



# Climate Action Report FY 2024



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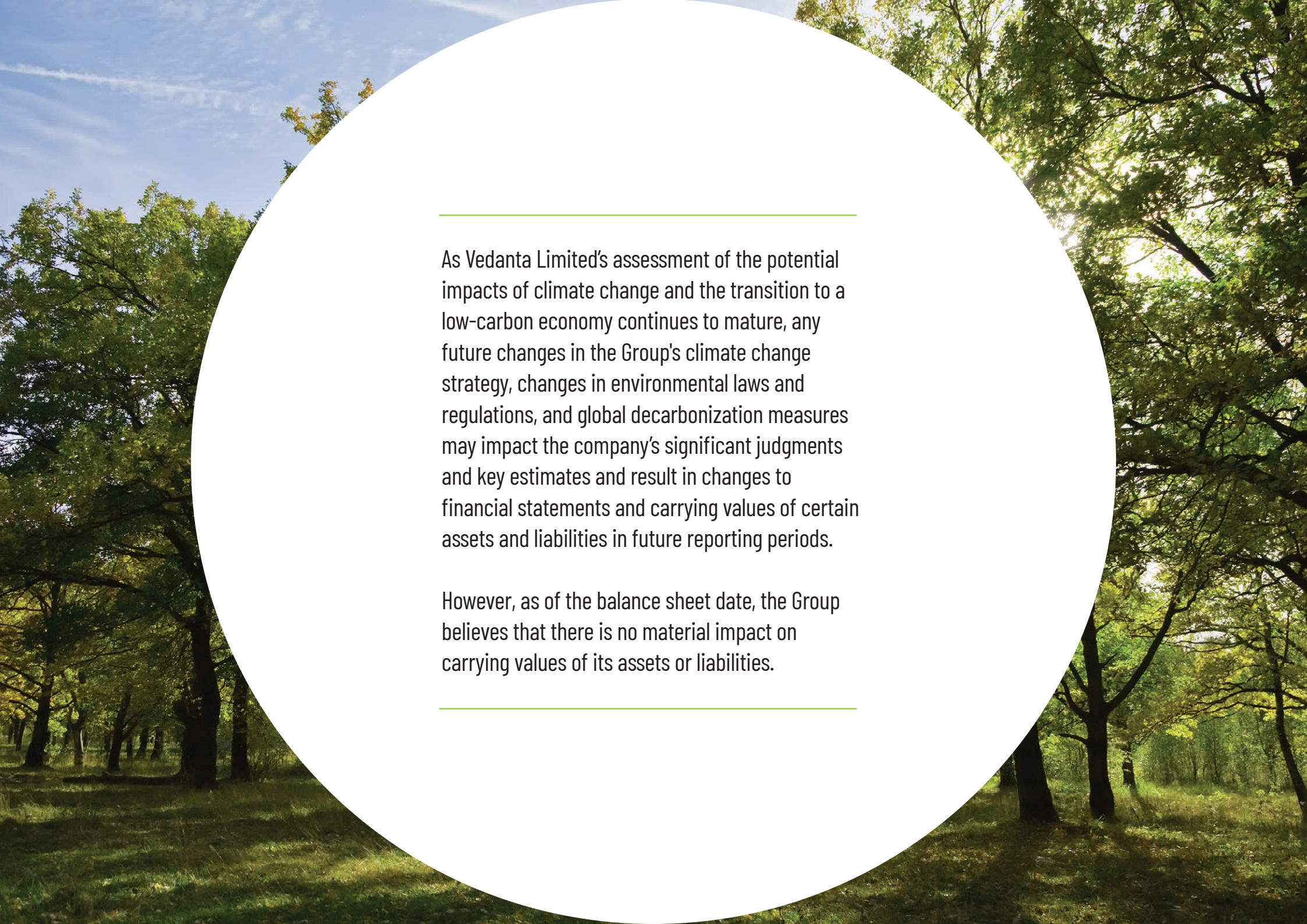
## Acronyms and abbreviations

BF	Blast Furnace	PCI	Pulverized Coal Injection
CapEx	Capital Expenditure	PDA	Power Delivery Agreement
CBAM	Carbon Border Adjustment Mechanism	PPA	Power Purchase Agreement
CCKP	Climate Change Knowledge Portal	RCP	Representative Concentration Pathway
CCUS	Carbon Capture, Utilization, and Storage	RE RTC	Renewable Energy Round The Clock
EAF	Electric Arc Furnace	SASB	Sustainability Accounting Standards Board
ESOS	Employee Stock Option Schemes	SBTi	Science-Based Targets Initiative
ETS	Emissions Trading Scheme	SLL	Sustainability-linked Loan
EV	Electric Vehicles	SSP	Shared Socioeconomic Pathway
FICCI	Federation of India Chambers of Commerce and Industry	TCFD	Task Force on Climate-Related Financial Disclosures
FIMI	Federation of Indian Mineral Industry	tCO <sub>2</sub> e	Tonnes of Carbon Dioxide Equivalent
FCEV	Fuel Cell Electric Vehicles	UNGC	United Nations Global Compact
GHG	Greenhouse Gas	WRI	World Resources Institute
GRI	Global Reporting Initiative		
HFO	Heavy Fuel Oil		
ICP	Internal Carbon Pricing		
INR	Indian Rupee		
INTrACS	International Best Trade Archive for Climate Stewardship		
LMV	Light Motor Vehicle		
LTIP	Long-term Incentives Plan		
NDC	Nationally Determined Contribution		
NGFS	Network for Greening the Financial System		
NGO	Non-Governmental Organization		
NOAA	National Oceanic and Atmospheric Administrative		
OpEx	Operational Expenditure		
		BALCO	Bharat Aluminium Company Ltd.
		ESL	ESL Steel Ltd.
		HZL	Hindustan Zinc Limited
		SC	Sterlite Copper
		TSPL	Talwandi Sabo Power Limited
		VAB	Value-Added Business
		VAL-J	Vedanta Aluminium – Jharsuguda
		VAL-L	Vedanta Aluminium – Lanjigarh
		VZI	Vedanta Zinc International

## Vedanta Business Units







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As Vedanta Limited's assessment of the potential impacts of climate change and the transition to a low-carbon economy continues to mature, any future changes in the Group's climate change strategy, changes in environmental laws and regulations, and global decarbonization measures may impact the company's significant judgments and key estimates and result in changes to financial statements and carrying values of certain assets and liabilities in future reporting periods.

However, as of the balance sheet date, the Group believes that there is no material impact on carrying values of its assets or liabilities.

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The background is a solid teal color. A large circle on the left contains a photograph of a bamboo forest, with a smaller teal circle overlapping its center. To the left of the bamboo circle is a vertical strip of teal containing white line-art icons of industrial and renewable energy elements: a factory with smokestacks, a cargo ship, a train, a wind turbine, and a solar panel. To the right of the bamboo circle are more white line-art icons: a single leaf, a cloud, another leaf, and a stylized sun or flower.

# About the Report

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The report aligns with our overarching business strategy of 'Transforming for Good.' It explores our climate journey, encompassing our achievements, lessons learned, and forthcoming initiatives.



This publication is a specialized climate disclosure focusing on Vedanta's (will be referred to as "we" or "our" from here) response to climate change, aligned with our overarching business strategy of "Transforming for Good." It presents our climate journey, encompassing our achievements, lessons learned, and forthcoming initiatives.

This climate disclosure offers insights into our climate-related performance, including that of our subsidiaries. The report adheres to the Task Force on Climate-related Financial Disclosures (TCFD) and incorporates elements from the International Financial Reporting Standards (IFRS S2). This report encompasses details on Vedanta's climate change governance, risk management, strategy, and metrics and targets.

We aim to continue improving Vedanta's climate change reporting, to fully align with IFRS S2, the Companies Act Climate-related Financial Disclosure requirements, and the United Kingdom (UK) listing rules.

## Materiality Matters

**Proactively addressing climate change mitigation and adaptation across our operations is essential for ensuring long-term sustainability, managing regulatory risks, capitalizing on emerging growth opportunities, and enhancing our reputation as a responsible company.**



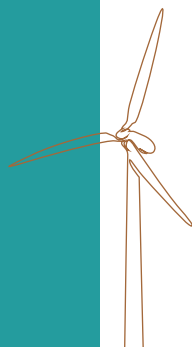
Climate change and its disruptive impact can lead to a domino effect on our operations, stakeholders, and external communities. The Global Sustainability Standards Board (GSSB) has issued sector-specific guidance for metals and mining, forming the foundation for establishing material importance specific to Vedanta's businesses.

Our main sectors – metals and mining, oil and gas upstream exploration, and power generation – are inherently energy and carbon-intensive, making them key contributors to climate change. Proactively addressing climate change mitigation and adaptation across our operations is essential for

ensuring long-term sustainability, managing regulatory risks, capitalizing on emerging growth opportunities, and enhancing our reputation as a responsible company.

Our industrial processes – such as heating, cooling, drilling, fracking, excavation, mine operations, combustion, and steam and electricity generation – result in GHG emissions and other pollutants. As highlighted by stakeholder consultations and industry benchmarks, climate change and decarbonization are high-priority topics. Globally, the decade from 2020 to 2030 is marked by substantive actions towards achieving the Sustainable Development Goals (SDGs), including climate action. Prioritizing climate action is crucial for aligning Vedanta's growth with India's 2070 Net Zero commitment. Additionally, Vedanta faces climate-related physical risks due to the geographical settings of its site locations.

These factors necessitate building greater climate resilience within the company and adopting an adaptive approach. We have integrated risk assessments and management plan formations into our regular operations. Given the centrality of climate change mitigation and adaptation to our businesses, these will remain high-priority material topics for Vedanta in the foreseeable future.



# Reporting Boundary

The disclosures under this report are made on a consolidated basis. Vedanta Group comprises of Vedanta Limited, its Subsidiaries, Associates, and Joint Ventures, the details of which are given in point No. 23 of Section A of the Business Responsibility and Sustainability Report (BRSR) and on page 323 of the Integrated Report and Annual Accounts FY 2023-24. All these entities are considered for the purpose of Financial Consolidation of the Group; however, for the purpose of reporting data and information in Climate action report, we have considered Vedanta Limited, its 10 Subsidiaries and 38 sites based on the management's assessment of materiality, the list of which is given as an appendix to the Integrated Report and Annual Accounts<sup>1</sup>. The following categories of Entities/Sites have not been considered for the purpose of this report.

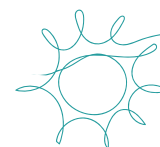
- Newly incorporated Entities or Entities/Sites operational for less than 12 months;
- Non-operational/ intermittent operational Entities/Sites; and entities/sites discontinued or outsourced.

Further, the GHG footprint, Water footprint, Energy footprint, and details of the Waste Management with respect to the following has not been considered based on our assessment of being immaterial to the Group's reporting:

- The Corporate Offices with respect to the Entities as considered under the Reporting Boundary.
- Guesthouses and Colonies being owned and maintained by the Group.

Further, the categories of the Scope 3 emissions considered by Vedanta are categorized into different buckets viz. completely covered, partially covered, not calculated and not applicable. Furthermore, the specific materiality considered for some of the categories of Scope 3 emissions is based on management assessment and these calculations are done on the basis of GHG protocol (Technical Guidance for calculating scope 3 emissions)

<sup>1</sup><https://www.vedantalimited.com/uploads/investor-overview/annual-report/Vedanta-Limited-Integrated-Report-FY24.pdf>





# Key Highlights


## Where we are

Our GHG Emissions:


Scope 1  
**61.28** million  
tCO<sub>2</sub>e



Scope 2  
**4.56** million  
tCO<sub>2</sub>e




Scope 3  
**34.87** million  
tCO<sub>2</sub>e




## What we achieved

**12%**  
decrease in GHG Intensity  
(metals business) from the  
FY 2021 baseline of 6.43  
tCO<sub>2</sub>e per tonne of metal




Hindustan Zinc  
Limited received the  
Climate Action Programme  
(CAP) **2.0 degrees  
oriented award**  
in the Energy, Mining, and  
Heavy manufacturing sector




On-boarding  
Vedanta's first Indian  
customer for our  
**low-GHG-emission**  
aluminium product  
(Restora)




**6.2** million tCO<sub>2</sub>e  
in avoided emissions  
since FY 2021 as a result  
of our decarbonization  
initiatives



Construction has begun  
on the cumulative  
**835** MW  
of RE Round-The-Clock-equivalent Power Delivery  
Agreements (PDAs). Out of these, 788 MW RE  
RTC was signed in the last fiscal cycle and the  
remaining 47 MW has been signed in FY 2024




Our Aluminium  
sector becomes  
part of the  
**Aluminium  
Stewardship Initiative**



**2.2** million  
trees planted as of  
FY 2024



**2.23** billion  
units of RE power  
consumption



CDP Climate  
Score (2023)  
**B**




## Our targets ahead

GHG Intensity  
target for FY 2025  
**5.20**/tonne  
of metal




Additional  
**1,200** MW  
of RE RTC under  
planning for FY 2027



**7** million  
trees to be planted  
by FY 2030 – aligned with  
World Economic Forum's  
1 trillion trees movement



Three business  
units developing  
plans to become  
**net zero carbon**  
(scope 1 and scope 2)  
businesses by FY 2035



# Chairman's Message



**Anil Agarwal**  
Chairman

*Dear Stakeholders,*

**It is with great pride that I reflect on another remarkable year in Vedanta's journey as a world-class Indian multinational. As we chart our course for the future, aimed at unleashing value for all stakeholders, I extend my deepest gratitude to each of you for being the pillars of our success, propelling us towards building a futuristic organization rooted in India's progress.**

In today's dynamic world, where transformation is imperative, Vedanta understands the need to continuously evolve for good and invest in a sustainable tomorrow to outperform. Join me as I unveil our fourth Climate Action report adhering to the Task Force on Climate-related Financial Disclosures (TCFD) and International Financial Reporting Standards (IFRS S2) that highlights our enhanced climate management strategies and ongoing progress in climate performance. This report makes a significant milestone, underscoring our evolving approach to climate action.

## **India's Vision and Vedanta's Role**

A major turning point in the global effort to combat climate change has been India's commitment to achieve net zero emissions by 2070. This forward-looking stance sets a new standard for economic growth and positions India as a model for other emerging markets. Vedanta is proud to contribute to this vision with a portfolio of nine metals and minerals critical for India's energy and mineral independence. We envision playing an even greater role in the nation's growth narrative by expanding capacities in the aluminum and zinc sectors, having invested US\$ 1.9 billion in growth capital expenditures in FY 2024. Promoting further investment in mining these metals and minerals is crucial for supporting India's transition to a just society and combating climate change. These opportunities foster collaboration with the government and stakeholders to create a sustainable future.

## **Leading in Net Zero Carbon**

Decarbonization stands as a critical imperative for Vedanta. Given the energy-intensive nature of our industry, our comprehensive approach across various fronts underscores our commitment to



setting a benchmark. This year, we have made significant strides in reducing GHG emissions intensity, surpassing annual targets in six of our Business Units. The integration of process enhancements and technological advancements has proven highly effective, positioning us well to achieve our goal of reducing GHG emissions intensity by 20% by FY 2025.

In the realm of Renewable Energy Round-The Clock (RE-RTC) expansion, construction is underway to add 835 MW across our operations, aligning with our target of achieving 2.5 GW of operational RE-RTC by FY 2030. As our production volumes increase across sectors, accompanied by emissions growth, our progressive additions in RE-RTC will gradually mitigate these emissions while facilitating our transition to cleaner energy sources. Notably, our aluminium business, the most emissions-intensive sector contributing over 65% of our total GHG emissions, will witness the substantial deployment of RE-RTC facilities. This initiative will be complemented by accelerated adoption of cleaner alternative fuels and carbon-light process technologies.

Upon achieving our FY 2030 clean energy objectives, we anticipate a 17 million tCO<sub>2</sub>e reduction in GHG emissions, highlighting our commitment to pursuing carbon-neutral growth and our potential for significant impact. Additionally, In

FY 2024, we achieved notable strides by planting 2.2 million trees, advancing towards our goal of planting 7 million trees by 2030 through active participation in the World Economic Forum's 1 trillion Trees initiative.

### Enhancing Environmental Performance

Our commitment to responsible stewardship of scarce natural resources is evident in our water and waste management achievements. This financial year, our water positivity ratio has risen to 0.71, reflecting the success of ongoing and newly implemented recycling, reuse, and harvesting initiatives. Furthermore, we have significantly elevated our CDP Water rating from B to A-, surpassing the international industry average of C. Regarding waste management, we achieved full utilization of fly ash production and nearly 93% reuse of high-volume low toxicity (HVL) waste this year, demonstrating the maturity of our waste-to-wealth programs throughout the organization.

Our progression as a sustainable enterprise enhances our cost competitiveness and aligns with global trends favouring green manufacturing and sustainable value chains. This evolution boosts the worldwide appeal and demand for our products as international regulations increasingly endorse environmentally responsible practices.

### Contributing to Global Sustainability

These initiatives exemplify our commitment to environmental sustainability and strengthen global actions on climate change and biodiversity. By integrating sustainable practices into our operations, Vedanta aims to meet regulatory requirements and lead by example in fostering a sustainable future.

As we embark on FY 2025, we remain steadfast in our pursuit of sustainable growth, operational excellence, and positive environmental impact. Your continued support and partnership are integral as we navigate the evolving landscape and continue to work towards creating long-term value for all stakeholders.

Best Regards,

**Anil Agarwal**

Chairman

# Message from Leadership



**Priya Agarwal Hebbar**

Non-Executive Director

**Vedanta has always been a company driven by aspirations, constantly seeking more from the future and pushing beyond our current achievements. As we explore infinite possibilities, we remain deeply aware that we are both beneficiaries and stewards of the resources we extract. Our business depends on nature, not the other way around.**

In the coming decade, Vedanta will undergo a transformative journey, transcending our current successes. As the Indian economy expands, so will our global footprint, introducing new products and expanding operations. However, this growth will be different. We are committed to breaking away from past practices and forging new pathways and connections, aligning our progress with the needs of a climate-challenged world undergoing transformation.

Decarbonization and achieving Net Zero growth are pivotal to our medium and long-term strategic roadmap as we reposition

our businesses for a carbon-neutral future. We have accelerated our efforts and are aggressively pursuing three key decarbonization strategies: transitioning to Renewable Energy, fuel switch, and reducing emissions intensity to manage our carbon footprint.

Through the use of advanced technologies, process optimizations, and continuous oversight, our operations have significantly reduced greenhouse gas (GHG) emissions intensity by an impressive 12% compared to our 2021 baseline, achieving a total GHG intensity for FY 2024 of 5.66 TCO<sub>2</sub>e/Mt Metal.

In anticipation of our GHG emissions peaking by FY 2027 due to expansions in our aluminum, steel, and other key businesses (HZL, VZI, and FACOR), we are progressively enhancing our renewable energy round-the-clock (RE-RTC) capabilities. We are well on our way to commission 835 MW of RE RTC, nearly one-third of our targeted 2.5 GW by 2030. Our shift towards sustainable biofuels is also underway, with ~66,551 tonnes of biomass utilized this year towards our FY 2025 target of 125,000 tonnes.



We have also secured US\$ 250 million sustainability-linked loan (SLL) funds from leading international banks to expand our horizon sustainably. In addition to advancing fleet decarbonization, we have implemented a pioneering EV purchase policy for all employees to promote the adoption of electric vehicles, underscoring our comprehensive approach to reducing our environmental footprint.

