

Corporates #StepUp Climate Action

CDP India Annual Report 2018

Written on behalf of 650 investors with US\$87 trillion in assets



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CEO foreword



We know that business is key in enabling the global economy to achieve – and exceed – its climate goals. The continued action of these entities will be vital as we go through 2019, the final year before nations update their national climate plans for the Paris Agreement and just as global emissions need to peak.

2018 was another momentous year for action on climate change. The landmark report from the Intergovernmental Panel on Climate Change (IPCC) underlined the urgent need to bend the curve on global greenhouse gas emissions. Meanwhile the UN Environment Programme offered a stark reminder of the gap between where we are now and where we need to be. The choice facing companies and investors has never been clearer: seize the opportunities of the low-carbon transition or continue business as usual and face untold risks.

Against this backdrop, it is encouraging that 2018 saw a quickening pace of climate action. We saw more companies disclose their environmental data, and more set stretching targets to reduce emissions. Eighteen years ago, when CDP started, climate disclosure was non-existent in capital markets. In 2018, over 7,000 companies, worth more than 50% of global market capitalization disclosed environmental data through our platform. That's an 11% jump on the previous year.

Environmental disclosure further entered the mainstream with the FSB's Task Force on Climate-related Financial Disclosure (TCFD), which built on the work of CDP and paves the way for mandatory climate-related disclosures across all G20 countries over time. Through our upgraded disclosure platform, which incorporates the TCFD's recommendations, the 7,000 companies disclosing this year have aligned their disclosures with those recommendations (72% of the listed companies that disclosed through CDP were able to answer between 21 and 25 of the 25 new TCFD questions).

As we have long believed, where there is greater transparency, greater action follows. As showcased by 2018's Global Climate Action Summit, leaders from across the worlds of business and finance are taking the urgent steps required to build a sustainable future for all. The summit was an important and timely reminder of the progress we are seeing across the real economy.

From the 500 companies that are now committed to set science-based emissions reductions targets; to those moving toward 100% renewable electricity; and the investors stepping up to shift their investments to low-carbon, we are seeing tremendous progress in the right direction.

But there is no time for complacency. There are still some serious hurdles in the race towards Paris Agreement implementation. In October 2018, Brazil elected a president whose policies threaten the future of the Amazon rainforest, one of the world's biggest carbon sinks. Meanwhile in the US, President Trump continues to ignore stark warnings on the damage climate change will inflict on the US economy, instead pushing through deregulation and attempting to resurrect the coal industry.

There's also no denying the reality of intensifying climate impacts. From a Europe-wide heatwave to record droughts in Cape Town, hurricanes in the Americas and wildfires in the Arctic, 2018's extreme weather events brought enormous costs to both capital markets and wider society.

To stay below the 1.5°C guardrail, the IPCC tells us the global economy needs to reach net zero-carbon by mid-century and halve emissions by 2030, compared with 2010 levels. This represents nothing short of a complete transformation of the global economy. It is going to take unprecedented co-operative action between companies, investors, cities, states and governments across all sectors.

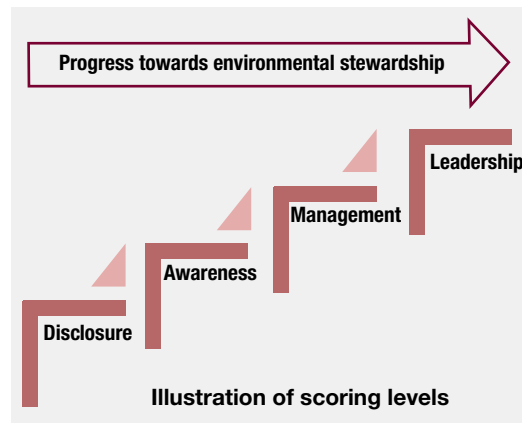
This is the time for businesses to ramp up action and send a clearer signal to governments that they need the policy ambition to match. Business as usual is no longer an option, but a prosperous and sustainable low-carbon future is achievable, if we choose to rise to the challenge. We must, we can and I believe we will.

**Paul Simpson
CEO, CDP**

CDP Scoring Methodology 2018

CDP scoring lays down milestones marking the progress of a company's sustainable journey. It provides a roadmap to companies to compare themselves to the best in class. The scoring methodology has evolved over time to influence company behaviour in order to improve their environmental performance. Scoring at CDP is mission-driven, focusing on principles and values for a sustainable economy, and highlighting the business case for change.

CDP's 2018 questionnaires are focussed on the high-impact sample companies in each of the three themes – Climate Change, Water, and Forests. To operationalise this approach, CDP developed a new Activity Classification System (CDP-ACS)¹, a three-tiered system starting from the lower rung of Activity, going up to Activity Group and, finally, Industry. This framework categorizes companies by the most relevant sectors. It focuses on the diverse activities from which companies derive revenue and associates these with the impacts on their business from climate change, water security and deforestation. This helps ensure a better understanding of company actions according to their environmental risk, opportunity and impact and is essential for better comparability of data.



Each of the questionnaires have a unique scoring methodology. The sector-based approach allows CDP to make more meaningful assessments of companies' responses, incorporating each sector's characteristics and nuances, resulting in a score that

reflects the company's progress in environmental stewardship and enabling better benchmarking against other companies.

The scoring of CDP's questionnaires is conducted by accredited scoring partners trained by CDP. CDP's internal scoring team coordinates and collates all scores and run data quality checks and quality assurance processes to ensure that scoring standards are aligned between samples and scoring partners.

Further guidance on the 2018 general questions and sector questions can be downloaded from: www.cdp.net/guidance/guidance-for-companies

Responding companies are assessed across four consecutive levels which represent the steps a company moves through as it progresses towards environmental stewardship: Disclosure which measures the completeness of the company's response; Awareness which intends to measure the extent to which the company has assessed environmental issues, risks and impacts in relation to its business; Management which is a measure of the extent to which the company has implemented actions, policies and strategies to address environmental issues; and Leadership which looks for particular steps a company has taken which represent best practice in the field of environmental management.

Questions may include criteria for scoring across more than one level. The criteria for scoring the levels are distributed throughout the questionnaire. All of the questions are scored for the disclosure level. Some of the questions have no awareness, management or leadership level scoring associated with them.

Scoring categories and weightings

This year, the number of categories per theme has increased from 2017, in order to better focus on key data points and provide a more detailed breakdown of a company's score. Scoring categories in 2018 are sub-groups of the 2018 questionnaire modules and are unique to each theme, but within each

	Climate Change	Water
A	>65%	>55%
Leadership A-	1-64%	1-54%
B	45-74%	45-69%
Management B-	<45%	<45%
C	45-79%	<45%
Awareness C-	<45%	45-79%
D	45-79%	<45%
Disclosure D-	<45%	<45%

¹ For further information, visit <https://bit.ly/2FlpOdY>

² Not all companies requested to respond to CDP do so. Companies who are requested to disclose their data and fail to do so, or fail to provide sufficient information to CDP to be evaluated will receive an F. An F does not indicate a failure in environmental stewardship.

F = Failure to provide sufficient information to CDP to be evaluated for this purpose.²

theme they are consistent across all sectors. Each sector within each theme is affected by and manages environmental issues in a specific way. **To capture these specificities, different weightings will be applied amongst sector scoring categories in each theme.**³

Weightings are applied by calculating the Management and Leadership score per scoring category in the same way as previous years: Numerator/Denominator * 100. These % scores are then translated into a category score per level by calculating the proportion of points achieved relative to the category weighting: Category weighting (%) / 100 * Management/Leadership score (%). The

category scores for each level are then summed together to calculate the overall final score.

Scoring weightings will only be applied to each of the scoring categories at Management and Leadership level. Where a scoring category consists of new questions, low weightings will reflect this. Weightings will be applied differently across sector categories for each theme to reflect this.

Public scores are available in CDP reports, through Bloomberg terminals, Google Finance and Deutsche Boerse's website. CDP operates a strict conflict of interest policy with regards to scoring and this can be viewed at <https://www.cdp.net/scoring-conflict-ofinterest>

Category	Management weighting	Leadership weighting
Governance	12.0%	12.5%
Risk management processes		10.0%
Risk Disclosure		8.0%
Opportunity Disclosure		8.0%
Business Impact Assessment & Financial Planning Assessment		5
Business Strategy		5
Scenario Analysis		1
Targets		12
Emissions reductions initiatives and low carbon products		5
Scope 1 & 2 emissions (incl. verification)		12
Scope 3 emissions (incl. verification)		5
Emissions breakdowns		0
Energy	6.0	7.0
Additional climate-related metrics (incl. verification)		0.0
Carbon pricing	2.0	0.0
Value chain engagement		5.0
Public policy engagement	1.0	0.0
Communications	1.0	0.5
Sign off		2.0
100% Disclosure points	0.0	2.0
Overall Total	100%	100%

³ The table is an example of the General Scoring methodology category weightings. Sector-wise scoring and the respective categories and weightings can be found here - http://b8f65cb373b1b7b15feb-c70d8ead6ced550b4d987d7c03fcd1d.r81.cf3.rackcdn.com/cms/guidance_docs/pdfs/000/000/413/original/CDP-climate-change-score-category-weightings.pdf?1524221034

Corporates #StepUp Climate Action

CDP India Climate Change Leader 2018

Infosys Limited A

Climate Change Rising Stars

Indusind Bank A-

Tata Motors A-

Tech Mahindra A-

Wipro A-

CDP India Water Security Rising Stars 2018

Mahindra & Mahindra A-

2018 drew to a close with a hotly-contested 'Katowice Climate Package' finalised at COP24 establishing a set of guidelines to make the Paris Agreement operational by 2020. It was also a year that saw extreme weather events cause devastation throughout most of the world as in India with unprecedented flooding in Kerala and hurricanes battering the east coast. Amid the cantankerous negotiations and human suffering, there were the green shoots of corporate and community actions.

It was also a year when the world's scientific community gave a dire warning. To hold off the worst impacts of climate change, the Intergovernmental Panel on Climate Change (IPCC) landmark report on 1.5°C, released in October, warned that climate action must increase five-fold to avert severity of adverse climate change impacts.

Even as extreme weather and scientific reports caused deep concern, the world also witnessed clear and loud calls for increased ambition and action. The way forward is clear to CDP – to change trajectory sufficiently, we need nothing short of a transformation of the global economy.

While some continue to ignore the writing on the wall, many are stepping up to seize the initiative and find opportunities in the transition to the low-carbon future which is well underway. Driven by corporates, communities, cities and other "non-state actors", exciting new endeavours have been showcased around the world.

Anand Mahindra, chairman of the dynamic **Mahindra Group**, told the World Economic Forum (WEF): "Climate change is the next century's biggest financial and business opportunity." He committed the entire group to the Science Based Targets initiative (SBTi), aligning their emission trajectory to meeting the Paris Agreement⁴. This generated a global momentum to reach 500 companies committing to SBTs by the Global Climate Action Summit in September. Even though the "Mahindra Challenge", as it came to be known globally, fell short of the target by five, it generated tremendous goodwill for corporates in general and Indian climate action in particular.

Indian companies are now at the forefront of this global fight where adopting SBTs is rapidly becoming the new norm for sustainable business practice. By December 2018, 25 companies committed to SBTs propelling India to the fifth position after US, Japan, UK, France in corporate climate action.

Some industrial sectors have set global benchmarks. Indian cement companies led by the **Dalmia Bharat** have been rated as the best in the world⁵. Many others have adopted ambitious renewable energy (RE) and energy efficiency targets.

The Indian Government too has been proactive especially in promoting RE domestically and internationally with the launch of the International Solar Alliance. India has stolen a march with unprecedented growth on RE propelling it to achieve its Paris Agreement goals 10 years ahead of the 2030 deadline, according to an independent global analysis⁶.

Projections show that the installed non-fossil fuel capacity in India will exceed 40% by end of 2019, a Nationally Determined Contribution (NDC) target meant to be achieved by 2030. And at the current rate of 2% reduction per year in emissions intensity of its gross domestic product (GDP), India will likely achieve 33-35% of emission intensity reduction a decade ahead of its target⁷.

"We had pledged to reduce emissions intensity by 33-35% by the year 2030 and have already achieved 21%," India's Environment Minister Harsh Vardhan said at the COP24 in Katowice, Poland. If the reductions were to include the food and agriculture sector, the reduction is around 26%, the minister added.

How can policy-makers and corporates boost these positive developments?

Financial instability and climate change are two key drivers of change in the global ecosystem which can fundamentally alter business and society. As the goal shifts to limiting global temperature rise below 1.5°C, the direction of financial flows will be crucial in achieving Sustainable Development Goals (SDGs). Natural resources are being consumed faster than their regeneration, threatening robust ecosystems.

Investors are now more discerning. The newly launched Investor Agenda⁸, led by CDP and six other groups, is enabling over 400 investors with US\$32 trillion in assets under management to report actions they are taking on low-carbon investment, corporate engagement, transparency and policy advocacy. By focusing on sector-based disclosure and forward-looking metrics CDP is providing companies and investors with meaningful and comparable data to drive greater progress.

At a time when there is a call for all countries to do more to fight climate change, India has stood up and informed the world at COP24 UN climate negotiations in Katowice that it will better its NDC targets. Companies too need to step up and support the global fight against climate change.

4 <https://economictimes.indiatimes.com/news/company/corporate-trends/climate-change-next-century-biggest-biz-opportunity-anand-mahindra/articleshow/62652949.cms>

5 Building Pressure, CDP, April 2018, <https://bit.ly/2ABJ8sy>

6 <https://energy.economictimes.indiatimes.com/news/coal/india-to-achieve-key-paris-climate-goals-10-years-before-deadline/66918120>

7 <https://climateactiontracker.org/countries/india/>

8 <https://theinvestoragenda.org/>

India Inc.'s readiness for TCFD

Core Elements of TCFD Recommendations



Governance

The organization's governance around climate-related risks and opportunities.

Strategy

The actual and potential impacts of climate-related risks and opportunities on the organization's business, strategy, and financial planning.

Risk management

The processes used by the organization to identify, assess, and manage climate-related risks.

Metrics and targets

The metrics and targets used to assess and manage relevant climate-related risks and opportunities.

Environmental disclosure has hit the mainstream, and with the Financial Stability Board's **Task Force on Climate-related Financial Disclosures (TCFD)** garnering even more support with the recommendations now endorsed by 513 firms globally; this is only set to increase. CDP has completely aligned its questionnaire with the TCFD recommendations to bring forth enhanced disclosure by companies which will be of use to financial markets.

In 2018, **52** Indian companies responded to CDP's Climate Change questionnaire. We analysed these responses through the lens of Governance & Strategy (including Scenario Analysis), Risks & Opportunities, Emissions & Targets, Engagement with value chain and Verification & Assurance. This enabled us to gauge their alignment with the TCFD recommendations.

