

Greening Real Estate



— *Beyond the Obvious*

Climate Change

Greenhouse gas emissions keep growing. Global temperatures keep rising. And our planet is fast approaching tipping points that will make climate chaos irreversible.

Antonio Guterres

Secretary –General of the U.N.



The climate crisis is about human security, economic security, environmental security, national security, and the very life of the planet ... It's more urgent than ever that we double down on our climate commitments.

Joe Biden

President of the United States of America

We must now agree on a binding review mechanism under international law, so that this century can credibly be called a century of decarbonization.



Angela Merkel

Former Chancellor of Germany

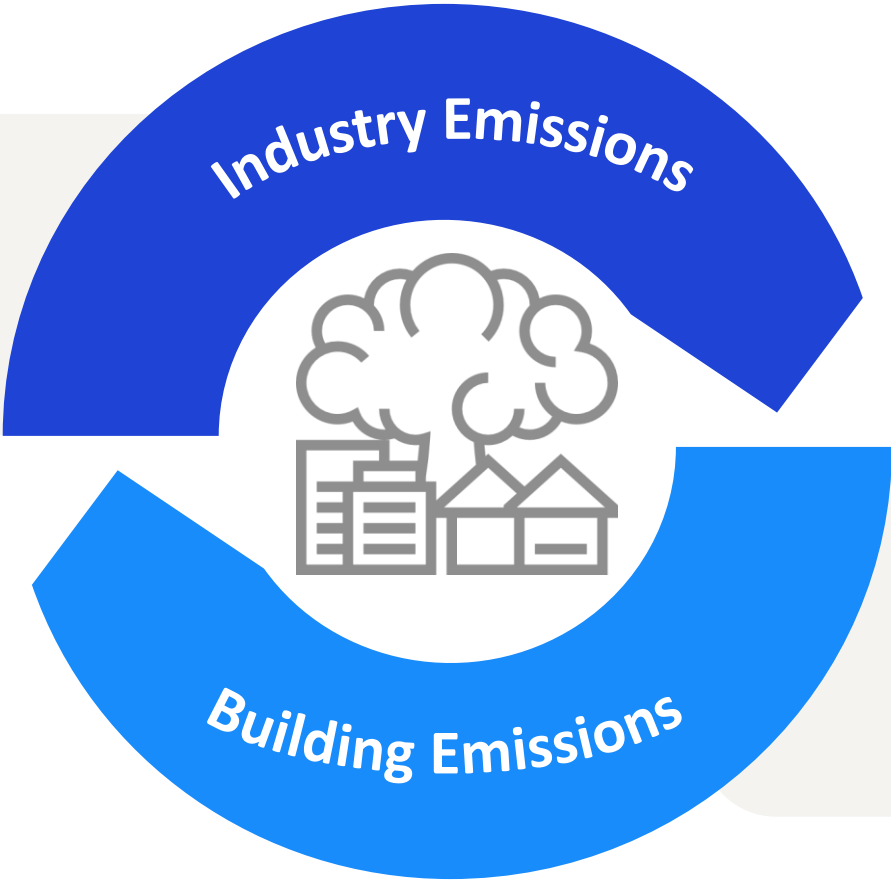
Climate change is no longer some far-off problem; it is happening here, it is happening now.

Barack Obama

Former president of the United States of America

Real Estate and Global Emissions

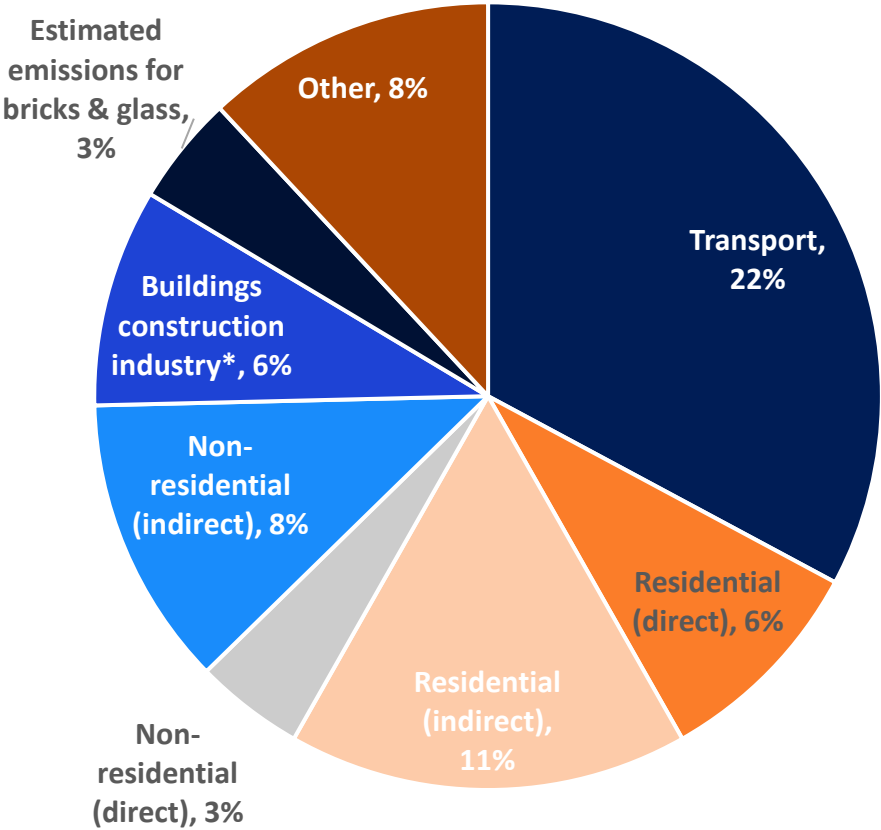
Real estate industry is responsible for around 40% of global carbon emissions.



