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Vale announces target to reduce client and supplier emissions by 15% by 2035

The company is one of the few capable of offering scope 3 emission reduction initiatives with a portfolio of high-quality products and innovative solutions

During a virtual meeting held with investors today (Dec 2), Vale presented its target to reduce net scope 3 emissions from its client and supply chain by 15% by 2035. The reduction target references 2018 as base year, which registered 586 million tons of CO2 equivalent (MTCO2e) from Vale's value chain. The company expects to reach 496 MTCO2e in 2035, down 90 MTCO2e compared to 2018 levels - which were equal to Chile's emissions from energy consumption in the same year, according to the International Energy Agency. The target will be reviewed in 2025 and every five years thereafter. Currently, scope 3 emissions account for 98% of Vale's carbon footprint.

The target already considers the production capacity increase to 400 million tons of iron ore, to be reached by the end of 2022. Just like its scope 1 and 2 targets, the new target is also aligned with the Paris Agreement's ambition to limit global warming to well below 2°C by the end of the century. Vale's scope 3 target is supported by its portfolio of high-quality products and innovative technologies that offer solutions for reducing emissions in its value chain.

The company will further engage with its value chain through partnerships for the development of low carbon technologies, especially with customers in the steel sector. Nature-based solutions also play an important role in this process, given Vale's forests initiatives and the potential access to carbon credit markets. Today, the company helps protect more than one million hectares worldwide. By 2030, it plans to cover another 500,000 hectares through recovery and protection projects. Vale recently joined the Task Force on Scaling Voluntary Carbon Markets, an initiative that brings together more than 40 leaders and companies worldwide with the aim of building capacity of voluntary carbon markets as a structured and feasible alternative against climate change (https://www.iif.com/tsvcm/).

"This agenda is a result of a consultation process aligned with a real demand from society for climate change," says Vale's CEO Eduardo Bartolomeo. "An initial estimate is that Vale will be able to account for up to 25% of the total scope 3 reduction target through its own portfolio, which sets the company apart from global competitors."

Today, the company supplies some of the best mixes of high-quality products in the iron ore market, which demand less energy in the steel blast furnace and consequently reduces emissions. BRBF (Brazilian Blend Fines) is one great example. It is a blend of ores with a high-grade iron concentrate and low levels of impurities produced in Carajás and Minas Gerais. BRBF started up in the fourth quarter of 2014 at the Teluk Rubiah port in Malaysia. Eighteen million tons of the product were sold in the first year of commercialization, in 2015. In 2019, sales climbed to 134 million tons and are expected to reach the 145-million mark by 2020.

The company, however, does not rely only on the quality of its products. "Vale has been developing low-carbon technological solutions for the steel industry for some years now," says Vale's executive director for Institutional Relations, Communication and Sustainability, Luiz Eduardo Osorio. "With the Tecnored technology, for example, Vale produces pig

iron by replacing up to 100% of mineral coal with biocarbon (from different types of biomass), which significantly reduces carbon dioxide emissions."

Vale recently announced its intention to create a platform in partnership with Kobe Steel and Mitsui & Co with the aim of providing low-carbon solutions for the steel industry. These solutions are based on technologies for production of biomass-based pig iron (Tecnored) and HBI (using natural gas). HBI - a briquetted form of direct reduced iron with a high iron content - would be supplied by Midrex, a company owned by Kobe. Vale is moving forward with discussions and studies in this direction and will make new announcements in due course.

Shipping

In shipping, which is included in scope 3, Vale is committed to the International Maritime Organization's goal of reducing the intensity of emissions by 40% in 2030 and absolute emissions by 50% by 2050, with 2008 as the base year. The company created the Ecoshipping program in collaboration with different industry players to advance projects designed to cut down emissions from the maritime transportation of iron ore. One such project uses rotating sail technology in very large ore carriers (VLOC), which will result in fuel savings of up to 8% and an annual reduction of up to 3,500 tons of CO2 equivalent per vessel.

Currently, the fleet of vessels contracted by Vale has the highest energy efficiency standards in the market. Since 2018, the company has been operating with second generation Guaibamaxes and Valemaxes (VLOCs) with a capacity of 325,000 and 400,000 tons, respectively. Both carriers produce up to 41% less CO2 equivalent emissions than a 180,000-ton capesize ship, which was built in 2011 and used as a reference for the first-generation Valemaxes launched that year.

The second generation Valemaxes and Guaibamaxes were also designed for future use of liquefied natural gas (LNG), which may further reduce emissions by 23% per vessel after the system is installed. Vale is also developing a solution for alternative fuels including methanol and ammonia. A preliminary assessment suggests that the range of emission reductions could be between 40 to 80% in those vessels. The plan is to get multi-fuel ships ready to receive the most suitable fuel once the current technological and regulatory uncertainties are cleared out.

Scopes 1 and 2

In addition to the scope 3 target announcement, the company communicated to investors a project for the implementation of Sol do Cerrado, one of the largest solar energy projects in the country, with an installed capacity of 766 megawatts. Scheduled to start up in Jaíba (MG) in October 2022, the project will meet 13% of Vale's electricity demand in 2025 and is expected to lower the annual cost by US$ 70 million after the startup.

Vale's US$ 500 million investment in the new solar plant is aligned with its goal of consuming 100% renewable electric energy in its units in Brazil by 2025 and, globally, by 2030. The project, which has already been approved by the company's Board of Directors, is subject to standard closing conditions, including approval from Brazilian National Power Agency (Aneel).

The investment in the new solar plant is part of the US$ 2 billion budget announced by the company in May to reduce 33% of its direct and indirect emissions (scopes 1 and 2) by 2030. The company plans to achieve carbon neutrality by 2050. At the time, Vale also announced an internal carbon price for approval of new investments, at US$ 50 per ton of CO2 equivalent.

To guide the implementation and delivery of its climate change commitments, Vale established the Low Carbon Forum, a group led by the CEO and composed of six executive directors and their technical teams. A clear indication of the Top

Management's engagement with the issue, the initiative helps monitor the progress of the commitments assumed and further Vale's climate agenda.

To achieve the scope 1 and 2 emissions target by 2030, the company is analyzing more than 35 initiatives using the Marginal Abatement Cost Curve - a tool that classifies projects by cost and potential for reducing emissions, enabling the company to make decisions with a cost-effectiveness analysis in hand.

The projects include use of biodiesel in base metals, energy efficiency, mine and railroad electrification, replacing coal with biofuels in pelletizing, and renewable energy. Since September, Vale has been testing a new 100% battery-powered switchyard locomotive. Pilot tests are taking place at the Tubarão unit, in Vitória (Espírito Santo, Brazil). In Canada, which concentrates Vale's main base metals units, 25 underground mine EVs are already in operation and, the goal is to have 40 in place by 2021.

More information

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