Our strong backward and forward integration, from mining to metal production and beyond, particularly in our flagship metal operations, has historically leveraged cost advantages from traditional fossil fuel-based captives. Concurrently, we are strategically acquiring thermal assets with remaining productive life, enhancing our cost competitiveness while progressively transitioning to clean energy sources such as RE-RTC, CCUS, and hydrogen fuel over the coming years. This approach mitigates transition risks until the economic benefits of clean energy solutions begin to impact our bottom line positively.

These initiatives underscore our dedication to strengthening our global efforts to address climate change. By embedding sustainable practices into our operations, Vedanta strives to meet regulatory standards and set a precedent for fostering a sustainable future.

As we enter FY 2025, we remain committed to sustainable growth, operational excellence, and positive environmental impact. Your ongoing support and partnership are crucial as we navigate the evolving landscape and strive to create long-term value for all stakeholders.

Best Regards,

**Priya Agarwal Hebbar**

Non-executive Director  
Vedanta Limited

# Executive Director's Note



**Arun Misra**

Executive Director

**The global economy demonstrated resilience in FY 2024, navigating turbulence from geopolitical conflicts and macroeconomic challenges. Amid these uncertainties, Vedanta has continued to advance our commitment to sustainable practices and climate action. Our focus is on addressing climate change, integrating sustainable practices across all operations, and exceeding stakeholder expectations.**

By leveraging strategic initiatives, we enhanced our operational efficiency to reduce our environmental footprint and drive long-term growth. Responsible environmental stewardship is essential to our success and resilience in a dynamic global economy. We aim to set industry standards, showing that environmental progress and business excellence can coexist.

I am pleased to present Vedanta's journey of business resilience on climate actions through

our FY2024 Climate Action Report, adhering to the Task Force on Climate-Related Financial Disclosures (TCFD) recommendations and International Financial Reporting Standards (IFRS S2). Since our inaugural report in February 2020, we have made significant strides and achieved notable milestones. Our commitment to becoming a Net Zero carbon company by 2050 or earlier underscores our dedication to transparency in communicating our strategy and roadmap to stakeholders. This report outlines our comprehensive approach to achieving decarbonization targets across short-, medium-, and long-term horizons and aims to foster collaboration and engagement among all stakeholders toward a sustainable, low-carbon future.

Aligned in purpose, both the board and management committees are steadfast in leading Vedanta towards addressing climate change. This involves recognizing the necessary shifts towards a decarbonized economy and proactively implementing the required enhancements. By launching India's first low-carbon aluminium products, Restora and Restora Ultra, we demonstrate our commitment to supporting the



energy transition. In FY 2024, 44kt of green aluminium was produced under these brands, with the potential to expand production capacity to 100kt. To further drive decarbonization, we have implemented an Internal Carbon Price (ICP) of US\$15/tCO<sub>2e</sub>, applying it to projects exceeding INR 50 million, with Business Unit-specific ICPs tailored to individual needs.

In pursuit of our renewable energy target of achieving 2.5 GW of round-the-clock renewable energy (RE RTC) by 2030, we have secured power delivery agreements (PDAs) totaling 835 MW of renewable energy (RE) capacity. We have also entered into agreements (PDAs) with Serentica Renewable to supply this power, which targets increasing our renewable power share to 20-25% and supporting our reduction of greenhouse gas (GHG) emissions to 15 to 20 million tCO<sub>2e</sub>. Currently, we are preparing to commission this project's inaugural phase in the second quarter of FY 2025.

Our progress towards reducing GHG emissions is divided into four levers, with a reduction in GHG intensity of our metals business by 20% by 2025. We have thus achieved a notable 12% reduction by enhancing our RE RTC generation capabilities, where we utilized 2.2 billion units of renewable power across our operations in FY 2024. We have

also made advancements in electrifying Light Motor Vehicles (LMV) and mining fleets and implemented energy efficiency projects across multiple sites. Beyond reducing our carbon footprint, we acknowledge our role in supporting India's net zero target by 2070. Producing essential metals like aluminium, zinc, and steel facilitates the country's energy transition. Our focus on scaling production meets rising demand, aiding the shift to a low-carbon economy amidst evolving policies and incentives in Renewable Energy, Green Hydrogen, and Green Metals bolstered by digitalization and operational automation efforts.

In recognition of water as a critical resource and tying this with our climate change risks, we have pursued water positivity initiatives and successfully achieved a 2.7% reduction in overall freshwater consumption by inaugurating a 4,000 KLD zero liquid discharge plant (phase 1) at our Zawar mines. This includes the addition of advanced technology to help in water conservation, supporting our vision of becoming five times water-positive by 2025. By also embracing circular economy principles, 93% of our high-volume-low toxicity waste was effectively reused in FY 2024. Complementing our sustainable water management efforts, our Corporate Social Responsibility (CSR) programs incorporate climate adaptation strategies benefiting local communities near our operations.

Vedanta remains committed to managing climate risks effectively and seizing opportunities through advanced climate science and scenario analysis. Our progress report provides a transparent account of our journey towards achieving net zero and details actionable steps to strengthen India's position to transition to a low-carbon economy.

Best Regards,

**Arun Misra**

Executive Director



# Vedanta at a glance

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Vedanta is dedicated to creating lasting value by prioritizing social responsibility, environmental sustainability, and business integrity.

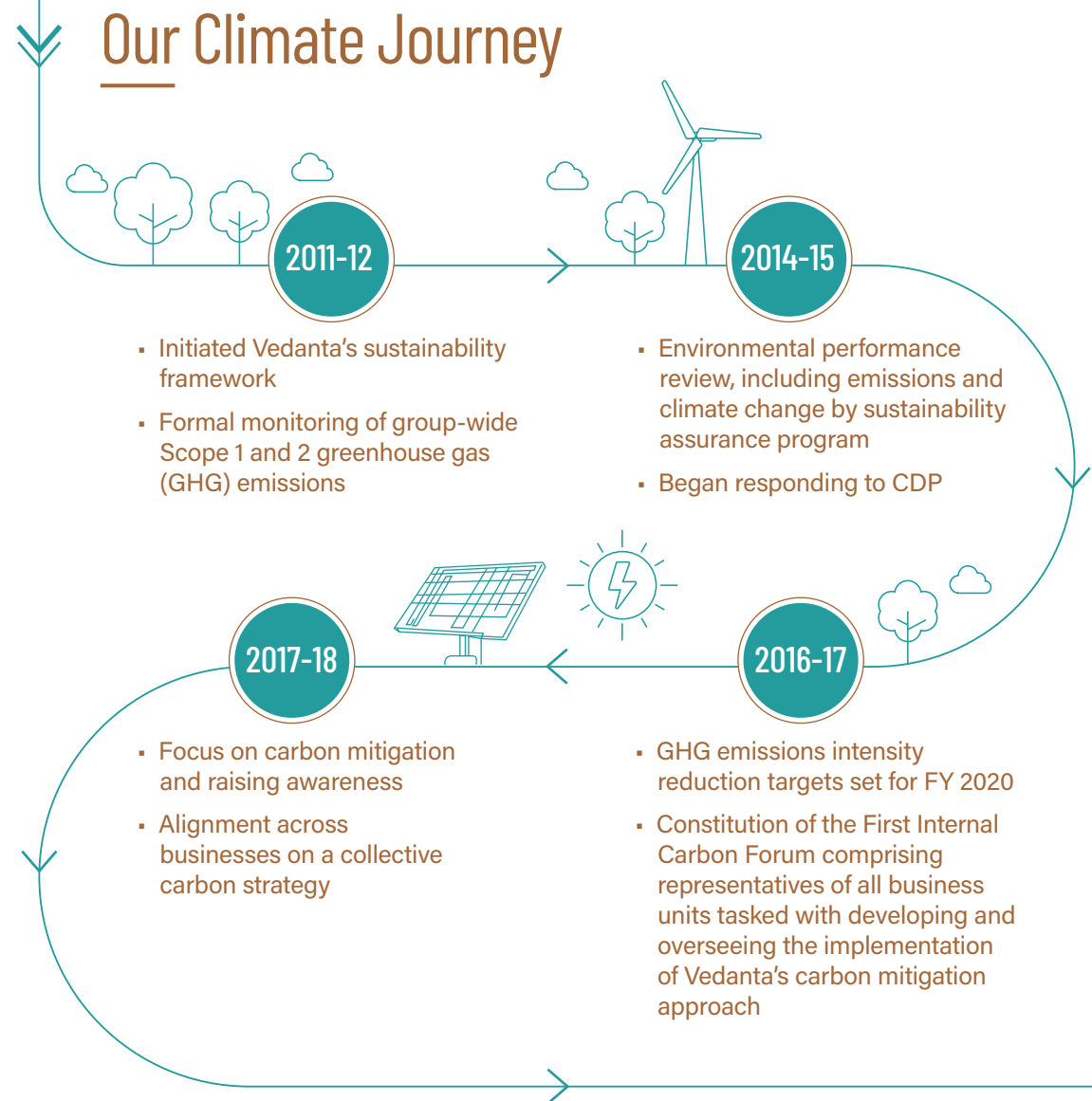


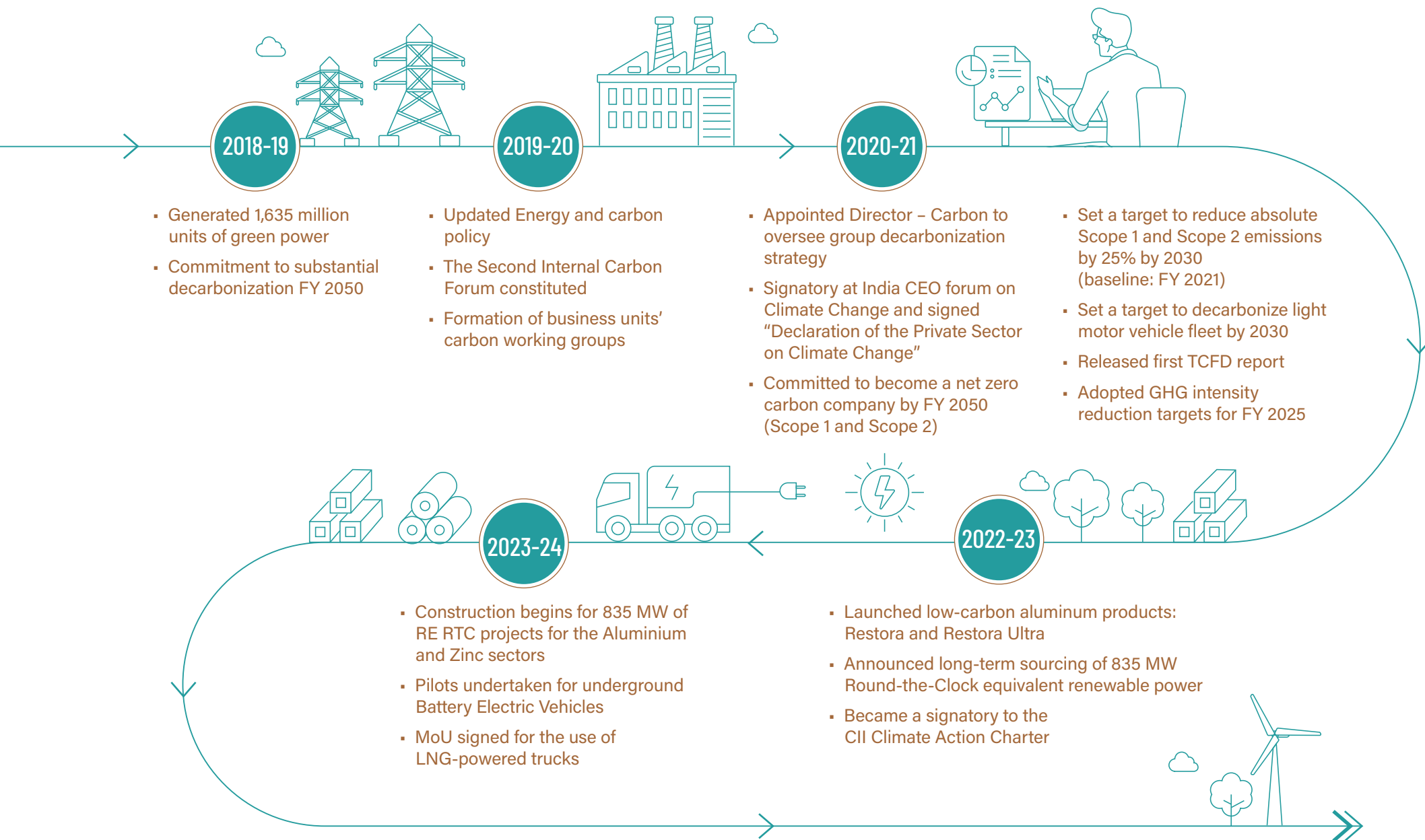
Vedanta Limited, a subsidiary of Vedanta Resources Limited, is the world's leading natural resources conglomerate with key assets in India, South Africa, and Namibia. Our diverse operations cover zinc-lead-silver, iron ore, steel, copper, aluminum, power, nickel, and oil and gas, holding market-leading positions in most areas. Leveraging our global operational scale, cost leadership, and operational excellence, we provide primary materials safely, sustainably, and cost-effectively, ensuring global resource sufficiency.

Vedanta is dedicated to creating lasting value by prioritizing social responsibility, environmental sustainability, and business integrity. By integrating these principles, we ensure our growth is inclusive and benefits all stakeholders, from local communities to international markets.

We enhance our Reserves and Resources (R&R) through brownfield and greenfield projects, extending the lifespans of our mines and oilfields. Our facilities in India and Africa process and smelt extracted minerals into refined metals like zinc, lead, silver, copper, and aluminum. We generate captive power with minimal environmental impact, selling any surplus.

We are known for completing projects on time and within budget, optimizing our resource base, and increasing resource lifespans. Our strategic processing facilities convert primary metals into value-added products such as sheets, rods, bars, and rolled products. Our operations include metal exploration and production, oil and gas extraction, and power generation across three blocks, focusing on zinc-lead-silver, iron ore, steel, copper, and aluminium.









# Our Decarbonization Journey

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We aim to achieve net zero emissions by 2050 or sooner, demonstrating our commitment to mitigating climate change, and plan to invest US\$5 billion over the next decade to support this goal.

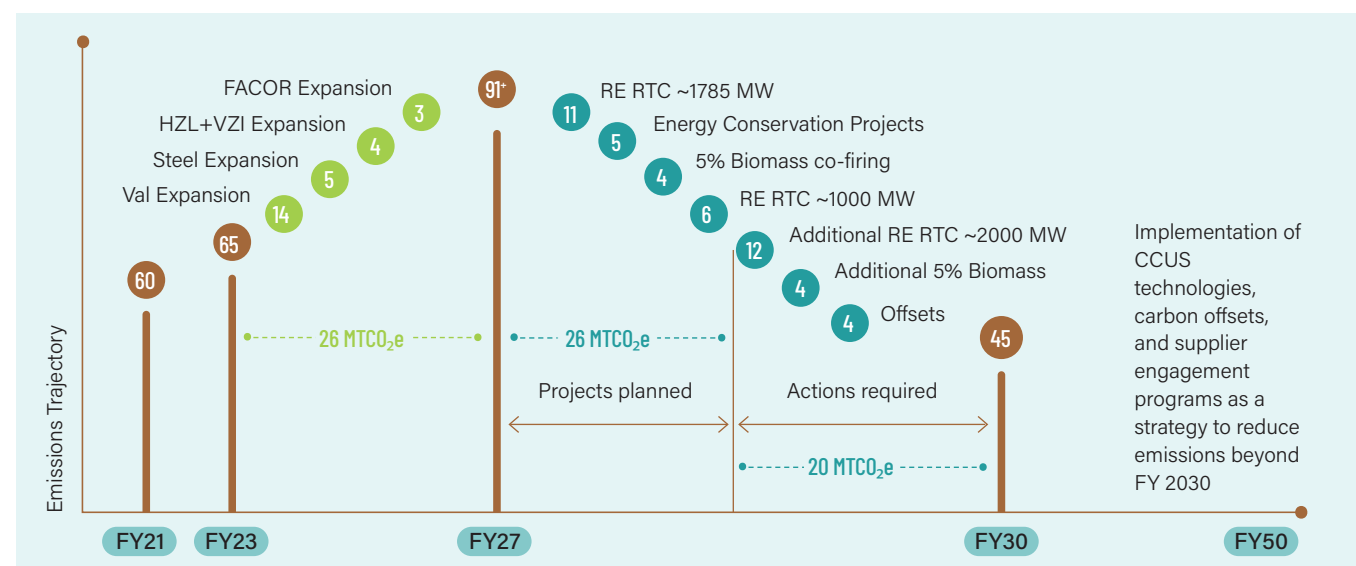
The growth of construction activities and modern goods in the current world led to rising levels of mining and an increase in the production of metals and minerals. The other side of the growth of mining and metals comprises the world's most carbon-intensive sector.

As per the reports from global institutes, estimates suggest that aluminium, steel, and copper are responsible for 2%<sup>2</sup>, 7%<sup>2</sup>, and 0.2%<sup>3</sup> of global carbon emissions, respectively. Collectively, the mining sector is responsible for emitting GHG emissions, which are estimated to be around 4 to 7% of total global GHG emissions<sup>4</sup>.

Vedanta aims to achieve net zero emissions by 2050 or sooner, demonstrating our commitment to mitigating climate change, and aim to spend US\$5 billion over the next decade to support this goal, accelerating our transition to net zero through various innovative projects and technologies.

## Vedanta's climate targets

- No additional coal-based thermal power and coal-based power only till end of power plants life
- Decarbonize 100% of our Light Motor Vehicle (LMV) fleet by 2030 and 75% of our mining fleet by 2035
- Accelerate adoption of hydrogen as fuel and seek to diversify into H2 fuel or related businesses
- Ensure all our businesses account for their Scope 3 emissions by 2025
- Aim to spend US\$ 5 Bn over the next 10 years to accelerate transition to Net-Zero
- Use 2.5 GW of Round-The-Clock RE and reduce absolute emissions by 25% by 2030 from 2021 baseline
- Net Zero Carbon by 2050 or sooner
- Work with our long-term, tier 1 suppliers to submit their GHG reduction strategies by 2025 and align with our commitments by 2030
- Disclose our performance in alignment with TCFD requirements
- Help communities adapt to the impacts of climate change through our social impact/CSR programs



<sup>2,4</sup>Mine 2023: The era of reinvention (pwc.com)

<sup>3</sup>ICA-GHG-Measurement-202210-Final-Spreads.pdf (internationalcopper.org)



# Decarbonization Levers

## Plan 2030



### Lever 1: Increasing the share of renewable energy

We continue our focus on greater renewable energy (RE) integration, with a share of renewable energy usage from FY 2021 to FY 2024 increasing from 0.4% to 1.24% of total energy consumption. We remain on track to achieve 2.5 GW (2,500 MW) of renewable energy round-the-clock (RE-RTC) equivalent usage by 2030. By doing so, we hope to reduce our GHG emissions by ~17 MTCO<sub>2</sub>e.