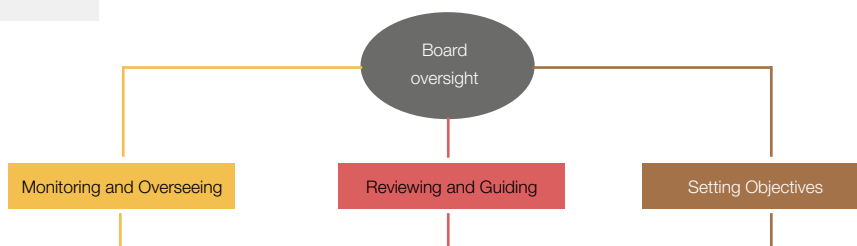
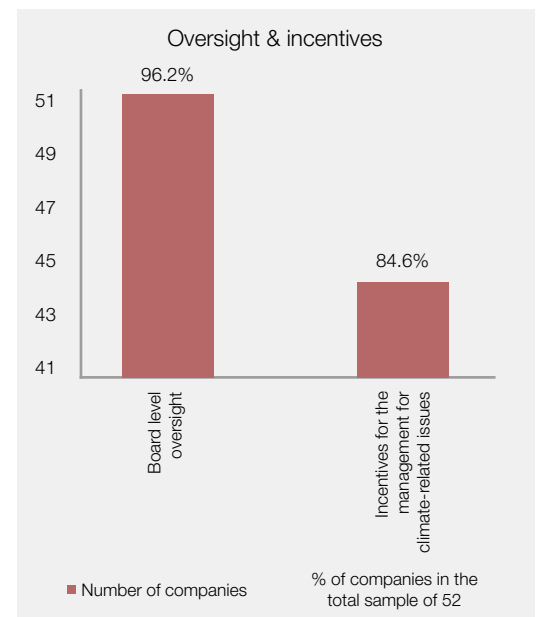
Governance & Strategy

Governance and strategy in climate-related issues is crucial for operational excellence and business growth in a carbon constrained future. A company with robust governance structure can define policies and climate actions in both the near and the long-term. Ability to predict a sustainable future and meet business growth and stakeholder expectations puts a company ahead of its peers and creates long-term value despite physical and transitional risks associated with climate change.

CDP's disclosures show evidence of broadened strategy merging business and climate models illustrating their impacts on finance, environment and corporate reputation. There is a greater emphasis

on board oversight, climate risk assessment and management (including integration into a company's business planning processes), and the use of forward-looking scenario analysis to determine the resilience of a company's strategy to climate risks. A company's resilience to climate risks will depend on the top leadership's direct supervision.

In 2018, 50 out of 52 companies stated having board-level oversight of climate-related issues, and 44 of them provide incentives to the management for achieving targets. Climate change related financial and operational risks are increasingly recognized as core to overall business operations and, therefore, are under the purview of Boards. Financial return is seen to be positively correlated with environmental performance and so are the non-financial parameters such as broad diversity, expertise and gender.



Percentage of companies with climate-related agenda items in board meetings*

- Progress against goals and targets for addressing climate-related issues – 65%
- Implementation and performance of objectives – 69%
- Major capital expenditures, acquisitions and divestitures – 48%

- Annual budget – 62%
- Business plans – 60%
- Major plans of action – 83%
- Risk management policies – 73%
- Strategy – 88%

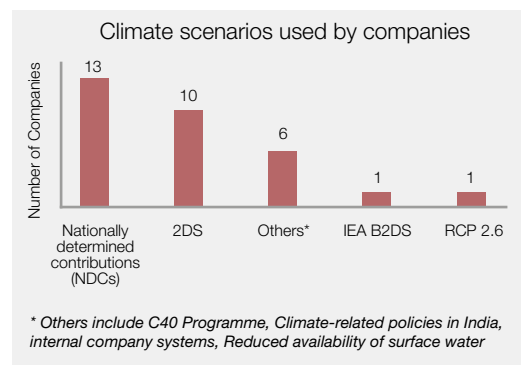
- Performance objectives – 58%

* This infographic provides an indication of the importance of climate-related issues to businesses. Investors are interested in organizations' understanding and approach to climate-related risks at the board level; how aligned this is with organizational strategy, plans of action, management policies, and performance objectives; and how the board monitors progress against targets and goals.

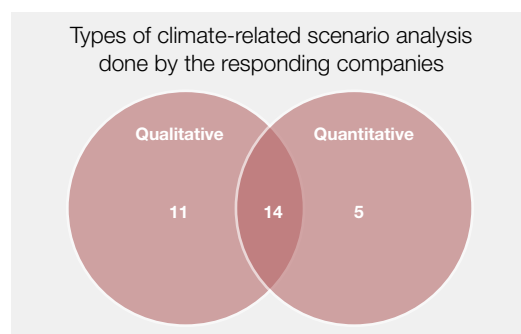
Scenario Analysis

Using scenario analysis⁹ to understand climate-related risks and opportunities and assess their potential business implications is a relatively recent advancement for the broader business world. Exploring a range of scenarios will help map potential threats and plot a way forward. The TCFD includes scenario analysis as one of its 11 key recommendations in order to improve a company's understanding of future risks and develop suitable resilience strategies. A 2°C or lower scenario is a minimal requirement identified by the TCFD, but organizations should also explore potential futures that could have a substantive impact on their strategy and financial planning.

Companies are using both qualitative and quantitative analysis. Many (40%) of them are using 2DS¹⁰ or India's NDCs for their climate-related scenario analysis. For instance, they have adopted SBTs, or are taking action in line with and under India's NDCs and have aligned their climate-related targets accordingly.



Organizations unfamiliar with scenario analysis choose to start with qualitative narratives to explore the potential range of climate change implications for the organization. A few that are ahead of the curve are incorporating quantitative information to illustrate potential pathways, while 15 responding companies stated that they plan to incorporate scenario analysis in the next two years.



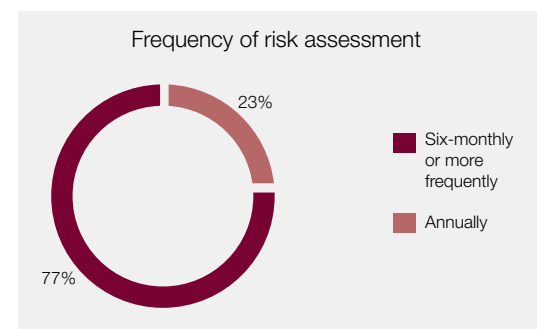
⁹ Scenario analysis is a strategic planning tool to help an organization understand how it might perform in different future states. It is designed to embrace complexity and uncertainty, allowing decision makers to evaluate the organization's flexibility, resilience, or robustness across a range of potential outcomes. The ultimate goal of scenario analysis is to encourage and equip decision makers to consider factors that shape their choices today through strengthening internal coherence

¹⁰ The 2°C Scenario (2DS) lays out an energy system pathway and a CO₂ emissions trajectory consistent with at least a 50% chance of limiting the average global temperature increase to 2°C by 2100.

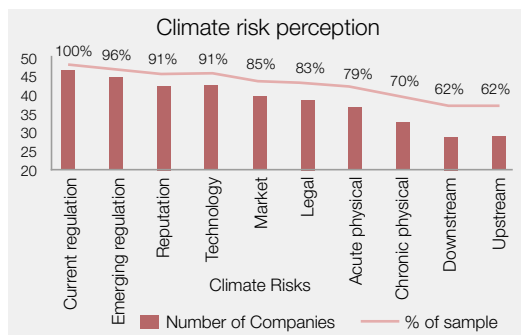
Risks & Opportunities

An important part of the TCFD's recommendations is the consistent categorization of climate-related risks and opportunities and the resulting financial impacts. The Task Force's recommendations encourage the evaluation and disclosure, as part of their annual financial filing preparation and reporting processes, and the climate-related risks and opportunities that are most pertinent to their business activities.

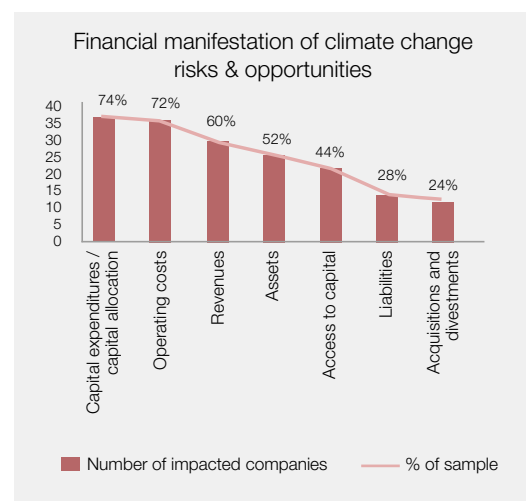
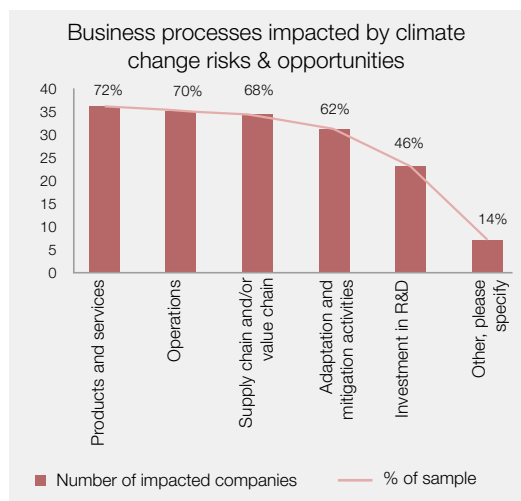
It was found that a total of 23 (almost 50%) of the responding companies consider climate-related risks for more than 6 years into the future, highlighting their long-term vision.



83% of the responding companies identified inherent climate-related risks and opportunities with the potential to have a substantive financial or strategic impact on their businesses. Current regulations, reputation and emerging regulations are the top three picks that are always relevant and included in a company's risk assessment. Of the 47 companies that responded to this question, 100% consider current regulation, 96% consider emerging regulation and 91% consider reputation as most relevant risks. These are followed by technological, market and legal risks.



Recognizing the potential impacts of climate change also offers opportunities for an organization, such as resource efficiency, shifting to climate-resilient or RE sources, the development of new products and services, access to new markets, and increased resilience. A new addition to the 2018 questionnaire was the query on the impact areas of business and finances due to climate risk and opportunities. Companies have identified critical areas of impact such as product & services, operations and supply chain which affect capital expenditure, operating costs and revenues.



Product development:

Dalmia Bharat has announced to become a carbon negative cement group by 2040. The company relies on series of existing measures such as clinker factor improvement, alternative fuel use, energy efficiency, etc. in short to medium-term and new measures such as renewable energy deployment, biomass use for energy requirements and Carbon Capture Utilization and Storage (CCUS) in the medium to long-term. The company has shown interest in offering cement plants for pilot testing and global collaborations in Carbon Capture and Utilization (CCU). Dalmia Bharat is also setting up a new integrated cement manufacturing plant in the eastern region of India with state of the art technology. The new production facility will contain the latest manufacturing process facility and it has been conceptualized to enhance the use of waste materials further in their eastern location. It will produce only low carbon footprint products such as Portland Slag Cement (PSC) and Portland Composite Cement (PCC). The process will also feature green power generation to reduce dependence on coal based captive power generation.

Tata Global Beverages Limited has a four-pronged climate change strategy of sustainable agriculture, sustainable forestry, renewable energy and energy efficiency. At TGBL, a focus on climate change management is being incorporated into new product development, and innovations are assessed through a product life cycle analysis. The sustainability function continues to engage with the business, Innovation and Research & Development (R&D) teams to increase understanding of how sustainability challenges can be used as drivers of innovations. As part of its effort to move towards low-carbon products, Himalayan water for USA markets are now a certified CarbonNeutral® product by Natural Capital Partners UK. Earlier, Himalayan factory had commissioned a grid connected solar photo-voltaic system of 630 KWp that replaces about 25% of the total power used by the factory. It procured Gold Standard carbon credits of 'efficient cookstoves' project to offset the GHG emissions in the life cycle of the product. TGBL also purchased International Renewable Energy Certificateds (I-RECs) that are formally recognized by the CDP and World Resources Institute (WRI) as a valid and independent renewable electricity tracking instrument to offset GHG emissions.

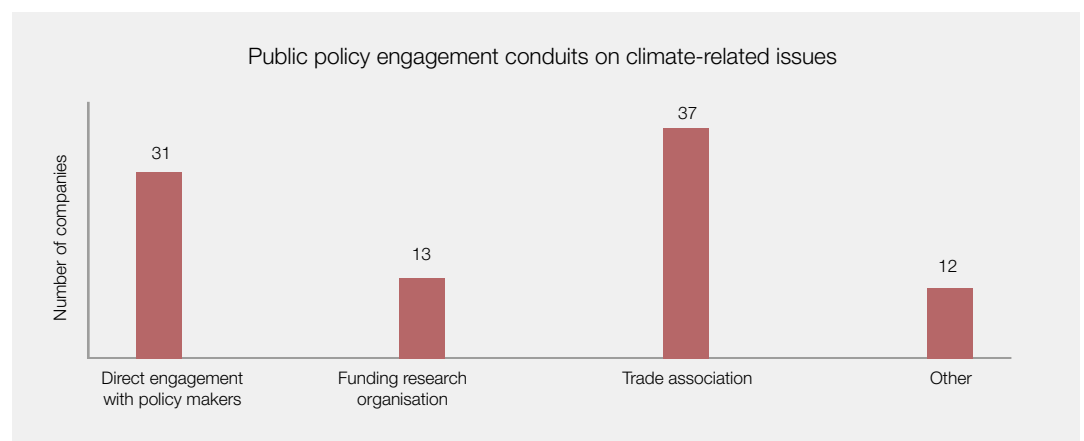
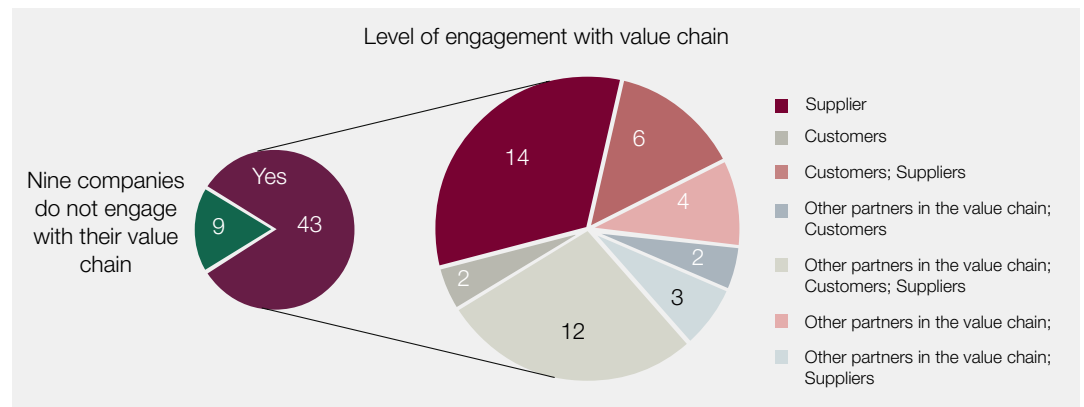
Engagement with multi-stakeholders

Stakeholder engagement on environmental and sustainability issues, an essential component of climate change mitigation and adaptation, also tends to affect stock performance for companies. While policy is the key driver for shift in climate action, yet within the corporate sector there are other pressure points like banks, insurance companies, investors, buyers, consumers and suppliers. It is imperative for a business to engage and communicate effectively with its stakeholders to be better prepared for climate change.

Cross-sectoral and public-private engagement contributes more to climate action, increasing mobilization towards innovation and resources to make progress on a larger scale. Collaborating

with the value chain can help ensure incorporation of emission reduction activities throughout the life-cycle of the product, considering both upstream and downstream emissions. Among the 43 companies who engage with their value chain, 27% engage only with their suppliers; another 23% engage more broadly to cover their suppliers, customers and other partners in their value chain and rest with other stakeholders.

