



# 2022

INTEGRATED REPORT

Braskem 

Braskem 

# Summary

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# Presentation

For the third consecutive year, we present our Integrated Report prepared based on the Integrated Reporting Framework (IR) principles and bringing together relevant GRI and SASB indicators to our stakeholders – shareholders, investors, team members, customers, suppliers, partners, government and society. With this, we reinforce Braskem's commitment to transparency by publishing concise and measurable information, endorsed by best practices in corporate governance and sustainability.

In the following pages are the results of a business strategy that is build to be increasingly more integrated with our sustainable development and innovation goals – key strategic pillars that drive the growth of the company and its continuous improvement.

Good reading!





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# Message from the **business leader**

GRI 2-22

**Roberto Bischoff**  
Business leader  
of Braskem



At Braskem, we understand sustainable development as the way to transform our way of doing business. Thus, since our creation, we have sought to mitigate negative impacts and enhance the positive ones through innovative and sustainable chemical and plastic solutions to improve people's lives.

In 2022, we significantly advanced in this journey from the revision of our corporate strategy, consolidating as our strategic pillars sustainability and innovation – both fundamental to enable the projects and initiatives related to our growth avenues: the ambition to expand, in a sustainable manner, the renewable, recycled, and traditional petrochemicals businesses.

*Our growth avenues are linked to the commitments we made in 2020, which aim to address society's global concerns in the long term. Among them, we have defined the elimination of plastic waste, the fight against climate change, and social responsibility, including the promotion of human rights, as central themes for our actions.*

## **Expanding leadership in renewable raw materials**

We are pioneers and global leaders in the production of plastics made from renewable sources. We currently have the capacity to produce 200,000 tons per year of green ethylene, a chemical product made from sugarcane ethanol, which is the raw material to produce polyethylene under the I'm green™ brand. At the time, the investment was a bet to combat climate change in the chemical and plastic industry, whose success is currently perceived by the growing demand from our customers for this product line.

“

*This early move put us in the lead in the production of polymers made from renewable raw materials and allowed us to acquire increased knowledge of the operation. Thus, last year we reached 95% utilization of green ethylene production capacity and commercialized about 179,000 tons of I'm green™ polyethylene.*



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By 2030, we are committed to expanding our bioproduct production capacity to 1 million tons. We achieved important advances in this front during the year: we progressed with the expansion of the current green ethylene production unit to 260,000 tons, which is expected to be concluded in 2023, and we launched a joint venture with Sojitz for the production and commercialization of monoethylene glycol and mono-propylene glycol made from renewable raw materials. Called Sustainea, the joint venture is the result of many years of research and development in this technological journey.

### Closing the loop of our products

We are betting on an increasingly circular business model that can reinsert our products into the value chain and avoid the inadequate disposal of plastic waste. To this end, we challenge ourselves to expand to 1 million tons the commercialization of resins and chemicals with recycled content, as well as to recover 1.5 million tons of plastic waste by 2030.

Thus, in 2022 we launched a new circularity ecosystem, Wenew, in order to consolidate and strengthen all our action fronts, such as circular products (resins and chemicals), environmental education and proper disposal initiatives, technologies, and circular design. The implemented actions already show important results: we reached 40 grades of resins with recycled content in our portfolio and 42 grades under development. In addition, we sold 54 thousand tons of resins and other products with circular characteristic and recovered 33.5 thousand tons in plastic waste through investments and partnerships in new businesses, socio-environmental programs, and industry alliances.

To boost the performance in this theme, we move forward with new investments to develop the plastic chain and leverage recycling. Thus, in february 2023, we completed the process of acquiring shares and subscribing to new shares issued by Wise Plásticos S.A., a company in the mechanical recycling sector focused on polypropylene (PP) resins. We also announced the creation of a joint venture with ER Plastics, a dutch company, which uses an innovative technology that converts low-quality plastic waste into final products. In the United States, we acquired a minority stake in Nexus Circular, a chemical recycling company.

“

*In 2022, we increased sales of products with recycled content by 144%.*

### Growth with a focus on climate change

We are committed to reaching 2030 with an absolute 15% reduction in greenhouse gas emissions (GHG) from our production processes and from energy purchases, and to achieving carbon neutrality by 2050. Thus, anchored in the corporate strategy, our actions aim to achieve these commitments.

To guide the way toward the commitments made, we performed an analysis of potential projects based on the development of a Marginal Abatement Cost Curve (MAC Curve) for GHG emissions. The result was the mapping of more than one hundred projects, among energy efficiency initiatives, renewable energy procurement, carbon capture and conversion, and expansion of the renewable raw materials base. The projects mapped by the curve have the potential to reduce up to 3.4 million tons of CO<sub>2</sub>e.

The mapped projects were prioritized and are being managed within the industrial decarbonization program, responsible for implementing cultural change, governance, and processes in the operations environment, as well as investment projects for the reduction of emissions.

Among them are the partnerships for the acquisition of renewable electricity globally. In Brazil, we contracted more than 220 average megawatts of renewable energy based on wind and solar with an average duration of 20 years, which represents approximately 40% of the volume of energy consumed by Braskem in the country. The agreements began to be signed in 2018, with the largest one coming in 2022, and allowing to avoid the emission of 3.3 million GHG tons during the course of the contracts. The volume of energy contracted would be enough to meet the residential consumption of a city of 2.8 million inhabitants. In the United States and Europe we also had important advances in renewable energy.

We are also joining with partners to introduce technologies that accelerate the energy transition of our petrochemical complexes. Thus, we have advanced in an important partnership with Coolbrook, which aims to plan a pilot project for the electrification of crackers, allowing us, in the future, to use electricity supplied by renewable sources in one of the main links of our operation.





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## Values that drive us

People are the basis of our operating strategy. Therefore, we believe that it is only possible to advance in our commitments for sustainable development by ensuring people's safety, ethical conduct, and the rights of all those who are part of our value chain.

To guide our path in this direction, we base ourselves on the assessment of the human rights risks to which our operations and value chain are exposed, a process that helps us achieve our commitment of managing 100% of the risks related to this topic by 2030. This past year we conducted this analysis for the second time and, as a result, we identified that 96% of the potential risks already have medium or high management by Braskem (for example, for the issues related to the image of plastic). For the points not yet covered, we are elaborating new action plans.

With regard to people, it is important to highlight our continuous support to families affected by the geological event in some neighborhoods of the city of Maceió (Alagoas-AL) in 2018. Throughout 2022, we maintained our work established in the Socio-environmental Agreement, signed on December 30, 2020, with the Federal Public Prosecutor's Office, to repair, mitigate or compensate potential environmental and socio-urban impacts arising from rock salt extraction activities.

We also continue to evolve in our operations with the human reliability journey, which aims to reduce exposure to human error that can create an environment prone to accidents. We conducted 1,200 trainings sessions on this theme globally, including employees and service providers. At the end of the year, we reached a rate of 0.85 accidents with and without lost time per million hours worked, a result aligned with the year 2021.

Also, this year, we carried out the first editions of censuses: one for self-identification of race and ethnicity and another for self-declaration of people with disabilities. This is an important initiative, because this assessment allows evolving towards a more effective diversity strategy, equity, and inclusion. In terms of gender diversity, we achieved record participation of women in leadership, with 33% in 2022 compared to 31% the previous year.

## Discipline and value creation

These actions were accompanied by the company's operational and financial performance that remained solid throughout the year through its robust financial strategy, with consistent operational cash generation, financial health, and discipline in capital allocation. In 2022, the result was impacted by the drop in petrochemical spreads in the international market and the lower sales volume due to the lower demand because of the macroeconomic scenario.

Thus, we closed the year with a recurring EBITDA of US\$2.1 billion, 64% lower than in 2021. Recurring cash generation was R\$6 billion, with an 18% return on cash flow. Additionally, the corporate leverage, in dollars, was 2.42x. It is worth mentioning that the risk rating agencies S&P and Fitch reaffirmed Braskem's investment grade by maintaining the rating at BBB-, with a stable outlook. These results reinforce our commitment to efficient capital allocation and return to shareholders.

It is worth mentioning that during the year we invested US\$149 million in projects aligned with Braskem's long term commitments for sustainable development. Among the main projects are the expansion of green ethylene capacity, CO<sub>2</sub>e emission reduction and energy efficiency initiatives at the plants, and the construction of the high-quality post-consumer resin recycling line in Brazil.

## Strength and resilience

Our business strategy seeks to balance investment decisions and capital allocation with a focus on sustainability, ensuring shareholder return during the petrochemical cycles. The year 2023 will be challenging, but Braskem is prepared, and the defined strategy will guide the company to focus and prioritize its initiatives, generating positive impacts for all stakeholders.

**Roberto Bischoff**  
Business leader of Braskem



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# Message from the **chairman** **of the Board of Directors**

GRI 2-22

Dear reader,

For Braskem, taking a long-term strategic view means achieving a balance between material issues for business, for people and for the planet. We understand that our actions must be based on principles for sustainable development to create value for all our stakeholders, now and in the future.

Over the years, we have been building and aligning our strategy to the challenges, trends, and new global demands. Thus, understanding the risks, paying attention to market opportunities and society's expectations, since 2021 we have focused our activities on themes that are relevant for Braskem and the petrochemical industry: the elimination of plastic waste, the fight against climate change, and social responsibility and human rights.

To ensure that the decision-making process in the company considers these and other commitments made for 2025, 2030, and 2050, we rely on a solid governance structure in which the Board of Directors actively participates in discussions and decisions about the evolution of our long-term vision.

In 2022, we contributed with another crucial step for Braskem's journey and for sustainable development: we approved the update of the corporate strategy that now highlights sustainability and innovation as strategic pillars; we positioned the renewable, recycled and traditional businesses, provided they contribute to the reduction of greenhouse gas emissions, as avenues for business growth; and we reinforced safety, people and governance as our foundations.

This step consolidates what had already been happening in the last two years: attention to market opportunities to accelerate the achievement and capture value with the commitments made. In 2022, we approved the new corporate structures, such as the spin-off of Voqen, an energy trading company; the joint venture Sustainea, producer of bioMEG and bioMPG; the joint venture with ER Plastics to enter the circular applications market; and the acquisition of an equity stake in Wise, a company in the recycling sector. We also approved the launching of Oxygea that, with initial investment of 150 million dollars, aims at fomenting start-ups and ventures to reach Braskem's long term commitments.

**José Mauro Mettrau  
Carneiro da Cunha**  
Chairman of the  
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## Solid foundations

The strategic focus on growth combined with sustainability requires solid foundations and the reinforcement of the core values of our business. Integrity, ethics, and transparency must prevail in all strategic decisions, actions of executives, leaders, members, and in all relationships.

In this sense, we recognize Braskem's exemplary work in the continuous strengthening of the compliance system that, in 2022, obtained two major achievements: the maintenance of the ISO 37001 certification and the best historical score in the evaluation of the Ethos Institute since we implemented the Compliance System (9.9 out of an average of 7.4 in our sector).

The recognition extends to a close look at human rights. This year, we reinforced our corporate risk matrix with the results of the updated human rights due diligence, which analyzed the potential risks of violation in our value chain. In this process we identified that most of the risks mapped, such as, for example, the image of plastic and socioeconomic issues, are already being treated and monitored by Braskem.

People's safety is a non-negotiable part of our ethical and responsible performance. In this aspect, the Board of Directors continues to closely follow the company's decisions in relation to the communities affected by the geological event in Maceió. The programs dedicated to the safe and fair relocation of families, as well as the region's socio-urban remediation plan are progressing as expected, with the full dedication of more than 1,400 people and in alignment with the authorities.

## Sustainable growth

Over the years, Braskem has evolved its commitments in a manner integrated to the corporate strategy, acting in an increasingly sustainable manner, and focused on preserving and generating value to the planet, to society and to our shareholders.

Even in a challenging global environment, Braskem reinforced its commitment to its financial health and presented solid results throughout 2022, with recurring cash generation of R\$6.0 billion, corporate leverage of 2.42x, and maintenance of its investment grade rating by Fitch and S&P.

We have a sharp vision for 2030. Focused on the perpetuity of the business, we will seek a balance between capital allocation, shareholder return during the petrochemical cycles, while investing in the business and in new opportunities, generating a positive impact for all stakeholders.

**José Mauro Mettrau Carneiro da Cunha**  
*Chairman of the Board of Directors*



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■ **R\$10.6 billion**

in recurring EBITDA with net cash generation of R\$3.3 billion and a return on cash flow of 18%.

■ **2.42x**

of corporate leverage ratio, in dollars, with maintenance of the investment grade by the credit agencies S&P and Fitch Ratings.

■ **US\$149 million**

of investments in projects related to achieving sustainability goals for 2025, 2030 and 2050.

■ **US\$150 million**

dedicated to investments in accelerating innovative start-ups in sustainability and circularity, within five years, through the new Oxygea Ventures innovation hub.

■ **+220 average megawatt of renewable electricity contracted**

in Brazil through long-term agreements for wind and solar sources, equivalent to the residential consumption of a city of 2.8 million inhabitants.

■ **179,000 tons**

of PE I'm green™ sold and diversification of the green portfolio with the Sustainea joint venture, which will produce, in the future, bioMEG and bioMPG based on renewable raw materials.

■ **Increase by 144%**

in sales of products with recycled content, totaling 54 thousand tons, and expansion in the recycling chain with the acquisition of Wise Plástico and the joint venture with ER Plastics.

■ **0.85 accidents rate**

accidents with and without lost time per million hours worked, lowest rate in the last six years due to progress in the human reliability program.

■ **The highest score**

of the well-being thermometer in three years of research (4.17 out of 5 points), which evaluates the level of satisfaction, engagement, and well-being of the members with their work, now considering all the regions.

■ **+150 social projects**

which benefited more than 610,000 people worldwide.

■ **R\$514 million**

in spending and investment in innovation and technology, an increase of 70% from 2021.





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# Braskem

- Our value chain
- Our products



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# Braskem

GRI 2-1, GRI 2-6

We are a global chemical and plastics company, a leader in the production of biochemicals and biopolymers manufactured from ethanol produced on an industrial scale from sugarcane. As the largest plastics producer in the Americas, we are committed to the circular economy and carbon neutrality, and believe in innovation as the strategic pillar of our actions.

Our purpose is to create sustainable solutions through chemicals and plastics. To that end, we have adopted a business strategy integrated with sustainable development, strengthening our commitment to economic growth, conservation of the environment and social justice. We have a human perspective and encourage leadership in all our team members, who work daily to develop a broad and diverse portfolio, with products and solutions that serve our customers in more than 71 countries.

**LEARN MORE!** about Braskem.

## Subtitle



**Commercial  
office**



PP: 625 kt/year  
CRP: 23 kt/year



Ethylene: 3,752 kt/year  
Green ethylene: 200 kt/  
year (+ 60 kt growth)



**Industrial  
plants**



PP: 2,020 kt/year



**Recycling  
facilities**



PE: 1,050 kt/year



**Innovation  
center**

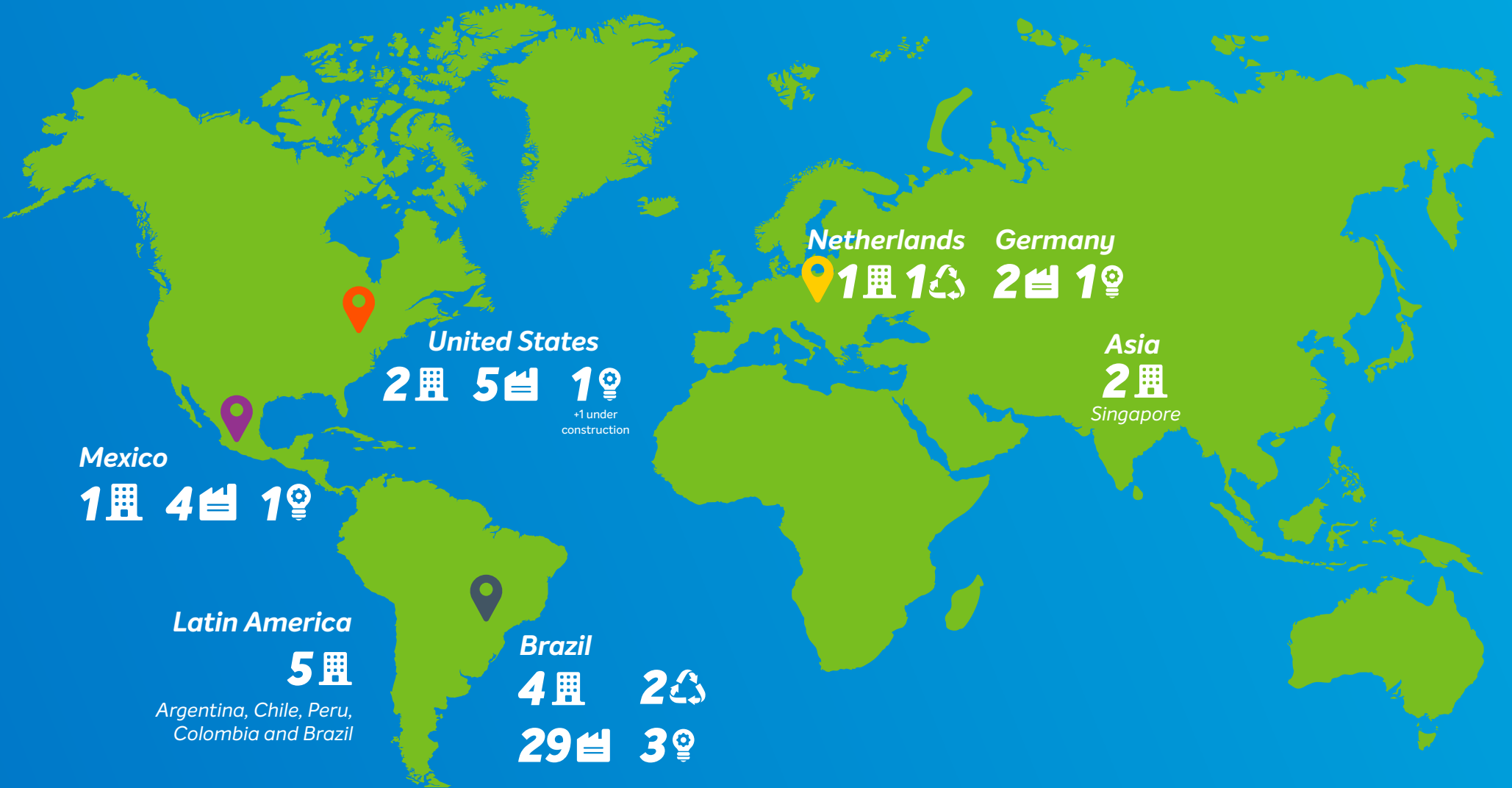
PE: 3,055 kt/year  
PP: 1,850 kt/year  
PVC: 710 kt/year  
Chlorine: 400 kt/year  
Caustic soda:  
460 kt/year  
PCR: 39 kt/year

## Performance map

GRI 2-1, GRI 2-6, GRI 2-7

- **+ 8,600** team members
- Present in **11 countries**.
- **40** industrial **unities** and **3 recycling facilities**.
- **14** comercial **offices**.
- Costumers in over **71 countries**.
- Annual production capacity of **12 million** tons of chemicals<sup>(1)</sup> and **9.3 million** tons of thermoplastic.
- **6 innovation centers** and 1 under construction.
- **200,000** tons of biopolymers and **+60,000** tons in expansion.
- Net Revenue: **US\$18.7 billion** in 2022.
- Market Value: **US\$3.6 billion** (12/31/2022).

(1) Includes ethylene, caustic soda, chlorine, EDC and other chemicals.



**CLICK HERE**

For more information  
about our global presence.





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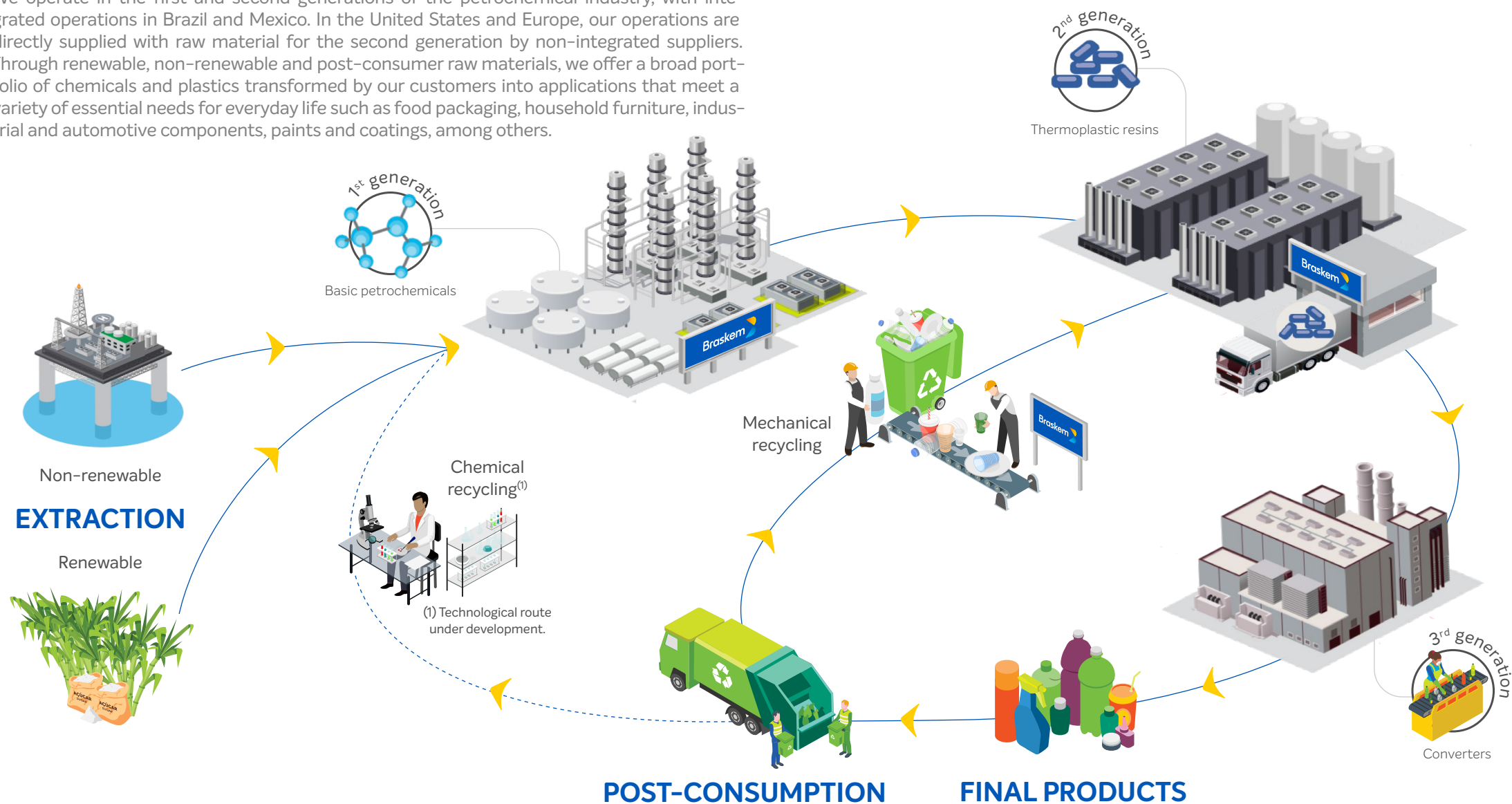
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# Our *value* chain

GRI 2-6

We operate in the first and second generations of the petrochemical industry, with integrated operations in Brazil and Mexico. In the United States and Europe, our operations are directly supplied with raw material for the second generation by non-integrated suppliers. Through renewable, non-renewable and post-consumer raw materials, we offer a broad portfolio of chemicals and plastics transformed by our customers into applications that meet a variety of essential needs for everyday life such as food packaging, household furniture, industrial and automotive components, paints and coatings, among others.





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# Our products

GRI 2-6

In the search for sustainable solutions through chemicals and plastics, our products are used to manufacture a wide range of items that people use in their daily lives in segments such as food packaging, home furniture, industrial and automobile components, paints and coatings, and others.

Through innovation, we aspire to be a benchmark in sustainability within the chemical and plastics industry. We work on several fronts to assess the environmental impacts and extend the useful life of our products. When developing new technologies, products and applications or business models, we seek solutions that mitigate negative impacts of our portfolio across the chain, whether by encouraging the use of circular design, supported by the Design for Environment methodology<sup>(2)</sup>, or through Life Cycle Assessment (LCA)<sup>(3)</sup> or sustainable production certifications.

[LEARN MORE!](#)

About our  
Wenew portfolio.

<sup>(2)</sup> Design approach that focuses on reducing the overall impact of a product, process or service on health and the environment, where impacts are taken into account throughout its life cycle.

<sup>(3)</sup> Technique for evaluating and quantifying potential environmental impacts associated with a product or process.

[LEARN MORE!](#)

About our portfolio of  
I'm green™ products

## Infrastructure, housing, water availability, and sanitation

### Braskem products used

PVC • Toluene • Braskem PIB • PP • Chlorine  
• Solvents • Butadiene • Benzene • PE •  
Unilene • Caustic Soda • Hypochlorite

### Benefits

Improved application performance, improved pipe/treatment station efficiency, and lower cost if compared to other materials

### End products

Household appliances • Furniture • Paint • Cleaning products • Water treatment stations

## Mobility

### Braskem products used

PE • Paraxylene • Cumene • PP • Propene  
Fuel • Benzene

### Benefits

More passenger safety, corrosion protection, fuel economy of fuel, and lower rate of emissions of pollutants into the atmosphere

### End products

Fuel tank • Coating of steering wheels and shock absorbers, door and instrument panels, bumpers, glove compartment, seat linings, trunks, and roofs • Air bag, air intake ducts, gears, injection system connectors, and parking brake system • Seat belt • Headlights, taillights, dashboard • Gasoline • etc.

## Health

### Braskem products used

PE • PVC • Butadiene • PP • Propene • Ethane

### Benefits

Greater durability and impact resistance, lower cost and rejection in the human body, less contamination, greater hygiene

### End products

Prosthetic • Medical devices • Plastic diapers • Implants • Medical equipment • Vaccines and medicines • cleaning and sterilization



## Packaging and consumer goods

### Braskem products used

PE • PP • PCR (post-consumption resin)  
• green PE • EVA and green EVA

### Benefits

Better conservation, quality, and hygiene in food transportation and storage, better hygiene and comfort in baby care, better processability and lower cost if compared to other materials

### End products

Rigid packaging for food, beverage, personal care products, and industrial uses • Flexible packaging for food (e.g.: plastic wrap) • Fabric • Disposable diapers • Bags • Buckets • Boxes • Furniture • Toys



## Agriculture and food

### Braskem products used

PE • PVC • Solvents • PP • Paraxylene • PIB

### Benefits

Increased productivity with less water consumption and reduced food waste

### End products

Grain packaging • Fruit and Vegetable Products • Agrochemicals, fertilizers, seeds • Beverage packaging, PE bottles, etc.





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# Company's *strategy*

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- **Business model**
- **Ecosystem**
- **Intelius: global performance management**
- **Our sustainability journey**
- **Materiality matrix**
- **Sustainable development commitments**



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## Value creation strategy

In 2022, we took another crucial step towards defining the company's growth focus for the coming years, within a strategy that integrates our commitments to sustainable development and maintaining our competitiveness.

Throughout the year, we conducted a review and consolidation exercise of our corporate strategy, which is anchored on its strategic pillars and foundations, with a focus on creating value through balanced capital allocation, returning value to shareholders over the cycle, while we invest in our growth avenues, impacting positively all stakeholders.

### Strategic pillars

Our strategic pillars reinforce the ambitions we have for the long term, considering the demands and opportunities in the traditional business, as well as ensuring that we look at the topic of sustainability in our investment decisions. Hence, our corporate strategy contemplates the following pillars:

- **Productivity and competitiveness:** move towards the 1<sup>st</sup> quartile of the global cost curve of the petrochemical industry, focusing on decarbonization initiatives and high value-added investments.
- **Sustainability:** to be a reference in the chemicals and plastics sector in sustainable development globally.
- **Growth and diversification:** to increase diversification into bio-based and circular raw materials and products.
- **Innovation:** deliver sustainable high value-added solutions through innovation in chemistry and plastics.

### Foundations

The foundations of our strategy reflect the values that we consistently practice and that are key to ensuring the achievement of our ambitions across the different pillars and growth avenues. They are:

- **Safety:** safe operations as a permanent and non-negotiable value.
- **People:** a human-centered company that promotes diversity, inclusion, and human right.
- **Governance:** governance and compliance in line with market best practices.

### Growth avenues

#### Traditional business

We will selectively invest to grow our current business seeking for productivity, and competitiveness improvements, and continue to implement the decarbonization of our existing assets. These measures together will enable the delivery of our commitment to reduce scope 1 and 2 emissions by 15% by 2030 and achieve carbon neutrality by 2050.

#### Bio-based

Our strategy seeks to grow in bio-based resins and chemicals, as well as increase the use of renewable raw materials, to meet our commitment of expanding bioproducts capacity to 1 million tons by 2030. We intend to accelerate the delivery of this commitment through the creation of strategic and financial partnerships.

#### Recycling

We aim to grow in circular products (mechanical recycling) and expand the use of circular raw materials (chemical recycling), with a commitment to reach 1 million tons sold of resins and chemicals with recycled content by 2030. Also, we are working to prevent 1.5 million tons of plastic waste from being sent to incineration, landfill, or dumped in the environment by 2030.

### Strategic pillars

Productivity and Competitiveness

Sustainability

Growth & Diversification

Innovation

### Growth avenues

Traditional business

Bio-based

Recycling

### Foundation

Safety

People

Governance

**Value creation to shareholders and positive impact generation to all stakeholders**





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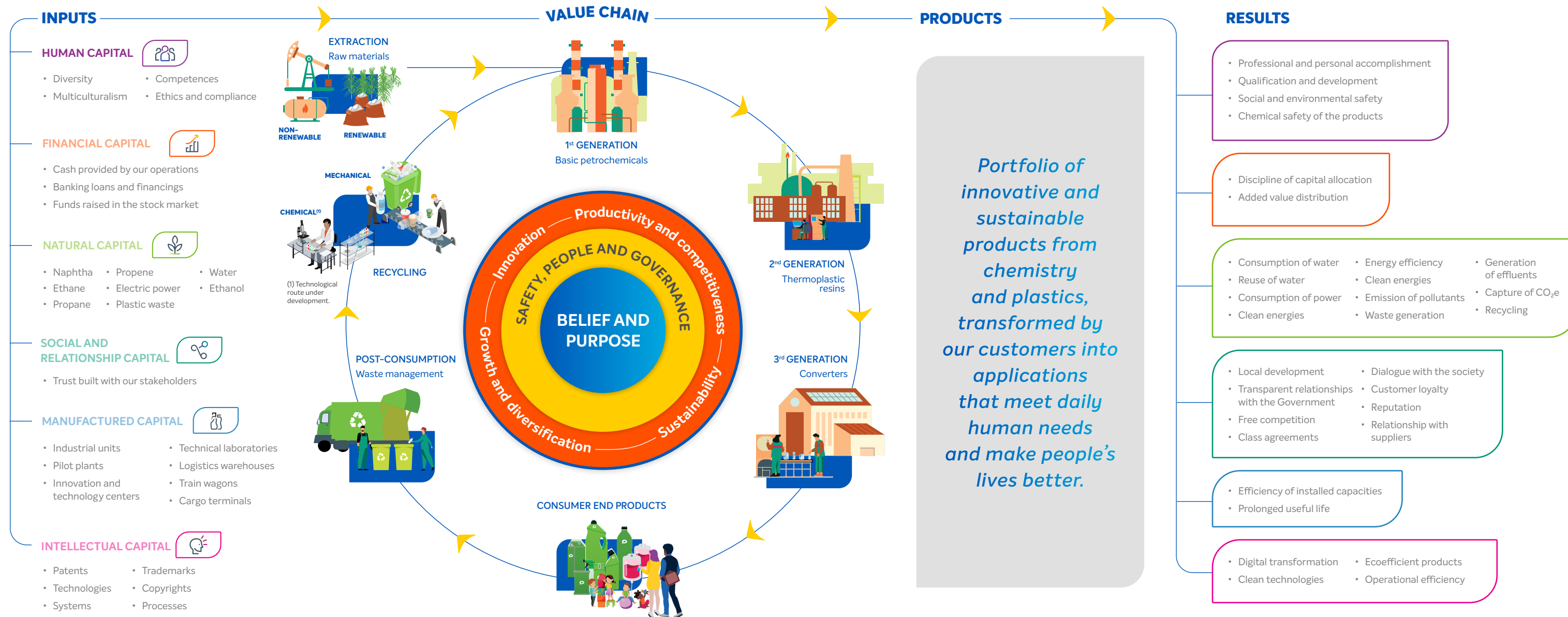
SASB content summary

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# Business model

“

Our corporate strategy guides the generation of integrated value throughout the value chain, expanding positive impacts and mitigating the negative ones of our performance in all capitals.