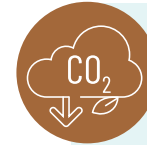
With 835 MW of RE being available for use by 2025 and progressive RE additions under planning, nearly 30 million tons out of the estimated 46 million tons of GHG reductions (65%) will come from renewable energy alone. A bulk of our commitment of spending US\$ 5 billion on decarbonization initiatives, will also be spend on the deployment of renewable energy for our operations.



### Lever 2: Switching to low-carbon or zero-carbon fuels

The use of natural gas in our alumina calciners, biomass co-firing in our thermal power plants, and switch to electric vehicles, constitute the primary approaches to switching of low-carbon/zero-carbon fuels.

Replacing coal with biomass has the potential to reduce nearly 5 million tons of GHG emissions by FY 2025. In the following five years, the company plans to replace an additional 5% of the coal with biomass, further curbing the GHG emissions from our thermal power plants.



### Lever 3: Improving the energy efficiency of our operations

We prioritize energy conservation through energy-efficient technologies, and optimized processes. These measures aim to reduce overall energy consumption and associated emissions.

In FY 2024, we introduced a range of initiatives to improve energy efficiencies, which will yield multiple benefits, including cost savings, streamlined operations, and enhanced productivity. Approximately 11% of the total planned emissions reduction between FY 2027 and FY 2030 will be achieved through energy conservation projects.



## Plan 2030-2050



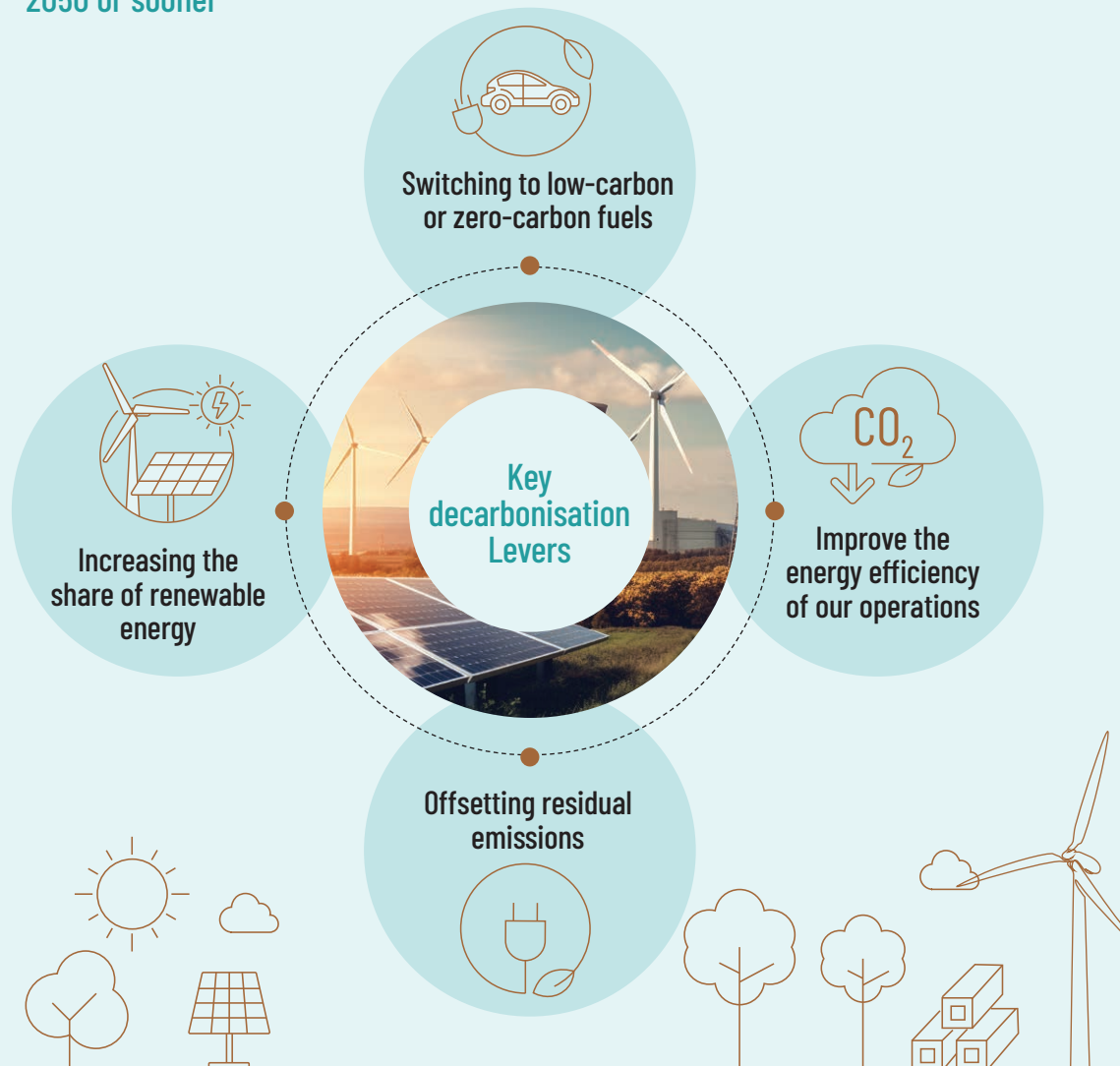
### Lever 4: Offsetting residual emissions

We are actively monitoring and evaluating clean technologies, including Carbon Capture, Utilization, and Storage (CCUS), and green hydrogen. These efforts aim to drive innovation and leadership in mitigating climate change through advanced clean technologies. However, it is important to note that the permanence of CCUS technologies is not yet fully established and may require future revisions. We are aligning our initiatives with pilot projects to assess the feasibility and reliability of these technologies in reducing carbon emissions, ensuring practical implementation and scalability across our operations. Specifically, our zinc business targets minimizing emissions through CCUS in concrete and soil enhancement by FY 2050 and our Oil & Gas business is piloting avenues to use CO<sub>2</sub> for Enhanced Oil Recovery. As these technologies evolve, we will continue to reassess their long-term effectiveness and make necessary adjustments to our strategies.







## Carbon Offsets

Our last strategic resort to cutting residual emissions from our operations is to purchase carbon offsets from voluntary carbon markets. We plan to primarily purchase/generate carbon offsets from nature-based solutions on international or domestic carbon market registries.

In FY 2022 Vedanta Committed to decarbonise its operations and achieve net-zero carbon (net-zero carbon for Scope 1 & Scope 2 GHG emissions) by 2050 or sooner



**Table 3.1 Business-wise Key Levers for Decarbonization**

Business Units		Decarbonization Levers - Key Measures		
	Lever 1	Lever 2	Lever 3	Lever 4
 <p><b>Aluminium Smelters</b></p>	Phase-wise round-the-clock renewable energy capacity addition, 580 MW of which has already been committed and agreements signed	Gradual increments in biomass cofiring in boilers	Incremental and continuous energy efficiency improvements, starting to invest in inert anodes in the short term with an aim to shift to 100% inert anodes in the long term	~1 million trees to be planted till 2030
 <p><b>Aluminium Refinery</b></p>	Phase-wise capacity addition of renewable energy	Biomass cofiring in boilers, 100% HFO replacement in calciner process with natural gas by 2030, followed by green hydrogen by 2050	Adoption of energy efficient practices	~0.055 million trees to be planted till 2030
 <p><b>Iron and Steel</b></p>	-	Gradual increase in the use of natural gas in blast furnaces, 10 MW of solar power by 2030 Use of hydrogen in pulverized coal injection (PCI) pilots and then gradual increase of hydrogen use in PCIs	Continuous process improvements such as coke dry quenching, sinter waste heat recovery, increased PCI, top recovery turbine etc.	~1 million trees to be planted till 2030 Gradual increase in carbon capture, starting with 50 TPD in the short term
 <p><b>Oil and Gas</b></p>	Up to 50 MW of renewable energy sourcing by 2030	-	Energy conservation and process optimization reduced flaring wherever possible	~2 million trees to be planted till 2030 Carbon Capture Utilization and Storage (CCUS) for enhanced oil recovery pilots
 <p><b>Thermal Power</b></p>	Up to 25 MW of renewable energy by 2025 Natural Gas to replace HFO/LDO by 2025	Co-firing of biomass for between 5% - 10% of coal usage	Deployment of Energy efficient processes to decrease carbon intensity	~0.7 million trees to be planted till 2030 Purchase or generation of NBS carbon offsets
 <p><b>Zinc</b></p>	100% renewable energy by 2050	Decarbonize 100% LMVs by 2030; 75% of mining fleet by 2035; R&D on use of green hydrogen for processes, and fuel for vehicles.	100% renewable energy by 2050 or sooner	~1.5 million trees to be planted till 2030 R&D on Carbon Capture and Utilization System- 50% concrete, 50% soil carbon enhancement by 2050





## Climate related metrics and targets

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We employ a diverse range of metrics to assess both the present and future implications of these factors and establish specific targets to mitigate the impact of our activities that generate emissions.

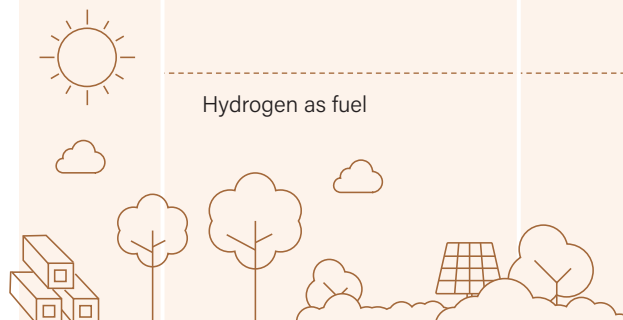
We have integrated climate-related risks and opportunities into our financial, operational, technological, and broader environmental, social, and governance (ESG) performance. As a result, we employ a diverse range of metrics to assess both the present and future implications of these factors and establish specific targets to mitigate the impact of our activities that generate emissions. These targets are an integral part of our comprehensive approach to managing climate-related risks and opportunities. By actively reducing our emissions, we not only contribute to our broader sustainability goals but also strengthen our overall risk management strategies in response to the challenges posed by climate change.

Additionally, Vedanta Aluminium's business expansion outlines an emissions management and reduction plan. A US\$250 million sustainability-linked loan (SLL) has been secured from leading international banks to fund the expansion in a sustainable manner. The loans were granted based on specific performance parameters for decarbonization and safety, which the company aims to meet by deploying these funds toward capital expenditure. This will also fuel the company's growth journey, including achieving a higher degree of backward integration and production of value-added aluminum products.

## Key performance metrics

In line with our business aims published in our sustainability report, we aim to be net zero carbon by 2050 or sooner, as stipulated in Aim 4.

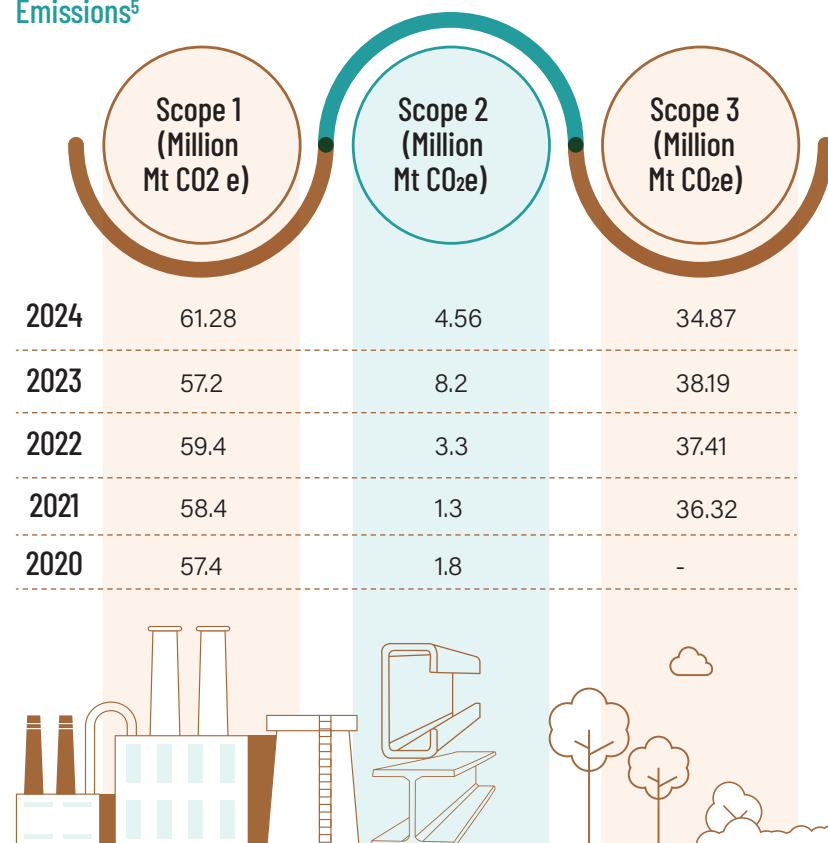
Aim	Key Performance Indicators	FY2025 goal	FY 2030 goal	Baseline	Progress as of FY 2024
<b>Aim 4:</b> Net Zero Carbon by 2050 or sooner	Absolute GHG emissions (% reduction from FY 2021 baseline)		25% reduction by 2030	60.24 million tCO <sub>2</sub> e	9.39% increase; 65.85 million tCO <sub>2</sub> e (Vedanta's emissions are likely to peak in FY 2027)
	GHG Emissions Intensity (% reduction from FY 2021 baseline)	20% reduction by 2025		6.43 t CO <sub>2</sub> e/MT	12.02% reduction; 5.66 tCO <sub>2</sub> e/Mt Metal
	Renewable Energy	500 MW RE RTC or equivalent	2.5 GW of RE RTC or equivalent	67 MW	255 MW of RE used
	LMV Decarbonization (% LMVs)	50%	100%		7.33%
	Capital Allocation for transition to net zero		US\$5 billion		US\$ 3 billion have been allocated till FY 2024 towards commissioning Renewable Energy projects
	Hydrogen as fuel		Commitment to accelerate the adoption of hydrogen as a fuel and seek to diversify into H2 fuel or related businesses		No work was undertaken in this area



# Scope 1, 2 and 3 Emissions

The company's emissions are primarily driven by our aluminium business, which accounts for over 64% of our total Scope 1 and Scope 2 emissions in FY 2024. With plans to increase aluminium production in the future, emissions from this sector are expected to grow. Our overall absolute emissions have increased marginally by 0.8% year-on-year.

## Emissions<sup>5</sup>



<sup>5</sup>We inventorize and report our Scope 1, 2, and 3 emissions in accordance with the GHG Protocol's Standards.

**Table 4.1** Greenhouse Gas Emissions at the Business Unit Level for FY 2024

Business units	Total Scope 1 emissions (tCO <sub>2</sub> e)*	Total Scope 2 emissions (tCO <sub>2</sub> e)*	Total Scope 3 emissions (tCO <sub>2</sub> e)*
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### Aluminium

BALCO	12,383,407	159,903	1,765,377
VAL - Jharsuguda	25,102,785	2,709,327	5,236,182
VAL - Lanjigarh	1,719,740	10,897	816,464
VGCB	1,285	7,712	Not calculated





### Copper


Sterlite Copper - Silvassa	51,206	82, 836	688,483
Fujairah Gold	8,892	3,542	283,959
MEL Nickel	2,902	0	Not Calculated




Business units	Total Scope 1 emissions (tCO <sub>2</sub> e)*	Total Scope 2 emissions (tCO <sub>2</sub> e)*	Total Scope 3 emissions (tCO <sub>2</sub> e)*
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 <b>Ferrochrome</b>			
FACOR	469,112	37,286	Not calculated

 <b>Iron Ore</b>			
Iron Ore Business (VAB)	1,957,316	8,992	318,348

 <b>Oil and Gas</b>			
Cairn Oil & Gas	1,729,151	339,470	20,021,350

 <b>Power</b>			
Power Business (TSPL)	9,242,594	385	3,031,193

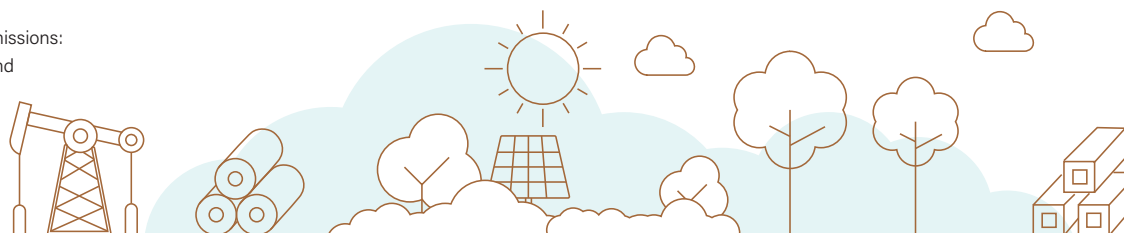
 <b>Steel</b>			
ESL Steel Limited	3,738,113	282,237	250,443

 <b>Zinc, Lead, and Silver</b>			
Hindustan Zinc Limited	3,983,137	562,939	1,579,930
Vedanta Zinc International	740,154	355,858	879,633

<b>Total</b>	<b>61,288,838</b>	<b>4,561,384</b>	<b>34,871,362</b>
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**\*Methodology :** We have used the following methodologies for collecting activity data and calculating emissions:

- American Petroleum Institute Compendium of Greenhouse Gas Emissions Methodologies for the Oil and Natural Gas Industry, 2003
- IPCC Guidelines for National Greenhouse Gas Inventories, 2006
- The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (Revised Edition)
- The Greenhouses Gas Protocol; Scope 2 Guidance
- World Steel Association CO<sub>2</sub> emissions data collection guidelines



**Table 4.2 Scope 3 Emissions Category-Wise**

In FY 2023-24, 'Use of Sold Products' contributed 54% (over 18 million tCO<sub>2</sub>e) to the overall Scope 3 emissions, followed by 'Purchased Goods & Services' contributed to over 20% ( 7 million tCO<sub>2</sub>e).


Scope 3 Categories	FY 2024 Values (tCO <sub>2</sub> e)
Category 1 - Purchased Goods & Services	7,026,916
Category 2 - Capital Goods	0
Category 3 - Fuel & Energy Related	6,054,695
Category 4 - Upstream Transportation and Distribution	394,454
Category 5 - Waste Generated in Operations	185,410
Category 6 - Business Travel	2,005
Category 7 - Employee Commute Data	12,032
Category 8 - Upstream Leased Assets	0*
Category 9 - Downstream Transportation and Distribution	399,527
Category 10 - Processing of Sold Products	2,403,538
Category 11 - Use of Sold Products	18,356,230
Category 12 - End-of-Life Treatment of Sold Products Leased Assets	36,555
Category 13 - Downstream leased assets	0*
Category 14 - Franchise	0*
Category 15 - Investments	0*
<b>Total Scope 3 emissions</b>	<b>34,871,362</b>

\*Note: Category 8, 13, 14, and 15 of scope 3 emissions are not applicable for Vedanta Limited

## GHG Emissions Intensity

Looking ahead, our objective is to further mitigate our GHG footprint by reducing the GHG emissions intensity of our metal businesses by 20% come FY 2025, based on the FY 2021 baseline. In line with this ambition, we have already made substantial progress, with a notable 12% reduction in GHG emissions intensity/tonne of metal produced during FY 2024 compared to our FY 2021 baseline year. Overall GHG intensity/tonne of metal produced compared to FY 2023 has decreased by 9.30% year-on-year.