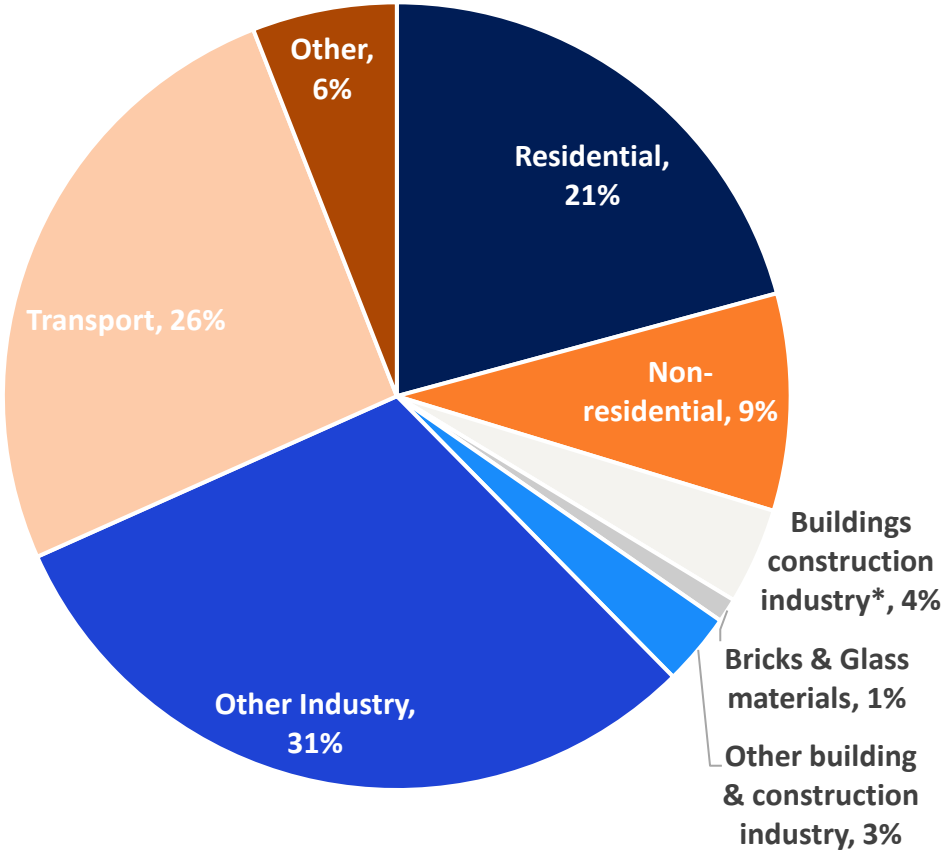
70% of these emissions are from buildings operations (operating, maintaining and managing buildings) and 30% during construction (use of construction materials and equipment).

~40% of Global Carbon Emissions Come from Real Estate

Global share of CO2 emissions (2021)