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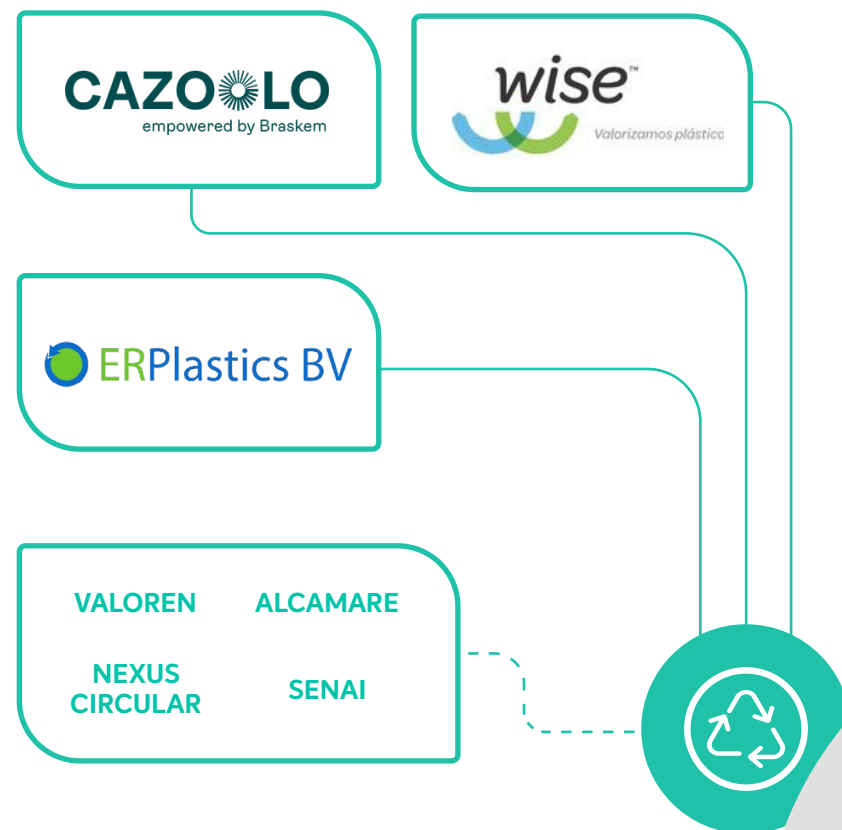
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# Ecosystem

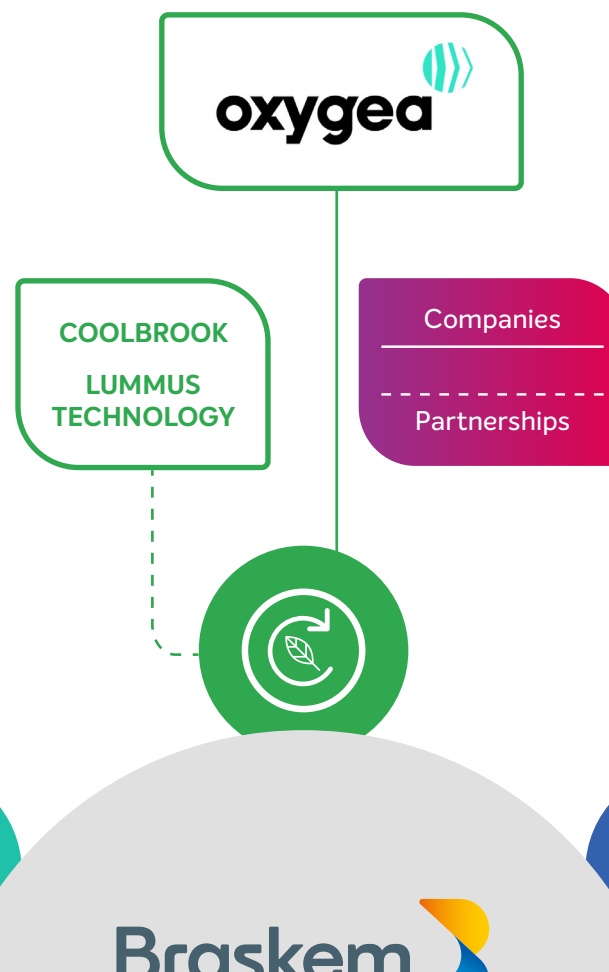
GRI 2-6

We believe that the transformation of the chemical and plastics industry is a global challenge, which shall be carried out in cooperation. For that reason, we act with strategic partnerships to accelerate the achievement of our long-term commitments.

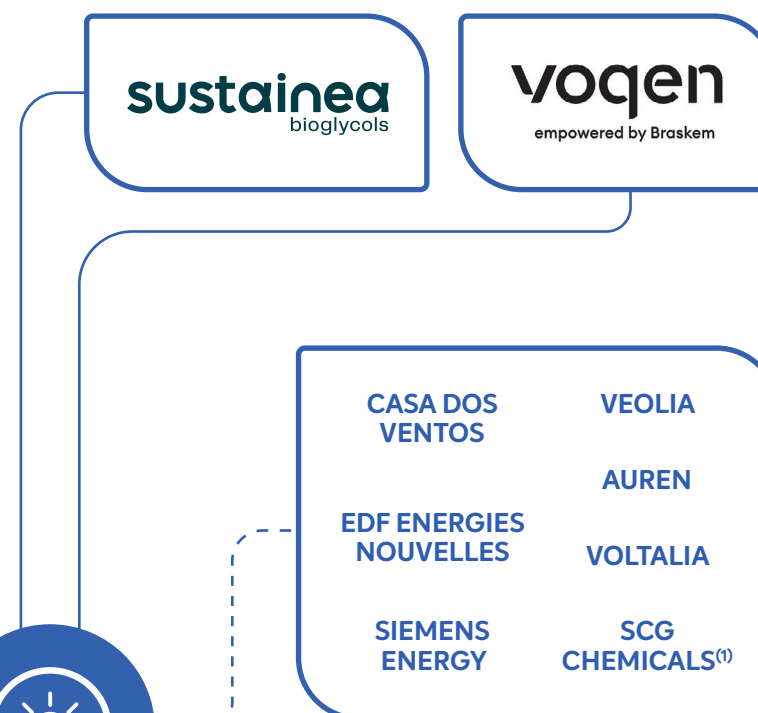
## ELIMINATION OF PLASTIC WASTE



## SUSTAINABLE INNOVATION



## COMBATING CLIMATE CHANGE



(1) Partnership in development.

Braskem

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## Intelius: global performance management

GRI 403-1

The purpose of Intelius, Braskem's global management system, is to unify and simplify the way we translate strategy into results, and it was developed based on the ISO 45001, ISO 14000, RC 14001, and ISO 9000 standards, in addition to regulations of other standards applicable to the petrochemical industry (such as ABNT rules, API, and Programa Atuação Responsável® [Responsible Action Program]).



Intelius, which is composed of five pillars – Health, Safety and Environment (HSE), Quality, Industrial Effectiveness, Performance Management, and Continuous Improvement & Sharing of Best Practices – is applied mainly to the company's industrial activities, and the implementation of its requirements leads to the identification and prevention of impacts on workers' safety and health, the environment, process safety, asset reliability, and the quality of our products, seeking to promote continuous process improvement.

The system is subject to an annual internal audit for the identification and repair of potential non-conformities in relation to its guiding principles. In 2022, 100% of the industrial units were audited, as well as the corporate processes related to certifications, such as ISO 9001 and ISO 14001, for example. More than 3,000 requirement compliance checks were performed, distributed among all units, totaling more than 650 audit hours, globally.

## Continuous improvement

Also in 2022, we established a governance cycle for Intelius that considers a cohesive and consistent documentation structure, implementation of requirements based on gap analysis and action plan, audits for the verification of compliance of the requirements implemented, and the review, to ensure effectiveness of the management system and adequacy to the company's strategies.





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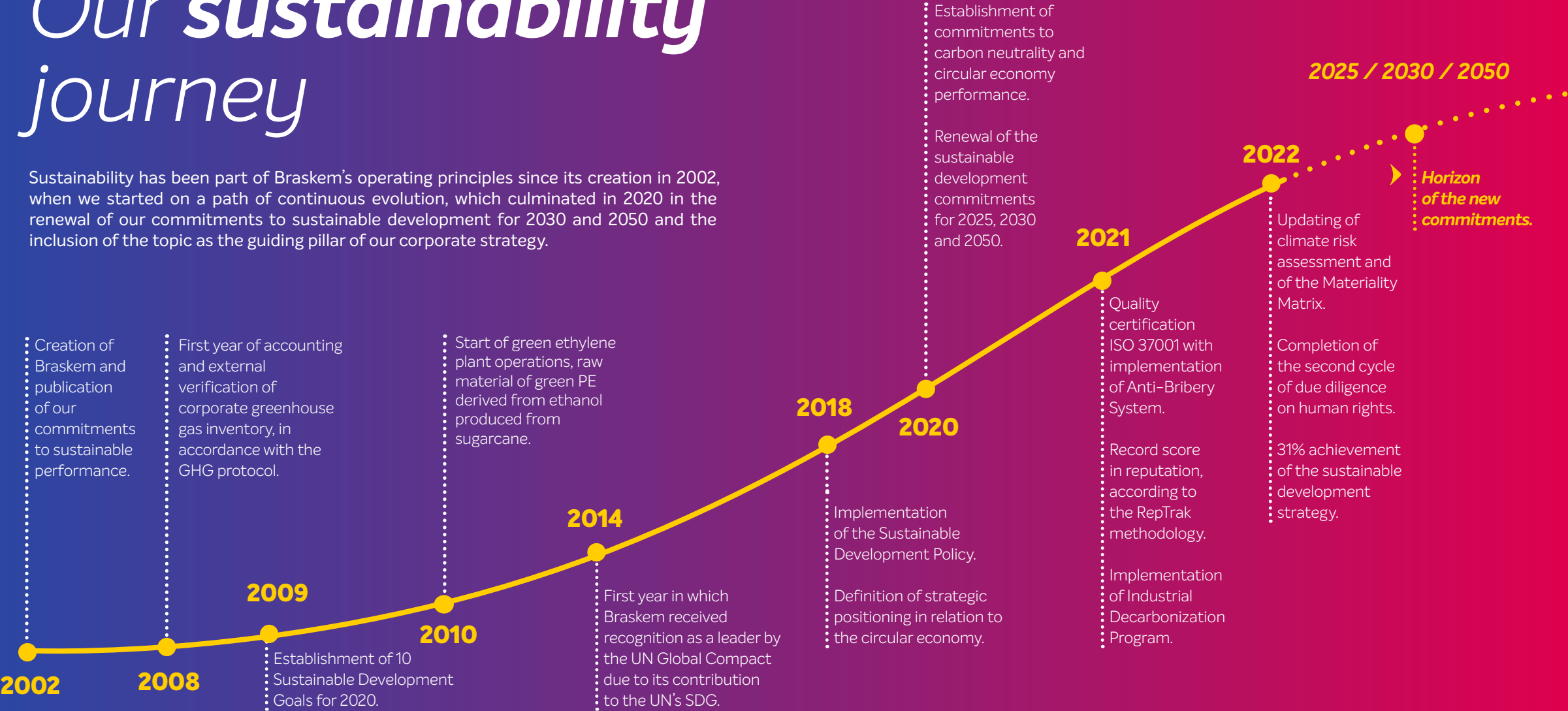
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# Our *sustainability* journey

Sustainability has been part of Braskem's operating principles since its creation in 2002, when we started on a path of continuous evolution, which culminated in 2020 in the renewal of our commitments to sustainable development for 2030 and 2050 and the inclusion of the topic as the guiding pillar of our corporate strategy.







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# Materiality matrix

GRI 2-29, GRI 3-1, GRI 3-2

The materiality matrix is a fundamental tool for building our long-term commitments for sustainable development. Based on the most recent guidelines of the Global Reporting Initiative (GRI), in 2022, we updated our materiality matrix to identify the issues that are most relevant to our business, considering environmental, social, economic and governance dimensions. This update involved consulting with more than 1,200 internal and external stakeholders<sup>(1)</sup>, including team members, leaders, customers, suppliers and the financial market, as well as face-to-face interviews with 78 leaders, benchmarking peer companies and analyzing key corporate risks and opportunities for the sector<sup>(2)</sup>.

## Steps for materiality reassessment



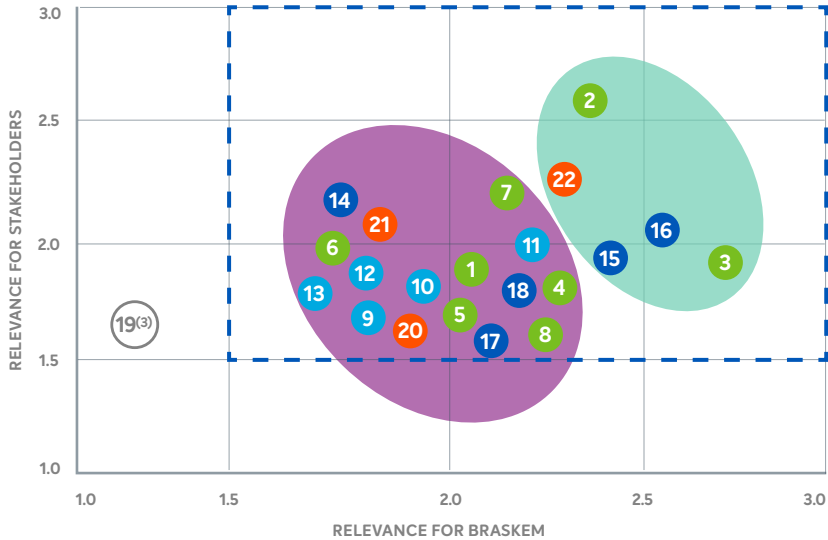
The study resulted in more than 500 topics which, after analysis and cross-checking of data and perceptions raised during the qualitative and quantitative consultations, defined the 21 most relevant issues for Braskem. These issues were aggregated into two different groups, which guided the type of strategic action to be taken: the value protection group (16) and the value creation group (5).

**Value protection:** issues whose impact management can protect Braskem's tangible and intangible value over time, which preserve and strengthen the corporate image and mitigate business risks.

**Value creation:** issues whose impact management can create tangible and intangible value for Braskem over time, which generate competitive advantage through business opportunities and strategic partnerships.

After reviewing the materiality matrix, we identified that most topics already have strategic ambitions or are part of the company's operational management. The new themes identified are being evaluated to define the level of action.

## Braskem materiality matrix



- Protection of value
- Generation of value
- 1 - Irrelevant 2 - Important 3 - Very important
- 21 material issues

(1) Academia and universities, associations and coalitions, boards, officers, customers, communities and third sector, financial market, government and trade associations, investors, suppliers, startup ecosystem, team members, and unions.  
(2) MSCI, GRI, SASB, CVM, WEF, S&P, among others.  
(3) Issue analyzed as non-material.

- Strategic ambition: KPIs, targets 1
- Operational management 2
- In evaluation 3

ENVIRONMENTAL	1. Biodiversity and land use	3
	2. Climate changes	1
	3. Post-consumption plastics	1
	4. Air pollution	1*
	5. Energy efficiency	1
	6. Waste management	1*
	7. Waste and effluents management	1
	8. Raw material impacts	1
SOCIAL	9. Diversity, equity, and inclusion	1
	10. Communities and social investments	1
	11. Health, safety, and well-being	1
	12. Human rights	1
	13. Employment, development, and retention	2
ECONOMIC	14. Responsible production and consumption	2
	15. Innovation, technology and digitalization	1
	16. Economic and financial performance	1
	17. Project management	2
	18. Supply chain management	2
GOVERNANCE	19. Infrastructure and sustainable cities <sup>(4)</sup>	
	20. Risk and opportunity management	2
	21. Management of relationship with stakeholders	2
	22. Governance, ethics, and compliance	2

\* Ambition to be defined.





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# Sustainable Development Commitments

Approved by the board of directors in 2020, the sustainable development commitments were built based on our materiality matrix, had the participation of our team members, leaders and executives, and also considering the analysis of global scenarios and trends, corporate risks and external references in sustainability. They encompass the dimensions of sustainable development (economic, social and environmental) and are aligned with the UN Sustainable Development Goals (SDGs), with priority given to the topics where our biggest impacts were identified. This strategy consists of seven dimensions and sets Braskem's second cycle of long-term commitments<sup>(2)</sup> for 2025, 2030 and 2050.

## Braskem and the SDGs

The commitments for 2025, 2030 and 2050 were set considering the impacts of Braskem and its supply chain – positive and negative – on each of the SDGs. This analysis was performed using the SDG Compass methodology and outlined our direct impact on four SDGs and, through our supply chain, impact on another 9 SDGs – totaling 13 themes.

[CLICK HERE](#)

To understand how we work on each of these commitments and how they align with our business.

## Our SDG priorities:



(2) The achievement of the commitments for sustainable development disclosed by the company (within projected costs and expected deadlines) is also subject to risks that include, but are not limited to: advancement, availability, development and accessibility of the technology necessary to achieve these commitments.

## Commitments 2020–2030

In 2022, we achieved 31% of our commitments<sup>(1)</sup>.

(1) It disregards the Water Security indicator, as its baseline is under evaluation, as well as the commitment to Operational Eco-efficiency, as ambitions are being defined.



[LEARN MORE!](#) About our commitments.





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## Elimination of plastic waste



Proper management of post-consumer plastic waste disposal is a global concern and a society-wide challenge. We want to contribute and be recognized as a company that develops the recycling supply chain, acting on four fronts that encompass all the challenges of the industry:

1

### Portfolio of sustainable products

Investment in an innovative and sustainable product portfolio based on chemical and mechanical recycling.

2

### Technology development

Development of technologies in chemical and mechanical recycling to enable large-scale production of products with recycled content, in chemical and mechanical recycling.

3

### Environmental education and consumer engagement

Promotion and engagement of consumers in the recycling and recovery of waste, by raising awareness of the value of waste.

4

### Circular design applications

Innovation in circular packaging design, based on collective intelligence.

***These fronts seek to achieve our commitments of increasing to 300,000 tons per year the sale of products with recycled content by 2025 and 1 million tons by 2030, as well as preventing 1.5 million tons of plastic waste from being sent to incineration, landfills or disposed of in the environment by 2030.***

Current challenge

Annual results

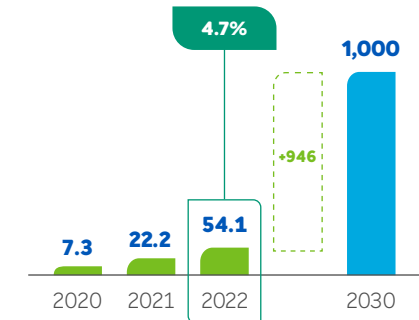
Commitment for 2030

Positive progress of the target

No progress on target

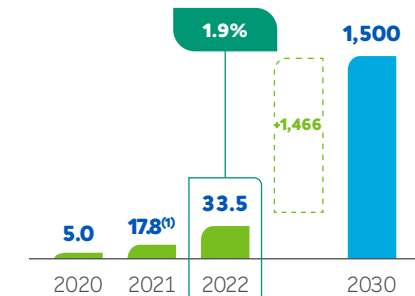
### Product sales with recycled content

(thousand tons)



### Recovered plastic waste

(thousand tons)



(1) In 2022, we started to consider collective actions for waste recovery. The result for 2021, of 13 thousand tons, considered only the percentage recovered in the sale of post-consumer resins.

You can find more details on the key initiatives and projects that helped us achieve these results in the **Natural Capital** and **Manufacturing Capital** chapters.

[CLICK HERE](#)

To find out more about the commitments and ambitions of our strategy.

[LEARN MORE!](#)

About the calculation methodology in the annex.



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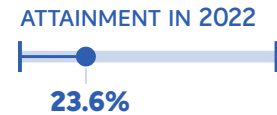
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## Combating climate change



Climate change is a global challenge, and its impacts are felt in all dimensions of sustainable development. Thus, we wish to be global leaders in the chemical industry, with the best indicators in terms of GHG emissions and a key player in carbon capture through the production of materials with renewable raw materials, based on three fronts:

1

### Emission reduction

Reduction in the emissions of CO<sub>2</sub>e with focus on energy efficiency and increased use of renewable energy.

2

### Carbon removal with stock in product

Accelerate the growth of company business in chemical products and polymers made from renewable raw materials that remove CO<sub>2</sub>e from the atmosphere.

3

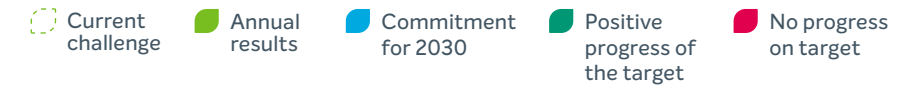
### Carbon to chemical conversion

Investment in technologies for carbon capture to store and use it as a raw material for the production of chemical products.

*We seek an absolute reduction of greenhouse gases emission, scopes 1 and 2, of 15% by 2030 (in relation to the average emissions for the years 2018, 2019 and 2020), reaching carbon neutrality by 2050.*

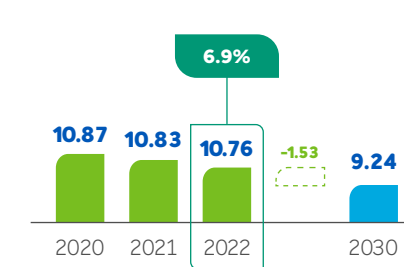
Thus, our purpose is to increase to 85% the total renewable electricity purchased for consumption in our industrial units, as well as to expand the production capacity of bioproducts to 1 million tons.

Part of the fight against climate change also encompasses business adaptation to extreme weather events. To mitigate the risks related to water scarcity, we have the commitment of increasing the water safety index of our operations to 100%, by means of water consumption efficiency and substitution of capture for safe sources.



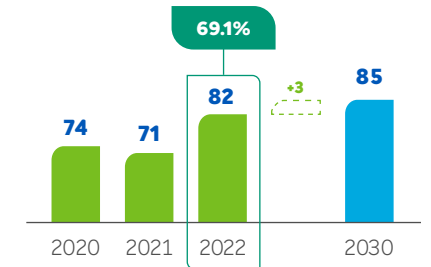
### Absolute GHG emissions

(million tons of CO<sub>2</sub>e, scopes 1 and 2)



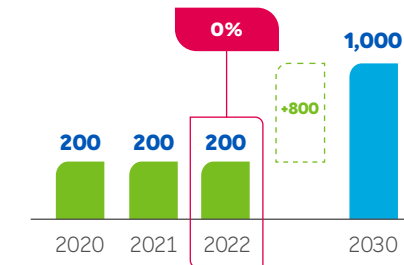
### Renewable electricity

(% of electrical energy purchased)



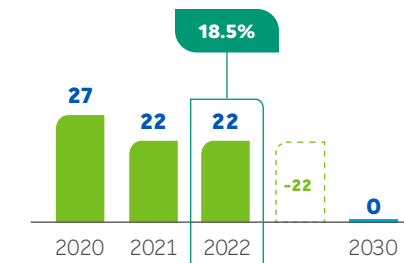
### Bioproduct production capacity

(thousand tons)



### Climate adaptation

(% of high climate risk)



### Water Safety Index

(% of water capture from safe sources)

Note: Braskem's commitment is to achieve 100% water intake from safe sources by 2030, measured by the water security indicator.

After reviewing the methodology for this indicator in 2022, Braskem will recalculate its historical data and base year to present its achievement in the next cycle. See the annual indicator results in Natural Capital, Water Management.

Find more details about the main initiatives and projects that helped us achieve these results in **Natural Capital**.

[LEARN MORE!](#)

About the commitments and ambitions of our strategy.

[LEARN MORE!](#)

About the calculation methodology in the exhibit.





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## Social responsibility and human rights

ATTAINMENT IN 2022

35.1%

Progress in sustainable development also implies a just society, with opportunities for all and aligned with human rights. Therefore, our ambition is to be recognized as a company that promotes human rights and equity in our operations and supply chain, and that also contributes towards the local development of surrounding communities. For that reason, we work on three fronts:

1

### Local development

To promote the local development of the communities surrounding our operations, contributing to the circular economy, entrepreneurship and innovation, and education.

2

### Diversity, Equity and Inclusion Program

To cooperate for an increasingly inclusive and welcoming society, ensuring equal opportunities for all through the Diversity, Equity, and Inclusion Program.

3

### Human rights risk management throughout the chain

To prevent, mitigate and, where appropriate, redress any human rights violations in our own operations and as a result of our business relationships.

*In 2022, we completed our second cycle of due diligence in human rights, a process that will help us achieve the commitment of managing 100% of human rights risks (high and medium) by 2030, in addition to supporting the achievement of commitments such as increasing the number of people benefited in communities to 500,000 people, increasing the percentage of women in leadership in Brazil to 45% and the percentage of black team members to 35%, in the same period.*

Current  
challenge

Annual  
results

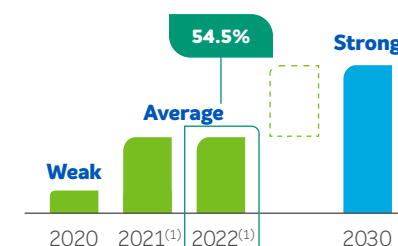
Commitment  
for 2030

Positive  
progress of  
the target

No progress  
on target

### RepTrak Pulse – Communities<sup>(1)</sup>

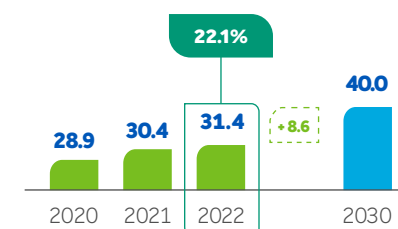
(range)



<sup>(1)</sup> Results for 2021 and 2022 revised due to improvement in RepTrak's reputation analysis methodology.

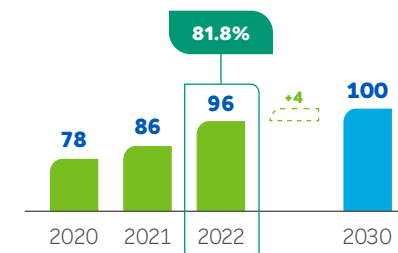
### Diversity

(women in leadership –%)



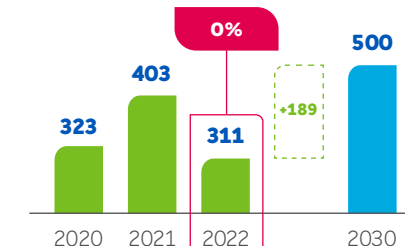
### Risks to human rights in the supply chain

(% of high and medium risks  
that are fully managed)



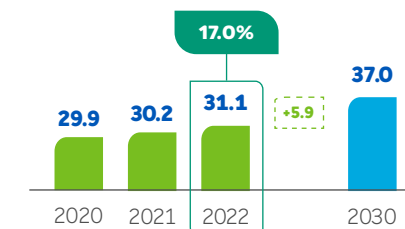
### Beneficiaries in communities<sup>(2)</sup>

(thousand people)



<sup>(2)</sup> Considers private social investment and volunteering.

(team members self-declaring as black<sup>(3)</sup> – %)



<sup>(3)</sup> Considers Brazil and the United States.

You can find more details on the key initiatives and projects that helped us achieve these results in the **Human Capital** and **Social and Relationship Capital** chapters.

[LEARN MORE!](#)

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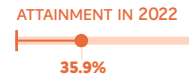
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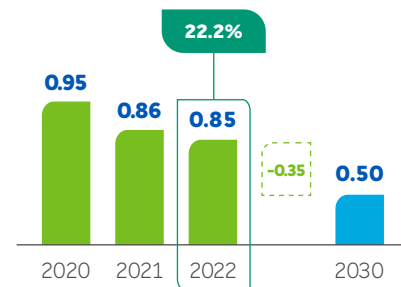


## Health and safety



### Accident Rate CAF (with lost time) + SAF (without lost time)

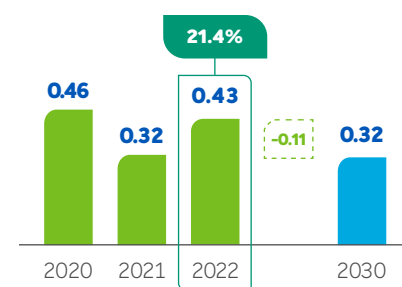
(accidents per million hours-man worked)



CAF: accidents with leave  
SAF: accidents without leave

### Accident Rate TIER 1 + TIER 2

(accidents per million hours-man worked)



Current challenge

Annual results

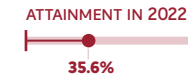
Commitment for 2030

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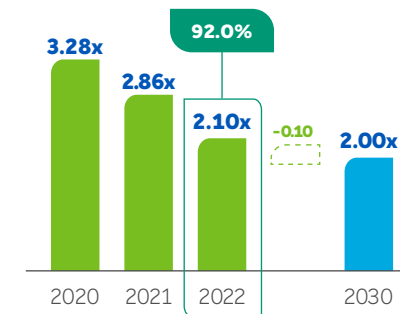


## Economic and financial results



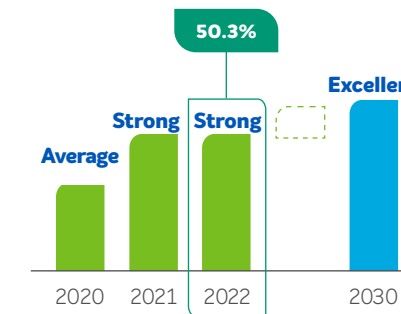
### Net debt to EBITDA ratio

(points)

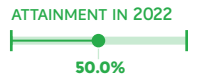


### RepTrak Pulse – Customers

(range)

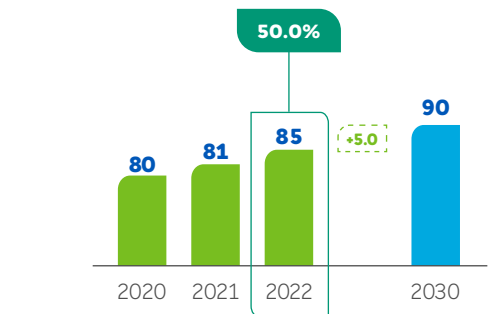


## Sustainable innovation



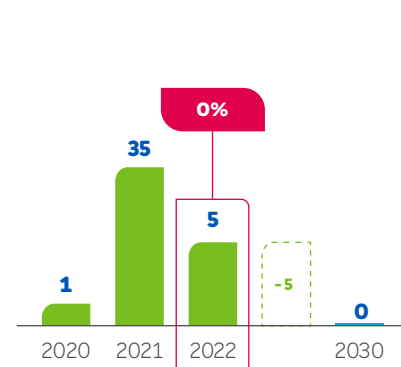
### Sustainability Index of I&T

(% of portfolio of projects with positive impact)



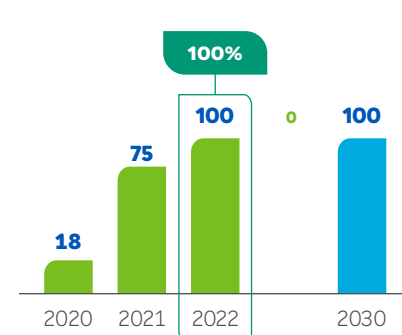
### Occupational diseases

(number of events)



### Socio-environmental risk mitigation plan<sup>(1)</sup>

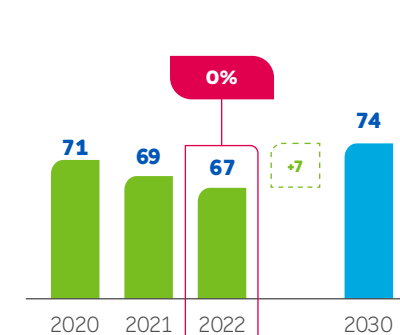
(% of actions implemented in the year)



(1) The assessment of socio-environmental risks is an on-going study. New action plans already exist for the coming years and new actions that can be included by 2030.

