

Ambipar Shades of Green assessment

September 18, 2024



Sector: Waste Management



Region: Brazil / Global

This report was produced by Shades of Green using Shades of Green Methodology.

On December 1, 2022, S&P Global acquired Shades of Green from CICERO.

Executive Summary

Ambipar, headquartered in São Paulo, Brazil, is a provider of waste management, emergency response and other environmental services to more than 15,000 clients across 40 countries.

Shading of Ambipar 2023 revenue, operating expenses, and capital expenditures

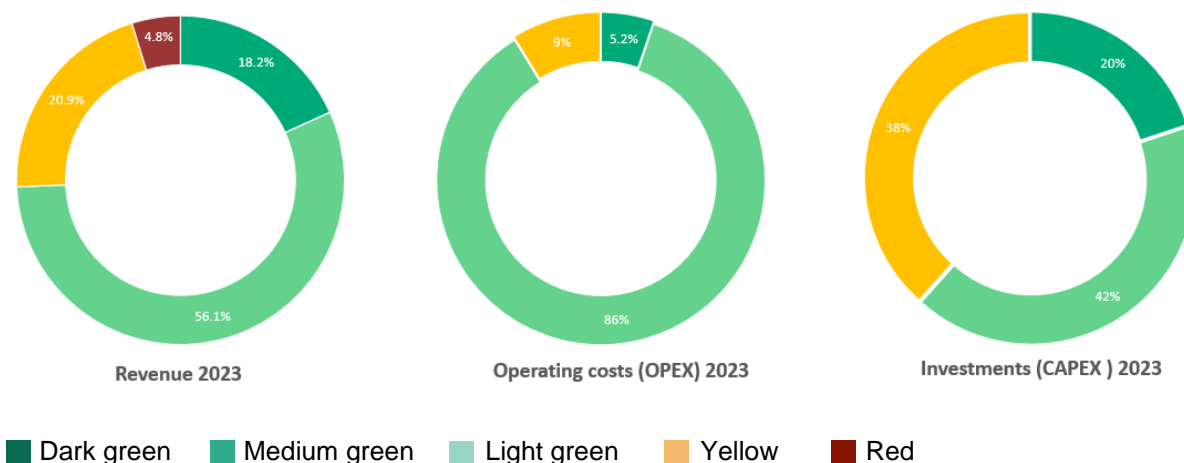


Figure 1: Shading of Ambipar 2023 revenue, operating costs and capital expenditures

The majority of Ambipar’s revenues and investments contribute to the low-carbon economy. We have assigned a Shade of Green to 74% of revenue, 91% of OPEX and 62% of CAPEX. Medium Green is assigned to Ambipar’s nature-based (decarbonization) and circular economy solutions. Light Green is assigned to revenue and operational and capital expenditures related to oil spill mitigation and emergency response to governmental customers, such as ports and coast guards but excluding oil and gas companies. Light green is also assigned to Ambipar’s waste-to-energy services, waste recycling and management, wastewater treatment and hazardous waste management as well as its sustainability and physical climate risk consulting, industrial plant decommissioning, emergency response training activities, biodiversity rehabilitation and monitoring services and membership fees from its emergency response business.

Ambipar has a significant share of revenue and investments that do not contribute to the low-carbon economy. While these activities may reduce waste pollution risks (i.e. drilling waste management) or have environmental benefits (i.e. biodiversity rehabilitation for oil & gas customers), they are also associated with climate and environmental risks. Revenue, operational and capital expenditures related to waste transportation with no determined end

B3 Ações Verdes¹

We assess that Ambipar meets the requirements for B3 Ações Verdes.



¹S&P Global Shades of Green AS is an approved reviewer to assess alignment with the BAV.

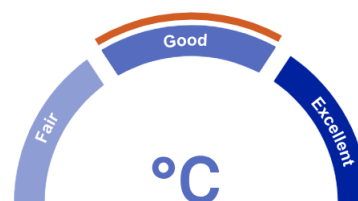
treatment, waste destined to landfill and incineration, as well as emergency, environmental, marine service and other response activities for sectors other than oil and gas clients are shaded Yellow due to the mix of environmental risk and benefits across the value chain of the activities served. We have also assigned a shade of Yellow to biodiversity rehabilitation and monitoring activities done by Ambipar but funded by the oil and gas sector and circular economy solutions for ongoing oil and gas operations where the waste is clearly treated to a higher standard than required by the national environmental authorities. In 2023, the share of Yellow revenues totalled 20.9% while the share of Yellow OPEX totalled 9%. Yellow CAPEX remained at 38%.

Ambipar has a minor share of revenue that is viewed as standard business practice for the oil and gas sector and is associated with high climate risk. Revenue originating from oil spills clean-up services, and Ambipar Response services associated with the oil & gas industry, including maritime, consulting, and industrial services not including drilling waste and other waste management are shaded Red. Uncleaned spills can threaten biodiversity and pollute soil and groundwater, therefore clean up services are vital to mitigate negative risks. However, such activities are currently closely linked to the oil and gas sector. For oil and gas companies, having access to the services that Ambipar provides should be seen as an ongoing licence to operate rather than improving the environmental impacts of the sector. The share of Red revenues in 2023 totalled 4.8%.

Governance Assessment

Ambipar’s governance structures support good oversight of environmental, social and climate topics. The company has created formal mechanisms for sustainability accountability across the organization. Ambipar’s sustainability strategy is guided by its double materiality assessment, informing key action plans, the creation of specialized working groups, internal programs, as well as public targets and commitments, which include GHG emissions reduction targets. The management of sustainability-related topics is integrated in a broad set of formalized procedures, such as the Sustainability and the Risk Management policies.

In our view, Ambipar’s sustainability reporting practices are ahead of standard practices in Brazil. For example, the company releases quarterly sustainability indicators, and its latest annual reporting (2023) already incorporates IFRS S1 and S2, which will become a regulatory requirement in Brazil in 2026. That said, the company has yet to amplify the scope of its physical climate risk scenario analysis and strengthen value chain engagement. Overall, we rate the governance structure of Ambipar to be **Good**.



EU Taxonomy

The EU Taxonomy specifies several waste management remediation, forestry, manufacturing, energy, professional and other that are relevant for Ambipar’s operations. The share of eligible activities is 90% of revenue, 68% of CAPEX and 93% of OPEX. Ineligible revenue activities are waste destined to landfills, sustainability consulting and other response activities. Ineligible CAPEX and OPEX are fossil fuelled vehicles and machinery acquisition.