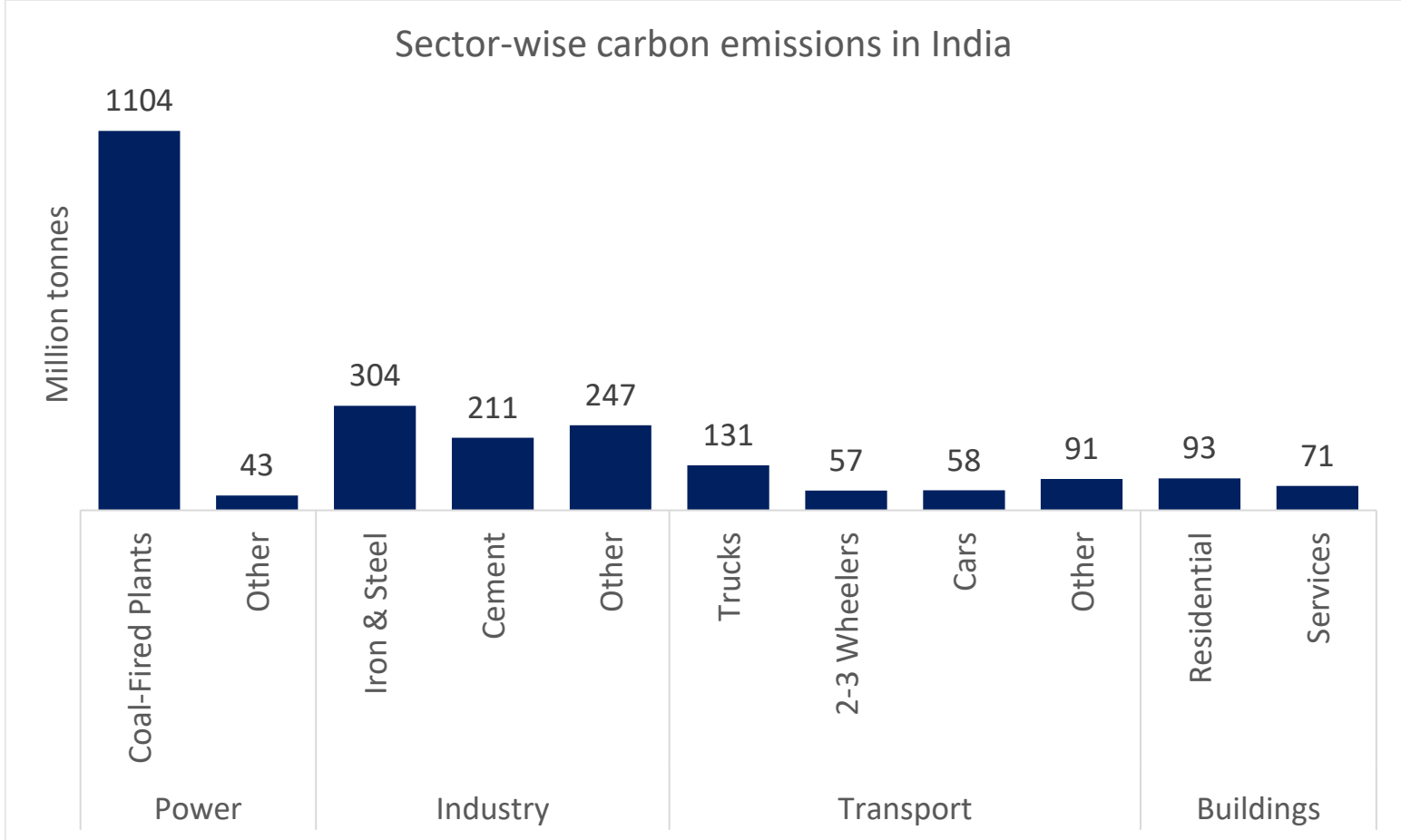


Global share of energy consumption (2021)

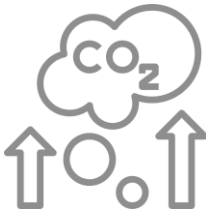


Source : United Nations Environment Programme

Real Estate - India's emissions



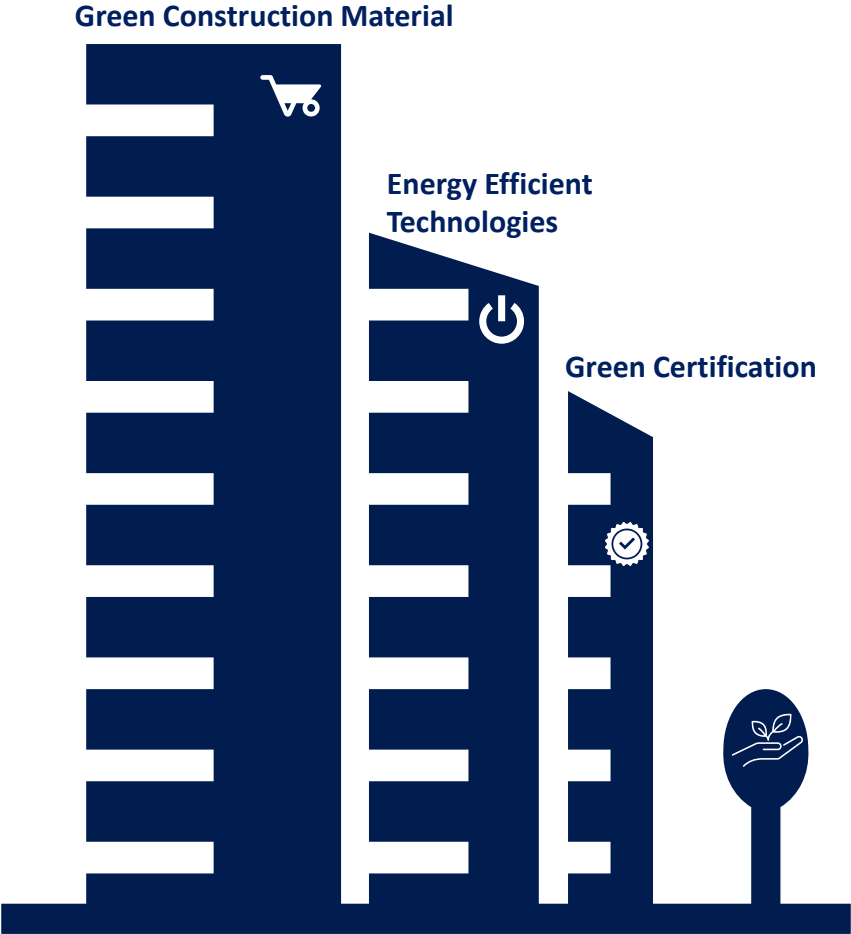
Source : International Energy Agency, 2019