**Table 4.3 GHG Intensity Trend: Metal & Mining Business**

	FY 2024	FY 2023	FY 2022	FY 2021
 <b>vedanta</b> transforming for good	5.66	6.24	6.14	6.45





**Table 4.4 GHG Intensity: Product-based (tCO<sub>2</sub>e/MT)**

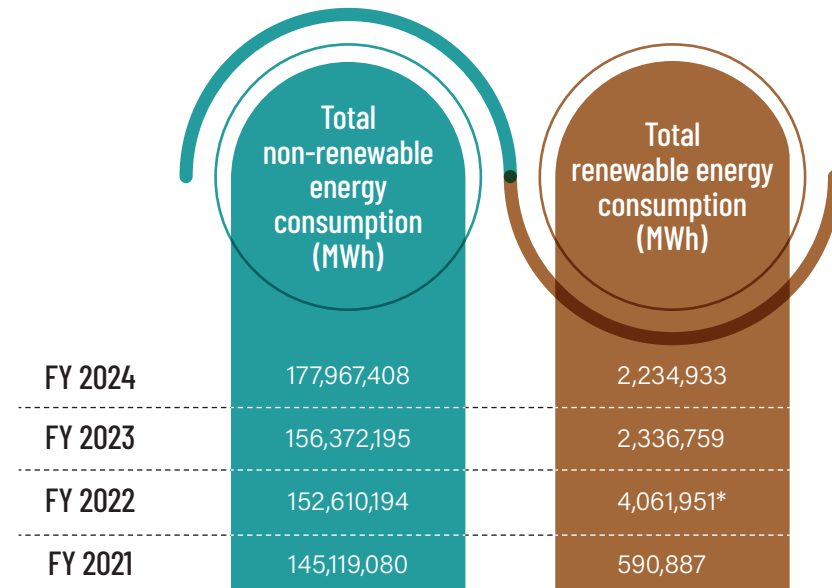
Business units	FY 2024	FY 2023	FY 2022	FY 2021
Aluminium	8.02	9.25	8.88	9.44
Copper	0.55	0.52	0.76	0.89
FACOR	6.36	5.97	6.61	6.4
Steel	2.73	2.27	1.87	2.29
Zinc India	4.40	4.54	4.98	5
Zinc International	5.06	0.92	1.07	0.69
Iron Ore Business	2.27	2.51	2.57	2.81

**Table 4.5 GHG Intensity: Revenue-based (tCO<sub>2</sub>e/INR Mn)**

Business units	GHG Intensity (tCO <sub>2</sub> e/INR Mn)	
	FY 2023	FY 2024
Aluminium	72.49	85.84
Copper (India + UAE)	0.70	0.75
Iron Ore	28.71	21.39
Oil and Gas	14.11	11.44
Other (steel + Ferro Chrome Business)	40.74	49.03
Power	219.98	150.75
Zinc India	13.82	16.06
Zinc International	6.99	30.41
Total GHG Intensity	45.04	45.83

## Other Key Climate Metrics

Our total energy consumption for FY 2024 compared to FY 2023 has increased by 13.5%, and the share of renewable energy in total energy consumption compared to the FY 2021 baseline has increased from 0.4% to 1.2%.



\*Note: The rise in renewable energy usage in FY 2022 is because of the increased reliance on grid electricity in that year due to a coal shortage for our thermal Captive Power Plants. The energy purchased from the grid was largely renewable energy.

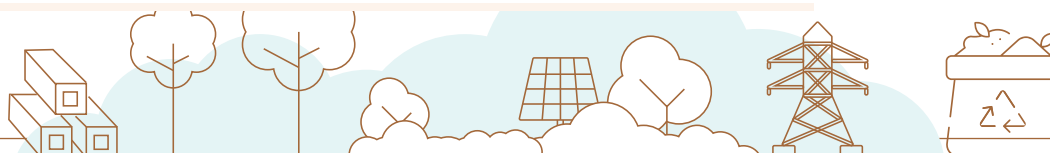
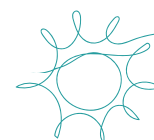


**Table 4.6 Energy Consumption**

Parameter	FY 2024
<b>From renewable sources</b>	
Total electricity consumption (A) (GJ)	6,045,334
Total fuel consumption (B) (GJ)	981,223
Energy consumption through other sources (C) (GJ)	1,019,201
Total energy consumption from renewable sources (A+B+C) (GJ) (I)	8,045,758
<b>From non-renewable sources</b>	
Total electricity consumption (D) (GJ)	22,372,000
Total fuel consumption (E) (GJ)	618,310,668
Energy consumption through other sources (F) (GJ)	-
Total energy consumption from the non-renewable sources (D+E+F) (GJ) (J)	640,682,668
Total Energy consumed (GJ) (I)	648,728,426
Energy intensity per rupee of turnover (Total energy consumption/ turnover in million rupees)	451.36

**Table 4.7 Waste Management**

Parameter	FY 2024	FY 2023
Total waste generated	62,454,226	18,631,982
Total waste disposed	14,303,795	21,112,092
Waste Recycled/Re-used	38,924,277	30,220,013
Waste intensity per rupee of turnover (million rupees)	43.45	12.81





# Strategy and Risk Management

Identifying climate-related risks and opportunities enables us to evaluate their impact, minimize our environmental footprint, and contribute constructively to the ongoing dialogue on climate issues.

At Vedanta, climate-related business risks are included in the Group risk register allowing us to monitor progress at the highest organizational level. We believe that resilience is the best strategy to protect against the risks and are committed to collaborating with all stakeholders to safeguard our business. Identifying climate-related risks and opportunities enables us to evaluate their impact, minimize our environmental footprint, and contribute constructively to the ongoing dialogue on climate issues.



## Process of Identifying and Assessing Climate-Related Risks

**We consistently monitor diverse data sources to stay updated on climate-related developments and physical climate risks.**



We utilized analytical tools that adopt a bottom-up methodology to forecast climate change impacts, evaluate various hypotheses, and examine multiple scenarios, including physical climate risks. These tools enabled us to assess the potential effects of policy changes, regulatory shifts, technological progress, market fluctuations, and societal trends on our business. Additionally, we consistently monitor diverse data sources to stay updated on climate-related developments and physical climate risks. This proactive approach allows us to detect significant changes that may necessitate reassessing our business strategy and implementing necessary actions. The Company also assesses whether climate risks, including physical risks and transition risks, could have a significant impact. If so, these risks are included in the cash-flow forecasts in assessing value in use amounts<sup>6</sup>.

The risk assessments conducted in FY 2022 continue to be relevant and applicable to our current operations.

## Highlights of Key Climate-Related Risks

**Switching to lower emissions technologies like hydrogen, CCUS, and biofuels could lead to additional capital and operating expenditure.**



We anticipate that policy and technology-related climate transition risk drivers will impact our business in the future. Policy changes to limit GHG emissions and introducing carbon pricing could potentially impact the demand for our fossil fuels, bringing risks to the revenues and also increasing the cost of operations from the direct and indirect impact of carbon costs. Similarly, switching to lower emissions technologies like hydrogen, CCUS, and biofuels could lead to additional capital and operating expenditure. On the climate change driven physical risks, the business units could be affected by a shortage of water. Also, a rise in temperatures could affect the health and safety of workers as well as mining operations.

<sup>6</sup>For more details, please refer to the Integrated Annual Report FY 2024: <https://www.vedantalimited.com/uploads/investor-overview/annual-report/Vedanta-AR-2024-18.06.2024-high-res.pdf>



# Physical Risks



The change in climate hazards, especially worsening long-term trends, can damage assets/infrastructure, induce raw material shortages and input price fluctuations, reduce workforce productivity, cause supply chain disruptions, and result in downstream value chain and market disruption. Climate inaction poses a risk to business, with ever-increasing scrutiny on how businesses are responding to the climate crisis and a potential rise in conflicts with communities upon depleting and scarce resources. Regulators and Investors are introducing disclosure requirements for assessing and managing climate risks.

We have thus conducted a comprehensive physical risk assessment to evaluate both acute and chronic risks that may impact all our business locations. We used RCP 4.5 and RCP 8.5 scenarios as business-as-usual and high-emission scenarios, respectively, in line with the TCFD and IFRS S2 requirements. Using RCP 8.5, scenario helped us understand the resilience of our business in the worst possible case and plan adaptation measures accordingly. To understand the potential risks under the RCP 4.5 and RCP 8.5 scenarios, we analyzed historical trends and generated future projections for five key climate hazards: changes in temperature, changes in precipitation, floods, droughts, and cyclones. This evaluation helps in understanding how our businesses might be affected by varying climate conditions and informs strategic planning for risk mitigation and resilience building.

## Moderate Climate Change Scenario (RCP 4.5):

In reference to the RCP 4.5 scenario, significant mitigation efforts are undertaken to reduce GHG emissions by half of current levels by 2080. This scenario will likely lead to a warming of over 2 degrees Celsius by the year 2100.

## High-Risk Climate Change Scenario (RCP 8.5):

Under this scenario of business as usual, where GHG emissions persist at current rates, it is anticipated that warming exceeding 4 degrees Celsius will occur by the year 2100.

Considering the RCP 4.5 scenario, over the next decade, we understand that there will be water scarcity at BALCO and Cairn Oil and Gas units and a high chance of flooding at IOB units. Vedanta Aluminium in Lanjigarh and Jharsuguda already face a cyclone risk that will be accentuated in the future.

Under the worst-case scenario (RCP 8.5), many businesses will face extreme climate risks. There will be water stress and scarcity at Sterlite Copper (Thoothukudi), TSPL, BALCO (Korba), and Cairn Oil and Gas. Vedanta will also experience very high temperatures at TSPL and at their units in Namibia and South Africa as compared to the present temperature.

## Approach and methodology for assessing physical risks

The physical risk analysis was based on four key analytical steps:

### STEP 01



#### Data collection:

Location-specific data were collected to study historical trends and understand if a location is historically prone to climate-related hazards, such as floods, droughts, and extreme rainfalls, for future projections (from 2020-2039 and 2040-2059). (*Climate data is sourced from World Bank CCKP, WRI, NOAA IBTrACS.*)

### STEP 02



#### Normalization of data:

After the data collection, normalization (N) was done by removing the units and converting all the values into dimensionless units (1 – 100).

### STEP 03



#### Risk Index:

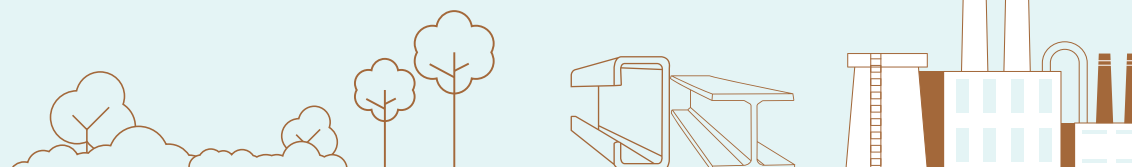
After normalization, the indicators were averaged to get the value of the risk index.

### STEP 04



#### Risk categorization:

The risk index value ranges from 1 (low risk) to 100 (high risk), with higher values reflecting a higher degree of risk. The entire range was divided into three categories, and each was assigned a qualitative indicator of risk— low to high.



# Physical Risks Under RCP 4.5 and 8.5

**Table 5.1** Summary Table of Hazards for All Business Units of Vedanta

Hazard Type	Business Units	Short <sup>1</sup>		Medium <sup>1</sup>		Long <sup>1</sup>	
		RCP 4.5	RCP 8.5	RCP 4.5	RCP 8.5	RCP 4.5	RCP 8.5
Drought	BALCO	●	●	●	●	●	●
	Cairn	●	●	●	●	●	●
	ESL	●	●	●	●	●	●
	HZL	●	●	●	●	●	●
	Iron Ore	●	●	●	●	●	●
	TSPL	●	●	●	●	●	●
	VAL	●	●	●	●	●	●
	SC	●	●	●	●	●	●
	VZI	●	●	●	●	●	●
High Temperatures	BALCO	●	●	●	●	●	●
	Cairn	●	●	●	●	●	●
	ESL	●	●	●	●	●	●
	HZL	●	●	●	●	●	●
	Iron ore	●	●	●	●	●	●
	TSPL	●	●	●	●	●	●
	VAL	●	●	●	●	●	●
	SC	●	●	●	●	●	●
	VZI	●	●	●	●	●	●
Floods	BALCO	●	●	●	●	●	●
	Cairn	●	●	●	●	●	●
	ESL	●	●	●	●	●	●

● Very Low   ● Low   ● Medium   ● High   ● Very High

Hazard Type	Business Units	Short <sup>1</sup>		Medium <sup>1</sup>		Long <sup>1</sup>	
		RCP 4.5	RCP 8.5	RCP 4.5	RCP 8.5	RCP 4.5	RCP 8.5
Floods	HZL	●	●	●	●	●	●
	Iron ore	●	●	●	●	●	●
	TSPL	●	●	●	●	●	●
	VAL	●	●	●	●	●	●
	SC	●	●	●	●	●	●
	VZI	●	●	●	●	●	●
Cyclones	BALCO	●	●	●	●	●	●
	Cairn	●	●	●	●	●	●
	ESL	●	●	●	●	●	●
	HZL	●	●	●	●	●	●
	Iron Ore	●	●	●	●	●	●
	TSPL	●	●	●	●	●	●
	VAL	●	●	●	●	●	●
	SC	●	●	●	●	●	●
	VZI	●	●	●	●	●	●
Rainfall	BALCO	●	●	●	●	●	●
	Cairn	●	●	●	●	●	●
	ESL	●	●	●	●	●	●
	HZL	●	●	●	●	●	●
	Iron Ore	●	●	●	●	●	●
	TSPL	●	●	●	●	●	●
	VAL	●	●	●	●	●	●
	SC	●	●	●	●	●	●
	VZI	●	●	●	●	●	●

● Very Low ● Low ● Medium ● High ● Very High

<sup>1</sup>Short-term horizon (1 - 3 years), Medium term horizon (3 - 10 years), and Long-term horizon (10 - 25 years)



## Risk Type



## Drought

Business Units  
with Very High  
Impact

BALCO  
Cairn  
TSPL  
SC

### Impact on operations

Water scarcity can disrupt operations in BALCO, Cairn, TSPL, and SC, posing risks to production and worker health.

### Impact on community

Water stress has the potential to escalate conflicts within local communities across all sites.

### Impact on health and safety

In the long term, inadequate water supplies at BU sites could compromise worker health due to limited access to sanitation services, posing risks to both workers and the local community.

### Potential Financial Impact

**CapEx:** > Investment in Water Infrastructure, Upgrading equipment's and processes

**OpEx:** > Increased water cost, energy costs, maintenance and repairs, regulatory and compliance costs

## Risk Type



## High Temperatures

Business Units  
with Very High  
Impact

TSPL  
VZI

### Impact on operations

In the long run, extreme temperatures disrupt and reduce equipment efficiency and worker safety. The rise in temperature presents a significant risk to BU infrastructure, leading to issues such as the expansion of metal joints, substructure damage, and asphalt deterioration. This results in higher operational and maintenance costs, including expenses for repairs and painting to maintain infrastructure integrity.

### Impact on health and safety

In the long term, prolonged exposure to heat may impede staff productivity in open spaces. Heat waves, the primary contributors to weather-related illnesses and deaths, will directly affect the health of both staff and nearby communities.

### Potential Financial Impact

**CapEx:** > Investments in cooling systems, building and structural modifications, technological investments

**OpEx:** > Maintenance costs, energy costs, health and safety costs, increased water usage

### Risk Type



## Floods

Business Units  
with Very High  
Impact

Iron Ore

### Impact on operations

Long-term consequences of heavy rainfall include disruptions to internet and phone services, electricity outages impacting operations, and interruptions to product transport and supply due to road closures.

### Impact on health and safety

In the long term, the outbreak of diseases at the business unit may occur following flooding, either due to water stagnation or pollution of existing water bodies.

### Impact on the supply chain

The road access to the affected business unit sites may have a risk of cutoff to the vehicles due to excess flooding.

### Potential Financial Impact

**CapEx:** > Infrastructure repair and maintenance, investment in flood mitigation measures, upgrading facilities

**OpEx:** > Increased maintenance costs, supply chain disruptions, operational disruptions

### Risk Type



## Cyclones

Business Units  
with Very High  
Impact

VAL

### Impact on operations

Cyclones may affect infrastructure such as roads, railway lines, sewage systems, and power transmission lines. This could result in disconnection or disruption of internet and phone services and electricity outages, leading to operational disruptions.

### Impact on health and safety

Cyclones with heavy winds may cause evacuations at sites due to safety concerns.

### Impact on the supply chain

Cyclones may have a risk of damaging roads and other transportation options due to heavy winds and flooding.

### Potential Financial Impact

**CapEx:** > Resilient infrastructure, flood control systems, technological investments, emergency systems

**OpEx:** > Increased operational costs, routine maintenance, higher premiums, rehabilitation

#### Risk Type



#### Rainfall

Business Units  
with Very High  
Impact

Iron Ore

#### Impact on operations

Insufficient measures to address increased flooding in storage rooms and power backup facilities may result in work disruptions during heavy rainfall and waterlogging incidents.

#### Impact on Health and Safety

The impact of heavy rainfall on health and safety in mines includes heightened risks of flooding, landslides, and infrastructure damage, posing threats to worker well-being and operational continuity.

#### Potential Financial Impact

**CapEx:** > Infrastructure investment, equipment purchases and upgrades, technology and monitoring

**OpEx:** > Operational disruptions, water management, safety measures, logistics and transportations

## Transition Risks and Opportunities

One of the key impacts of emerging climate change are the likely changes in national policies, regulatory obligations, market expectations, technology transitions and reputational impact. Collectively, these transitional risks have the potential to significantly disrupt how a business operates under "normal" circumstances.

The pace of these changes is also likely to correspond to how quickly society starts to witness changes in the climate. To understand this change, Vedanta has deployed scenario analysis. By doing so we are able to determine the probable impacts on the business as a result of the changes in regulatory or market factors.

We utilized multiple transition scenarios in line with India's net zero commitment as well as our stakeholders' expectations. These scenarios also represent TCFD and IFRS S2 recommendations on selecting business as usual as well as low carbon transition scenarios.





### Current Policies Scenario (CPS):

In this pathway, existing climate policies remain unchanged, lacking any strengthening of ambition. Consequently, emissions persist on an upward trajectory, ultimately surpassing the 1.5°C limit by a considerable margin.

### Nationally Determined Contributions (NDCs) Scenario:

This scenario envisions the full implementation of India's presently pledged unconditional NDCs, ensuring the attainment of specified energy and emissions targets by 2025 and 2030, respectively.

### Below 2°C Scenario (B2DS):

Under this scenario, explicit temperature targets are set to keep warming below 2°C throughout the 21st century, with the 87th percentile of temperature rise remaining within this threshold.

### Net Zero 2050 Scenario:

Anticipating global CO<sub>2</sub> emissions reaching net zero by 2050, this scenario envisages a balance between emissions and removals, with some countries achieving net-negative emissions to offset positive emissions elsewhere.

## Approach and methodology for assessing transition risks

This analysis used five of the NGFS reference scenarios covering three aspects of the NGFS scenario matrix, i.e., orderly, disorderly, and hothouse world. From a transition risk perspective, these five scenarios were considered by different contributing modeling groups leading to different transition pathways (i.e., across different scenarios and models). The transition pathways all share the same underlying assumption on key socio-economic drivers, such as harmonized population and economic developments. Drivers such as food and energy demand are also harmonized, not at a precise level but in terms of general patterns. All these socio-economic assumptions are taken from the shared socio-economic pathway SSP2, which describes a “middle-of-the-road” future.