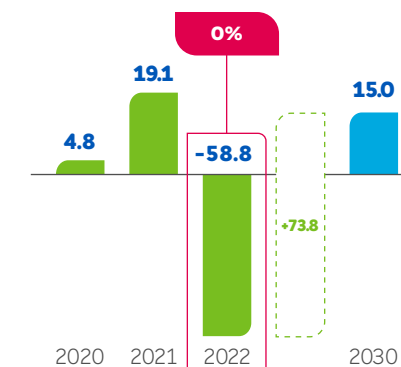
### Dow Jones Sustainability Index

(points)



### Total Shareholder Return

(%)



You can find more details about the key initiatives and projects that helped us achieve these results in the **Human Capital** chapter.

[CLICK HERE](#)

To find out more about the commitments and ambitions of our strategy.

You can find more details on the key initiatives and projects that helped us achieve these results in the **Financial Capital** chapter.

[CLICK HERE](#)

To find out more about the commitments and ambitions of our strategy.



## Operational eco-efficiency

The indicators for this dimension refer to the availability of water consumption, energy consumption, hazardous waste generation, air emissions, and chemical and biochemical oxygen demand. Challenging commitments are being defined and you can find further details on these fronts in **Natural Capital**.

[LEARN MORE!](#)

About the commitments and ambitions of our strategy.



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## Governance in sustainability

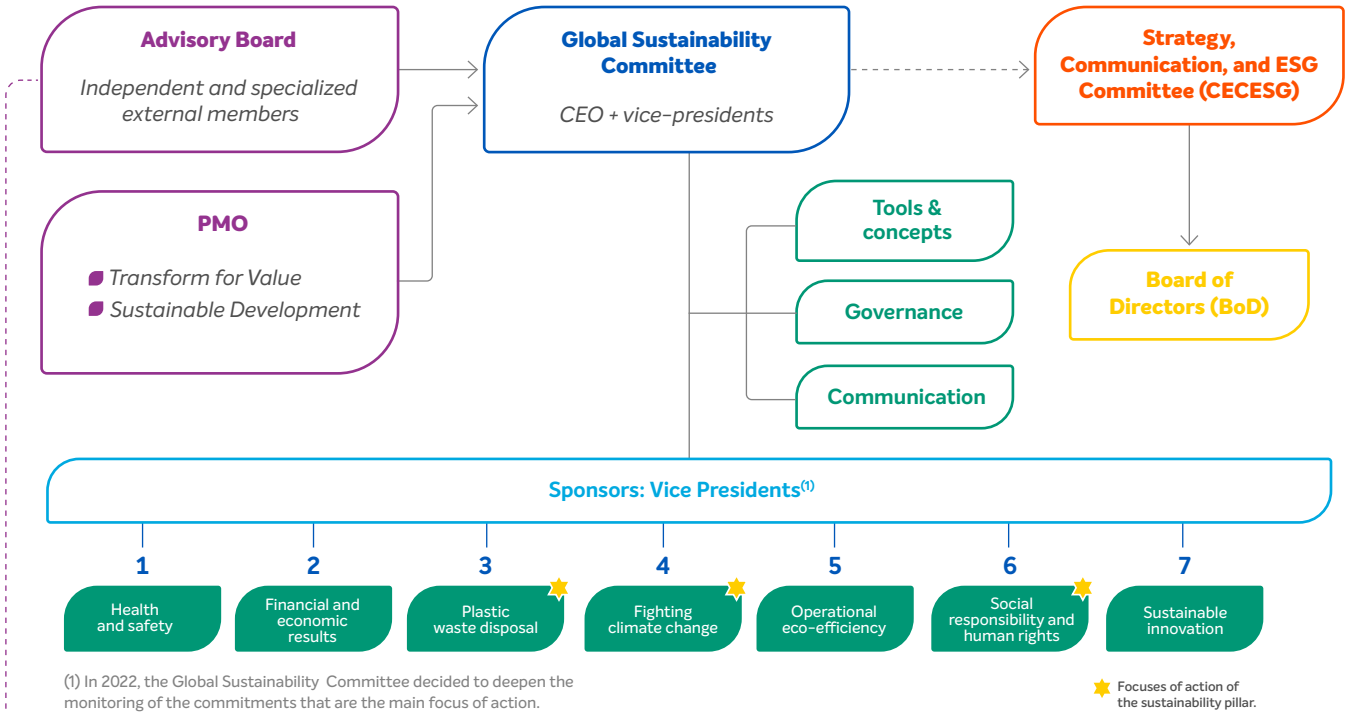
To guarantee that short-term objectives are aligned with the long-term objectives, Braskem relies on a governance structure that ensures the follow-up of the strategy's progress by executives through the Global Sustainability Committee. The Committee meets monthly, is divided into working groups for each dimension of the strategy, and for each of them an executive is designated as the responsible person. The matters discussed in this forum are submitted to the CECESG, an advisory committee to the Board of Directors for sustainability matters, according to the relevance of the agenda.

In furtherance of the commitments made, assigning roles and responsibilities to all professionals, since 2021 environmental, social, and governance (ESG) aspects have been included in the corporate goals, which are assigned, according to positions and responsibilities, from the business leader to the base of the hierarchy. In 2022, the ESG targets attributed to the business leader represented 33% of the total targets established, against 30% in 2021.



## Sustainability Governance Structure

GRI 2-12, GRI 2-13



### Advisory Board

Since 2022, we have had a Sustainable Development Advisory Board formed by external and independent members. Its mission is to bring an unbiased and specialized perspective to decision-making related to the fulfillment of the company's commitments on health, safety, climate change, plastic waste elimination, social responsibility and other themes of the strategy for 2025, 2030 and 2050.

The board focused discussion on four themes: the sustainability strategy and long-term vision; the overall goals and ways to achieve them; advice on project portfolio and innovation; and know-how on sustainability trends and how to incorporate them into the company's strategies.





# Governance, *ethics and compliance*

GRI 2-9, GRI 2-10, GRI 2-11, GRI 2-12, GRI 2-13, GRI 2-17



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- **Governance structure**
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## Governance structure

GRI 2-10, GRI 2-13

Our corporate strategy and ambitions for sustainable development are guided by the constant evolution of our corporate governance and compliance initiatives in accordance with best market practices.

Our Board of Directors (BoD) is the highest governance body, and its powers include to resolve on the company's Business Plan and on the objectives related to compliance and the environmental, social, and governance aspects (ESG), to analyze Braskem's initiatives linked to the ESG criteria and to encourage the adoption and constant update in relation to the best market practices applicable to its sector of activity, to resolve on the Succession Plan of the Officers Appointed by the Bylaws and to set their duties, in addition to approving operational or expansion investments, as provided in its Internal Regulations and in Braskem's Bylaws.

In order to provide a complete overview of Braskem's governance system, all new members of the BoD participate in the Integration Program conducted by the Corporate Governance area, with presentations on the culture, people, business environment, and Braskem's Compliance and Governance Systems. In addition, since 2018 the BoD, its advisory committees and secretariat are subject to an annual evaluation process organized by external advisors. [GRI 2-12](#), [GRI 2-17](#)

Since 2021, the BoD has periodically evaluated the trends and evolution of the practices adopted by Braskem. During 2022, 25 meetings in all were held, including ordinary and extraordinary meetings, the main topics discussed being the monitoring of risk assessment, the discussion, approval and launch of investments and projects in line with the 2030 and 2050 sustainability commitments. As well as the BoD, our governance structure is composed of the General Meeting, the Statutory Executive Board, the Supervisory Board and the advisory committees to the Board of Directors. [GRI 2-12](#), [GRI 2-14](#)

### Board of Directors (BoD)

GRI 2-11



**11 members**, six of whom are independent.



Elected by means of a list indicated by the signatories to the **Shareholders' Agreement**.



**Two-year mandate**, re-election permitted.



**The chairman of the Board of Directors** does not exercise an executive role at Braskem.

[CLICK HERE](#)

To find out more about the composition of our Board of Directors, Executive Board and committees.

[CLICK HERE](#)

Access the internal rules of the Board of Directors here.

### Ordinary General Meeting (OGM)

A forum for the deliberation of shareholders, the Ordinary General Meeting (OGM) takes place every year after the end of the fiscal year to consider matters provided for in the Corporations Act, such as the directors' accounts and financial statements; allocation of net profit from the fiscal year and distribution of dividends; election of the members of the BoD, if applicable, and of the Supervisory Board; and the overall remuneration of the directors and members of the company's Supervisory Board. Extraordinary General Meetings (EGMs) may also be held whenever the corporate interest requires them, to deliberate on other matters under the purview of the shareholders.





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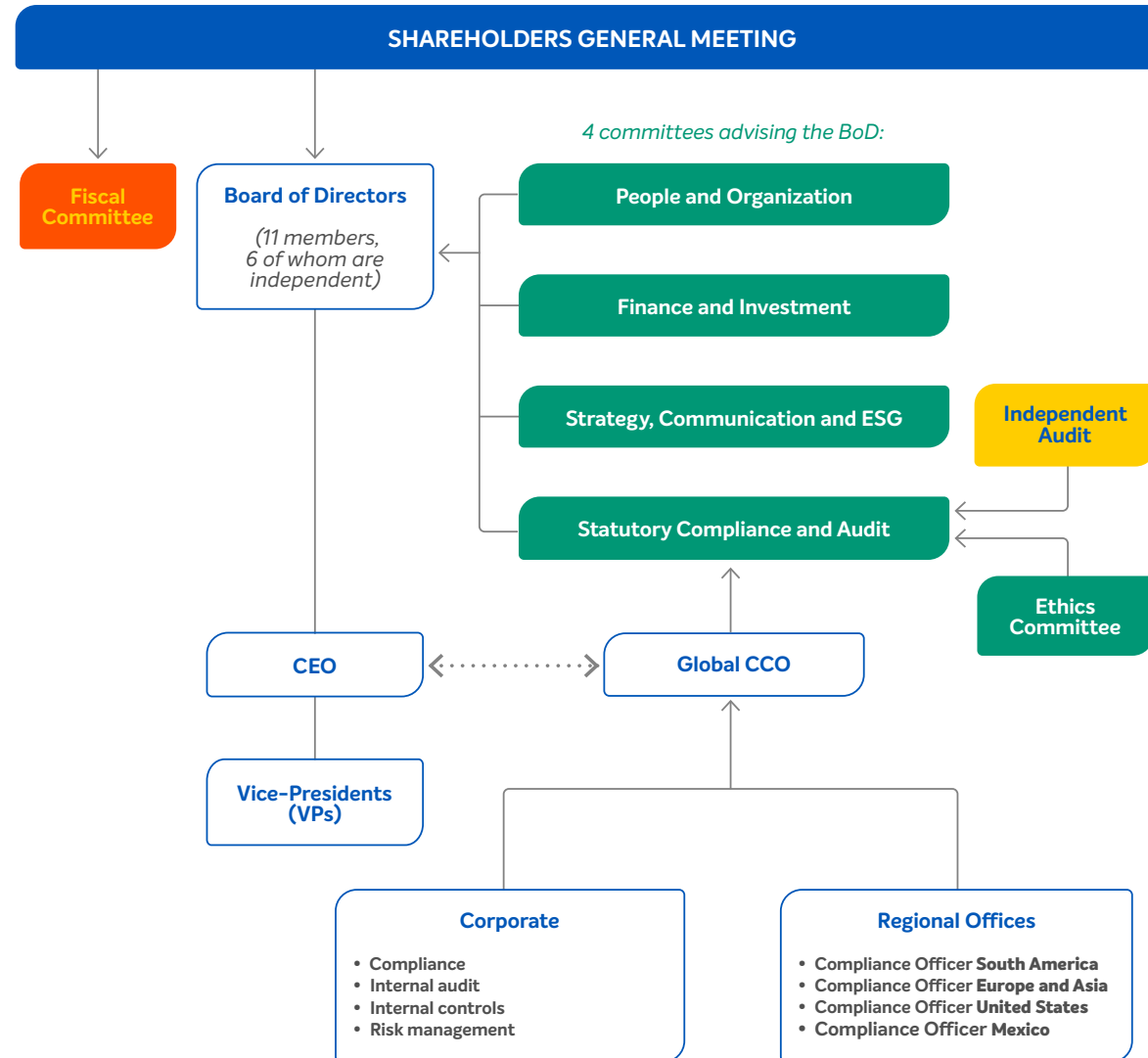
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## Governance Organizational Chart



## BoD Advisory Committees

GRI 2-9

**Statutory Compliance and Audit Committee (Comitê de Conformidade e Auditoria Estatutário – CCAE):** its an statutory committee, that adheres to CVM Resolution nº 23/2021, as well as adhering to the rules of the Sarbanes-Oxley Act (SOx), formed by five independent members (three members of the board of directors and two external members) who monitor Braskem's internal controls and risk management and oversee the quality and integrity of financial statements and financial reports.

**Strategy, Communication, and ESG Committee (Comitê de Estratégia, Comunicação e ESG – CECESG):** composed of three members of the BoD, one of which is independent, it is responsible for supporting the Board of Directors in the evaluation of the strategic direction, which shall observe Braskem's sustainable development guidelines, and for monitoring and evaluating the initiatives and goals assumed by the Company with respect to its corporate sustainability and the ESG criteria. Its duties include, without limitation, to monitor ESG aspects existing in the strategy and in the corporate policies relating to the disclosure of information, sustainable development, and health, safety, environment, quality, and productivity.

**Finance and Investment Committee (Comitê de Finanças Investimentos – CFI):** analyzes the policies related to financial management, guarantees, investments, dividends and securities trading. In addition, it participates in investment decisions and monitors the financial strategy and the performance of the company's shares on the stock market. It has four members of the board of directors, one of these being an independent member.

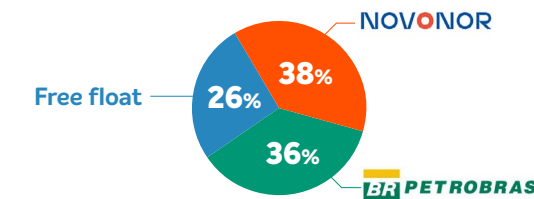
**People and Organization Committee (Comitê de Pessoas e Organização – CPO):** composed of three members of the board of directors, one being independent, it monitors and reviews strategic policies and projects, in addition to parameters and criteria that the board suggests in relation to the remuneration of the directors.

## Shareholding Composition

GRI 2-1

Braskem is a publicly traded company and has participated in Level 1 corporate governance of the São Paulo Stock Exchange (BM&F Bovespa) since 2003. Currently the main shareholders of the company are Novonor – in judicial recovery, and Petrobras. The company also has part of

its shares listed on the B3, the New York Stock Exchange (NYSE) and the Latibex – the Latin American section of the Madrid Stock Exchange, which gives more liquidity to shareholders.







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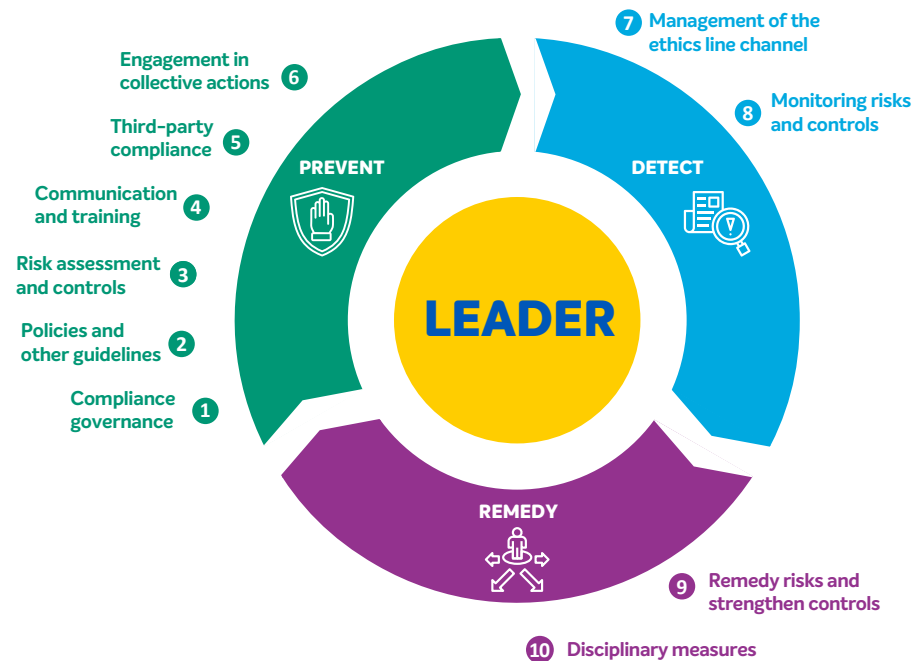
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## Compliance System

GRI 2-26, GRI 3-3, GRI 205, GRI 206, GRI 406, GRI 3-3 406, GRI 3-3 415, GRI 419

Our Compliance area has among its main roles ensuring a constant evolution of the maturity of internal controls, risk management, internal audit and compliance. To that end, we have a Chief Compliance Officer (CCO), who reports directly to the Board of Directors, via the Statutory Compliance and Audit Committee (CCAEC), and indirectly to the CEO. In addition, we work based on our [Global Compliance System Policy](#), which addresses the guidelines and responsibilities of our team members, in addition to establishing instances of governance for their compliance. The goal of double reporting provides for autonomy, while at the same time, maintaining the connection with the business leader.

Braskem's Compliance System consists of 10 integrated Risk Prevention, Detection and Remediation measures. The commitment of Braskem team members, especially leaders, to the implementation and practice of these measures is fundamental to the effectiveness and efficiency of the system. GRI 205, GRI 206, GRI 406, GRI 415, GRI 419



Additionally, below the CCO, there are five structures that act in relation to the continuous improvement of our processes and risk management, with a team composed of more than 80 people worldwide:

**1. Internal Controls:** advises the company on the evaluation and design of processes and controls with a focus on minimizing risks, promoting the accuracy of accounting records and adherence of processes to guiding documentation (internal normative documents), business rules and laws and regulations in force.

**2. Risk Management and Business Continuity:** supports the leaders of the business areas in the assessment, prioritization, treatment and reporting of corporate risks.

**3. Privacy and Data Protection:** guides and organizes data protection through ethical solutions, in accordance with global legislation such as the General Data Protection Law.

**4. Compliance:** helps disseminate company values and promotes ethical, honest and transparent conduct. In addition to the codes of conduct, it provides training on topics such as ethics and anti-corruption.

**5. Internal Audit:** this is an objective and independent assessment and consulting activity, designed to add value and improve Braskem's operations.

In 2022, we issued 25 reports referring to the review of various company processes, where we identified 128 opportunities for improvement, generating more than 200 action plans for the business areas, with the aim of improving our governance and the internal controls environment.

## Leniency Agreement with AGU and CGU

Within the actions of the compliance area in 2022, it is important to highlight the submission of the fifth and sixth monitoring reports of the Improvement Plan which forms part of the Braskem Integrity Program, together with the Secretariat for Private Integrity, which is a result of the Leniency Agreement signed in 2019 with the AGU and CGU.

## Global Compliance Survey

We have also carried out the 2022 Global Compliance Survey, which allowed us to capture the perception of all members of the company about the area, enabling the identification of opportunities for improvement and confirming the commitment to continuous evolution of the system.

### Global Compliance Survey 2022

- **97.5%**  
think that everyone is responsible  
for ensuring compliance  
within the company.
- **+85%**  
trust the confidentiality and  
seriousness of the Ethics Line Channel.
- **93.6%**  
feel empowered to act ethically,  
honestly and transparently.



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## Commitment to compliance

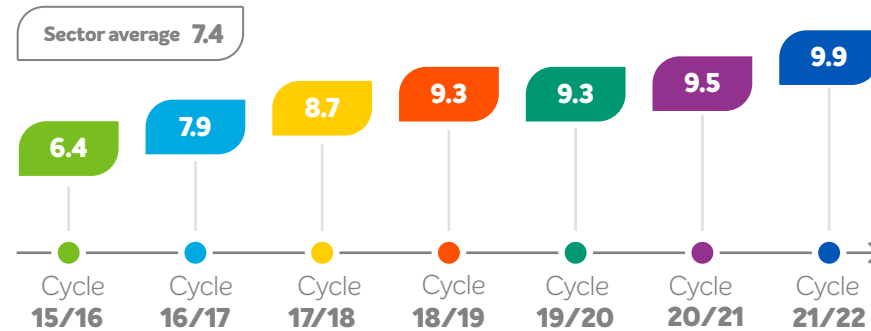
Our efforts to be a company recognized for integrity, ethics and transparency also earned us two major achievements in 2022: the maintenance and extension of the ISO 37001 certification and the best ever historical rating in the Ethos Institute's assessment since we implemented the Compliance System. This result positions us as a benchmark in compliance and above the overall industry average across all evaluated criteria.

In addition, besides being a signatory of the Private Sector's Commitment to the Integrity of the Supply Chain, promoted by the International Chamber of Commerce (ICC), we maintain our engagement in combatting corruption by participating in the UN Global Compact's Anti-Corruption Platform, in addition to promoting campaigns, internally and externally, on the subject<sup>(1)</sup>.

(1) There were no confirmed cases of corruption in 2022.

GRI 205-3

### Ethos institute indicators of integrity over recent years



“

*In 2022, we reached a score of 9.9, out of 10, in the integrity evaluation of the Ethos Institute.*

## Compliance Ambassador Program

In 2022, we began the Compliance Ambassador Program in Brazil, an initiative that aims to improve communication between all areas on the issues related to compliance within the company. In this first year, 12 team members from all of the vice presidents' departments participated in a series of training events to become the contact point between the vice presidents and the Compliance area, disseminating the culture and correct use of compliance tools.

## Compliance tools

To ensure the effectiveness of the Compliance System, Braskem has the support of some important tools:

[CLICK HERE](#)

Related Party Policy

[CLICK HERE](#)

Third-Party Code of Conduct

[CLICK HERE](#)

Global Compliance  
System Policy

[CLICK HERE](#)

Regiment of Statutory  
Compliance and Audit Committee

[CLICK HERE](#)

Global Risk  
Management Policy

[CLICK HERE](#)

Global Anti-Corruption Policy

[CLICK HERE](#)

Learn about Braskem's Statutes and Corporate Policies here.



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## Ethical conduct

The **Code of Conduct** guides to our commitment to ethical, responsible and transparent management. With a global scope, it defines the values, principles and practices that guide the company's performance, in accordance with all applicable laws.

We also provide the Ethics Line Channel, a resource, in various languages, for receiving reports about violations of the team members' and Third Party's Code of Conduct. Created in 2007, it allows anonymous contact for whistleblowers to report information and facts in order to maintain an ethical and respectful corporate environment at Braskem.

All pieces of information are received and treated with absolute confidentiality and 100% of the cases received by the Braskem Ethics Line Channel are handled and analyzed independently. Reports to the channel can be made anonymously and no retaliation against to complainants is allowed. The results and action plans arising from the investigations undertaken by the Ethics Line are carried out independently and impartially, being monitored by the Ethics Committee and by the Statutory Compliance and Audit Committee. [GRI 2-26](#)

In 2022, the greater confidence of the team members in the Channel was evidenced by a record number of reports being received. The Channel is a powerful tool for improving the work environment – 844 reports were received in this cycle, with 52.8% of the total being unsubstantiated cases, cases with insufficient data or outside of the scope of the Channel. Completed investigations may result in the following outcomes: remediation plans that aim to monitor, communicate and train team members on topics related to the conduct expected by the company; apply disciplinary measures based on internal guidelines; improve or create processes, controls and guidance documentation; and finally, request clarification from partners.



## Respectful relationships

GRI 3-3 406

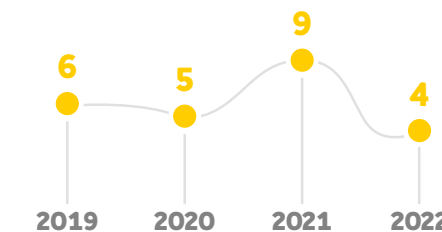
Based on the Diversity diagnosis we did in 2021, discussions with the affinity networks<sup>(2)</sup> – race and ethnicity, gender and LGBTQIA+ – and the analysis of reports received by the Ethics Line Channel, we identified that there are still situations of disrespect, harassment and discrimination within our work environment, especially in the industrial areas.

For that reason, we developed the "Respect is Non-negotiable" project, which seeks to inform and raise awareness among people about its role in building an increasingly healthy, welcoming and inclusive environment. A pilot was held on November 21, 22 and 23 in Alagoas. There were eight training sessions which included the leaders of the administrative areas of the Chlorine-Soda and PVC/MVC units and dialog with the operators of the control rooms. We also trained the leaders and team members in relation to the case of Maceió. As to the next steps we will compile the lessons learnt and expand this initiative to the other regions.

(2) Groups that allow team members to connect and engage with a specific theme, usually related to their personal identity and experiences.

## Cases of discrimination

GRI 406-1



[CLICK HERE](#)

To access our Ethics Line channel.



# Risk management



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# Corporate risk management

GRI 2-12, GRI 3-3 205, GRI 205-1, GRI 307

The risk assessment process leverages opportunities and identifies potentially negative impacts on the company, whether financial, strategic, operational or regulatory.

Braskem's risk management methodology is based on international references (such as ISO 31000 and COSO – Enterprise Risk Management), and divides risks into four categories: strategic, operational, financial and regulatory. Risks are periodically evaluated by the company's directors and submitted to a regional and then global consolidation process, and are considered according to the potential impact and probability of occurring. The result of the analysis is presented graphically on a heat map and approved by the board of directors.

With the analysis approved, the priority risks are then treated and monitored, by the Board of Directors and its advisory committees, where relevant, in order to mitigate and prepare the company to face adverse issues. Following the assessment of the corporate risks of all Braskem operations in 2022, we now highlight some risks that are being dealt with and monitored:

Note: No significant corporate risks related to corruption were found, and the topic is continuously monitored and treated as a priority by the Compliance vice-presidency.



Image  
of plastic

Growing global concern for the environment, as well as inadequate disposal of post-consumer plastic waste, with the trend of banning single-use plastic by governments and lawmakers. Mitigations include the development of initiatives to make Braskem a benchmark in the development of the recycling supply chain and the promotion of conscious consumption of plastic.

[CLICK HERE](#)



Climate  
change

The greater concern on the part of the general population, with the growing search for government alignment with the goals of the Paris Agreement, through the implementation of public policies that encourage the reduction of greenhouse gas emissions. Our mitigation include the reduction of greenhouse gas emissions in the processes and in the purchase of low-carbon energy and e the compensation of emissions with investments in renewable raw materials.

[CLICK HERE](#)



Socio-  
environmental  
issues

Environmental, health, and safety impacts to which chemical and petrochemical operations are subject. The nature of our industry may involve risks to our workers and to the communities surrounding the industrial areas and the areas of transportation and loading/unloading of its products and raw materials, such as pipelines, roads, and ports. As a result, Braskem is subject to stringent labor, environmental, and other regulations. Mitigation encompasses a permanent mapping of scenarios of potential high risks and respective treatments through specific governance, as well as programs to improve the human reliability, and actions for mechanical integrity of the units.

[CLICK HERE](#)



Petrochemical  
sector cycle

A characteristic of the petrochemical industry, which historically alternates between periods of limited supply, which generates price and margin increases, followed by capacity expansions (of supply), which press prices and margins down until demand can absorb this product surplus and a new cycle begins. Mitigations for this risk include maintaining a conservative cash position above the minimum required by the company's financial policy and maintaining the elongated debt profile.

[CLICK HERE](#)



Cyber and  
information  
security

Increased cyberattacks, which may result in the exposure of sensitive data, unscheduled operational stops, and unavailability of systems that affect the regular operation of the company with consequent damage to its image and reputation. Mitigations include network segregation and initiatives to increase control of the environment and assets, monitoring team member behavior and constant testing to identify if the environment is safe.

[CLICK HERE](#)



Macroeconomic  
and geopolitical  
factors

Instability of macroeconomic and political factors, caused by economic crises, wars and conflicts, including sanctions, that alter business dynamics and reduce/block the availability of products and inputs, as well as changes in policies related to fiscal incentives. Mitigations consists of periodic analysis of economic and geopolitical changes that may impact Braskem's economic activity, in addition to monitoring the regulatory environment and projecting macro sectoral variables, among others.

- ★ Strategic risks
- ★ Operational risks

## Human rights

By means of the synergy with the human rights due diligence process, the risks identified have been integrated into the company's risk management process, and are now systematically evaluated according to the corporate risk evaluation process. Risks associated with human rights cover the topics of plastic image and social and environmental issues specifically on social and labor aspects in the value chain, as well as diversity, equity and inclusion, among others. Complete information may be found in Human Capital and Social and Relationship Capital.



# CAPITAL Performance



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# **Human Capital**

GRI 2-23, GRI 3-3 202, GRI 3-3 401, 402, 403, 404

People are the foundation of Braskem's strategy, so our team members are the protagonists of our history. Over these 20 years, we have improved our actions to respect and promote human rights by continuously acting to ensure a safe, diverse, inclusive work environment that brings opportunity for growth and development to all the people who are part of the company, taking into account the physical and mental well-being of all our professionals.

Based on the importance of Human Capital to our business, we have made commitments for 2030 related to health and safety, as well as social responsibility and human rights.



## **Health and Safety** *Dimension 1*

[CLICK HERE!](#)

Click on **LEARN MORE!** for more details  
about advances in the dimension.



## **Social Responsibility and Human Rights** *Dimension 6*

[CLICK HERE!](#)







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## Human Capital in numbers

**+8,600**  
**team numbers**  
(+4% vs. 2021).

**33%**  
of our leadership  
positions are held  
by **women**  
(+2 pp vs. 2021).

**15%**  
of our leadership  
positions are held by  
**black people**  
(+2 pp vs. 2021).

**4.17** in the  
**well-being  
thermometer**,  
considering the  
maximum score of 5  
(+2% vs. 2021).

**4%**  
**of terminations  
of employment**  
were voluntary  
(+0.35 pp vs. 2021).

**0.85**  
**accidents rate**  
with and without  
lost time  
(1MM HT)  
(-1% vs. 2021).

**96%**  
of **human  
rights** action  
plans carried out  
(+10 pp vs. 2021).

## Focus on human rights

Human rights are the focus of our commitments to 2030. For that purpose, we conduct our business to respect them, promote them and, if necessary, remedy them in accordance with the United Nations (UN) Guiding Principles on Business and Human Rights, the UNGPs. Our Global Policy on Sustainable Development, Codes of Conduct for members and third parties, as well as the proposed value to the member, the BeUx, reinforce Braskem's commitment to this issue.

