

CHAPTER 2

Climate and environment regulatory requirements for the manufacturing sector

This article aims to:

Provide an overview of the climate and environment-related regulatory requirements in India for the manufacturing sector.

Introduction

The rapid development in industrialisation has given a boost to the manufacturing sector. It includes a diverse range of industries such as automotive, chemical, pharma, textile, electrical equipment, etc. While the manufacturing and production sectors are key drivers for economic growth, the activities in these sectors are leading to issues such as environment pollution and climate change. In this regard, regulatory authorities across the globe are implementing climate and environment related regulations to protect and conserve the environment and ensure sustainable use of natural resources. Also, the climate and environment related risks, corresponding regulatory requirements and strategic decisions undertaken by the entities could have an impact on the business model of an organisation.

Therefore, it is of utmost importance to obtain an understanding of the effects of climate and environment risk on an entity's financial statements. In our previous editions, we have discussed the effects of climate-related matters on financial statements¹ and the accounting considerations for carbon credit².

In this article we aim to provide an overview of the climate and environment-related regulatory requirements in India for the companies in the manufacturing sector.

The following sections discuss key requirements relating to disclosures under Securities Exchange Board of India's (SEBI) Business Responsibility and Sustainability Reporting (BRSR) and highlights few environment/climate-related laws and regulations applicable in India. It is essential that companies adopt a comprehensive approach to ensure effective Environment, Social and Governance (ESG) compliance and reporting.

1. AAU – Issue 84 July 2023. Click [here](#) to access the same.
2. AAU – Issue 87 October 2023. Click [here](#) to access the same.
3. As per market capitalisation as on 31 March of previous year

SEBI's sustainability reporting framework

In May 2021, the Securities Exchange Board of India (SEBI) introduced BRSR which requires certain listed entities to make Environmental, Social, and Governance (ESG) disclosures. Currently, top 1,000 listed entities³ are mandatorily required to submit BRSR along with their annual reports. The BRSR seeks disclosures from listed companies on their performance against the nine principles of the 'National Guidelines on Responsible Business Conduct' (NGBRCs) issued by the Ministry of Corporate Affairs (MCA) in 2019. The reporting section of BRSR is divided into three sections,

- Section A: General disclosures
- Section B: Management and process disclosures
- Section C: Principle wise performance disclosure.


Further, the principle wise performance disclosures are divided into (a) essential indicators (i.e. mandatory reporting) and (b) leadership indicators (i.e. to be reported on voluntary basis).

Additionally, in July 2023, SEBI issued a framework for enhancing the ESG disclosures which consisted of applicability of BRSR Core, disclosure for value chain and their assurance. The BRSR Core requires mandatory reasonable assurance from an independent assurance provider, commencing from Financial Year (FY) 2023-24 for top 150 companies over a glide path of four years.

Some of the key environment and climate related BRSR requirements that could have an impact on the manufacturing sector are enumerated in Principle 6, *Businesses should respect and make efforts to protect and restore the environment* of the BRSR.



The key attributes from these disclosure requirements under Principle 6 are as follows:



Greenhouse Gas (GHG) and other emissions

GHGs are considered to be one of the significant contributors of climate change. A first step towards reducing the carbon footprint of the manufacturing industry is understanding the Product Carbon Footprint (PCF), which measures the total greenhouse gas emissions generated by a product. Therefore, it is of utmost importance for entities to monitor and control GHG emissions to achieve the target for becoming a carbon neutral economy.

It covers the following gases:

Carbon dioxide (CO ₂)	Methane (CH ₄)
Nitrous oxide (N ₂ O)	Hydrofluorocarbons (HFCs)
Perfluorocarbons (PFCs)	Sulphur hexafluoride (SF ₆)
Nitrogen trifluoride (NF ₃)	



BRSR provides following disclosure requirements relating to GHG:

Essential indicators

- **GHG footprints (BRSR Core):** Companies are required to disclose details regarding total Scope 1 emissions and total Scope 2 emissions. These are explained in detail in the table below

	Scope 1	Scope 2
Meaning	<ul style="list-style-type: none"> • Direct GHG emissions from sources that are owned or controlled by the entity. • These sources could be any physical unit or process that releases GHG into the atmosphere. • Any emissions that are not physically controlled but result from intentional or unintentional releases of GHGs, such as equipment leakages, methane emissions (eg: from coal mines), shall also be included in the calculation of Scope 1 emissions. 	Indirect emissions that result from the generation of purchased or acquired electricity, heating, cooling, and steam consumed by the entity.
Unit for the disclosure	Metric tonnes of CO ₂ equivalent	
Disclosure requirements	<ul style="list-style-type: none"> • Breakup of CO₂, CH₄, N₂O, HFCs, PFCs, SF₆, NF₃, if available. • Standards, methodologies, assumptions and/or calculation tools used, including sources of the global warming potential (GWP) rates and emission factors used. 	

