to LEED standards[3].

[1] UNEP FI – Global ESG Real Estate Investment Survey Results | 2019
[2] IGBC | 2021
[3] LEEDS | 2020

IV.2 Social (S)

The 'S' of ESG is an assessment of how a company manages its relationship with its labour force, the society in which it operates, and the political environment. A firm's short to long term growth and performance is affected by these social factors. For instance, if employees on strikes can create a dearth of skilled labour, it can also damage the company's reputation in the society. Hence, employee satisfaction is an important factor in a company's performance.

Real Estate Social Factors

- COMMUNITY DEVELOPMENT
- EMPLOYEE ENGAGEMENT
- EMPLOYEE HEALTH & WELL-BEING
- FREEDOM OF ASSOCIATION
- HUMAN RIGHT PROTOCOL
- INCLUSION AND DIVERSITY
- LABOR STANDARDS AND WORKING CONDITIONS
- STAKEHOLDER RELATIONS
- CHILD LABOR POLICY
- HEALTH AND SAFETY OF COMMUNITY, CONTRACTORS, AND EMPLOYEES

The impact of COVID-19 has affected the communities interact and behave, leading stakeholders to take a relook at the transport, technology, and health infrastructure available to them. According to a McKinsey survey, 'The ESG Premium: New perspectives on value and perspectives' published in 2020, 93% of total respondents feel that social programs make a positive long-term contribution. In comparison, only 77% respondents had stated that social programs were important for their growth in the company's 2009 survey[4].

CERTIFICATIONS

There is no extensive rating system which specifically covers social factors of a firm. However, two rating systems can be used as they cover a few of the above social factors:

WELL

WELL is a building certification program which was created in 2014 by Delos and International WELL Building Institute (IWBI). It is currently being managed by the IWBI. It emphasises on assessing building design from the lens of occupant health and well-being. The evaluation of a building is based on 11 points of assessment – air, water, nourishment, light, movement, thermal comfort, sound, materials, mind, community, and innovation. In February 2021, WELL-certified projects have crossed the 1.5-billion sq. ft. mark across more than 80 countries[5].

FitWel

Fitwel was created in 2017 in collaboration between The Center for Disease Control, the US General Services Administration and the Center for Active Design. FitWel emphases on location, building access, outdoor spaces, entrances, stairs, indoor environment, workspaces, shared spaces, water supply, cafeterias and prepared food areas, vending machines and snack bars, and emergency procedures. The rating system is both managed and reviewed by the Center for Active Design, a non-profit organization based in New York City. Being relatively new, in 2020, FitWel had rated over 0.1 billion sq. ft. of assets across the globe[6].

[4] The ESG premium: New perspectives on value and performance | 2020
[5] WELL | 2021
[6] FitWel | 2020

IV.3 Governance (G)

Governance factors include decision-making, spanning from policymaking by a company's stakeholders to the distribution of rights and responsibilities among different levels in corporations, with includes the board of directors, managers, shareholders, and stakeholders. In ESG, the 'G' factor is still not very prominently taken into consideration. However, understanding governance risks and opportunities in decision-making is critical, as poor corporate governance practices have stood at the core of some of the biggest corporate misdemeanours.

Real Estate Governance Factors

- BRIBERY AND CORRUPTION
- CYBERSECURITY
- DATA PROTECTION AND PRIVACY
- EXECUTIVE COMPENSATION
- FIDUCIARY AUDIT
- FRAUD
- POLITICAL CONTRIBUTIONS
- SHAREHOLDER RIGHTS

With an aim to mitigate risks, a majority firms across the globe have started giving the 'G' factor of ESG equal importance to improve their ESG ratings. According to the latest UNEP FI – Global ESG Real Estate Investment Survey Results 2019, 85% of respondents are highly or very highly motivated to incorporate the ESG principles due to reduced risk. The survey further showed that 80% of Asia-Pacific respondents were highly motivated to use ESG principles in their functioning[7].

CERTIFICATIONS

There is no specific rating system available which specializes in quantifying and ranking firms on 'G' factor. However, there are three important disclosure frameworks which are being used by firms / organizations across the globe that quantify and rate 'G' factor along with the other factors of ESG. UN PRI and GRESB standards have already been covered in the earlier part of the report. Enlisted below is another important standard that is widely accepted worlwide:

GRI

GRI stands for 'Global Reporting Initiative' which was formed in 1997 in Boston, which has gone over many revisions. In 2016, GRI transitioned from defining guidelines to setting the first global standards for sustainability reporting – the GRI Standards. The GRI Standards aim to make firms / organizations understand and report their impact on the economy, environment, and people in a comparable and credible way, which helps increase the transparency on their contribution to sustainable development. According to KPMG's Survey of Sustainability Reporting 2020, GRI remains the most widely followed and used reporting standards. In a sample of 5,200 top firms from globe, 67% of respondents reported to using GRI as their sustainability reporting guideline[8].

[7] UNEP FI – Global ESG Real Estate Investment Survey Results | 2019
[8] KPMG Survey of Sustainability Reporting | 2020

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