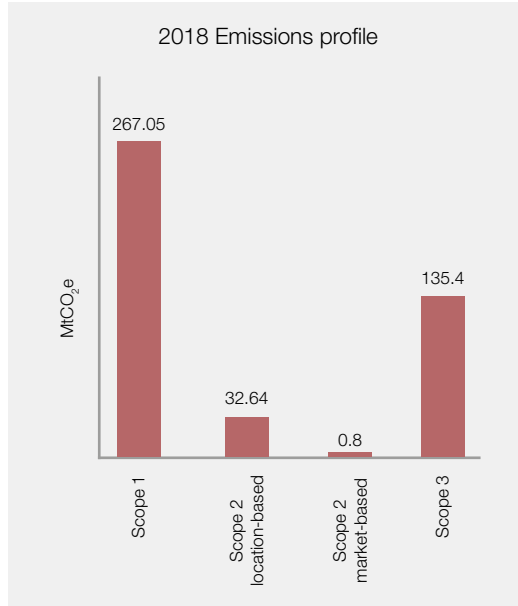
Additionally, engagement on public policy enables a company to communicate on its policy actions with multi-stakeholders. Businesses can put into context their understanding of sustainable development and corporate climate policy. Most of the reporting companies engage in activities that either directly or indirectly influence public policy on climate-related issues. Some engage directly with policy-makers, while others do it through trade associations and research organisations.



Emissions snapshot

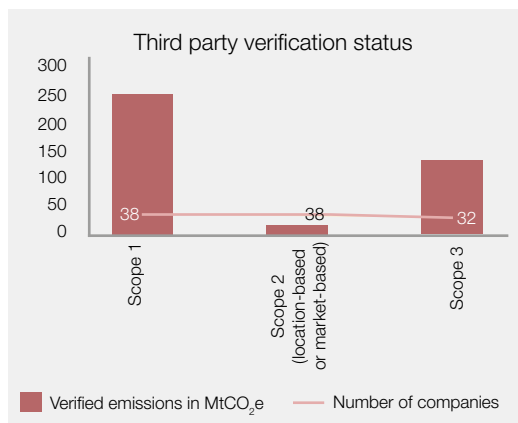
India is a rapidly developing economy which shows an increase in corporate reported emissions due to growing operations and also because of accurate emissions quantification across all scopes. According to India's second Biennial Update Report, the Energy and Industrial Processes and Product Use (IPPU) sectors contributed to about 90% of the total national greenhouse gas (GHG) inventory. The figure

as per 2014 data for these two sectors are a total of 2112 MtCO₂e. In 2018, the 52 reporting companies account a total reported emissions (Scope 1+2 [location-based]) of 299.7 MtCO₂e. This is over 14% of the national GHG emissions from the industrial and energy sectors. With the Government planning a National Inventory Management System as well as a meta registry, there is bound to be better monitoring and accounting in the coming years as well as complementing of inventories.

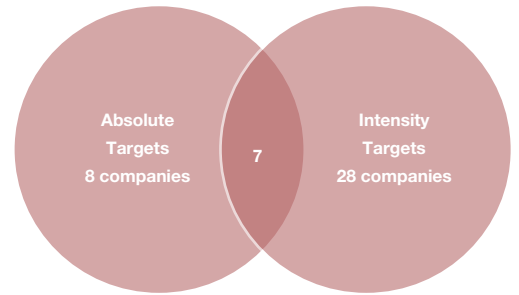


Verification

Third-party verification is an important component of emissions reporting and over the years, the number of companies undertaking third-party emissions audit has increased. In 2018, 73% of reporting companies have submitted third-party assurance for 94% and 57% of their Scope 1 and Scope 2 emissions respectively. An interesting development has been in case of Scope 3 verification where 62% have third-party assurance for 98% of their Scope 3 emissions.

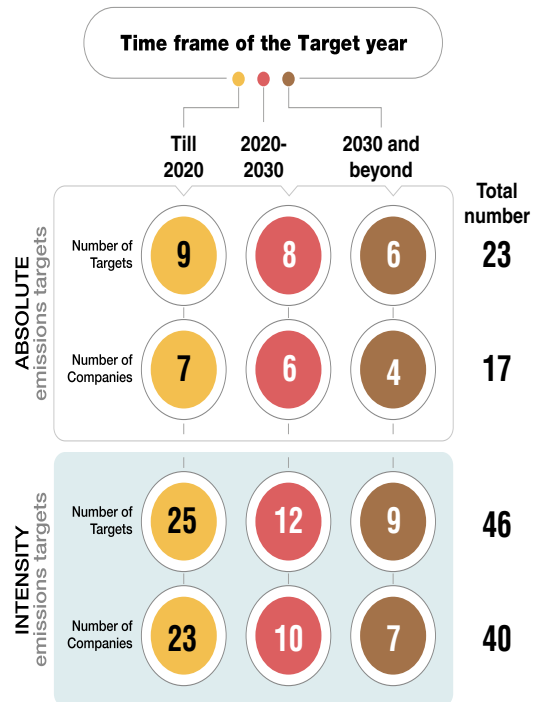


Emission reduction targets



Companies are undertaking both absolute and intensity targets. There are a total 69 targets from 52 companies of which three have been approved as science-based targets. Nine companies reported having no targets in place, however more than 50% of them anticipate setting one in the next two years.

Companies have opted for both short to long-term targets – companies with long-term perspective have more intensity targets and the ones with short-term horizon have gone in for absolute targets.



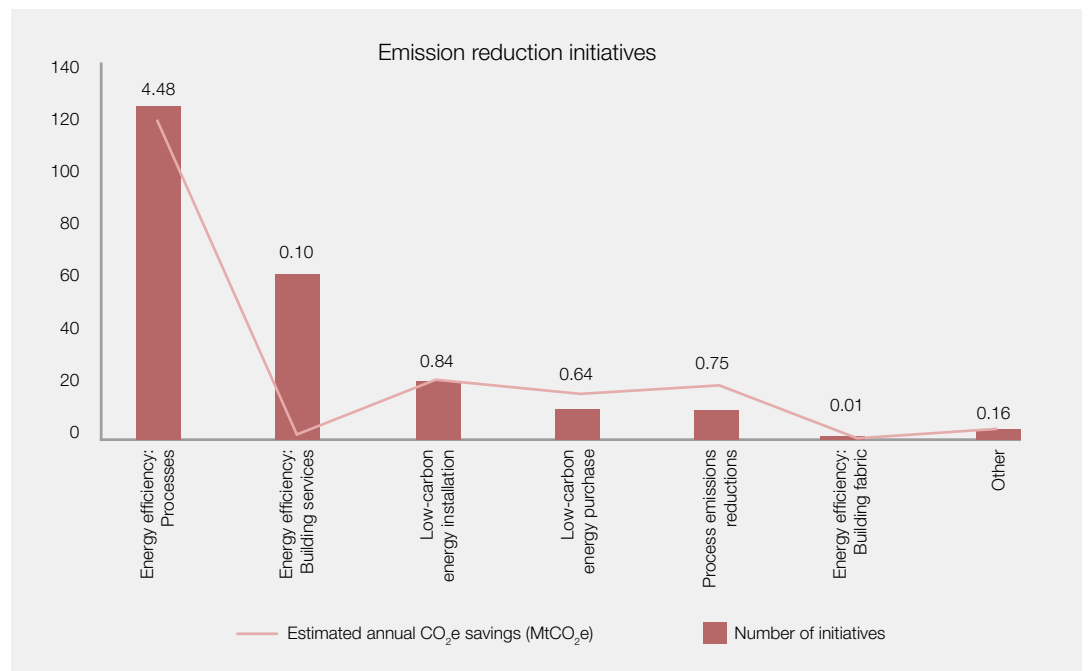
Apart from absolute and intensity targets and SBTs, the respondents claimed 15 other targets which were RE consumption targets, nine energy usage targets and six RE production target, amongst many others.

Emission reduction initiatives

95% of the responding companies had emission reduction initiatives (ERI) active within the reporting year. While energy efficiency-process is still the most deployed ERI, yet it is process emissions reductions, low-carbon energy purchase and low-carbon energy installation respectively which outweigh the former in their potential to save CO₂e emissions.

Commit to Action

As illustrated, boardrooms are now stepping up and participating in forward-looking actions that often run ahead of policy. As SBTs become the new norm for corporate sustainability, embracing of renewables and integration of energy efficiency is spurring new innovations, even as carbon pricing is being adopted as a mechanism to hedge future climate risk. We shall examine each of these in greater detail in subsequent sections which underscore the stellar efforts of Indian corporate champions.



Vendor selection based on climate mitigation actions:

IndusInd Bank prefers vendors that demonstrate some climate change mitigation actions. They have also set internal targets to switch to climate-friendly recycled paper for their business and operational needs, in a phased manner. Over 70% of their total procurement spend goes to vendors who have been screened for sustainability parameters including their impact on climate change.

Incorporating climate mitigation in capital allocation:

Kotak Mahindra Bank allocates a portion of its annual budget for expenses to be incurred towards investing in RE, developing energy efficient infrastructure, acquiring LEED certifications and increasing the use of green technology.

Including climate-related risks and opportunities in operating costs:

At **Ultratech Cement** the annual financial planning is done considering many strategic inputs such as using waste heat recovery projects which have lower operating and maintenance costs as compared to conventional technology; using alternate materials in cement manufacturing resulting in reduced costs of handling, energy and grinding till clinkerisation, etc. A shift in blended portfolio results in benefits of lower operating costs.

Incorporating low-carbon goods and services:

L&T's Green Products and Services portfolio encompasses engineering and design solutions based on the principles of resource conservation, clean energy and energy efficiency which help lower carbon emissions, water consumption and air pollution, enabling development of infrastructure that has a lower environmental impact and higher public well-being. In view of changes in consumer behaviour as well as national and international regulatory scenarios, L&T adopted the substitution of current goods and services with lower emission products and services as a risk mitigation strategy. The company successfully converted perceived challenges into opportunity and built a business case by upgrading their services and products and developing a green portfolio. Subsequently, green portfolio generated a revenue of INR 221.25 billion in 2017-18, an increase of 12% over the previous year and contributing to more than 29% of the company's standalone sales. L&T's Green Portfolio includes green buildings, solar power plants, efficient power transmission and distribution systems, energy efficient equipment, metro rail projects and water treatment and recycling projects. These solutions have a force multiplier effect as they help the company's clients to move towards a low carbon economy path – spreading the impact far and wide.

Climate change integrated into Enterprise Risk Management:

Tech Mahindra has effectively integrated climate change in their Enterprise Risk Management Framework. This helped identify fuel and energy tax risk which were addressed by using low emissions energy solutions and adopting clean/green technologies. Since April 2015 they have achieved nearly US\$1 million cost savings by deploying solar power, and leveraged cost savings worth nearly a quarter of a million dollars by installing energy efficient equipment. They have also saved 44 lakh units of grid electricity in 2017-18. In addition, their Business Continuity Planning (BCP) exercise continually monitors risk assessment and mitigation measures, which cover their key functions, projects and systems.

Gaining momentum on internal carbon price

Tata Steel's ICP is driven by mandatory emission reduction targets which have financial implications with regards to EU-ETS and emission allocations. Carbon price assumptions are built into their financial processes, with annual forecasts feeding into their financial planning and latest views of these forecasts are taken into account through the year. In addition, carbon prices are included in their bespoke in-house model which is used to both technically and economically evaluate changes in the operation of their iron making processes.

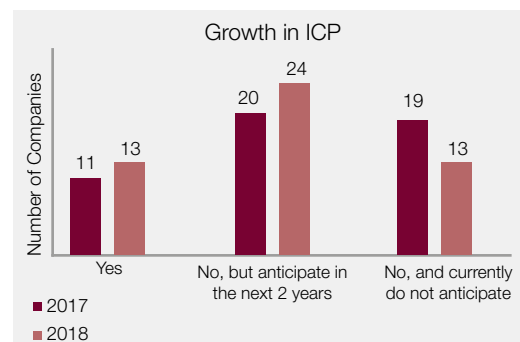
Internal Carbon Pricing (ICP) has emerged as a powerful approach to assess and manage carbon-related risks and opportunities that may arise from the transition to a low-carbon economy. For many companies, the most significant consequences of these risks will emerge over time, and their magnitude is uncertain. Assigning a monetary value to the cost of carbon emissions helps companies monitor and adapt their strategies and financial planning to real-time and potential future shifts in the external market.

The TCFD also lists ICP as a key metric to assess climate-related risks and opportunities in line with its strategy and risk management process. It states that “Where relevant, organizations should provide their internal carbon prices as well as climate-related opportunity metrics, such as revenue from products and services designed for a low-carbon economy”¹¹.

The TCFD recommends that companies should disclose the following regarding their use of ICP¹²:

- ▼ what assumptions are made about how carbon price(s) would develop over time (within tax and/or emissions trading frameworks),
- ▼ geographic scope of implementation,
- ▼ whether the carbon price would apply only at the margin or as a base cost,
- ▼ whether the price is applied to specific economic sectors or across the whole economy, and in what regions,

- ▼ whether a common carbon price is used (at multiple points in time) or differentiated prices,
- ▼ assumptions about scope and modality of a CO₂ price via tax or trading scheme.



CDP is committed to implementing the TCFD recommendations by facilitating the enhanced disclosure of carbon pricing. Since 2013, CDP has been asking companies to disclose their practice of using an ICP which has now evolved into a separate section. Companies are gradually adopting ICP and taking advantage of low-carbon investment opportunities while managing carbon risks. In 2018, 13 companies are using an ICP and 24 companies anticipate incorporating ICP in the next two years, as compared to 11 and 20 companies respectively in 2017. Companies are also transparently disclosing their prices.

Company	Price/tonne of CO ₂ (₹)	Price/tonne of CO ₂ (\$)
ACC	3,313	47.33
Ambuja Cements	1,998.4	29
Tata Chemicals* ¹³	1,324	20
Mahindra & Mahindra	664	10
Tata Steel ¹⁴	650-2,210	10-34
Hindustan Zinc*	1,118.46	16.89
Tata Motors	910	14
Mahindra Sanyo Special Steel Pvt. Ltd*	752.02	11.35
Infosys Limited*	695.1	10.5
Tech Mahindra*	662	10
Tata Global Beverages*	315	4.75
Shree Cement*	142	2.14

¹¹ Implementing the Recommendations of the Task-Force on Climate-Related Financial Disclosures, page 17, <https://www.fsb-tcfd.org/wp-content/uploads/2017/12/FINAL-TCFD-Annex-Amended-121517.pdf>

¹² The Use of Scenario Analysis in Disclosure of Climate-Related Risks and Opportunities, Technical Supplement, <https://www.fsb-tcfd.org/wp-content/uploads/2016/11/TCFD-Technical-Supplement-A4-14-Dec-2016.pdf>

¹³ Since Tata Chemicals, Hindustan Zinc, Mahindra Sanyo Special Steel Pvt Ltd, Infosys Limited, Tech Mahindra, and Tata Global Beverages did not give a conversion rate, the average conversion rate for their reporting year (2017-2018) was used i.e. \$1 = ₹66.2.

¹⁴ Tata Steel has provided different price ranges for Europe and Indian operations.

Tata Motors is applying a shadow price of carbon throughout the organization irrespective of geographical location. They are using ICP in their economic assessment of investment projects related to production, R&D, and strategy interventions. They envisage that putting a price on carbon will promote use of clean processes and vehicle technologies, renewable energy and increased ENCON initiatives which would ultimately help in driving reduction in GHG emissions and achieving the carbon reduction targets. Implementation of ICP would also help Tata Motors to be resilient against upcoming carbon policies and regulations and protect them from future carbon related risks.

#IsICPGood4U

ICP adoption is a strategic step by any company. While the numbers are slowly increasing, there are several challenges and possible solutions to overcoming them. To encourage further uptake, CDP India launched a communications outreach campaign via LinkedIn and Twitter, the target audience being primarily Indian companies, to spread awareness about the concept of ICP.

Uses & benefits

ICP provides an incentive to reallocate resources towards low-carbon activities, such as energy efficiency improvements, emissions reductions, and RE procurement, over high-carbon activities. Applying a carbon cost to such investment decisions supports a better return on investment in a carbon-constrained future, thus creating a clear business case for their execution. It is also used in determining the business case for R&D investments necessary for new low-carbon products and services – a priority for companies seeking to cut emissions from the manufacturing process and attract new business from customers interested in low-carbon, low-cost solutions¹⁵.