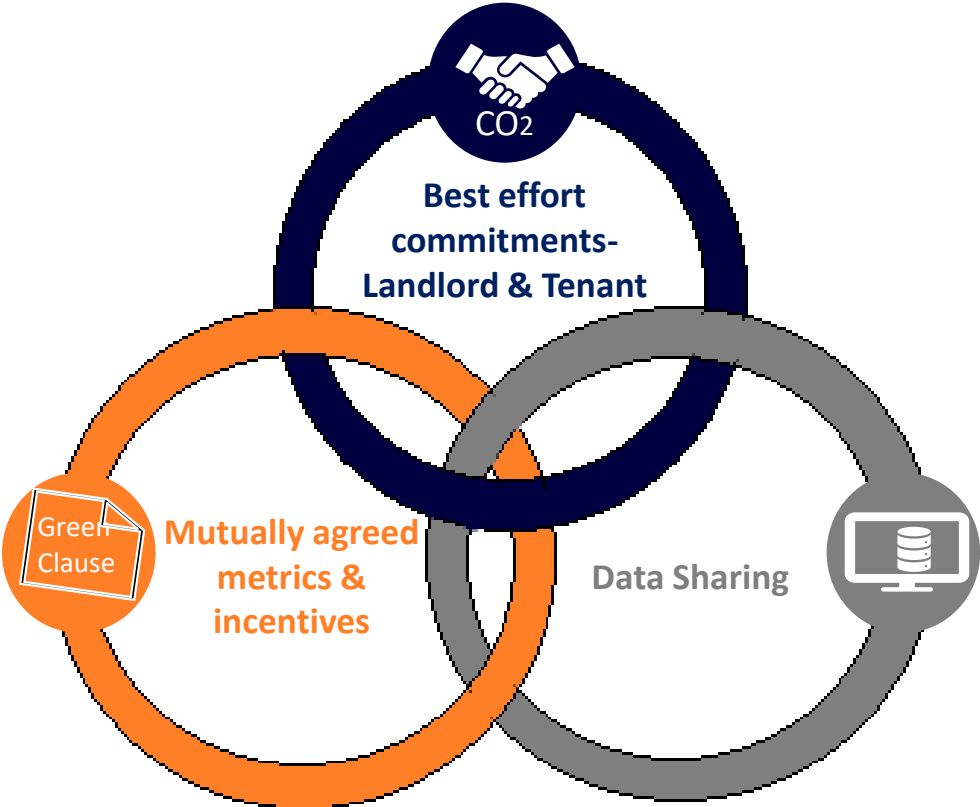
Real estate sector is responsible for ~7% of India's GDP and ~22% of India's emissions.

Going Green

Green-ifying Buildings



Green leasing



Use of Green Materials

Green Steel



Manufacture of steel without the use of fossil fuels

Green Cement



Cement manufactured using municipal waste, and waste of other industries - slag, fly ash, etc.

Green Aluminum



Production of the metal uses hydropower/recycled material

Green Paints and local materials



Plastic Non-VOC paints, locally available sustainable materials like wood, mud etc.

Use of Energy Efficient Technologies

- Low energy and efficient lighting
- High energy efficiency (high star rated) appliances
- Sensor based lighting in common areas



Energy Efficient
Techniques

- Rooftop solar/wind
- Battery storage for renewable power




Renewable
Energy Usage

- Rainwater harvesting and recycling of water
- Waste optimization policies
- Green building design




Others

Get Certified




BREEAM
Year of Origin:
1990
Country of Origin :
U.K



LEED
Year of Origin:
1998
Country of Origin :
U.S.A



DGNB
Year of Origin:
2009
Country of Origin :
Germany



HQE
Year of Origin:
1996
Country of Origin :
France

Green Leasing

What is a green lease?

