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Advancing Corporate Climate Action through Emissions Disclosures in India

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Contents

Executive summary

According to the World Economic Forum's *Global Risks Report 2025*, environmental risks form the greatest challenge in both, the short and long term. The risk attributed to climate-related factors intensifies over the time period, and they account for four of the top five risks in the long term (Elsner, Atkinson, and Zahidi 2025). Among other things, this has implications for the financial architecture at large, both internationally and at the domestic level. Indian regulators have been increasingly emphasising the need for climate-integrated financial risk planning, across credit, market and operational risks (RBI 2025).

As countries around the world attempt to avert some of the worst impacts of climate change, businesses have emerged as important agents of change—taking the lead in sustainability efforts, undertaking system-wide transformations to green their manufacturing, distribution, and investment-making processes. Corporate emissions disclosure frameworks have been among the upshots of this initiative, as a means to make the process more transparent and boost accountability. While emerging economies are catching up to the challenge, advanced economies have been implementing these for much longer, and offer key lessons to newer players like India.

This report compares corporate emissions disclosure frameworks across six jurisdictions, to offer actionable pointers for India to design a blueprint for the disclosures landscape going forward. The comparative analysis is based on a review of literature and regulations, and consultations with industry and subject experts.

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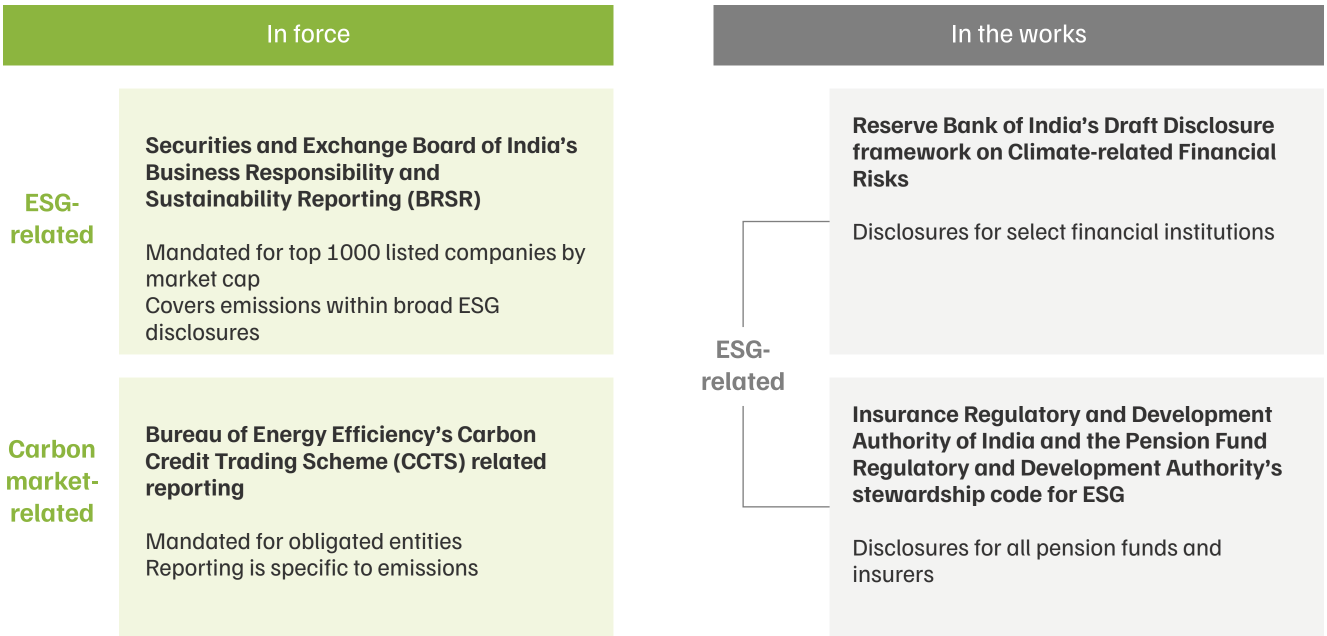
Emissions disclosures landscape in India

Emissions disclosures in India are mandated either as a part of broad Environment, Social and Governance (ESG) disclosures, or through emissions reporting requirements under the compliance carbon market (required FY26 onwards). Currently, Securities and Exchange Board of India (SEBI)'s Business Responsibility and Sustainability Reporting (BRSR) is the only disclosure mandate in India–covering emissions within the broad ESG disclosure framework. It is mandatory to file for the top 1000 listed companies by market capitalisation.

The other form of emissions reporting–mandated by the compliance carbon market will also be enforced shortly (FY26 onwards) for obligated entities, with the commencement of the Carbon Credit Trading Scheme (CCTS), administered by the Bureau of Energy Efficiency (BEE). Several of these regulated unit-level entities included under the CCTS belong to companies that are also required to make BRSR filings under the SEBI mandate, and make ESG disclosures.

Other regulators, such as the Reserve Bank of India (RBI), the Insurance Regulatory and Development Authority of India (IRDAI), and the Pension Fund Regulatory and Development Authority (PFRDA) have also integrated ESG risk monitoring within their regulatory purview, but are yet to introduce disclosure templates.

Figure ES1. Locating emissions disclosures within the Indian sustainability disclosures landscape



Source: Authors' analysis

Corporations are a significant source of emissions across sectors, which makes them a useful cross-cutting lever to drive emission reductions. India's total emissions stand at about 3 billion tonnes of carbon dioxide equivalent (tCO_2e) (Ministry of Environment, Forest and Climate Change, Government of India. 2025). Of this, the top 1,000 listed companies account for about 43 per cent (1.3 billion tCO_2e) (Author's analysis based data from [Indian Corporate Climate Action Data 2024]).

Considering the sizable emissions by large corporates in India and the existing coverage of emissions disclosures across different reporting mandates, the report sets out three important questions to address and guide the development of emissions disclosure frameworks in India:

- Can the landscape of emissions disclosures be expanded to cover a greater share of emissions without creating unintended spillovers for non-emitters?
- Can the quality and integrity of emissions disclosures be improved to enhance its utility for corporates, regulators, and investors?
- What are the opportunities for convergence and interoperability between the dual reporting mandates?

Learning from global disclosure and emissions reporting frameworks

Defining the coverage of reporting mandates is a critical component of the disclosure design, as it determines who must report and why. In terms of the applicability of environmental, social, and governance (ESG) disclosure frameworks, global jurisdictions primarily follow the approach of determining coverage based on company revenues (as well as number of employees in the case of EU and UK). In India, the BRSR framework covers only the top 1000 listed entities, while the upcoming RBI climate-risk disclosures will apply to select financial institutions, once introduced.

Identifying relevant report attributes is essential to ensure higher quality reporting. In terms of the key disclosure requirements, a review of global best practices highlights two key aspects: (i) reporting of all three scopes of emissions (scope 1, 2, and 3), and (ii) mandatory assurances for reported data. In India, scope 3 emissions (value chain) disclosures are so far limited to BRSR Core, requiring 'assessment' vis-a-vis 'assurance'. The RBI framework includes scope 3 emissions reporting, it is yet to specify assurance requirements. MRV protocols under India's CCTS require third-party assurance, in line with global best practices. Hiving off non-material indicators is likely to positively incentivise reporters, and potentially minimise the need for regulatory mandates from various directions.

The utilisation of digital technologies to monitor and report emissions is a key aspect supplementing the evolution of the corporate disclosures landscape, enabling harmonisation between various reporting compliances. The US state of California, for example, uses its digital architecture to harmonise emissions monitoring for reporting under different disclosure frameworks (ESG-related and carbon markets-related). Its Greenhouse Gas Reporting Tool (Cal e-GGRT) creates accessible profiles for each reporting facility, allowing corporates to directly compile and report emissions. In India, CCTS guidelines do not specify the requirements of digital emissions monitoring.

Encouraging an ecosystem-level transformation of corporate behaviour towards emissions and associated climate disclosures, including medium-sized enterprises, can have long-term benefits for mainstreaming disclosures and ushering in a culture of transparency. In this light, the EU has expanded its emphasis beyond large corporates, to build capacity within medium-sized enterprises on emissions measurement and reporting, through industry-aligned training.

Charting a pathway for emissions disclosures in India

The study consolidates learnings from other jurisdictions such as the European Union, California, South Korea, and the United Kingdom, to develop a set of levers that can ensure new mechanisms put into place for improving emissions disclosures have multi-faceted utility for corporations, and helps them spotlight their growing sustainability profiles without adding to their regulatory obligations. Of the 1,000 companies mandated to file BRSR, 998 did so in 2024. However, filing the report does not guarantee completeness or accuracy of data. For instance, only 781 companies reported scope 1 and 2 emissions, which are essential indicators for reporting (Author's analysis based on a study of BRSR reports for FY 24-25). The study identifies **four fundamental levers**, which focus not just on increasing reporting, but also enhancing its quality. Along these levers, several pertinent action points emerge:

1. **Enhance coverage of emissions based on empirical evidence**
   Any expansion of reporting coverage must be guided by an evidence-based assessment of corporate contribution to national emissions. For instance, the top 1,000 companies contribute ~1.3 billion tCO_2e (43 per cent of India's total emissions), whereas the emissions from companies between top 500 and top 1,000 are ~0.3 billion tCO_2e (which amounts to a ~30 per cent of an increase for doubling the number of companies reporting). This suggests that going beyond the top 1,000 alone may not yield substantial gains on emissions coverage, and may actually inappropriately widen the corporate net without widening the emissions net. However, there is scope to extend emissions reporting coverage beyond 43 per cent (share of the top 1,000), and two options emerge in this regard:

   » Expanding the coverage of non-BRSR frameworks, such as those of the RBI, the IRDAI, and the PFRDA that are expected to enter into force, and introducing ministry-wise mandates for sectors uncovered through the above disclosures; or

   » A revenue-based threshold, as in other jurisdictions, that will widen the net to include large non-listed firms, leaving smaller listed entities unaffected.

2. **Strengthen quality and integrity of disclosures**
   To do this, SEBI may consider a single report, possibly an expanded version of BRSR Core with assurances. It can then do away with the BRSR Comprehensive entirely. Assurances must also be mandatory under the RBI, IRDAI and PFRDA frameworks, when introduced. This will help improve the quality of disclosures. Further, SEBI recently mandated ESG mutual funds to invest 65 per cent of their assets under management (AUM) in BRSR Core-compliant companies. Regulations should avoid reinforcing BRSR compliance without focusing on quality, as the often incomplete and inaccurate nature of corporate reporting can potentially misdirect ESG funds to invest without due diligence on their part, ultimately impacting the integrity of the disclosure process.

3. **Harmonise real-time emissions monitoring through an interoperable system**
   Currently, emissions estimation is undertaken internally by corporates and manually updated into the BRSR filing. For ease of reporting and verification processes, use of a real-time emissions monitoring system interoperable with other reporting compliances can be encouraged. This platform may be designed for utilisation by corporates, to track emissions for general corporate disclosures. With India on the cusp of operationalising its own domestic carbon market, putting such a system in place can potentially have widespread benefits for the entire emissions monitoring ecosystem, and create a bottom-up source for emissions data in the country.

4. **Build ecosystem capacity for emissions measurement and reporting**
   Familiarity with emissions estimation and reporting will help MSMEs identify process inefficiencies, reduce costs, and enhance sustainability, making them more competitive in global markets. Emissions disclosure should be included within BRSR Lite as MSMEs forming part of the value chain for large companies will have to do so once BRSR Core is enforced. This will close the loop on value chain disclosures. Capacity building programmes can be guided by those provided by the European Financial Reporting Advisory Group (EFRAG) and Malaysia, as they have taken active steps, in terms of reporting frameworks and tailored training programs, to bring their small and medium sectors within larger supply chain sustainability considerations.

These levers lend themselves to a complete re-imagination of disclosure formats, shifting from compliance-driven reporting to a **corporate sustainability report card** that reflects companies' efforts towards embedding climate action in their systems and processes.

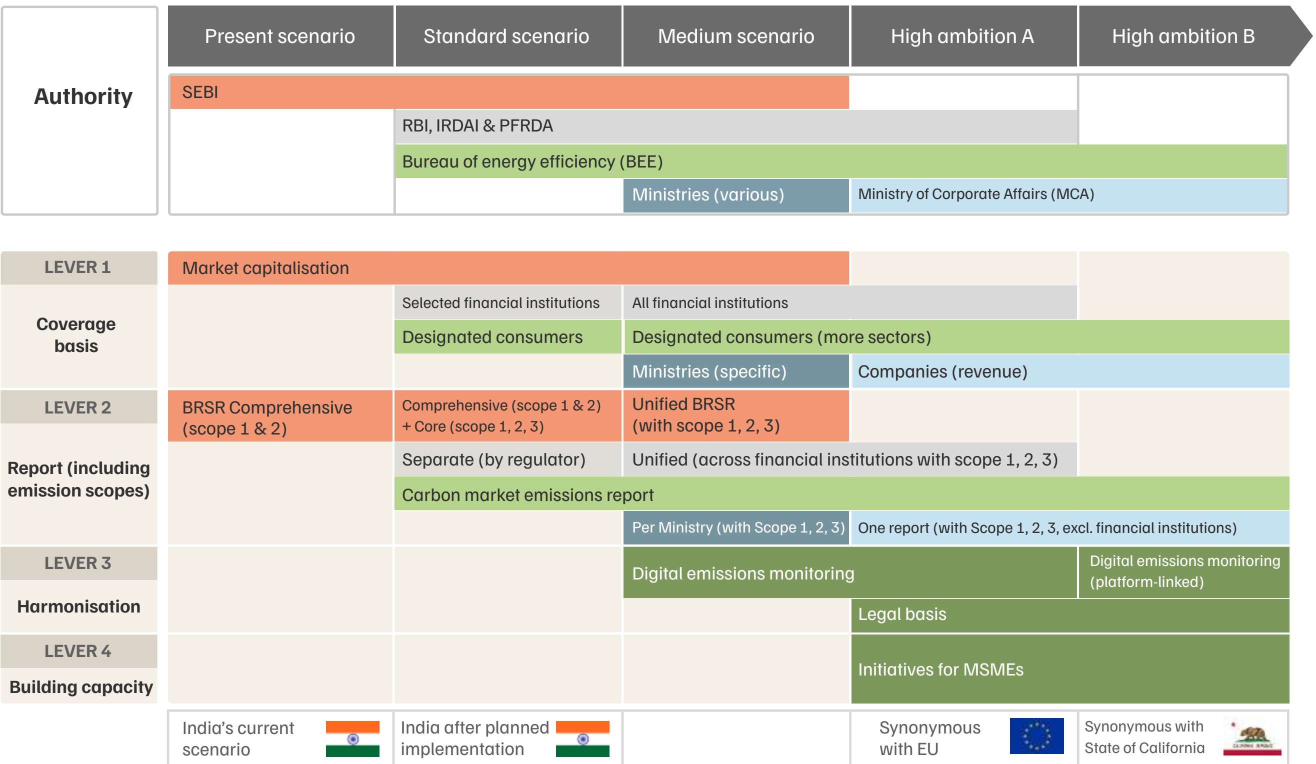
> The scenarios provide policy-makers the choice of a suitable end goal, and the regulatory pathway required to achieve it.