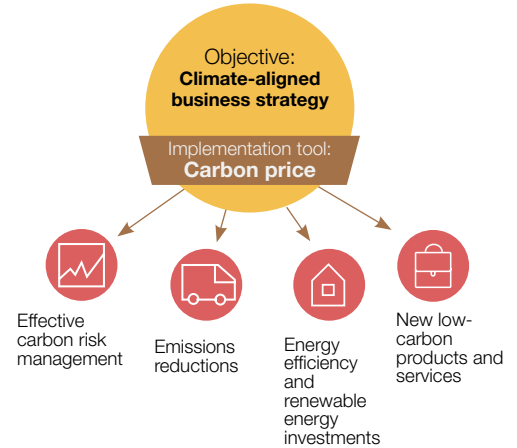
Drivers of ICP



The benefits of using ICP are:

- ▶ **Navigating regulations:** ICP (shadow price) can help a company to assess risk exposure, make informed decisions and future proof their assets and investments against regulatory risks.
- ▶ **Building better relationships:** Due to growing pressure from investors and stakeholders to

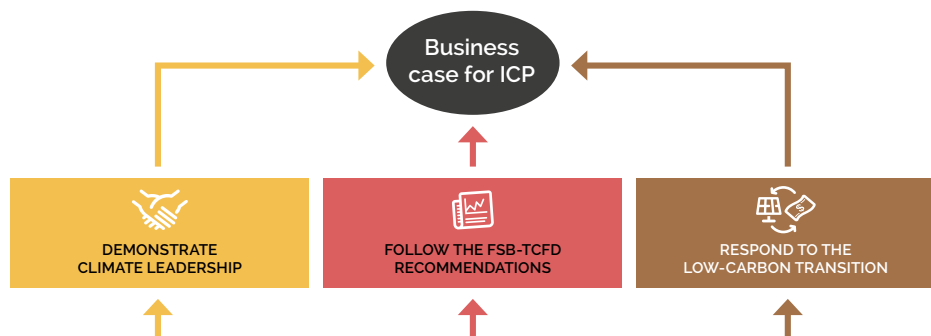
Delivering change



measure and report environmental and carbon footprint, and manage climate-related risks and opportunities, ICP can communicate how well a company is managing the transition to low-carbon activities.

- ▶ **Demonstrate leadership on sustainability:** ICP can help a company establish leadership on sustainability which not only enhances its reputation but also helps motivate to change employee behavior. For example, internal fee mechanisms take this approach a step further by charging responsible business units for their carbon emissions. These programs frequently reinvest the collected revenue back into clean technologies and other activities that help transition the entire company to low-carbon.

Benefits of using an ICP approach¹⁶



Benefits of setting an internal carbon price

CONTRIBUTE A FAIR SHARE OF EFFORT TO ACHIEVING THE PARIS AGREEMENT

- » Strengthen **brand value**
- » Gain a **competitive edge** in a low-carbon economy
- » **Accelerate GHG reductions** throughout the value chain
- » Reduce **exposure to climate-related regulations**

BUILD RESILIENCE AGAINST CLIMATE-RELATED RISKS

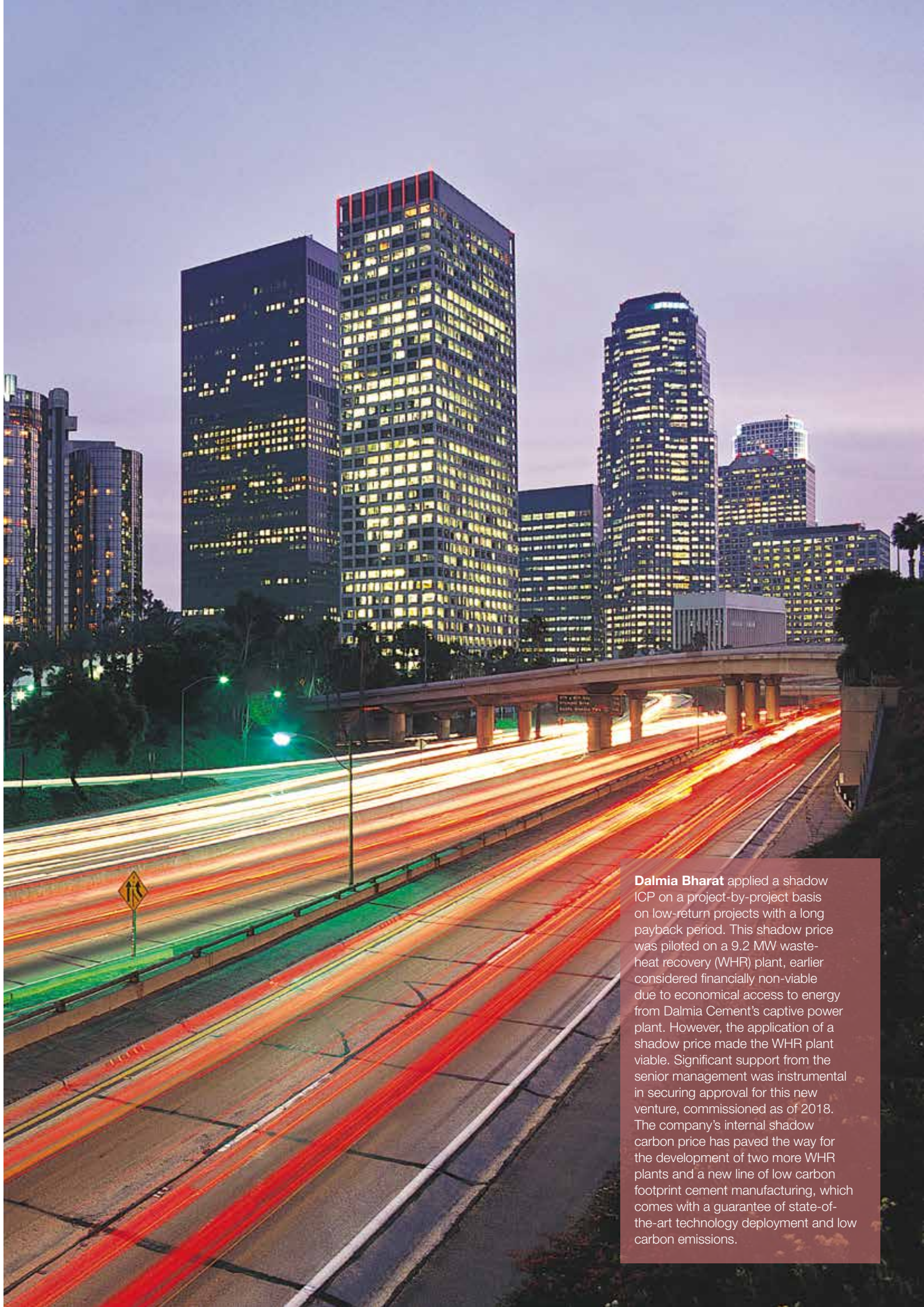
- » Lower risk of carbon **cost pass-through** from suppliers
- » Anticipate the impact of **shifts in customer preferences** to low-carbon products and services
- » Enable **scenario analysis** on the financial performance of the business using a single uniform metric

SEIZE OPPORTUNITIES IN A LOW-CARBON FUTURE

- » Discover **new opportunities** to reduce energy and carbon costs through collaboration within the company, with suppliers and with customers
- » Find **new customer markets**
- » Enable **R&D** of low-carbon products to become commercially viable

15 CDP Carbon price report 2016 https://b8f65cb373b1b7b15feb-c70d8ead6ced550b4d987d7c03fcd1d.ssl.cf3.rackcdn.com/cms/reports/documents/000/001/132/original/CDP_Carbon_Price_report_2016.pdf?1474899276

16 Ecofys, The Generation Foundation and CDP, How-to guide to corporate internal carbon pricing – Four dimensions to best practice approaches, Consultation Draft, September 2017.



Dalmia Bharat applied a shadow ICP on a project-by-project basis on low-return projects with a long payback period. This shadow price was piloted on a 9.2 MW waste-heat recovery (WHR) plant, earlier considered financially non-viable due to economical access to energy from Dalmia Cement's captive power plant. However, the application of a shadow price made the WHR plant viable. Significant support from the senior management was instrumental in securing approval for this new venture, commissioned as of 2018. The company's internal shadow carbon price has paved the way for the development of two more WHR plants and a new line of low carbon footprint cement manufacturing, which comes with a guarantee of state-of-the-art technology deployment and low carbon emissions.

Renewable energy shines bright

REmade Index 2018:

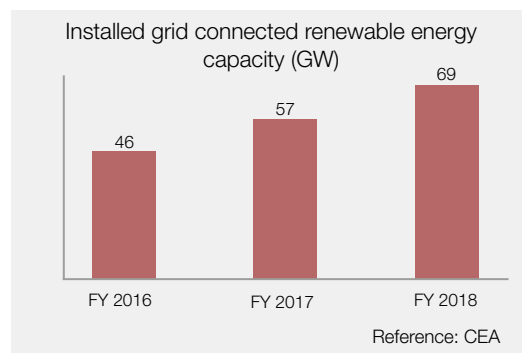
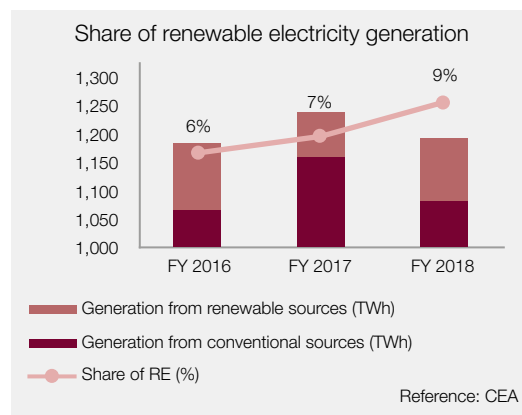
In May 2018, the International Renewable Energy Agency (IRENA), launched the REMade Index Report with input from CDP. The report provides the first-ever account of global trends in corporate sourcing of renewables. It examines the practices of over 2400 companies, identifying drivers, achievements and barriers, and providing recommendations to strengthen the momentum. Indian companies such as Bharat Forge, Infosys, and Wipro secured a place in corporate renewable electricity production for self-consumption index and corporate renewable electricity consumption index of Information Technology sector.

IRENA (2018), Corporate Sourcing of Renewables: Market and Industry Trends – REMade Index 2018. This report is available for download from www.irena.org/publications.

India had committed that by 2030, as much as 40% of its installed energy capacity will be non-fossil fuel based. The Ministry of New and Renewable Energy (MNRE) Secretary, Mr. Anand Kumar told the press in Katowice that the country will better the target by 50%, to achieve non-fossil fuel capacity of 60%.¹⁷

“Today, India has 73 GW of wind, solar and biomass capacity, and another 22 GW is under construction. Yet another 25 GW is in the process of being tendered out. That leaves 55 GW more to be set up by 2022 for India to meet its target of 175 GW. After 2022, India will auction 30 GW of solar and 10 GW of wind every year till 2030. By 2030, the country will have 350 GW of solar and 150 GW of wind installed capacity”.

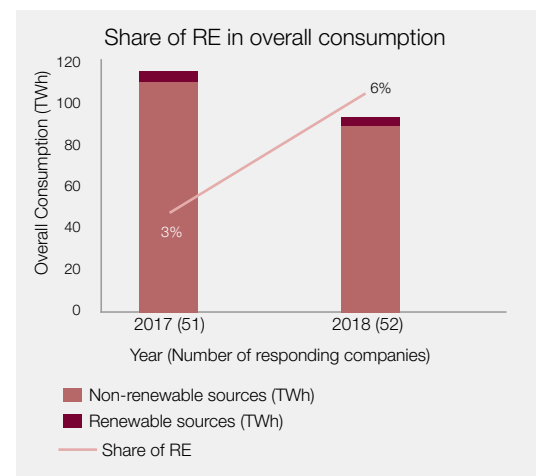
Due to rapid economic growth, the demand of electricity in India has grown significantly. In 2017-18, about 1,194 TWh¹⁸ electricity was generated in India, almost double the amount of 10 years ago. Based on predictions, India’s annual electricity demand is expected to reach 5,000TWh¹⁹ by 2035. The share of renewable electricity generation capacity is also growing in India. By March 2018, the grid connected renewable electricity capacity was 69 GW which was 20% of India’s total installed electricity generation capacity. Also, the share of renewable electricity generation has grown consistently from 6% in 2016 to 9% in 2018, which is significant especially when thermal energy remains as the single largest source of electricity generation.



India’s ambitious RE goals provide a huge opportunity for investors and the corporate sector to play an important role in the growth of renewables in India. The Government of India has also pledged to reduce carbon emissions relative to GDP by 33-35% from 2005 levels by 2030. Aligned with the national commitment, India’s grid connected RE capacity has grown at the rate of 15% annually since 2015. Private sector contributed heavily in India’s overall installed RE capacity.

More than 50%²⁰ of energy demand is from industries in India. Therefore, they have a great potential to decarbonize their energy supply with the use of renewable electricity. As per the analysis²¹ by the International Renewable Energy Agency (IRENA), about 1138 companies around the world in 75 countries actively sourced 465 TWh of renewable electricity in 2017, an amount close to the overall electricity demand of France. This demonstrates the growing interest among corporate consumers towards renewables.

In 2018, the 52 responding companies in India consumed a total of 86 TWh electricity in their operations, of which 6% (5.5 TWh) came from RE sources. Renewable electricity targets have become a preferred choice to demonstrate a strong leadership by corporates. Companies find renewable electricity targets as an important tool to challenge themselves and benchmark its performance against peers. In 2018, 17 companies from India have reported renewable energy targets. These companies have reported 15 TWh of electricity consumption, of which 9% came from renewables.



Global renewable energy campaigns like the RE100 provide a leadership platform to companies where companies commit to go for 100% renewable electricity. In India, **five** companies have committed to source 100% of electricity from RE sources and joined RE100 campaign.

The detailed breakdown of the renewable electricity consumption shows that Renewable Electricity

17 <https://energy.economictimes.indiatimes.com/news/renewable/india-will-overachieve-paris-commitments-experts/67078684>

18 http://www.cea.nic.in/reports/monthly/executivesummary/2018/exe_summary-04.pdf

19 <http://www.bridgetoindia.com/blog/how-much-power-will-india-need-in-2035/>

20 http://mospi.nic.in/sites/default/files/publication_reports/Energy_Statistics_2018.pdf

21 <http://irena.org/publications/2018/May/Corporate-Sourcing-of-Renewable-Energy>

Infosys

Software services company has total installed capacity of 46.1 MW Solar PV installations. Out of 46.1 MW, 16.1 MW is off-grid rooftop Solar PV installation and remaining 30 MW is Captive Ground mounted Solar PV installation. In 2015, Infosys became the first Indian company to join the RE100 campaign and has committed to source 100% renewable electricity by 2020.