**Table 5.2** Accessing Transition Drivers on the Business Units of Vedanta

Transition Drivers	Impacted Business Units	Implications for Vedanta	Response Measures
Policy	<ul style="list-style-type: none"> <li>● BALCO (Low impact in short, medium, and long terms)</li> <li>● VAL (Low impact in short, medium, and long terms)</li> </ul>	<ul style="list-style-type: none"> <li>▪ Impact from Carbon Tax and ETS</li> <li>▪ Instruments such as CBAM at BALCO &amp; VAL</li> </ul>	<p>Vedanta has made pledges to curb GHG emissions, encompassing goals such as achieving 2.5 GW of Renewable Energy through Renewable Purchase Certificates (RTC) by 2030 and reducing absolute emissions by 25% from a 2021 baseline. To fulfill these commitments, we have implemented a range of initiatives, including efficiency enhancements in turbines and thermal operations, the adoption of biomass cofiring in thermal power plants, and the sourcing of Renewable Energy power across all our facilities.</p> <p>We note a shift in consumer preferences toward low-carbon metals and are actively exploring avenues to decarbonize our product offerings. In line with this, we have procured over 5 billion units of Renewable Energy power in our Aluminium division over the past two years, specifically utilized to produce Restora and Restora Ultra, our low-carbon aluminium products.</p>
Market	<ul style="list-style-type: none"> <li>● Cairn (High impact in the Long Term)</li> <li>● BALCO (Low impact in short, medium, and long terms)</li> <li>● VAL (Low impact in short, medium, and long terms)</li> <li>● VZI (Low impact in short, medium, and long terms)</li> <li>● TSPL (Medium impact in the medium term)</li> </ul>	<ul style="list-style-type: none"> <li>▪ Lower demand for fossil fuels leading to potential revenue loss at Cairn.</li> <li>▪ Increase in demand for greener products: recycled aluminium at BALCO, VAL, and VZI.</li> <li>▪ Phase down of coal leading to cost escalations and competitiveness at TSPL.</li> </ul>	<p>To fulfil these commitments, we have implemented a range of initiatives, spanning efficiency enhancements in turbines and thermal operations, adoption of biomass cofiring in thermal power plants, and sourcing Renewable Energy power across all our facilities.</p> <p>We note a shift in consumer preferences toward low-carbon metals and are actively exploring avenues to decarbonize our product offerings. In line with this, we have procured over 5 billion units of Renewable Energy power in our Aluminium division over the past two years, specifically utilized to produce Restora and Restora Ultra, our low-carbon aluminium products.</p>

● Low ● Medium ● High

Transition Drivers	Impacted Business Units	Implications for Vedanta	Response Measures
Technology	<ul style="list-style-type: none"> <li>● BALCO (Low impact in short, medium, and long terms)</li> <li>● VAL (Low impact in short, medium, and long terms)</li> <li>● ESL (Low impact in short, medium, and long terms)</li> <li>● VZI (Low impact in short, medium, and long terms)</li> <li>● Cairn (High impact in the Medium Term)</li> <li>● TSPL (Medium impact in the long term)</li> </ul>	<ul style="list-style-type: none"> <li>▪ Cost of switching to cleaner energy at BALCO, ESL, HZL, VAL, SC, VZI</li> <li>▪ Deployment of CCUS or related technologies at our power plants</li> <li>▪ Conversion from coke to green hydrogen at VAB, ESL</li> <li>▪ Switch to electric vehicles across all our units.</li> </ul>	<p>Our goal is to reduce absolute GHG emissions by 25% by FY2030, compared to our baseline in 2021. To accomplish this, we have implemented several initiatives aimed at restructuring our energy generation portfolio. For instance, we have installed solar panels on rooftops across various locations in our business units both in India and abroad.</p> <p>Furthermore, we have initiated a comprehensive transition, replacing our current diesel vehicles with electric and integrating technologically advanced lithium-ion forklifts on a substantial scale.</p>
Reputation	<ul style="list-style-type: none"> <li>● Cairn (Medium impact in the Short Term)</li> <li>● VZI (Low impact in short, medium, and long terms)</li> <li>● ESL (Low impact in short, medium, and long terms)</li> <li>● BALCO (Low impact in short, medium, and long terms)</li> </ul>	<ul style="list-style-type: none"> <li>▪ Reputational concerns of remaining invested in fossil fuel businesses</li> <li>▪ Positive reputational impacts due to the inclusion of low-carbon products in our portfolio, such as Restora and Restora Ultra. Additional products being developed for copper and zinc.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Relationship with the community through enhanced community development programs such as water conservation, livelihood support, etc.</li> <li>▪ Undertaking pilot studies of new technologies to assess feasibility, costs, and replicability.</li> <li>▪ Launching new green product lines in our copper, zinc, and aluminum businesses.</li> </ul>

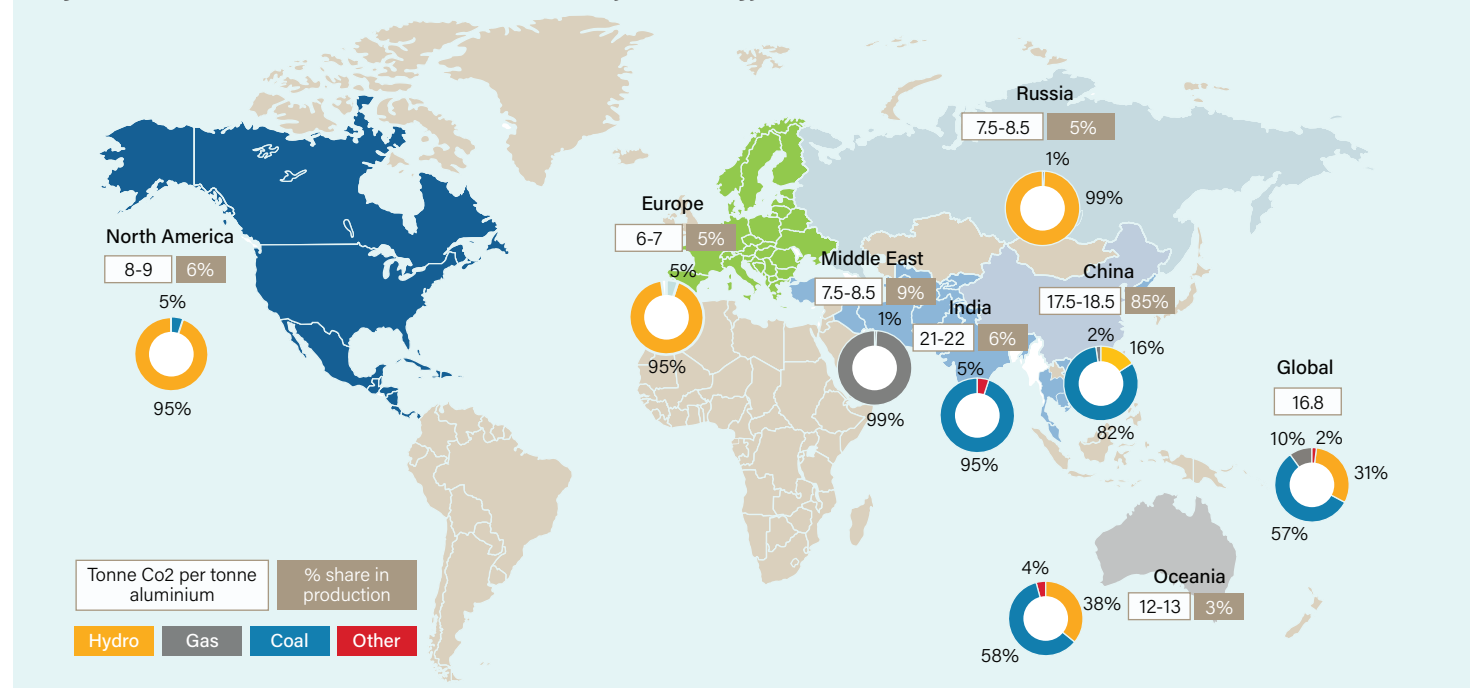
● Low    ● Medium    ● High

# Focus Area - Impact of CBAM on Vedanta's Businesses

During the initial CBAM phase, exports to the EU may hold steady as domestic manufacturers like Vedanta meet GHG reporting standards until 2025's end. However, from 2026, primary aluminum exporters will need to purchase EU-ETS certificates for emissions, making exports unsustainable as free allowances diminish. With India's high emission intensity compared to major competitors, CBAM will be hit hard, especially with expanding capacities in the Middle East, making regional rivals more competitive.

As an aluminum exporter to the EU, the carbon border tax is expected to impact our export costs. Starting in 2026, a price per unit emission will be imposed on goods imported into the EU, affecting the competitiveness of our exports. Once the permanent system is implemented, importers into the EU will be required to report annual import quantities and the associated greenhouse gas emissions. They will then need to surrender the corresponding number of CBAM

Figure 5.1 Global Aluminium GHG Emission Intensity and Energy Mix



certificates, priced according to the weekly average auction price of the EU's emission allowances, typically ranging from 70 to 103 Euros per tonne of carbon under the Emission Trading System.

Currently, in FY 2024, our aluminum division significantly contributes to our

overall emissions, accounting for 39,205,932 tCO<sub>2</sub>e of Scope 1 emissions and 2,880,127 tCO<sub>2</sub>e of Scope 2 emissions.

Considering this effect from CBAM, under our green product initiative, this year we have produced 44kt of green aluminium under the brand

name of Restora with a potential to increase to 100kt. Our Restora Ultra brand, which is produced from aluminium dross generated from the operations, has lowest carbon footprint in the market. It will help in reducing the impact of CBAM on Vedanta's Aluminium business.

# Key Drivers Impacting Financial Planning

**We consider climate-related matters, including physical and transition risks, in our assessment of expected useful lives and estimated residual values.**



The potential effects of climate change can impact assets and liabilities that are assessed based on estimated future cash flows. In preparing the financial statements, the primary considerations for potential climate change impacts include: (a) incorporating capital expenditures into cash flow projections, (b) determining the recoverable amounts of existing assets, and reviewing estimates of the useful lives of property, plant, and equipment.

We review the residual value and useful life of an asset at least at each financial year-end. We consider climate-related matters, including physical and transition risks, in our assessment of expected useful lives and estimated residual values. If expectations differ from previous estimates, the change is accounted for as a change in the accounting estimate.

The impact of climate-related matters, such as changes in environmental regulations and other relevant legislation, is considered by us in estimating the restoration, rehabilitation, and environmental costs. The cost of the related asset is adjusted for changes in the provision due to factors such as updated cost estimates, changes to the lives of operations, new disturbances, and revisions to discount rates. The adjusted cost of the asset is depreciated prospectively over the lives of the assets to which they relate. The unwinding of the discount is shown as finance cost in the consolidated statement of profit and loss.

Beyond these climate-change impacts on our current financial statements, we also track potential impacts on future financial statements. While we currently do not track spending or revenue aligned with our transition to a 1.5°C world, we aim to implement this within the next two years. Below is a summary table illustrating the impact of climate-related issues on our capital expenditures and liabilities identified during our assessments.



**Table 5.3 Financial Attributes and Impacts**

Financial Attribute	Impact
Capital Expenditures	<ul style="list-style-type: none"> <li>Investments in Low-Carbon Solutions: <ul style="list-style-type: none"> <li>We are committed to investing in innovative technologies that reduce carbon emissions.</li> <li>Piloting projects focused on reusing/recycling waste generated in our operations.</li> <li>Initiatives aimed at reclaiming flood-prone areas vulnerable to water risk.</li> </ul> </li> <li>Capital Expenditure for Emission Reduction: <ul style="list-style-type: none"> <li>There is a significant capital expenditure is allocated to achieve our greenhouse gas emission reduction targets.</li> <li>Increasing the integration of renewable energy sources into our energy consumption portfolio requires substantial investment.</li> </ul> </li> <li>Capex for Water related issues: <ul style="list-style-type: none"> <li>Conduct water risk assessments using tools such as WRI Aqueduct and WRF Water Risk Filter to understand water stress at our business units</li> <li>Employ various mitigation and adaptation practices. These practices include managing water demand and supply, implementing risk management measures, adopting new technologies, and accounting for infrastructure costs.</li> </ul> </li> <li>Internal Carbon Pricing Mechanism: <ul style="list-style-type: none"> <li>Introduction of an internal price on carbon within our capital expenditure approval process.</li> <li>The objective is to incentivize investment in clean technologies, low-carbon solutions, and renewable energy projects.</li> <li>This strategy extends across our operations and supply chain, ensuring a comprehensive approach to sustainability.</li> </ul> </li> </ul>
Liabilities	<p>We have allocated funds annually for the restoration and rehabilitation of mining sites, determined by evaluating mine closure plans and estimating the costs of dismantling and removal. These costs are capitalized when the obligation arises. Similarly, provisions are made for decommissioning our oil and gas assets, considering the current estimates of removal and decommissioning costs, forecasted timing of settlement, and applicable discount rates.</p>

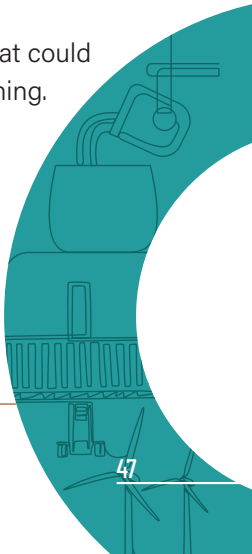
## Key Climate Attributes Impacting Vedanta

At Vedanta, we have designated EBITDA as a critical performance indicator to gauge both the substantial financial impact and management's effectiveness.



We employed the IPCC and NGFS scenarios to evaluate financial impacts and prioritize risks across our business units in various regions. At Vedanta, we have designated EBITDA as a critical performance indicator to gauge both the substantial financial impact and management's effectiveness. We believe that a 2.5% impact on EBITDA can significantly influence the economic outcomes and project decisions of our stakeholders.

We examine a range of climate-related issues that could potentially affect our strategy and financial planning.



The table below summarizes these issues and their potential impacts on our business, finances, and strategic initiatives.

**Table 5.4 Climate Attributes and Mitigation Actions**

Climate Attribute	Business Impact	Mitigation Actions
Use of lower emissions source of energy	We have recognized that integrating lower-emission practices, such as leveraging renewable energy sources and adopting technologies that minimize energy consumption and emissions, presents substantial cost-saving opportunities for our operations. By prioritizing these initiatives, we aim to optimize our processes while simultaneously reducing our environmental footprint.	<p>Our goal is to reduce absolute GHG emissions by 25% by FY2030, compared to our baseline in 2021. To accomplish this objective, we have implemented several initiatives aimed at restructuring our energy generation portfolio. For instance, we have installed solar panels on rooftops across various locations in our business units both in India and abroad. Furthermore, we have initiated a comprehensive transition, replacing our current diesel vehicles with electric ones and integrating technologically advanced lithium-ion forklifts on a substantial scale.</p> <p>A comprehensive strategy to deploy 2.5 GW of RE RTC by 2030 is underway across all our businesses. As of FY 2024, commissioning was underway for 835 MW of RE RTC projects, which will become part of our captive energy sources in our businesses.</p>
Emerging Regulations and shift in consumer preferences	We have recognized the imminent impact of regulatory shifts, such as the "National Carbon Market" and CBAM, on our operations. Concurrently, we have closely monitored changing consumer preferences favouring carbon-neutral or low-carbon products. With the anticipated rise in demand for commodities like aluminium amidst the transition to a low-carbon economy.	<p>We have made pledges to curb GHG emissions, encompassing goals such as using 2.5 GW of Renewable Round-The-Clock power by 2030 and reducing absolute emissions by 25% from a 2021 baseline.</p> <p>We have implemented a range of initiatives, spanning efficiency enhancements in turbines and thermal operations, adoption of biomass cofiring in thermal power plants, and sourcing Renewable Energy power across all our facilities.</p> <p>We have noted a shift in consumer preferences toward low-carbon metals and are actively exploring avenues to decarbonize our product offerings. In line with this, we have procured over 1,047 million units of green power in our Aluminium division in FY 2024 specifically utilized for the production of Restora and Restora Ultra, our low-carbon aluminum products.</p>
Chronic climate changes and water related issues	We have conducted an assessment and identified several environmental factors that could significantly impact our business operations. These include changes in water availability, heightened frequency, and intensity of cyclones, as well as escalating temperatures. These factors pose various challenges, such as potential disruptions to our supply chain, increased operational risks, and the need for enhanced infrastructure resilience.	<p>We made a road map and studied how climate change affects our operations in different places. This helps us see where we might have problems. We are also planning ways to make our business stronger against climate changes by looking at different possible scenarios.</p> <p>Progress toward the implementation of this water strategy is driven by our water management program, which is guided by a mandatory group-wide water management standard and delivered via operational action plans. The management standard emphasizes including a plan for achieving zero water discharge from the operations (except mine dewatering water with regulatory requirements) commensurate to business risk and integrated with performance requirements. In FY 2022-23, we carried out the evaluation of overall basin risk and operational risk using 3 water risk assessment tools- WRI Aqueduct, WBCSD WRF Water Risk Filter and India water tool, with the objective of conducting a sensitivity analysis and stress testing for water-related risks in 2030 and 2050 scenario.</p> <p>Additionally, we are exploring innovative solutions and technologies to bolster our business's resilience in the face of these environmental changes.</p> <p>In alignment with this strategy, we are improving our operational water performance through infrastructure improvements (such as installing ROs), water treatment and recovery technologies (treating ETP water through a zero effluent discharge system), and environmental impact management (through initiatives like rainwater harvesting).</p>

# Adaptation and Mitigation Strategies

Vedanta's business units are dedicated to minimizing their carbon footprint and enhancing climate resilience, despite facing diverse risks. Our efforts encompass multiple strategies, from investing in renewable energy and enhancing energy

efficiency to innovating low-carbon products aligned with EU emission standards. Additionally, we are redefining our operations to foster sustainability and mitigate environmental impact.