A proposal for a blueprint to enhance corporate emissions disclosures in India

The levers discussed above are stacked into ambition-based scenarios, each presenting policy and regulatory trade-offs they are likely to face (Figure ES2). Further, the scenarios also demonstrate where other jurisdictions stand. This analysis is useful for informing the level of ambition that is best-suited for India's broader emissions reductions goals—in terms of both, the ease and efficacy of implementation and the strengthening of regulatory oversight for enhanced corporate climate action, and the choice of a suitable pathway going forward.

A robust, internationally comparable and credible disclosure framework is a critical step towards mainstreaming corporate sustainability and enhancing access to green finance for Indian companies. While the decision on the ambition level for India must be rooted in the country's larger climate action goals over the medium and long-term, the scenarios present a progressive pathway forward, conducive for both, ambitious reforms and incremental policy-making.

Figure ES2. Potential corporate emissions disclosure scenarios for India

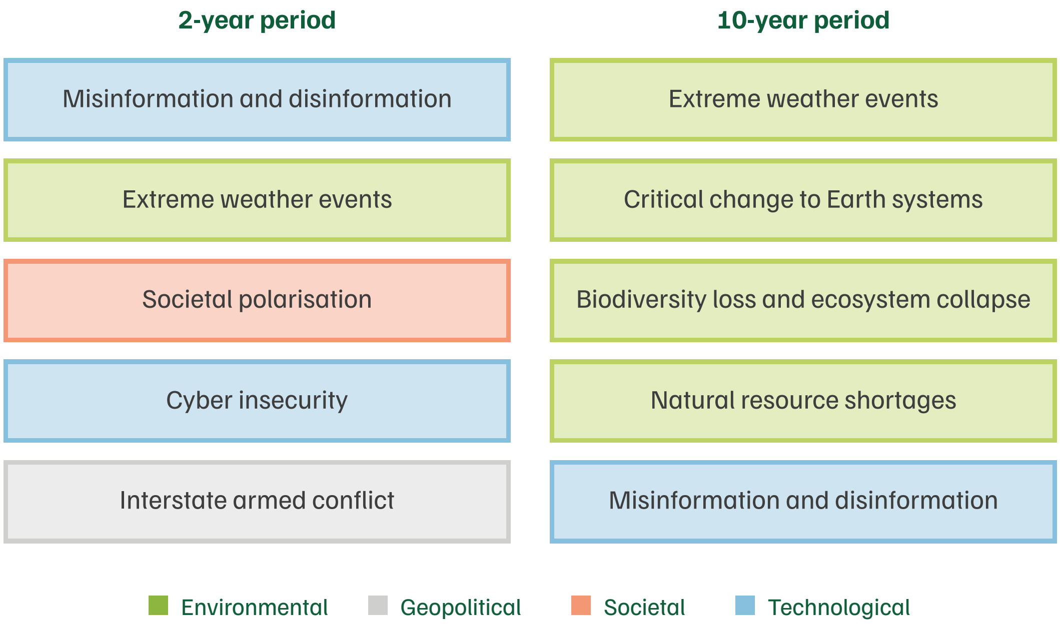


Source: Authors' analysis

1. Introduction

Climate change poses global risks across a vast spectrum, the burden of which is being increasingly experienced by individuals, businesses, communities and governments. Over the past decade especially, climate change has majorly disrupted geographies, economies and societies, making it a key aspect for businesses and governments, among others, to factor into short- as well as long-term growth strategy (Lebel et al. 2012). The World Economic Forum's Global Risks Report 2025 lists environmental factors among the top global risks over both the short and long-term horizons. A glaring 80 per cent of the top 5 risks in the long term—or over a 10-year outlook—are climate-related (Elsner, Atkinson, and Zahidi 2025).

Figure 1. Environmental factors constitute 4 of 5 top global risks in the long term



Source: Authors' analysis based on Elsner, Atkinson, and Zahidi 2025
Note: Based on a survey comprising respondents from civil society, international organisations, academia, government, and private sector. Over 50 per cent of the respondents were from the private sector.

In addition to the physical risks of extreme weather events and ecosystem collapses, transition risks are also emerging as a result of global and national policies that aim to steer companies and consumers away from fossil fuel-based energy sources. Transition scenarios have spurred a vast array of technological innovations in the last two decades, and are likely to continue disrupting business models of diverse corporations in the coming year with new ideas, products, and services (Kost 2020). As drivers of the economy, businesses are faced with the twin responsibilities of (i) aligning with national climate targets and (ii) providing relevant information to investors and shareholders on such risks and opportunities.

1.1 Evolution of the global disclosure landscape

Corporate climate action has been a key focus area on account of its role and contribution towards driving emissions reductions in an economy. A core consideration determining the reduction of emissions is the division of emissions into scope 1, 2, and 3 emissions, depending on the source, which impacts the extent to which emissions can be mitigated[1]. For production-based industrial corporations, action on emissions reductions (scope 1 and 2) is vital; for financial institutions their action towards financed emissions (scope 3) may require deeper focus.

Various instruments are driving emissions reductions globally. Carbon border taxes, domestic carbon taxes, and compliance mechanisms are critical in driving emissions disclosures because they directly link financial outcomes to environmental transparency. By placing a measurable cost on carbon emissions, they create strong economic incentives for companies to accurately track, report, and reduce their emissions. Together, these tools shift emissions disclosures from a voluntary sustainability gesture to a regulatory and market imperative, ensuring that emissions data becomes consistent, verifiable, and comparable across sectors and jurisdictions.

Globally, about 1,173 companies have made net zero declarations so far (Net Zero Tracker, n.d.). However, many barriers still prevent asset managers from accurately assessing and pricing climate risk, including a dearth of universally accepted and supported disclosure standards and availability of high quality data. Metrics tend to be 'input-based' and qualitative in nature, focusing on business effort, rather than quantitative 'output-based' metrics focusing on the impact of the business effort (Organisation for Economic Co-operation and Development 2025).

In the absence of regulated disclosures across jurisdictions, several voluntary, investor-driven frameworks such as the Global Reporting Initiative (GRI) have helped motivated companies make disclosures in a standardised manner. Environmental data platforms such as CDP have also made it simpler for corporates to report emissions through comprehensive questionnaires. However, firm-led adoption of voluntary standards can expose consumers and investors to greenwashing, which can occur at the product- or firm-level, or in the form of climate-washing (Ballan and Czarnezki 2024). The growing number of voluntary standards with independent areas of focus (sustainability, climate-risk) has also led to fragmentation of the disclosures (Mehta 2025). This makes regulated disclosure regimes critical, to enable disclosures in a consistent, regular, and standardised manner.

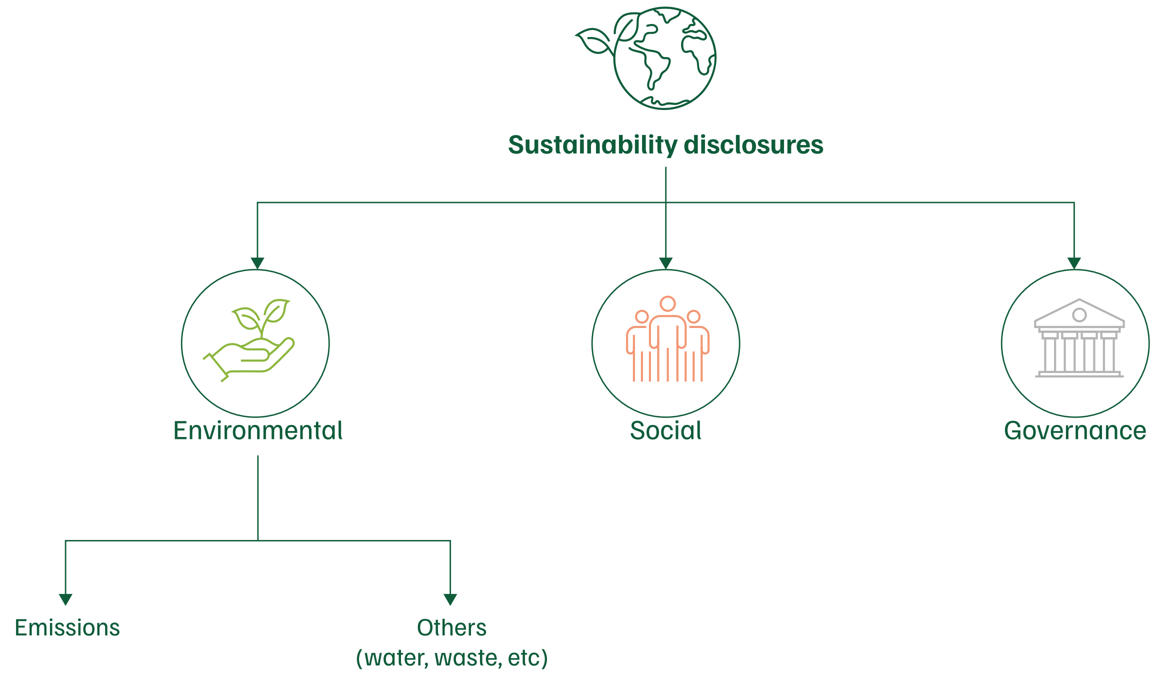
Figure 2. Various instruments driving emissions reductions globally

Carbon border taxes	Carbon taxes	Net zero targets	Compliance markets
EU CBAM, US FPF Act	in 31 jurisdictions (as of 2024)	across countries & corporates	in 36 jurisdictions (as of 2024)

Source: Authors' analysis

1. Scope 1, 2, and 3 emissions are greenhouse gases that are released across an organisation's entire value chain. Scope 1 emissions are greenhouse gases that an organisation emits from sources it owns or controls directly. Scope 2 emissions are indirect, deriving from an organisation's purchase of electricity, steam, heat, or cooling. An organisation's Scope 3 emissions, also known as its life-cycle emissions, are those that arise across the value chain, both upstream and downstream. For example, Scope 3 emissions include the fuel used to power an airplane once it's been sold to an airline. They also include the energy used to manufacture the steel that's used to build the airplane.

Figure 3. Areas of focus within the landscape of sustainability disclosures



Source: Authors' analysis

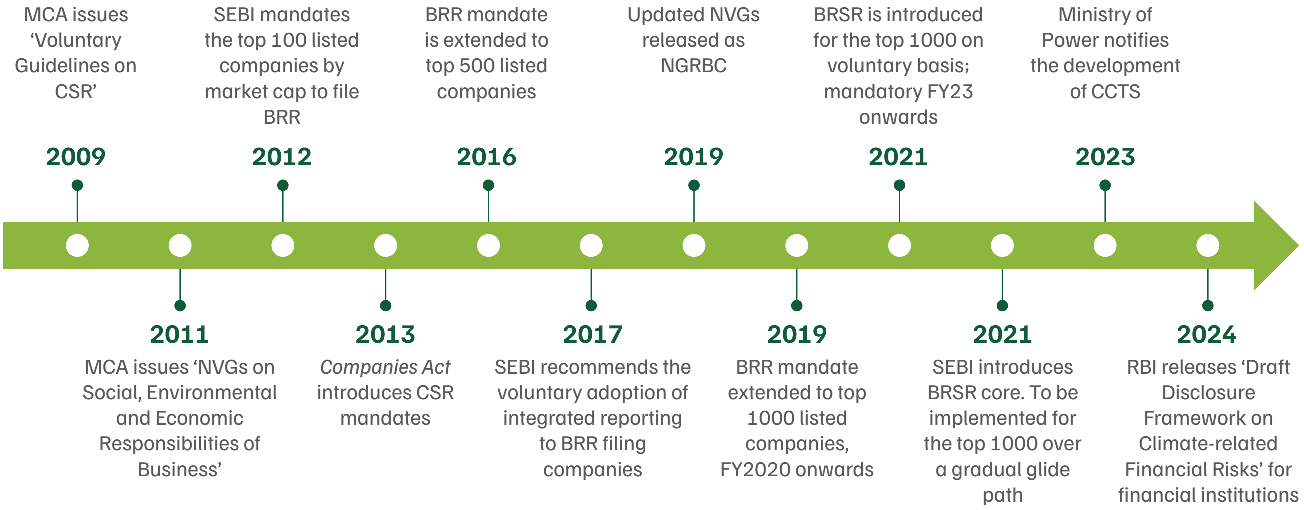
There are concerns that disclosures are turning into an end in itself, rather than a means to improve a company's sustainability outcomes (Pucker 2021). When implemented correctly, emissions disclosures can help (i) governments plan national-level emissions targets in a bottom-up manner, (ii) help governments set industry-specific emissions benchmarks as per the current baseline, and (iii) incentivise corporates to improve action on emissions reductions, and disclose the same.

Despite their value to the investment community, disclosures are a politically divisive issue in countries such as the US, with regulators facing significant pushback from industry and the judiciary (McGowan 2023). In the US, the Securities Exchange Commission attempted to mandate climate risk disclosures for listed entities but this was halted on account of opposition from industry and a few states. In this context, certain state governments (such as California) have stepped up to push corporations towards enhancing emissions disclosures, resulting in a bottom-up approach. In contrast, the European Union has taken a top-down regulatory approach, with most EU companies subject to disclosures. Understanding the regulatory approach taken by countries globally is an important starting point for countries such as India that are at a nascent stage of disclosure regulation, for charting the way forward in a meaningful manner.

1.2 Disclosure regime in India

The corporate responsibility and sustainability disclosures landscape in India has evolved significantly over the years—moving from its voluntary and prescription-based nature, to a legal mandate. This transformation, driven by market pressures and regulatory initiatives, has led to a greater emphasis on board oversight and management of investor expectations. Thus, by growing beyond financial disclosures to cover the social and environmental impacts of a company's operations, corporate accountability has come to stress the importance of sustainability.

Figure 4. Evolution of the disclosures landscape in India



Source: Authors' analysis

In the current landscape, mandatory non-financial (sustainability) disclosures by corporates in India have three drivers. They are either (i) corporate social responsibility (CSR)-driven, (ii) environmental, social, and governance (ESG)-driven, or, (iii) compliance carbon market-driven.

i. **CSR-driven disclosures**: *The Companies Act, 2013*, outlines the statutory responsibilities of a company's board of directors towards corporate accountability. It also establishes the legal mandate for certain companies (based on their turnover and net profit) to establish a CSR committee, consisting of its directors, to undertake CSR activities, and to report on them.