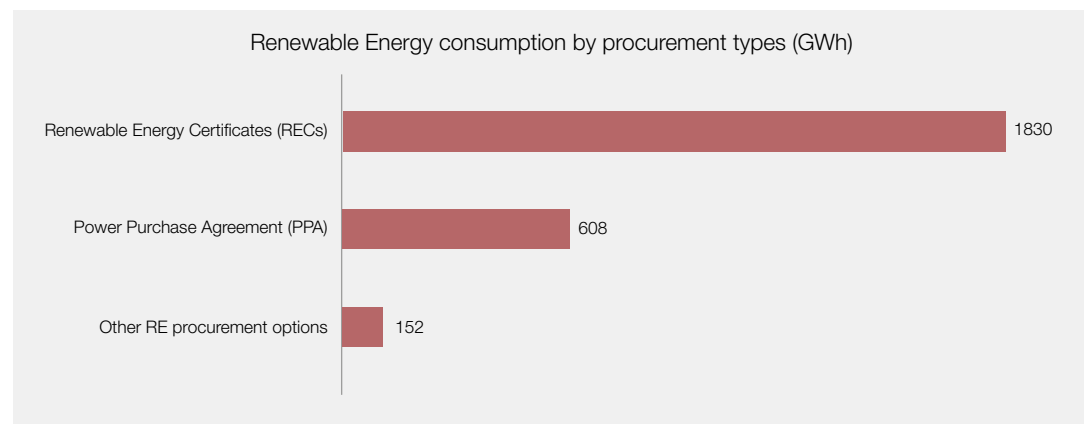
Indian Hotels Company

This hospitality chain owned by the Tata Group has entered into power purchase agreements with its electricity suppliers for procuring renewable energy. In the reporting period, 21% of the electricity consumed was from renewable sources. India, Zambia and UAE were the regions where the highest amount of RE was procured.

Certificates (RECs) is the most preferred procurement option among companies followed by Power Purchase Agreement (PPA). Renewable electricity is increasingly becoming cost competitive especially when the industrial tariffs are growing considerably. Increasing interest in corporate PPAs is also evident from the data reported by member companies to RE100 where PPAs represented 17% of all the renewable electricity purchased by RE100 members

in India. The US, India and Europe represent the majority of the global corporate PPA market.

Increasing number of companies are voluntarily taking RE targets and procuring RE. Driven by intentions to reduce scope 2 emissions in combination with economic benefits, renewables have become an attractive source of energy. This is also supporting India's ambitious plan to add renewable energy capacity and fulfil its commitment under NDC.



About the RE100 initiative:



RE100 is a global initiative led by The Climate Group in partnership with CDP, brings together the most influential businesses committed to 100% renewable power for their global operations. RE100 shares the compelling business case for renewables, such as greater control over energy costs, increased competitiveness, and delivery on emissions goals.

Since the beginning of 2018, 37 new companies have signed up to the RE100 initiative. Putting renewables at the heart of business strategy, the current 155 members are creating demand for 188 TWh of renewable power per year – equivalent to the 23rd largest country electricity consumption in the world. They have a total combined revenue of more than US\$4.5 trillion, over 5% of global GDP.

Major Indian businesses such as **Infosys, Dalmia Bharat, Tata Motors, Hatsun Agro Products and Mahindra Holidays** have committed to using 100% renewable electricity in their global operations by joining RE100.

Science-based targets: New norm for sustainable business practice

Key highlights

- 25 Indian companies have committed to the SBTi, out of which three companies have got their targets approved. These are **Mahindra Sanyo Special Steel, Hindustan Zinc Limited and Wipro**.
- Mahindra Sanyo Special Steel is the first global steel company to get its targets approved by SBTi.
- The estimated emission reduction potential based on the targets set by three approved companies is 1.25 MtCO₂e.
- The Automobiles and Components sector has the highest number of committed companies from India (5), followed by Mining – Metals (3) and Real Estate (3).

Benefits of setting SBTs²²

- Enhanced brand reputation
- Increased investor confidence
- Resilience against regulation
- Increased innovation
- Bottom line savings
- Competitive edge

With over three years of the landmark Paris Agreement, 2018 has seen an unprecedented rise in the number of companies committing to reduce their emissions in line with the levels required to prevent dangerous global warming. Companies representing around one eighth of the total global market capitalization are now using climate science to define their future course.

Indian companies are at the forefront of this global fight where science-based targets (SBTs) are rapidly becoming the new norm for sustainable business practice. By December 2018, 25 companies committed propelling India to the fifth position after US, Japan, UK, France in corporate climate action.

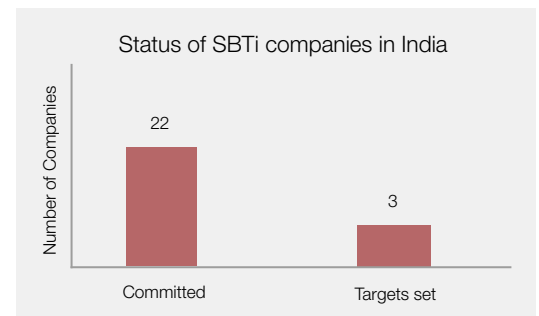
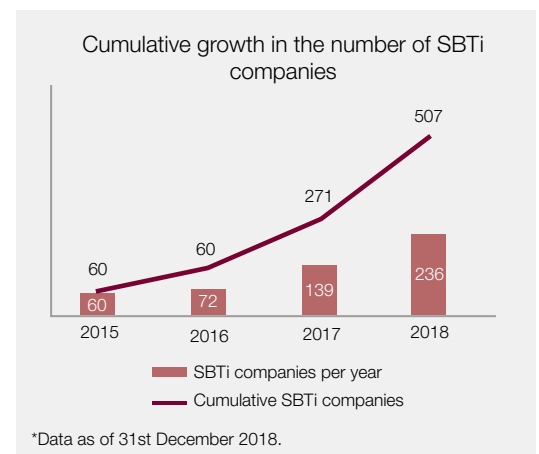
Setting SBTs in conformity with the Paris Agreement provides companies with a clearly defined pathway to future-proof growth by specifying how much and how quickly they need to reduce their GHG emissions. Setting SBTs allows companies to mitigate climate risks and simultaneously capture the financial and other opportunities of a low-carbon transition. Moving beyond the usual state of affairs in target setting is essential for companies that want to remain competitive in a carbon constrained market. SBTs provide companies with a transparent and credible foundation for their corporate climate action plans.

The combined market capitalization of all companies that have joined the SBTi is nearly US\$10 trillion, comparable to the NASDAQ stock exchange. Nearly a fifth (17%) of Fortune Global 500 companies have now committed to set science-based emissions reduction targets which also includes companies from the heavy emitting sectors.

Commitments under NDCs will certainly have an impact on Indian businesses in respect of future market strategy and their repercussions on investments, R&D initiatives and capacity-building. Physical as well as regulatory risks (government regulation of greenhouse gases, carbon taxes), coupled with market risks (new low-carbon technologies challenging established business models) and reputational risks have the potential to disrupt businesses. However, a planned scientific approach can minimize these risks and even provide new opportunities. Despite being a developing economy, many Indian companies from the hard to abate sectors have also committed to meet their low-carbon goals.

Progress so far

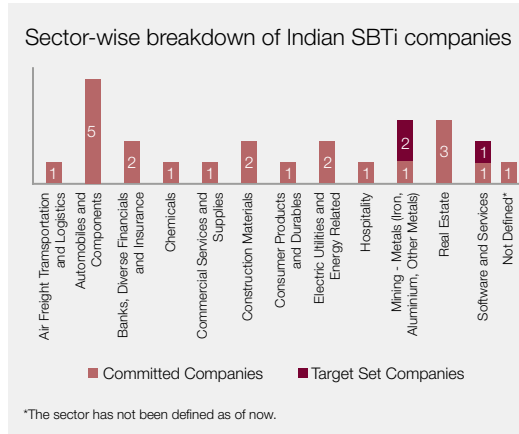
Globally, over 507 companies from 39 countries have committed to set SBTs. Out of this, 163 companies have got their targets approved from SBTi. The graph shows the cumulative growth in the number of committed companies since the initiative was launched. These include companies from the high-emitting sectors, many of which will have to undergo organizational and process transformations in order to meet their goals.



As India is set to move towards future-proofing growth, there has been a significant number of companies which have joined the SBTi. By December 2018, 25 companies have committed to the SBTi out of which three companies have their targets approved. The sector-wise breakdown of the SBTi companies shows that the level of commitment in moving towards a low carbon economy is relentless across industrial sectors, with the maximum commitments from the Automobiles and Components sector.



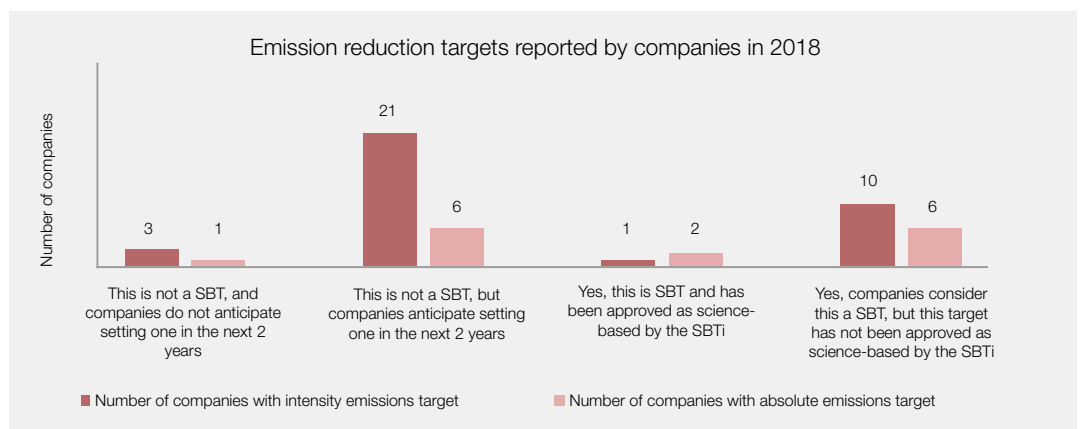
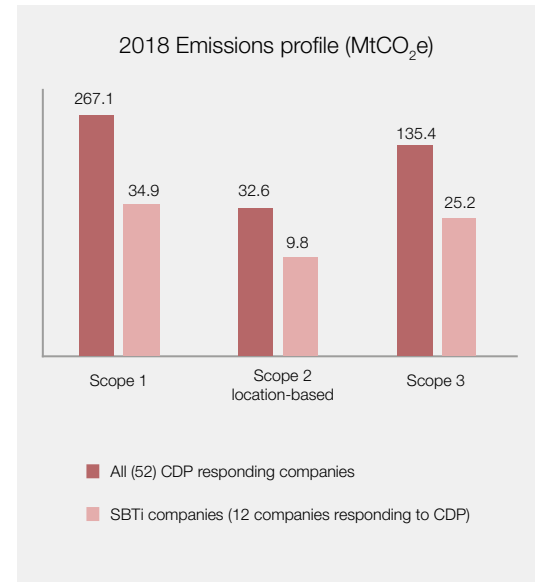
²² <https://sciencebasedtargets.org/2018/07/09/six-business-benefits-of-setting-science-based-targets/>



As part of achieving one of the targets under the NDCs, India has committed to reduce the emissions intensity of GDP by 33%–35% by 2030 below 2005 levels. The potential emission reduction of companies taking action through various initiatives shows that companies can contribute in an effective way to achieve this target. Data disclosed to CDP suggests that there are 15 companies having absolute and/or intensity targets based on science, but these have not been approved by the initiative. Also, there are about 27 companies which anticipate setting science-based emission reduction targets in the next two years. This shows potential of more companies to commit to the SBTi and get their targets validated by the initiative.

Emissions coverage

Out of the 25 committed companies, 12²³ companies have responded to CDP via the Climate Change investor disclosure program and one²⁴ company has responded through CDP's supply chain program in 2018. The emissions breakdown data for the 12 companies in comparison with the total emissions reported by all 52 companies in the investor sample of 2018 is shown in the graph. It is to be noted that these 12 companies have approximately 13% share of scope 1, 30% share of scope 2 (location-based) emissions and 19% share of scope 3 emissions in the overall CDP reporting sample. This gives a clear indication that companies with significant carbon footprint are taking the necessary steps to limit the warming, but more companies need to step forward and commit to bold and ambitious climate initiatives such as the SBTi in order to help India achieve its NDCs and move towards a low carbon economy.



23 Includes the companies of the CDP Investor program 2018: Ambuja Cement Ltd, Dalmia Bharat, Hindustan Zinc Limited, Mahindra & Mahindra Financial Services Limited, Mahindra & Mahindra Limited, Mahindra Lifespaces Developers Limited, Mahindra Sanyo Special Steel, Marico Limited, Tata Chemicals Limited, Tech Mahindra, Wipro, Yes Bank

24 Mahindra Logistics Limited responded to the CDP Supply Chain program 2018.

Indian companies with approved targets and target details

Mahindra Sanyo Special Steel

Indian steel manufacturer Mahindra Sanyo Special Steel commits to reducing Scope 1&2 emissions per tonne of steel produced 35% by 2030, against a 2016 base-year. Mahindra Sanyo also commits to reducing Scope 3 emissions per tonne of steel produced by 35% by 2030 against a 2016 base-year.

Hindustan Zinc Limited

Integrated mining and resources producer Hindustan Zinc Limited commits to reduce absolute Scopes 1 and 2 GHG emissions 14% by 2026 from a 2016 base-year. Hindustan Zinc Limited also commits to reduce absolute Scope 3 GHG emissions 20% by 2026 from a 2016 base-year.

Wipro

Information technology, consulting and business process services company, Wipro commits to reduce absolute scope 1 and 2 GHG emissions 14% by 2022 and 48% by 2030, from a 2017 base-year. In addition, Wipro commits to reduce absolute scope 3 GHG emissions 10% by 2022 and 30% by 2030 from a 2017 base-year for business travel, employee commute, upstream fuel and energy related emissions.

“Climate change is the next century’s biggest financial and business opportunity. We have to keep drumming the message that climate change is in fact the next century’s biggest financial and business opportunity. All of our companies will commit to the science-based targets initiated... It is one way in which every company in the world can find a very quantitative road map in how they are going to contribute in meeting the Paris goals...”

Anand Mahindra, Chairman, Mahindra Group

“The global low-carbon transition is underway, and we are gearing up to unlock innovation and create the sustainable business of the future. The Paris Agreement has shown us the direction of travel. Science-based targets provide the roadmap to navigate the transition and ensure we play our part in delivering on the world’s low-carbon goals.”

Mahendra Singhi, CEO, Dalmia Cement Group

“Combating climate change is among today’s most urgent global challenges, and also one of our biggest economic opportunities. “Science-based targets align our business strategy with the goals of the Paris Agreement. While we are responsible for playing our part in preventing dangerous climate change, we also future-proof our growth and profitability by taking climate action in collaboration with our partners in the value chain. Science-based targets provide us with a clear road map for such an action plan.”

**Uday Gupta, Ex-Managing Director,
Mahindra Sanyo Special Steel**

About the SBTi

The Science Based Targets initiative champions science-based target setting as a powerful way of boosting companies’ competitive advantage in the transition to the low-carbon economy.

It is a collaboration between CDP, the United Nations Global Compact (UNGC), World Resources Institute (WRI), and the World-Wide Fund for Nature (WWF) and one of the We Mean Business Coalition commitments.

The initiative:

- Showcases companies that set science-based targets through case studies, events and media to highlight the increased innovation, reduced regulatory uncertainty, strengthened investor confidence and improved profitability and competitiveness generated by science-based target setting.
- Defines and promotes best practice in science-based target setting with the support of a Technical Advisory Group
- Offers resources, workshops and guidance to reduce barriers to adoption
- Independently assesses and approves companies’ targets



Join the SBTi

We look forward to companies taking action by committing to develop science-based targets.