**Table 5.5** Adaptation And Mitigation Strategies

Objective	Time period	Steps being undertaken
Policy and Governance	Short	<ul style="list-style-type: none"> <li>• Create a plan to deal with climate change risks.</li> <li>• Ensure every new project, merger, or acquisition have to follow to reduce their climate impact, like using more renewable energy and the best available technology.</li> <li>• Make sure our yearly business plans include goals for cutting carbon emissions.</li> <li>• Include climate-related goals when evaluating how well executives and managers are doing their jobs.</li> <li>• Start a program to work with our suppliers to ensure they are also taking steps to address their impacts on climate change.</li> <li>• Communicate with community members to identify ways to deal with climate problems and include these plans in our existing community support projects.</li> </ul>
	Medium	<ul style="list-style-type: none"> <li>• Identify and try out green business ideas, like storing renewable energy.</li> <li>• Look into and push for better policies, such as ones that help overcome problems with moving away from coal and making sure the switch to low-carbon energy is executed in a seamless manner.</li> </ul>
	Long	<ul style="list-style-type: none"> <li>• Revise the Net Zero plan to incorporate recent regulatory and market requirements, as well as the Group's progress in achieving short to medium-term targets.</li> <li>• Create and put into action a Just Transition plan.</li> </ul>

Objective	Time period	Steps being undertaken
Risk Management	Short	<ul style="list-style-type: none"> <li>Vedanta adapts existing risk management processes to address losses from cyclones and heatwaves and we plan to use the quality assurance and compliance approaches for climate-related information.</li> <li>We embed internal carbon pricing into decision-making. Vedanta sets a \$15/tCO<sub>2</sub>e Shadow Carbon Price, continually reviewing it annually to align with unit decarbonization plans.</li> </ul>
	Medium	<ul style="list-style-type: none"> <li>Create plans for each business unit to deal with climate risks. Work with suppliers to manage risks.</li> <li>Identify and work with critical suppliers who might be affected by climate issues.</li> <li>Have in place alternative suppliers to minimize the impact of supply chain disruptions due to climate events.</li> </ul>
	Long	<ul style="list-style-type: none"> <li>Develop contingency planning to minimize the impact of climate-related events/emergencies. Additionally, adopt measures to mitigate exposure to the identified physical risks associated with climate change.</li> </ul>
Targets and Metrics	Short	<ul style="list-style-type: none"> <li>Establish a framework to unify business unit targets and accomplishments, aligning metrics with group-level objectives such as achieving Net Zero emissions by 2050 and a 25% absolute reduction by 2030.</li> <li>Enhance our Scope 3 emissions tracking and identify emission hotspots throughout the value chain.</li> <li>Implement specific annual targets for the adoption of renewable energy and ensure a 5% biomass utilization annually across our power plant operations.</li> </ul>
	Medium	<ul style="list-style-type: none"> <li>Develop a strategy for procuring renewable energy to meet the goal of attaining 2500 MW of RE RTC within our operations.</li> <li>Define targets for reducing Scope 3 emissions across various material categories.</li> <li>Work with critical stakeholders in our value-chain to develop plans that help reduce our Scope 3 emissions.</li> <li>Promote the adoption of science-based emission reduction targets among suppliers and customers.</li> <li>Assess the climate change relevance of CSR programs through thorough analyses conducted at the business unit level to ascertain their effectiveness and relevance.</li> </ul>
	Long	<ul style="list-style-type: none"> <li>Update the climate budget, enhanced insurance and climate fund (ICP), and GHG emission reduction targets based on the revised climate risk assessments.</li> <li>Establish precise targets for the adoption of clean technologies, including renewable energy (RE), carbon CCUS, and green hydrogen.</li> </ul>



# Our Climate Strategy

We aim to strategically align our operations and financial planning with the impacts of climate-related risks and opportunities. Our measures focus on product and service offerings, supply chain management, investments in R&D and partnerships, and operational enhancements.



## Products And Services

In FY 2022, we introduced green aluminum products, "Restora" and "Restora Ultra," that boast significantly lower GHG intensity than global standards.

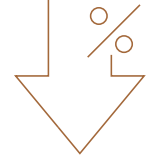


At Vedanta, we have recognized the shift in consumer preferences towards low-carbon metals, prompting us to focus on decarbonizing our product portfolio. In FY 2022, we introduced green aluminium products, "Restora" and "Restora Ultra," that boast significantly lower GHG intensity than global standards. Restora, produced using renewable energy, emits half the global standard of 4 tCO<sub>2</sub>e per tonne of aluminum. Restora Ultra, made from reclaimed aluminium dross, has nearly zero carbon footprint in the market. In FY 2024, low-carbon aluminum generated around US\$ 150 million in revenue. Additionally, a pilot project for recycled copper production reduced our carbon footprint, generating ~US\$ 25 million in green copper sales.

With the economy transitioning towards a low-carbon future, we anticipate shifts in demand for our products, with an increase projected for copper, silver, and zinc in electric motors, transmission lines, batteries, and solar panels. Conversely, the decline in lead-acid battery usage in electric vehicles may reduce its demand.

## Supply Chain

Our aluminum and zinc units have committed to reducing Scope 3 emissions, targeting a 25% reduction for Vedanta Aluminium and 20% for HZL by 2030 and 2027, respectively

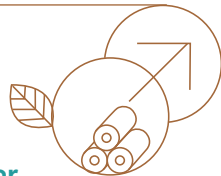


We are actively assessing the impact of climate-related risks and opportunities on our supply chain, aiming to align our diverse operations with decarbonization efforts. We have instituted a supplier selection criterion emphasizing compliance with environmental and sustainability standards, including climate change considerations. By FY 2025, we aim to collaborate with long-term tier 1 suppliers to establish GHG reduction strategies, with plans to align them by FY 2030. While some business units are progressing faster, our aluminium and zinc units have committed to reducing Scope 3 emissions, targeting a 25% reduction for Vedanta Aluminium and 20% for HZL by 2030 and 2027, respectively, over specified baseline years.



## Research and Development Initiatives

By transitioning copper production to scrap and pursuing aggressive decarbonization pathways for zinc and aluminum, Vedanta aims to achieve net zero emissions by 2050.



At Vedanta, we are strategically aligning ourselves with the escalating demand for environmentally sustainable solutions, notably by the raising interest in low-carbon aluminum. We recognize the importance of adapting to evolving consumer preferences, by adopting technological innovation at rigorous standards, thus strengthening our position as a frontrunner in research and development in the aluminium sector. Our new products, "Restora" and "Restora Ultra," demonstrate our ongoing commitment to green practices, reflecting a step forward towards lowering our carbon footprint since we started in FY 2022.

Looking ahead, our pledge extends to achieving full decarbonization of our vehicle fleet by 2030, alongside substantial strides in greening our mining operations, targeting a considerable portion of our mining fleet by 2035. Initiatives such as the

integration of electric vehicles (EVs) at HZL and ESL, as well as strategic collaborations like the Memorandum of Understanding (MoU) with Sandvik AB, underline our strategy in reducing carbon emissions and mitigating environmental impact, particularly at our mining sites.

By transitioning copper production to scrap and pursuing aggressive decarbonization pathways for zinc and aluminum, Vedanta aims to achieve net zero emissions by 2050. This commitment to sustainability is not only a response to rising global metal demand but also underscores Vedanta's dedication to balancing economic growth with environmental responsibility.

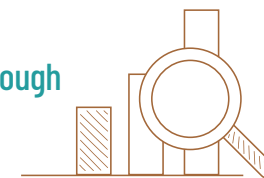
As demand for metals surges, we anticipate a positive impact on our bottom line while remaining steadfast in our commitment to decarbonize. By integrating renewable energy sources and sustainable practices into its operations, we are not only meeting market demand for eco-friendly products but also setting a precedent for sustainable metal production.

In parallel, our R&D initiatives at our aluminum business units are focused on decarbonization and efficiency improvements. One project optimizes the green carbon anode manufacturing process, reducing electrical resistivity from 58  $\mu\Omega$  (million microohms) to 57  $\mu\Omega$ , leading to US\$ 0.2 million in savings. This project has completed its first phase and is progressing to the second phase. A second initiative,

uses Finite Element Analysis (FEA) to enhance pot life by studying stress variations in cathodes, providing insights into crack formation, with the computational study completed and further steps proposed. Additionally, we are developing a specialized cathode coating to enhance wettability, aimed at reducing the set voltage by 5 mV, which could save US\$ 0.8 million at full capacity. This coating, developed with IPR Gandhinagar, has been authenticated at the lab scale, and full-scale trials are currently underway.

## Operations

Embracing a systematic approach, we conduct thorough risk identification and assessments, followed by monitoring and reporting across operational, financial, strategic, and reputational domains.



We have implemented an internal shadow carbon price of US\$ 15 per tonne (INR 1,241.76) of CO<sub>2</sub>e for projects with budgets over INR 50 million. This prepares us for future GHG emission costs and supports clean energy investments. By embedding carbon costs into decisions about capital expenditures, operations, and risk management, we contextualize climate events, reduce risks, and enhance investment attractiveness. Covering scope 1 and 2 emissions, our internal carbon pricing



anticipates potential carbon taxes in India, promoting low-carbon investments. We review this pricing annually to stay competitive and industry-aligned.

## Alignment of Climate Change with our Enterprise Risk Management

At Vedanta, accountability and oversight in risk management form the integral components of our governance framework, which seamlessly intertwine with our core governance principles. Our approach for our risk management framework is made with efficiency by prioritizing simplicity, consistency, and clarity in both the management and reporting of risks, including those associated with climate change, to the Board.

Our Enterprise Risk Management (ERM) framework serves as a robust mechanism to identify, address, and mitigate risks that could impact the Company. Embracing a systematic approach, we conduct thorough risk identification and assessments, followed by monitoring and reporting across operational, financial, strategic, and reputational domains. Within this framework,

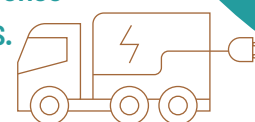
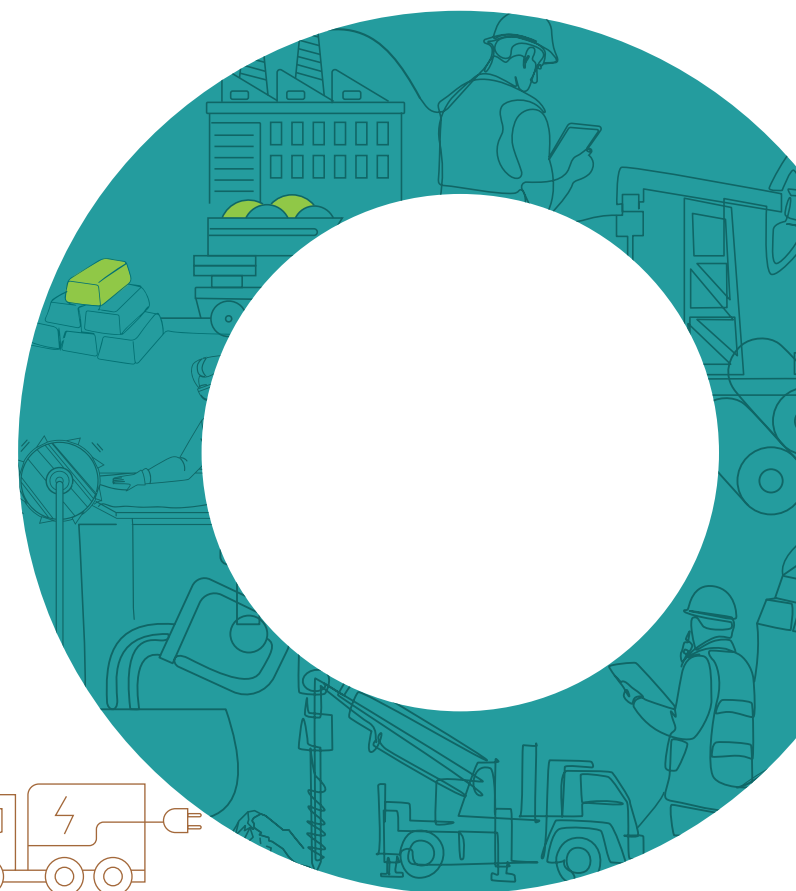
climate change emerges as a focal point, reflecting our primary commitment to its mitigation.

The Board ESG Committee stands as a pivotal body that oversees the management of climate-related and broader ESG risks. In close collaboration with the Audit Committee, the ESG Committee identifies material ESG risks and orchestrates targeted mitigation actions, ensuring effective risk management through continuous controlling mechanisms. Our risk management process adopts a bottom-up approach, leveraging decentralized internal controls to capture risks at a granular level, spanning both physical and transition risks. Designated risk officers at operating business and group levels overlook this effort, ensuring comprehensive risk coverage and timely response measures.

## Promoting Collaboration and Response Measures

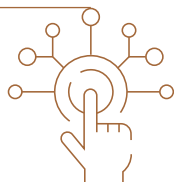
**Our Energy & Carbon Community of Practice (CoP) collaborates with business unit-level Energy & Carbon working groups to develop and implement response measures for identified risks and opportunities.**

Collaboration is central to our risk mitigation strategy. The Director of ESG, Carbon & Social Performance delivers regular updates to the Executive Committee (Exco/Mancom) on climate-related management activities. Moreover, our Energy & Carbon Community of Practice (CoP) collaborates with business unit-level Energy & Carbon working groups to develop and implement response measures for identified risks and opportunities.



# Enhanced Oversight Through GRMC

At Vedanta, we leverage advanced analytical tools employing a bottom-up approach to generate comprehensive climate change forecast ranges.



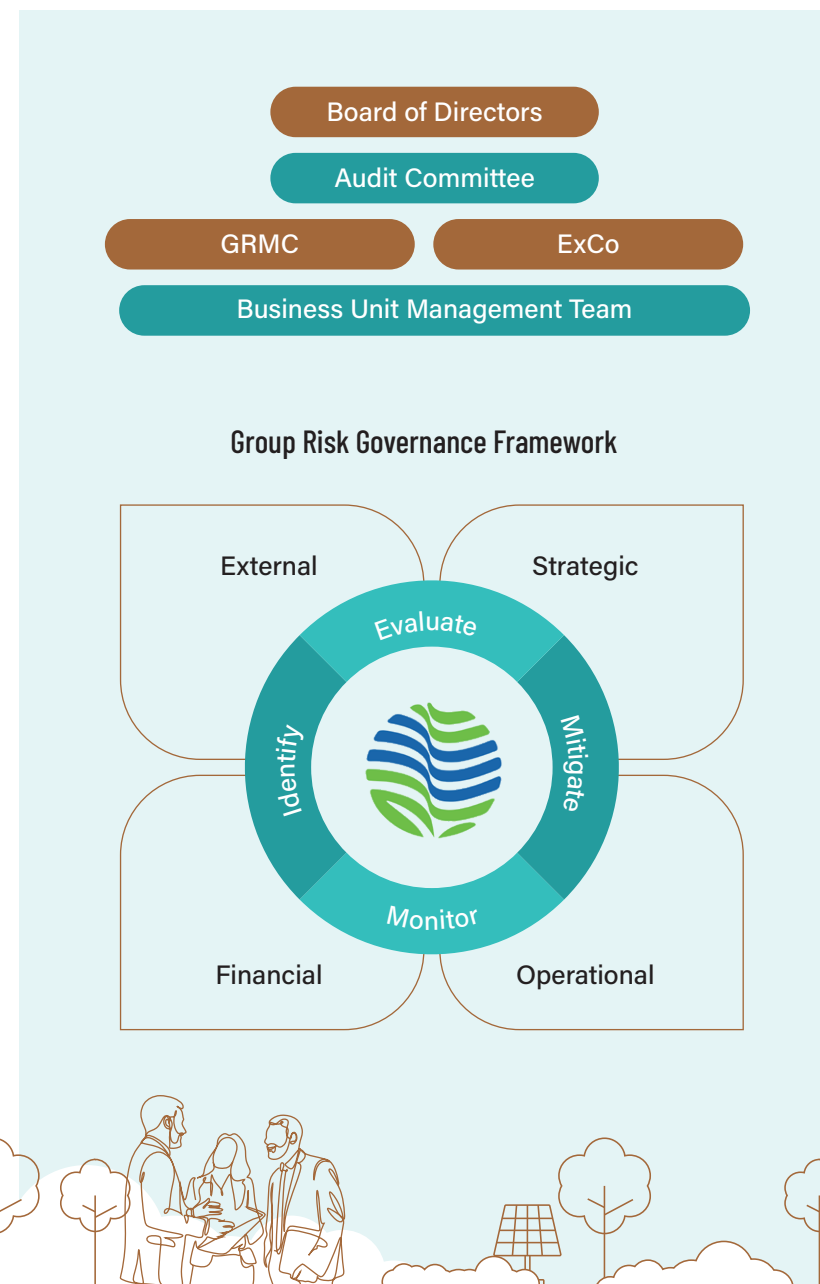
The Audit & Risk Management Committee receives assistance from the Group Risk Management Committee (GRMC) in overseeing the comprehensive risk mitigation program and control systems. Through regular discussions, the GRMC decides the resilience of our framework at the business unit level and facilitates the integration of Climate-related Financial Risk into Enterprise Risk Management.

We identify risks at the individual business level for both existing operations and ongoing projects through a consistently applied methodology. Business-level review meetings are conducted at least once every quarter to formally discuss risk management. All business divisions

maintain their risk matrix every quarter, which is reviewed by the respective management/executive committee, with CEO as the chairman. Additionally, business divisions have their risk registers as per their operational size and the number of SBUs/ locations.

The respective businesses review the risks, changes in their nature, exposure since the last assessment and control measures to decide further action plans. Control measures stated in the risk matrix are also periodically reviewed by the business management teams to verify their effectiveness. These meetings are chaired by the CEOs of the respective businesses and attended by CXOs, senior management and functional heads concerned.

Finally, the risks across the various risk registers are aggregated and evaluated to identify the Group's principal risks and formulate a response mechanism. This element is an important component of the overall internal control process for which the Board obtains assurance. Additionally, climate-related factors have also been addressed in our risk evaluations. A separate exercise to understand evolving climate risk scenarios was also conducted for each business, in order to understand scale of risk and its probability.







# Governance

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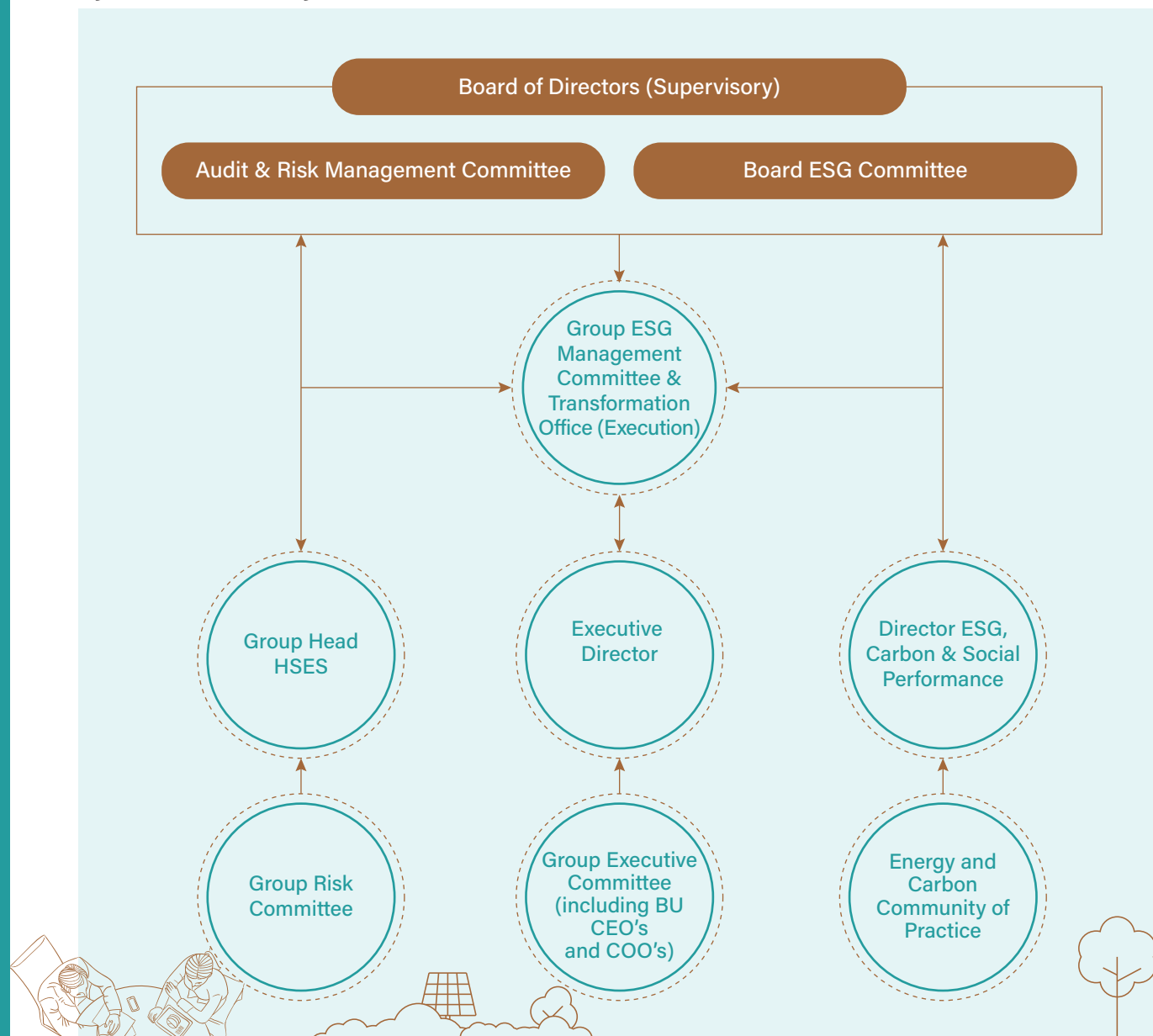
At Vedanta, we have set up a clear system for integrating climate change concerns into our business and future planning. The Board monitors all sustainability issues, including climate change, to ensure we are doing our part.