The three key sections of the Act that reinforce corporate accountability and board oversight are:

- **Section 134**: mandates a company's board of directors to approve and present financial statements and related disclosures in the board report.
- **Section 135**: lays down the legal framework and rules for certain companies to undertake CSR activities, and the CSR-related duties of the board.
- **Section 166**: outlines the duty of directors to ensure that they promote and act in the best interests of the company, its employees, the shareholders, the community, and the environment.

The enforcement of CSR-driven disclosures is largely focused on promoting sustainable business approaches that cover the social and environmental responsibilities of a company, and other diverse aspects such as health, education, and resource management.

ii. **ESG-driven disclosures**: The Ministry of Corporate Affairs (MCA) and the Securities and Exchange Board of India (SEBI) have historically driven the regulatory development of ESG disclosures in India. Currently, the Business Responsibility and Sustainability Report (BRSR) under SEBI covers the regulatory framework for ESG reporting by the top 1,000 (by market capitalisation) listed companies in India. It covers environmental, social and governance parameters, with emissions being a key indicator under the environment parameter. In addition to the BRSR having an investor-oriented purposefulness, it also reflects board-level responsibility and accountability, as anchored in Section 166 of the *Companies Act*, 2013.

Structurally, the BRSR is divided into three sections (Securities and Exchange Board of India 2023):

- **Section A: General Disclosures** (focusing on basic company information and governance)
- **Section B: Management and Process Disclosures** (covering company policies, oversight, and risk management processes related to ESG)

- **Section C: Principle-wise Performance Disclosures** (based on nine principles of the National Guidelines for Responsible Business Conduct [NGRBC])

Among the nine NGRBC principles, principle 6 covers environment-related disclosures, and has undergone significant development—to expand its coverage from simple environmental performance aspects, to metrics such as emissions reporting, in alignment with global standards (Securities and Exchange Board of India 2021).

Currently, the BRSR is the only emissions disclosure mandate in force in India. Other regulators, such as the Reserve Bank of India (RBI), the Insurance Regulatory and Development Authority of India (IRDAI), and the Pension Fund Regulatory and Development Authority (PFRDA) have also integrated ESG risk monitoring within their regulatory purview. However, they have not introduced disclosure templates so far.

iii. **Compliance carbon market-driven reporting (based on monitoring, reporting and verification [MRV] guidelines)**: India announced the introduction of a compliance carbon market and the Carbon Credit Trading Scheme (CCTS) in 2023, to be administered by the Bureau of Energy Efficiency (BEE). The CCTS has recently set emission-intensity reduction mandates for obligated entities, and outlined disclosure requirements to demonstrate emissions measurement practices and the achievement of the set targets, with compliance starting FY 2026. This reporting is mandated for the regulated entities across nine high-emitting industrial sectors (Bureau of Energy Efficiency, n.d.). Further, several regulated unit-level entities included under the CCTS belong to companies that are also required to make BRSR filings under the SEBI mandate, and make ESG disclosures.

Of the three aforementioned regulatory mandates that drive the landscape of corporate disclosures in India, emissions disclosures are covered by (i) ESG-driven disclosures (enforced by SEBI through BRSR, and certain formats currently under development), and (ii) compliance carbon market-driven reporting (enforced by BEE for the CCTS).

Filings under the BRSR—the only emissions reporting mandate currently in force—are the only source of data for measuring emissions by corporates in India. In 2024, 998 companies filed the BRSR, but only 781 reported data on Scope 1 and 2 emissions, which is an essential indicator for mandatory reporting. The leadership indicator, scope 3, was reported only by 268 companies.[2] This suggests that while accuracy of data needs verification, the quality and consistency of reporting also needs attention.

Figure 5. Corporate emissions reporting in India—what exists & what's on anvil

In force (FY 2023 onwards)	**In the works**			
SEBI	**SEBI**	**RBI**	**PFRDA and IRDAI**	**BEE** (carbon market)
• **BRSR Comprehensive** - Market cap based - Top 1000 companies - 9 principles covering E, S, & G Emissions covered under Principle 6 (Environment)	• **BRSR Core** - Market cap based - Top 150 companies; glidepath to Top 1000 over 4 years - FY 26 onwards	• **Climate-related risk disclosures** - Select regulated entities (REs), excludes middle layer NBFCs - Disclosure not specified yet - Compliance year not specified yet	• **Stewardship code for ESG** - All pension funds and insurers - Disclosure not specified yet - Compliance year not specified yet	• **Annual emissions report** - 9 sectors covered - Obligated entities to be specified - Compliance begins FY 26
Scope 1 & 2	**Scope 1,2 & 3**	**Scope 1,2 & 3**	**Unspecified**	**Scope 1 & 2**

Source: Authors' analysis

2. Author's analysis based on data from Indian Corporate Climate Action Data 2024 (Indian Corporate Climate Action Data, n.d.)

Figure 6. Share of top 1,000 listed entities in India's national emissions

Figure 6A. Top 1000 listed companies by market cap account for ~43% of India's emissions

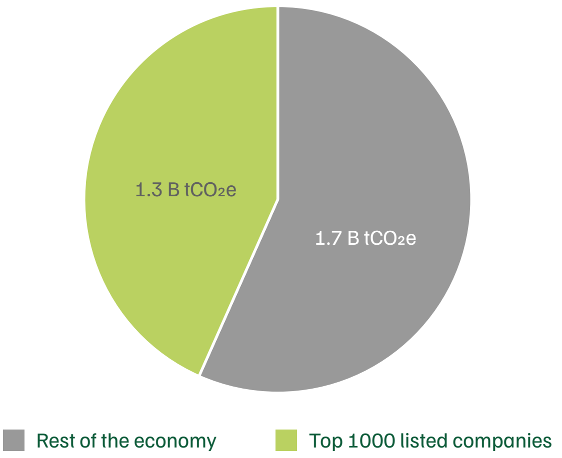
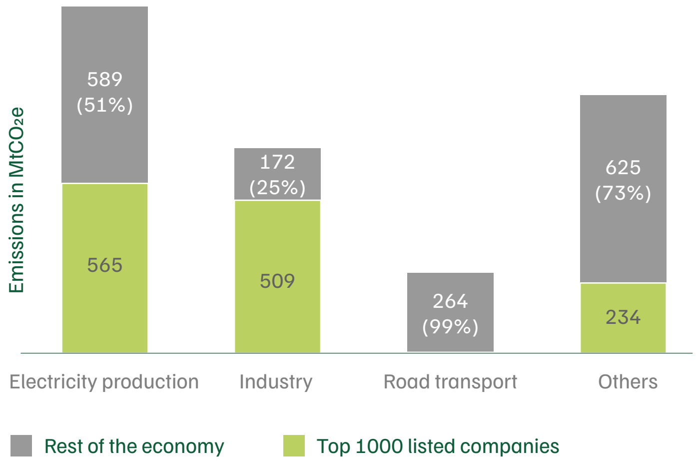


Figure 6B. Emissions attributable to the Top 1000 companies varies by sector



Source: Authors' analysis based on Government of India's Biennial Update Report–4 submitted to the UNFCCC (MoEFCC 2025), and Indian Corporate Climate Action Data 2024 (Indian Corporate Climate Action Data, n.d.)

Corporations are a significant source of emissions across sectors, making them a useful cross-cutting lever to drive emission reductions. India's total emissions stand at about 3 billion tCO_2e. Of this, the top 1,000 listed companies account for about 43 per cent (1.3 billion tCO_2e). When compared with India's sectoral emissions, the top 1,000 companies account for 49 per cent of India's emissions from electricity production, and 75 per cent of India's emissions from industry.

Apart from the top 1,000 companies, there is a considerable segment of emissions from the rest of the economy that needs to be covered by reporting. However, there is a simultaneous need to ensure that coverage is expanded by tapping into low-hanging fruit, without enhancing the compliance burden on smaller entities. With respect to this, there are three important questions that can guide the design of a futuristic emissions disclosure framework, especially for the evolving regime in India:

- First, how can the landscape of emissions disclosures be expanded to cover a greater share of emissions without creating unintended spillovers for non-emitters?
- Second, how can the quality and integrity of emissions disclosures be improved to enhance its utility for corporates, regulators, and investors?
- Third, what are the opportunities for convergence and building interoperability between the dual reporting mandates?

1.3 Study design and objective

This study adopts a cross-jurisdictional comparative analysis of general corporate emissions-related, and carbon market-related emissions disclosure regimes. It covers corporate emissions disclosure regimes and carbon market MRV protocols across 6 jurisdictions. The comparison considers India's evolving emissions disclosure regime vis-à-vis jurisdictions with mature regulatory environments, to identify best practices and pathways for improvement.

India's ESG disclosure frameworks (SEBI, RBI, IRDAI, and PFRDA) are assessed against those in the EU, the UK, and the US (particularly the state of California). The purpose behind including frameworks still under developmental stages (RBI, IRDAI, and PFRDA) is to ensure that options proposed here are not in isolation, and take into account the ever-expanding disclosure landscape in India. **India's carbon market driven disclosures (regulated by BEE) have been assessed against those in the EU, the UK, California, and South Korea**.

The selection of the international regimes is rooted in the maturity of their disclosure landscapes, the size of their ESG markets, their leadership in innovating and expanding frameworks that often influence global reporting trends, and the inter-connectedness of these jurisdictions with the trade and business operations of several Indian corporations.

The report adopts an ecosystem-level transformative approach rather than presenting action points for each type of stakeholder. The actionable policy options presented bring together regulators, policy-makers, central banks, companies, insurers, pension funds, and carbon markets, to ensure a cohesive and collaborative pathway is charted. **The report consolidates learnings from the other jurisdictions, and develops policy options to ensure that new mechanisms implemented in India have multi-faceted utility for corporates which help them spotlight their growing sustainability profiles, without adding to their regulatory obligations**.

Image: iStock

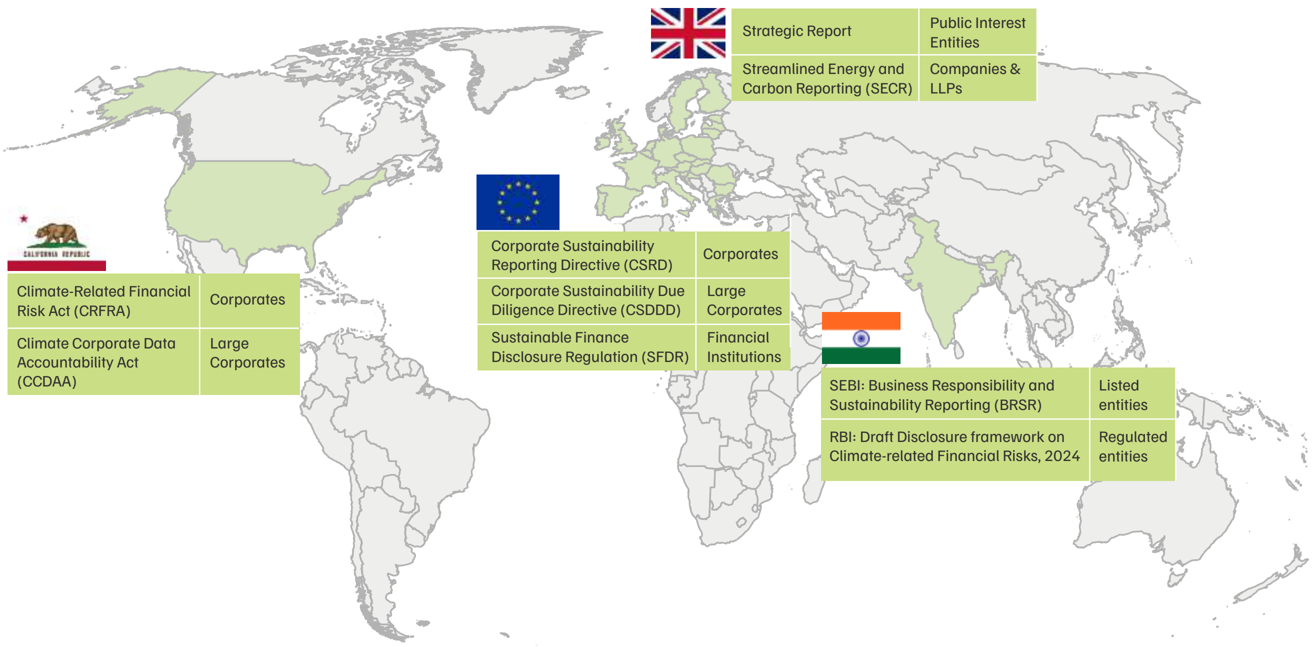
2. ESG-driven corporate disclosures

As climate disclosure frameworks evolve, they now extend beyond simply reporting Scope 1, 2, and 3 emissions. Across different frameworks and jurisdictions, corporations are increasingly required to disclose monitoring plans, emissions reduction pathways, and carbon market transactions, among other details. For instance, the International Sustainability Standards Board (ISSB) recommends that entities disclose their plans for using carbon credits to offset emissions. India's emissions disclosure framework is still evolving, and to identify pathways for improvement, it is essential to compare it with mature regulatory environments that have established best practices.[3]

The European Union (EU), the United States (US), and the United Kingdom (UK) were chosen as benchmark jurisdictions for the following reasons:

- **Global leadership in emissions disclosures**: The EU has one of the most advanced sustainability reporting frameworks, with the Corporate Sustainability Reporting Directive (CSRD) and Sustainable Finance Disclosure Regulation (SFDR) setting global standards for corporate transparency, Scope 3 disclosures, and double materiality. Even though the Omnibus regulation has relaxed disclosure norms, they remain robust and progressive (European Union 2022;

Figure 7. Emissions disclosure regimes studied



Source: Authors' compilation

3. While several other disclosure frameworks (from the RBI, IRDAI and PFRDA) may be introduced soon, this analysis focuses on the BRSR framework, as it is in force currently. For the purpose of RBI, its Draft Disclosure Framework provided certain details on the expected final framework, which has been included in the analysis.

2024; 2019, 317:201) The US presents a case for sub-national legislative action (as in the state of California), in the absence of nationwide mandates (Securities and Exchange Commission 2024; State of California 2023).[4] It may also be joined by New York, Illinois, New Jersey and Washington state (Ainsworth 2025). The UK's Streamlined Energy and Carbon Reporting (SECR) and alignment with Task Force on Climate-related Financial Disclosures (TCFD) demonstrate an effective blend of regulatory oversight and corporate compliance (Government of UK 2019; 2022; 2022; 2021). Additionally, it has also announced plans to move to ISSB standards soon (Climate Disclosure Standards Board 2021).