Indian companies committed to SBTi

Company name	Status	Sector
Ambuja Cement Ltd	Committed	Construction Materials
Banka BioLoo	Committed	
Dalmia Bharat Limited	Committed	Construction Materials
EPC Industrie Limited	Committed	Commercial Services and Supplies
Gromax Agri Equipment Limited	Committed	Automobiles and Components
Havells India Limited	Committed	Electric Utilities and Energy Related
Hindustan Zinc Limited	Targets Set	Mining - Metals (Iron, Aluminium, Other Metals)
Mahindra & Mahindra Financial Services Limited	Committed	Banks, Diverse Financials and Insurance
Mahindra & Mahindra Limited	Committed	Automobiles and Components
Mahindra Accelo	Committed	Mining - Metals (Iron, Aluminium, Other Metals)
Mahindra Electric Mobility Ltd	Committed	Automobiles and Components
Mahindra First Choice Services Ltd.	Committed	Automobiles and Components
Mahindra Holidays and Resorts India Limited	Committed	Hospitality
Mahindra Lifespaces Developers Limited	Committed	Real Estate
Mahindra Logistics Ltd.	Committed	Air Freight Transportation and Logistics
Mahindra Sanyo Special Steel	Targets Set	Mining - Metals (Iron, Aluminium, Other Metals)
Mahindra Susten	Committed	Electric Utilities and Energy Related
Mahindra World City (Jaipur) Ltd.	Committed	Real Estate
Mahindra World City Developers Ltd	Committed	Real Estate
Marico Limited	Committed	Consumer Products and Durables
Swaraj Engines Limited	Committed	Automobiles and Components
TATA Chemicals Limited	Committed	Chemicals
Tech Mahindra	Committed	Software and Services
Wipro	Targets Set	Software and Services
YES Bank	Committed	Banks, Diverse Financials and Insurance

India's water security imperilled

In India in 2018, **202,740** megalitres of water was withdrawn in total by the nine responding companies and **185,781** megalitres and **98,008** megalitres of water was consumed and discharged respectively. In some cases sewage water is being treated and used 100%, as well as recycling of water is prevalent, leading to zero discharge of water. Despite recycling and treatment, majority of the responding companies stated higher withdrawal and consumption compared to 2017, thus proving the ever-increasing demand of water for increased industrial activities.

Risks identified by global companies with operations in India	Number of global companies
Physical	20
Regulatory	1
Reputation & Markets	1
Supply chain	8

In its 10th year of operation, CDP's Water Security program works to catalyse action amongst corporates, cities, states and regions to improve water security globally. It provides data users and companies with a framework to analyse, report and benchmark strategies to identify and mitigate current and future water-related risks and capitalise on opportunities. CDP now holds the world's largest self-reported corporate water dataset, with **2113** companies reporting in 2018.

Along with CDP's water scoring methodology, the Water Security questionnaire helps companies to drive improvements in water management and enables benchmarking against leading practice on key parameters such as water dependence and water accounting metrics; value chain engagement activities; business impacts; risk assessment procedures; risks and opportunities; facility water accounting; water governance and business strategy; targets and linkages with other environmental issues.

In 2018, 760 global companies responded to institutional investors through CDP's Water Security program which included only nine Indian companies. The Materials sector has the highest number of reporting companies which includes Iron, Aluminium mining and Chemical Industries. Water is a critical component in resource extraction, raw material processing and production processes for these sectors. While the number is quite less, yet it is a commendable effort by these few reporting companies on transparently disclosing their water usage and management methods which eventually leads their journey towards best practice.

Today, more than 2.1 billion people lack access to safely managed drinking water, while over half the global population – about 4.5 billion people – lack access to proper sanitation services. More than a third of the global population²⁵ is affected by water scarcity, yet we continue to manage water inefficiently across all sectors and some 80% of wastewater²⁶ continues to be discharged untreated, adding to already problematic levels of water pollution. Competition for the world's finite amount of freshwater is rapidly increasing. With nearly 70% of water being contaminated, India is placed at 120th amongst 122 countries in the water quality index. In June 2018, Union Government's think tank, Niti Aayog published a startling report on India's worsening water crisis – 600 million people living with "extreme water stress", and about three-fourth of the households in the country not having drinking water in their premise. It estimates that 21 states will run dry of groundwater by 2020 and demand for potable water will outstrip supply by 2030 if adequate steps are not taken immediately.²⁷ In addition, while the country is dealing with its neighbours Pakistan and Bangladesh over water usage, six Indian states are also involved in disputes over the river waters,

from Yamuna in the north, to Narmada in the midwest and the Cauvery in the south.

As droughts, floods and declining freshwater ecosystems become the new 'norm', addressing water security is an increasing imperative for climate mitigation and adaptation without which it will create systemic risks to the global ecosystem. As a result, investors expect their investee companies to incorporate water management into their policies and business practices via business strategy and planning, risk management, reporting, and interaction with regulators and stakeholders. They should continue to undertake an annual assessment of companies' water management disclosure. For example, Norges Bank Investment Management has published their expectation from companies on water management based on best practices from internationally recognised standards such as the UN Global Compact, the OECD Principles of Corporate Governance, and the OECD Guidelines for Multinational Enterprises. Businesses should do all that they can to drive the transition to a water-secure future, enhancing their social license to operate, building resilience and credibility whilst cutting costs in the process. Disclosure statistics in 2018 reflect this trend well.

- ▼ **Eight out of nine (90%)** of the responding companies reported exposure to water-related risks which may have a substantial financial or strategic impact on their businesses.
- ▼ Physical risks were reported to have the highest cost of potential impact with over **₹3000 crores** followed by regulatory risks and technological risks. Interestingly for regulatory risks, high water prices were reported as a result of poor enforcement of water regulations. As for technological risks, an increase in operating costs was reported by the responding companies.
- ▼ The availability of good quality freshwater is emphasized - **70%** of the respondents consider direct and indirect use of good quality freshwater as well as recycled, brackish and/or produced water as important and vital, requiring it for their daily operations and in their supply chain as well. In water-stressed zones, companies are increasingly using recycled water as this reduces their dependency on freshwater. For example, **Tata Steel** maximizes the use of recycled water as it reduces the cost of operations.

Municipal sewage water to useable water:

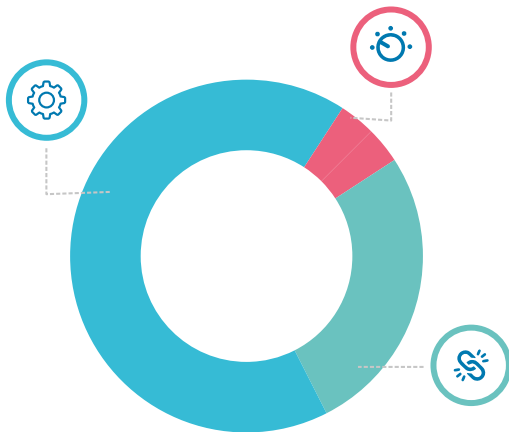
For **Hindustan Zinc Ltd.**, freshwater is required for all operational processes. However, as their operations are located in water-stressed zones, this represents 100% of its water withdrawals. In order to reduce its dependence on fresh water, HZL have installed STP (sewage treatment plant) of 25 MLD in the city of Udaipur, Rajasthan.

25 http://www.unwater.org/publication_categories/sdg-6-synthesis-report-2018-on-water-and-sanitation/

26 http://www.unwater.org/publication_categories/sdg-6-synthesis-report-2018-on-water-and-sanitation/

27 http://www.niti.gov.in/writereaddata/files/document_publication/2018-05-18-Water-index-Report_vS6B.pdf

Risk types



- Physical
- Regulatory
- Technology

15
3
1 } **19**



Physical Risks

Risk	Potential Impact
Drought	Closure of operations
Declining water quality	Increased operating costs
Increased water stress	Constraint to growth Upfront costs to adopt/deploy new practices and processes
Increased water scarcity	Brand damage Constraint to growth
Other	Reduction or disruption in production capacity
Seasonal supply variability/ inter annual variability	Impact on company assets
Pollution incident	Impact on company assets

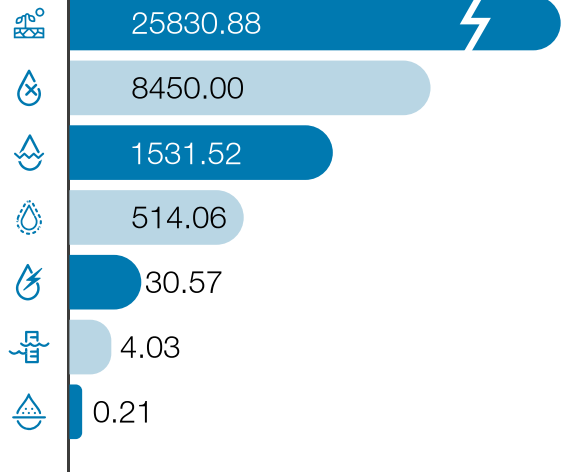
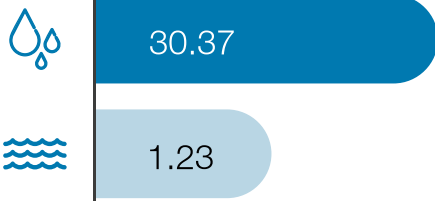
Potential Impact in million INR ₹ **36,361.26**



Regulatory Risks

Risk	Potential Impact
Poor enforcement of water regulation	Increased operating costs
Limited or no river basin/catchment management	Constraint to growth

Potential Impact in million INR ₹ **31.60**



Technological Risks

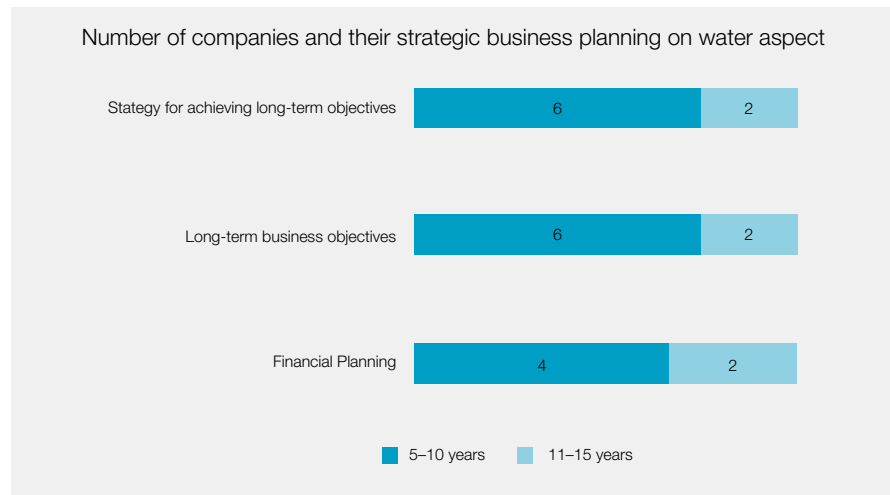
Risk	Potential Impact
Transitioning to water intensive, low carbon energy sources	Increased operating costs

Potential Impact in million INR ₹ **0.68**

Enabling water security

Reporting companies are not only measuring and monitoring their water usage, risks and impacts but are also employing good management methods to

enable water security. The table below shows that they are ticking the right boxes when it comes to enabling water security.



Companies are also looking into medium and long-term strategies on water issues and have integrated the following water aspects (Strategy for achieving long-term objectives, Long-term business objectives and financial planning) into their business plans.

The above figure shows that companies prefer mid-term planning (5-10 years) instead of long-

term planning (11-15 years). This doesn't come as a surprise as water effects are felt locally and can be short-term in nature, requiring more immediate strategic planning. While eight companies have integrated water-related issues in their long-term business objectives as well as their strategy to achieve them, only six companies have considered it in their financial planning.

Name of company	Board level oversight ²⁸	Water targets & Goals ²⁹	Documented Water policies ³⁰	Scenario Analysis ³¹	Internal Price on Water ³²	Verification of Water Information	Value chain engagement ³³
Ambuja Cements	✓	✓	✓	✓	✓		✓
Dr. Reddy's Laboratories	✓	✓	✓	✓			
Hindustan Zinc	✓	✓	✓	✓		✓	✓
Mahindra & Mahindra	✓	✓	✓	✓		✓	✓
Marico	✓	✓					✓
Tata Chemicals	✓	✓				✓	
Tata Steel	✓	✓	✓		✓	✓	✓
Tech Mahindra	✓	✓	✓			✓	✓
Mahindra Sanyo							
Special Steel Pvt. Ltd	✓	✓	✓			✓	✓

28 All 9 reporting companies having board-level oversight of water-related issues (CEO being the most common position having responsibility of water-related issues)

29 All 9 responding companies reported having water-related targets/goals which are monitored at the corporate level.

30 77% (7 of 9) responding companies reported having documented water policy that is publicly available.

31 Four out of the nine responding companies use climate-related scenario analysis to inform their business strategy – from using MoEFCC's State Climate Change Action plans, external experts and using WRI's Aqueduct tool and India's National Action Plan for Climate Change. The rest of the companies plan on conducting similar scenario analysis within the next two years

32 Two companies reported as having an internal price on water. Five companies reported as currently exploring water valuation process.

33 6% of the responding companies said that they engage with their suppliers on water-related issues and 22% engage with their respective customers and other value chain partners. The rest intend to engage with their value chain regarding water-related issues within the next two years

Hindustan Zinc Ltd. has a dedicated Water Management policy and are following the Water Management Standard (TS-14) of Vedanta Sustainability Framework. Their water management policy not only includes compliance with national & international regulations but also identification and implementation of water saving projects, use of recycled water, efficient water accounting, avoiding water pollution, helping communities for sustainable water resources by rainwater harvesting as well as monitoring and transparent communication of water consumption performance to stakeholders.

Water and the Sustainable Development Goals

Water has been recognised as a fundamental pillar of future development during the formulation of the SDGs. Achieving SDG 6 - the global goal to ensure the availability and sustainable management of water and sanitation for all – is not only a goal in and of itself; delivering this Goal is essential to meeting all the other Global Goals.

SDG 6 cannot be achieved without corporate action. Industry accounts for over 19% of global water withdrawal, and agricultural supply chains for 70% more. What gets measured gets managed, and at CDP, we've seen an increasing number of companies tracking, managing and implementing water solutions. Significant progress will rely on robust data on the current landscape and the implementation of change required to ensure environmental sustainability on water. Today over 2,000 of the world's largest companies measure, manage and report their water risks and impacts through CDP – up from 1,200 just three years ago.