All these principles guide us towards a responsible business conduct; for that purpose, our starting point is the conduction of a due diligence in human rights, for the periodic identification of potential risks involving violation.

“

*We aim to manage  
100% of high and  
medium human  
rights risks by 2030.*

### Due diligence on human rights

We started the first cycle of due diligence on human rights at Braskem in 2017, based on global references and considering our operations in Brazil. In 2022, mitigation actions in relation to the risks identified in this analysis achieved the 96% mark.

In 2021, we started a new due diligence on a global scale, conducted remotely because of the pandemic, with a continued focus on centering rights-holders in assessments. With respect to this, interviews were conducted with neighboring communities, team members and leaders, third parties and external experts, in addition to the analysis of documents, public information and information published in the media, resulting in, during 2022, the identification of risks and impacts on a global and local scale.

We analyzed the risks to human rights mapped in relation to existing corporate risks – identified in accordance with the process set out in the **Risk Management** chapter. As a result, action plans designated for corporate risks already met most treatment recommendations for human rights. For those not envisaged, we are developing new action plans that will be integrated into corporate risks later.

As a result of the process, opportunities for improvements were found in:

**Relationship with communities:** communities are relevant stakeholders for us because they are neighbors to our industrial operations, where there are risks. For this reason we have implemented a number of actions to prevent negative impacts. You can find information on our main actions in the **Social and Relationship Capital** chapter.





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**Supply chain:** labor issues, slave labor, low visibility of the processes, among others, are problems that can affect any part of the supply chain, across all industries. Therefore, we have adopted a series of procedures for evaluating third parties, in order to mitigate potential risks. You can find more details in the **Social and Relationship Capital** chapter.

**Disposal of plastic:** the plastic supply chain is subject to issues related to its disposal and, for this, we take a series of measures to return waste to the appropriate location, whether through the recovery of material or environmental education. You can find the main actions in the **Natural Capital** chapter.

**Occupational health:** Given the nature of our operations, team members are potentially subject to occupational health-related risks, as well as the most recent concern over mental health. The COVID-19 pandemic has intensified our actions on these topics, with programs aimed at the integral health of people. More details on this topic can be found later **in this chapter**.

**Diversity, equity and inclusion:** we operate in an ecosystem with different nations and cultures, each with their own complexities related to diversity, equity and inclusion. As a way to adapt to the challenges, we have implemented the Diversity, Equity and Inclusion Program, which will be covered later **in this chapter**.

## Value proposition to team member: BeUx

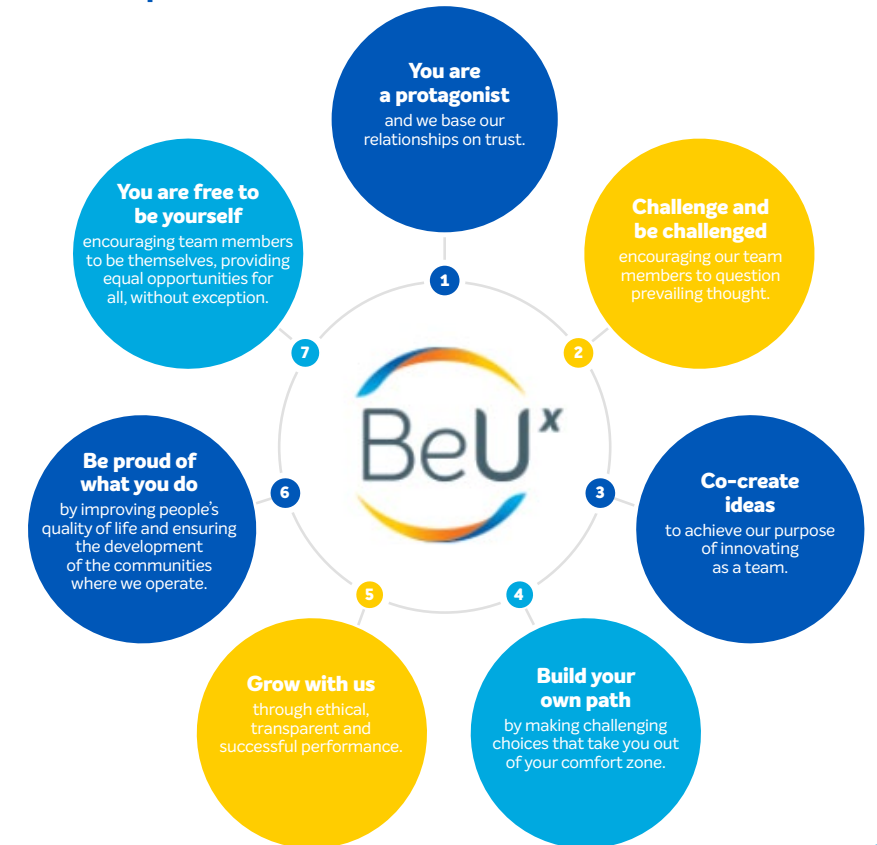
GRI 3-3 202

We have consolidated our ambition to be recognized as a people-oriented company that promotes local development and human rights through BeUx, which reflects our most fundamental cultural elements, through competencies that guide and are expected of our members, developed and assessed in 100% of the company.

The annual performance evaluation process is based on these elements and guides the corporate initiatives and the individual development of the professionals. All members – including the business leader – have an Action Program (PA) with corporate and individual targets and behavioral competencies, aligned with the company's culture.

To evaluate the competencies dimension, in addition to the traditional leader-led evaluation, we adopted the network evaluation format, which is a broader feedback system that also considers the view of peers and other members and leaders. In 2022, 100% of the members undergone this evaluation. It is important to note that the entire career management and development is defined based on these evaluations, and that the variable remuneration (Profit Sharing) results from a combination of factors evaluated in this process. [GRI 404-3](#)

## The seven pillars of BeUx







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## Health and safety

GRI 403-3, GRI 403-6, GRI 403-1, GRI 403-2, GRI 3-3, GRI 403-4, GRI 403-5, GRI 403-6, GRI 403-7, GRI 403-8, GRI 403-9, GRI 403-10 | SASB RT-CH-320a.1, RT-CH-320a.2

People’s safety is a non-negotiable value for us and we want all our team members to feel well and healthy in their working day at Braskem. As pointed out by the due diligence process in human rights, our industry is naturally subject to occupational health risks, intensified by the new work dynamics imposed by the pandemic.

For this reason, we take a number of measures to promote the safety, health and well-being of people. Regarding safety, we operate based on the Human Reliability Program and work closely with third parties. We also adopted measures regarding the safety of processes logistics and products. Regarding health and well-being, we implemented the Integral Health Program and continuous improvement in occupational hygiene, as well as programs aimed at the well-being of team members, the results of which were reflected in the Pulse Survey.

### Human Reliability Program

Since 2018, we have consistently followed our human reliability journey – which is essential to achieving our 2030 health and safety goals. The program aims to reduce the tendency for errors and losses in operations and maximize production and operational efficiency, relying upon integration between people and technology in processes.

In 2022, we conducted Human Reliability training for non-leaders in Mexico and the United States, and this process was started in Brazil, with more than 1,200 people taking part in the training, including team members and contractors, in all four countries, totaling more than 2,500 people trained in the subject since 2019.

“  
For 2030, our commitment is to reduce the accident rate, with and without lost time, to 0.5 accidents per one million hours worked.

### Technology at the service of safety

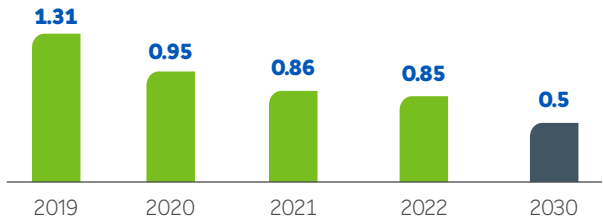
Technology plays a key role in maintaining and ensuring the safety of all our professionals. Therefore, we started a digital approach to our health and safety projects with a focus on four main pillars of action:

- |   |   |
|---|---|
| <b>Reduce human risk exposure</b> with task elimination and automation.                           | <b>Improve skills and knowledge</b> through training opportunities to build experience. |
| <b>Identify and prevent hazardous situations</b> based on information and predictive maintenance. | <b>Adherence to procedures and processes</b> with access, efficiency and application.   |

### Accident rate with and without lost time

(1MM/HHT)  
GRI 403-9

Braskem’s global rate of accidents with and without leave (CAF + SAF) in 2022 was 0.85 per million of hours worked, which corresponds to a decrease by 1% in relation to the 2021 rate. The reduction over the years occurred due to the increasing activities of the Human Reliability Program, which, since 2019, trains and guides members and third parties on this issue, as well as to the closer management of contractors with regard to HSE requirements. Other factors, such as the sharing of experiences and the disclosure of the safety rules, have also contributed to an improvement in the occupational accident rate.





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## Process safety

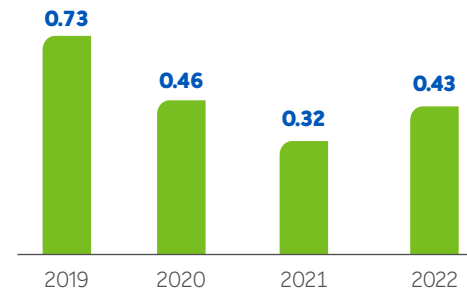
One of our goals in the health and safety dimension is to reduce the frequency of process accidents. To this end, during 2022 we focused on studies for the identification, analysis and mitigation of process risks that may affect the population surrounding Braskem industrial facilities or the environment.

“  
For 2030, our  
commitment is to  
reduce the accident  
rate of Tier 1 process  
to 0.05 accidents  
per one million  
hours worked.

The frequency rate of Tier 1 and Tier 2 process accidents was 0.43 (events per 1 million hours-man worked), 34% higher than the 2021 result, but the second lowest recorded by the company historically. In Tier 1 the rate was 0.08 in 2022, which corresponds to a 14% increase in relation to the previous year.

The Tier 2 rate, on the other hand, was 0.35, compared to a rate of 0.21 in the previous year, which represents an increase of 67%, and corresponds to the second best result of the last five years (2018-2022).

**Accident rate Tier 1 and 2**  
(1MM/HHW)



Tier 1: Incident with loss of product containment above the limits established by the American Petroleum Institute (API) 754 for TIER 1 according to the released product or any release that causes: death of or injury to an employee or third party, hospital harm to or death of the external population, financial loss greater than US\$100,000, or community evacuation.

Tier 2: Incident with loss of product containment above the limits established by the American Petroleum Institute (API) 754 for TIER 2 according to the released product or any release that causes: accident without leave of an employee or third party and financial loss greater than US\$2.5 thousand.

The focuses on process safety were:

**Near Miss:** improvement in the process for registering events and in the critical analysis process in the units.

**Mechanical Integrity:** management of assets to ensure that important pieces of equipment are always suitable for the application for which they were designed, throughout their useful life, in their specific operation. The program integrates the corporate areas of industrial reliability and efficiency, prioritizing units and other areas based on the need to improve process safety.

**Risk Analysis:** efforts to minimize the most significant risks of industrial units by conducting in-depth risk mapping studies and engineering studies and with investments focused on mitigating identified risks.

## Occupational diseases

GRI 403-10

In 2022, we had five reportable occupational diseases in Brazil, of which three are linked to hearing loss. In this matter there was an expressive reduction, by 91% in relation to 2021, because in that year many investigations of previous years were concluded.

We are continuously working to improve the occupational risk management. In this respect, we have developed a procedure with HSE directives for the construction of new projects or ventures. We also actively participate in the development of legal rules related to the efficiency of individual protection equipment for noise and for carcinogenic chemicals.



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## Integral health

Two out of the five events of occupational disease relate to mental and behavioral disorders. Over the past five years, this indicator has shown us the recurrence of such cases, and during the pandemic, structured actions for the promotion of a healthy work environment have become necessary.

Since then, we have worked to provide members with care and activities aimed at people's integral health. Thus, in 2022, Braskem began the development of a Global Program of Integral Health and Well-Being – which initiative is divided into four pillars of like importance: physical, emotional/mental, social/family, and occupational health. The focus of this program is to encourage an increasingly humanized and welcoming work environment, raising health levels and establishing a culture of well-being for our members. The program was structured in four phases:

**1. Overview:** interviews with Braskem's main leaders and focus groups in Brazil, Mexico, Europe and the United States with representatives from the areas of Human Resources and Health and Safety. Workshops were carried out with the participation of representatives from other areas of the company, mainly from the Industrial area, to align expectations and analyze the Maturity Index.

**2. Assessment:** mapping of regional initiatives and structures devoted to health and well-being, in addition to administering a health and lifestyle questionnaire with the goal of standardizing global diagnosis (Health Risk Assessment).

**3. Strategy:** planned for Q2 2023, the evaluation of Phase 2 results to define the actions that will be implemented.

**4. Implementation:** the last phase will take place between 2023 and 2025.

In 2021, we developed the Mental Health Program for leadership, in partnership with the Albert Einstein Hospital Research Institute, to provide training in topics related to mental health care. In 2022, we continued the program, totaling 26 groups, and 466 participants, impacting on 60% of Braskem leaders in all the regions in which we operate.

Another highlight is the Caring for People Program, created during the COVID-19 pandemic to welcome our team members and promote an increasingly humanized and collaborative work environment, based on the four pillars: mental well-being, social well-being, support for new ways of working and professional improvement. In 2022, the program produced 11 livestreams and a video, totaling 5,171 participants. And to extend the reach of mental health actions, we offered four livestreams on Saturdays for teams that work on a shift basis.

In the United States, the wellness team worked to raise awareness, on four core themes among team members: healthy eating, blood pressure, depression, and diabetes. In Mexico, the team reinforced physical and emotional health issues through the "Sentirte Bien" Program, focusing actions on stress and resilience. In Europe, the team launched Breakfast Talks with the Leadership and made the Gympass available in Germany, encouraging and promoting physical health.

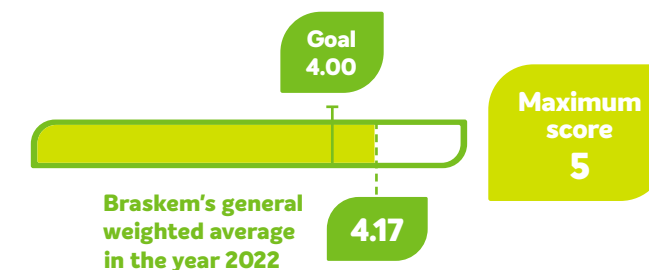
“

*For 2030, our commitment is to have zero occurrences of occupational diseases.*

## Pulse Survey

With the intention of evaluating the results of our actions and work practices, we created the Pulse Survey in 2020. The survey is conducted twice a year and measures the perception of our team members regarding their experience at Braskem, well-being and engagement, also supports for the preparation of new action plans. Key insights from 2022 include a sense of pride in belonging of our team members and the recognition that flexibility is a key factor for balance and well-being when adapting to new ways of working.

## Pulse Survey Global KPI







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## Diversity, equity and inclusion

Providing a diverse, inclusive and equitable environment for everyone is a priority for us. According to the conclusions of due diligence in human rights, multiculturalism is present in our daily lives, which presents even more challenges to actions in diversity, equity and inclusion (DE&I). Therefore, we have set commitments for 2030 within the dimension of social responsibility and human rights, in accordance with the particularities of DE&I in the regions in which we operate.

“

*For 2030, our commitment is to increase the share of women leaders globally to 40% and black team members in Brazil and United States to 37%.*

We have implemented several DE&I actions that, in 2022 were reinforced by the establishment of a global corporate guideline, whose goal is to set global commitments in DE&I and direct our actions in all the regions where we operate.

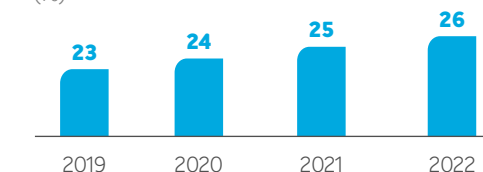
One of our efforts to make progress in this area is to increase the representation of minority groups. Within the pillar of race and ethnicity in 2022, globally we went from 30% black team members to 33%. We achieved this result through various initiatives such as: more inclusive selection processes, implementation of goals, reservation of some vacancies, awareness raising for leaders and team members, and a census of race and ethnicity, among others.

*In 2022, we conducted a self-identification campaign of Race and Ethnicity, reaching more than 6,000 team members in Brazil and more than eight hundred in the United States. This work helped us to get to know our team in more depth and aids us in driving forward internal initiatives and achieving goals.*

## Diversity x-ray

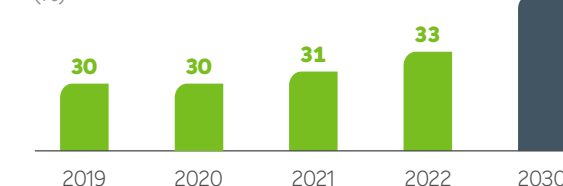
### Women

(%)



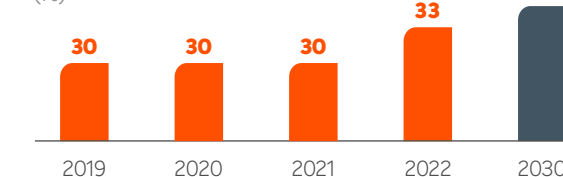
### Women in leadership<sup>(1)</sup>

(%)



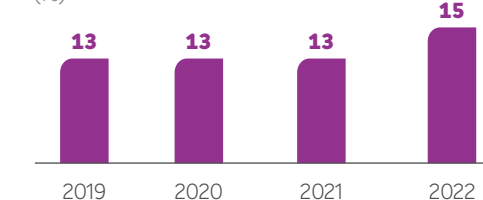
### Black team members<sup>(2)</sup>

(%)



### Black people in leadership<sup>(1) (2)</sup>

(%)



(1) Leadership positions include: coordinators, managers, directors, vice-presidents and business leader. To see the percentage of women for each hierarchical level, visit <https://www.braskem.com.br/ESGdashboard>.

(2) Only considers team members in Brazil and in the United States.



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## Leadership training in diversity, equity and inclusion

Continuing with the training of the most senior leaders in relation to DE&I initiatives in Brazil, we implemented individual mentoring sessions with vice presidents and the CEO. We also held as training for everyone in the Board responsible for people and organizational culture. Over the course of the year, more than 4,700 people participated in livestreams, training sessions and workshops on diversity, equity and inclusion issues.

## Inclusion of people with disabilities

In 2022, we opened up new opportunities including vacancies reserved for people with disabilities. We carried out a survey of the accessibility of our offices. We created health care and people management protocols and raised awareness on the topic among leaders. We conducted a census to map team members who self-declare as having a disability, and analyzed their needs. The census was carried out at the offices in Brazil and had a 75% participation, equivalent to 1,079 members, with 12 people classified as having a disability after individual analysis of possible cases and medical evaluations.

## Undergraduate internship

In the University Internship Program, we have established goals for hiring black and ethnic minorities (45%), women (50%), and people with disabilities (5%). To make the process even more inclusive, English is no longer mandatory for most positions. In addition, when assessing resumes, we do not look at information such as age, educational institution and previous experience. The logical reasoning test was replaced by a decision-making journey.



*In 2022, we launched the Black Journey with the goal of developing behavioral skills and providing other content to accelerate the inclusion of black people in the labor market; with this initiative, we reached more than 1,600 people in Brazil.*

In addition to the initiatives mentioned before, we also had some other advances such as our association with the Women Lead Movement of the Brazil Network of the Global Pact; membership of the Women's Movement 360, becoming a signatory to the Open Letter of Support for LGBTQIA+ People, the creation of a diverse hiring area and reserved vacancies for minority groups; accessibility surveys and improvement in the processes for the inclusion of people with disabilities in the offices and the governance of affinity networks.

## Partnerships that merit special emphasis

In the United States, Braskem maintains several partnerships that promote issues related to DE&I. Among them, we highlight:

**Women in Manufacturing:** we are corporate members of the organization, which is the only national and global trade association devoted to providing year-round support to women in the manufacturing industry.

**Out and Equal:** we are partners with the leading organization devoted exclusively to LGBTQIA+ workplace equality.

**Conselho DEI SPE:** we are members of the Society of Petroleum Engineers (SPE) Diversity, Equity and Inclusion (DEI) Advisory Council. The goal of the body is to emphasize the importance of these issues and create resources for professional development, guidance and recruitment to be used by the teams of member companies.

## Bloomberg Gender-Equality Index

*In 2023, Braskem is on the Bloomberg Gender-Equality Index for the third consecutive year. The index lists publicly traded companies that commit to an inclusive work environment and offer a work-life balance.*



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# Social and Relationship Capital

GRI 3-3, GRI 203, GRI 203-2, GRI 413 | SASB RT-CH-210a.1

People are the foundation of our business. For this reason we constantly strive to strengthen our relationship with all stakeholders. They help form the solid foundation that maintains the longevity of our business. Not only is this part of who we are, it also integrates with our sustainability pillar through our commitment to social responsibility and human rights.



**Social Responsibility  
and Human Rights**  
*Dimension 6*

[CLICK HERE](#)

**For more details about  
advances in the dimension.**







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## Social Capital in numbers

**R\$33.3 million**

in investments  
with social and  
environmental impact  
(-14% vs. 2021).

**610,200**

people benefited from  
social actions  
(-20% vs. 2021).

**Average  
reputation with  
communities**

(+3% in points vs. 2021).

**72%**

engagement in the CDP  
Supply Chain Climate  
(-7 pp vs. 2021).

**82%**

engagement  
in the CDP Supply  
Chain Water  
(-5 pp vs. 2021).

**Good  
reputation  
with clients**

(+10% in points vs. 2021).

**R\$74 million**

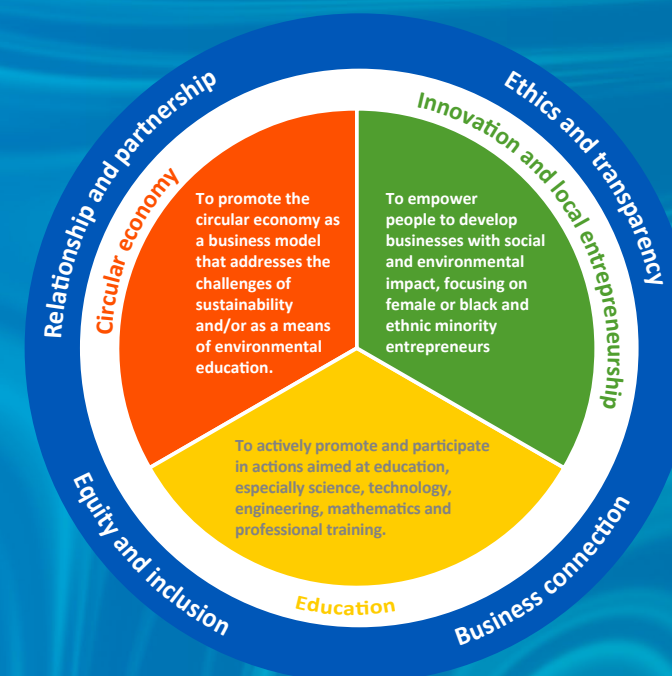
invested in  
associations  
(+63% vs. 2021).

## Protecting communities

We strive to act as agents of transformation within society and strengthen our relationship with the communities surrounding our operations. We believe it is our duty to contribute to the development of regions where we operate, generating shared value and well-being for all and promoting human rights in all of our relationships.

The results of the human rights due diligence reinforce the work we have implemented over time with the communities that live in close proximity to our operations and which potentially could be negatively impacted. Therefore, we seek to strengthen the relationship and sustain our social license to operate through focusing on the promotion of actions that generate local development, respecting the specific characteristics of each region and establishing trusting relationships through dialog and transparency.

### Global social responsibility strategy



“

*By 2030, we  
want to reach  
500,000  
people  
benefited by  
PSI (Private  
Social  
Investment),  
donations,  
and volunteer  
program.*



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Socio-environmental impact

Based on the global social responsibility strategy, we invest in social and environmental impact projects in all locations where we operate. This is accomplished through donations, sponsorship, ISP, and the Global Volunteer Program, which primarily address three long-term causes: education, circular economy, and local entrepreneurship and innovation. In addition, we also invest in projects according to the characteristics of each location.

In 2022, we carried out 153 social actions that benefited more than 610,000 people globally, including ISPs, donations, emergency campaigns, and volunteering. More than R\$33 million were invested.

Global social impact<sup>(1)</sup>

	Investment <sup>(2)</sup>	People benefited <sup>(3)</sup>	Total initiatives
Brazil	R\$27,302,853.42	392,777	75
Mexico	R\$4,441,550.47	54,789	37
United States	R\$1,556,772.00	162,403	39
Europe	R\$5,427.87	220	2
<b>General total</b>	<b>R\$33,306,603.76</b>	<b>610,189</b>	<b>153</b>

(1) Includes private social investment, donations, and volunteer actions.  
(2) Includes investment in initiatives that will start only in 2023.  
(3) Includes the result of initiatives that were paid in previous years, with or without fiscal incentive, but with execution in 2022.

[CLICK HERE](#) See the key programs and their impacts in 2022.

In 2022, we concluded the community engagement review in Bahia, completed the project in Rio de Janeiro, São Paulo (ABC), and Alagoas, and started building the framework in Rio Grande do Sul and Mexico. Our community engagement methodology seeks to establish an integrated and strategic vision of the relationship actions with the communities in each of the regions where we operate, by means of the identification of potential impacts, whether positive and negative, associated with our operations and the characteristics of each community.

Impacts assessed in the community engagement framework:

- Environmental Impacts, identified by the Environmental, Health and Safety Guidelines for Petroleum-based Polymers Manufacturing of IFC.
- Social and economic Impacts, identified by the GRI, Community aspect.
- Impacts related to the guarantee of human rights, identified by Braskem's human rights due diligence.

This framework analyzes impacts on three levels: environmental, social and economic, and human rights. In addition, the evaluation criteria contemplate the impact responsibility, perception of the impact by the community, and materiality of the potential impact.

Social dialogue

We keep an open dialogue with all the communities located in the vicinity of our operations, through participation in the Advisory Community Councils (CCC)<sup>(1)</sup>, the communication channels directly related to the industrial units, and the Ethics Line, as well as through associations of companies of the petrochemical centers where we operate.

We also keep open, in Brazil, the Program Formando Laços [Forming Ties], which focuses on receiving in our industrial units visitors from schools, universities, customers, suppliers, the community, and governmental and non-governmental institutions, the press, among others, to know our processes and facilities. In 2022, in-person visits were resumed, and we received more than 1,580 people from the communities throughout the year.

Datafolha Survey

In 2022, we conducted a survey in Brazil with the support of the Datafolha Institute. The purpose thereof was to bring important information on the communities in the vicinity of Braskem's operations, such as profile, characteristics, habits, and perceptions, especially in relation to Braskem's image and on important issues to format the company's social actions in the regional offices.

This enabled us to check the degree of knowledge of the communities in relation to the petrochemical centers, as well as to identify the strengths and vulnerabilities of the industry and of the company, which will help us to delimit actions involving relationship, communication, and investment in social projects.

(1) Committee organized by companies that are part of the petrochemical centers in which Braskem has operations. Other companies of the territory and representatives of the communities participate in this forum.







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## Support to the communities

Our actions with the communities have global reach and involve all locations where we operate or nearby regions affected by our business. They involve not only donations, but also volunteer work, educational programs, and initiatives aimed at protecting the environment.

In Brazil, we announced the first edition of a public bid – *Projetos que Transformam* [Projects that Transform] – to select and support social projects devoted to the local and sustainable development of the communities where we operate. The bid notice selected 17 initiatives that received, in the aggregate, R\$1 million, and their representatives attended four free virtual training sessions relating to project management and accountability aspects.

### Corais de Maré

The Corais de Maré project promotes restoration of the All Saints Bay (Baía de Todos-os-Santos) reef. For that purpose, a new technique was developed using plastic and other recyclable materials to enhance the growth of the species *Millepora alcicornis* in seedbeds built using the skeleton of the sun coral, which is a species considered invasive in the region. The technology is tested since 2022, on the sea bottom of Maré Island (Ilha de Maré), with the participation of researchers, environmentalists, and fishermen.

The initiative seeks to recover part of the reefs of the All Saints Bay, the quantity of corals of which was reduced by about 50% since 2003, according to a survey conducted by UFBA researchers. These ecosystems are essential for biodiversity, since they shelter at least 25% of the marine species, and they also contribute to economic and food security of the population of coastal towns, according to studies conducted by the Global Coral Reef Monitoring Network (GCRMN).



In Mexico, our industrial plant in Veracruz is close to the Municipalities of Coatzacoalcos and Nanchital, where community meetings were held in the communities of Nahualapa, Pollo de Oro, and Lázaro Cárdenas, with the total participation of 141 residents. The purpose of these meetings was to discuss the implementation and results of the social programs and the program on maintenance downtimes. In addition, several special topics were discussed in each community, and a space was provided to hear feedback from the community and answer to questions.



One of our plants in the United States is located near a residential area, in Marcus Hook, Pennsylvania. In 2022, we attended five Marcus Hook Environmental Advisory Committee meetings and maintained an active relationship with local representatives to ensure that we are helping to meet the community's needs and expectations.

In that year we funded, through private social investment, a new waste collection center for residents to recycle household plastic waste, providing access to recycling. In addition, within the Volunteer Program, we partnered with Keep Pennsylvania Beautiful and the Marcus Hook Borough to conduct a clean-up and focused on areas near the Marcus Hook creek to remove plastic waste from the natural environment.





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## Emergency donations

We carry out five emergency donation actions to support families in Bahia, Petrópolis (RJ), and Maceió (AL), who suffered from the heavy rains that affected these regions. In all, more than 121,000 people have been benefited and more than R\$3.3 million have been invested.

We also make donations to combat the hunger and vulnerability resulting from the pandemic. We carry out two initiatives: the voluntary donation by members, in which Braskem quintupled the amount donated, and direct disbursement by the company, in the amount of R\$5 million, for the acquisition of food baskets. Both actions benefited more than 178 thousand people with 56.7 thousand food baskets donated.

## Global Volunteer Program

One of our main initiatives in favor of the communities surrounding our operations is the Global Volunteer Program, which originated in 2017 from our wish to increasingly strengthen our relationship with people in order to encourage our members to perform volunteer actions that generate a positive social impact on the communities. We note that, in 2022, there was a reduction in the number of benefited persons if compared to 2021, because in that year we made relevant emergency donations related to the Covid-19 pandemics and to fight hunger.

“  
Total number of volunteers:  
**1.4 thousand**  
(1,091 members and 331 guests)  
in 6 countries.

Number of benefited people:  
**37.2 thousand.**

### Acknowledged initiative

*In 2022, the Volunteering Games (Gincana de Voluntariado) received the Aplauze Award from the Brazilian Corporate Volunteering Council (CBVE), in the category Engagement Initiative. In Mexico, we received the award Mejores Prácticas de Responsabilidad Social Empresarial, 23<sup>rd</sup> edition, from the Mexican Philanthropy Center (Cemefi). In the United States, we were acknowledged as Cleanup Champions by the Plastics Industry Association (Plastic), due to the cleanup task forces carried out throughout the year.*





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## Maceió Case

Braskem has the non-negotiable value of the safety of people and, since the occurrence of the geological event in some neighborhoods of the city of Maceió (AL), in 2018, this has been the main priority, in view of its commitment to safety and social responsibility. Associated with this action, the company has carried out a series of actions related to the preventive evacuation of risk areas, financial compensation, geological stabilization and referral of unoccupied areas. Below are some of these key actions:

### Support to residents

The Financial Compensation and Relocation Support Program (*Programa de Compensação Financeira e Apoio – PCF*), created in December 2019 with the purpose of pre-emptively relocating residents, as well as accelerating the compensation process, has achieved its goals and reached the end of 2022 with more than 98% of the families already relocated from the areas considered to be at risk. About 97% of residents have also received compensation proposals with an acceptance rate of 99.6%.