- **GHG emission intensity (BRSR Core):** In addition to disclosure of Scope 1 and Scope 2 emissions, entities are also required emission intensity ratios in terms of per rupee of turnover adjusted for Purchasing Power Parity (PPP) and in terms of physical output.
- **Projects undertaken to reduce GHG emissions (Principle 6, Essential Indicators):** Organisations are required to disclose the various projects and initiatives that have been undertaken to reduce GHG emissions.
- **Other air emissions:** Details regarding other air emissions should be provided. These include NO_x, SO_x, Particulate matter (PM), Persistent organic pollutants (POP), Volatile organic compounds (VOC), Hazardous air pollutants (HAP). Also, details of any contextual information necessary to understand how the data has been compiled, such as any standards, methodologies, assumptions and/or calculation tools used should also be provided.

Leadership indicators

Disclosure of total Scope 3 emissions and its intensity: Scope 3 emissions are indirect GHG emissions (not included in energy indirect (Scope 2) GHG emissions) that occur outside of the organisation and include both - upstream and downstream emissions. The BRSR mentions that organisations on a voluntary basis provide a disclosure of their Scope 3 emissions and the breakup into CO₂, CH₄, N₂O, HFCs, PFCs, SF₆, NF₃. While computing Scope 3 GHG emissions, the organisation should exclude any GHG trades i.e. purchase, sale or transfer of GHG emissions.



4. Renewable energy sources are those that can be replenished in a short time through ecological cycles or agricultural processes. These include geothermal, wind, solar, hydro, and biomass. Whereas non-renewable energy sources are those that cannot be replenished, reproduced, grown or generated in a short time period through ecological cycles or agricultural processes. These include fuel distilled from petroleum or crude oil, such as gasoline, diesel fuel, jet fuel, and heating oil; natural gas, such as compressed natural gas (CNG), and liquefied natural gas (LNG), fuels extracted from natural gas processing and petroleum refining, such as butane, propane, and liquefied petroleum gas (LPG), coal, and nuclear power.



Energy footprint

Energy can be consumed in various forms, such as fuel, electricity, heating, cooling or steam. The BRSR requires entities to disclose details regarding energy consumption. In recent times, energy consumption has become equally important as energy supply, therefore regulators are looking for indicators and data to monitor developments in energy consumption. Through these disclosures, stakeholders could assess the impact an organisation has with respect to energy and how it manages the same.

Essential indicators

- **Total energy consumption (BRSR Core):** An organisation is required to disclose details regarding the total energy consumed from
 - Renewable and
 - Non-renewable sources⁴

It includes the summation of non-renewable fuel consumed, renewable fuel consumed, purchased electricity including heating, cooling and steam, self-generated electricity including heating, cooling, steam.

Organisations should also disclose any contextual information necessary to understand how the data has been compiled, such as any standards, methodologies, assumptions and/or calculation tools used.

- **Energy intensity (BRSR Core):** Entities are also required to provide disclose intensity ratios in terms of the turnover adjusted for Purchasing Power Parity (PPP) and in terms of physical output.



Water

BRSR requires companies to provide certain disclosures related to water withdrawal, discharge, consumption and water intensity. Through these disclosures stakeholders could assess the impact on the functioning of the ecosystem. Further, these disclosures would also enable the respective company to undertake measures that could prevent the pollution of water bodies by reducing the consumption, wastage, effluent let-off, etc.

The key BRSR disclosure requirements are as follows:

Essential indicators

- **Water withdrawal (BRSR Core):** Water withdrawn for any use is required to be disclosed. Further, a break-up of water withdrawn from various sources, such as surface water, ground water, third party water, sea-water/desalinated water⁵ or any other source, is to be provided.
- **Water discharged (BRSR Core):** Companies are required to report the total water discharged i.e. the total effluents, used water and unused water released to surface water, groundwater, seawater or sent to third parties or others, for which the organisation has no further use. By quantifying the volume of water discharge, organisations and stakeholders can understand the negative impacts on the receiving waterbody.