The Board's diverse experiences allow them to thoroughly evaluate how climate change might affect us and our operations. They understand the ongoing climate change discussion and international policies, helping them make smart decisions about where to invest money to benefit our stakeholders in the long run. They also understand the risks that climate change poses to our business units.

At Vedanta, we have set up a clear system for integrating climate change concerns into our business and future planning. The Board monitors all sustainability issues, including climate change, to ensure we are doing our part.

Climate change holds particular significance in governance discussions at the board level. It is a recurring topic in various contexts, including strategy discussions, assessing business performance, making investment decisions, and evaluating scenario triggers and signposts. Board members contribute diverse expertise from sectors such as resources, energy, finance, government, and policy, enriching discussions on climate change and its implications for Vedanta's operations and long-term strategy.

Figure 6.1 Climate Change Governance



**Table 6.1 Board and Management Responsibilities**

<p><b>Vedanta Board</b></p>	<p><b>Responsibilities</b></p> <p>The Board oversees the holistic aspects of strategy, people, culture, ESG (Environmental, Social, and Governance), and community engagement, with the ultimate responsibility of prioritizing business performance and governance. It ensures that the group maintains a comprehensive risk management framework, which includes addressing climate-related risks and opportunities.</p> <p>The Board oversees the climate-related risk management process, regularly reviews corporate goals, incentives, targets, and key performance indicators (KPIs) related to climate change. This ensures alignment with our commitment to effectively manage climate risks and capitalize on opportunities for sustainable growth.</p>
<p><b>Board ESG Committee</b></p>	<p><b>Responsibilities</b></p> <p>The Board ESG Committee comprises the Group Executive Director and two independent Directors, convening biannually to provide strategic guidance on climate-related matters. It is responsible for developing climate-related policies and management systems, reporting directly to the full Board.</p> <p>This committee advises the Board on changes in regulatory requirements concerning climate and sustainability matters in both Indian and international contexts. It also provides oversight on the effectiveness of short-, medium-, and long-term targets related to climate and other ESG topics, recommending improvements as needed.</p> <p><b>Policies and Management Systems</b></p> <p>The committee reviews and suggests enhancements to established governance structures regarding carbon management and monitors the company's progress toward Net Zero and other ESG goals. It ensures the effective implementation of governance, advocacy, and public relations mechanisms concerning ESG and Climate Change issues.</p> <p>Moreover, the committee outlines initiatives to embed a sustainability and climate change culture throughout the organization, engaging employees at all levels. It reviews the information presented in the Sustainability report and Climate Action Report, evaluating emerging sustainability and climate risks and opportunities to guide management in mitigating potential threats to sustained growth.</p> <p><b>Key Focus Areas in FY 2024</b></p> <ul style="list-style-type: none"> <li>▪ Reviewed progress on the targets of a 20% reduction in GHG intensity by FY 2025 and a 25% reduction in absolute GHG emissions by FY 2030, based on the FY 2021 baseline. This included: <ul style="list-style-type: none"> <li>- Updates on projects aimed at achieving these targets</li> <li>- Budgetary allocations and approvals</li> <li>- Updates on commissioning of Renewable Energy projects approved by the Board in previous fiscal cycles.</li> </ul> </li> </ul>

## Management Responsibilities

<b>ESG Management Committee (ESG ManCom)</b>	<p><b>Responsibilities</b></p> <p>The committee is responsible for providing governance, strategic leadership, and execution support for Vedanta's sustainability strategy, including implementing our 2050 net zero roadmap, focusing on ensuring alignment and execution.</p> <p>Chaired by the Executive Director and a Non-executive Director, the committee's membership includes key stakeholders such as the Director of ESG, Carbon, and Social Performance, the Group Head of Health, Safety, Environment, and Sustainability (HSES), the Group Chief Human Resources Officer (CHRO), the Group Head of Communications, the CEOs of our Aluminium and Base Metals businesses, and the Head of Supply Chain Community of Practice (CoP).</p> <p>The committee meets fortnightly to discuss progress, address challenges, and provide guidance on initiatives related to sustainability, ensuring a concerted effort towards achieving our long-term sustainability goals.</p>
<b>Group Executive Committee (ExCo)</b>	<p><b>Responsibilities</b></p> <p>The committee coordinates the various geographical business scopes led by our business CEOs and functional leadership at the Executive Board level. It meets regularly to discuss key performance indicators (KPIs), including greenhouse gas (GHG) emissions, metals intensity, renewable energy integration in operations, new product launches, and research and development (R&amp;D) initiatives with the board.</p> <p>In collaboration with the ESG Management Committee (Man-Com), they provide guidance and advice to the Board's ESG committee. Their monthly meetings ensure ongoing progress tracking, and they report updates to the full Executive Board every month.</p>
<b>Energy and Carbon Community of Practice</b>	<p><b>Responsibilities</b></p> <p>The team holds overall operational responsibility for implementing Vedanta's carbon and climate strategy, focusing on initiatives related to energy efficiency. It is also responsible for developing, overseeing, and providing recommendations to the ESG ManCom (Management Committee) and Group Executive Committee (ExCo) regarding implementing Vedanta's carbon mitigation approach.</p> <p>It is chaired by the Director of ESG, Carbon, and Social Performance; the team's membership includes Business Unit Chief Operating Officers (COOs) or designated carbon champions. It meets monthly to discuss progress, share insights, and collaborate on strategies to address carbon emissions and climate-related challenges within Vedanta's operations.</p>
<b>Group Audit and Risk Committee</b>	<p><b>Responsibilities</b></p> <p>The Audit &amp; Risk Management Committee oversees the risk management framework by enhancing the organization's resilience against emerging threats. This committee plays a pivotal role in identifying, assessing, and addressing changes in risk exposure including climate change as a primary risk. To support risk governance, the committee reviews existing risk control measures and evaluates the opportunities and actions by providing strategic guidance and oversight. It receives support from the Internal Group Risk Executive Management Committee (GRMC), which complements its efforts by evaluating the design and operational effectiveness of risk mitigation programs and control systems.</p>



## Executive Officers

Executive Director	<b>Responsibilities</b> Responsible for implementing the ESG (Environmental, Social, and Governance) strategy, which encompasses people and culture, and identifying climate change risks and opportunities.
Business Units CEOs	BU CEO's are accountable for executing climate mitigation and resilience measures at the local business level.
BU COOs	The COO's role involves supervising climate-related matters, risks, and opportunities within their designated business units. They are responsible for understanding and executing group-level targets, policies, and standards within their businesses. Furthermore, they ensure the implementation of carbon reduction strategies by overseeing operational aspects such as energy management.



# Business Responsibility Model

The team is led by the Director of ESG, Carbon, and Social Performance, and regularly advises the ESG Committee and the Group Executive Committee on climate-related strategy, risks, and performance metrics.



We have a dedicated climate change team within the corporate ESG function. This team's primary responsibility is to guide the leadership team on our approach to addressing climate change. They collaborate closely with Vedanta's functional teams, external partners, and industry stakeholders to develop practical solutions to preserve and unlock long-term value for the company. The team is led by the Director of ESG, Carbon, and Social Performance, and regularly advises the ESG Committee and the Group Executive Committee on climate-related strategy, risks, and performance metrics.

Their responsibilities include:

- Driving the implementation of the carbon agenda throughout the organization.
- Collaborating with Business Unit teams to monitor the implementation of decarbonization initiatives.
- Tracking progress towards emission reduction targets and ensuring alignment with company objectives.
- Reporting progress to the respective management committees.
- Overseeing disclosures under the TCFD/IFRS S2, Carbon Disclosures Project (CDP), S&P Global Corporate Sustainability Assessment, Morgan Stanley Capital International (MSCI) ESG ratings, and Sustainalytics to ensure transparent reporting on climate-related matters.
- Developing specific plans to manage the carbon footprint, recommending adopting carbon reduction measures that align with investor expectations, and understanding emerging physical and transitional risks and opportunities associated with climate change.
- Collaborating with the risk team to identify key risk indicators and assess performance about Vedanta's tolerance for climate change-related risks.

## Stakeholder Engagement

Our commitment to governance extends to proactive engagement with shareholders on climate change issues. Recognizing the critical role of shareholder perspectives in shaping strategic decisions, the Board fosters open communication channels to seek and incorporate feedback on climate-related concerns.

## Comprehensive Communication Approach

We employ a diverse range of both formal and informal communication avenues to capture and address shareholder viewpoints effectively. Climate change-related discussions are increasingly prominent in all routine interactions with investors, underscoring our responsiveness to evolving environmental priorities. These engagements occur notably during the Group CEO's presentations on financial results and in dedicated sessions led by the Chair with investors.

## Integration of Shareholder Feedback

The Analysis of shareholder feedback, including insights gathered from various forums such as Annual General Meetings, enhances the Board's understanding of investor sentiments on climate change. We ensure that this feedback, alongside inputs from other investor engagements, is documented and presented to the Board. This comprehensive approach not only facilitates informed decision-making but also reinforces our commitment to transparency and responsiveness in addressing climate-related concerns.

# Advancing Global Climate Action: Our Commitment to Collaborative Policy Development

Through collaborative efforts, we align with industry perspectives and advocate for proactive measures to address environmental challenges.



We align, involve, and participate in the CII Climate Charter, the IBBI Advisory Group, the World Economic Forum's Alliance of CEOs, Federation of Indian Mineral Industry (FIMI) and Federation of Indian Chambers of Commerce & Industry (FICCI), and Climate Leaders India. We recognize that addressing climate change requires collective action, and industries play a key

role in shaping effective policies. At Vedanta, we engage with industry bodies and stakeholders to contribute to robust, long-term policies for a low-carbon economy.

These formal and informal engagements with various international industry associations extend our commitment to sustainability by fostering dialogue on critical sustainability issues, including climate change. Through collaborative efforts, we align with industry perspectives and advocate for proactive measures to address environmental challenges.



**Table 6.1 International Agreements and Initiatives**

Industry Associations	Thinktanks and Subject-Matter Expert Organizations	Academic Institutions	NGOs and Civil Society Organizations	
Aluminium Association of India	Quality Circle Forum of India	IIT Madras	Wockhardt Foundation	Charbhujia Filling Station
Federation of Indian Mineral Industries (FIMI)	National Safety Council	IIM Sambalpur	Action for Food Production	MECC
International Zinc Association	UN Global Compact	IIT- Bombay	Drishtee Foundation	Barmer Jan Sewa Samiti
Confederation of Indian Industry (CII)	UN Women's Empowerment Principles	ISB Hyderabad	Sarthak Jan Vikas Sansthan	IPE Global
FICCI	IUCN - Leaders for Nature	IISC Bengaluru	Learnet Skills limited	Paralympic Committee of India
ASSOCHAM	British Safety Council	BITS-Pilani	BAIF Development Research Foundation	GT Healthcare Trust
Indian Steel Association	Indian Green Building Council	IIM-Raipur	Sheghai Foundation	CHETNA Foundation
Federation of Indian Petroleum Industry	Mine Ventilation Society of South Africa (MVSSA)	National Forensic Sciences University	Swajal Pvt. Ltd.	Navrachna Mahila Vikas Trust
The Federation of Indian Chambers of Commerce and Industry	Recycling and Environment Industry Association of India		Waterlife	CEDRA
International Zinc Association			Fontus	BODH Siksha Samiti
Minerals Council South Africa			Rural Development Organisation (RDO)	HelpAge India
Mine Health & Safety Council (MHSC)			Vodalife	
Association of Mine Managers (AMMSA)			SEEDS	
Recycling and Environment Industry Association of India				



## Advocating For Comprehensive Policy Frameworks

We support the adoption of multi-policy frameworks that encompass measures to combat climate change effectively. This includes robust support for low-emission technologies and initiatives aimed at enhancing resilience against climate impacts. Furthermore, we endorse the integration of recommendations from the TCFD as we adopt IFRS S2 into policy frameworks, promoting transparency and informed decision-making in addressing climate risks.



## Remuneration Policies

The Executive Compensation system at Vedanta is established and benchmarked against relevant industry comparators. Our remuneration arrangements serve multiple objectives:

Facilitating the implementation of the company's strategy

Attractive and incentivizing skilled executives

Fostering long-term alignment between senior executives and the interests of our shareholders.

The annual performance bonus for management is determined by a balanced scorecard encompassing financial, operational, sustainability, and strategic metrics. Notably, the safety and sustainability scorecards within the Vedanta Sustainability Assurance Program (VSAP) are integral components of variable pay. This inclusion strengthens the connection between executive remuneration and ESG (Environmental, Social, and Governance) objectives.

## Alignment Of ESG Metrics with Executive Performance Scorecards and Workforce Incentives At Vedanta

At Vedanta, ESG measures are strategically integrated into the performance evaluation framework, ensuring a cohesive alignment with our sustainability objectives. This integration begins at the executive level, where ESG targets are embedded within the performance scorecards of the Executive Director and other senior leaders. By including these metrics throughout the organizational hierarchy, individual employees with direct responsibility for ESG outcomes are incentivized to actively contribute to the company's sustainability agenda.

Annual performance assessments at Vedanta incorporate ESG criteria as integral components, underscoring the company's commitment to responsible business practices.



## ESG Component in Bonus Structures

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For FY 2024, our bonus structure reflects a substantial emphasis on ESG considerations, including climate change mitigation efforts. The ESG component, constituting 15% of the bonus weighting for all employees, including executive leadership, underscores the company's dedication to rewarding contributions towards sustainability objectives. Within this allocation, 5% is allocated to safety performance, while 10% is tied to sustainability achievements, aligning with the Vedanta Sustainability Assurance Program (VSAP) score. A portion of the bonus payout is contingent upon the attainment of sustainability targets, including climate-related Key Performance Indicators (KPIs), thereby reinforcing the importance of environmental responsibility in bonus remuneration.

## Integration of Sustainability Parameters into Long-Term Incentive Plan (LTIP)

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Sustainability considerations, including climate change metrics, are integrated into Vedanta's Long-Term Incentive Plan (LTIP) schemes, reflecting the company's long-term commitment to environmental sustainability. Employee stock options are linked to sustained business performance and individual contributions against predefined sustainability criteria. These Employee Stock Option Schemes (ESOSs) mature after a performance period of three years, upon the achievement of key sustainability goals, such as a 20% reduction in greenhouse gas (GHG) emissions intensity. By aligning long-term incentives with sustainability targets, Vedanta encourages enduring commitment to environmental stewardship among our workforces.

## Revolutionizing Company Car Policy with Electric Vehicle Incentives

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Road-based transportation is a significant contributor to global warming, accounting for approximately 12% of global GHG emissions. At Vedanta, we recognize the urgency of addressing this challenge and are steadfast in our commitment to mitigate these emissions. As part of our proactive approach, we target to achieve complete decarbonization of our light motor vehicle fleet by 2030. This goal underscores our determination to significantly reduce our carbon footprint and contribute to global efforts in combating climate change.

To accelerate progress towards our emission reduction objectives, we have implemented a radical transformation of our Company Car Policy. This includes the introduction of an Electric Vehicle ("EV") Kicker designed to incentivize employees to opt for EVs. In line with our commitment to sustainability and employee welfare, we have also launched a new EV Incentive policy specifically tailored to promote the purchase of electric two-wheelers. This initiative extends benefits to all employees across the organization, empowering them to embrace eco-friendly transportation options while reaping financial rewards. By offering compelling incentives, we aim to encourage widespread adoption of EVs among our workforce, thereby driving tangible reductions in emissions.



# Annexure 1: TCFD Alignment

Topic	Disclosure	Chapters
Governance	Describe the board of directors' oversight of climate-related risks and opportunities.	Chapter 6, pg: 53-62
	Describe management's role in assessing and managing risks and opportunities.	Chapter 6, pg: 53-62
Strategy	Describe the climate-related risks and opportunities the organization has identified over the short, medium, and long term.	Chapter 5, pg: 31-52
	Describe the impact of climate-related risks and opportunities on the organization's businesses, strategy, and financial planning.	Chapter 5, pg: 31-52
	Describe the resilience of the organization's strategy, taking into consideration different climate-related scenarios, including a 2°C or lower scenario.	Chapter 5, pg: 31-52
Risk management	Describe the organization's processes for identifying and assessing climate-related risks.	Chapter 5, pg: 31-52
	Describe the organization's processes for managing climate-related risks.	Chapter 5, pg: 31-52
	Describe how processes for identifying, assessing, and managing climate-related risks are integrated into the organization's overall risk management.	Chapter 5, pg: 31-52
Metrics and targets	Disclose the metrics used by the organization to assess climate-related risks and opportunities in line with its strategy and risk management process.	Chapter 3, pg: 19-23
	Disclose Scope 1, Scope 2, and, if appropriate, Scope 3 greenhouse gas (GHG) emissions and the related risks.	Chapter 4, pg: 24-30 Chapter 3, pg: 19-23
	Describe the targets used by the organization to manage climate-related risks and opportunities and performance against targets.	Chapter 4, pg: 24-30 Chapter 3, pg: 19-23

# Annexure 2: Assurance Statement



## INDEPENDENT AUDITOR'S LIMITED ASSURANCE REPORT ON THE IDENTIFIED SUSTAINABILITY INFORMATION IN VEDANTA LIMITED'S CLIMATE ACTION REPORT

To the Board of Directors of Vedanta Limited

We have undertaken to perform a limited assurance engagement for Vedanta Limited (the 'Company'), its Legal Entities and their Sites (the 'Group'), the details of which are as described in the "Scope, Boundary and Limitations" paragraph given below, vide agreement dated 09 January 2024 in respect of the agreed Sustainability Information listed below in accordance with the "Criteria" stated below. This Sustainability Information is as included in the Climate Action Report of the Group for the year ended 31 March 2024. This engagement was conducted by a multidisciplinary team, including professionals with suitable skills and experience in auditing environmental, social, and economic information (Chartered Accountants, Engineers and Environment Professionals).