The PCF is an integral part of the Agreement entered into between the Public Prosecutor's Office, Defenders and Braskem, whereby, in addition to relocation and compensation measures, the program encompasses financial support and technical support services, such as rent assistance, the cost of the changes, coatrooms, pet storage during the change period, real estate consulting, service channels, support in opening bank accounts, partnering with notary offices to issue documents and certificates, among others. The program has social technicians, facilitators for the process of financial compensation, legal and psychological support, all committed to seeking the best solutions for the residents of the region. This psychological support service that the company offers is free for all families residing in the areas of evacuation and monitoring and who are included in the PCF. By the end of 2022, more than 33,000 visits have been conducted.

The PCF has completed its third year of existence having fulfilled the scope defined in the Agreement and, so far, out of a total of approximately 19,000 entries made to the program, more than 18,600 have already received the proposal for financial compensation, approaching its closing.

### Plan for Closing and Monitoring the Salt Mines

Throughout 2022, the Company continued to make its best efforts to adopt the necessary and appropriate measures to resolve the issues arising from the geological phenomenon, fully complying with all commitments assumed. The actions for closing and monitoring salt wells follow the mine closure plan approved by the National Mining Agency (*Agência Nacional de Mineração – ANM*), aiming at stabilization of the cavities. The interpretation of the monitoring data makes it possible to observe a reduction of the ground movement velocity, which will continue to be monitored, even after the completion of actions planned for the coming years. The actions of filling the wells with sand, belonging to the first group of 4 cavities, are in an advanced phase, with the monitoring of the ANM, and expected completion for the 1st half of 2023. Actions have already been initiated to fill the second group, of 5 cavities, according to the planned schedule.







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## Socio-urban and environmental remediation measures

Braskem has been moving forward with the adoption of measures, established in the Socio-environmental Agreement, signed on 12/30/2020 with the Federal Public Prosecutor's Office, to repair, mitigate or compensate potential environmental and socio-urban impacts resulting from the activities of rock salt extraction.

In 2022, the Social Action Plan was prepared as a development of the work of the Technical-Participative Diagnosis, resulting in the proposal of initiatives that are divided into: Axis 1 – Social policies and reduction of vulnerabilities; Axis 2 – Economic Activity, Labor and Income; Axis 3 – Urban and Environmental Renovation; and Axis 4 – Preservation of Memory and Culture. The current stage is a technical discussion of the diagnosis with the competent public bodies. The proposal for Potential Projects of social actions keeps evolving, to support the discussions between the agencies involved, as well as the conduct of public consultation about the proposed diagnosis.

The Socio-environmental Agreement also provided for the making of a diagnosis to evaluate the potential environmental impacts resulting from the extraction of rock salt and the preparation of an environmental Plan with detailed proposals for measures. This diagnosis has already been concluded and resulted in the preparation of an Environmental Action Plan, which is in the process of discussion with the authorities, following the procedure provided for in the Socio-environmental Agreement.

As an integral part of the transformation agenda and future referral of the vacated areas, the works of the Stabilization and Drainage Project of the Mutange Coast were started in January 2022, whose scope encompasses demolition, earthworks, construction of drainage system and planting of vegetation cover in the area involved, with completion planned by the end of 2023.

Also in 2022, the Partial Adherence Agreement of the Municipality of Maceió to the Socio-environmental Agreement was signed relating to eleven Urban Mobility actions in the region, of which two have already been

initiated and continue to move forward. There are already about 300 workers involved in these two actions, and the implementation of each of the planned actions, in addition to expanding the generation of jobs, will bring benefit to the locations where they will be implemented, as well as to the city as a whole.

### Urban integration of Flexais

In October 2022, we signed an agreement with the competent public bodies to implement renovation measures in the Flexais region, located in the Bebedouro neighborhood, considering the socioeconomic islanding of this area, after the PCF relocation process.

The Urban Integration and Development Project of Flexais expects to complete the 23 renovation actions in two years, based on initiatives to improve living conditions and access essential utilities. There will also be payment of financial support to residents, vacant property owners and merchants.

### Communication

Since 2019, through social dialog with community leaders and merchants, information has been collected and questions have been clarified about the PCF and about works and interventions in the areas, among other topics. Active listening is also conducted that receives the demands of communities and seeks to support their resolutions, in addition to seeking opportunities for cooperation to mitigate local impacts.

There are various channels of direct contact with families, with messaging application support and an 0800 Service Center. As of December 2022, approximately 224,000 telephone calls have been made. In addition, access to information about the actions related to Maceió is broad and transparent, through the website [www.braskem.com.br/alagoas](http://www.braskem.com.br/alagoas). The platform also provides regular accountability of the activities performed. In addition to social media channels, Communication relies on the Braskem Explains campaign, published in the main local media, to ensure that the most up-to-date information is always available and accessible.

### Next steps

In 2023, the priority will be to complete the final relocation support measures provided for in the PCF and, as well as the latest financial compensations, in addition to proceeding with the safe closure process of the 35 wells in the region, with this expected to last until 2024. In addition to these actions, the company will proceed with urban mobility projects, the agreed renovation actions of the Flexais region and the forwarding actions of the unoccupied areas.

The company will also move forward with the execution of the environmental plan and the definition of potential social action projects in the surrounding region.





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## Proximity with customers

Our broad and diverse portfolio includes products that contribute to the productivity and competitiveness of clients in a variety of industries. Together, we seek to develop sustainable solutions that positively impact the entire production chain. This is the case with life cycle analyses, certified raw materials with renewable and circular content and recently the offer of carbon credits to offset emissions in the transportation of goods.

In order to strengthen our relationship with clients and present our entire range of solutions – their features, applications and degrees – we participate in various events throughout the year. In 2022, we participated in Expobor, Agrishow, Abrafat, all in Brazil, and K Fair, in Germany.

“

*By 2022, Braskem had already completed 116 LCA projects in partnership with its customers.*

### K Fair

In 2022 we also attended the K Fair, held in Düsseldorf (Germany) that happens every four years. One of the highlights was the launch of Wenew, a global circular economy ecosystem that encompasses circular technologies and products, and education initiatives on conscious consumption and proper disposal.

Another important point of our participation was the presentation of innovation initiatives, such as Cazoolo to Oxygea and the Center for Technology and Innovation (CTI), at the petrochemical hub of Triunfo, in the south of Brazil. We also introduced Smartrails, a solution for our clients that replaces wooden sleepers with railway sleepers made of plastic. The coating is made of polyethylene with fiberglass and high-density polyethylene blocks.

### Reputation survey

Braskem has been monitoring its reputation since 2010 through an annual survey carried out with various stakeholders. The survey looks at emotional issues, degree of esteem, admiration, empathy and trust. It also uses rational indicators in seven dimensions: products and services, innovation, work environment, governance, citizenship, leadership and performance.

In 2022, Braskem's score was with a strong reputation. We show significant growth of the reputation indicator for communities around our operations in Brazil. We have also made a positive highlight for our reputation with society in general in Brazil, with growth in the reputation indicator for the second consecutive year.

### Highest historical score at Ecovadis

Since 2009, we are invited by our customers to participate in Ecovadis' social and environmental evaluation. We used efforts to improve the answers to the questions of the questionnaire and, in 2022, we obtained Braskem's highest historical score in the evaluation, reaching 68 points, against 62 points of the classification of the previous year.



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## Supplier management

GRI 3-3 204, GRI 205, GRI 304, GRI 308-1, GRI 3-3 410, GRI 3-3 414, GRI 412-3

2022 was also a year of strengthening relationships with our suppliers, contributing to the achievement of greater reliability, competitiveness, safety and efficiency for our operations. In addition, we have strengthened our actions in Sustainability through initiatives that promote the engagement and development of our partners on the topic.

From the registration process onward, our suppliers are invited to get to know and sign our Third Party Code of Conduct, which expresses their expectations about the conduct of partners working with Braskem. For more critical sectors, such as sugarcane ethanol, we also have exclusive codes and criteria for supply, whose compliance with the standards required by the company is essential for the formation of the partnership.

Recycled plastic suppliers, in turn, are subject to a specific checklist and due diligence and subject to frequent audits. In addition, in the Registration process itself, a survey of information from each partner is carried out with the goal of evaluating and classifying the risk exposure with regard to environmental aspects; labor and human rights aspects; ethical aspects; and/or financial aspects of Braskem as regards this new relationship and consequently acting with the establishment of possible mitigating plans if the relationship materializes.

### Assessment of ethanol suppliers

The human rights due diligence process has reinforced what had already been identified a few years ago: the existence of risks associated with the ethanol supply chain, made from sugarcane, which is used for the production of I'm green™ polyethylene. Since 2016, we have implemented the Responsible Sourcing of Ethanol Program to ensure integrity and sustainability practices in the cane chain through audits of suppliers and sub-suppliers.

The program is structured into two pillars: compliance and excellence. The compliance pillar establishes the operational standards expected for the management of human resources, the environment, local communities, quality, and efficiency. The pillar of excellence refers to a Continuous Improvement Program, focused on issues relevant to the ethanol chain. In 2022, we revised the Program to broaden the themes addressed, reinforce governance requirements, and further mitigate risks in the chain.

[CLICK HERE](#)

For more details of our I'm green™ recognitions and certifications.

## Socio-environmental engagement

GRI 3-3 308, GRI 308-2

Regarding sustainability aspects, we consolidated our partnership with Ecovadis, one of the world's largest global supply chain sustainability rating companies, to evaluate the environmental, social and governance management of the supplier base. In 2022, we had 200% growth in the evaluated supplier base, which demonstrates the engagement of our supply chain on the topic. In addition, we also achieved the engagement of 270 suppliers in the assessment of CDP Supply Chain Climate and CDP Supply Chain Water, with engagement rates of 82% and 72% respectively. Also worth highlighting is Braskem's partnership with Childhood Brazil in the fight against sexual exploitation of children and adolescents on the highways, given its road distribution matrix.





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## Recognition

As a result of the consolidation of these partnerships, in 2022, we held the second edition of the Braskem Supplier Sustainability Recognition award, which highlights the ESG best practices of our suppliers and encourages our supply chain to take actions in socioenvironmental performance, human and labor rights, the environment, ethics and sustainable Procurement.

In this process, the companies were evaluated based on their scores in the Ecovadis, and Carbon Disclosure Project (CDP) questionnaires, resulting in the recognition of 24 suppliers that stood out the most in the period. The online event had an audience of more than 1,000 Braskem suppliers worldwide.



## Partnerships that transform

*Since 2021, we have been working together with BASF on projects aimed at accelerating two crucial points for the chemical sector: recycling and carbon neutrality. In 2022, the partnership prioritized five actions, two of which are being implemented and one will start in 2023. One of them is the use of maritime logistical assets through the partnership, with the objective of optimizing idle capacity and reducing impacts on emissions of greenhouse gases (GHG). The partnership also resulted in an agreement, valid from 2023, in which Braskem supplies propylene with a circular attribute through the concept of mass balance, certified by the International Sustainability and Carbon Certification (ISCC). It is worth noting that the sustainable solutions made possible by the partnership with BASF are scalable and may be extended to other Braskem customers.*

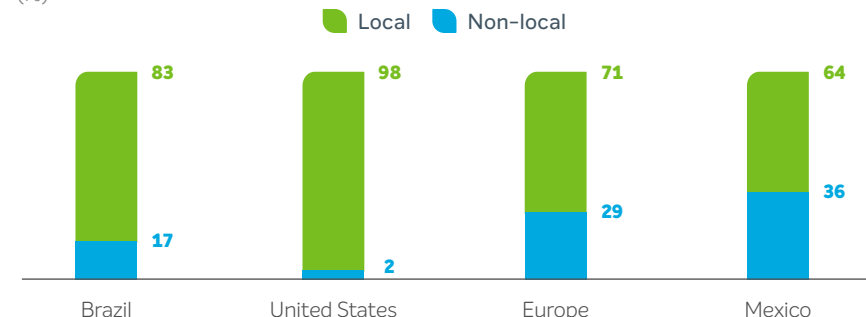
## Supplier management

GRI 204-1

2022 was also characterized by a volatile economic and supply scenario arising from the pandemic. In this context, expenditures with local suppliers of goods, services and Supplies totaled R\$13.5 billion (79% of total expenditure).

### Expenses with local suppliers by region<sup>(1)</sup>

(%)



(1) Suppliers of goods, services and inputs.

## Risk management in input procurement

We review the input supply chain risk management process, creating global indicators and setting priorities by region and country, enabling the implementation of risk mitigating actions according to the degree of vulnerability presented. Such actions have also allowed us to improve business relationships and product procurement strategies that are indispensable for our production processes, since this mapping is not limited to looking at only our main suppliers, but the entire supply chain and any potential impacts we are subject to.

## Foreign trade compliance and safety

Another standout front in 2022 was achieving the low-risk operator rating through the Authorized Economic Operator (Operador Econômico Autorizado, OEA) Certification in the Safety category, resulting in greater agility and predictability of loads in international trade flows.





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# Acting with government and associations

GRI 2-28

In an ethical and transparent manner, we want to contribute to discussions for the formulation of public policies related to the development of the petrochemical industry, the elimination of plastic waste and the fight against climate change, fundamental topics for the development of our industry and our business.

In order to improve our governance and intensify our initiatives on topics that impact different regions, we created the Global Advocacy area in 2022. An integral part of the Institutional Relations board, the new area, in support of Sustainable Development strategies, will focus on the creation of a governance system for the exchange of information among the various Institutional Relations teams in the different regions, the mapping of public policies and global impact initiatives and the mapping of stakeholders for the development of global positions on these fronts.

At the end of 2022, along with other members of the International Council of Chemical Associations (*Conselho Internacional de Associações de Produtos Químicos – ICCA*), we participated in the first round of negotiations seeking to reach a global agreement to eliminate plastic pollution. This round was the first in a series of agendas due to continue until 2024 to come up with a global proposal covering all stakeholders in this chain.

We are also involved in discussions to develop public policies aimed at regulating the handling of plastic waste, especially in Brazil and Europe, which will support us in overcoming challenges in the recycling chain.

Also at the end of the year, we participated in several events during the 27<sup>th</sup> UN Climate Conference in Egypt to present our strategy to combat climate change and key projects towards carbon neutrality. We also conducted several interactions with government officials, partners and clients during the event.

## Investment in class associations

Region	Investment in 2022 (R\$)	Number of entities
Brazil	47,027,128.38	61
USA	15,125,842.26	18
Mexico	4,500,410.72	6
Europe and Asia	7,577,297.44	9
<b>Total</b>	<b>74,230,678.80</b>	<b>94</b>





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# Financial Capital

GRI 3-3 201, GRI 201-1, GRI 203, GRI 413 | SASB RT-CH-210a.1

It is essential for us to seek economic and financial results based on a solid development strategy, on constant strengthening of ESG practices, on long-lasting relations with our customers and, consequently, on the increase in the value generated for shareholders.

We understand that this is a key issue to enable our commitments of 2030 and 2050. For that purpose, we are continuously working to guarantee the integrity of our production chain, the strengthening of our governance and compliance system, and the maintenance of a strong level of liquidity and positive cash generation, even in down cycle periods in the petrochemical industry.



## **Economic and Financial Results** Dimension 2

[CLICK HERE](#)

**For more details on advances in the  
area of economic and financial results.**







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## Financial Capital in numbers

**R\$3.3** billion

in cash  
generation  
(-66% vs. 2021).

**US\$929** million

in corporate  
investments  
(-8% vs. what was estimated).

**2.42x**  
corporate  
leverage

(+1,48 pp vs. 2021).

Recurring EBITDA:

**US\$2.1** billion

(-64% vs. 2021).

*The good performance of the company's financial capital over 20 years of existence is the result of a strategy based on discipline in capital allocation and focused on value generation, risk mitigation, and identifying and seizing opportunities.*

## Cash generation

We ended the year with recurring EBITDA of US\$2.1 billion, 64% lower than 2021, an amount explained by factors such as the drop in international spreads of PE, PP and PVC in Brazil, PP in the United States and Europe, and PE in Mexico, as well as the lower volume of sales of major chemicals in the Brazil and PP segment in the United States and Europe.

In turn, the recurring cash generation in 2022 was R\$6 billion due to the recurring EBITDA for the period, the variation in working capital, and the company's operational and strategic investments referring mainly to the disbursements of scheduled maintenance stoppages made in 2Q22 and the construction of the ethane import terminal in Mexico and the expansion of biopolymer capacity in Rio Grande do Sul, respectively. Adding the payments relating to the geological event in Alagoas, the Company presented a cash generation of R\$3.3 billion.

## Liquidity and indebtedness

We finished the year with gross debt of US\$6.8 billion, with 96% of maturities concentrated in the long term and 4% in the short term. In line with the strategy of maintaining a robust cash position and given a volatile and unstable scenario for borrowings in the international market in 2022, Braskem once again accessed the local market, issuing four operations totaling R\$3.7 billion. Finally, corporate leverage, as measured by the recurring net debt/EBITDA ratio in dollars, was 2.42x.

## Investments

In 2022, we invested US\$149 million in projects related to the seven dimensions of the sustainable development strategy, distributed as follows:

Dimension	2022 (US\$ MM)	2023e (US\$ MM)
1 - Health and safety	16	77
2 - Economic and financial results	-	-
3 - Elimination of plastic waste	3	4
4 - Combating climate change	92	47
5 - Operational eco-efficiency	24	35
6 - Social responsibility and human rights	9	7
7 - Sustainable innovation	5	24
<b>Total</b>	<b>149</b>	<b>194</b>

Note: Investments by dimension do not consider investments in scheduled maintenance shutdowns, spare parts for equipment, among others.

The key projects of the year related to the commitments for Sustainable Development were the expansion of biopolymer capacity in Triumph, initiatives to reduce CO<sub>2</sub>e emissions and energy efficiency of plants and projects related to industrial safety.





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# ESG value

## ESG Day

2022 represented the consolidation of the sustainability strategy to our corporate strategy. In October, we held the second ESG Day, a hybrid event where we presented our advances in sustainability and reinforced our commitments for 2025, 2030 and 2050, which focus on three pillars: social responsibility and human rights; plastic waste disposal and combating climate change.

There were about 730 participants including investors, journalists, banks and Braskem team members. The event had a positive impact with the media and among sell-side analysts, who make recommendation on buying, holding or selling stock.

[CLICK HERE](#) To download our ESG Day presentation.

 [Click here to access the event recording.](#)



## Credit lines

In 2022, we secured our first corporate credit line tied to a sustainability-linked goal (Sustainability Linked Loan, SLL). We have signed two contracts with international financial institutions totaling US\$150 million tied to the growth in sales volume of Green PE I'm green™ bio-based in the coming years, there are incentive and penalty mechanisms tied to the achievement of the established KPI.

Also in 2022 we conducted a local debt issue. This is the 124<sup>th</sup> issue of agribusiness receivable certificates (Certificados de Recebíveis do Agronegócio – CRA), backed by credit rights in the amount of R\$720 million, by the Eco Securitizadora de Direitos Creditórios do Agronegócio. Our goal is to apply resources exclusively to the acquisition of ethanol from rural producers.

[LEARN MORE!](#)

[In Manufactured Capital.](#)

## Investor relations



In 2022, we launched the Braskem Invest podcast. The channel, available on different platforms, covers information related to the company's performance in its strategic pillars and the petrochemical sector, in addition to offering analyses and views on the company and the financial market.

[LEARN MORE!](#)

[About our Investor Relations initiatives.](#)

 [Click here to access Braskem Invest.](#)



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# Natural Capital

GRI 3-3 416

We have sustainability as one of the pillars of corporate strategy and business growth. Through our initiatives and processes, we transform natural, renewable and non-renewable resources into chemical and plastic products, seeking to reduce and mitigate environmental and social impacts.

Our focus is on combating climate change and eliminating plastic waste, seeking to be a benchmark in operational eco-efficiency in our operations in relation to water and energy consumption and effluent generation, atmospheric emissions and waste.



**Elimination of Plastic Waste**  
Dimension 3

[CLICK HERE](#)



**Combating Climate Change**  
Dimension 4

[CLICK HERE](#)



**Operational Eco-efficiency**  
Dimension 5

[CLICK HERE](#)

For more details on  
advances in the dimension.







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## Natural Capital in numbers

**18.6 million** tons in raw material consumption (-3 vs. 2021).  
**~20 million** m<sup>3</sup> in the generation of effluents (-3% vs. 2021).

**71.2 million** m<sup>3</sup> in water consumption (+1% vs. 2021).  
**50.6 thousand** tons in waste generated (+23% vs. 2021).

**10.7 million** tons in GHG emissions (scopes 1 and 2) (-2% vs. 2021).  
**33.5 thousand** in plastic waste recovered (+89% vs. 2021).

## Combating climate change

At Braskem, we assumed the commitment to reach 2030 with an absolute 15% reduction in greenhouse gas emissions (GHG) in scopes 1 and 2 – in relation to the average of the years 2018, 2019, and 2020 – and to achieve carbon neutrality by 2050.

In addition, we committed to expand our bioproducts production capacity to 1 million tons. For that purpose, we have adopted an action plan composed of three pillars of operation: reduction of emissions in our operations, removal of biogenic carbon with stock in product and carbon capture/conversion into chemicals.

In 2022, we mapped potential projects to achieve these commitments by means of the development of a Marginal Abatement Cost Curve (MAC curve) of GHG emissions. Based on this study, we developed a global route of initiatives of various levels of maturity and complexity, with different expected development horizons.

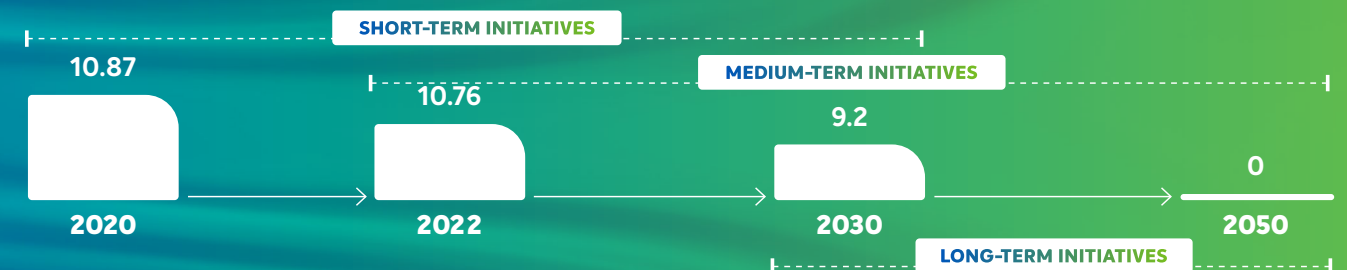
The global curve mapped 161 projects with potential to reduce 3.4 million tons of CO<sub>2</sub>e:

- **Short term:** efficiency projects and energy matrix replacement.
- **Medium-term:** projects for the use of renewable raw materials.
- **Long-term:** technology development projects for carbon capture and use.

The MAC curve allowed us to review and improve the internal cost of carbon, which is used since 2016 to analyze the feasibility of investment projects considering the variable of GHG emissions. Since 2021, this analysis is mandatory for certain lines of investment and it is based on a tool developed internally. The tool calculates the cost of the estimated emission of a project based on its technical specifications.

### Volume of GHG emissions

(million tCO<sub>2</sub>e – average of the last three years)



[LEARN MORE!](#)

About our strategy to combat climate change in the chapter Braskem's Strategy or click here to access our page with a progression of the goals.





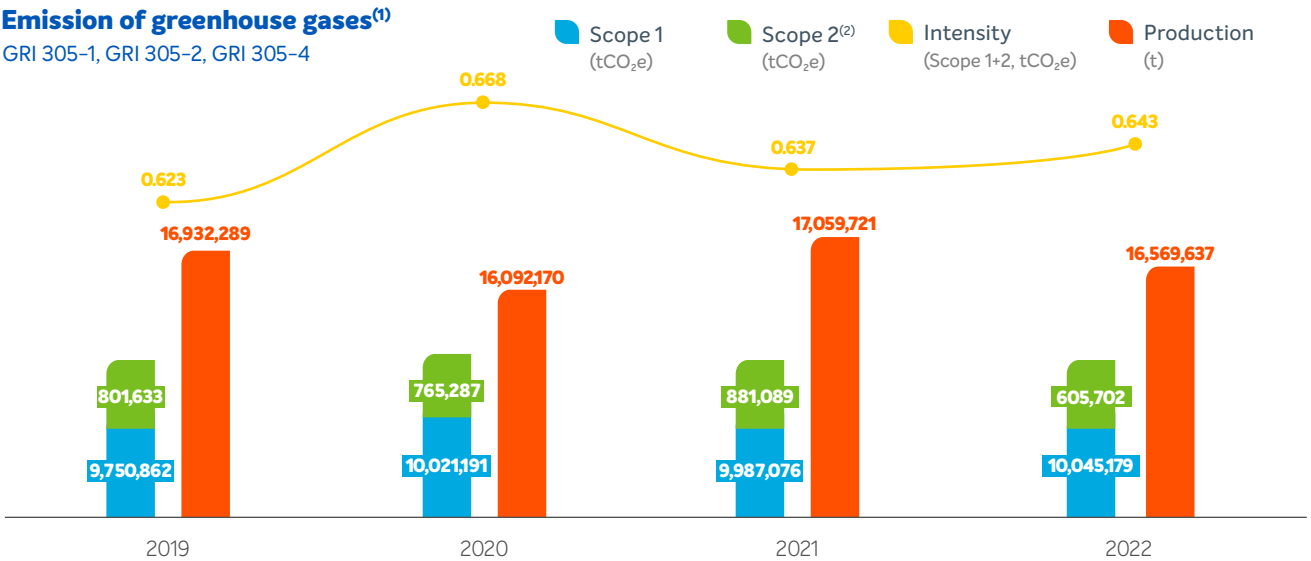
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Inventory of GHG emissions

Since 2008, we account for the emissions of Braskem’s operations and publish the results in a GHG inventory, which currently follows the operational control approach, contemplating our global emissions of scopes 1, 2, and 3, and which is annually verified by an independent third party. The inventory is our main tool to monitor our qualitative evolution in relation to the reduction targets of our climate change strategy.

The inventory observes the guidelines of The Greenhouse Gas (GHG) Protocol – Corporate Accounting and Reporting Standard – Revised Edition from World Resources Institute (WRI) and World Business Council for Sustainable Development (WBCSD) – 2004 Revised Edition and the Specifications of the Brazilian Program GHG Protocol: Accounting, Quantification, and Publication of Corporate Inventories of the Greenhouse Gas Emissions – Second Edition and is verified by an external third party.

Emission map  
GRI 3-3, GRI 305



(1) The reference values for potential global warming (GWP) have been changed and are in line with the IPCC Fifth Assessment Report (AR5).  
(2) Market-based, the approach of measuring Scope 2 GHG emissions using a specific emission factor directly associated with the source of the generation of purchased electricity.

Scope 1 emissions

Most of Braskem’s scope 1 emissions – 90% in 2022 – occur in our petrochemical centers (crackers), where the raw material (of fossil and/or renewable origin) is transformed into plastic products, chemicals, and specialties in an energy-intensive process named cracking. With the reduction in the amount produced in 2022 compared to the previous year, our crackers did not operate at their optimal energy efficiency. As a consequence thereof, even with a smaller production, our GHG emissions of scope 1 remained stable in relation to 2021, with a small increase by 0.58%.

Scope 2 emissions  
GRI 305-5

Braskem’s scope 2 emissions presented a reduction if compared to 2021, in the market-based approach (-31.26%).

Even though the electricity and vapor consumption remained stable in relation to the previous year, the emission factors of the interconnected systems (grid) in which we operated were reduced, most expressively in Brazil, were the factor dropped by almost 66% due to the good performance of the hydroelectric plants (which was less frequent in 2021 due to the water crisis). Since the electricity consumed in Brazil originating from the grid represents a little more than 60% of the total consumption of scope 2 (electricity and vapor, the impact on emissions was considerable).

In addition, the reduction by 31.26% reflects the renewable and clean energy purchase agreements in Brazil, Germany, and the United States, strategy under implementation since 2018 and which has already brought important results in the inventory.





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### Scope 3 emissions

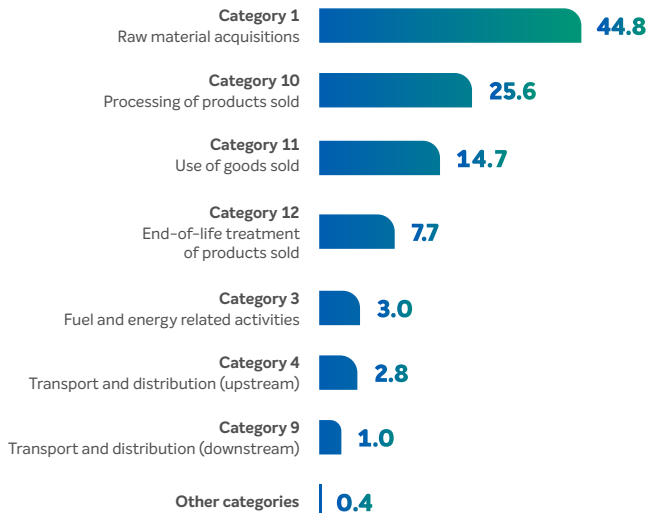
GRI 305-3

In 2022, Braskem's scope 3 recorded 27,281,767 tons of CO<sub>2</sub>e considering all categories reported relating to the upstream and downstream emissions of our value chain. This amount includes the report of 12 categories out of the 15 categories applicable to scope 3, it being understood that categories 2, 13, and 14 do not apply or are not material for our business. Considering the entire chain, the scope 3 emissions represent 72% of its total emissions for Braskem. Upon analysis of the results, we note that 85% of the total scope 3 emissions are concentrated in three categories, which are: 1- Goods and services purchased; 10- Processing of products sold; and 11- Use of goods and services sold. This distribution profile is very similar to companies of our industry due to the purchase of fossil raw material and of the processing carried out by our customers in the transformation of resins and use of the energy products sold.

In absolute numbers there was a reduction of 9% compared to 2021, mainly leveraged by a reduction in raw materials as a consequence of the reduction in the company's total production volume in the period, use of more accurate emission factors for transport (categories 4 and 9), reduction of the grid emission factor, border adjustment (category 15) and disregard of waste and effluent emissions from Cetrel in scope 3.

#### Representativeness of each category in the total scope 3 emissions

(%)



#### Review of the corporate inventory process

In 2022, we reviewed the greenhouse gas emission management process, which is a fundamental initiative to consolidate and bring more assertiveness to the corporate inventory. While listening and understanding the new process, we identified three main fronts for the inventory as a unified corporate GHG emissions management tool: quantitative monitoring of corporate emissions reduction targets with the Industrial team; monthly monitoring of the plant emissions to understand the impact of “real-time” decision making; and to forecast future emissions of our operations considering potential future projects.

“

*In 2022, we were awarded the gold classification of the GHG Protocol Brazilian Program (PBGHG) for the 12<sup>th</sup> consecutive time. This is a result of the coverage of the emissions (scopes 1, 2, and 3) and of the verification by an accredited third party in the 2021 inventory. At the CDP Climate, we were awarded grade B.*







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# Industrial Decarbonization Program

To achieve the emissions reduction commitment set for 2030, in 2021 we developed a program dedicated to industrial decarbonization. The program is based on three fundamental pillars: GHG Inventory, the basis for proper management of the topic; Culture, Process and Governance, which includes the development of an industrial mentality focused on operating and identifying improvements that can reduce greenhouse gases emission, strengthen the orientation of processes and governance for decision-making based on emissions, besides stimulating partnerships for the development and implementation of solutions; and the lines of action, distributed on the fronts:

**OPERATIONAL DECISIONS**

Implement continuous improvement operational initiatives with a view to reducing emissions.