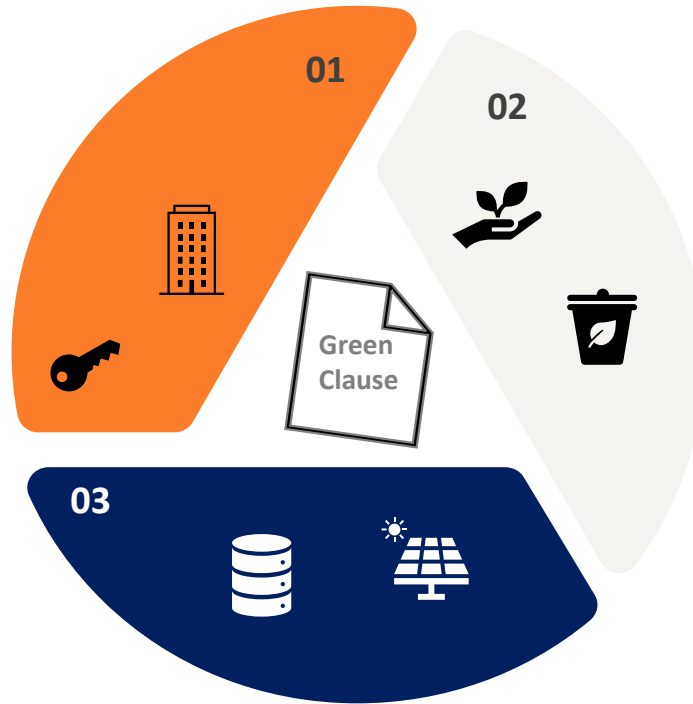
- A lease agreement with sustainability baked into it. It aims to ensure the sustainable construction, usage and maintenance of properties.
- The lease puts requirements on the landlord, the tenant, or both and locks in collaboration between the two.



Aspects of Green Leasing

Property Supply & Management

- Providing for responsibilities of the landlord in ensuring the supply of buildings with sustainable energy (power, heating & cooling)
- Obligations/best effort commitments of the tenant to separate waste collection to the extent possible, using recyclable products.



Construction & Maintenance

- Performing maintenance works with sustainable products and considering contractors that adhere to sustainability standards.
- Ensuring at the time of construction that the property provides for sustainable heating/cooling facilities, waste disposal areas allowing separate waste collection facilities.

Data Sharing

- Clauses obliging the parties to exchange data regarding energy supply, water supply, waste disposal, determination of the CO2 balance of leased premises.

Adoption of Green Leasing Practices



Global

According to global surveys, 34% of occupiers already have green lease clauses, while a further 40% plan to sign them by 2025. For real estate investors, 42% have green lease clauses in place and an additional 37% are looking to adopt them by 2025.