5. The water withdrawal, discharge and consumption could take place from/to the following sources:

- **Surface water**- water that occurs naturally on the earth's surface in ice sheets, ice caps, glaciers, icebergs, bogs, ponds, lakes, rivers, and streams
- **Ground water** - water that is being held in, and that can be recovered from, an underground formation
- **Third party water** - refers to municipal water and other private suppliers of water
- **Sea-water/desalinated water** – refers to water in a sea or ocean
- **Other sources** - Organisations may specify the other sources, in case the same are significant

Further details regarding the level of treatment on the water discharged should also be provided. This would provide insight into the effort an organisation is making to improve the quality of its water discharged. The water discharged could be categorised into the following treatment levels:

- Primary treatment: This refers to removal of solid substances that settle or float on the water surface.
- Secondary treatment: This aims to remove substances and materials that have remained in the water, or are dissolved or suspended in it.
- Tertiary treatment: This treatment aims to upgrade water to a higher level of quality before it is discharged. It includes processes that remove heavy metals, nitrogen, and phosphorus.
- Untreated water: In case the water withdrawn and discharged is of good quality that does not require treatment, an explanation for the same should be provided.

Organisations should also disclose any contextual information necessary to understand how the data has been compiled, such as any standards, methodologies, assumptions and/or calculation tools used.



- **Water consumption (BRSR Core):** This refers to water that is no longer available for use by the ecosystem or local community, such as water that has been withdrawn and incorporated into products or has evaporated or is polluted to the point of being unusable by other users, and is therefore not released back to surface water, groundwater, seawater, or a third party. It also includes water that has been stored during the reporting period for use or discharge in a subsequent reporting period.

If an entity cannot directly measure its water consumption, then it could calculate it as the difference between total water withdrawn and total water discharged.

- **Water intensity (BRSR Core):** Entities are also required to disclose intensity ratios in terms of the turnover adjusted for Purchasing Power Parity (PPP) and in terms of physical output.
- **Disclosures relating to zero liquid discharge mechanism:** If an organisation has implemented a zero liquid discharge mechanism, details regarding the coverage and implementation is required to be provided. Also under this system, entities may use advanced waste-water treatment technologies to recycle, recover and then re-use the treated waste-water to ensure that there is no discharge of the waste-water to the environment.

Leadership indicators

Details of water withdrawn, consumed and discharged in areas of water stress: Areas of water stress are those where there is inability to meet the human and ecological demand for water. Organisations could optionally provide details regarding the facility/plant located in areas of water stress in terms of withdrawal, consumption and discharge.



Waste management

An organisation could generate waste from its own activities, such as, during the production of its products. BRSR requires entities to provide disclosures regarding the waste generated, recovered and recycled. Such information would enable an organisation and the stakeholders to understand waste-related impacts and how the organisation manages the same.

The key disclosures are as follows:

Essential indicators

- **Total waste generated (BRSR Core):** Organisations are required to provide details regarding the total waste generated. This information should be provided in terms of the categories specified in various Waste Management Rules issued by the Ministry of Environment, Forests & Climate Change i.e. plastic waste, e-waste, construction and demolition waste, battery waste, radioactive waste and other hazardous and non-hazardous waste.
- **Waste recovered (BRSR Core):** For each category of waste generated, details regarding waste recovered should be provided. Waste could be recovered in the following manner:
 - **Recycling:** This refers to reprocessing of products or components of products that have become waste while making new materials.
 - **Reusing:** This means checking, cleaning, or repairing operations through which products or components of products that have become waste are prepared to be put to use for the same purpose for which they were conceived.

In case any other recovery option is used, the organisation should provide details regarding the same.

- **Waste disposed (BRSR Core):** Details are to be provided for disposal of waste for each category of waste generated. The break-up of the disposal methods are as follows:
 - Waste that is incinerated – This refers to controlled burning of waste at high temperatures.
 - Waste that is sent to a landfill – Under this method, waste is deposited in sanitary landfills. This excludes uncontrolled waste disposal such as open burning and dumping.
 - Other disposal operations – In case any other disposal operations used, the same should be specified in case the same are significant.
- **Waste intensity (BRSR Core):** Entities are required to intensity ratios in terms of the turnover adjusted for PPP and in terms of physical output.
- **Waste management practices:** Under this section, a description should be provided of the activities that could lead to significant waste-related impact and the actions taken by the organisation to manage such an impact. Such actions could include the following:
 - Improving materials selection and product design
 - Using recycled, re-used or renewable materials
 - Substituting inputs that have hazardous characteristics with inputs that are non-hazardous.