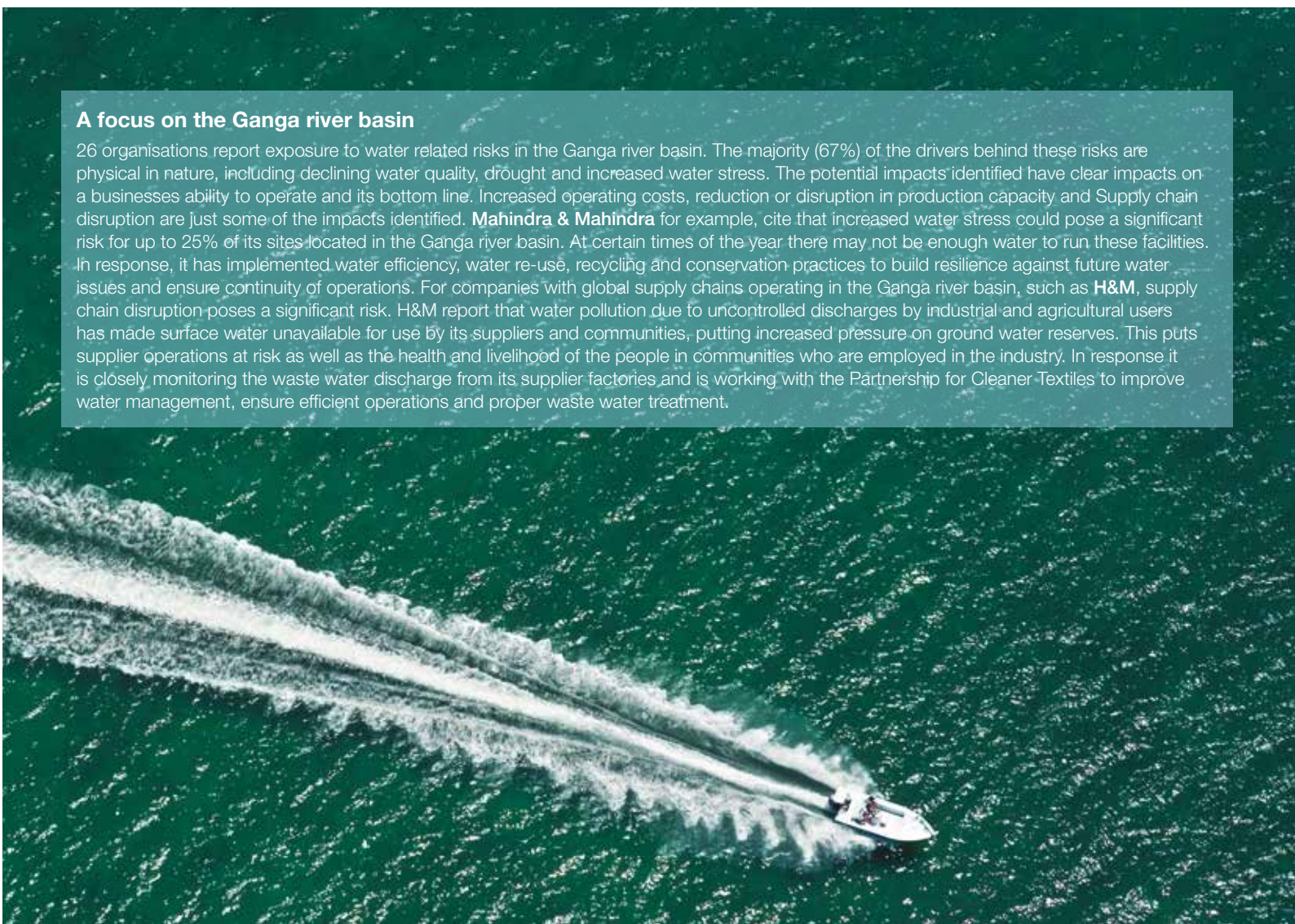
Global businesses, including those involved in the production of food, energy, chemicals, metals and medicines, have a significant role to play in achieving SDG 6. Not only do they employ a vast proportion of the global workforce, but they are also breeding grounds for the creativity and innovation needed to generate the solutions to deliver a water secure world.

To succeed, companies responsible for the greatest impacts upon water resources must recognise that water is a fundamental asset to their business. They must transform their business models in ways that decouple production and consumption from the depletion of water resources and work together with governments and communities alike, to enhance sustainable water management within the river basins upon which they depend.

Tata Steel calculates the internal cost of water (apart from government cess) which includes both OPEX and also estimates internal water cost through scenario analysis for future water scarcity scenarios.

A focus on the Ganga river basin

26 organisations report exposure to water related risks in the Ganga river basin. The majority (67%) of the drivers behind these risks are physical in nature, including declining water quality, drought and increased water stress. The potential impacts identified have clear impacts on a businesses ability to operate and its bottom line. Increased operating costs, reduction or disruption in production capacity and Supply chain disruption are just some of the impacts identified. **Mahindra & Mahindra** for example, cite that increased water stress could pose a significant risk for up to 25% of its sites located in the Ganga river basin. At certain times of the year there may not be enough water to run these facilities. In response, it has implemented water efficiency, water re-use, recycling and conservation practices to build resilience against future water issues and ensure continuity of operations. For companies with global supply chains operating in the Ganga river basin, such as **H&M**, supply chain disruption poses a significant risk. H&M report that water pollution due to uncontrolled discharges by industrial and agricultural users has made surface water unavailable for use by its suppliers and communities, putting increased pressure on ground water reserves. This puts supplier operations at risk as well as the health and livelihood of the people in communities who are employed in the industry. In response it is closely monitoring the waste water discharge from its supplier factories and is working with the Partnership for Cleaner Textiles to improve water management, ensure efficient operations and proper waste water treatment.



Forestry in a sustainable low-carbon economy

Comparatively there is very limited indication of traceability and transparency on forest risk commodities in CDP's sample of Indian manufacturing companies with none responding of the 33 requested by investors in 2018. Requests from CDP Supply Chain members have been better received with **five** out of **six** companies responding to purchasing companies. The overall response suggests a lack of resources from companies which are highly dependent on high-risk commodities to realize the business impacts of global deforestation and forest degradation.

The role of forestry in a sustainable low carbon economy has taken a more central role in the context of a 2-degree warming scenario, with carbon sequestration being placed at the heart of global action. India's Second Biennial Update Report 2018 to the United Nations Framework Convention on Climate Change³⁴, has reflected the importance of forests in their carbon emissions reduction strategy. The National Agroforestry Policy (2014), Compensatory Afforestation Fund Act 2016 with Compensatory Afforestation Fund Management and Planning Authority (CAMPA) and National Afforestation and Eco-Development Board (NAEB) programme facilitated significant regrowth of forest cover in recent years.

Currently, 18 afforestation/reforestation carbon mitigation projects are listed by the private sector in India sequestering up to 2.28 MtCO₂³⁵. Projects such as these are also recognized in the CDP Forest reporting platform as potential opportunities for business to support and mitigate against the impacts of deforestation in supply chains whilst supporting India's wider strategy to reduce domestic emissions.

Whilst the impacts of deforestation on climate change are felt globally, emissions from deforestation are regionally concentrated in tropical rainforest's biomes. Permanent land use change for commodities is the biggest driver of tree cover loss globally, primarily to produce beef, soy, palm and timber products³⁶. India is the largest importer of palm oil in the world and is also one of the biggest importers of forest-risk soy products from tropical forest producing countries like Brazil and Argentina. Additionally, almost a third of tropical timber trade goes through India with an estimated 17% of imports of illegal origin according to a 2017 assessment of the Forest 500, Global Canopy^{37,38}.

CDP requested 1115 companies across all regions to disclose data on the top four commodities drivers in 2018 to complete the CDP Forest questionnaire

on behalf of investors and purchasing customers. In total, **455** companies responded, with the number of disclosures increasing by 58% compared to 2017. This increase was largely due to responses to CDP's Supply Chain program³⁹ demonstrating the power of procurement in driving greater transparency in commodities from the high deforestation risk regions. Of the 91 companies disclosing on palm oil to investors, 81% identified deforestation and forest degradation as having potential substantive financial or strategic impact on their business.

Across all four commodities, companies reported already experiencing the following forest-related detrimental impacts:

- ▼ Brand damage,
- ▼ Increased operational costs
- ▼ Increased production costs
- ▼ Reduction or disruption in production capacity
- ▼ Supply Chain disruption
- ▼ Physical immediate impacts

Forests also underpin the sustainability agenda, which is why the UN SDGs are clearly mapped in the CDP Forest questionnaire⁴⁰. Through CDP data we have established that hundreds of companies based in the US, Europe, Japan and Brazil have recognized the importance of forestry and forest commodities in their manufacturing, retailing and processing operations, and included this in a company-wide policy. Alone, companies will struggle to achieve zero-net-deforestation commitments in complex commodity supply chains without greater transparency across the industry wide. CDP recommends more companies use the Forests questionnaire as a standardized method to assess their exposure to deforestation risks and guide action which ensures that everyday consumer commodities are not produced at the expense of forests and the ecosystem services they provide for.

34 Available at <https://unfccc.int/sites/default/files/resource/INDIA%20SECOND%20BUR%202018.pdf>

35 Available at <https://unfccc.int/sites/default/files/resource/INDIA%20SECOND%20BUR%202018.pdf>

36 Curtis, P. G., Slay, C. M., Harris, N. L., Tyukavina, A., & Hansen, M. C. (2018), Classifying drivers of global forest loss, *Science*, 361(6407), 1108-1111

37 Forest 500, Global Canopy, <https://forest500.org/rankings/jurisdictions/india>

38 The Forest 500 jurisdiction assessment- provides a benchmark for country and subnational jurisdiction action on forest loss driven by forest risk. Source: https://forest500.org/sites/default/files/2017_jurisdiction_assessment_methodology.pdf

39 CDP's work with supply chains includes 115 purchasing organizations and more than 11,500 suppliers to identify and manage climate change, deforestation and water-related risks. By supporting collaboration and transparency in the value chain, our supply chain member companies can engage with their suppliers to tackle risks, take advantage of opportunities and ensure business continuity.

40 Root and branch: How forests underpin the sustainability agenda. CDP policy briefing 2018. <https://6fefcbb86e61af1b2fc4-c70d8ead6ced550b4d987d7c03fcd1d.ssl.cf3.rackcdn.com/cms/reports/documents/000/003/091/original/SDG-Policy-Brief-Forests-EN.PDF?1520501329>



2018 CDP Cities and States & Regions

CDP provides a global platform for states and regions to measure, manage and disclose their environmental impacts. Over 120 state and regional governments disclose to CDP from 32 countries, representing over 672 million people, 21% of the global economy and over 5 GtCO₂e. In 2018, 90% more cities disclosed emissions reduction targets and twice as many cities said they have climate action plans in place, compared to prior to the Paris Agreement in 2015.

climate change. London, Copenhagen, Los Angeles, Montreal, New York City, Paris, San Jose, Stockholm, Sydney, Tokyo and Tshwane have pledged to have zero emissions by 2050.

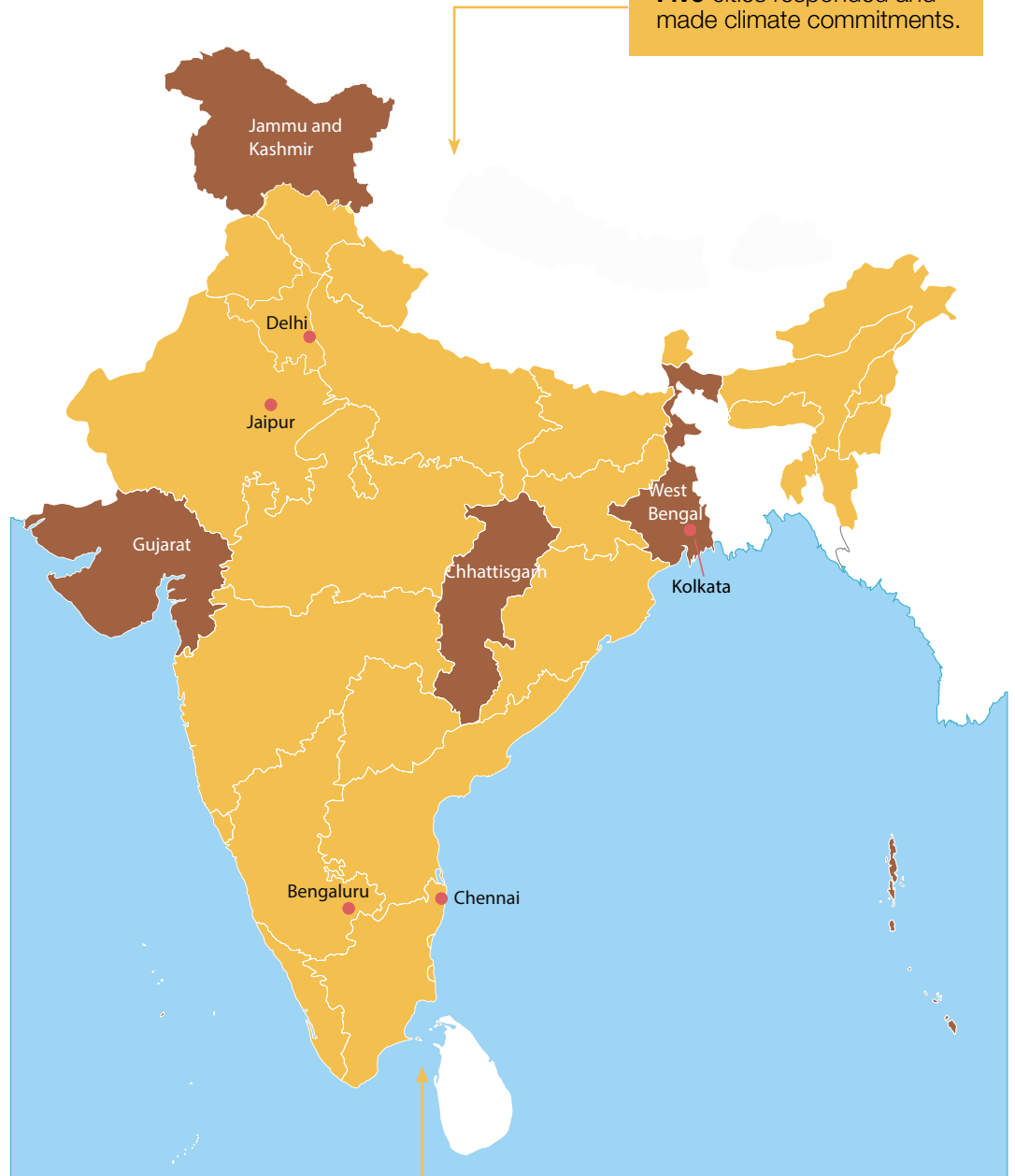
50 states and regions globally have reported both a region-wide GHG emissions reduction target and a region-wide inventory. Their combined economy makes up 10% of global GDP and 7% of global emissions. Additionally, states and regions have committed to decarbonize at a rate of 6.2% a year until 2050.⁴¹

Cities all over the world are setting bold targets on

Gujarat and Jammu & Kashmir, with a combined population of just over 189 million, about 14% of India's total population, have made climate commitments in line with the India's NDC targets.

India snapshot

Five cities responded and made climate commitments.



Jaipur representing a population of 3 million and accounting for just over 0.2% of India's total population, has made a RE commitment of sourcing 15% solar power for city-wide electricity consumption by 2020.

Four states responded to CDP States and Regions program

⁴¹ Global States and Regions Annual Disclosure 2018 Update, The Climate Group & CDP, https://www.theclimategroup.org/sites/default/files/global_states_and_regions_annual_disclosure_report_final_web.pdf

Ambitious action for low-carbon transition

We must dare to dream big. It opens immense possibilities to imagine, innovate and bring technological advancements to realise our vision for the betterment of people, profit and the planet.

Mahendra Singhi,
MD and CEO,
Dalmia Cement (Bharat) Limited

Environmental disclosure by leading companies via CDP's reporting platform is feeding data across capital markets to provide a holistic picture, inform better decisions and drive action. Companies are reporting how science-based carbon emission reduction targets can drive business and sustainability improvements. They are showing how RE purchases are helping companies to cut emissions and how setting an internal price on carbon can drive efficiency and shift investment decisions.

As seen in the report, the Indian corporate sector is witnessing a spurt in green opportunities. Companies are going beyond the bare minimum prescribed under law and adopting innovative mechanisms. This is responsible – and smart – business in the age of climate change. The booming market for RE, is the most obvious example.

While the Government is introducing several policy measures to boost renewables and drive action through energy efficiency, and introduction of electric vehicles multiple stakeholders perceive this as a

shared journey to bring about radical change. The 2018 data demonstrates increased commitments towards emission reduction initiatives. At a time when countries around the world have set emission reduction targets in line with the Paris Agreement, corporate climate action is once again in the spotlight.

Progress is visible, but so is devastation due to extreme weather. As we move into the final year before nations are expected to update their national climate plans for the Paris Agreement, we expect to see all parts of society push forward with greater ambition and innovation.

But the future, replete with opportunities, is not certain, and there is no time to waste.