Table 1: Sector specific metrics

	Number of spill response operations participated in (number)	Volume of oil recovered as part of a spill response operation (m ³)	Solid waste managed (m ³)	Scope 1 & 2 Emissions (tonnes CO ₂ e)	Scope 3 Emissions (tonnes CO ₂ e)
2023	1,024	1,343.38	3,838,194	229,386	70,077
2022	906	1,072.54	2,426,130	253,896	48,253
2021	735	863.30	1,854,307	141,190	35,300

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Ambipar sustainability governance

Company description

Ambipar Group (“Ambipar” or “the Group”) is a provider of waste management, emergency response and other environmental services to more than 15,000 clients across 40 countries. It is headquartered in Brazil, where 57% of its gross revenues were generated in 2023. It has a diversified customer base across many sectors with no specific concentration. The group’s operations are aggregated into two businesses: Ambipar Environment (48% of revenue) and Ambipar Response (52% of revenue).

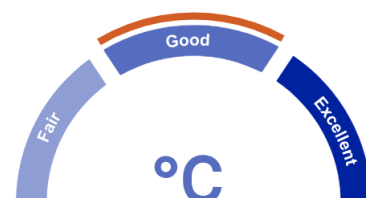
Ambipar Environment provides solutions related to industrial waste management and recovery/recycling; circular economy in both post-consumption and post-industrial stages; decarbonization consulting and origination and commercialization of carbon credits for the voluntary market; transportation, storage, handling, and disposal of hazardous materials (“Hazmat”); and ESG consulting and reporting services.

Ambipar Response is focused on providing services related to crisis management and response to chemical and environmental, and biological emergencies in road, rail, oil and gas, industrial, maritime, automotive, forestry among other sectors. Around 16% of the Ambipar Response revenues are derived from the oil and gas sector (8% when considering all the group’s operations). It also offers industrial cleaning, repair, and maintenance, as well as consulting services, environmental impact assessment analyses, recovery, and remediation of contaminated areas for several sectors. Moreover, it has a portfolio of training for emergency care, prevention of occupational risks and work safety.

Governance Assessment

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In our view, Ambipar’s sustainability reporting practices are ahead of standard practices in Brazil. For example, the company releases quarterly sustainability indicators, and its latest annual reporting (2023) already incorporates IFRS S1 and S2, which will become a regulatory requirement in Brazil in 2026. That said, the company has yet to amplify the scope of its physical climate risk scenario analysis and strengthen value chain engagement.



The overall assessment of Ambipar’s governance structure and processes gives it a rating of **Good**.

Key strategies, policies, and targets

Ambipar Group has broad set of overarching policies, and the Response and Environment divisions have business-specific policies. The Sustainability Policy sets clear responsibilities for the Board of Directors, the Sustainability Committee, and the Leadership of Business Units in the definition of sustainability-related strategic priorities, as well as the implementation of Ambipar's sustainability strategy and monitoring of the achieved outcomes. Moreover, it states guidelines for corporate governance, people management (including trainings), corporate social responsibility, and environmental practices.

The definition of strategic priorities is also guided by Ambipar's double materiality assessment. The group identified eight material topics based on sectoral studies, as well as on a comprehensive consultation of internal and external stakeholders. Environmental aspects are prominent, with those related to preservation and regeneration of the environment, clean and green technologies, circular economy, and climate change classified as most material.

Ambipar's environmental strategy is supported by a series of public commitments. Ambipar targets a 50% reduction in GHG emissions by 2030 (baseline: 2022). In the medium-term, the Group commits to having 100% of its road fleet powered by biomethane and biofuels by 2040. Finally, in the long-term, the target is to achieve Net Zero emissions by 2050. The company is in the process of validating such targets with the Science-Based Targets Initiative, which is expected to occur by May 2025.

Moreover, the Group has made a commitment to reducing freshwater use of its response and waste management services by 25%, as well as to implementing a circular business model by 2030 by recovering, to the extent possible, all waste generated by Ambipar's own activities. In addition, Ambipar commits to ensuring that its operations and value chain do not contribute to Amazon's deforestation by 2030. The company can trace and guarantee this for part of the products and services it uses, but it is not entirely clear how it aims to achieve this commitment. The company also aims to contribute with a transition to a low carbon and nature positive economy through its industrial, wastewater treatment and decarbonization services.

Governance structure

Ambipar Group has established a governance structure that incorporates sustainability across different levels of the organization. The Sustainability Executive Team reports to the Group's CEO and is responsible for communicating environmental-, social-, and climate-related information from operations up to the top management teams. The Sustainability Executive Team oversees 13 internal working group focused on ESG. They meet monthly to create and monitor action plans addressing key sustainability issues, such as climate, circular economy, and community impact. According to Ambipar, its more connected the market and are responsible of representing the company in sectoral discussions and external opportunities. For example, through its emergency response division, the company has engaged with public authorities to calibrate physical risk stress scenarios for climate events and develop emergency response plans.

The evolution of sustainability performance is reported at least twice a year to the Sustainability Committee, which then advise the Board on how to consider sustainability management on business decision-making. Sustainability discussions are escalated to the Board of Directors according to materiality and relevance by the CEO. Currently, although sustainability-linked compensation is not available to all employees, the Chief Sustainability Officer has a short-term incentive plan linked to ESG goals. Short-term incentives are also in place for executives from the Response division but linked to Health and Safety and Governance targets.

Supply chain

Ambipar has formalized procedures that allows for the inclusion of sustainability criteria to its sourcing processes, which includes an initial compliance risk assessment as well as risk management procedures related to social and

environmental aspects of its supply chain. However, there is no evidence of quantitative environmental criteria for suppliers and stricter requirements to outsourced workforce suppliers. The Group states that the implementation of sustainable practices by suppliers may be used as criteria for its qualification and assessment, but that formalizing environmental criteria is still in a nascent phase. For critical suppliers, defined as those for which interruption of services could impact Ambipar's operations, a points-based assessment is in place, with social and environmental criteria representing 20% of the scoring. Moreover, these are monitored through a specific risk management process that verifies regulatory documents that are reassessed by the Quality, Health Safety and Environment (QHSE) team every three years.

The Supplier Relationship Policy requires suppliers to comply with regulation and to observe Ambipar's policies, as well as its Code of Conduct. Ambipar requires suppliers to share these commitments to any sub-contractor. Suppliers also commit, through this policy, to not engage in child and forced labour, discrimination, and harassment practices and to respect human rights. Risks stemming from Ambipar's supply chain are also monitored regularly as part of the company's Risk Management System. Ambipar has promoted active efforts to train suppliers on its Code of Conduct, while also incentivizing them to participate in sustainability-related external trainings. The Group plans to maintain trainings offers to suppliers on ethical standards, policies, and sustainability, initially targeting critical suppliers.