In case the waste is managed by a third party, then the entity could provide a description of the processes used to determine whether the third party manages the waste in line with contractual or legislative obligations.

Leadership indicators

Specific initiatives to reduce emissions/effluent discharge/waste generated: On a voluntarily basis, organisations could take up specific initiatives or innovative technology or solutions used to improve resource efficiency or reduce impact due to emissions/effluent discharge/waste generated. In such cases, details regarding the outcome of such initiatives should also be provided.

Other environment/climate-related laws and regulations:

Entities in the manufacturing sector are required to comply with number of climate and environment related regulations. Some of the prevalent climate and environment related regulations in India are as follows:



Environment protection

The Environment (Protection) Act, 1986 (Environment Act) and Environment (Protection) Rules, 1986 (EP Rules) is considered as a comprehensive umbrella legislation to protect and improve the quality of the environment and to prevent, control and abate environmental pollution. The EP Rules prescribe the standards for emission or discharge of environmental pollutants.

Obligation: The Environment Act states that persons carrying on any industry, operation, process are not allowed to emit or discharge environmental pollutants in excess of the standards prescribed in EP Rules. Further, persons engaged in handling any hazardous substance should abide by the procedures and safeguards prescribed under the EP Rules. Additionally, respective state boards may specify more stringent standards for a specific industry or locations.

Consequences of non-compliance: In case of failure to comply or contravention of the provisions, such person would be punishable with imprisonment for a term which may extend to five years or with fine which may extend to INR1 Lakh or with both, and in case the failure or contravention continues then an additional fine which may extend to INR5,000 for every day during which such failure or contravention continues after the conviction for the first such failure or contravention.



Water conservation and pollution

The Water (Prevention and Control of Pollution) Act, 1974 lays down the regulatory framework for prevention and control of water pollution and for maintaining or restoring wholesomeness of water. Manufacturing industries are a huge contributor of water pollution on account of the toxic pollutants included in discharged water.

As per the provisions of this Act, respective state governments lay down effluent standards for the sewage and trade effluents and for the quality of receiving waters. Further, they also lay down standards for treatment of sewage and trade effluents to be discharged into any particular stream after taking into account the minimum fair-weather dilution available in that stream and the tolerance limits of pollution permissible in the water of the stream.

Additionally, in 2022 the Government of India has set up the Bureau of Water Use Efficiency (BWUE) for promotion, regulation and control of efficient use of water in irrigation, industrial and domestic sectors.

Obligation: The Act also states that, consent of the state board should be obtained to establish any industry, operation or process, or for any treatment and disposal system or any extension which is likely to discharge sewage or trade effluent into a stream or well or sewer or on land. In addition, consent should also be obtained to use any new or altered outlets for the discharge of sewage water.

Consequences of non-compliance: In case of failure to comply with the provisions the said Act, a person could face monetary penalty and/or imprisonment.



Air pollution

The Air (Prevention & Control of Pollution) Act, 1981 lays down regulations with respect to prevention, control and abatement of air pollution. Manufacturing and production activities would result in emission of various air pollutants, including emission of GHGs.

Every state government in consultation with its respective state pollution control board has determined pollution control areas, prescribed the permissible limits of air pollutants and has laid down the approved and prohibited fuels.

Obligation: Any person operating an industrial plant should ensure that that emissions discharged are within the standards laid down by the state board.

Consequences on non-compliances: Non-compliance could lead to punishment in the form of minimum imprisonment of one and half year extending up to six years and with a fine. In case the failure continues, an additional fine extending to INR5,000 for every day during which such failure continues. The companies are required to comply with the permissible limits of air pollutants prescribed by the respective state governments.





E-waste

The Government has issued E-Waste (Management) Rules, 2022, which defines e-waste as any electrical and electronic equipment, including solar photo-voltaic modules or panels or cells, whole or in part discarded as waste, as well as rejects from manufacturing, refurbishment and repair processes.

These rules apply to every manufacturer, producer, refurbisher, dismantler and recycler involved in generation of e-waste or electrical and electronic equipment which are listed in Schedule I of the said rules.