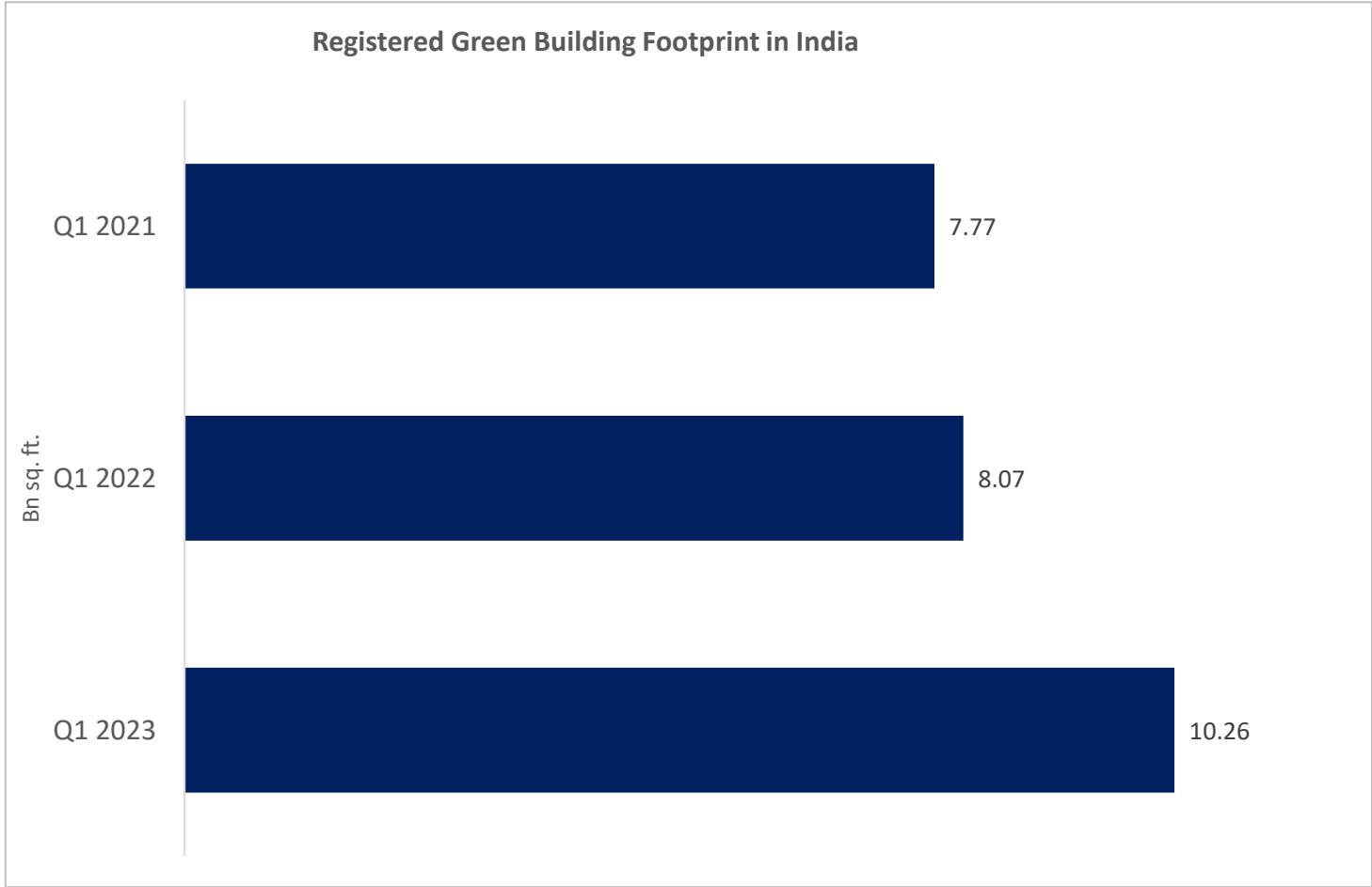


India

Research suggests that adoption of green leases is on the upswing, with 40% of occupiers and investors in India having already adopted green lease agreements and another 40% planning to do so by 2025.



Green Building Space in India



Source : Indian Green Building Council



~10 Bn square feet of registered green building footprint



10,690+ registered green projects



6300+ GreenPro certified products



321 Mn square ft. of green certified Grade-A office stock



43.8% share of green-certified projects in India's Grade-A office stock

Challenges of Going Green

Transitioning to green leases and green buildings will not be a one-step overnight process. Various stakeholders (lenders, developers, contractors, customers, regulators) will need to work together and collaborate to avoid a shock to the existing system



No common global standard

Green lease agreements are not that common yet. Hence there is absence of a universally accepted standard set of regulations to be followed by stakeholders.

Non-legally binding

Lease agreements might contain obligations by the parties, or merely best effort commitments. Such best effort commitments are however, difficult to enforce.



Increased Costs

Heavy industries such as steel, cement and aluminum which are crucial to the real estate sector are among the hardest and most expensive to decarbonize.

Within Challenges, are the Seeds of Opportunity

Mitigating Valuation Risk

Over 500 global investors have urged companies in which they invest to commit to net-zero business strategies

Mitigating Regulatory Risk

Unpreparedness can increase cost of compliance and increase the overall cost of doing business

Broadening Investor Horizon

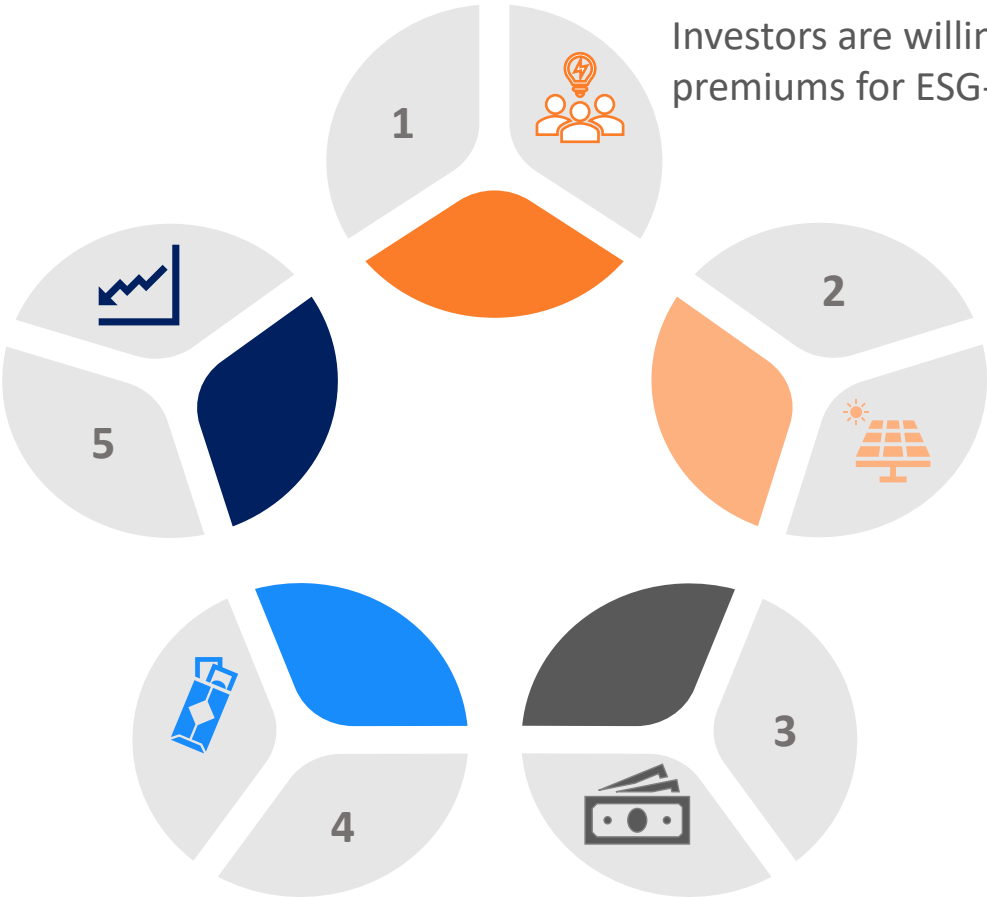
Investors are willing to pay price premiums for ESG-compliant properties