Environmental risk management

Sustainability-related risks are monitored and managed by Ambipar in accordance with its Risk Management Policy. The policy sets the company's risk map and the procedures for risk identification, classification, prioritization, treatment, and monitoring. Climate-related risks are assessed based on current and emerging regulation, as well as on technological, legal, market, reputational and physical factors. Carbon pricing mechanisms and flooding, for example, are already identified as material risks, with estimated potential financial impact. Local management and operational units are trained to support the development of emergency response plans. Furthermore, Ambipar provides consulting services for customers aiming to adopt internal carbon pricing.

Ambipar Response has adopted two physical climate risk scenarios (RCP 4.5 and RCP 8.5) as references to identify extreme events that could generate environmental emergencies for clients. In addition, scenario analysis is used for Ambipar's owned Brazilian assets to guide the implementation of structures to prevent floods. Ambipar has yet to deepen its analyses of other physical climate risks and plans on incorporating scenario analysis to inform its adaptation plans for all its operations in the next two years.

Ambipar's Integrated Management System is a tool to map and monitor potential environmental impacts and improvement areas. Currently, some units are ISO 14001 certified, although coverage data is still under review due to recent acquisitions. The company also holds several certifications connected to sustainability practices, such as Together for Sustainability and SASSMAQ, a national certification that independently assesses environmental, health, safety and quality management systems of companies that provide services to the chemical industry.

Social risk awareness

Due to the profile of emergency response activities carried out by Ambipar, workers and outsourced staff are regularly exposed to occupational health and safety (H&S) risks. Demonstrating awareness of such risks, the company places the topic as one of the most material social issues, being managed by a dedicated director and overseen by the QHSE Board. 100% of employees and outsourced staff are covered by the Occupational Safety and Health (OSH) Management system and Brazilian operations hold ISO 45001 and ISO 22320:2013 certifications.

In addition, manuals and procedures covering H&S requirements and expected conduct are shared with all employees and outsourced staff. Ambipar regularly promotes internal engagement initiatives to foster safety

culture. H&S indicators for 2023 are monitored by the OHS Management and publicly reported, such as Lost Time Injury Frequency Rates (0.71) and Severity Rates (44.14, calculated using internationally recognized H&S indicators methodology), covering the subcontracted workforce.

Another relevant social factor for environmental service providers is their relationship with local communities. Reducing Emissions from Deforestation and Forest Degradation (REDD+) projects developed by Ambipar follow procedures to ensure social safeguards are applied in line with certification requirements. For example, the company's Free, Prior and Informed Consent (FPIC) protocols are externally verified by independent auditors. These actions are aimed to ensure equitable distribution of benefits among communities and other stakeholders. Moreover, due diligence processes are conducted to mitigate risks related to land grabbing.

Reporting

Ambipar's annual sustainability reporting follows the Global Reporting Initiative (GRI) Standards, incorporates the capitals approach from the Integrated Report (IR) and discloses information on Sustainability Accounting Standards Board's (SASB's) indicators. The company has already taken initial steps to adopt the International Financial Reporting Standards (IFRS) S1 and S2, anticipating regulatory demands, which require Brazilian public companies to formally disclose sustainability and climate-related data through IFRS in 2026, including the quantification of financial impacts stemming from sustainability-related risks and opportunities beyond climate.

Ambipar uses the outcomes of its materiality assessment to outline reporting topics, which are also aligned to the Sustainable Development Goals (SDGs). Given the acceleration of inorganic growth strategies through 24 acquisitions in 2023, it is positive that the most recent sustainability report gives transparency to the coverage (i.e., percentage of units) of each indicator disclosed. The annual sustainability report is reviewed by the executive teams of each business division, by the Board of Directors and externally audited.

In 2023, Ambipar Group's GHG emissions inventory, which is also externally verified, was enhanced through several initiatives, such as the screening of Scope 3 categories to determine their relevance to the business and the consideration of emissions from eco-parks. It is positive that the 2023 GHG inventory used data from all business units, including the ones recently acquired and integrated by Ambipar.

Sector risk exposure

Physical climate risks. Ambipar has operations all over the world, and depending on the location of operations, can be more or less exposed to physical climate risks. Operations in South America, for example, are in countries where droughts, sea level rise and increase in precipitation are likely events. Ambipar's supply chain – both downstream and upstream - is likely exposed to disruptions from extreme weather – mainly through transportation routes/links but also from possible pollution in relation to extreme weather.

Transition risks. Due to the profound changes needed to limit global warming to well below 2°C, transition risk affects all sectors. The lock-in of carbon intensive processes can constitute a transition risk for Ambipar. Although it is not an oil and gas producer, the company is indirectly exposed to transition risks given the broader shift away from oil and gas. Ambipar might face financial consequences e.g., from the loss of revenues from oil and gas clean-up activities.

Environmental risks. Emergency response operations have sustainability risks related to the adequate management of air, soil, or water (both river and seawater) pollution. In addition, the company handles large quantities of hazardous and non-hazardous waste, which pose risks of negative impact on the local environment and biodiversity if not handled correctly.

Social risks. Ambipar's operations might pose risks for staff working in hazardous environments exposed to contaminants and safety hazards. In addition, operations may be adjacent to local communities and generate negative externalities to their health and safety. Therefore, adverse events or failure to implement adequate community engagement and dialogue systems may generate opposition, leading to financial and reputational impacts. Deforestation avoidance projects might pose risks related to land grabbing and might result in inequitable distribution of benefits with local communities, if procedures for Free, Prior and Informed Consent (FPIC) and community engagement mechanisms are not followed properly.

Assessment of Ambipar's activities

Key issues and metrics

Pollution

Within the Ambipar Response division, Ambipar provides oil spill response activities. Even though the company remediates pollution, which is positive, it is still exposed to pollution risks because it needs to adequately handle dangerous materials and substances. Onshore activities focus on medical assistance and rescue, while offshore emergency activities offer cleanup services. For example, regarding the latter, Ambipar was involved in Repsol's 2022 Peruvian oil spill, the largest in Latin America to date (10 thousand barrels). The company relies on strategically located main hubs and a range of regional and local centers to ensure a rapid response to emergency situations. Ambipar also handles industrial chemical spills and emergencies at dry ports, decommissioning of oil and gas fields, industrial silo cleaning, soil remediation, and underground tank cleaning. Ambipar's remediation responses uses products from its circular economy division.