- **Influence on global regulatory trends**: The EU's CSRD and ISSB-aligned frameworks are shaping corporate sustainability reporting worldwide, making them highly relevant for India as it integrates global disclosure standards (IFRS Foundation, n.d.). While the US is on the backfoot on climate-related initiatives at present, its global leadership in ESG markets is second only to the EU's. Further, in the absence of countrywide disclosures, states such as California have been at the forefront, demonstrating an interesting illustration of sub-national leadership.
- **Trade and investment considerations**: Many Indian multinational corporations operate in or trade with these jurisdictions, requiring compliance with their sustainability reporting standards. The EU's Carbon Border Adjustment Mechanism (CBAM) is a direct concern for Indian exporters, specifically for iron and steel, cement, and aluminium. The ability of an exporter to comply with the CBAM's emissions reporting obligations is an important factor in assessing competitiveness (Gupta, Pandey, and Sapatnekar 2024). Foreign institutional investors from the US, the UK, and the EU are increasingly demanding higher sustainability transparency from Indian companies, influencing local disclosure practices (Bose et al. 2024).

2.1 Comparison of regulatory approaches taken across jurisdictions studied

Based on the parameters identified as critical to emissions disclosures,[5] a comparison of regulatory approaches adopted across four jurisdictions–the EU, the UK, the US (both federal and state levels), and India is presented in Table 1.

Image: iStock

4. The Securities Exchange Commission (SEC) attempted to mandate nationwide climate disclosures in 2024, which were opposed by industry and states. While it carried on its defense for a year, the SEC withdrew the proposal altogether, in early 2025. Hence this analysis does not include the proposed framework, as it no longer exists. From the US, the state of California is used as a reference point, owing to its legislated mandates on climate related disclosures.
5. The key parameters used for comparison are highlighted in Annexure 2.

Table 1. Corporate emissions disclosures: India Vs EU, US, UK

Parameters	India	US (federal & states)	EU	UK
Legal basis	National-level regulation (various agencies)	States (CA, IL, NY, WA) - Statutory legislation	EU-wide statutory legislation	National legislation and regulations
Agencies and regimes	SEBI: BRSR RBI: Draft Disclosure Framework on Climate-related Financial Risks, 2024 IRDAI & PFRDA: TBA	State: California (CARB) Climate-Related Financial Risk Act (CRFRA) Climate Corporate Data Accountability Act (CCDAA)	Supra-national (ESMA): Corporate Sustainability Reporting Directive Designated NSAs: Corporate Sustainability Due Diligence Directive (CSDDD) Sustainable Finance Disclosure Regulation (SFDR)	Federal (UK FRC): Strategic Report DESNZ: Streamlined energy & carbon reporting
Regulatory approach	Evolving regulatory approach	Market-driven with state-level regulations	Regulatory-heavy	Hybrid approach
Applicability	SEBI: Listed entities RBI: Select Regulated Entities IRDAI & PFRDA: Insurers + pension funds	Companies Large companies (only for CCDAA)	Companies Large companies (only for CSDDD) Financial companies (SFDR)	Strategic report: PIE (large listed), AIM (mid cap), non-PIE entities SECR: Companies + LLPs
Coverage	1,000 companies	~15,300 companies	~6,900 companies + Financial companies	NA

Source: Authors' analysis based on (European Union 2024; 2022; 2019), (Securities and Exchange Commission 2024), (State of California 2023a; 2023b), (Securities and Exchange Board of India 2021), (Ministry of Corporate Affairs 2020), (Government of UK 2022a; 2022b), TCFD (Government of UK 2021a).

2.2 Comparison of emissions disclosures across jurisdictions studied

1. **Coverage**: The coverage of obligated entities is based on a few broad categories, separately or in combination: (i) monetary thresholds, (ii) market capitalisation, and (iii) number of employees. In the EU, the coverage is based on monetary thresholds whereas the UK follows a combination of monetary thresholds and number of employees. The state-level disclosures in California follow the monetary threshold approach to determine coverage. India's BRSR disclosures follow the market capitalisation route (Securities and Exchange Board of India 2021), whereas the disclosure mandates under the RBI, the PFRDA and the IRDAI extend to all entities under the purview.

Table 2. Market cap to monetary thresholds: How different jurisdictions enforce emissions disclosures

Parameters	India	US (federal & states)	EU	UK
Coverage	SEBI - Market capitalisation RBI - All regulated entities IRDAI - All insurers PFRDA - All pension funds	CA - Monetary threshold (revenue)	Monetary threshold	Monetary threshold and number of employees
Voluntary/ mandatory (for those covered)	SEBI BRSR Comprehensive and Core - Mandatory SEBI BRSR Lite - Voluntary RBI - Mandatory IRDAI - Mandatory PFRDA - Mandatory	CA - Mandatory	CSRD - Mandatory SFDR - Mandatory CSDDD - Mandatory	Mandatory for all

Source: Authors' analysis

2. **Number of reports and assurances**: In the EU, obligated entities subject to the Corporate Sustainability Reporting Directive (CSRD) have to file a report according to the European Sustainability Reporting Standards (ESRS). In California, companies have a single report for climate-related risks, including emissions. Companies in the UK are required to file their disclosures in their strategic report, or as part of the Energy and Carbon Report in the case of LLPs, if they do not file a separate strategic report. On the contrary, corporates in India are required to make their emissions disclosure under BRSR, which is a separate filing. For entities under the purview of the RBI, the PFRDA and the IRDAI, the reporting requirements are yet to be announced. On the assurances front, the EU, states in the US (California), and SEBI's BRSR Core filings require mandatory assurances, whereas the UK has not mandated assurances yet. All the reports are required on an annual basis, except under California's Climate-Related Financial Risk Act, which requires disclosures once in two years.

Table 3. Mixed bag in India but mandated in California: Emissions disclosure approaches on assurances

Parameters	India	US (federal & states)	EU	UK
Assurances	SEBI BRSR Comp - No SEBI BRSR Core - Yes	No federally mandated regulation in force yet California reporting standards require assurances	All three (CSRD, SFDR, CSDDD) frameworks require assurances	No assurance requirements

Source: Authors' analysis

Table 4. Coverage of emission scopes & disclosures: Different mandates within India too

Parameters	India	US (federal & states)	EU	UK
Emission scopes covered	SEBI BRSR Comp - Scope 1 & 2 SEBI BRSR Core - Scope 1, 2 & 3 RBI - Scope 1, 2 & 3	Federal - Scope 1 and 2 CA - Scope 1, 2 and 3	Scope 1, 2 and 3	SECR - Scope 1 and 2 (only quoted companies)
Coverage of value chains	BRSR Comp - No BRSR Core - Yes RBI - Yes	Federal - No CA - Yes	Yes, in all three	No

Source: Authors' analysis

3. **Scopes covered**: In the EU and California, companies are required to mandatorily disclose all three scopes of emissions. In the UK, only Scope 1 and 2 emissions reporting is mandated currently (Government of UK 2022), but the reporting of Scope 3 emissions shall become mandatory with the adoption of ISSB standards. India follows a mixed approach on this stance—BRSR Comprehensive mandates Scope 1 and 2 emissions disclosures, whereas BRSR Core requires all three scopes (Securities and Exchange Board of India 2023c; 2023b). Banks and financial institutions under the RBI's purview are mandated to disclose all three scopes, whereas emissions disclosures for entities under the IRDAI and PFRDA's purview are yet to be decided.

4. **Other attributes**:

- **Segregation of climate disclosures**: The disclosure mandates in the US on the federal level require climate-related reporting, while the states require emissions reporting. The UK requires reporting on energy usage and carbon emissions. India's BRSR is similar to the reporting requirements under the EU, where the environmental indicators are fused along with social and governance under an ESG framework. On the other hand, the RBI's reporting requirements are climate-related.

- **Reporting boundary**: The reporting boundary for corporates vis-a-vis the disclosure about their subsidiaries, joint ventures, or associate companies is important to get a complete understanding of their emissions as a conglomerate. Currently, in the EU, following a double materiality assessment of the corporates' various affairs, disclosures are required from a consolidated holding level if found material. In California, all subsidiaries of non-US parent companies are also required to disclose their GHG emissions and climate risks, while the reporting boundary prescription in the UK is yet to be determined. Under India's BRSR, companies are required to disclose all the subsidiaries, joint ventures, and associate companies registered under the conglomerate. But the disclosure of these subsidiaries' emissions is left to the discretion of the companies. They are required to clarify whether the report is from a 'standalone' or 'conglomerate' perspective, and maintain uniformity across the various parameters of the report.

- **Private sector/industry initiatives**: In the US, industry-driven disclosures are common, and highly regarded for access to markets, e.g. SCS global for the gem and jewellery industry, American Iron & Steel Institute, P100 for construction.

Table 5. India's reporting boundary doesn't mandate subsidiaries' emissions disclosures

Parameters	India	US (federal & states)	EU	UK
Coverage of Environmental ('E') indicators	SEBI - Fused with social and governance (BRSR) RBI - Only climate-related	Federal - Only climate related CA - Only emissions reporting	Fused with social and governance in all three	SECR - Only energy usage and carbon emissions CFD - Aligned to TCFD (proposed move to ISSB)
Reporting boundary	BRSR - No current prescription. Companies have to disclose all their subsidiaries, JVs, associate companies, and only mention whether the report is created on a standalone or conglomerate basis.	CA - includes subsidiaries of non-US parent companies for both GHG disclosures and climate risk disclosures	Requires disclosures from a consolidated holding level. Non-EU headquartered companies required to make disclosures through their EU subsidiaries	TBD

Source: Authors' analysis

Table 6. What India can take away from global emissions disclosure frameworks: coverage, features and more

	EU			UK		California (USA)		India	
Parameters	**CSRD**	**CSDDD**	**SFDR**	**Strategic report**	**SECR**	**CRFRA**	**CCDAA**	**SEBI BRSR**	**RBI disclosures**
Applicability	Corporates	Large corporates	Financial institutions	Public Interest Entities	Companies + LLPs	Corporates (including FIs)	Large corporates (including FIs)	Top 1,000 listed entities	Regulated entities (REs)
Legal basis	Statutory	Statutory	Statutory	Statutory	Statutory	Statutory	Statutory	Regulatory	Regulatory
Coverage basis	Revenue + Employees	Revenue + Employees	All FIs	Employees	Revenue + Employees	Revenue	Revenue	Market cap	Selected REs
Scopes covered	1, 2, and 3	1, 2, and 3	1, 2, and 3	1 and 2	1 and 2	1, 2, and 3	1, 2, and 3	1 and 2	1, 2, and 3
Reporting boundary	Defined	Defined	Defined	Defined	Defined	Defined	Defined	Not specified	Not specified
Assurances	Mandatory	Mandatory	Mandatory	Not mandated	Not mandated	Mandatory	Mandatory	Not mandated	Mandatory
Enforcement mechanisms	Penalties & suspension	Penalties & suspension	Penalties & suspension	Comply-or-explain	Comply-or-explain	Penalties	Penalties	Comply-or-explain	Comply-or-explain
Capacity building for MSMEs	Guidance provisions for voluntary reporting standard			N/A		N/A		N/A	

Best practice   Good practice   Less than ideal practice

Source: Authors' analysis

2.3 Opportunities for improving frameworks in India

As India strengthens its emissions disclosure landscape, there is an opportunity to integrate global best practices and refine existing frameworks. Harmonising reporting standards across all listed and large private companies, as in the case of the EU's CSRD mandates, ensures consistency and comparability. India can benefit from aligning BRSR disclosures more closely with global frameworks like the ISSB. Further, considering that a national-level regulation-driven approach has already been chosen, the way forward must focus on (i) establishing clear regulatory priorities, (ii) signalling a predictable process, and (iii) enabling stronger regulatory enforcement. The following section explores key opportunities to improve India's disclosure frameworks by learning from global best practices and transforming reporting formats into a meaningful sustainability 'report card' for companies. Key areas of improvement include:

- **Coverage**: The market capitalisation-based framework presents certain challenges with respect to expanding the coverage. There is a risk of low-emitting listed entities being included under the reporting mandate, and high-emitting non-listed entities being excluded. There is potential for India to adopt a targeted approach when expanding coverage, and go beyond the current market cap-based threshold.

- **Strengthening reporting quality:**

  » In the EU and California, the frameworks emphasise **Scope 3 disclosures**, which provide a more comprehensive view of a company's emissions. India's current disclosures focus primarily on Scope 1 and 2; a phased approach towards mandatory Scope 3 reporting would enhance corporate accountability.

  » Additionally, in India, moving away from a larger set of indicators that do not require mandated assurances, towards a **smaller subset of relevant indicators with mandated assurance requirements** may prove to be more useful in boosting investor confidence as well as simplifying reporting requirements and costs incurred by the corporates.

  » Since India's reporting is market capitalisation-based, specifying a clear **reporting boundary** (with respect to conglomerates and how they must treat subsidiaries) can be useful. Similarly, there can be a cut-off date for market capitalisation estimation, so that companies on the fringe are aware of their BRSR compliance requirement.

- **Digitalisation of data**: Publicly accessible digital repositories will make it easier to track corporate sustainability performance, as in the case of CA and the EU. Moving towards the development of an open-access platform where BRSR filings, carbon disclosures, and sustainability scores are centralised may be helpful.

- **Building ecosystem readiness**: The ESG (and emissions) reporting landscape is currently limited to the top 1,000 companies by market cap. As India's corporate presence deepens and the economy grows, more companies are expected to tap into capital markets for business growth, and hence demonstrate sustainability efforts. Indian regulators and policy-makers can proactively work towards expanding and enhancing the ecosystem for disclosures in the country, increasing awareness, building guidance tools such as handbooks, and holding capacity building initiatives. Together, they can also meaningfully engage large firms to undertake technical capacity building for value chain reporting.

India has an opportunity to refine its emissions disclosure frameworks by adopting best practices from global leaders and enhancing data comparability, credibility, and accessibility. By transforming disclosure formats into a **corporate sustainability report card**, companies will be held accountable for their environmental impact in a way that is transparent, investor-friendly, and aligned with India's long-term climate commitments. Strengthening regulatory oversight, integrating materiality assessments, and expanding digital access to sustainability data will be crucial in shaping India's transition to a more responsible corporate ecosystem.