Obligation: As per these rules, the manufacturer should ensure that the e-waste generated is recycled or disposed. Further, eligible producers are required to implement and fulfil Extended Producer Responsibility (EPR) obligations i.e. the responsibility of the producer of electrical or electronic equipment to meet the recycling targets to ensure environmentally sound management of such waste. The EPR obligations are stated in Schedule-III and Schedule-IV of the said rules.

Consequences on non-compliance: Environment compensation would be levied as per Central Pollution Control Board (CPCB) guidelines in case of violation of any provisions of the E-Waste (Management) Rules. Further, environment compensation would also be levied in case of or use of false EPR certificate, unregistered producers, manufacturer, refurbisher and recyclers. It should be noted that, false information resulting in over generation of EPR certificates by recycler would result in revocation of registration and a repeat offence and violation of these rules for three times or more shall also result in permanent revocation of registration over and above the environmental compensation charges.

Additionally, prosecution provisions as per the Environment (Protection) Act, 1986 would also be applicable.



Plastic waste

Entities in the manufacturing sector could be producers or manufacturers of plastic or plastic-related products or could be generators of plastic waste.

Obligation: The Plastic Waste Management Rules, 2016, mandate the generators of plastic waste to take steps to minimise generation of plastic waste, not to litter the plastic waste, ensure segregated storage of waste at source and hand over segregated waste to registered waste pickers', registered recyclers or waste collection agencies.

The rules also cast responsibilities on producers, importers, and brand owners with respect to collection of plastic waste. EPR regulations would apply to them with respect to pre-consumer and post-consumer plastic packaging waste to ensure environmentally sound management of the product until the end of its life. They should ensure they comply with the targets in accordance with Schedule II to the rules. These rules have been amended on 14 March 2024, and provide revised definition of biodegradable plastics, importer, manufacturer, producer and seller and more detailed requirements.

Non-compliance: Environmental compensation would be levied based upon polluter pays principle, as per CPCB guidelines, on persons who are not complying with the provisions of the Plastic Waste Management Rules.

Further, environmental compensation would also be levied in case of non-fulfilment of EPR targets by producers, importers and brand owners, for the purpose of protecting and improving the quality of the environment and preventing, controlling and abating environment pollution. This compensation would be levied by the respective State Pollution Control Board on the producers, importers and brand-owners operating in their jurisdiction (for Producers, Importers & Brand-Owners not operating in more than two states/Union Territory's), plastic waste processors which includes recyclers and other waste processors – waste to energy, waste to oil, co-processors.





Hazardous waste

Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016 are notified to ensure safe handling, generation, processing, treatment, package, storage, transportation, use reprocessing, collection, conversion, and offering for sale, destruction and disposal of hazardous waste. As per the rules, hazardous waste refers to any waste that has characteristics, such as physical, chemical, biological, reactive, toxic, flammable, explosive or corrosive, causes to danger or is likely to cause danger to health or environment, whether alone or in contact with other wastes or substances.

Obligation: The rules lay down the regulatory framework for a person in possession with

hazardous waste. As per the rules, such a person should ensure prevention, minimisation, reuse, recycling, recovery, utilisation including co-processing and safe disposal of hazardous waste.

Further, the seventh amendment⁶ to these rules introduced EPR regulations for waste tyres. These regulations are applicable to producers⁷, recyclers and retreader of waste tyres. Such entities should ensure they fulfil the EPR obligations as per the rule.

Non-compliance: Environmental compensation would be levied, as per CPCB guidelines, on the producers in case of non-fulfilment of EPR obligations, use of false



EPR certificate, unregistered producers and recyclers and on recyclers for issue of false EPR certificate and providing false information. Additionally, any false information resulting in over generation of EPR certificates by recycler above 5 per cent of the actual recycled waste would result in revocation of registration.

Additionally, prosecution provisions as per the Environment (Protection) Act, 1986 would also be applicable.



6. G.S.R. 593(E) dated 21 July 2022

7. As per Rule 1(e), 'producer' means any person or entity who, -

- i. manufactures and sells new tyre domestically; or
- ii. sells domestically under its own brand, new tyre manufactured by other manufacturers or suppliers; or
- iii. sells imported new tyre; or
- iv. imports vehicles fitted with new tyres; or
- v. automobile manufacturers importing new tyre for use in new vehicles sold domestically; or
- vi. imports waste tyre;

The bottom line

Governments and regulators around the globe are issuing a broad variety of ESG related regulations. With increasing focus and demand for ESG related disclosures, organisations are required to comply with environmental, social and governance standards and regulations.