Ambipar's emergency response and prevention procedures are certified by several institutes. These include: the Incident Command System certification of the International Maritime Organization (IMO) for hazardous and noxious substances, the International Spill Accreditation Scheme, the UK MCA 1, 2, 3 and 4 from the British Navy and the Spanish ANE-ISO 22320 certification.

Within the Ambipar Environment division, Ambipar provides the transportation, disposal and remediation of hazardous waste and materials in Latin America. These materials can pose significant risks to the environment due to their chemical, physical, or biological properties. They come from various sources such as industrial plants, laboratories, hospitals, and construction sites. Proper disposal methods followed by Ambipar include incineration, neutralization, and secure landfilling, to minimize environmental impact. Ambipar complies with hazardous material handling and disposal regulation in the countries where it operates. The Environment division also serves the implementation of customers' environmental programs, management of contaminated areas, and wastewater treatment. Ambipar Logistics offers transportation of bulk and packaged chemical products, which involves a high risk of pollution in case of accidents.

Waste/Circular Economy

Ambipar waste management services are situated within the Ambipar Environment division. It follows six steps: identification of generation points and waste classification; definition of containment and storage methods; collection, movement, and segregation/ valorization (recycling or generation of electricity or biogas); insertion into the (circular) economy, disposal in landfills or incineration, and traceability and certification, done by Ambipar. We see Ambipar's contributions to a circular economy transition as positive, however, its exposure to landfill and incineration poses pollution risks. That said, in 2023, only 13% of the waste collected was sent to landfills or incinerated. The remaining were mostly recovered (57%), recycled (12.5%) or used to generate electricity (7%). The collected waste is generated along the industrial production chain of various sectors. For example, in aluminium production, about 40 types of waste are generated from the production of primary aluminium to its smelting to reach the final product. This is a relevant industry for Ambipar, given Brazil's sizeable bauxite reserves and alumina production although it represents a small portion of its overall business due to diversification. Another industry that the company focus on is the cement industry. Ambipar converts waste with high calorific value into fuel for the cement industry, substituting the use of petroleum coke by the industry. To date, Ambipar operates 76 waste management and valorization, and 13 circular economy bases in Brazil, 37 waste

management and valorization bases in Peru, 27 in Chile, and 3 in Paraguay. In Chile, in accordance with the country's new legislation, the company is constructing integrated industrial waste management centers with a recovery rate exceeding 90% of the processed waste.

Meanwhile, the circular economy service is broader than just industrial waste, also operating with municipal waste, which therefore can include paper, metal, glass, and organic waste. For the circular economy division, waste is collected either via reverse logistics activities or independent garbage collectors who work on the streets collecting waste using trucks and taking it to waste separation and recycling units.

Through its circular economy business, even though the company has GHG emissions in the transportation and treatment of waste, there is a contribution to the preservation of nature considering the reduction in the exploitation of natural resources through product circularity.

Biodiversity and land use

Both Ambipar Response and Environmental divisions offer services that help preserve biodiversity or support the transition to a nature positive economy. That said, the group's contribution to the continuity or expansion of resource intensive sectors such as mining, does pose indirect biodiversity loss risks to Ambipar.

Ambipar's Response services include conducting environmental impact assessment (EIA) studies for various sectors to ensure compliance with applicable country, state and/or municipal-level environmental licensing requirements. Ambipar's EIA services are utilized by the oil and gas, mining, ports and terminals, energy and water utilities, steelmaking, petrochemicals, beverages, and pulp and paper industries. The group also offers high-complexity incident prevention studies for companies to stress test incident risks, such as mining dam failures. Therefore, like pollution risks, Ambipar mitigates biodiversity loss risks, but is still exposed to them because it needs to adequately conduct EIAs and implement the necessary compensation measures. Ambipar's Response division also conducts aerial logistics to combat deforestation and illegal mining in the Amazon region through contracts with ICMBIO and the Pará State Government Security Secretariat. For context, deforestation rates in the Amazon halved in 2023 to 434 thousand hectares according to Mapbiomas data. However, this trend did not repeat in the Cerrado (the second-largest biome), where the deforested area nearly doubled to 1.1 million hectares.

Meanwhile, through its Ambipar Environment division, Ambipar supports the transition of the agricultural sector by providing inputs based on organic waste. For example, the company has developed a regulatory approved soil conditioner made from composting organic waste. Ambipar is looking to support the development of second-generation ethanol in Brazil, sourcing waste from ports. Ambipar also engages in forest conservation and restoration projects, as well as fauna and flora remediation. It is also involved in the voluntary carbon credit market through projects aimed at protecting areas that would otherwise be deforested (REDD+ and Restoration projects). Ambipar verifies its credits through the Verified Carbon Standard (VCS) and Community Climate and Biodiversity (CCB), both linked to Verra. The certified carbon credits can be sold to companies seeking to offset the carbon emissions from their activities, as well as in the form of tokens registered on the blockchain and sold to offset and neutralize carbon emissions by individuals or companies.

GHG Emissions

Ambipar calculates and verifies, with reasonable assurance, its carbon footprint for Scopes 1, 2, and 3 in accordance with the GHG Protocol. However, the company is finalizing the measurement of relevant Scope 3 categories, such as emissions from goods and services purchased, capital goods and fuel and energy use activities not included in Scope 1 or 2 emissions (i.e., fuel used in construction activities for Ambipar). In 2023, Ambipar saw a 7.51% decrease in total emissions compared to 2022. Despite the increase in treated waste (the main source of emissions), the group managed to reduce these emissions by decreasing flared gas from its landfills. However,

the company reported a slight increase in Scope 3 emissions due to the higher amount of transportation and distribution emissions, given the greater amount of treated waste.

Going forward, the company expects to expand on the recovery of landfill gases to generate electricity or capture biomethane as a fuel. Ambipar also plans to substitute diesel with biomethane in its heavy-duty vehicle fleet that serves its waste management and emergency response businesses. As the company’s biomethane fuel production increases, this could enable it to further the circularity of its operations and reduce emissions from mobile combustion, the second most prominent source of emissions.

Table 2: The table summarises GHG-emissions and main emission reduction targets.