**ENERGY MATRIX**

Increase the share of renewable energy and low-carbon fuels in Braskem's energy matrix.

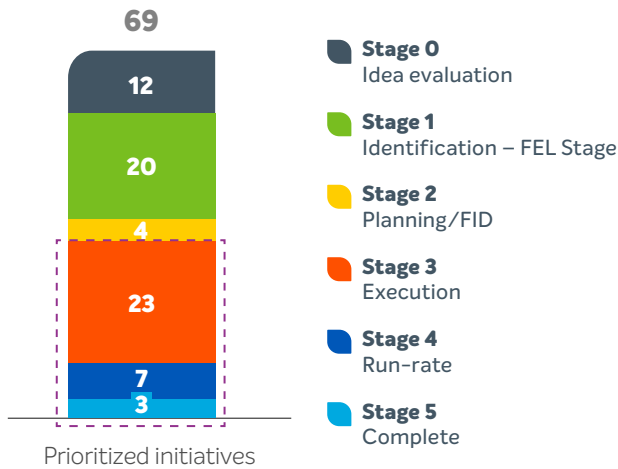
**ENERGY EFFICIENCY**

Reduce GHG emissions through energy integration, electrification and optimization initiatives.

**TRANSFORMATIONAL PROJECT**

Implement key initiatives capable of significantly reducing GHG emissions from key issuer complexes.

## Program initiatives per stage



Based on the MAC curve developed this year, we prioritized 69 initiative to reduce emissions among the lines of action, it being understood that 48% of them are already in progress or in run-rate. The energy efficiency and electrification initiatives are the main fronts of the decarbonization portfolio, based on renewable energy and low-carbon fuels.

## Industrial mindset focused on decarbonization

In our strategy to fight climate change, we establish annual goals related to the reduction of emissions by industrial decarbonization projects, contemplated in the variable remuneration of the senior management.

In 2022 we also conducted the main global technical congress, which was created to encourage preparation of the industrial public to the challenges in climate change, focused on technical excellence. Its main purpose was to share the improvements and best practices involving industrial decarbonization, and also to present the external benchmarks. Twenty-eight initiatives with potential to reduce greenhouse gas emissions were presented, and the majority of them originated from continued improvement projects. The industrial decarbonization capacity building track, which was implemented in 2021 and gathers the main concepts and initiatives of the program, trained more than 700 people since then.

“The target established for 2022, to map projects for the reduction of 300 thousand tCO<sub>2</sub>e, was fully achieved.”



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### Increase in energy efficiency in the ABC petrochemical center

Since 2019, we devote to a process of modernization of the electric system in the petrochemical center of the ABC region, in São Paulo. The project is carried out in partnership with Siemens, which is responsible for building and operating the high-efficiency co-generation system, and the joint investment amounts to approximately R\$600 million.

The purpose is to update the technology of the system that serves this petrochemical center, which is made by substituting steam turbines by high-efficiency electric motors. The support originates from a new energy co-generation plant fed by residual gas with high hydrogen content from the petrochemical production process.

In 2022, we started the co-generation phase, which generated a reduction by approximately 35 kt CO<sub>2</sub>e/year due to the use of electricity and natural gas. For 2023, we foresee conclusion of the project and an estimate reduction by approximately 100 kt CO<sub>2</sub>e/year, in addition to estimated gains in energy efficiency (7.3%) and water consumption (11%).

#### Electrification with renewable energy

As part of our commitment to implementing of new technologies and solutions that drive to the sustainable development, Braskem and Coolbrook plan to jointly implement a pilot project in which Braskem will evaluate the use of the disruptive technology, called RotoDynamic Reactor (RDR), on an industrial scale before implementing it into your crackers. Ultimately, the project involves the electrification of crackers through the substitution the use of thermal energy derived from fossil fuel for electricity generated from renewable sources, which is one of the ways for Braskem to reach carbon neutrality by 2050.

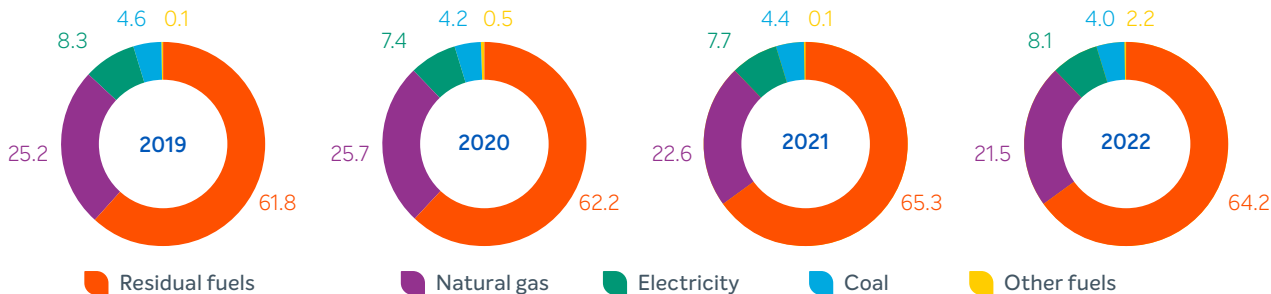
### Consumption of power

GRI 3-3 302, GRI 302-1, GRI 302-3, GRI 302-4

In 2022, even with lower absolute consumption, the indicator of total energy consumed was 4.7% higher if compared with the previous year (11.31 GJ/t), mainly due to a reduction in the production and consequent worsening of the energy efficiency of the plants. Irrespective of that, throughout the year, we continue investing in renewable electric matrix and energy efficiency.

	2019	2020	2021	2022
Energy consumption (GJ)	188,064,527.12	186,884,884	188,512,343	187,376,560
Energy consumption intensity (GJ/t)	11.09	11.23	10.80	11.31

#### % of consumption by energy type



#### Voqen: Vocation for energy

In October 2022, we launched Voqen – new Braskem company, being one of its focuses the energy transition in our industry. Voqen already manages a portfolio of more than R\$3 billion per year, will help us in the energy transition process and provide support to the entire chemical and petrochemical chain. We will offer our customers and partners all knowledge of the energy and gas markets we gathered over the years, as well as customize renewable energy solutions and new business models.

[LEARN MORE!](#)

[About Voqen.](#)



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## Investments in renewable electric energy

In 2018, we initiated a sequence of long-term agreements for the purchase of renewable energy. Since then, we signed agreements with an average term of 20 years, for the supply of electric energy from wind and solar sources. In Brazil, our agreements represent 40% of the energy we purchase in the country and account more than 220 average megawatts. Also enable the construction of new ventures that contribute to the expansion of the electric system and the country's development, especially in the regions where we are located.

■ % of renewable electricity purchased: **82%**.

■ MWm of long-term renewable electricity  
already contracted globally: **+230 MW**.

■ **3.3 million** tons of CO<sub>2</sub>e in emissions  
avoided over the duration of the contracts.



## Biomass-based thermal energy

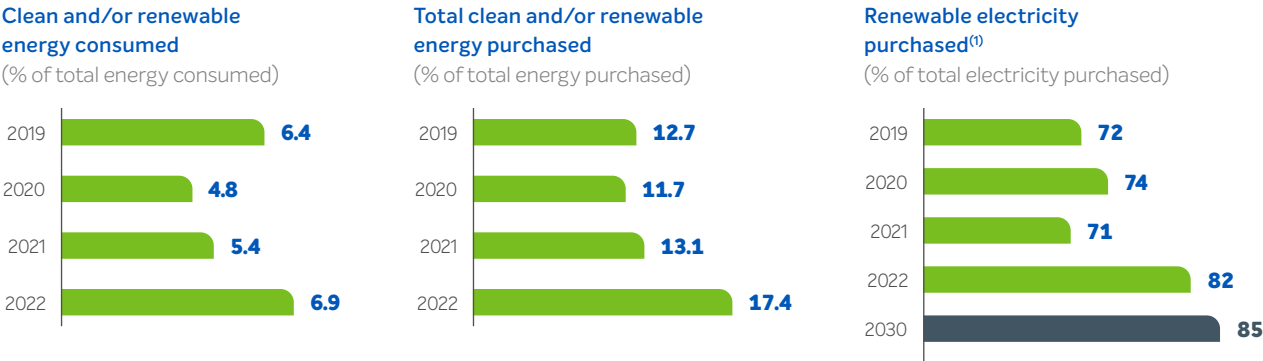
**Veolia:** in 2022, we executed an agreement to produce energy with the use of biomass-based steam. As from 2023, the operation will be carried out in Marechal Deodoro (AL), generating up to 900 thousand tons of steam/year, in 20 years, reducing approximately 150 thousand tons of CO<sub>2</sub>e in the long term.

### Clean energy and RECs certificates in Germany and in the USA

We evaluate the potential to increase our consumption of renewable energy globally. Therefore, in 2022 Braskem Europe commenced to implement its strategy of purchase of energy with renewable certificate for 100% of its consumption of electricity. As a result thereof, in that year the market-based emissions of scope 2 of Braskem of that region were 75% lower than the location-based emissions.

Braskem in the United States, in turn, signed a renewable electric energy purchase agreement, for a term of ten years, for the plant in Neal (West Virginia), which becomes effective in 2025. It has also entered into clean energy agreements for the plant in Marcus Hook (Pennsylvania), until 2027. Finally, it has acquired Renewable Energy Certificates (RECs) for the Texas plants.

### Renewable energy in Braskem's energy matrix



(1) The electricity supply at Braskem is acquired via specific renewable contracts, complemented by electricity from the grid. Thus, the percentage of renewable electricity purchased considers both forms of supply. In 2022, there was greater renewability of the Brazilian GRID, as explained in the GHG emissions volume indicator, scope 2.





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## Carbon to chemical conversion

We are investing in the development of carbon capture technologies for storage and use as raw materials for chemical production. Our Innovation team is working with a pipeline where 170 ideas have been identified, 15 of which have been developed, becoming research already at various stages of development.

Among the projects are a partnership with Northwestern University in the development of a co-electrolysis technology, which simultaneously transforms CO<sub>2</sub>e captured in CO and ethylene into ethylene oxide. With the University of São Paulo and the Federal University of São Carlos (UFSCar), we worked on creating a new technology to convert CO<sub>2</sub>e into light olefins or linear alpha-olefins. Together, we are also developing an electrocatalytic system to convert CO<sub>2</sub>e and water into ethanol.

With New Iridium, a startup from Colorado, United States, we are supporting the development of a photocatalytic system that uses light energy to promote the conversion reaction of CO<sub>2</sub>e into organic acids. In addition to the projects to convert CO<sub>2</sub>e, we also have a partnership for the development of capture technologies with membrane in cooperation with Compact Membrane Systems (CMS).

With respect to the project of University of Illinois, from Chicago, initiated in 2019, we have obtained positive results, with the conclusion of the development of the technology in laboratory, and we are evaluating the commencement of the pilot plant to continue the development of the technology in larger scale.

## Removal of biogenic carbon with inventory incorporated in the product

From a global emission perspective, we understand that biopolymers are an important solution for the petrochemical industry towards carbon neutrality. In fact, the raw material used for the production thereof contains carbon of biogenic origin, for example, removed from the atmosphere during the plant photosynthesis process. Because they retain biogenic carbon molecules for dozens of years, biopolymers can be considered as long-term inventories of biogenic carbon.

For that reason, we announced in 2021 the expansion of current green ethylene capacity at the Triunfo petrochemical complex in Rio Grande do Sul (Brazil) from 200 kt/year to 260 kt/year, with an estimated investment of US\$87 million, which is expected to start operating in the first half of 2023. As expected for 2022, we also continue to study the feasibility of expanding green ethylene production to Thailand, in partnership with SCG Chemicals – during 2023, we expect to reach project milestones such as investment approval.

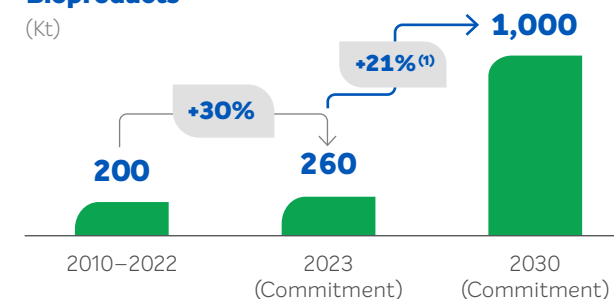
In 2022, we formalized our partnership with Lummus for licensing technology to produce green ethylene. The partnership will accelerate the use of bioethanol for the production of chemicals and plastics.

[CLICK HERE](#)

**Learn more about green polyethylene sales in Manufacturing Capital.**

## Bioproducts

(Kt)



<sup>(1)</sup> Considers the weighted annual growth rate in the period.



## Diversification into bioproducts

The year 2022 also marked the launch of Sustainea, a joint venture with Japan's Sojitz focused on the production and sale of monoethylene glycol (bioMEG) and monopropylene glycol (bioMPG) made from renewable raw materials. The raw material for PET, MEG has numerous applications and is essential for industries such as the textile and packaging industries, especially beverage bottles, but today it is still predominantly produced from fossil raw materials.

**sustainea**  
bioglycols

By means of this joint venture, the business plan contemplates the implementation of three industrial plants, with start-up of the first unit in 2025. Sustainea will also establish a production chain to ensure renewable and competitive raw material supply, as well as a logistics operation that enables the smallest possible carbon footprint. The expectation is that once the technology is approved, the plants will have a combined production capacity of up to 700,000 tons of bioMEG per year.

[LEARN MORE!](#)

[About Sustainea.](#)



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## Climate adaptation

GRI 201-2

We concluded the climate risk review, with time horizons of 2030 and 2050, in which we identified and evaluated the physical and transition risks, as well as the climate-related opportunities that could impact the company under different climate scenarios. The study also included mapping the existing control measures for the identified risks and updating the climate change adaptation plan.

The study included scenarios limiting the average temperature increase to 2°C by the end of the century, providing a wide diversity of plausible outcomes and meeting the best practices for climate risk studies established by the Task Force on Climate-related Financial Disclosures (TCFD).

Its scope reflected all operations in the countries where the company operates, with potential physical risks raised associated with ten types of climate threats that vary according to the region of the analyzed units in Brazil, Mexico, the United States, and Germany. After the climate risk classification process, the highest risks were identified, totaling 22 in the time horizon of 2030, and thus action plans were defined to eliminate or reduce these risks.

Among the industrial units, those located in Brazil presented the highest incidence, where extreme climate events, such as severe droughts, heavy rains and floods, can occur. For each of the risks, classified as high, we prepared action plans with adaptation measures. As for the opportunities, identified and classified as priorities, we selected those with the greatest potential positive impact on the business and defined actions to enhance them. The incorporation of climate risks to the corporate risk management process, aligned with Braskem's strategy, allows for the anticipation of due adaptation measures, which can avoid or control certain risks, and the exploitation of the opportunities identified in the study.

## Climate adaptation and water security

One of the main physical climate risks to which we are exposed is water scarcity; therefore, water risk management is completely interconnected with climate risk management. The main actions for mitigating water risk is the search for new safe sources of water catchment, thus avoiding potential conflicts with the community and increasing water security. One example is Aquapolo, which serves part of the operations in the Southeast region of Brazil, and is one of the main initiatives we have implemented for water risk mitigation, the largest reuse plant in operation in Latin America with 1,000 liters/s capacity.

In operation since 2012, the project is the result of a partnership between sanitation company SABESP, at the time with the private operator BRK Ambiental and Braskem in a 41-year contract to supply the company's plants in the ABC petrochemical complex. Nowadays, the Aquapolo is under GS Inima management and supplies almost 100% of the water consumed by the units of ABC Paulista, which contributes to minimizing the risks of scarcity in the region.

For the selection of new safe water sources, using as reference the requirements of the CEO Water Mandate and our sustainable development strategy, with technical support from a specialized consulting firm, we developed a tool that considers technical, social, environmental, economic, and risk aspects in the decision-making process for new water sources; this way, these new water withdrawal options will be more aligned with our strategy, underpinning the achievement of the 100% water security index by 2030.





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## Water management

GRI 3-3 303, GRI 303-1, GRI 303-2, GRI 303-4, GRI 303-5 | SASB RT-CH-140a.3

Water is a fundamental resource for petrochemical production, used in cooling processes and steam generation, as well as incorporated into certain products. Water scarcity – magnified by climate change – can negatively impact our business and the continuity of operations.

Therefore, based on the study of climate risks and on the studies of hydrographic basin risks in the regions of our operations, we defined and have been implementing action plans for water safety for all industrial units, in alignment with the climate change adaptation plan, especially for those with the highest risk of droughts and water unavailability: the northeastern and southeastern regions of Brazil.

Among our goals for this topic is the use in our operations of 100% water from safe sources by 2030. In 2022, the global water security index was 65.3%, an decrease of 4.1% compared to 2021. The eco-efficiency indicator of Braskem's water consumption in 2022 was 4.30 m<sup>3</sup>/t, almost 3% higher than the previous year's result.

We concluded the technical reassessment of indicators and concepts related to water, based on the most recent updates of recognized international references, such as WRI, GRI, CDP, CEO Mandate, among others. One of the main review points is the standardization of the concept of safe water, which has already been updated to calculate the 2022 water security indicator. This review will allow us to follow a path in line with our commitment for 2030.

Another important change refers to the reassessment of water reuse indicator, which is part of the water security index, what resulted in adjustments to exclude process improvements inherent to the technologies used in the plants. This adjustment impacted the water security indicator in 2021 and 2022.

**Rio de Janeiro:** we signed a memorandum of understanding with the concessionaire Águas do Rio (Aegea Group) for a project to supply the company's industrial plants in Duque de Caxias with reused water. The project is aligned with the climate adaptation objectives, with a focus on achieving 100% water security for its industrial units by the year 2030.

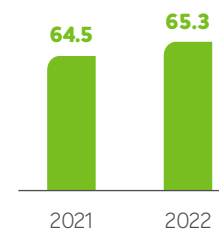
**Alagoas:** we are evaluating alternatives for the reuse and desalination of seawater for the two industrial units. To support the project selection process, we developed a methodology with an external consulting firm, with criteria that will be considered to define the winning proposal. This process should be completed by 2023.

The effort for an efficient management of water resources guaranteed our presence, for the sixth year in a row, in the global A List of water use of the Carbon Disclosure Program (CDP). The non-profit environmental organization selects the best publicly traded companies in the world in relation to sustainability aspects.

We are also part, since 2019, of the CEO Water Mandate, a UN Global Compact platform that brings together more than 150 companies committed to advancing the management of water resources. After joining the Race to Resilience initiatives of the United Nations Framework Convention on Climate Change (UNFCCC) and Water Resilience Coalition, a coalition led by CEO Water Mandate, which aims to preserve the world's freshwater resources through collective actions in water-scarce basins, we are evaluating existing collective action initiatives in the southeast and northeast regions of Brazil, regions of potential water stress, to select the one most adherent to Braskem's strategy and with potential positive socio-environmental impact.

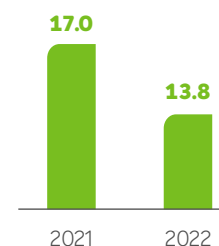
### Water safety index

(%)



### Water reuse index<sup>(1)</sup>

(%)

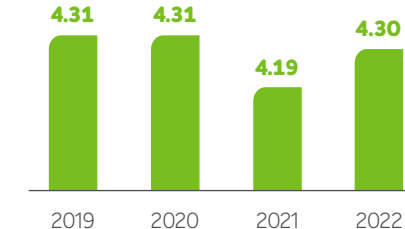


(1) The methodology for calculating the water reuse index has been changed to exclude process improvements that are inherent to the technology used in plants. This change also modified the water safety index values as this indicator uses the reuse index as one of the calculation elements.

(2) Of all areas and areas with water stress (ML).

### Water consumption

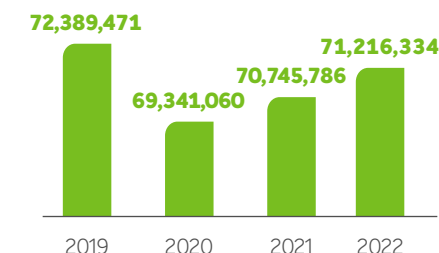
(m<sup>3</sup>/t)



GRI 303-5

### Total water consumption<sup>(2)</sup>

(m<sup>3</sup>)



### Distribution of water tanks

Developed in partnership with Fortlev, a national leader in water storage solutions, the project aims to produce and distribute (with the help of the Friends of Good Institution) water tanks in 80 villages in the states of Alagoas, Pernambuco and Ceará. The action benefited around 10,000 people and Braskem was responsible for donating Polyethylene resin to produce more than 2,000 water tanks.





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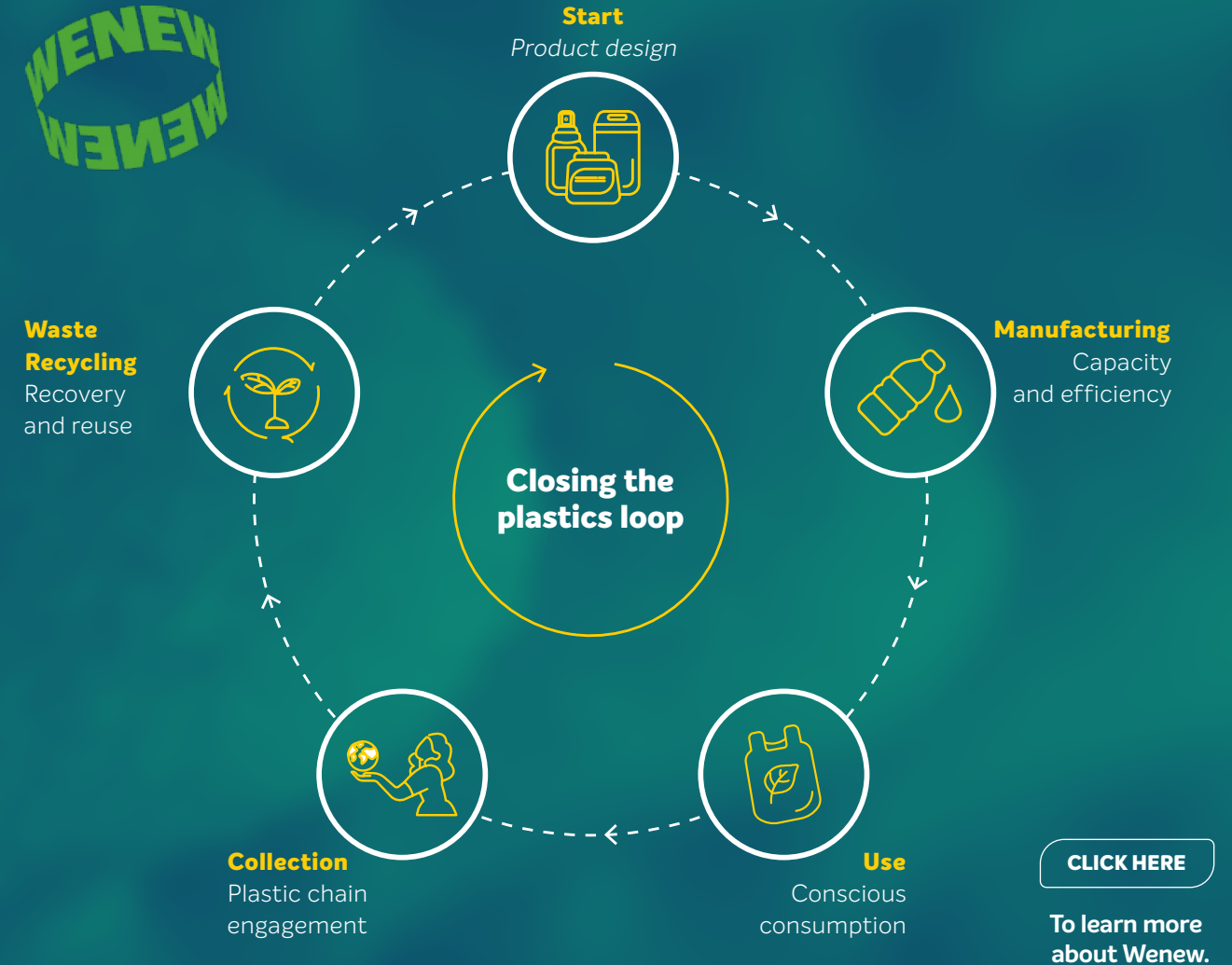
GRI content summary

## Disposal of post-consumer plastic waste

GRI 3-3 301

We are committed to expanding the commercialization of resins with recycled content to 300,000 tons in 2025 and 1 million tons by 2030, as well as recovering 1.5 million tons of plastic waste by this same year. Thus, increasingly committed to strengthening and achieving the circular economy, we launched Wenew, the company's new circularity ecosystem which includes circular products (resins and chemicals), environmental education and proper disposal initiatives, technologies and circular design.

We denominate the last three initiatives as Wemove, a movement that aims to educate and engage people in society and raise awareness about ways to achieve a more circular plastics supply chain.





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# Circular product portfolio

GRI 3-3 301

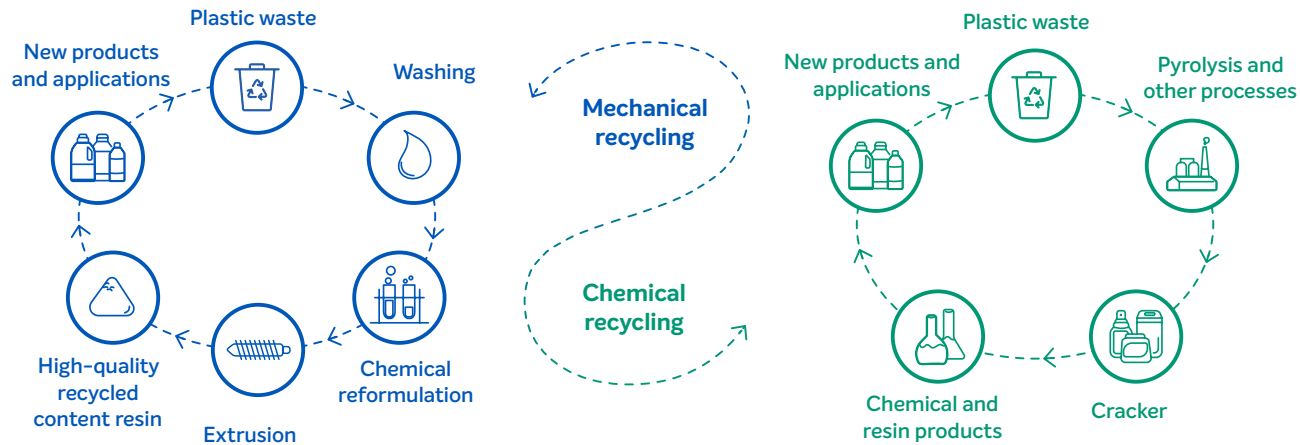
Our global portfolio comprises 40 grades of post-consumer recycled content resins and 42 grades are in development. We have plastic resins produced from mechanical recycling, and chemicals such as solvents and specialties, repurposed from the company's traditional production processes. Braskem's circular products are the result of plastic waste recycling and recovery processes and, for this, we invest in innovative waste recycling and recovery technologies.

## Mechanical recycling

Process of milling post-consumer plastic into smaller pieces that, after going through the extrusion process, become recycled content resins for the most diverse applications.

## Chemical recycling

Process of breaking down post-consumer plastic molecules, with alteration of their physicochemical properties, for the generation of circular raw materials used in the manufacture of new chemicals or resins, with the same quality as conventional ones and for the most diverse applications. Braskem is investing in chemical recycling technology to soon make it a reality.



## Waste recovery

Process of recovery of products derived from the manufacture of other Braskem solutions, generating maximum use of raw materials and reduction of waste.

In 2022, Braskem in the United States announced a novelty that contributes to the company's commitments to the circular economy. This is the expansion of the polymer portfolio, which now includes two new polypropylene (PP) grades with post-consumer recycled (PCR) content. The solutions are used in a wide range of US Food and Drug Administration (FDA) food contact applications, including consumer packaging, caps, and household utilities. With the launch, we want to help our clients meet their recycled content goals in the FDA food contact market, which currently has limited PCR solutions.



*In Brazil and Mexico, we completed the lifecycle analysis study of recycled content resins, which showed up to a 48% reduction in carbon footprint over conventional resin.*



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## Extending our recycling supply chain

GRI 3-3 301

In 2022, we made significant strides to achieve our goal of expanding our portfolio to include 300,000 tons of thermoplastic resins and recycled content chemicals by 2025. One of them was the signing of a contract for acquisition of shares and subscription of new shares issued by Wise Plásticos S.A., a company in the mechanical recycling sector focused on polypropylene (PP) and polyethylene (PE) resins.

As of the present, Braskem owns 61.1% of Wise's share capital. A significant part of the investment – estimated at R\$121 million – will be allocated to doubling current production capacity to around 50,000 tons of recycled products by 2026. The transaction was approved by CADE on november 2022, completed on february 2023, and and is connected to Braskem's circular economy strategy, creating even more sustainable and innovative solutions based on the improvement of opportunities in the plastics production chain, which includes the recycling challenge in Brazil.

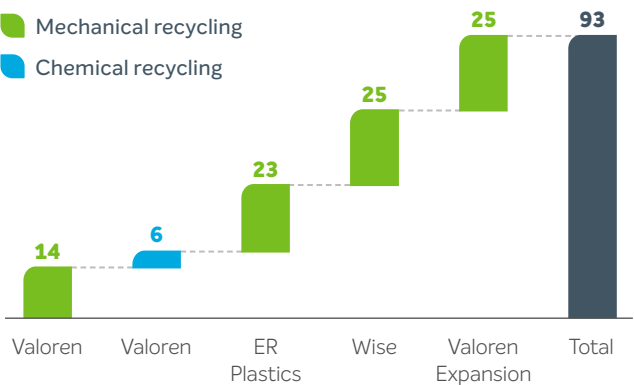
Also in 2022 we inaugurated, in partnership with Valoren, the first mechanical recycling plant in Brazil. With an investment of approximately R\$67 million, the unit is expected to transform 250 million post-consumer packaging – made of polyethylene and polypropylene – into 14,000 tons of high-quality recycled content resin annually. After the process, the resins will serve as raw materials for the transformation industry.

In addition, we announced the formation of a joint venture with ER Plastics in the Netherlands. The company, which will be controlled by Braskem, is responsible for creating an innovative technology that converts low-quality plastic waste into final products. With this, we will expand our performance in the supply chain, based on a new business model, and be able to expand the use of this technology to other regions.

The ER Plastics has a nominal mechanical recycling capacity of 23,000 tons per year, that transforms mixed plastic waste into compression-molded parts (plates for use in construction and pallets). For Braskem, the operation is aligned with the commitment of achieving 300,000 tons of sales of products with recycled content by 2025.

### Production capacity – 2025e

(kt)



### Braskem Idesa and Alcamare

The partnership between Braskem Idesa and Alcamare, Mexico's largest recycler, will help drive the relevance of PE and PP recycling in the country. Through a long-term contract, we will develop and trade food-quality recycled material, i.e., food contact-capable recycled products.







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## Technology development

GRI 3-3 301

In search of new technologies with high potential for plastic waste recovery, we have invested in several partnerships to increase the quality of post-consumer recycled content resins and expand their application possibilities. Among these projects is the partnership with the [Institute for Sustainable Process Technology](#) in developing a technology for separation and recycling of mixed plastic waste sent for pyrolysis. With an investment of €2 million, the project will enable the recovery of plastics that will become raw materials for resin production.

Together with Senai, we are working on chemical recycling research into solutions for use of flexible post-consumer plastic. The goal of this partnership – which has an investment of R\$2.7 million – is the development of catalysts to improve the quality of the products generated in the plastic chemical recycling process.