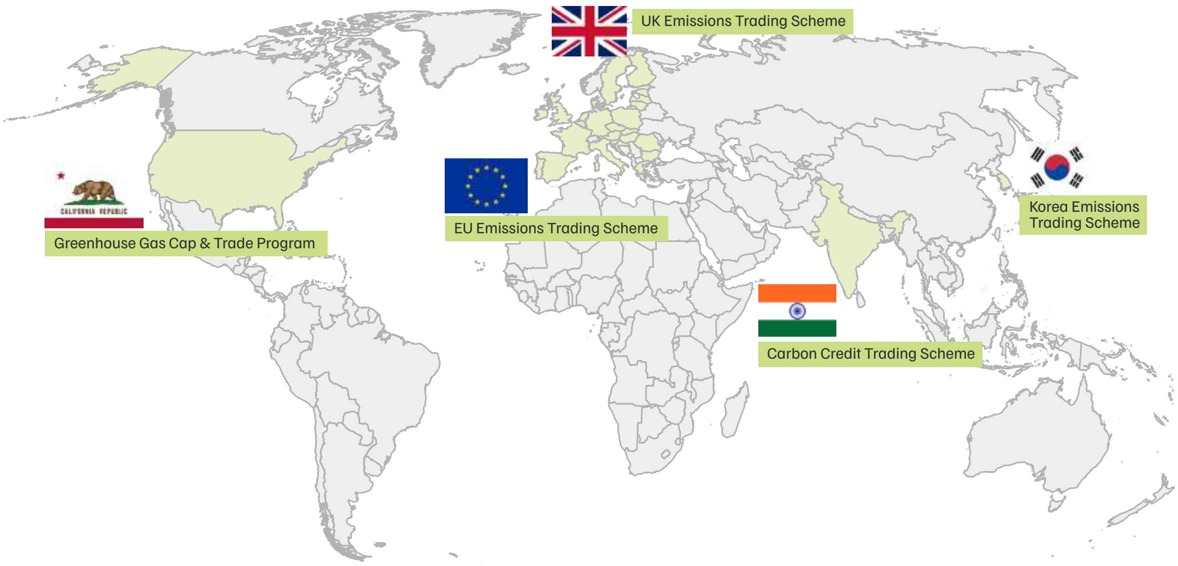
3. Compliance carbon markets-driven reporting

This section focuses on the second kind of corporate emissions disclosures—those mandated upon obligated entities by compliance carbon markets. Across jurisdictions, corporate climate accountability is often supplemented by the enforcement of a domestic compliance carbon market that places a threshold on emissions permitted and introduces additional disclosure requirements upon regulated entities. India's CCTS has begun operations, and would enforce disclosure requirements 2026 onwards, to demonstrate compliance against emission-intensity reduction mandates across nine industrial sectors. Several regulated plant-level entities covered by the CCTS belong to corporates that are also required to file BRSR reports under the SEBI mandate, and make ESG-related disclosures.

Monitoring, reporting, and verification (MRV) frameworks build the credibility and integrity of a compliance carbon market or an emissions trading scheme (ETS) by enabling accurate emissions measurement and verification. An emissions trading scheme and its MRV framework can largely be understood through its (i) legal basis and institutional setup, and (ii) monitoring, reporting, and verification protocols. Across these components, India's upcoming carbon market (CCTS) and its MRV framework is compared with a select-few jurisdictions across the world.

For the comparison, emissions trading schemes from the EU, the UK and California were chosen to maintain continuity with the analysis of general corporate disclosures, and to enable a holistic understanding of the regulatory environment for emissions. South Korea was chosen as it is an Asian economy with a fairly mature emissions trading scheme.

Figure 8. Emissions trading schemes studied



Source: Authors' compilation

3.1 Legal basis and institutional setup across carbon markets

The setup of a compliance carbon market is built on its (a) legal basis, and (b) institutional structure

i) **Legal basis**: Unlike other jurisdictions that have dedicated laws for establishing carbon markets, India has inserted the specification of a carbon market into the existing *Energy Conservation Act* (The Energy Conservation (Amendment) Act 2022).

ii) **Institutional structure**: In India, the BEE (under the MoP) is tasked with the administrative responsibilities of the Indian Carbon Market (ICM), owing to its experience in executing the similar target-based Perform, Achieve, and Trade (PAT) scheme (Bureau of Energy Efficiency, n.d.). This is in contrast with other carbon markets that are regulated by cross-sectoral ministries or departments. This may potentially result in siloed governance, on account of the lack of cross-sectoral coordination, and limited linkages of the Ministry of Power with larger climate diplomacy channels, where carbon markets are a key aspect of global cooperation. While India has set up a National Steering Committee for Indian Carbon Market (NSCICM), comprising members from both, Ministry of Power (MoP) and the Ministry of Environment, Forest, and Climate Change (MoEFCC), it remains to be seen whether this approach can mitigate the mentioned institutional challenges.

3.2 Monitoring, reporting, and verification protocols across carbon markets

Monitoring of real-time emissions forms the foundational bedrock for the reporting of accurate and verifiable emissions data. For the ease of recording and documentation of emissions data, automation of monitoring procedures is a common approach throughout the studied jurisdictions. Across all of them (excluding India), the deployment of continuous emissions monitoring systems (CEMS) is either encouraged, or mandated (depending upon the size and level of emissions of the installation) (Directorate-General Climate Action, European Commission 2021) (Asian Development Bank 2018). The installed real-time emissions monitoring systems (alongside their data acquisition and handling systems) directly feed the recorded data into the respective digital reporting systems and formats, further smoothening the reporting procedures for entities.

In the Indian context, no requirement of digital emissions monitoring has been outlined under the CCTS' MRV framework. Historically, the utilisation of CEMS has largely been done by the Central Pollution Control Board (CPCB) and state pollution control boards (SPCBs) for monitoring pollutants, as guided by *the Air (Prevention and Control of Pollution) Act*. Under the PAT scheme as well, continuous emissions monitoring was not

Table 7. Comparison of legal and institutional setups of carbon markets

	EU ETS	UK ETS	K-ETS	Cal ETS	India CCTS
Legal basis	*EU ETS Directive, 2003*	*The GHG ETS Order, 2020*	*Act on Allocation and Trading of GHG Emissions*	*California Global Warming Solutions Act, 2006*	*Energy Conservation Act, 2003 (Amd 2022)*
Established in	2005	2021	2005	2013	2026
Established via legal Act	Yes	Yes	Yes	Yes	No
Nodal body's focus area	Environment	Environment	Environment	Environment	Power

Source: Authors' analysis based on (European Parliament 2024), (Government of UK 2020), (Government of UK 2023), (European Commission, n.d.), (Ministry of Government Legislation 2020), (Climate Change Research Institute of Korea 2016), (California Legislative Information 2006), (California Air Resources Board 2019), (The Energy Conservation (Amendment) Act, 2022), (Bureau of Energy Efficiency, n.d.), and (Ministry of Environment, Forest and Climate Change 2025).

Table 8. India yet to mandate digital monitoring of emissions

	EU ETS	UK ETS	K-ETS	Cal ETS	India CCTS
Digital monitoring systems mandated/actively used	Yes	Yes	Yes	Yes	Unspecified
Linkage of digital monitoring with reporting systems	Yes	Yes	Yes	Yes	Unspecified

Source: Authors' analysis

mandated. As the global experience highlights, the digital recording of emissions under the CCTS might require the addition of CO_2 and other GHGs under the list of 'pollutants' under a particular regulation or Act (such as the *Environment Protection Act*).

In terms of reporting protocols, the Korea ETS, the California Cap-and-Trade Program, and the Indian CCTS mandate Scope 1 and Scope 2 reporting by regulated entities. Under the EU ETS and the UK ETS, reporting is limited to scope 1 (accompanied by basic details on fuel usage). Submission of reports under ETS is undertaken digitally across all studied jurisdictions, except India, albeit through differential platforms and approaches. In the case of the Indian CCTS, the form/method of reporting has not been specified yet.

Uniquely, California's ETS goes a step further by enabling the linkage of emissions databases from the Cap-and-Trade Program with easy emissions tracking for general corporate disclosures. This is done through the California Air Resources Board's electronic Greenhouse Gas Reporting Tool (Cal e-GGRT), which is used by regulated entities to report GHG emissions . As a digital platform, it enables this linkage by creating accessible profiles for each facility reporting emissions through the system, which they can directly draw while compiling data for corporate emission disclosures (California Air Resources Board, n.d.).

Third-party assurance of emissions reports is a mandated requirement under emission trading schemes across all jurisdictions studied, as independent verification is key to ensuring transparency and credibility of reported data. Going further, the EU ETS (Directorate-General Climate Action, European Commission 2022) and the Indian CCTS (Bureau of Energy Efficiency 2024) also require the verification report to be reviewed by an independent reviewer before submission for certification and approval. Across the studied jurisdictions, verified emissions reports are typically certified by nodal authorities for the issuance of credits. Under the CCTS, certification takes a more complex route—the nodal authority, the BEE, first submits accurate verification reports to the NSCICM. The latter then, upon review, guides the BEE to issue the credits (Bureau of Energy Efficiency 2024).

Table 9. India's CCTS requires mandatory third-party assurances

	EU ETS	UK ETS	K-ETS	Cal ETS	India CCTS
Monitoring plan	Yes	Yes	Yes	No	Yes
Annual emissions report	Yes	Yes	Yes	Yes	Yes
Additional Submissions	Improvement Report	Improvement Report	-	Compliance Instrument Surrender Report	Performance Assessment Report
Scope of emissions covered	1	1	1 & 2	1 & 2	1 & 2
Mode of reporting	Digital	Digital	Digital	Digital	Digital
Third-party assurance	Yes	Yes	Yes	Yes	Yes
Independent review of verification report	Yes	No	No	No	Yes

Source: Authors' analysis

Table 10. What India can take away from global emissions trading schemes: Digital monitoring and more

Parameter	EU ETS	UK ETS	K-ETS	Cal ETS	India CCTS
Clear legal basis	Established Act, linkages with long-term climate goals	Established Act, linkages with long-term climate goals	Established Act, linkages with long-term climate goals	Established Act, linkages with long-term climate goals	Mention of a carbon market inserted into an existing Act, no linkage with long-term goals
Institutional setup	Dedicated National Competent Authorities (NCAs)	Dedicated nodal body comprising regional bodies	Single ministry in charge	Single state department in charge	Functions involve both MoP & MoEFCC (NSCICM)
Enforcement mechanisms	Penalties, public disclosures, debarment, and legal action	Non-compliance notice, penalties, and legal action	Penalties and legal action	Penalties and legal action	Penalties and legal action
Monitoring approaches	Clearly outlined, utilisation of digital monitoring	Clearly outlined, utilisation of digital monitoring	Clearly outlined, utilisation of digital monitoring	Clearly outlined, utilisation of digital monitoring	Well-defined, no specifications for digital monitoring
Digital monitoring	Yes	Yes	Yes	Yes	Unspecified
Reporting requirements	Monitoring plan, emissions report, and improvement report	Monitoring plan, emissions report, and improvement report	Monitoring plan and emissions report	Emissions report, Compliance Instrument Surrender Report	Monitoring plan, emissions report, and performance assessment report
Digital reporting	Digital reporting linked to monitoring	Digital reporting linked to monitoring	Digital reporting linked to monitoring	Digital reporting directly linked to monitoring, and to general corporate disclosures	Digital reporting platform under development; not linked to monitoring systems
Verification protocols	Third-party assurance + independent review of verification report	Third-party assurance	Third-party assurance	Third-party assurance	Third-party assurance + independent review of verification report
Certification procedures	Through the NCAS	Through the nodal body	Through the nodal body	Through the nodal body	To be undertaken by BEE in consultation with NSCICM

Best practice   Good practice   Less than ideal practice

Source: Authors' analysis

3.3 Opportunities for improving frameworks in India

A comparative analysis of India's carbon market and its MRV framework with other carbon markets across other jurisdictions reveals several key takeaways on the comprehensiveness of the CCTS' MRV protocols, and offers suggestions on further strengthening its implementation.

MRV protocols & need for digitalisation

Primarily, the CCTS protocols governing all three aspects of monitoring, reporting, and verification draw fluent comparability with other carbon markets in the world, highlighting alignment with global benchmarks, standards, and methodologies. In conjunction, the protocols round up an overall MRV approach that stresses on the importance of the credibility of reported data and emission reductions.

However, a notable difference is observed in the utilisation of a digital or automated approach. Specifically, the monitoring guidelines do not address the need for continuous emissions monitoring systems that can improve both the monitoring accuracy as well the ease of reporting — a feature observed across global markets. Thus, at present, the current MRV protocols appear siloed, potentially making compliance onerous for entities. What emerges is a need to bridge the gap between 'M', 'R', and 'V' through an outlook that prioritises and promotes the digitalisation of processes, creating effective linkages that smoothen data management and reporting. Digital monitoring protocols can help develop linkages to the digital reporting platform for the CCTS that is currently being developed by the BEE (national carbon credit electronic platform) (Bureau of Energy Efficiency, n.d.).

Digitalisation of monitoring and reporting processes is also an important component for establishing between the carbon market- and the ESG-driven emissions disclosures. An automated repository of emissions, as highlighted in the case of other jurisdictions, shall help the ease of reporting—enabling corporates to draw the needed information from the same, common source, as per the scope of reporting. Alongside, it will be important to regulate emissions measurement boundaries and methodologies to maintain standardisation of reported data. Sound verification protocols and capacity building of auditors for consistency checks will also be crucial to ensure quality control.

Image: iStock

4. Enhancing corporate emissions disclosures in India

As the previous sections have described, in India, there exist two separate strands of emissions disclosures: (i) the ESG-driven disclosures mandated by SEBI BRSR for investor information, and (ii) the MRV-driven reporting compliances for the carbon market. To strengthen corporate emissions disclosures in India, the study identifies four fundamental levers:

- Expanding the coverage and scope of reporting on the basis of an evidence-based assessment;
- Strengthening existing reporting attributes to improve the quality and integrity of reporting;
- Harmonising reporting needs of the upcoming Indian carbon market (ICM) within the broad emissions disclosure regime in India, to simplify processes and reduce compliance burdens, and
- Building capacity for medium-sized enterprises that are likely to be major emitters of the future.

For each of these four, actions have been proposed for SEBI (capital markets regulator, with its already active BRSR), and others (including non-capital market regulators such as the RBI, the PFRDA, and the IRDAI, whose formats are under developmental stages, and can benefit from the analysis undertaken). The purpose behind including frameworks still under developmental stages is to ensure that options proposed here are not in isolation, and take into account the ever-expanding disclosure landscape in India. The study highlights four key levers, with several actions under each. While independently actionable, these steps are inter-connected.