	Total (tons CO₂eq¹)	Scope 1 emissions	Scope 2 emissions	Scope 3 emissions
Main targets	50% reduction in absolute GHG emissions by 2030 (baseline: 2022)			
2023	279,463	228,716	671	50,077
2022	302,149	250,097	3,799	48,253
2021	176,491	140,634	555	35,300
Main Sources	Scope 1	54% of Ambipar’s emissions come from six business units involving final waste disposal sites. The remaining comes from fossil fuel combustion of the company’s owned heavy-duty vehicles		Third party transportation and distribution of non-recycled or treated waste, business and employee commuting and travel

Energy

Ambipar’s energy generation does not meet the total electricity demand of the group, as the generation is still low compared to the total demand and because it is a decentralized company, with waste treatment units throughout Brazil and abroad. Still, the company is looking to increase its self-generation of energy via methane gas recovery and the installation of PV panels in its circular economy business units. In 2023, Ambipar acquired international renewable energy certificates (I-RECs) for 100% of business units in Brazil. In 2024, Brazilian business units are migrating to the unregulated electricity market, including I-RECs in the contracts.

The primary energy demand of the group comes from fuel use for the entire fleet used in its waste management and emergency response services. Fuel consumption has been decreasing, driven by a reduction in diesel consumption. This is due to the substitution of some diesel-powered trucks with biomethane powered trucks.

Table 3: The table summarises energy mix by energy source.

Energy source	2023	2022

¹ CO₂e, carbon dioxide equivalent is a measurement term for greenhouse gas accounting.

CNG - vehicles (m³)	378,671.61	3,347.36
Gasoline - vehicles (l)	1,132,728.38	510,894.22
Diesel - vehicles (l)	24,911,942.50	31,670,380.77
Jet fuel - (l)	935,700	1,537,000
First-generation ethanol - vehicles (l)	841,621.06	1,691,745.57

Table 4: The table summarises electricity mix by source.

Energy source	2023	2022
Fossil fuels	8.3%	9%
Hydro	34.3%	62%
Solar	N/A	4%
Wind	57.4%	12%
Biomass	N/A	5.5%
Total Consumption (MWh)	23,505	18,590

Climate Resilience

Ambipar’s physical climate risk identification and adaptation measures are part of the company’s overall risk management procedures, but it is not entirely clear how the identification informs asset hardening and long-term adaptation plans. According to the company, the sustainability division monitors events that could pose risks to assets, operations, and the value chain. It also evaluates risks considering the medium-term (5-10 years) and long-term (10-20 years) through scenario analysis. However, it is unclear which scenarios Ambipar uses and under what scope (asset only, supply chain, or value chain included). Impact prevention and mitigation plans are developed for identified units and shared with the board and managers of the identified units. For example, Ambipar’s operations exposed to acute risks related to floods (river and rain) in the Brazilian regions of the Northeast (states of Pernambuco and Alagoas), Southeast (state of São Paulo), and South (state of Paraná).

The company also supports emergency responses for clients experiencing asset losses or other limitations due to physical climate events. For example, the company supported responses to the recent severe flooding in the Brazilian state of Rio Grande do Sul. The company uses the RCP 4.5 and RCP 8.5 global warming scenarios to identify extreme events for clients served by its emergency response division. Ambipar is enhancing its models to identify more anomalies and improve precision.

Table 5: Shades of Green assessment of Ambipar’s management of key environmental issues

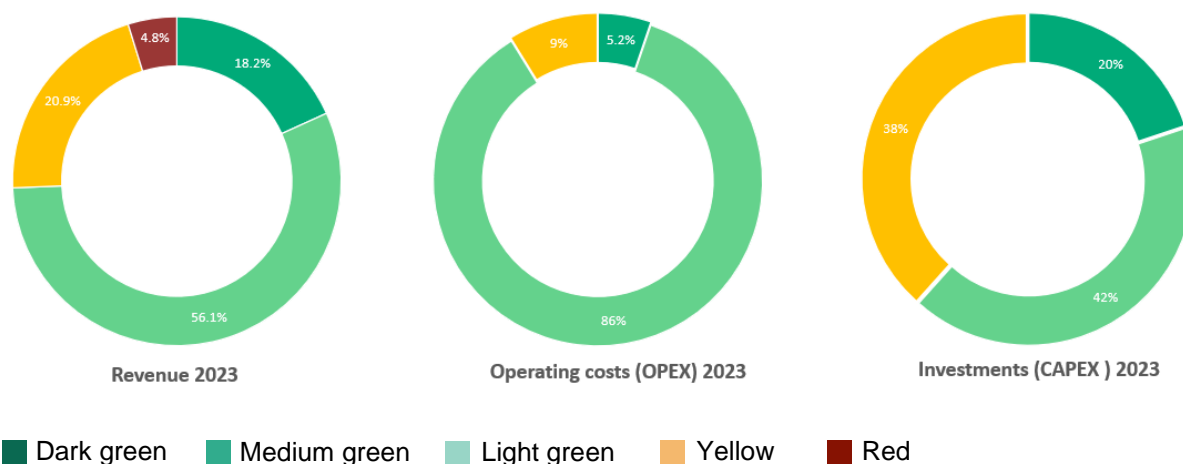
Key issue	Shades of Green comments
Pollution	✓ Ambipar has shown an adequate track record in services supporting the reduction of pollution caused by environmental emergencies or physical risk events. For example, Ambipar Response operated during the Brumadinho tailings dam collapse in 2019.

Supporting this, Ambipar's emergency response and prevention procedures are certified by several institutes.

Waste/Circular Economy	<ul style="list-style-type: none"> ✓ Ambipar plays a highly relevant role in progressing Brazil's national waste policy, especially regarding the goal of no longer sending waste to open air dumps. Furthermore, the company aims to installing more methane gas recovery infrastructure in its landfills, which is not a common practice in Brazil. ✓ Ambipar has several successful circular economy products in the market, which attests its contribution to positive circular solutions, especially in the Brazilian economy (its main market). We believe the climate benefit of the circular solutions are significant given that it replaces the need for carbon intensive raw materials such as synthetic fertilizers and concrete, among other. That said, the scale of this business relative to the group's full operations is somewhat limited.
Biodiversity and land use	<ul style="list-style-type: none"> ✓ Ambipar plays a significant role in enhancing the credibility of nature-based solutions in Brazil through its 2.5 million hectares preserved in key Brazilian biomes via REDD+ and restoration projects. ✓ We believe Ambipar has a robust project selection policy for its carbon credits. Furthermore, we see strong biodiversity considerations in AR projects, as the company uses native species from the project's region, which is a strength.
GHG Emissions	<ul style="list-style-type: none"> ✓ At the waste disposal sites (Ambipar's main source of direct emissions), the company expects to reduce scope 1 and 2 emissions by expanding on the recovery of landfill gases to generate electricity and/or biomethane. We believe this is positive given the potential to reduce associated climate emissions and the context of a low share of recovered landfill gases in Brazil. ✓ The company has comprehensive emissions reporting. However, it does not include some material Scope 3 categories. That said, Ambipar expects to finish these indirect emissions estimations before submitting its GHG targets to SBTi.
Energy	<ul style="list-style-type: none"> ✓ The main source of the company's energy use is fossil fuel. By 2040, the company is committed to fully replacing its diesel-fuelled heavy-duty fleet with a low-carbon fleet using hydrogen, biodiesel, or other viable low-carbon fuel sources. This represents a relevant share of the company's Scope 1 emissions, so we see this as a positive action. That said, the company does not have a strategy on jet fuel, which is a limitation. ✓ I-RECs, which are used by Ambipar, may not influence actual emissions from electricity production
Climate Resilience	<ul style="list-style-type: none"> ✓ We view the company's adaptation plans and resilience measures for its assets' exposure to physical risks such as flooding events and related soil erosion risks as nascent and therefore as an area for improvement. For example, the company has yet to make use of