Attracting New-age Customers

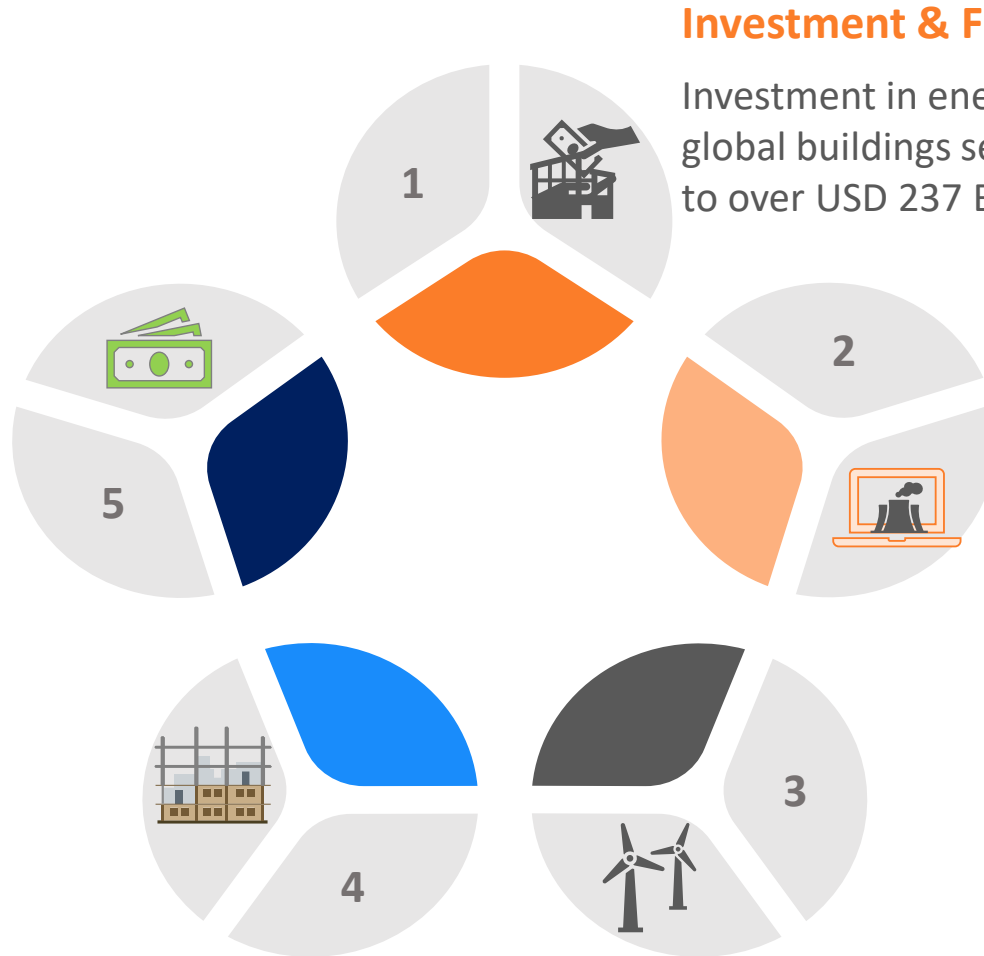
Insulation upgrades, lighting upgrades, installing renewable energy systems

New Sources of Revenue

Natural lighting in common areas, green compost, recycling and upcycling services, renewable energy storage