Image: iStock

Table 11. Enhanced coverage to capacity building—4 proposed levers to strengthen corporate emissions disclosures

Key levers	Description
1. Enhance coverage	Expand coverage through diverse options - Option 1: Enhance non-BRSR frameworks - Option 2: Shift to a revenue-based threshold
2. Strengthen reporting	Specify reporting boundary Unify reporting Incorporate Scope 3 emissions disclosures Mandate assurances
3. Harmonise reporting systems	Encourage digital emissions monitoring Establish a legal basis for emissions reporting Specify enforcement provisions
4. Capacity building	Formal training programmes for SMEs Engage in capacity building programmes with large corporates

Source: Authors' analysis

4.1 Lever 1: Expand the coverage of emissions reporting

Globally, emissions disclosure mandates are broad-based, allowing more companies to fall within the scope of regulation. It also provides an opportunity for regulators to seamlessly widen the net to cover a greater share of emissions as per larger domestic policy around corporate climate action. There are also different approaches chosen by countries to define the applicability of disclosure mandates upon companies. The current approaches for coverage of companies, across prominent jurisdictions is as follows:

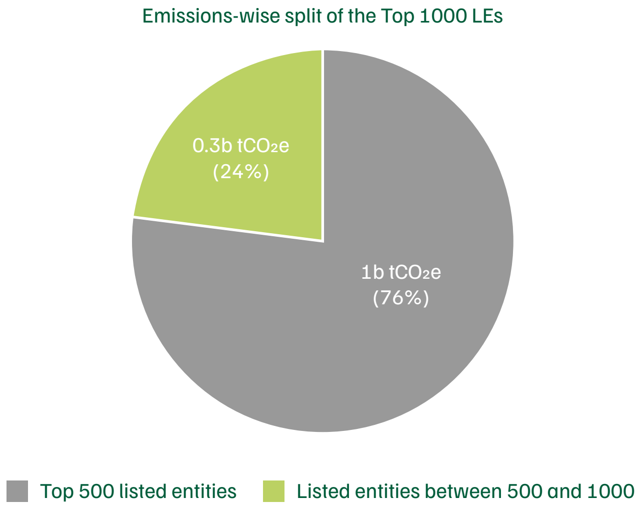
i. by revenue or asset size: UK, EU, California, South Korea, among others, or

ii. by market capitalisation: India (BRSR), Japan, among others.

In India, the coverage, so far, is limited to listed entities. BRSR only covers the top 1,000 listed entities by market cap. The number of companies covered is especially small compared to other jurisdictions (Table 1). This number also does not capture a majority of India's emissions (Figure 6). An assessment of the present coverage under the BRSR mandate reveals some insights on the share of emissions that mandated entities are responsible for:

- The top 500 listed entities' emissions amount to ~ 1billion tCO_2e (Pathak and Somvanshi 2023) while India's total emissions stand at ~3 billion tCO_2e (Ministry of Environment, Forest and Climate Change, Government of India. 2025). This implies that the share of emissions contributed by the top 500 listed entities amounts to about 33 per cent of the national total.
- Further, the top 1,000 listed entities' total emissions amount to ~1.3 billion tCO_2e (Indian Corporate Climate Action Data 2024) amounting to about a 43 per cent share of the national total (~3 billion tCO_2e).

Figure 9. Share of emissions contributed by listed entities groups



Source: Authors' analysis

The delta increase in coverage of emissions from top 500 to top 1,000 is ~0.3billion tCO_2e. Doubling the number of companies reporting is providing just about 30 per cent increase in emissions coverage . Hence, it is unlikely that going beyond the top 1,000 will yield any further substantial gains on emissions coverage, and may actually inappropriately widen the corporate net without widening the emissions net.

Yet, there is a need to expand emissions disclosure coverage to complement the current top 1,000 listed entities covered under the BRSR. What are the options to achieve this?

Table 12. Two options to enhance emissions coverage

Option 1 **Enhance the coverage of non-BRSR frameworks**	**Option 2** **Apply a revenue lens**
SEBI: remains constant at top 1,000 RBI: enhanced to include middle-layer Non-Banking Financial Companies (NBFCs)within disclosures ambit IRDAI and PFRDA: set timeframes for implementing proposed ESG investment and disclosure mandates Specific ministries: introduce sector-specific coverage including medium enterprises with sizable emissions	Establish a revenue/ production value-based threshold, above which entities will need to report their emissions Examples: EU, UK, California
Policy trade-off Fragmented disclosures, but targeted at high emitters	**Policy trade-off** Will include large non-listed companies (potentially large emitters), but requires institutional restructuring

Source: Authors' analysis

Option 1: Enhance applicability of non-BRSR frameworks

This option will keep SEBI's coverage of the top 1,000 listed entities intact, and shift focus to expanding emissions coverage through other levers. This will ensure that high-emissions sectors are targeted and spillover to non-emitting entities (although large) is minimised.

- **Enhancing applicability of RBI climate risk disclosures**: The current applicability of the mandates extends to (a) all scheduled commercial banks, (b) all tier-IV primary urban co-operative banks, (c) all all-India FIs, and (d) all top + upper-layer NBFCs. Middle-layer NBFCs can be covered within the scope of climate-risk disclosures as well, considering they include some key infrastructure finance companies with major lending to the power sector across India.

- **Introducing disclosure templates of the IRDAI and the PFRDA**: set a timeframe for introduction of the reporting format, with a phased roadmap for mandating disclosures.

- **Further expanding coverage through sector-specific targeting**: Mandating reporting through specific ministries (such as steel, power, others), giving due consideration to proportionality (based on emissions), that excludes small emitters within the sector. For instance, the power sector has sizable emissions but its corporations are non-listed (hence excluded from BRSR coverage), not covered under the categorisation of financial institutions, and don't fall under the CCTS' sectoral coverage either.

> Emissions reporting should be expanded on the basis of an empirical assessment of the costs and benefits of expansion. The expansion must focus on widening the emissions coverage net without significantly widening the corporate coverage net.

Option 2: Apply a revenue lens

This option envisages shifting from a market cap-based threshold to a revenue/production value-based threshold, as done by the EU, the UK, and California. All companies above the set threshold will then have to comply with reporting mandates, irrespective of their listing status.

This can bring companies into the net with significant mismatches between revenue (yardstick for emissions) versus market cap (yardstick for management performance). This approach will also bring large non-listed companies into the net. However, changing the definition of the reporting threshold from market capitalisation to revenue/asset will likely shift the responsibility of regulation and enforcement away from SEBI, and onto a body with broader corporate oversight, such as the Ministry of Corporate Affairs.

4.2 Lever 2: Strengthen quality and integrity of reporting

Currently, there are two compliance requirements in India—BRSR Comprehensive and BRSR Core. BRSR Comprehensive includes 130 indicators without assurances while BRSR Core includes 30 indicators with assessment. Formats from the RBI, the IRDAI and the PFRDA are unspecified yet.

It is essential that reporting formats focus on minimising compliance burdens, and enhancing the integrity and utility of reports for both, companies and investors.
In the case of India, how can the present mandate be simplified?

Table 13. Actions to streamline reporting formats

For BRSR (SEBI)	For other disclosures
In India, SEBI can also consider a single report that replaces the current compliance requirement with BRSR Comprehensive and Core. • Assurances can be mandated. While 130 indicators under BRSR Comprehensive may be perceived as too many for assurance, a single report with fewer indicators and mandatory third-party assurances may be more relevant (as is the case across EU, UK, and California).	While the RBI, IRDAI and PFRDA reporting formats are not specified yet, the RBI climate risk disclosure guidance document provides some insight into the metrics and coverage of financial institutions. • In this regard, RBI, IRDAI and PFRDA can consider standardising reporting to have a single framework for financial institutions (irrespective of regulator), such as a uniform format to be followed by all financial institutions (e.g., the SFDR format in the EU). • IRDAI and PFRDA can consider emulating the RBI's requirements on scope (mandatory scope 1, 2, and 3 emissions reporting) for uniformity across financial institutions. • While unspecified yet, third party assurances must be mandatory, in line with BRSR Core.

Source: Authors' analysis

Format: Currently, the BRSR is spread across the themes of E, S, and G (refer section 1). The third section of principle-wise performance disclosures are distributed across 9 principles (covering E, S, and G), which are further categorised as 'essential' or 'leadership'. The essential indicators are mandatory, whereas the leadership indicators are voluntary—entities that aspire to progress to a higher level in their quest to be socially, environmentally, and ethically responsible are expected to disclose under the leadership category. This dilutes the focus on environmental indicators, particularly emissions.

Principle of materiality[8]: BRSR takes a single materiality approach currently covered under general disclosures, and not under Principle 6 (environment-related) disclosures.

In addition to solving format-related constraints, improving the quality of disclosures made will require an ecosystem-level transformation of market incentives that encourage corporations to report completely and accurately. In this context, there is a need to develop additional metrics to incentivize emissions disclosures.

For instance, one of the primary objectives of disclosures is to enable investors to understand the risks and opportunities faced by a company, with respect to several aspects, of which climate-related risk (including physical and transition risk) is one. Disclosures also help investment managers and retail investors direct finance towards end-uses they wish to support (Financial Conduct Authority 2024). Demand-side measures, promoted through the investment community can also act as a lever to enhance compliance with disclosure mandates and incentivise accurate, complete and robust disclosure quality.

8. There are two broad types of materiality: (i) Financial materiality: How sustainability impacts a company's financial performance, and (ii) Impact materiality: How a company's activities impact external stakeholders and the environment. When both types are covered by indicators asked, a disclosure format is said to implement double materiality, and when either one of the two are covered, it is termed as single materiality.

Table 14. Actions for strengthening report attributes

For BRSR (SEBI)	For other disclosures
Format: SEBI can consider separating out (i) general sustainability disclosures including E, S, and G (Section 1), and (ii) climate-related disclosures (Section 2) for a greater focus on emissions. • Applicability of Section 2 will depend on materiality demonstrated in Section 1. Under Section 2, larger companies may be expected to include more detailed aspects around climate-related reporting, such as transition planning, emissions reduction pathways, and reduction of financed emissions. This is consistent with International Financial Reporting Standards (IFRS) S2 requirements, which have been applied in the EU, through the CSDDD format. • The separate format for MSMEs (BRSR Lite), must have limited attributes, primarily on scope 1 and 2 emissions.	RBI, IRDAI and PFRDA can consider introducing specificity on the format and content of disclosures to be made by entities under their jurisdiction. In the case of IRDAI and PFRDA emissions disclosures, current ESG reporting guidance is embedded in stewardship code and is non-specific. This can be extracted and made specific in the form of a report. RBI, IRDAI and PFRDA must also specify a sophisticated methodology for calculating emissions. Presently it specifies the GHG protocol. • Should specify use of methodologies such as by the Partnership for Carbon Accounting Financials (PCAF), used globally for estimation of financed emissions.
Scopes covered: Include scope 3 reporting for larger entities (gradually increasing to cover more). Top 1,000 (or an equivalent in revenue terms) should ideally be covered under scope 3 disclosures.	RBI, IRDAI and PFRDA disclosures should ideally be designed as per a double materiality assessment. • Impact and financial materiality are critical for assessing risk exposure of financed emissions.[9]
Materiality: Include double materiality (financial and impact) under Principle 6, at least in the list of Leadership indicators.	
Reporting boundary: Specify the reporting boundary for covered entities (clarifying the reporting requirements from holdings/subsidiaries /associate companies /JVs).	

Source: Authors' analysis

In a 2023 regulation, SEBI introduced a regulation mandating all ESG funds to invest 65 per cent of their assets under management (AUM) with only BRSR Core-compliant firms (Securities and Exchange Board of India 2023a). This essentially creates an ecosystem of double regulation, where a disclosure mandate is enforced, and mere compliance with the mandate is determined as sufficient as an investment criteria. This harms the due diligence protocols that investment managers must undertake independently, and also encourages low quality BRSR compliance (Thomas and Mehta 2023). There is a need for the BRSR to be viewed as a means to the end of greater transparency on corporate climate action, rather than an end in itself.

Further, while the regulation seeks to direct ESG finance towards BRSR Core compliant firms, there are some fundamental challenges with the approach:

i. First, it takes a narrow compliance-centric view, rather than a broader quality-centric view. BRSR reports are often incomplete and inaccurate (Yadav and Srivastava 2024).

ii. Second, since the mandatory BRSR Core reporting is to begin in FY26 (with submissions potentially due in April 2026), ESG investment norms till then?

9. Financed emissions refer to the greenhouse gas emissions linked to the investment and lending activities of financial institutions which are key to gauging the climate related exposure of financial institutions. These come under the ambit of Scope 3 emissions for the FIs.

Table 15. Actions for incentivising high quality emissions disclosures

For SEBI	For other regulators
ESG investment funds/fund managers can add an emissions dimension • Compliance with either BRSR Core or Comprehensive is not an indicator of quality or action (FICCI 2023) • Criteria for investment can be linked to actual performance on E, S, and G (with emissions reductions being one criterion) **Fund-naming rules linked to a specified end use can also be considered and developed** (For e.g., for a social bond, at least 70 per cent of the usage must be towards eligible social purposes) • In the UK, the FCA requires a minimum threshold (70 per cent) in terms of usage of funds, in order for a fund to be labelled eligible for its specified purpose (Financial Conduct Authority 2023b) • Similarly in the US, the SEC has proposed to adopt a 80 per cent threshold for investments suggested by the fund name. (US Securities and Exchange Commission 2023) • In the EU, European Securities and Markets Authority (ESMA) specifies a minimum of 80 per cent of the funds should be deployed for environmental or social characteristics or sustainable investment objectives, if it has ESG-related terms in its fund name (European Securities and Markets Authority 2022) **ESG rating providers can be encouraged to focus on high-risk indicators such as climate** • Presently, ESG ratings present a unified score for E, S, and G, which can mask performance across individual categories • ESG rating providers can generate individual weighted scores for E, S, and G categories to enhance visibility on emissions	**Introduce a transition risk assessment** • For banks, NBFCs, insurers and pension funds consideration while making investment decisions **An ESG consideration towards investment is mentioned in the stewardship codes by IRDAI and PFRDA** • This can be emulated for banks and NBFCs too • Further, the ESG related guidance can be based on tangible and specific targets such as a certain percentage reduction in emissions over 5 years, instead of mere compliance with a reporting format **ESG rating providers can also undertake separate scoring for financial institutions, taking into account financed emissions**. • This can help place greater accountability on financial institutions to align finance with climate goals • Such scores will help the entire ecosystem understand better where opportunities exist to cut emissions

Source: Authors' analysis

4.3 Lever 3: Harmonising emissions reporting

Under the existing regime of emissions disclosures in India, mandates for reporting emissions are spread across several regulators, and this is likely to only increase in the future as RBI, IRDAI, PFRDA and BEE also formalise their emissions reports. While the disclosures may contain aspects in addition to emissions (covering broader climate and environment related indicators), but at the very least for emissions reporting there must be a way for corporate entities to feed in data or record it through devices, and have visibility over this data to use this for reporting wherever required. However, the exclusion of CO_2 from the *Environment Protection Act* makes establishing such systems a challenge, and enforcement of emissions reporting mandates creates jurisdictional conflicts. The following steps are towards legitimising emissions reporting at a nation-wide scale (beyond listed entities alone), ensuring enforceable mandates and simplifying reporting for corporations.

i. **Digital emissions monitoring and reporting**

- **BRSR reporting format**: As highlighted earlier in section 3, at present, there is no systematic infrastructure for digital monitoring of GHG emissions from corporate entities or industrial plants. Further, the fact that the *Environmental Protection Act*, which also lists gases categorised as 'pollutants', does not include CO_2, may present challenges for streamlining digital monitoring of GHG emissions.