physical risk scenario analysis to identify other risks, such as heat waves, that its operations could be exposed to.

Shading of Ambipar’s revenue, operating expenses and capital expenditures



The Shade of Green assigned to an activity reflects its overall climate risk and environmental impact. In assigning a Shade of Green to Ambipar’s revenue streams, costs, and CAPEX, we have considered Ambipar’s governance score of Good, the company’s management of key environmental concerns, and how its activities are aligned to a low carbon and climate-resilient future. We use a more granular breakdown when shading Ambipar’s financial metrics compared to what is published in Ambipar’s earning releases and audited financial statements. We use estimated data provided by the company and not published externally. Most accounting systems do typically not provide a breakdown of revenue and investments by environmental impact, and the analysis may therefore not be directly comparable with annual reporting. We have categorized Ambipar’s waste management and valorization revenues by end disposal type. Managed volumes may not directly correlate with revenue representation for each type, as different tariffs are applied to each. In 2023, the reported distribution of solid waste managed by Ambipar was as follows: recovered (57%), landfilled or incinerated (13%), recycled (12.5%), movement (7.5%) and waste-to-energy mainly for cement kilns (10%).

In 2023, 18% of Ambipar’s revenue is shaded Medium Green, 56% Light Green, 21% Yellow and 4.8% Red. 5% of OPEX is shaded Medium Green, 86% Light Green, and 9% Yellow. CAPEX is 20% Medium Green, 42% Light Green, and 38% Yellow.

Medium Green is allocated to revenues and investments related to Ambipar’s circular economy (not including circular solutions for the oil and gas sector), industrial waste recycling services and decarbonization (nature-based solution) services.

- ✓ Ambipar provides a more sustainable alternative to the industrial and consumer waste generated by different industries by turning waste streams into products, contributing to a reduction in pressure for the exploration of natural resources and emissions associated with industrial processes.
- ✓ Ambipar’s decarbonization division offers carbon credits via REDD+ and AR schemes. We believe the division contributes to the sustainable management of land, including forested land, which is a key piece for managing GHG emissions and adaptation to climate change.

Light Green is allocated to revenues and investments related to Ambipar's waste management and valorization, sustainability consulting, hazardous materials treatment, and disposal. It is also allocated to expenditures related to oil spill mitigation and emergency response to governmental customers, such as ports and coast guards but excluding oil and gas companies, as well as Ambipar Response activities that serve sectors other than oil and gas. These are:

- ✓ Revenue from Ambipar's waste management and valorization not related to active oil and gas operations that contribute to the treatment of industrial and municipal waste. We view it as a necessary activity for the low carbon and climate resilient future and aligned with the waste hierarchy. Industrial and municipal activities produce large volumes of waste, and recycling, recovery and energy generation are important to avoid land use needed for landfilling and methane emissions from landfill gas. Ambipar serves a variety of sectors, with some concentration on food and beverages, energy and pulp and paper. The company is implementing a zero-deforestation waste sourcing policy. We view this as positive given the deforestation risks in the sectors where Ambipar operates in Brazil. Within this division, Ambipar transforms waste with high calorific value into fuel for the cement industry, replacing fossil-based derivatives to power cement kilns. Even though the cement plants Ambipar serves are associated with high emissions, which is a pitfall, we view Ambipar's provision of lower emissions alternative fuels as a positive step in this difficult to decarbonize sector.
- ✓ Revenue from Ambipar's sustainability consulting serving all types of industries, including providing management software and sustainability indicators advice. Despite the limited visibility towards the outcomes of the services, we expect some contribution of the division towards a low carbon economy.
- ✓ Membership fees from its emergency response business. Part of Ambipar Response division operates under a membership service, where Ambipar Response engages with clients on physical risk climate scenario and helps integrate physical risk assessments into companies' risk management governance. The membership service also includes standby workforce for emergency response. In our view, such services enhance the climate resilience of its customers.
- ✓ Revenue from Ambipar Response related to decommissioning of industrial plants, as well as training and physical risk consulting services. We view these activities as necessary for the continuity and transition of sectors other than oil and gas. However, the activity itself can be linked to the use of fossil fuels, and there is a significant climate risk associated with the broader sectors served by Ambipar Response.
- ✓ Revenues generated from collection and treatment of hazardous waste for corporate and governmental customers. Appropriate waste treatment will reduce the risk of local pollution and improve material recovery, which is key to the circular economy and to reducing the climate impact of the relevant sector. However, there are still some emissions related to the activities, both from the production of the equipment and from the use phase, particularly if the equipment is powered with fossil fuels.
- ✓ Revenue and emergency response to governmental customers, such as ports and coast guards but excluding oil and gas companies. The activity can provide reduced environmental impacts through cleanup of potential leaks. The governmental customers are not liable for the spillage. However, the activity is currently closely linked to the use of fossil fuels, and it is therefore a significant climate risk associate with these activities. The equipment is needed in the transition to a low carbon future, but we expect that there will be less need for oil spill mitigation and emergency response as the transition away from oil and gas advances.

Yellow is allocated to revenues and investments, that do not contribute to the transition, related to:

- ✓ Waste transportation with no determined end treatment or waste destined to landfill and incineration. Waste destined to landfill, and incineration entails high climate risks from methane gas emissions or CO₂ from incineration.
- ✓ Point in time environmental emergencies remediation, environmental due diligence, and licensing and marine service response activities for hard-to-abate sectors other than oil & gas. In our view, the environmental emergencies remediation, environmental and maritime services provided by Ambipar Response that are not

part of its membership service, but point in time contracts, allow for a business-as-usual licence to operate for hard-to-abate sectors rather than improving the environmental impacts of the sector. Furthermore, for environmental emergency response, Ambipar is mitigating the damage done by these sectors rather than creating net climate and/or environmental benefit.