Another disruptive project with Valoren also focus on chemical recycling that will transform, by means of the pyrolysis process, plastic waste into certified circular raw material, which will be used in the manufacture of resins or chemical inputs. The project, which involves a joint disbursement of R\$44 million, should start operating in the first quarter of 2023 and will have the capacity to produce six thousand tons of circular products per year.

We also made a capital investment to acquire the minority stake in [Nexus Circular](#), a company that operates in chemical recycling. The proprietary technology project converts films destined for landfill and other hard-to-recycle plastics into high-quality raw materials. The 10-year agreement announced by the two companies considers the supply of raw materials for the production of circular PP resins certified by Braskem.

## Environmental education and consumer engagement

In 2022, we accounted for 33.5 thousand tons of recovered plastic, an increase of 156% over the last year, due to the consolidation and increase of collective actions and consumer engagement. This result considers the volume of plastic waste recovered through sales of post-consumer resins (PCR), which totaled 28.3 thousand tons, an increase of 115% compared to the previous year.

Among these actions are cashback system initiatives. In 2022, we signed and operated with three companies in this segment, in which people exchange their sanitized post-consumption packaging for credits available on a card, provided directly at the collection points (fixed and mobile). The units accept materials made of plastic, glass, paper, cardboard, aluminum, among others. With the card it is possible to make purchases in local establishments, such as markets, pharmacies, and bakeries.

Triciclo, Coletando and Molecoola helped install 34 new voluntary delivery points in the states of São Paulo, Rio de Janeiro and Bahia. In addition, we made it possible to include PE and PP collection at more than 200 points that were already in operation. With Coletando, the action (also cashback) is carried out in 17 municipalities of four states (SP, RJ, MG and BA). The waste collected goes to one of the 25 partner cooperatives that allocate the materials for recycling.

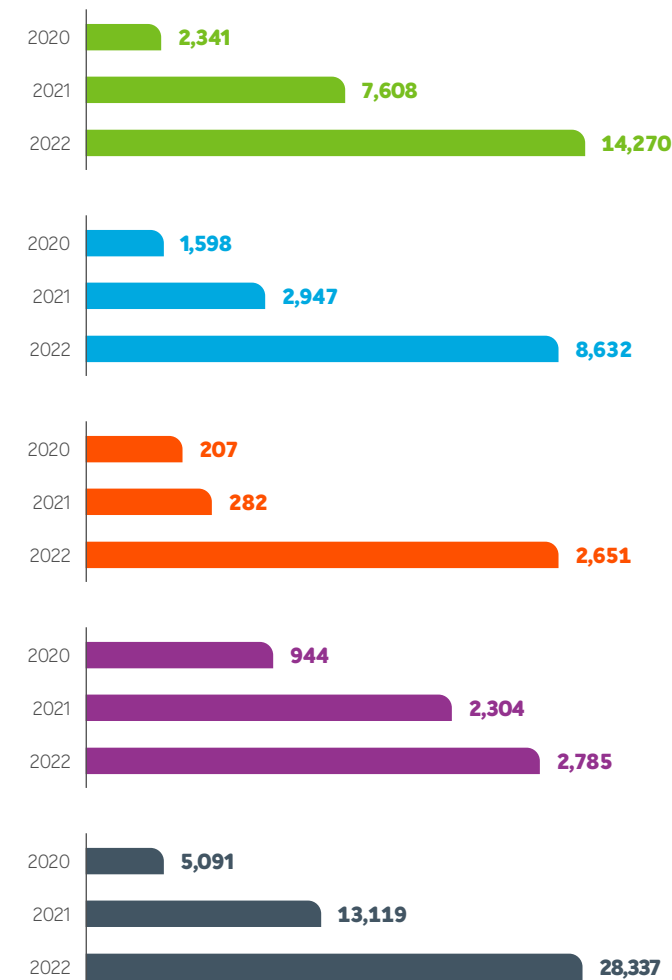
In the case of plastic items (polyethylene and polypropylene), Braskem is responsible for recycling, through the mechanical recycling unit operated by Valoren. The materials return to the chain as post-consumer recycled resin, which can be used for the production of new products, thus closing the cycle of the circular economy.

### Volume of recycled waste recovered and used in Braskem's production

(t)

GRI 301-2

■ Brazil ■ United States ■ Europe ■ Mexico ■ Total





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## Zero waste in the park

*In 2022, we joined forces with Ibirapuera with the Zero Waste Braskem project to contribute to the goal of making it the most sustainable park in Latin America, making it zero landfill by 2030. The goal is to make the more than 18 million visitors aware of how to dispose of waste correctly, improve waste management in the park, and optimize recycling by means of signalized waste garbage cans and exchanging waste for discounts on products sold in the park.*

*We are also sponsors of sustainability actions at the São Paulo Museum of Art (Masp). In this partnership we encourage the museum to make improvements in its waste management. In the first six months of the partnership more than 10 tons of recyclable material was removed from the museum, which was sent to a cooperative for recycling.*

## Recycling show

In 2022, we will take our commitment to sustainable development and circular economy to three major events: Rock In Rio, Lollapalooza and Popload Festival. These actions consisted of plastic waste collection stations where participants could exchange recyclable items for various gifts.

■ **Popload Festival:**  
**+27,000** plastic items collected.

■ **Lollapalooza Brazil:**  
**+129,000** plastic items collected.

■ **Rock in Rio:**  
**+872,000** plastic items collected.

## SER+ Program

The program aims to foster the development of the recycling productive chain of solid urban waste in recycling cooperatives, through training, mentoring, and investment in equipment, PPE, infrastructure improvement works, and services in recycling cooperatives.

In 2022, we recovered 4.7 thousand tons through the program, which expanded its activities to the city of Duque de Caxias (RJ), benefiting 30 cooperatives and more than 900 cooperative members in distinct stages of maturity. In the year, the program recovered about 4.7 thousand tons of plastic waste.

## Partnerships to prevent plastic waste disposal

GRI 3-3 301

Over the years, Braskem has joined various initiatives to understand, prevent and assist in the management of plastic waste.



■ **Blue Keepers:** coordinated by the Global Compact Brazil, the project was developed to prevent plastic waste from escaping into rivers and oceans in a systemic and lasting way. We are one of the sponsors of the action, which focuses on waste management to generate impact in the short, medium, and long term through the fronts of diagnosis, solutions, pilot projects and public management. In 2022, we presented the project's diagnosis at an event of the United Nations Educational, Scientific, and Cultural Organization (UNESCO), on Dialogues of Ocean Culture; we conducted research, with the National Confederation of Municipalities, on eco-barriers and eco-boats; and we have evolved with the collection of samples, through the Oceanography Institute of the University of São Paulo (USP), to build the first national inventory of types of waste that go to sea, considering priority cities.



■ **Alliance to End Plastic Waste (AEPW):** an industry coalition that invests in projects and technologies to end plastic waste disposal in the environment, especially in the oceans. We make commitments on two fronts: Solution Accelerator Fund (investment of US\$7.5 million by 2023 in annual membership fees) and Member Directed Commitment (investment of US\$15 million by 2023 – alliance members commit to investing directly in their own activities to deal with plastic waste, a goal Braskem has already met). In 2022, more than 30,000 tons of plastics were recovered in the initiative's actions.



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## Circular design

GRI 3-3 301

In 2022, we inaugurated Cazoolo, Brazil's first packaging development center for the circular economy. The space, which is located in São Paulo (SP), is the result of an investment of R\$20 million and functions as a packaging innovation hub. Its main goal is to design and develop improvements for the entire packaging journey – from conception to post-consumer.

There we want to bring together all the links in the production chain, such as clients, brand owners, designers, startups and universities, so that they can create and co-create projects that aim at the complete circularity of their products, reducing environmental impacts and leveraging innovations with technology.

*All projects developed in Cazoolo follow the concepts of Design for Environment (DfE)<sup>(1)</sup> and Life Cycle Analysis (LCA).<sup>(2)</sup>*

The initiative has already started to reap good results, with packaging solutions developed and available for the market. This is the case of the Stand Up Pouch, a mono-material developed in partnership with Antilhas; the mono-material tube created in conjunction with C-Pack; and the mono-material solution in BOPP.

(1) Design approach to reduce the overall health and environmental impact of a product, process or service.

(2) Technique for evaluating and quantifying potential environmental impacts associated with a product or process.



*The Cazoolo was recognized as an Initiative of the Year 2022 in the Design ESG/Circular Economy category of the Brazil Design Awards and awarded in the Design category of the Design for a Better World award, organized by Centro Brasil Design.*

### Actions to increase plastic recovery

As a leader in polypropylene production in North America, we are committed to collaborating and strengthening recycling and circularity. It was with this goal that in 2020 we joined the Polypropylene Recycling Coalition, an initiative of The Recycling Partnership.

In 2022, the How2Recycle North American packaging recyclability labeling program upgraded the eligibility of rigid polypropylene (PP) tubs, bottles, jugs, and jars from "check locally" to "widely recyclable" in the United States. This was achieved by several years of improving polypropylene sortation capabilities at material recovery facilities through a structured granting program, administered by TRP. As a result, our clients can remain confident in communicating PP recyclability on their products and packages.

Also in 2022, we rejoined the American Chemistry Council's Plastics Division to work across the industry on improving the recovery of plastic packaging. We also continued our participation as members and part of the Executive Advisory Board of Cyclyx, an innovative consortium working to increase plastic recovery rates and supply feedstock to recycling projects.







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# Operational eco-efficiency

Within our sustainable development strategy, we invest in technologies and projects that seek to make our operations more eco-efficient by improving the way we use and leverage natural resources to reduce any kind of negative impact on the environment.

## Waste and effluent management

GRI 3-3 306, GRI 306-1

At Braskem, we have a Health, Safety, Environment, Quality and Productivity Policy. One of its parameters is the monitoring of hazardous and non-hazardous waste. This is done based on local regulations and site-specific quality procedures.

Waste management efficiency, designed to increase company eco-efficiency, reduce waste treatment costs and also prevent environmental liabilities, follows an order of priority:

1. Non-generation
2. Reduction
3. Reuse
4. Waste treatment
5. Final destination

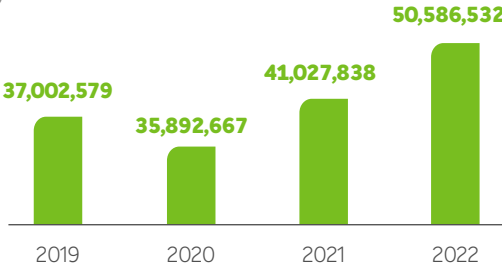
In 2022, the intensity of waste generation was 3.04 kg/t, an increase of 25% compared to 2021, due to lower production in the year, accounting for waste from environmental liabilities and the maintenance stoppage in Rio Grande do Sul.

## Waste generation

GRI 306-3

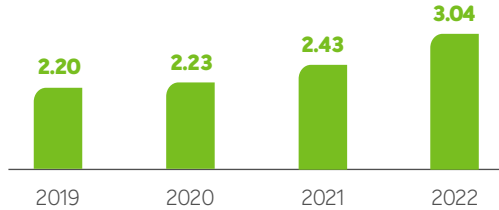
### Total waste generation

(kg)



### Indicator – waste generation

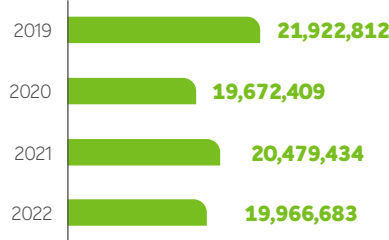
(kg/t)



The management of effluents is based on standards defined by local legislation and on internal procedures in all our units. In 2022, the intensity of generation of liquid effluents was 1.21 m<sup>3</sup>/t, in line with the previous year. During the year we advanced with projects to optimize cooling water consumption, mitigating the negative effects of scheduled and unscheduled shutdowns, as well as equipment cleaning.

## Total effluent generation

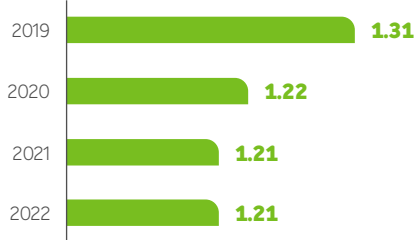
(m<sup>3</sup>)



GRI 303-4

## Effluent generation

(m<sup>3</sup>/t)

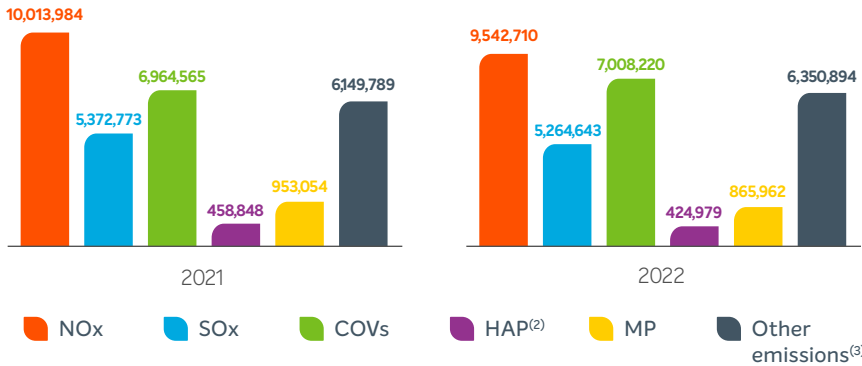


## Significant atmospheric emissions<sup>(1)</sup>

(kg/year)

GRI 305-7 | SASB RT-CH-120A.1.

The improvement in the campaign to monitor emission sources and the standardization of atmospheric emission inventories led to a reduction in NOx, SOx and PM emissions, mainly at the crackers in Brazil and at Braskem Idesa. Due to the maintenance stoppage in Rio Grande do Sul, Brazil, there was a reduction in Hazardous Air Pollutants (HAP), due to the cleaning of equipment, improving systems' burning and cleaning efficiency. For the other pollutants, the pattern was maintained in the volume of emissions, without significant impacts.



(1) The methodologies used are recommended by local environmental agencies. Where measurement is not available, estimates (emission factors) based on recognized methods, e.g., US EPA AP-42, are used.

(2) Including toxic air pollutants and hazardous air pollutants (HAP).

(3) Including total hydrocarbons and carbon monoxides.



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# Manufactured Capital

Our 40 manufacturing plants across four countries have a productive capacity of more than 16 million tons/year of plastics and chemicals marketed to clients in more than 70 countries. We are aware that in order to evolve our business in a lasting and sustainable way, we need relevant topics such as the circular economy, recycling, and combating climate change – topics that are already present in our day-to-day activities and integrated into our business strategy.



**Elimination of Plastic Waste**  
Dimension 3

[CLICK HERE](#)

For more details on  
advances in the dimension.



**Combating Climate Change**  
Dimension 4

[CLICK HERE](#)

[CLICK HERE](#)

To learn about our positioning  
in circular economy.





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## Manufactured Capital in numbers

**R\$37.8 billion**  
value of fixed assets  
(+1.4% vs. 2021).

**21.3 million tons**  
productive capacity  
(same as 2021).

**54.1 thousand tons**  
sales of recycled products  
(+144% vs. 2021).

**Unit utilization rate:**

**78%**  
Brazil  
(-3 pp vs. 2021).

**73%**  
Mexico  
(+7 pp vs. 2021).

**80%**  
United States and Europe  
(-7 pp vs. 2021).

## Performance, efficiency and productivity

In addition to setting a high standard for quality, safety, efficiency, productivity and competitiveness, our processes and structures are critical to the evolution of our sustainable development agenda. We have a strong commitment to the circular economy and carbon neutrality and want to strengthen these topics not only in the Braskem portfolio, but also throughout the production chain.

In 2022, our fixed assets totaled R\$37.8 billion and we had a productive capacity of 21.3 million tons of chemicals and plastic resins. In the recycled content resins segment, production capacity reached 62,000 tons/year.

### Brazil

The average utilization rate of the petrochemical plants in Brazil decreased 3 pp compared to 2021, reaching 78%, due to scheduled maintenance stoppages at the Rio Grande do Sul petrochemical plant and PVC plant in Alagoas, the unavailability of raw materials at the Rio de Janeiro and ABC petrochemical plants, in addition to the lower demand for resins and a fall in spreads in the international market.

On the other hand, the volume of resin sales in the Brazilian market was in line with the previous year's result due to the greater market share of resins and maintenance of local PE demand, which offset the decline in total demand for resins in the country. Resin exports in 2022 also remained in line with 2021.

The sales of the main chemicals were lower (-6%) mainly due to the lower availability of products for sales given the lower utilization rate of the petrochemical plants in the year. Exports also decreased (-27%) due to lower demand in the foreign market.

In PVC, the average utilization rate of the Alagoas and Bahia plants was 66%, 1 pp higher than 2021. Sales totaled 498 tons, 1% higher than the previous year.

### United States and Europe

The utilization rate of US and European plants was 80%, down 5 pp from 2021 due mainly to lower demand in the regions and short unscheduled stoppages in the period.

Sales volume in the United States also declined by -9%, an amount which was also associated with lower demand in the period associated with lower consumption, high inventory levels in the transformation chain, and the expectation of converters to lower prices in subsequent periods and high levels of PP imports into Europe.





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## Mexico

The average utilization rate of the PE plants increased 7 pp compared to 2021 due to the increased supply of ethane through the Fast Track solution. Sales, in turn, increased 20% due to increased availability of product for sale, given the higher utilization rate in the period, and higher demand for PE in the region.

Fast Track operations supplemented raw material supply with an average of 18,500 barrels per day of ethane imported from the United States, representing a 20.4% increase compared to 2021 and 74% utilization rate of this solution. Additionally, in August the Fast Track solution recorded a record supply, operating at an average of 27,200 barrels per day, due to investments that allowed an increase in the volume of imported ethane.

### Puerto Mexico Chemical Terminal

GRI 2-6

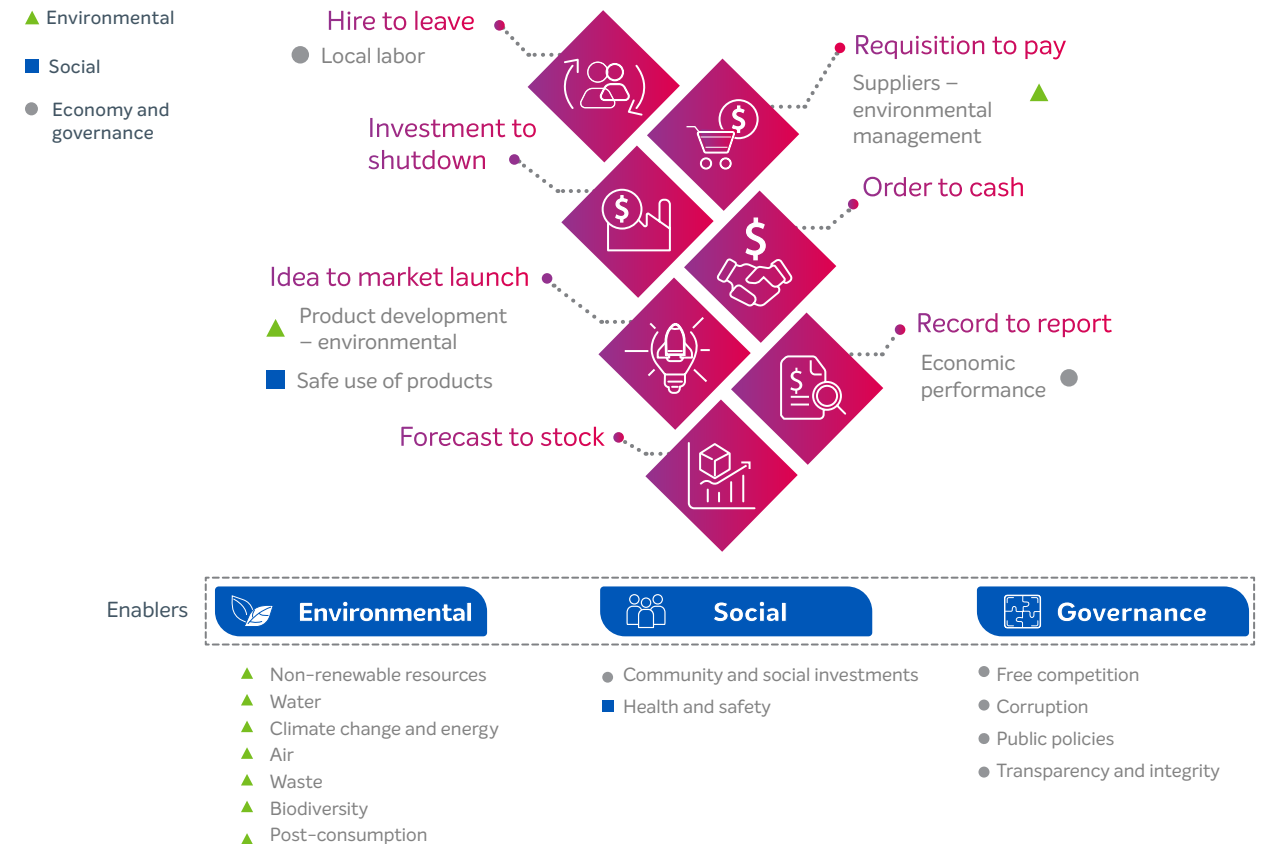
Braskem Idesa (BI) announced an agreement with the company Advorio for the construction and operation of Puerto Mexico Chemical Terminal (TQPM), which will serve to import ethane in Veracruz. The transaction, which was completed in March 2023, with an estimated investment of US\$400 million, will have a 50% equity stake in TQPM for each company.

Construction began in July 2022 and has reached a physical progress to December of 26%. Operations are expected to start in the second half of 2024.

The purpose of the terminal is to complement Mexico's hydrocarbon supply and provide additional ethane for Braskem Idesa to operate at full capacity, increasing gas availability and the competitiveness of the entire Mexican petrochemical and plastics industry.

## Transform for Value

Within the processes that drive our strategy and drive value for the company, one highlight is the Transform for Value global efficiency program. Its role is to coordinate and accelerate improvement initiatives in different areas, including competitiveness and productivity and energy. Thus we can prioritize applications aligned to our strategy by selecting those that adhere most to our business and sustainability commitments.



Through Transform for Value we redesign our process structure, generating value for the company through process optimization (whether related to physical or intellectual assets), always focusing on the environmental, social and governance pillars for decision making.



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## Optimization and value capture

In 2022, the cumulative capture of these initiatives totaled about US\$283 million. The capture rate represents, mostly, a direct impact on the company's EBITDA, which can occur in four ways: net revenue increase, variable cost reduction, fixed cost reduction or DVGA reduction.

Importantly, approximately 1/3 of the value capture pace of US\$353 million/year can be associated with Digital Transformation initiatives, which make significant use of digital technologies in their scopes, such as automation and instrumentation, new software and systems, advanced analytics, machine learning, and cloud services, among others.

In addition, other initiatives in more preliminary phases, such as planning or execution, under management of the areas that compose the program's scope of operation have added to the pipeline's potential approximately US\$387 million/year to be captured in the coming years.



## Products and sales

Braskem has remained focused on developing various projects in its main growth avenues, which are concentrated in existing business with a focus on productivity and competitiveness, of renewables and recycling.

In the Brazilian market, demand for PE, PP and PVC fell 3% compared to 2021 mainly influenced by the decline in consumption, due to the rising interest rates.

In the United States, PP demand fell 6% compared to 2021, affected by high inventory levels in the transformation chain and fear of an economic recession. The European market was also down 8% year-on-year, explained by lower consumer confidence due to the region's poor economic performance and the impacts of high inventories on the transformation chain. In Mexico, PE demand increased from 2021 (+8%), explained by the continued recovery of the Mexican economy over 2022, especially in industrial sectors.

## Sales of recycled products

GRI 301-3

In 2022, our sales of recycled content products reached 54,000 tons, growth of 144% over 2021. This demonstrates the company's commitment to continue expanding its portfolio of products with recycled content, encouraging the recycling chain in the regions where it operates and developing the recycled market.



### Product stewardship

**We perform strategic management of our products to ensure the health, safety, and mitigation of environmental impacts during their life cycles, delivering sustainability and safety to customers and society in our portfolio. We incorporate analyses of these aspects even in the development phase.**

**The management of the topic is performed with the following objectives: to achieve regulatory compliance and product safety, to understand impacts and risks associated with portfolio growth, to strategically position the company with policy makers, to develop internal culture, and to enhance systems and tools for proper product analysis.**



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### Sales of products with recycled content

(ton)

	2022 (A)	2021 (B)	Var. (A)/(B)
Recycled products	54,149	22,181	144%
Chemicals <sup>(1)</sup>	11,772	1,975	496%
Resins with Recycled Content (Wenew)	42,377	20,206	110%
Brazil	19,713	10,138	94%
United States and Europe	16,977	3,405	399%
Mexico	5,687	6,663	-15%

(1) Sales of circular chemicals considers only Brazil.

**LEARN MORE!**

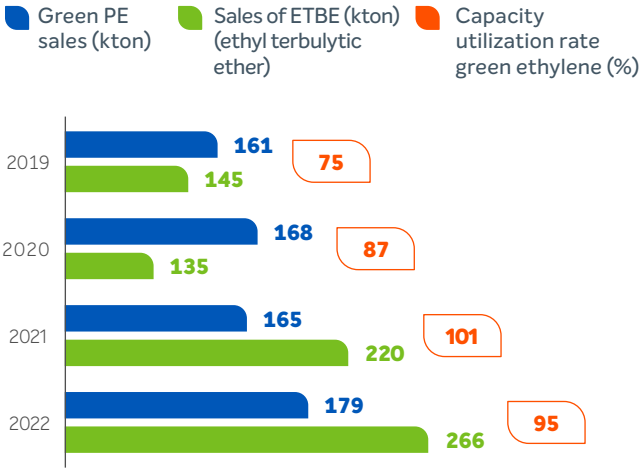
About our products with recycled content strategy.

### PVC with rice husk

Our vinyl business has been working on Resysta, a technology that unites PVC with rice husk. In partnership with the German company, the project uses rice husk – a food by-product that generates a lot of carbon dioxide gas – with PVC to produce a wood substitute. The result is a resistant material that can be used in several applications, especially in the furniture industry.

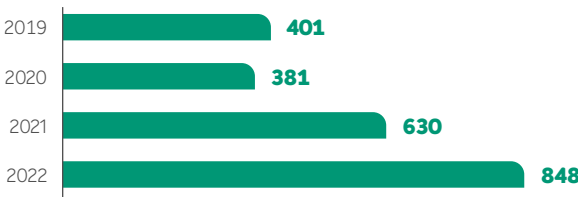
### Green PE Sales

In 2022 we reached the mark of 178,538 tons sold, with a green ethylene utilization rate of 95%. Our commitment is to increase the production capacity of bioproducts to 1 million tons by 2030.



### Net revenue (Green PE + ETBE)

(US\$ million)



**CLICK HERE**

To find more about our biobased products strategy.

### Sustainable Production Certifications

We were the first Brazilian company to receive the International Sustainability and Carbon Certification for the use of alternative raw materials (ISCC Plus). This means that industrial units in the south and southeast regions can test and produce new polymers derived from sustainable, credited and recognized sources. Germany's production plants and the Netherlands office also received this certification and in 2022 it was the time of the US facilities, where we have five certified plants.

We also received Bonsucro certification which affirms the production and processing of raw materials in a socially and environmentally responsible manner at our industrial complex in Triunfo (RS). We became members of the Roundtable on Sustainable Biomaterials (RSB), an entity that promotes the development of renewable and circular fuels and materials, with a special focus on the aviation sector. Through this partnership, we can help develop and discuss pathways to this market alongside airlines, aircraft manufacturers and other organizations.

In addition, based on our initiatives with Ocean Clean Sweep, we have already earned the OCS Blue seal, awarded by Plastivida, licensor of Operation Clean Sweep® in Brazil. In 2022, we held the Good Practices Sharing Forum related to the OCS/Pellet Zero Program; 85 logistics and industrial leaders from all over Brazil attended. Our units in Mexico and in the United States are also certified by OCS.





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# Intellectual Capital

We believe investing in advancing technology will increasingly be the central path in the pursuit of a more sustainable future. We see innovation as a strategic pillar, being present in all our investment decisions to enable the transition process to the carbon neutral circular economy, based on the development of increasingly cleaner solutions.

To measure the results on this front, we implemented an index two years ago that evaluates the sustainability of our projects in the fields of innovation and technology. Our goal is to have an index greater than 90% by 2030.



**Sustainable Innovation**  
*Dimension 7*

**CLICK HERE**

**For more details on advances in the  
Sustainable Innovation dimension.**





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## Intellectual Capital in numbers

**360**

members in I&T  
(+20% vs. 2021).

**16%**

of sales with products  
launched in the  
last five years  
(+2 pp vs. 2021).

**14**

I&T facilities  
(+8% vs. 2021).

**R\$514 million**

in spending and  
investment in innovation  
and technology  
(+70% vs. 2021).

more than  
**R\$500 million**

in value captured  
through digital  
technologies  
(+46% vs. 2021).

**85%**

in the Sustainability  
Index of I&T projects  
(+4 pp vs. 2021).

**20**

accelerated startups  
at Braskem Labs.

## Sustainable innovation

At Braskem, innovation is a fundamental pillar to evolve with our long-term commitments. Our transformation through innovation began with the implementation of the Sustainability Index for all innovation projects and the creation of platforms that focus on circular and low-carbon solutions: performance materials, transformation of biomass into chemicals, recycling, next generation process, and conversion of CO<sub>2</sub>e into chemicals.

The innovation platforms have established themselves and started to contribute with opportunities to develop production processes and new molecules with reduced carbon emissions, mitigation, and reduction of safety risk regarding the use of chemicals and new raw materials with renewable or circular basis, strengthening Braskem's portfolio of innovation and technology projects.

### Sustainability Index

Since 2020, the Sustainability Index has integrated all Braskem's innovation and technology projects, thus ensuring the alignment of each project with our sustainable development strategy. All initiatives undergo an assessment in the planning phase of aspects related to sustainability and the type of impact (positive, negative or neutral). At the end, they receive an average grade.

We ended 2022 with 179 projects in innovation and technology, with 131 assessed against the Sustainability Index and 111 with positive impact. This represents an 85% Sustainability Index. The positive impacts of these initiatives are related to: water and/or energy savings, chemical safety (process/product), greenhouse gas emissions and circularity.

In the year, we also developed a methodology to map the sustainable impact of solutions (Sustainable Solutions Mapping – SSM), i.e., the combined impact of the product in application, impact of product production up to Braskem's gate, and the impact of product use after Braskem's gate until end-of-life. Braskem's SSM methodology is based on four benchmarks:

(i) Sustainable Portfolio Management Guide of the World Business Council for Sustainable Development; (ii) Safe and Sustainable by Design Chemicals & Materials from the European Union, (iii) Sustainable Portfolio Management from Solvay; and (iv) Sustainable Solution Steering from BASF. Sustainable Solution Mapping directs us to a product portfolio that integrates sustainability and business growth, signaling product challenges and opportunities, and making sustainability a driver of innovation and growth.

### Investments in 2022

(in reais)

Region	Operating Expenses	Investments	Total
Brazil	181,005,336.08	117,261,952.99	298,267,289.07
Europe	10,243,054.31	3,200,869.86	13,443,924.17
United States	136,090,442.80	66,450,290.74	202,540,733.54
<b>Total</b>	<b>327,338,833.19</b>	<b>186,913,113.59</b>	<b>514,251,946.78</b>



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*Throughout 2022, investments in innovation and technology (I&T), including operating expenses and fixed assets, totaled R\$514 million, up 69.8% compared to 2021. Of the total fixed expenses, 85% were dedicated to innovation for sustainability and 21.4% obtained in tax benefits for innovation.*

## Innovation framework

Braskem's research and innovation area has team members and centers in various parts of the world:

- **24 new patent** applications and **94 extensions**.
- We currently have **1,047 active documents**, of which **454 are patents granted**.
- **2 Technology and Innovation Centers (CTI)**: Triunfo (RS, Brazil) and Pittsburgh (PA, United States).
- **2 Polymer-focused Technical Nuclei**: Wesseling (Germany) and Coatzacoalcas (Mexico).
- **7 pilot plants**.
- **1 Biotechnology Development Laboratory** in Campinas (SP).
- **1 Renewable Innovation Center** in Lexington (MA, United States) under construction.
- **1 Process Technology Development Center** in Mauá (SP).