New Business Models in a Green Era



Investment & Financing

Investment in energy efficiency within the global buildings sector grew 16% on-year to over USD 237 Bn in 2021

Data & Analytics

Using data & analytics to measure emissions from buildings

Developing Green Building Materials

Using renewable raw materials, carbon-neutral solar energy, recycling and replenishing bio-waste

Green Financing

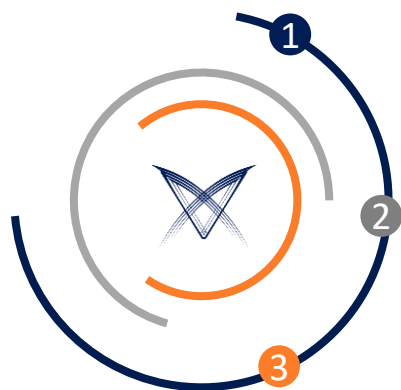
Mindspace REIT, owner and developer of Grade A office portfolio announced the first REIT level green bond in India, raising INR 5.5 Bn

Retrofitting of Buildings

Surveys suggest modifying existing buildings to reduce GHGs leads to lower operational costs, better return on investment and better rental income

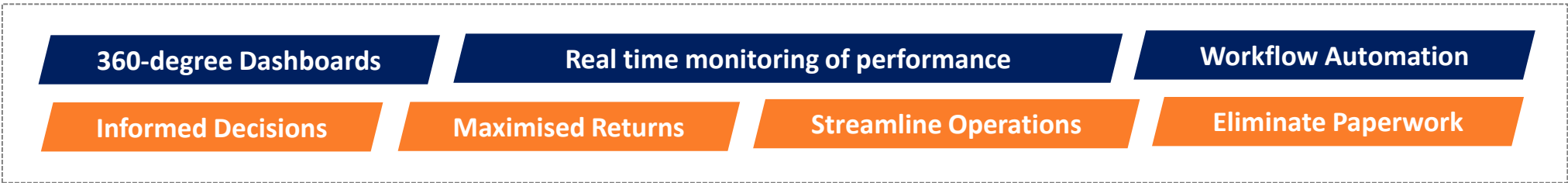
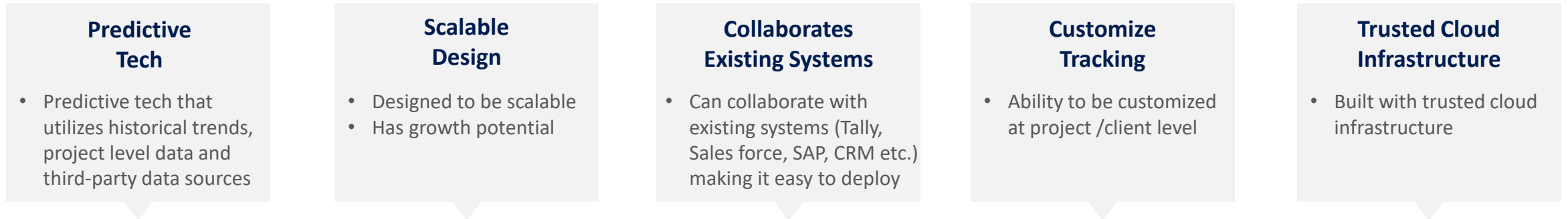
About TruBoard Partners

Founded in early 2020, TruBoard aspires to be India's largest tech-enabled 3rd party asset management platform in Infrastructure, Real Estate and Retail, by offering bespoke project management and capital raising solutions to institutional clients



	Current Capabilities	Key Matrices	Key Projects
Real Estate	<ul style="list-style-type: none"> Residential Real Estate 	<ul style="list-style-type: none"> ~12Mn+ Sq ft of AUM 	<ul style="list-style-type: none"> Pre- investment DD and Post-investment Monitoring with multiple NBFCs Project Management with Digital inputs POC with a stressed asset fund
Infrastructure	<ul style="list-style-type: none"> Renewables Roads 	<ul style="list-style-type: none"> ~1 GW of AUM ~600 KM 	<ul style="list-style-type: none"> Renewables Asset Management across 12 SPVs Road Assets across 6 SPVs Compliance monitoring POC at a large IPP
Retail	<ul style="list-style-type: none"> Resolution of chronic NPA 	<ul style="list-style-type: none"> ~ \$250 Mn AUM 	<ul style="list-style-type: none"> Pool monitoring POC for a securitized pool Propensity to pay model
Other Sectors	<ul style="list-style-type: none"> Covenant Monitoring MIS reporting & Data checks 	<ul style="list-style-type: none"> ~ \$1 Bn AUM 	<ul style="list-style-type: none"> Investment Monitoring: Cashflow + Operations Monitoring Covenants

TruGenie: Platform for Real Estate Asset Performance Management



Thank You

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