- ✓ Waste management for ongoing oil and gas activities. Revenue originating from waste management services for ongoing upstream oil and gas activities and from oil spill contingency equipment for oil and gas exploration are directly associated with the oil and gas sector and is allocated a Red Shading. However, the cases where waste is clearly treated to a higher level than required by the local environmental authorities, including circular economy solutions for drilling waste, have been allocated a Yellow Shade.

Red is allocated to projects and solutions that have no role to play in a low carbon and climate resilient future. For Ambipar, that is allocated to revenues originating from oil spill clean-up services for the oil and gas sector, and Ambipar Response services associated with the oil & gas industry, including maritime, consulting, and industrial services. Uncleaned spills can threaten biodiversity and pollute soil and groundwater; therefore, clean up services are vital to mitigate negative risks. However, such activities are currently closely linked to the oil and gas sector. For oil and gas companies, having access to certain services that Ambipar provides should be seen as an ongoing licence to operate rather than improving the environmental impacts of the sector.

Operational expenditures are as a starting point allocated the same shade as the revenue for each business (Ambipar Environment, that has more than half of revenues as green, and Ambipar Response, that has more than half of revenues as not green). OPEX related to first-generation biofuel and fossil-fuelled rental and freight expenses, despite supporting some green services, are classified as Yellow given the high climate risks associated with such products. Similarly, all CAPEX for fossil fuelled machines, equipment, aircraft and vehicles is shaded Yellow.

Investors should note that our assessment is based on data reported or estimated by the company and has not always been verified by a third party. We analyse revenue, operating costs and capital expenditures, however there is typically not an explicit link between sustainability and financial data.² Our shading often requires allocating line items in financial statements to projects or products, for this we rely on the company's internal allocation methods. In addition, there are numerous ways to estimate, measure, verify and report e.g., data on emissions, which may make direct comparisons between companies or regulatory criteria difficult and somewhat uncertain.

EU Taxonomy

The relevant EU Taxonomy activities for Ambipar are:

- Forestry, rehabilitation, and restoration of forests, including reforestation and natural forest regeneration after an extreme event
- Forest management
- Conservation forestry
- Restoration of wetlands
- Manufacture of low carbon technologies
- Electricity generation from renewable non-fossil fuel gaseous
- Manufacture of biogas and biofuels for use in transport and of bioliquids, collection and transport of non-hazardous waste, including in source segregated fractions
- Treatment of hazardous waste

² Most accounting systems do typically not provide a break-down of revenue and investments by environmental impact, and the analysis may therefore include imprecisions and may not be directly comparable with figures in the annual reporting

- Anaerobic digestion of bio-waste
- Composting of bio-waste
- Sorting and material recovery of non-hazardous waste
- Landfill gas capture and utilisation
- Depollution and dismantling of end-of-life products
- Manufacture of plastics in primary form
- Manufacture of plastics packaging goods
- Close to market research, development and innovation
- Marketplace for the trade of second-hand goods for reuse
- Emergency services for disaster risk management
- Flood risk prevention and protection infrastructure
- Nature-based solutions for flood and drought risk prevention and protection
- Remediation of contaminated sites and areas
- Conservation, including restoration, of habitats, ecosystems, and species
- Consultancy for physical climate risk management
- Adaptation and remediation of legally non-conforming landfills and abandoned or illegal waste dumps
- Sea and coastal freight water transport, vessels for port operations and auxiliary activities
- Emergency services

The share of eligible activities is 90% of revenue, 68% of CAPEX and 93% of OPEX. Ineligible revenue activities are waste destined to landfills, sustainability consulting and other response activities. Ineligible CAPEX and OPEX are fossil fuelled vehicles and machinery acquisition or first-generation biofuel.

We note that Ambipar is not subject to the reporting obligations of the EU Taxonomy regulation and that the figures below are estimates based on our internal mapping of how its economic activities match with the EU Taxonomy activities.

We have not conducted an assessment of Ambipar alignment with the technical screening criteria, the do no significant harm (DNSH) criteria or minimum safeguards of the EU Taxonomy.

Table 6: Overall EU Taxonomy eligibility

Overall EU Taxonomy eligibility	Revenue	OPEX	CAPEX
Total share eligible (activities covered by criteria) in 2023	90%	93%	68%

B3 Ações Verdes

S&P Global Ratings Shades of Green confirms that Ambipar meets the requirements for o B3 Ações Verdes (BAV) set out in B3 Ofício Circular 002/2024-VPE. The BAV follows the World Federation of Exchanges Green Equity Principles guidelines.

In 2023, 90% of revenue, 93% of OPEX and 68% of CAPEX was eligible for the EU taxonomy. Only eligible activities are included in the calculations of green activities below. In 2023, 74% of Ambipar’s eligible turnover came from assets with some Shade of Green exceeding the 50% threshold for green activities for company turnover. The sum of OPEX and CAPEX allocated a Shade of Green is 86%. This exceeds the 50% threshold for investments, defined as the sum of CAPEX and OPEX. BAV requires that less than 5% of the company’s annual revenues are derived from fossil fuel activities. In 2023, Ambipar had 4.8% of turnover derived from as standard

business practice for the oil and gas sector and viewed as meeting the definition of fossil fuel activities. We segment Ambipar Response's revenue from the oil and gas sector into two categories: activities that are viewed as a part of the license to operate whether required by regulation or not, and services that reduce the environmental impacts of the sector. The first category is included in the scope of fossil fuel activities and shaded Red in our methodology. For example, we shade services for oil spills clean-up services for oil and gas as Red, therefore counting toward revenue derived from fossil fuel activities. Meanwhile, we shade, for example, circular solutions for drilling waste from ongoing oil and gas activities as Yellow, therefore not counting toward revenue derived from fossil fuel activities. Investors should note that Brazilian law requires the oil and gas sector to provide funding to biodiversity rehabilitation projects. The revenue from these projects are not viewed as fossil fuel activities and are shaded Yellow. As a result, in our view, Ambipar meets the BAV threshold of less than 5% of the company's turnover being derived from fossil fuel activities.