### Identified Sustainability Information

The Identified Sustainability Information for the year ended 31 March 2024 is summarized below:

The Identified Sustainability Information of the Group is the Quantitative Information as mentioned in the Climate Action Report of the Group for the year ended 31 March 2024.

Our limited assurance engagement was with respect to the year ended 31 March 2024, unless otherwise stated and we have not performed any procedures with respect to earlier periods and, therefore, do not express any limited assurance conclusion thereon.

### Criteria

In preparing the Climate Action Report for the Financial Year 2023-2024, the Group applied the Task Force on Climate Related Financial Disclosures ("TCFD") Recommendations by the Financial Stability Board ("FSB") and incorporates elements from the International Financial Reporting Standards ("IFRS") S2- Climate Related Disclosures (the "Criteria"). Since the disclosures given in the Climate Action Report are based on the guidance as mentioned above, as a result, the subject matter information may not be suitable for another purpose.



## **Management's Responsibilities**

The Group's management is responsible for establishing the "Criteria" for preparing the Climate Action Report, in accordance with TCFD recommendations and elements from IFRS S2, identification of key aspects, engagement with stakeholders, content, preparation and presentation of the Climate Action Report in accordance with the "Criteria". This responsibility includes design, implementation and maintenance of internal controls, relevant to the preparation and measurement of the Climate Action Report, which is free from material misstatement, whether due to fraud or error.

## **Inherent limitations**

The absence of a significant body of established practice on which to draw to evaluate and measure non-financial information allows for different, but acceptable, measures and measurement techniques and can affect comparability between entities.

## **Our Independence and Quality Control**

We have complied with the independence and other ethical requirements of the International Code of Ethics for Professional Accountants (including International Independence Standards) issued by the International Ethics Standards Board for Accountants ('IESBA Code'), which is founded on fundamental principles of integrity, objectivity, professional competence, due care, confidentiality, and professional behavior.

Our firm applies International Standard on Quality Management ('ISQM') 1, "Quality Management for Firms that Perform Audits or Reviews of Financial Statements, or Other Assurance or Related Services Engagements" and accordingly maintains a comprehensive system of quality management, including documented policies and procedures regarding compliance with ethical requirements, professional standards, and applicable legal and regulatory requirements.

## **Our Responsibility**

Our responsibility is to express a limited assurance conclusion on the Identified Sustainability Information with respect to the Entities/ Sites covered in the "Scope, Boundary, and Limitations" paragraph given below, based on the procedures we have performed and the evidence we have obtained.

We conducted our engagement in accordance with the International Standard on Assurance Engagements ('ISAE') 3000 (Revised), "Assurance Engagements other than Audits or Reviews of Historical Financial Information", issued by the International Auditing and Assurance Standards Board. This standard requires that we plan and perform our engagement to obtain limited assurance about whether the Identified Sustainability Information is free from material misstatement.

A limited assurance engagement involves assessing the suitability in the circumstances of the Group's use of the "Criteria" as the basis for the preparation of the Identified Sustainability Information whether due to fraud or error, responding to the assessed risks as necessary in the

circumstances, and evaluating the overall presentation of the Identified Sustainability Information.

A limited assurance engagement is substantially less in scope than a reasonable assurance engagement in relation to both the risk assessment procedures, including an understanding of internal controls, and the procedures performed in response to the assessed risks.

## **Scope, Boundary and Limitations**

### ***Scope and Boundary***

- The scope of our limited assurance covers the Group's Identified Sustainability Information for the period 1 April 2023 to 31 March 2024.
- Out of the boundary used for the preparation of the audited Consolidated Financial Statements of the Group for the Financial Year 2023-24, the boundary used for the purpose of preparation of the Group's Climate Action Report includes the data and the information of the Group, as mentioned in the Appendix I to this report. The following categories of Entities/Sites are not considered for the purpose of preparation of the Climate Action Report:
  - Newly incorporated Entities or Entities/Sites operational for less than 12 months;
  - Non-operational/ intermittent operational Entities/Sites; and
  - Entities/Sites discontinued or outsourced.
- The data review and validation of these Entities/ Sites was performed through physical site visits and/or together with desktop reviews.
- The Categories of the Scope 3 emissions considered by the Group and verified by us are given in Appendix II to this Report, marking completely covered, partially covered, not calculated and not applicable. Further, the specific materiality considered for some of the categories of Scope 3 emissions is also mentioned in the Appendix II to this report.

### ***Limitations***

Our limited assurance scope excludes the following and therefore we do not express a limited assurance conclusion on the same:

- Operations of the Group other than those covered in the "Scope and Boundary".
- The data/ information other than the Identified Sustainability Information.
- Data and information outside the defined reporting period i.e., Financial Year 2023-24.

- The statements that describe expressions of opinion, belief, aspiration, expectation, aim, or future intentions provided by the Group.
- Data related to Group's economic and financial performance, strategy and other related linkages expressed in the Group's Integrated Report and Annual Accounts for the Financial Year 2023-24 or any other Report, containing Identified Sustainability Information.
- Effectiveness of management's internal controls of the Group, while we considered the same when determining the nature and extent of our procedures; however, our limited assurance engagement was not designed to provide assurance on these internal controls.
- The Group's compliance with Acts, Regulations and Guidelines with respect to various Regulatory authorities and other legal matters.
- The accuracy or validity of the underlying data and assumptions with respect to the Scenario Analysis (Chapter 5: Strategy and Risk Management), conducted by an external agency for the Financial Year 2021-2022, vide report dated June 2022. Our verification of the data and assumptions mentioned in the Identified Sustainability Information for Financial Year 2023-2024 is restricted to extracting the final results from the said Report. We did not re-perform an assessment of the physical and transition risk modelling used in the preparation and application of the scenario analysis.
- Verification of Scope 3 emissions for one of the business units of the Group's Aluminum and Power Sector, viz. Jharsuguda, as that was conducted by third party.

### **Assurance Procedures**

The procedures we performed were based on our professional judgment and included inquiries, observation of processes performed, inspection of documents, evaluating the appropriateness of quantification methods and reporting policies, analytical procedures and agreeing or reconciling with underlying records.

Given the circumstances of the engagement, in performing the procedures listed above, we:

- Obtained an understanding of the Group's business activities, processes and its operating locations, as identified by the Group.
- Interviewed people involved to understand the reporting process, governance, design and implementation of the data management systems and internal controls in place during the reporting period to capture, collate, calculate and report the data and assumption in the Identified Sustainability Information.
- Performed limited substantive testing on a sample basis of disclosures and presentations in the Identified Sustainability Information for the Entities/ Sites, as covered in the "Scope, Boundary and Limitations" to verify whether the data was appropriately recorded, collated, measured and reported with underlying supporting documents.
- Checked the consistency of the data/information within the Identified Sustainability Information.
- Checked the consolidation methodology for the Entities/ Sites as covered in the "Scope, Boundary and Limitations" for ensuring the completeness of data being reported.
- Tested the mathematical accuracy of the data provided on test-check basis.
- Assessed the level of adherence of the "Criteria", as mentioned above by the Group while reporting.

- Assessed the appropriateness of various assumptions, estimations and thresholds used by the Group in the preparation of the Identified Sustainability Information.
- Undertook analytical review procedures to support the reasonableness of the data used in the Identified Sustainability Information.
- Apart from the audited Business Responsibility and Sustainability Report (BRSR), as mentioned below, we traced the relevant data and assumptions from the following published Reports and the Group's internal documents:
  - Annual Accounts for the Financial Year 2023-24 of Vedanta Limited (Independent Auditors' Report, issued by another auditor, vide Audit Report dated 25 April 2024).
  - BRSR for the Financial Year 2023-24 (Reasonable and Limited Assurance Letter issued by us, vide Assurance Letter dated 17 June 2024 on BRSR Core and other than BRSR Core indicators respectively).
  - The TCFD Report for the Financial Year 2022-23 (Limited Assurance letter issued by another auditor, vide Assurance Letter dated 31 August 2023).
  - Management Presentations.
  - Internal Email confirmations from various stakeholders.
- Enquired to corroborate with the relevant management personnel to understand the progress against the Climate Action Plan commitments.
- Obtained written representations from the Group's Management.

The procedures performed in a limited assurance engagement vary in nature and timing from, and are less in extent than for, a reasonable assurance engagement. Consequently, the level of assurance obtained in a limited assurance engagement is substantially lower than the assurance that would have been obtained had we performed a reasonable assurance engagement. Accordingly, we do not express a reasonable assurance opinion about whether the Identified Sustainability Information has been prepared, in all material respects, in accordance with the "Criteria".

### **Limited Assurance Conclusion**

Based on the procedures we have performed and the evidence we have obtained, nothing has come to our attention that causes us to believe that the Group's Identified Sustainability Information for the year ended 31 March 2024 is not prepared, in all material respects, in accordance with the "Criteria".

### **Emphasis of Matter**

We draw your attention to the following matters:

- The "Scope, Boundary and Limitations" in this report. The Entities/ Sites considered for the purpose of reporting in the Climate Action Report are as per the management's assessment of materiality.

- The financial numbers used in some of the disclosures in the Identified Sustainability Information are extracted from the Integrated Report and Annual Accounts for the Financial Year 2023-24 and hence are not audited by us. While the financial numbers related to certain entities include inter-company consolidation adjustments as per the applicable financial reporting framework (net figures), the non-financial data used in some of the disclosures in the Identified Sustainability Information related to these entities are given without adjustments (gross figures). Further, some of the Entities/ Sites are considered for the purpose of said financial numbers, which may have been excluded from the "Scope, Boundary and Limitations".
- Some of the entities are considered for the purpose of preparation of the Identified Sustainability Information on full consolidation method, without adjusting for minority interest in the relevant group entity, based on operational control, as assessed by the management.
- The Non-Financial Reporting System used by the Group in the preparation of the Identified Sustainability Information is in the advanced stage of implementation and is in the process of being integrated with other Financial and Non-Financial Reporting Systems of the Group.

Our limited assurance conclusion is not modified in respect of these matters.

#### **Other matter**

The Identified Sustainability Information as contained in the TCFD Report for the year ended 31 March 2023 was assured by the previous assurance practitioner who had expressed an unmodified opinion on 31 August 2023.

Our opinion is not modified in respect of this matter.

#### **Restriction on use**

Our Limited Assurance Report has been prepared and addressed to the Board of Directors of the Company at the request of the Company solely, to assist the Group in reporting on Group's sustainability performance and activities. Accordingly, we accept no liability to anyone, other than the Group. Our Limited Assurance report should not be used for any other purpose or by any person other than the addressees of our report. We neither accept nor assume any duty of care or liability for any other purpose or to any other party to whom our report is shown or into whose hands it may come without our prior consent in writing.

#### **For Mazars Advisory LLP**

Firm Registration No.: AAI-2887

**Sarika Gosain**

Partner

**Gurugram**

**6<sup>th</sup> September 2024**



Appendix I to the Independent Auditor's Limited Assurance Report on the Identified Sustainability Information in Vedanta Limited's Climate Action Report

Entities and Sites Included	Status
<b>Vedanta Limited</b>	<b>The Company</b>
<i>Iron Ore Odisha</i>	<i>Site</i>
<i>Value Added Business</i>	<i>Site</i>
<i>Karnataka Iron Ore Mines (IOK)</i>	<i>Site</i>
<i>Iron Ore Goa (IOG)</i>	<i>Site</i>
<i>Sesa Coke Vazare (SMCV)</i>	<i>Site</i>
<i>Sterlite Copper – Silvassa</i>	<i>Site</i>
<i>Sterlite copper- Tuticorin</i>	<i>Site</i>
<i>Vedanta Aluminium limited - Jharsuguda</i>	<i>Site</i>
<i>Vedanta Aluminium limited -Lanjigarh</i>	<i>Site</i>
<i>Cairn oil &amp; gas -RJ-North (Mangla, Bhagyam, Aishwarya)</i>	<i>Site</i>
<i>Cairn oil &amp; gas -RJ South</i>	<i>Site</i>
<i>Cairn oil &amp; gas -RJ-North (Midstream)</i>	
<i>Cairn oil &amp; gas- Ravva</i>	<i>Site</i>
<i>Cairn oil &amp; gas- Suvali</i>	<i>Site</i>
<i>Cairn oil &amp; gas- Jaya, Cambay</i>	<i>Site</i>
<i>Cairn oil &amp; gas- Assam operations</i>	<i>Site</i>
<b>Hindustan Zinc Limited (HZL)</b>	<b>Subsidiary of the Company</b>
<i>Rampura Agucha Mine (RAM)</i>	<i>Site</i>
<i>Zawar Mines (ZM)</i>	<i>Site</i>
<i>Rajpura Dariba Mine (RDM)</i>	<i>Site</i>
<i>Sindesar Khurd Mine (SKM)</i>	<i>Site</i>

Entities and Sites Included	Status
<i>Dariba Smelter Complex (DSC)</i>	<i>Site</i>
<i>Chandaria Lead- Zinc Smelters (CLZS)</i>	<i>Site</i>
<i>Kayad Mines (KM)</i>	<i>Site</i>
<i>Debari Zinc Smelters (DZS)</i>	<i>Site</i>
<i>Pantnagar Metal Plant (PMP)</i>	<i>Site</i>
<b>Cairn Energy Hydrocarbons Ltd</b>	<b>Subsidiary of the Company</b>
<b>ESL Steels Limited</b>	<b>Subsidiary of the Company</b>
<i>ESL Plant, Bokaro</i>	<i>Site</i>
<b>Ferro Alloy Corporation Limited (FACOR)</b>	<b>Subsidiary of the Company</b>
<i>FACOR CCP &amp; Power plant, Bhadrak</i>	<i>Site</i>
<i>Ostapal mines</i>	<i>Site</i>
<i>Kalaringita mines</i>	<i>Site</i>
<b>Bharat Aluminium Company Limited (BALCO)</b>	<b>Subsidiary of the Company</b>
<i>Smelters and Power plants, Korba</i>	<i>Site</i>
<i>Chotia Mines</i>	<i>Site</i>
<b>MALCO Energy Limited (MEL)</b>	<b>Subsidiary of the Company</b>
<i>Nicomat, Goa</i>	<i>Site</i>
<i>Sesa Coke, Gujarat</i>	<i>Site</i>

Entities and Sites Included	Status
<b>Vizag General Cargo Berth Private Limited</b>	<b>Subsidiary of the Company</b>
<i>VGCB Port Facility</i>	<i>Site</i>
<b>Talwandi Sabo Power Limited</b>	<b>Subsidiary of the Company</b>
<i>Power plant-Mansa</i>	<i>Site</i>
<b>Black Mountain Mining (Pty) Limited</b>	<b>Subsidiary of the Company</b>
<i>Vedanta Zinc International - Gamsberg</i>	<i>Site</i>
<i>Vedanta Zinc International- Black Mountain Mines</i>	<i>Site</i>
<b>Fujairah Gold FZE</b>	<b>Subsidiary of the Company</b>
<i>Fujairah Gold, UAE</i>	<i>Site</i>

## Appendix II to the Independent Auditor's Limited Assurance Report on the Identified Sustainability Information in Vedanta Limited's Climate Action Report

Category No.	Category Name	Description	Coverage	Vedanta Subsidiaries Scope 3 Emissions Boundaries											
				BALCO	Jairam Oil & Gas	ESL	Fujairah	HZL	Interlite Copper	VAB	Lanjigarh	TSPL	VZI	Jharsuguda (Assured by third party and not assured by us)	Total
Category 1	Purchased goods and services	Emissions from the production of goods and services that the company purchases. <i>Note: For the purpose of Category 1 emissions, the calculations include at a minimum 58% of purchased goods by the Group. This category does not include services received.</i>	Partially Covered	12,66,691	1,55,714	1,40,200	2,70,077	4,32,386	5,78,216	17,457	1,25,729	7,826	35,575	39,97,045.16	70,26,916.16
Category 2	Capital goods	Emissions from the production of capital goods purchased or acquired by the company. Capital goods are long-lasting items such as buildings, machinery, and vehicles.	Not Calculated	Not Calculated	Not Calculated	Not Calculated	Not Calculated	Not Calculated	Not Calculated	Not Calculated	Not Calculated	Not Calculated	Not Calculated	Not Calculated	Not Calculated
Category 3	Fuel and energy related activities	Emissions from the production of fuels and energy purchased and consumed by the company that are not included in Scope 1 or Scope 2 emissions. This includes life cycle emission of fuel minus combustion emissions	Completely covered	3,64,093	1,80,241	71,320	2,735	8,44,295	48,038	58,028	4,78,769	29,97,470	61,262	9,48,443.79	60,54,694.79
Category 4	Upstream transportation and distribution	Emissions from the transportation and distribution of products purchased by the company, including inbound logistics, warehousing, and distribution between a company's own facilities. <i>Note: For the purpose of Category 4 emissions, the calculations are based on the items accounted for in Category 1, as mentioned above</i>	Partially Covered	21,622	Not Applicable	14,906	5,956	14,196	19,307	34,842	2,03,676	Not Calculated	578	79,371.13	3,94,454.13
Category 5	Waste generated in operations	Emissions from the disposal and treatment of waste generated in the company's operations.	Completely covered	1,00,190	10,732	1,840	Not Calculated	9,631	67	12,015	2,724	25,826	Not Calculated	22,385.19	1,85,410.19
Category 6	Business Travels	Emissions from the transportation of employees for business-related activities in vehicles not owned or operated by the company.	Completely covered	326	Not Applicable	Not Calculated	25	205	470	73	79	2	484	340.57	2,004.57
Category 7	Employee commuting	Emissions from the transportation of employees between their homes and their worksites.	Completely covered	7,877	Not Applicable	1,587	42	1,237	213	196	349	69	Not Calculated	461.60	12,031.60
Category 8	Upstream leased assets	Emissions from the operation of assets that are leased by the company and not included in Scope 1 and Scope 2.	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable
Category 9	Downstream transportation and distribution	Emissions from the transportation and distribution of products sold by the company, including warehousing and logistics.	Completely covered	4,578	Not Applicable	20,590	5,124	25,079	2,114	59,393	5,138	Not Applicable	89,377	1,88,134.29	3,99,527.29
Category 10	Processing of sold products	Emissions from the processing of intermediate products sold by the company by downstream companies.	Completely covered	Not Calculated	13,18,433	Not Calculated	Not Calculated	2,36,071	38,047	1,18,630	Not Calculated	Not Applicable	6,92,357	Not Applicable	24,03,538.00
Category 11	Use of sold products	Emissions from the use of goods and services sold by the company.	Completely covered	Not Applicable	1,83,56,230	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Calculated	Not Applicable	Not Applicable	1,83,56,230.00
Category 12	End-of-life treatment of sold products	Emissions from the waste disposal and treatment of products sold by the company at the end of their life.	Not Calculated/ Not Applicable	Not Calculated	Not Applicable	Not Calculated	Not Calculated	16,830	2,011	17,714	Not Calculated	Not Applicable	Not Calculated	Not Applicable	36,555.00
				17,65,377.00	2,00,21,350.00	2,50,443.00	2,83,959.00	15,79,930.00	6,88,483.00	3,18,348.00	8,16,464.00	30,31,193.00	8,79,633.00	52,36,181.73	3,48,71,361.73







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