Digital ESG platforms utilise technology, automation and analytics to smoothen data calculations and management, thereby improving the quality, and credibility of reported data. These can also help corporates determine key areas for intervention to improve their ESG performance, and help plan strategies to lower emissions from baseline levels. Further, natural language processing (NLP) is growing in its adoption at ESG analytics firms, as it enables the collation of a variety of perspectives, through cross-referencing and maintaining consistency across stakeholders (Responsible Investor 2023).

Table 16. Actions for digitalising emissions recording and reporting

For all regulators mandating emissions disclosures
All regulators requiring emissions disclosures can encourage use of digital emissions monitoring systems • Currently, emissions estimation is undertaken internally by corporates and manually filled into the BRSR report • Manual reporting affects credibility of disclosures • For ease of reporting and verification processes, use of a real-time emissions monitoring system can be encouraged • This will also significantly help MSMEs build a time series of emissions as they are likely to grow in size and emissions in the future
Regulators can consider accrediting ESG service providers, the same way there is accreditation for third-party verification agencies • Empanelling ESG agencies that provide analytics based on ESG data can prompt companies to undertake assessments of their ESG-related risks and opportunities more frequently and explore pathways to reduce emissions or avoid emissions. • Such analytics will also aid MSMEs understand emissions reduction planning at a nascent stage. • Technologies such as natural language processing (NLP) can be mainstreamed, which can help collect and collate ESG data from company documents and other public sources.

Source: Authors' analysis

- **Digital monitoring systems for CCTS**: Similarly, MRV reporting formats also exist for carbon markets. While these MRV protocols (including types of reports, contents of reports, and broad verification/certification processes) studied across jurisdictions are similar, the underlying systems of emissions monitoring stand out as key distinguishing elements.

In the case of carbon markets too, digital monitoring plays a key role. The PAT scheme (predecessor of the upcoming CCTS in India) also did not have a dedicated emissions monitoring system, and several industries used their internal systems to monitor. Rather, many Designated Consumers (DCs) under the PAT scheme were also subject to environmental regulations under the *Air (Prevention and Control of Pollution) Act, 1981*, or sectoral guidelines issued by the CPCB or the SPCBs and had these systems in place as per those requirements. So far, the CCTS has also not notified any such monitoring systems' for participants.

  » **Encourage infrastructure for real-time digital continuous emissions monitoring system (CEMS)**: Deployment of CEMS can ease reporting of unit-level emissions by directly feeding source emissions data into required formats.

  » **Enable the digital reporting platform being developed by BEE to be linked to unit-level CEMS (such as the Cal e-GGRT platform under the Cal ETS)**: this shall help automate the reporting of scope 1 emissions.

- **Interoperability between recommended corporate and carbon market emissions databases from common monitoring systems**: In the case of California, regulated entities under the California ETS deploy CEMS to record real-time emissions and are mandatorily required to report GHG emissions using the Cal e-GGRT. The digital platform creates profiles for each facility reporting emissions through the system, and provides standardized templates including methodologies and guidelines in accordance with regulatory requirements, to simplify the reporting process. This platform can also be utilised by corporates to track emissions for general corporate disclosures.[10]

Another instance is that of the EU, where commonly used methodologies for estimating emissions make it easier for companies to uniformly report under the EU ETS and comply with CSRD requirements as well. The underlying ESRS considers the wide range of compliances required within the EU, and enables simplified reporting across all.

While carbon markets require plant-wise or unit-wise emissions records, having a repository of real-time data will mean that corporate entities can simply aggregate the recorded emissions across multiple plants or units, for consolidated reporting in the general corporate disclosures they must also make (at least for scope 1 data). This way, the reporting becomes less onerous, more accountable, and will also smoothen consequent processes of verification and certification.

ii. **Strengthen the legal basis for emissions reductions**

In the EU, the Green Deal is a set of proactive climate-related legislations and policies that provide a foundation and legal basis for the EU's climate action commitments and actions. These are to be adopted by EU member countries in the form of national legislation.

In California, the two Acts - Corporate Climate Data Act (2023) and Climate-Related Financial Risk Act (2023) seek to mainstream corporate climate action through enhanced accountability of corporates. As the largest state in the US, most US companies are likely to have business in California.

Effectively, California's legislation will achieve to a great effect what the SEC has not been able to achieve due to questions pertaining to its jurisdiction over climate risk disclosure.

Broad-based legislation for environmental and climate policy such as the EU Green Deal and South Korea's Framework Act on Carbon Neutrality and Green Growth for Coping with Climate Change have several ecosystem-level impacts. A legal basis for GHG emissions monitoring and control will help several associated policy-making towards climate action. This will also provide a legitimate basis for mainstreaming GHG emissions reporting.

10. Cal e-GGRT is based on the US EPA greenhouse gas reporting tool. Cal e-GGRT must be used to report GHG data required by the California Regulation for the Mandatory Reporting of Greenhouse Gas Emissions. With additional data, Cal e-GGRT can also support California cap-and-trade. (California Air Resources Board 2012)

Table 17. Actions to broaden legal basis for emissions reductions

For general corporate emissions disclosures	For carbon markets reporting
The inclusion of sustainability reporting will enhance SEBI's enforcement powers	BEE must specify enforcement provisions with penalties linked to the price of carbon
A legal basis for GHG emissions, by listing CO_2 and other GHGs as 'pollutants', will complement enhanced mandates on emissions reporting	A legal basis for GHG emissions, by listing CO_2 and other GHGs as 'pollutants', will enhance the effectiveness of the carbon market, and enable a smoother transition to an absolute emissions-based cap and trade in the future.
A legal basis will also help mainstream emissions disclosures for a larger proportion of the economy (such as certain MSMEs), going beyond the current ambit of listed entities alone	

Source: Authors' analysis

4.4 Lever 4: Undertake capacity building initiatives for the reporters of the future

In order to encourage an ecosystem level transformation of corporate behaviour towards emissions and associated climate disclosures, there is a need to not just incentivise large corporates, but also begin educating medium sized enterprises on the benefits of emissions disclosures, and equip them with the skills and tools needed to smoothly undertake reporting when they are required to. In several industries, MSMEs collectively contribute a significant share of carbon emissions, despite their individual footprints being small. Accurate reporting will help MSMEs identify inefficiencies, reduce costs, and enhance sustainability, making them more competitive in global markets.

In India, SEBI introduced the BRSR Lite format in 2023, as a voluntary reporting format for MSMEs to enhance their ESG profiles. At present, this is the only specific emissions reporting format for MSMEs in India. However, the Lite format has certain inconsistencies, when viewed alongside the BRSR Core, which depends on MSMEs (as the supply chain of larger corporations) for compliance. The key requirement under BRSR Core is that of emissions (scope 1 and 2) of MSMEs, which contribute to the scope 3 emissions of BRSR Core reporters. However, the BRSR Lite does not include any indicators on GHG emissions. This is in contrast with what is seen globally.

Malaysia and the EU are collaborating to enhance MSME capacity in emissions disclosures and sustainability compliance. The EU-funded SWITCH Asia Program provides sustainability tools to help MSMEs in Southeast Asia improve energy efficiency and reduce emissions. Malaysia's i-ESG Framework supports MSMEs in the manufacturing sector, aligning them with ESG principles and carbon neutrality targets. With the EU's CBA requiring emissions reporting for exports, Malaysia is assisting businesses in meeting these new regulations. Additionally, Malaysia, Indonesia, and the EU are developing a practical guide for smallholders to comply with the EU's deforestation laws. These initiatives aim to ensure MSMEs remain competitive while supporting global sustainability efforts.

Similarly, the European Financial Reporting Advisory Group (EFRAG) which sets the ESRS, and outlines disclosure requirements for companies, includes SMEs, on emissions, climate risks, and ESG factors. To ease compliance for smaller businesses, EFRAG is working on simplified reporting frameworks tailored to MSMEs. Additionally, it provides guidance and tools to help businesses, including non-EU exporters like Malaysian MSMEs, align with CBAM and ESG disclosure requirements. Through these efforts, EFRAG ensures that MSMEs can meet EU sustainability expectations while minimizing administrative burdens. These regulations make transparent emissions disclosures a necessity for international trade, ensuring market access and compliance with ESG expectations. Additionally, large corporations are demanding emissions data from their supply chains, pushing MSMEs to report their footprints. Strong reporting practices also attract green financing and investment, supporting long-term growth while contributing to climate action goals.

Table 18. Actions for ecosystem-level emissions reporting capacity building

All regulators/ ministries requiring emissions disclosures from MSMEs
Simplify reporting frameworks with clear progressions: • The BRSR Lite should focus on emissions estimation and reporting (scope 1 and 2) which is also linked to BRSR Core's requirements. While it can remain voluntary for the near future, it is important for this interim reporting format to focus on the key aspects that have a larger implication. • Regulators can also set up a capacity building programme for training MSMEs on latest emissions disclosure norms and technologies, helping them transition to the reporting regime smoothly. • Further, large corporations (top 150 or top 250 listed entities) can also be asked to begin formal training programmes for their value chains (which may include MSMEs and other non-listed entities). **Enable a choice-based disclosure format for MSMEs, allowing for industry-specific reporting:** • BRSR Lite can allow MSMEs to choose indicators for disclosure that benefit them, as per the nature of their operations.

Source: Authors' analysis

Image: iStock

5. Way forward

The previous section pointed to the need for several policy- and format-related actions, towards ensuring India's corporate emissions disclosure regime is

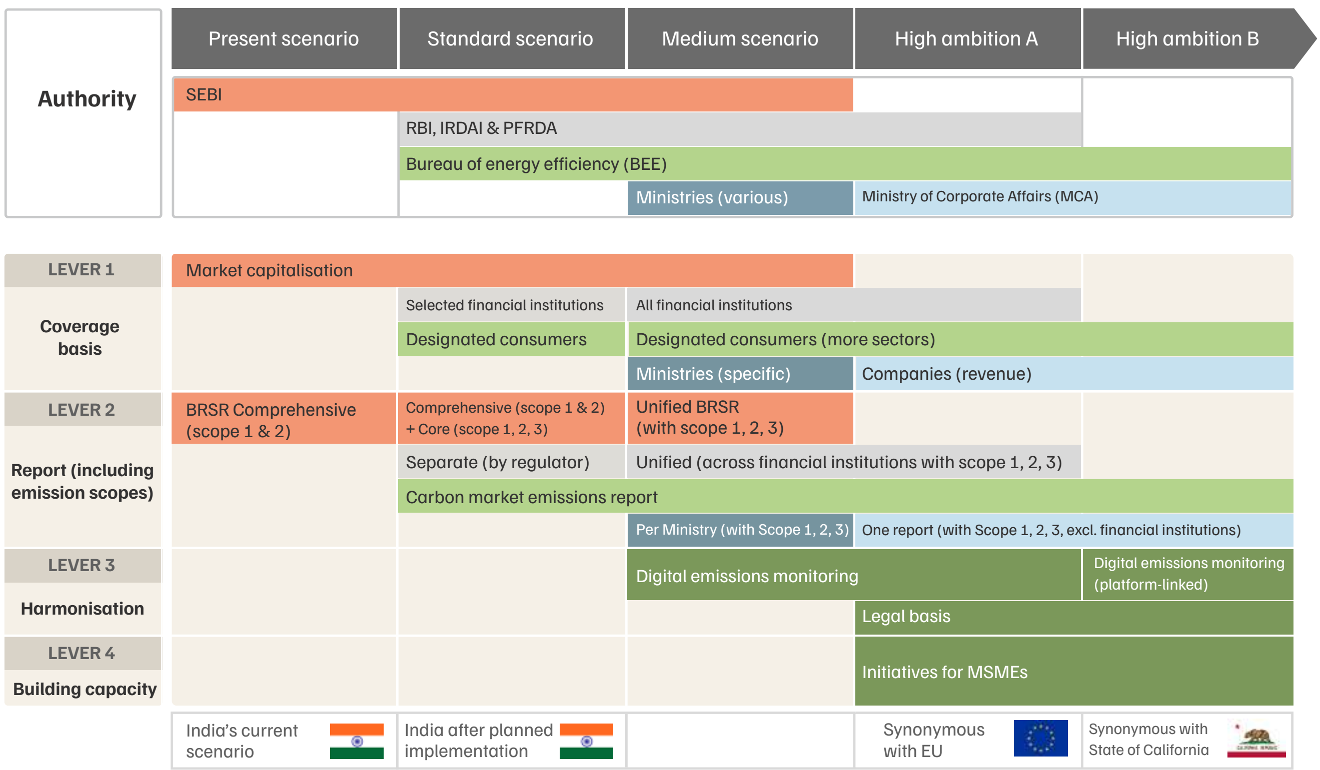
- On par with international standards,
- Aligned with India's emissions reduction goals, and
- Adequately addressing credibility and integrity challenges that hinder green finance flows.

Actions ranged from shifting the threshold for determining the coverage of companies (market cap-based to revenue cut-off based) to mandating assurances, to strengthening features of the reporting format.

While each of these is essential to enhancing the overall quality and integrity, competitiveness, and interoperability of disclosures, they vary in terms of implementation complexity. Figure 10 places the actions suggested into ambition scenarios, considering the complexity of implementing each through policy or regulatory mediums. The x-axis represents ambition scenarios and places each of the jurisdictions studied (India and others) into one of them based on disclosures in force. The y-axis represents the four levers within which the actions are situated.

This bucketing is based on subjective factors, such as (i) time to implement (based on extent of legal and administrative changes), (ii) jurisdiction-related constraints at the level of regulators, (iii) capacity of regulators/agencies overseeing the disclosures, and (iv) the legal frameworks within which 'emissions' sits in India.

Figure 10. Potential corporate emissions disclosure scenarios for India



Source: Authors' analysis

India is currently at the 'present scenario', with the SEBI BRSR Comprehensive being the only mandatory reporting asking corporates to disclose their emissions. The 'standard ambition' scenario captures the intentions of Indian regulators to begin emissions disclosures, for entities under their jurisdictions. It assumes a status quo position, with no improvements incorporated in the scenario. As the scenarios move to 'medium ambition', some actions are fed in, such as the unification of varied reports by a single regulator, minimising compliance burdens and beginning the expansion of emissions covered through reporting, by bringing in ministries at the helm of high emission sectors, who are also well placed to mandate emissions reporting for large corporates within their sector.