Terms and methodology

The aim of this analysis is to be a practical tool for investors, lenders and public authorities for understanding climate risk. Shades of Green encourages the client to make this assessment publicly available. If any part of the assessment is quoted, the full report must be made available. Our assessment, including on governance, is relevant for the reporting year covered by the analysis. This assessment is based on a review of documentation of the client’s policies and processes, as well as information provided to us by the client during meetings, teleconferences and email correspondence. In our review we have relied on the correctness and completeness of the information made available to us by the company.

Shading corporate revenue and investments

Our view is that the green transformation must be financially sustainable to be lasting at the corporate level. We have therefore shaded the company’s current revenue generating activities, as well as investments and operating expenses.

The approach is an adaptation of the Shades of Green methodology for the green bond market. The Shade of Green allocated to a green bond framework reflects how aligned the likely implementation of the framework is to a low carbon and climate resilient future, and we have rated investments and revenue streams in this assessment similarly. We allocate a shade of green to the revenue stream and investments according to how these streams reflect alignment of the underlying activities to a low carbon and climate resilient future and taking into account governance issues.

Shading		Examples
	Dark green Is allocated to projects and solutions that corresponds to the long-term vision of a low-carbon and climate resilient future.	 Solar power plants
	Medium green Is allocated to projects and solutions that represent significant steps towards the long-term vision but are not quite there yet.	 Energy efficient buildings
	Light green Is allocated to transition activities that do not lock in emissions. These projects reduce emissions or have other environmental benefits in the near term rather than representing low carbon and climate resilient long-term solutions.	 Hybrid road vehicles
	Yellow Is allocated to projects and solutions that do not explicitly contribute to the transition to a low carbon and climate resilient future. This category also includes activities with too little information to assess.	 Health care services
	Red Is allocated to projects and solutions that have no role to play in a low-carbon and climate resilient future. There are the heaviest emitting assets, with the most potential for lock in of emissions and highest risk of stranded assets.	 New oil exploration

In addition to shading from dark green to red, Shades of Green also includes a governance score to show the robustness of the environmental governance structure. When assessing the governance of the company, Shades of Green looks at five elements: 1) strategy, policies and governance structure; 2) lifecycle considerations including supply chain policies and environmental considerations towards customers; 3) the integration of climate

considerations into their business and the handling of resilience issues; 4) the awareness of social risks and the management of these; and 5) reporting. Based on these aspects, an overall grading is given on governance strength falling into one of three classes: Fair, Good or Excellent. Please note this is not a substitute for a full evaluation of the governance of the issuing institution, and does not cover, e.g., corruption.

In March 2020, a technical expert group (TEG) proposed an EU taxonomy for sustainable finance that included a number of principles including “do-no-significant-harm (DNSH)-criteria” and safety thresholds for various types of activities³. In April 2021, EU published its delegated act to outline proposed criteria for climate mitigation and adaptation, which it was tasked to develop after the EU Taxonomy Regulation entered into law in July 2020. Shades of Green has assessed the mitigation criteria in the EU taxonomy that includes specific thresholds for activities relevant for the company⁴.

Do-No-Significant-Harm criteria include measures such as ensuring resistance and resilience to extreme weather events, preventing excessive water consumption from inefficient water appliances, ensuring recycling and reuse of construction and demolition waste and limiting pollution and chemical contamination of the local environment, as well as restriction on the type of land used for construction (no arable or forested land).

Shades of Green has assessed potential alignment against the mitigation thresholds and the DNSH criteria in the delegated acts published in April 2021.

In order to qualify as a sustainable activity under the EU regulation 2020/852 certain minimum safeguards must be complied with. The safeguards entail alignment with the OECD Guidelines for Multinational Enterprises and UN Guiding Principles on Business and Human Rights, including the International Labour Organisation’s (‘ILO’) declaration on Fundamental Rights and Principles at Work, the eight ILO core conventions and the International Bill of Human Rights. Shades of Green has completed a light touch assessment of the above social safeguards with a focus on human rights and labor rights risks⁵. We take the sectoral, regional and judicial context into account and focus on the risks likely to be the most material social risk.

Our assessment of alignment against the EU Taxonomy is based on a desk review of the listed source documents against the Taxonomy Delegate Act and following our own shading methodology.

³ Taxonomy: Final report of the Technical Expert Group on Sustainable Finance, March 2020. [TEG final report on the EU taxonomy \(europa.eu\)](#)

⁴ [taxonomy-regulation-delegated-act-2021-2800-annex-1_en.pdf \(europa.eu\)](#)

⁵ S&P Global Ratings Shades of Green is in the process of further developing its assessment method to ensure that it encompasses the object and purpose of the minimum safeguards.

Appendix 1: Referenced documents list

Document Number	Document Name	Description
1	2023 Annual Financial Statements	Public financial disclosures
2	2023 Earnings release	Public financial disclosures
3	2023 Sustainability Report (Draft)	Corporate Report
4	2023 CDP Climate Change Report	External Assessment
5	2024 Reference Form	Regulatory Disclosure
6	2024 Ambipar Day Presentation	Investor Presentation
7	Code of Conduct and Compliance	Company Policy dated 2023
8	Sustainability Policy	Company Policy dated 2023
9	Board of Director's and Sustainability Committee Internal Regulations	Documents dated 2020
10	Risk Management Policy	Company Policy, not dated
11	Supplier Relationship Policy	Company Policy, not dated
12	Executive Compensation Policy	Company Policy dated 2020

Appendix 2: About Shades of Green

S&P Global Ratings Shades of Green provides independent, research-based second party opinions (SPOs) of green financing frameworks as well as climate risk and impact reporting reviews of companies. At the heart of all our SPOs is the multi-award-winning Shades of Green methodology, which assigns shadings to investments and activities to reflect the extent to which they contribute to the transition to a low carbon and climate resilient future.

Shades of Green Company Assessments indicate the greenness of a company by providing a shading of revenues, operating costs and capital expenditures, as well as an assessment the company's governance structure. Shades of Green also provides second opinions on institutions' frameworks and guidance for assessing and selecting eligible projects for green, sustainability and sustainability-linked bond investments. Shades of Green is internationally recognized as a leading provider of independent reviews of green bonds, since the market's inception in 2008. Shades of Green is independent of the company being assessed, its directors, senior management and advisers, and is remunerated in a way that prevents any conflicts of interests arising as a result of the fee structure. Shades of Green operates independently from the financial sector and other stakeholders to preserve the unbiased nature and high quality of assessments.



ESG Opinion Provider of the Year



Largest External Review Provider in Number of Deals for Shades of Green



ESG Assessment Tool of the Year - Ratings



External Assessment Provider of the Year

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