As CDP's CEO Paul Simpson noted, "2019 needs to be the year we urgently scale up action to accelerate the low carbon transition, halt the destruction of our forests - which could in itself provide a third of climate mitigation efforts – and protect our vital water supplies, which are central to key industries, such as agriculture, and vital to the low carbon transition."



Appendix I

Table of emissions, scores and sector by company

Company Profile			CDP 2018		Emissions Profile (tons CO ₂ e)				
CDPACS Classification - Primary Activity	Company Name	Sample	2018 Score Band	2018 Permission Status	Scope 1	Scope 2: Location-based	Scope 2: Market-based	Scope 3	Scope 3 (number of categories reported)
Accessories manufacture	Titan Company		D	Non public	-	-	-	-	-
Automobile manufacturing	Mahindra & Mahindra		B	Public	41777	229217	226950	15412320	14
	Maruti Suzuki India			Non public	-	-	-	-	-
	Tata Motors		A-	Public	97163	311058	0	4152411	6
Banking & investment services	Axis Bank		C	Public	7433	137237	-	9899	3
	Indusind Bank		A-	Public	5777	57801	-	5798	15
	Kotak Mahindra Bank		C	Public	773	67593	-	27370	3
	Mahindra & Mahindra Financial Services	BSE Top 200	C	Public	134	2493	-	14878	16
	State Bank of India		C	Public	123116	1280315	-		0
	YES BANK Limited		C	Public	2980	29668	-	12893	4
CCGT generation	Tata Power Co		D	Public	35723397	14936	-	1948	1
Cement	ACC		B	Public	16810776	600541	-	713652	4
	Ambuja Cements			Public	14711549	8894681	-	2338812	7
	Shree Cement		B	Public	14009272	192108	-	227548	14
	Ultratech Cement		B	Public	39298919	640545	-	4794494	15
	Dalmia Bharat Ltd.		B	Non public	-	-	-	-	-
Electrical equipment	Godrej Interio Division-Godrej & Boyce Mfg.Co.Ltd.	SSC	D	Public	5280	12018	-	3058	5
Gas utilities	GAIL		D	Public	2892451	467536	-	0	17
Hotels & lodging	Indian Hotels Co. Ltd.	BSE Top 200	C	Public	47101	199283	-	35886	3
Inorganic base chemicals	Tata Chemicals			Public	4970931	63930	-	639225	17
Iron & steel mills	Mahindra Sanyo Special Steel Pvt. Ltd	SSC	B	Public	48930	149325	142256	244083	17
	Tata Steel		B	Public	47025134	3344945	-	26223755	17
	JSW Steel		D	Public	39575052	65487	-	66269480	5
Iron ore mining	NMDC		D	Non public	-	-	-	-	-
Logistics services	Adani Ports & Special Economic Zone		-	Non public	-	-	-	-	-
Metal processing	Bharat Forge		D	Public	245629	5207	-		0
Non-CCGT generation	JSW Energy		C	Public	17314093	3931	-	9778	2
Oil & Gas Refining	Indian Oil Corporation	BSE Top 200	D	Public	15723274	48739	-		0
Oilseed processing	Godrej Industries		C	Public	40885	45042	-	8539	17
Other food processing	Marico			Public	3094	12825	-		0
Other non-ferrous refining	Hindustan Zinc		B	Public	4829878	154564	-	4443747	17
Personal care & household products	Godrej Consumer Products		C	Public	33880	26683	-	38334	4

Company Profile			CDP 2018		Emissions Profile (tons CO ₂ e)				
CDPACS Classification - Primary Activity	Company Name	Sample	2018 Score Band	2018 Permission Status	Scope 1	Scope 2: Location-based	Scope 2: Market-based	Scope 3	Scope 3 (number of categories reported)
Pharmaceuticals	Biocon			Non public	-	-	-	-	-
	Dr. Reddy's Laboratories	BSE Top 200	B	Public	298791	259822	0	282467	4
	Jubilant Life Sciences Ltd		C	Non public	-	-	-	-	-
	ZCL Chemicals	SSC		Public	-	-	-	-	0
	Piramal Enterprises		D	Public	33228	72199	-	0	16
Professional & information services	HCL Technologies	BSE Top 200	C	Public	10951	169543	-	98836	17
	Infosys Limited		A	Public	13114	121640	0	182734	6
	Larsen & Toubro Infotech Ltd	SSC	B	Public	314	28961	-	10143	14
	Mindtree Ltd		C	Non public	-	-	-	-	-
	Tata Consultancy Services	BSE Top 200	B	Public	29701	425628	466177	659795	8
	Tech Mahindra		A-	Public	2787	122700	-	36885	4
Real estate developers	Wipro		A-	Public	16046	189785	-	406104	6
	Mahindra Lifespace Developers Limited	SSC	D	Public	1041	9887	-	453	1
Rubber products	JK Tyres & Industries	SSC	C	Public	206446	132978	-	-	0
Servers & data centres	Tata Communications		B	Public	8080	121001	-	2420811	3
Tea	Tata Global Beverages	BSE Top 200	B	Public	10846	18999	-	521343	5
Textiles	ARVIND Ltd		D	Public	336680	363760	-	45898	1
	Welspun India Ltd	SSC	D	Non public	-	-	-	-	-
Transportation infrastructure & other construction	Larsen & Toubro	BSE Top 200	B	Public	434802	349206	0	3344182	3
	Lucknow Metro Rail Corporation	SSC	-	Non public	-	-	-	-	-

Appendix II

BSE Top 200

Sample is based on average annual market capitalisation listed on Bombay Stock Exchange (BSE), known as BSE Top 200.

CDPACS Classification - Primary Activity	Company Name	Response Status	CDPACS Classification - Primary Activity	Company Name	Response Status
Accessories manufacture	Titan Company	Submitted	Banking & investment services	HDFC Bank Ltd	Not submitted
	Bayer CropScience Ltd	Not submitted		Housing Development Finance Corporation	Not submitted
Agricultural chemicals	PI Industries Ltd	Not submitted		ICICI Bank Limited	Not submitted
	UPL Limited	Not submitted		IDBI Bank Ltd	Not submitted
	United Breweries	Not submitted		IDFC Bank Ltd	Not submitted
Alcoholic beverages	Hindalco Industries	Not submitted		IDFC Ltd	Not submitted
Asset owners, managers & advisors	Bajaj Holdings & Invst. (BHIL)	Not submitted		Indiabulls Housing Finance Ltd	Not submitted
Automobile manufacturing	Mahindra & Mahindra	Submitted		Indiabulls Ventures Ltd	Not submitted
	Maruti Suzuki India	Submitted		Karnataka Bank Limited	Not submitted
	Tata Motors	Submitted		L&T Finance Holdings Limited	Not submitted
	Bajaj Auto	Not submitted		LIC Housing Finance	Not submitted
	Hero Motocorp Ltd	Not submitted		Manappuram General Finance & Leasing	Not submitted
	TVS Motor Company Ltd	Not submitted		Motilal Oswal Financial Services Ltd	Not submitted
	Ashok Leyland	Not submitted		Muthoot Finance Limited	Not submitted
	Eicher Motors Ltd	Not submitted		PNB Housing Finance Ltd	Not submitted
Baked goods & cereals	Britannia Industries	Not submitted		Power Finance Corporation	Not submitted
	Axis Bank	Submitted		Punjab National Bank	Not submitted
	Indusind Bank	Submitted		RBL Bank Ltd	Not submitted
	Kotak Mahindra Bank	Submitted		Rural Electrification Corpn.	Not submitted
	Mahindra & Mahindra Financial Services	Submitted		Shriram City Union Finance Ltd	Not submitted
	State Bank of India	Submitted	Shriram Transport Finance Co.	Not submitted	
	YES BANK Limited	Submitted	South Indian Bank Ltd.	Not submitted	
	Bajaj Finance Limited	Not submitted	Union Bank of India	Not submitted	
	Bank of Baroda	Not submitted	Batteries	Exide Industries	Not submitted
	Bank of India	Not submitted	Building subcontractors	Voltas	Not submitted
Bharat Financial Inclusion Ltd.	Not submitted	CCGT generation	Tata Power Co	Submitted	
Canara Bank	Not submitted		Adani Power Ltd	Not submitted	
Central Bank of India	Not submitted		National Hydroelectric Power Corporation Ltd (NHPC)	Not submitted	
Cholamandalam Investment and Finance Company Ltd	Not submitted	NTPC Ltd	Not submitted		
City Union Bank Ltd.	Not submitted	Reliance Power	Not submitted		
Dewan Housing Finance Corporation Limited	Not submitted	ACC	Submitted		
Edelweiss Financial Services Ltd	Not submitted	Cement	Ambuja Cements	Submitted	
Federal Bank	Not submitted		Dalmia Bharat Ltd	Submitted	
Gruh Finance Ltd	Not submitted		Shree Cement	Submitted	

CDPACS Classification - Primary Activity	Company Name	Response Status
Cement	Ultratech Cement	Submitted
	Century Textiles & Industries	Not submitted
	Grasim Industries	Not submitted
	The Ramco Cements Ltd	Not submitted
Ceramic	Kajaria Ceramics Ltd	Not submitted
Clothing Design	Page Industries Ltd	Not submitted
	Rajesh Exports Ltd	Not submitted
Clothing Manufacture	Bata India Ltd	Not submitted
Clothing retail	Aditya Birla Fashion and Retail Ltd	Not submitted
Coal Extraction	Coal India	Not submitted
	Adani Enterprises	Not submitted
Dairy & egg products	Nestle India	Not submitted
Electrical equipment	Crompton Greaves Consumer Electricals Ltd	Not submitted
	ABB India Ltd	Not submitted
	Amara Raja Batteries Ltd	Not submitted
	Havells India	Not submitted
	Siemens Ltd	Not submitted
Electricity networks	CESC Ltd	Not submitted
	Power Grid Corpn. of India	Not submitted
	Reliance Infrastructure	Not submitted
	Torrent Power	Not submitted
Electronic equipment	Bharat Electronics	Not submitted
Engineering services	Engineers India Ltd	Not submitted
Fabricated metal components	Bosch Ltd	Not submitted
	Gillette India	Not submitted
Fast food	Jubilant Foodworks Ltd	Not submitted
Gas utilities	GAIL	Submitted
	Indraprastha Gas Ltd	Not submitted
Health Care Facilities	Apollo Hospitals Enterprises	Not submitted
Hotels & lodging	Indian Hotels Co. Ltd.	Submitted
Industrial machinery	AIA Engineering Ltd.	Not submitted
	Bharat Heavy Electricals	Not submitted
	Cummins India	Not submitted
	Jain Irrigation Systems	Not submitted
Inorganic base chemicals	Tata Chemicals	Submitted
	SRF Ltd.	Not submitted

CDPACS Classification - Primary Activity	Company Name	Response Status
Insurance	Bajaj Finserv	Not submitted
	ICICI Prudential Life Insurance Company Ltd	Not submitted
	Max Financial Services	Not submitted
Iron & steel mills	JSW Steel	Submitted
	Tata Steel	Submitted
	Jindal Steel & Power	Not submitted
	Steel Authority of India	Not submitted
Iron ore mining	NMDC	Submitted
Logistics services	Adani Ports & Special Economic Zone	Submitted
	Container Corporation of India	Not submitted
	Gujarat Pipavav Port Limited	Not submitted
Media & marketing	Dish TV India	Not submitted
	Sun TV Network	Not submitted
	Zee Entertainment Enterprises	Not submitted
	Info Edge (India) Ltd.	Not submitted
Metal processing	Bharat Forge	Submitted
Mobile heavy machinery	Escorts Ltd	Not submitted
Non - CCGT Generation	JSW Energy	Submitted
Non-wood furniture	Motherson Sumi Systems	Not submitted
Non - nitrogenous fertilizers	Coromandel International	Not submitted
	Oil & Natural Gas	Not submitted
Oil & gas extraction	Oil India Ltd.	Not submitted
	Petronet LNG	Not submitted
Oil & Gas Pipelines & Storage	Gujarat State Petronet	Not submitted
	Indian Oil Corporation	Submitted
Oil & Gas Refining	Bharat Petroleum Corporation	Not submitted
	Hindustan Petroleum Corporation	Not submitted
	Reliance Industries	Not submitted
Organic base chemicals	Kansai Nerolac Paints Limited	Not submitted
Other food processing	Marico	Submitted
	GlaxoSmithKline Consumer Health	Not submitted
Other non-ferrous refining	Hindustan Zinc	Submitted
Other non-ferrous ore mining	National Aluminium Co.	Not submitted
	Vedanta Ltd	Not submitted

CDPACS Classification - Primary Activity	Company Name	Response Status	
Other renewable energy equipment	Suzlon Energy Ltd.	Not submitted	
Oilseed processing	Godrej Industries	Submitted	
Passenger airlines	InterGlobe Aviation Ltd	Not submitted	
Personal care & household products	Godrej Consumer Products	Submitted	
	Colgate Palmolive India	Not submitted	
	Dabur India	Not submitted	
	Emami Ltd.	Not submitted	
	Hindustan Unilever	Not submitted	
	Procter & Gamble Hygiene & Health Care Ltd	Not submitted	
Pharmaceuticals	Biocon	Submitted	
	Dr. Reddy's Laboratories	Submitted	
	Jubilant Life Sciences Ltd	Submitted	
	Piramal Enterprises	Submitted	
	Divi's Laboratories	Not submitted	
	Ajanta Pharma Ltd.	Not submitted	
	Alkem Laboratories Ltd	Not submitted	
	Aurobindo Pharma	Not submitted	
	Cadila Healthcare	Not submitted	
	Cipla	Not submitted	
	GlaxoSmithKline Pharmaceuticals	Not submitted	
	Glenmark Pharmaceuticals	Not submitted	
	Lupin	Not submitted	
	Natco Pharma Ltd	Not submitted	
	Strides Arco	Not submitted	
	Sun Pharmaceutical Industries	Not submitted	
	Torrent Pharmaceuticals	Not submitted	
	Wockhardt	Not submitted	
	Plastic products	Supreme Industries Ltd	Not submitted
	Professional & information services	HCL Technologies	Submitted
Infosys Limited		Submitted	
Mindtree Ltd		Submitted	
Tech Mahindra		Submitted	
Wipro		Submitted	

CDPACS Classification - Primary Activity	Company Name	Response Status
Professional & information services	CRISIL LTD	Not submitted
	Tata Consulatncy Services	Submitted
	Mphasis	Not submitted
Real estate developers	Indiabulls Real Estate Ltd	Not submitted
Real estate services	DLF	Not submitted
Rubber products	MRF LTD	Not submitted
	APOLLO TYRES LTD	Not submitted
	Balkrishna Industries Ltd	Not submitted
	Ceat Ltd	Not submitted
Servers & data centres	Tata Communications	Submitted
Software	Oracle Financial Services	Not submitted
	Tata Elxsi Ltd	Not submitted
	Vakrangee Softwares Ltd.	Not submitted
Specialty chemicals	Asian Paints	Not submitted
	Berger Paints India Ltd	Not submitted
	Castrol India	Not submitted
	Pidilite Industries Ltd	Not submitted
Supermarkets, food & drugstores	Avenue Supermarts Ltd	Not submitted
Tea	Tata Global Beverages	Submitted
Telecommunications services	Bharti Airtel	Not submitted
	Vodafone Idea Ltd	Not submitted
Textiles	ARVIND Ltd	Submitted
Tobacco products	ITC Limited	Not submitted
Transportation infrastructure & other construction	Larsen & Toubro	Submitted
	IRB Infrastructure Developers	Not submitted
	NCC Ltd (Nagarjuna Construction Co.)	Not submitted
Transportation support services	GMR Infrastructure Limited	Not submitted
Utility line construction	Bharti Infratel Limited	Not submitted
	Multi Commodity Exchange of India Ltd	Not submitted

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