The high ambition category is split across two scenarios - A and B, based on the extent of authority level unification.

- Both high ambition scenarios assume a shift from market cap based applicability to a revenue cut-off based applicability criteria for corporations, to bring into the reporting net large non-listed entities as well.

- This function is also likely to be discharged by a body such as the Ministry of Corporate Affairs (MCA), since SEBI's jurisdiction is limited to listed companies. Institutions such as the Indian Institute of Corporate Affairs (IICA) that fall under the aegis of the MCA can play a supportive role in this transitional shift, considering it houses the School of Business Environment (SBE) which has played a pioneering role in the development of key policies and guidelines such as the NGRBC, the Zero draft of the National Action Plan on Business and Human Rights, as well as contributed to the High-Level Committee on CSR.

Scenario A keeps reporting for financial institutions separate (overseen by RBI), and scenario B subsumes this too within the ambit of an oversight body such as the MCA. The BEE remains as is with respect to its functions, as the carbon market related emissions reporting is for a separate kind of compliance, and must hence be kept separate. This scenario also incorporates cross-cutting actions such as significant harmonisation for digital emissions monitoring systems, and enhancement of the legal basis for emissions reductions, as elucidated in a previous section. Further, capacity building initiatives for smaller companies are also clearly marked as essential actions to upgrade ecosystem level disclosures.

Each of these scenarios have implications for regulators and authorities mandating and overseeing disclosures. Figure 11 spotlights the evolving role of authorities in-charge, in line with the progression of disclosure scenarios. Up until medium ambition, the status quo on authorities in-charge remains intact. There onwards, SEBI, Select Ministries and consequently financial regulators, are subsumed under the MCA-driven disclosures in stages.

Figure 11. Key implications for regulators across different ambition levels

	Present scenario	Standard scenario	Medium scenario	High ambition A	High ambition B
SEBI			• Mandate assurance • Outline report boundary • Mandate scope 3 • Unify: 1 report (2 parts)	Emissions reporting subsumed under MCA	Emissions reporting subsumed under MCA
RBI IRDAI & PFRDA		• Introduce reporting format with timeline • Include scope 3	• Cover all REs (RBI) • Unify: 1 report (RBI, IRDAI, PFRDA) • Specify methodology: scope 3	• Cover all REs (RBI) • Unify: 1 report (RBI, IRDAI, PFRDA) • Specify methodology: scope 3	Emissions reporting subsumed under MCA
Select Ministries			Introduce emissions reporting for large entities	Emissions reporting subsumed under MCA	Emissions reporting subsumed under MCA
BEE			Establish digital emissions monitoring systems	Establish digital emissions monitoring systems	Establish digital emissions monitoring systems
MCA				Create voluntary format for MSMEs (scope 1 & 2) Capacity building for MSMEs Cover all companies (exc. FIs) • Include scope 3 • Mandate assurances • Specify methodologies	Unify into 1 mandatory format (all companies) Create voluntary format for MSMEs (scope 1 & 2) Capacity building for MSMEs Cover all companies (exc. FIs) • Include scope 3 • Mandate assurances • Specify methodologies
Over-arching				Link emissions monitoring system with common platform Enhance legal basis and strengthen enforcement	

Source: Authors' analysis
Note: FI stands for financial institutions

The emissions disclosure scenarios presented in Figure 11 provide India with varied levels of ambition scenarios to ponder upon—reflecting the regulatory development that has already occurred across other studied jurisdictions. The comparative analysis highlights the alignment of emissions disclosure regimes across other jurisdictions with high ambition scenarios and introduces an opportunity for India to expand and strengthen its own corporate emissions disclosures regime.

Keeping in mind the variations in ease of implementation and the willingness for regulatory shifts, each ambition level comes with a set of trade-offs that must be carefully considered when making the choice for India.

Table 19. Policy trade-offs pertaining to each ambition scenario

Ambition	Features	Questions
Medium ambition	• Expanding RBI scope 1, 2, & 3 coverage beyond select REs • Introducing ministry-specific reporting for large entities within high emission sectors • Digital monitoring of emissions	• What kinds of RE's to further include? • Which ministries should be included? • What proportionality should be applied to minimise spillovers? • How can digital emissions monitoring systems be formalised?
High ambition A (with FI carve-out)	**A consolidated reporting regime for companies** • Companies mandated as per a revenue (and employee) cut-off • (For example: UK, EU have thresholds of ~INR 4000 crore turnover/ 250 employees) **Harmonising digital emissions monitoring systems** • (For example: the Cal GGRT platform provides interoperability to corporates for generating aggregated emissions reports) **Enhancing legal basis** • (For example: EU, UK, CA & South Korea, regulate emissions in alignment with national climate laws)	**What revenue threshold can be suitable for India?** • If the objective is to capture all top 1,000 companies, revenue threshold can be very low • What other unlisted companies will this threshold include? • Is there a suitable revenue threshold which excludes some of the current top 1,000 companies but at the same time brings in other unlisted firms such that coverage remains at 43% or more How can a digital emissions monitoring system for carbon market compliance incorporate a platform linkage for company-level emissions aggregation?
High ambition B	**Separation of reporting for financial institutions and other companies** (For example: CA has combined reporting norms for all types of companies, applying only a revenue threshold of USD 500mn - USD 1bn)	**Is eliminating the separation between corporate and financial institutions reporting desirable?** What threshold can be considered in India to effectively enhance emissions coverage across companies and FIs?

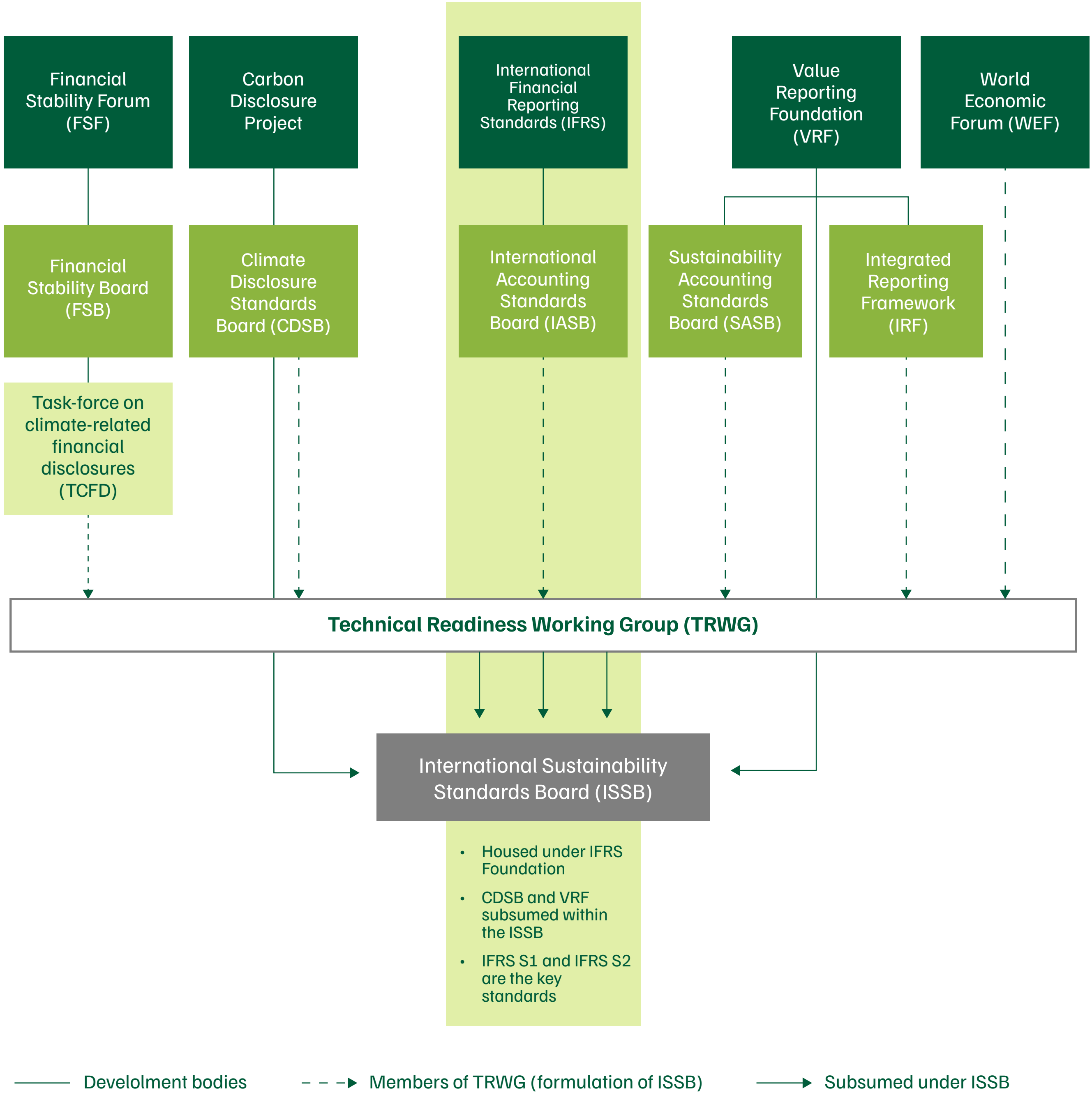
Source: Authors' analysis

Each of these trade-offs will need to be carefully considered to examine and select a level of ambition that is best-suited for India's landscape—in terms of both, the ease and efficacy of implementation and the strengthening of regulatory oversight for enhanced corporate climate action. A robust, internationally comparable and credible disclosure framework is a critical step towards mainstreaming corporate sustainability and enhancing access to green finance for Indian companies. No matter the ultimate choice of ambition, the scenarios present a progressive pathway forward, conducive for both, ambitious reforms and incremental policy-making .

Annexures

Annexure 1

Figure A1. Evolution of sustainability-related initiatives into the ISSB



Source: Authors' analysis based on IFRS Foundation's description of ISSB's formation (Mehta 2025)

Annexure 2

Table A2. Description of relevant parameters for cross-jurisdictional comparison of emissions disclosures

Parameter	Features
Regulatory basis	Categorises the approach chosen by each jurisdiction–in the form of state or national level legislations or regulations.
Agency	The regulatory body or authority responsible for overseeing and enforcing emissions disclosures.
Name of framework	The official name of the emissions disclosure framework applicable in each jurisdiction–in the form of acts, regulations or reports.
Voluntary/ mandatory (for those who are covered)	Specifies whether the reporting requirements are voluntary or mandatory for covered entities.
Filling format	Standardized templates and reporting platforms prescribed by regulatory authorities.
Coverage of 'E' indicators	Whether the jurisdiction treats emissions (and climate) reporting separately, or fuses it under the broader sustainability umbrella using the ESG reporting lens.
Applicability based on	Differentiates the particular jurisdictions' rationale behind applicability of emissions reporting–whether the obligated entities are categorised based on market capitalisation, revenue lens or number of employees.
Emissions scopes covered	Specifies the types of emissions covered (Scope 1, 2, and 3).
Metrics included	Categories of emissions measured; and additional sustainability metrics such as energy efficiency, carbon intensity, and transition plans.
Coverage of value chains	The extent to which emissions disclosures include upstream and downstream value chains.
Methodology	Describes which internal standard the disclosure is aligned to. Highlights if any specific calculation and estimation methodologies are prescribed for emissions reporting in the jurisdiction.
Materiality	Defines whether the jurisdiction follows a single or double materiality approach to their disclosures.
Assurances	The extent of independent verification required for reported emissions–mandatory third-party audits, verification standards.
Industry pushback	The level of opposition or concerns raised by industry stakeholders regarding emissions disclosure mandates.

Source: Authors' analysis

Annexure 3

Table A3. Stakeholder consultations undertaken (affiliations are as of when consultations were conducted)

Name	Organisation	Organisation type
Shuchi Sharma	Deloitte	ESG Advisory
Shaayak Chatterjee	BreatheESG	ESG Advisory
Sunila Sahasrabuddhe	auctusESG	ESG Advisory
Shubhi Goel	Independent expert	Industry body
Joseph Gualtieri	CDP	Non-profit
Huma Saif Qazi	CDP	Non-profit
Devyandra Putri	CDP	Non-profit
Sachin Sharma	SGS Global	ESG Advisory
Anirban Chatterjee	Bureau Veritas	Verification agency
Nikunj Dube	CareEdge	ESG Advisory
Pravin Jadhav	RBL Bank	Financial institution (listed)
Hiten Mehta	Mahendra Brothers	Company (non-listed)
Anonymous	Anonymous (jewellery manufacturer)	Company (non-listed)
Bhavya Sharma	Urban Company	Company (non-listed)

Source: Authors' analysis

Acronyms

AUM: assets under management

BEE: Bureau of Energy Efficiency

BRR: Business Responsibility Reporting

BRSR: Business Responsibility and Sustainability Reporting

CA: California

CARB: California Air Resources Board

Cal e-GGRT: California Electronic Greenhouse Gas Reporting Tool

CBAM: Carbon Border Adjustment Mechanism

CCDAA: Climate Corporate Data Accountability Act

CCTS: Carbon Credit Trading Scheme

CEMS: continuous emissions monitoring systems

CPCB: Central Pollution Control Board

CRFRA: Climate-Related Financial Risk Act

CSDDD: Corporate Sustainability Due Diligence Directive

CSR: corporate social responsibility

CSRD: Corporate Sustainability Reporting Directive

EFRAG: European Financial Reporting Advisory Group

ESG: environmental, social, and governance

ESMA: European Securities and Markets Authority

ESRS: European Sustainability Reporting Standards

ETS: emissions trading scheme

EU: European Union

GRI: Global Reporting Initiative

ICM: Indian Carbon Market

IFRS: International Financial Reporting Standards

IRDAI: Insurance Regulatory and Development Authority of India

ISSB: International Sustainability Standards Board

LLP: limited liability partnership

MCA: Ministry of Corporate Affairs

MoEFCC: Ministry of Environment, Forest, and Climate Change

MoP: Ministry of Power

MRV: monitoring, reporting, and verification

MSMEs: micro, small, and medium enterprises

NBFCs: non-banking financial companies

NGRBC: National Guidelines for Responsible Business Conduct

NSCICM: National Steering Committee for Indian Carbon Market

NVGs: National Voluntary Guidelines

PAT: *Perform, Achieve, and Trade Scheme*

PFRDA: Pension Fund Regulatory and Development Authority

RBI: Reserve Bank of India

SEBI: Securities and Exchange Board of India

SEC: Securities Exchange Commission (U.S.)

SECR: Streamlined Energy and Carbon Reporting

SFDR: Sustainable Finance Disclosure Regulation

SPCBs: state pollution control boards

TCFD: Task Force on Climate-related Financial Disclosures

tCO2e: tonnes of carbon dioxide equivalent

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