## New innovation center in Boston

Accelerate the innovation of renewable chemicals and sustainable materials. This is the goal of the new renewable innovation center that Braskem will build in the US city of Lexington, in the Boston metropolitan area.

With more than 3,250 square meters and an investment of approximately US\$4.4 million, the site will expand our opportunities and capabilities in biotechnology, catalysis, process engineering and open innovation. One of the main focuses will be early-stage science and engineering related to converting biomass-based raw materials (sugars, cellulose, vegetable oils and lignin) into sustainable chemicals and materials. The facility is expected to be ready in the second half of 2023 after obtaining final validation and commissioning.

## Innovation and digital technologies

We have joined efforts between innovation and digital technologies to bring innovative research and development methodologies to our platforms. In 2022, we combine data science and robotics for product innovation, accelerating the experimental stages of development projects. Tests performed on material samples, previously performed only in laboratories, are now performed in a virtual environment, allowing solutions to be available to our customers in less time.

## Supporting innovation

In 2022, our technology centers supported many of our clients' initiatives:

- **334 clients** in Brazil (23,000 analyses)
- **77 clients** in the United States (10,480 analyses)
- **51 clients** in Europe (8,400 analyses)







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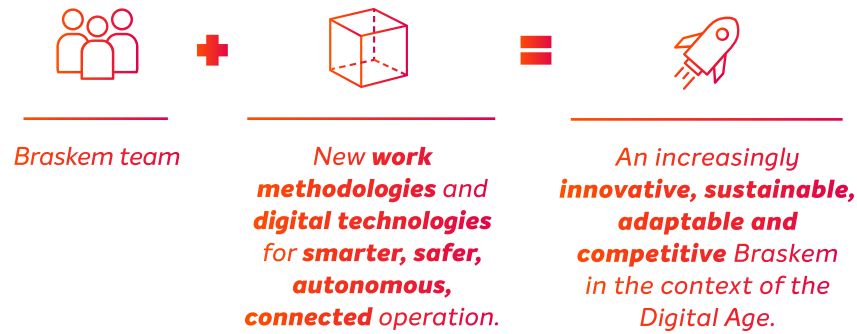
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# Digital transformation

We have experienced an era of accelerated change driven by new digital technologies, appropriately called the Digital Age. From modern-day rideshare apps to the use of drones to deliver goods to our homes after we push a few buttons on our smartphones – digital technologies are fundamentally reshaping how we live, economies and markets, society, politics and geopolitics, community and ethics, learning and work.

With the goal of making the company increasingly innovative, sustainable, adaptable and competitive in the context of the Digital Age, Braskem started a **digital transformation** program in 2018. The effort aims to equip company team members with a **new generation of tools**, which include innovative methodologies and digital technologies that enable us to operate smarter and safer, autonomous and more connected.



Over the last five years, the company has been investing in an organized and recurring way in new technologies – from preparing the necessary infrastructure to operating assets safely and reliably, to initiatives that reshape how we produce basic plastic and chemical resins. Other investments in new ventures (new business models originating internally) and disruptive innovation are underway and enhance our commitment to sustainable development, alongside startups with the same purpose.

In 2022, approximately R\$35 million was directly allocated to the digital transformation product portfolio, which already has more than 25 initiatives and more than 70 digital products aimed at the industry 4.0, supply chain, commercial, research and development, among others.

“  
Order of more than R\$500 million per year – an amount that makes up part of the recurring gains of the Transform for Value program.”

Today, digital strategies are transforming practically the entire Braskem supply chain, generating estimated gains in the order of R\$500 million per year – an amount that is part of the recurring gains of the Transform for Value program. Examples include:

- Using data science to make better decisions in processes such as predictive maintenance, quality control, process optimization, demand forecasting, logistics optimization, and operations planning.
- Implementing stand-alone systems for performing repetitive or high-risk activities.
- Eliminating information silos, to connect people, systems and assets to maximize efficiency and productivity.
- Using design and user experience best practices, to improve the customer experience.

Braskem has created most of its digital tools internally, with development teams working through rapid feedback cycles, learning and adapting to changes in an agile way. Indeed, our experts have already developed around 25 different machine learning models used in over 400 applications in recent years. Today, the digital product development cycle, from idea to implementation of the new solution, is about nine months, often enabling benefits to be captured quickly.

A key part of the digital transformation process has been in managing change, promoting the use of agile working methods, and acquiring skills associated with the development of digital solutions.

From 2018 to date, more than 3,000 members have had the opportunity to explore several complementary disciplines that foster innovative thinking, such as data science, agile, and design thinking.

## Building internal startups

The company also diversifies its portfolio of investments in digital technologies through the creation of new business models. These new digital businesses, developed based on ideas generated within the company itself, have the mission of anticipating market changes that impact the company and the industry in general. More than half of the startups developed by 2022 are linked to the company's commitments to sustainable development.



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## Innovation in the supply chain

We believe that innovation – not only in our products and operations – but throughout our supply chain has the ability to generate a number of positive impacts in the pursuit of a more sustainable future. In this way, we seek to develop tools to prepare ourselves for the structural challenges that will enable the energy transition to a more sustainable, circular, and carbon-neutral economy.

### Oxygea Ventures

Braskem's digital transformation led to the foundation of Oxygea Ventures, a corporate venture capital arm launched in 2022, that is devoted to leveraging the work of startups that operate in sustainable innovation and digital transformation.

The new company is strongly linked to meeting the public commitments we have made to reduce carbon emissions and increase our plastics recycling rate. With Oxygea, we are incubating ideas and accelerating businesses. Four initiatives are already in the early stages. They were created within Braskem and will now continue as startups. In addition, the hub intends to select six more startups.

Another goal of the company, which targets Brazil, the United States, Europe and Israel, is to operate as an enabler of connections between mentors, clients and suppliers, strengthening the entire ecosystem. In addition, Oxygea comes with the technological support, expertise and structure of Braskem where tests and validations can be carried out.

[LEARN MORE!](#)

[About Oxygea.](#)

### Braskem Labs

Since 2016, we have stimulated open innovation and our supply chain for chemistry and plastics, with Braskem Labs, a platform for the acceleration of startups that generate positive social and environmental impact. These startups focus on: agribusiness, biotechnology, packaging, infrastructure and construction, chemicals, mobility, and health.

Carried out in partnership with the accelerator Quintessa, its main goal is to encourage this ecosystem and seek solutions to Braskem's business challenges. Over the past six years, the platform has accelerated 132 startups, of which 96% continue to operate.

In 2022, in addition to Brazilian startups, Braskem Labs expanded its borders by inviting entrepreneurs from Chile to be considered for selection. The choice of country was based on the maturity of its innovative ecosystem, which stand out in Latin America. Chile is also an important partner in the company's business strategy. This initiative functioned as a pilot project to evaluate the possibility of Braskem Labs expanding to other countries.

### Recognitions and Events

#### Innovation Culture

Braskem is one of the 20 most innovative companies in Brazil. The position was awarded by Innovative Workplaces, a study by the MIT Technology Review magazine, of the Massachusetts Institute of Technology.

#### Innovation Leader

The Top 100 Open Corps 2022 ranking recognized Braskem's leadership role in developing innovations in partnership with startups. The company also appears in the top five in the Manufacturing and Chemical Industry category.

[LEARN MORE!](#)

[About Braskem Labs.](#)

### Braskem Labs in 2022

■ **20 accelerated startups.**

■ **40+ mentors.**

■ **20 meetings over 5 months.**

■ **50 hours of training and 17 hours of individual mentoring support.**

■ **27 ongoing partnerships and/or pilots.**

■ **250 connections made.**



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# About this **Report**

GRI 2-1, GRI 2-2, GRI 2-3, GRI 2-4, GRI 2-5, GRI 2-14

Since 2007, every year we have published our Reports based on internationally recognized standards. It has been prepared in accordance with the current Global Reporting Initiative (GRI) standards, follows the IFRS Foundation's Integrated Reporting framework, the Sustainability Accounting Standards Board (SASB) chemicals sector indicators, and the International Business Council (IBC) metrics that demonstrate progress towards stakeholder capitalism.

This Integrated Annual Report covers the period January 1 to December 31, 2022. Subsequent events occurring in 2023 have been included and are identified throughout the Report. Publication occurred on March 24, 2023.

Braskem is a publicly traded company incorporated under Brazilian law, with principal place of business in the city of São Paulo (Brazil) and with global operations on four continents. The Report covers the company's main activities, considering the legal entities in which Braskem has operational control and/or consolidates information in the **Financial Statements**, excluding subsidiary Cetrel and its subsidiaries for social and environmental indicators. Restatements of information can be identified throughout the Report by text or explanatory notes.

This Report describes Braskem's commitments, goals and performance in the financial, human, intellectual, manufactured, social and relationship

capitals, showing how the company generates value and impacts its main stakeholders through its business model. It also makes it possible to know the pillars of our 2020–2030 sustainability strategy and its performance transversal to business, the material issues considered by Braskem, and the company's strategy. Thus, the content gathers the entire ESG theme related to Braskem, in addition to the economic and financial information for 2022.

The 2022 Integrated Annual Report is adherent to Resolution No. 14 of the Brazilian Securities and Exchange Commission (CVM), dated December 9, 2020, which made the CPC Guideline No. 9 – Integrated Reporting, issued by the Accounting Pronouncements Committee (CPC), mandatory for publicly traded companies when deciding to prepare and disclose the integrated report. Additionally, it determines that the integrated report should be subject to limited assurance by an independent auditor registered with the CVM, in accordance with the standards issued by the Federal Accounting Council (CFC).

As a way of maintaining the conciseness of the document, we highlight here part of the indicators and maintain the public data in its entirety in an **online center**.

Braskem's governance agencies, including the Board of Directors, reviewed and approved the document prior to its publication. The Integrated Annual Report 2022 also underwent external evaluation conducted by KPMG.

*Questions, criticisms and suggestions may be sent to [braskem-ri@braskem.com.br](mailto:braskem-ri@braskem.com.br) or [www.braskem.com.br/contato](http://www.braskem.com.br/contato).*







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# Methodology: calculation of the commitments for 2030

We calculated the progress of our commitments on three levels: global, by commitment and by indicator.

## Global progress

The global progress is the arithmetic average of the individual progress of each of the seven commitments (health and safety, economic and financial results, elimination of plastic waste, combating climate change, operational eco-efficiency, social responsibility and human rights, and sustainable innovation).

## Progress by commitment

The progress of each commitment represents the arithmetic average of the achievement of the indicators.

## Progress by indicator

The achievement of the indicator level considers some elements: baseline, 2030 target, challenge size and current result.

■ **Baseline:** calculated as the average of the 2018, 2019, and 2020 results, for indicators subject to industry volatility, or as the actual 2020 result.

■ **Indicators with baseline measured by three-year average:** net debt/EBITDA, RepTrak Pulse with customers, Dow Jones Sustainability Index, absolute GHG emissions volume, renewable electricity, Water Security Index, bioproducts production capacity, Reptrak Pulse with communities, people benefited in communities, women in leadership, black people.

■ **Indicators with baseline measured by actual 2020 result:** Workplace Accident Rate (CAF + SAF), Tier 1 and 2 Accident Rate, occupational diseases, socio-environmental risks, sales of products with recycled content, recovered plastic waste, climate adaptation and I&T Sustainability Index.

■ **Target and challenge size:** target defined considering industry challenges, and the challenge size is the difference between the target and the baseline.

■ **Current result:** calculated as the moving average of the last three years or the actual result of the reported fiscal year, according to the methodology applied in the calculation of the baseline.

The achievement of the indicators is calculated according to the formula: achievement =  $\frac{[(\text{baseline} - \text{current result}) / (\text{challenge size})] - 1}{1}$ .

An exception is the Total Shareholder Return indicator, where the baseline is calculated considering the 10-year period 2011-2020, the current result also considers the last 10 years, and the achievement is calculated by simple variation (current result/2030 target - 1).





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### Industry: Chemicals

Topic	Code	Accounting metrics	Page or answer	SDG	WEF-IBC
Product design for use phase efficiency	RT-CH-410a.1	Revenue from products designed for resource efficiency in the use phase	<a href="http://www.braskem.com.br/ESGdashboard">www.braskem.com.br/ESGdashboard</a>	11	
Operational safety, emergency preparedness, and response	RT-CH-540a.1.	Process Safety Incidents Count (PSIC), Process Safety Total Incident Rate (PSTIR), and Process Safety Incident Severity Rate (PSISR)	<a href="http://www.braskem.com.br/ESGdashboard">www.braskem.com.br/ESGdashboard</a>	8	
	RT-CH-540a.2	Number of transport Incidents	<a href="http://www.braskem.com.br/ESGdashboard">www.braskem.com.br/ESGdashboard</a>	8	
Production	RT-CH-000.A	Production per reported segment	<a href="http://www.braskem.com.br/ESGdashboard">www.braskem.com.br/ESGdashboard</a>	8	
Safety and environmental management of chemical products	RT-CH-410b.1	Percentage of products that contain the Harmonized System of Classification and Labeling of Chemicals (GHS) Category 1 and 2 Substances Hazardous to Health and the Environment, (2) percentage of such products that have undergone a risk assessment	<a href="http://www.braskem.com.br/ESGdashboard">www.braskem.com.br/ESGdashboard</a>	12	Planet
	RT-CH-410b.2	Discussion of the strategy to: (1) manage chemicals of concern and; (2) develop alternatives with reduced human and/or environmental impact	<a href="http://www.braskem.com.br/ESGdashboard">www.braskem.com.br/ESGdashboard</a>	12	Planet
Genetically modified organisms	RT-CH-410c.1	Percentage of products per revenue that contain genetically modified organisms (GMO)	<a href="http://www.braskem.com.br/ESGdashboard">www.braskem.com.br/ESGdashboard</a>	12	Planet
Hazardous waste management	RT-CH-150a.1	Amount of hazardous waste generated, percentage recycled	<a href="http://www.braskem.com.br/ESGdashboard">www.braskem.com.br/ESGdashboard</a>	12	



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Topic	Code	Accounting metrics	Page or answer	SDG	WEF-IBC
Water Management	RT-CH-140a.1.	Total water removed, (2) total water consumed, percentage of each of them in regions with high or extremely high baseline water stress	<a href="http://www.braskem.com.br/ESGdashboard">www.braskem.com.br/ESGdashboard</a>	6 and 9	Planet
	RT-CH-140a.2.	Number of noncompliance incidents associated with water quality permits, standards, and regulations	There were no incidents in 2022 that generated a fine without the possibility of new appeals.	6	
	RT-CH-140a.3.	Description of water management risks and discussion of strategies and practices to mitigate these risks	<a href="http://www.braskem.com.br/ESGdashboard">www.braskem.com.br/ESGdashboard</a>	6 and 9	
Emission of greenhouse gases	RT-CH-110a.1	Gross global emissions of scope 1, percentage covered by emission limiting regulations	<a href="http://www.braskem.com.br/ESGdashboard">www.braskem.com.br/ESGdashboard</a>	13	Planet
	RT-CH-110a.2.	Discussion of long- and short-term strategy or plan to manage scope 1 emissions, emission reduction targets, and analysis of target performance	<a href="http://www.braskem.com.br/ESGdashboard">www.braskem.com.br/ESGdashboard</a>	13	Planet
Power management	RT-CH-130a.1.	(1) Total energy consumed, (2) percentage of electricity from the grid, (3) percentage of renewables, (4) total self-generated energy	<a href="http://www.braskem.com.br/ESGdashboard">www.braskem.com.br/ESGdashboard</a>	7 and 9	Planet
Air quality	RT-CH-120a.1.	Atmospheric emissions of the following pollutants: (1) NOx (excluding N2O), (2) SOx, (3) volatile organic compounds (VOCs) and (4) hazardous atmospheric pollutants (HAPs)	<a href="http://www.braskem.com.br/ESGdashboard">www.braskem.com.br/ESGdashboard</a>	3 and 12	Planet
Health and safety of workers	RT-CH-320a.1	(1) Total recordable incident rate (TRIR) and (2) fatality rate for (a) direct employees and (b) outsourced employees	<a href="http://www.braskem.com.br/ESGdashboard">www.braskem.com.br/ESGdashboard</a>	8	People
	RT-CH-320a.2.	Description of the efforts to assess, monitor and reduce employees' and outsourced workers' exposure to long-term health (chronical) risks	<a href="http://www.braskem.com.br/ESGdashboard">www.braskem.com.br/ESGdashboard</a>	8	People





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Topic	Code	Accounting metrics	Page or answer	SDG	WEF-IBC
Relations with the community	RT-CH-210a.1	Discussion of engagement processes to manage risks and opportunities associated with community interests	<a href="http://www.braskem.com.br/ESGdashboard">www.braskem.com.br/ESGdashboard</a>	11	
Management of the legal regulatory environment	RT-CH-530a.1	Discussion of corporate positions related to government regulations and/or policy proposals that address environmental and social factors affecting the industry	<a href="http://www.braskem.com.br/ESGdashboard">www.braskem.com.br/ESGdashboard</a>	16	Planet

### Industry: Oil and gas – Midstream

Topic	Code	Accounting metrics	Page or answer	SDG	WEF-IBC
Competitive behavior	EM-MD-520a.1	Total amount of monetary losses as a result of legal proceedings associated with federal pipeline and storage regulations	Não existe nenhuma perda relativa a procedimentos associados a regulamentações federais de oleodutos e armazenamento.		Planet
	EM-MD-160a.1	Description of environmental management policies and practices	<a href="http://www.braskem.com.br/ESGdashboard">www.braskem.com.br/ESGdashboard</a>	8 and 12	Planet
Ecological impacts	EM-MD-160a.2	Percentage of land owned, leased, and/or operated in areas with protected conservation status or endangered species habitat	<a href="http://www.braskem.com.br/ESGdashboard">www.braskem.com.br/ESGdashboard</a>	6, 14 and 15	Planet
	EM-MD-160a.3	Disturbed land area, percentage of impacted area restored	<a href="http://www.braskem.com.br/ESGdashboard">www.braskem.com.br/ESGdashboard</a>	6, 14 and 15	Planet
Emission of greenhouse gases	EM-MD-110a.1	Gross global emissions of Scope 1, percentage covered by emission limiting regulations	<a href="http://www.braskem.com.br/ESGdashboard">www.braskem.com.br/ESGdashboard</a>	13	Planet
	EM-MD-110a.2	Discussion of long- and short-term strategy or plan to manage Scope 1 emissions, emission reduction targets, and analysis of target performance	<a href="http://www.braskem.com.br/ESGdashboard">www.braskem.com.br/ESGdashboard</a>	13	Planet
Air quality	EM-MD-120a.1	Atmospheric emissions of the following pollutants: (1) NOx (excluding N2O), (2) SOx, (3) volatile organic compounds (VOCs) and (4) particulate matter (PM10)	<a href="http://www.braskem.com.br/ESGdashboard">www.braskem.com.br/ESGdashboard</a>	3 and 12	Planet



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**Declarations of use**

Braskem S.A. reports information in accordance with the GRI standards for the period 01/01/2022 to 12/31/2022

**GR 1 used**

GRI 1: Fundamentals 2021

**Applicable GRI industry standards**

Chemicals, oil and gas

Source	Publication	Page	Omission Omitted requirement(s)	Reason	Explanation	Industry GRI ref. no.	SDG ref. no.	WEF-IBC
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GRI 2: General disclosures 2021	2-1 Organization details	10, 84, 28						
	2-2 Entities included in the sustainability report of the Organization	84						
	2-3 Period, frequency, and contact person for information on the Report	84						
	2-4 Reformulation of information	84						
	2-5 External verification	84, 110						
	2-6 Activities, value chain, and other business relationships	10, 11, 12, 16, 76						
	2-7 Employees	<a href="http://www.braskem.com.br/ESGdashboard">www.braskem.com.br/ESGdashboard</a>	2-7d	<b>Not applicable</b> Braskem does not have employment contracts for non-guaranteed hours.			8 and 10	
	2-8 Workers who are not employees	<a href="http://www.braskem.com.br/ESGdashboard">www.braskem.com.br/ESGdashboard</a>					8	



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	2-10 Appointment and selection of the highest governance body	26					5 and 16	
	2-11 Chair of the highest governance body	26					16	
	2-12 Role performed by the highest governance body in overseeing impact management	26, 27, 28, 33					16	Governance principles
	2-13 Delegation of Impact management liability	25, 26						
	2-14 Role of the highest governance body in sustainability reporting	84						
	2-15 Conflicts of Interest	<a href="http://www.braskem.com.br/ESGdashboard">www.braskem.com.br/ESGdashboard</a>					16	
	2-16 Communication of the critical concerns	<a href="http://www.braskem.com.br/ESGdashboard">www.braskem.com.br/ESGdashboard</a>						
	2-17 Collective knowledge of the highest governance body	<a href="http://www.braskem.com.br/ESGdashboard">www.braskem.com.br/ESGdashboard</a>						
	2-18 Appraisal of the performance of the highest governance body	<a href="http://www.braskem.com.br/ESGdashboard">www.braskem.com.br/ESGdashboard</a>						

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	2-19 Remuneration policies	<a href="http://www.braskem.com.br/ESGdashboard">www.braskem.com.br/ESGdashboard</a>						Governance principles
	2-20 Process to determine compensation	<a href="http://www.braskem.com.br/ESGdashboard">www.braskem.com.br/ESGdashboard</a>						
	2-21 Proportion of total annual compensation	<a href="http://www.braskem.com.br/ESGdashboard">www.braskem.com.br/ESGdashboard</a>	2-21		<b>Confidential matters</b> The indicator is not reported because it deals with confidential and sensitive information, as it could compromise the privacy of Braskem members. It is possible to understand more details of the compensation of members of the statutory board and the Board of Directors in item 13 of the 2022 Reference Form. [ <a href="https://api.mziq.com/mzfilemanager/v2/d/540b55c5-af99-45f7-a772-92665eb948e9/2e4b89ce-5139-0b20-3333-fe8f8c-6c0d8e?origin=1">https://api.mziq.com/mzfilemanager/v2/d/540b55c5-af99-45f7-a772-92665eb948e9/2e4b89ce-5139-0b20-3333-fe8f8c-6c0d8e?origin=1</a> ]			People
	2-22 Demonstration of the sustainable development strategy	3, 6						Governance principles
	2-23 Commitment policy	35					16	
	2-24 Incorporation of the commitment policy	<a href="http://www.braskem.com.br/ESGdashboard">www.braskem.com.br/ESGdashboard</a>					16	
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Source	Publication	Page	Omission Omitted requirement(s)	Reason	Explanation	Industry GRI ref. no.	SDG ref. no.	WEF-IBC
	2-26 Mechanisms for guidance and concerns regarding ethics	29, 31					16	Governance principles
	2-27 Compliance with laws and regulations	<a href="http://www.braskem.com.br/ESGdashboard">www.braskem.com.br/ESGdashboard</a>						Planet
	2-28 Participation in associations	53						
	2-29 Approach for the engagement of stakeholders	19						Governance principles
	2-30 Collective bargaining agreements	<a href="http://www.braskem.com.br/ESGdashboard">www.braskem.com.br/ESGdashboard</a>					8	People



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Source	Publication	Page	Omission Omitted requirement(s)	Reason	Explanation	Industry GRI ref. no.	SDG ref. no.	WEF-IBC
<b>Material topics</b>								
GRI 3: Material topics 2021	3-1 Process to determine the material topics 2021	19						
	3-2 List of the material topics 2021	19						Governance principles
<b>Economic performance</b>								
GRI 3: Material topic 2021	3-3 Management of the material issues 2021	54				11.2, 11.14, 11.21	-	
GRI 201: Economic performance 2016	201-1 Direct economic value generated and distributed	54, <a href="http://www.braskem.com.br/ESGdashboard">www.braskem.com.br/ ESGdashboard</a>	201-1b	<b>Not applicable</b> Braskem does not disclose, through the Financial Statements, this type of information by country.		11.14, 11.21	8 and 9	Prosperity
	201-2 Financial implications and other risks and opportunities arising from climate change	65				11.2	13	
	201-3 Obligations of the defined benefit plan and other retirement plans	<a href="http://www.braskem.com.br/ESGdashboard">www.braskem.com.br/ ESGdashboard</a>					-	
	201-4 Financial support received from the government	<a href="http://www.braskem.com.br/ESGdashboard">www.braskem.com.br/ ESGdashboard</a>	201-4b	<b>Not applicable</b> Braskem discloses the information through the Financial Statements.		11.21	-	Prosperity





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Market presence								
GRI 3: Material topics 2021	3-3 Management of the material issues 2021	35, 37				11.11, 11.14		
GRI 202: Market presence 2016	202-1 Ratio between the lowest wage and the local minimum wage, with gender breakdown	<a href="http://www.braskem.com.br/ESGdashboard">www.braskem.com.br/ESGdashboard</a>					1, 5 and 8	People
	202-2 Proportion of board members hired from the local community	<a href="http://www.braskem.com.br/ESGdashboard">www.braskem.com.br/ESGdashboard</a>				11.11, 11.14	8	
Indirect economic impacts								
GRI 3: Material topics 2021	3-3 Management of the material issues 2021	<a href="http://www.braskem.com.br/ESGdashboard">www.braskem.com.br/ESGdashboard</a>						
GRI 203: Indirect economic impacts 2016	203-1 Investments in infrastructure and service support	<a href="http://www.braskem.com.br/ESGdashboard">www.braskem.com.br/ESGdashboard</a>					5, 9 and 11	
	203-2 Significant indirect economic impacts	43					1, 3 and 8	Prosperity
Procurement practices								
GRI 3: Material topics 2021	3-3 Management of the material issues 2021	51				11.14		
GRI 204: Procurement practices 2016	204-1 Proportion of expenses with local suppliers	52				11.14	8	



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<b>Fight against corruption</b>								
GRI 3: Material topics 2021	3-3 Management of the material issues 2021	33				11.20		
GRI 205: Fight against corruption 2016	205-1 Operations assessed for corruption-related risks	33				11.20	16	Governance principles
	205-2 Communication and training on anticorruption policies and procedures	<a href="http://www.braskem.com.br/ESGdashboard">www.braskem.com.br/ESGdashboard</a>				11.20	16	Governance principles
	205-3 Confirmed cases of corruption and actions taken	30				11.20	16	
<b>Unfair competition</b>								
GRI 3: Material topics 2021	3-3 Management of the material issues 2021	<a href="http://www.braskem.com.br/ESGdashboard">www.braskem.com.br/ESGdashboard</a>				11.19		
GRI 206: Unfair competition 2016	206-1 Lawsuits for unfair competition, trust practices, and monopoly	<a href="http://www.braskem.com.br/ESGdashboard">www.braskem.com.br/ESGdashboard</a>	206-1b	<b>Not applicable</b> Braskem is not a party to any lawsuit of this nature.		11.19	16	



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<b>Taxes</b>								
GRI 3: Material topics 2021	3-3 Management of the material issues 2021	<a href="http://www.braskem.com.br/ESGdashboard">www.braskem.com.br/ ESGdashboard</a>				11.21	1, 10 and 17	
	207-1 Tax approach	<a href="http://www.braskem.com.br/ESGdashboard">www.braskem.com.br/ ESGdashboard</a>				11.21	1, 10 and 17	
	207-2 Governance, control, and fiscal risk management	<a href="http://www.braskem.com.br/ESGdashboard">www.braskem.com.br/ ESGdashboard</a>				11.21	1, 10 and 17	
	GRI 207: Taxes 2019	207-3 Stakeholder engagement and management of their tax concerns	<a href="http://www.braskem.com.br/ESGdashboard">www.braskem.com.br/ ESGdashboard</a>			11.21	1, 10 and 17	
	207-4 Country-by-country reporting	<a href="http://www.braskem.com.br/ESGdashboard">www.braskem.com.br/ ESGdashboard</a>	207-4b	<b>Not applicable</b> Braskem does not disclose, through the Financial Statements, this type of information by country.		11.21	1, 10 and 17	
<b>Materials</b>								
GRI 3: Material topics 2021	3-3 Management of the material issues 2021	67 to 72					8 and 12	
	301-1 Materials used, broken down by weight or volume	<a href="http://www.braskem.com.br/ESGdashboard">www.braskem.com.br/ ESGdashboard</a>					8 and 12	Planet
GRI 301: Materials 2016	301-2 Raw materials or recycled materials used	70					8 and 12	Planet
	301-3 Recovered products and their packaging	77					8 and 12	Planet





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<b>Energy</b>								
GRI 3: Material topics 2021	3-3 Management of the material issues 2021	62				11.1	7, 8, 12 and 13	
GRI302: Energy 2016	302-1 Energy consumption within the organization	62				11.1	7, 8, 12 and 13	
	302-2 Energy consumption outside the organization	<a href="http://www.braskem.com.br/ESGdashboard">www.braskem.com.br/ ESGdashboard</a>				11.1	7, 8, 12 and 13	
	302-3 Energy intensity	62				11.1	7, 8, 12 and 13	
	302-4 Reduction of energy consumption	62					7, 8, 12 and 13	
<b>Water and effluents</b>								
GRI 3: Material topics 2021	3-3 Management of the material issues 2021	66				11.6	6 and 12	
GRI 303: Water and effluents 2018	303-1 Interactions with water as a shared resource	66				11.6	6 and 12	
	303-2 Management of Impacts related to water disposal	66				11.6	6	
	303-3 Water collection	<a href="http://www.braskem.com.br/ESGdashboard">www.braskem.com.br/ ESGdashboard</a>				11.6	6	Planet
	303-4 Water disposal	<a href="http://www.braskem.com.br/ESGdashboard">www.braskem.com.br/ ESGdashboard</a>				11.6	6	Planet
	303-5 Water consumption	66				11.6	6	Planet



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Biodiversity								
GRI 3: Material topics 2021	3-3 Management of the material issues 2021	<a href="http://www.braskem.com.br/ESGdashboard">www.braskem.com.br/ESGdashboard</a>				11.4	6, 14 and 15	
GRI 304: Biodiversity 2016	304-1 Operational units owned, leased, or managed within or adjacent to environmental protection areas and areas of high biodiversity value located outside of environmental protection areas	<a href="http://www.braskem.com.br/ESGdashboard">www.braskem.com.br/ESGdashboard</a>				11.4	6, 14 and 15	Planet
	304-2 Significant impacts of activities, products, and services on biodiversity	<a href="http://www.braskem.com.br/ESGdashboard">www.braskem.com.br/ESGdashboard</a>				11.4	6, 14 and 15	Planet
	304-3 Protected or restored habitats	<a href="http://www.braskem.com.br/ESGdashboard">www.braskem.com.br/ESGdashboard</a>				11.4	6, 14 and 15	
	304-4 Species included in the IUCN red list and in national conservation lists with habitats in areas affected by the organization's operations	<a href="http://www.braskem.com.br/ESGdashboard">www.braskem.com.br/ESGdashboard</a>				11.4	6, 14 and 15	



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<b>Emissions</b>								
GRI 3: Material topics 2021	3-3 Management of the material issues 2021	59				11.1, 11.2	3, 12, 13, 14 and 15	
	305-1 Direct emissions (scope 1) of greenhouse gases (GHG)	59				11.1	3, 12, 13, 14 and 15	Planet
	305-2 Indirect emissions (scope 2) of greenhouse gases (GHG) originating from the acquisition of energy	59				11.1	3, 12, 13, 14 and 15	Planet
	305-3 Other indirect emissions (scope 3) of greenhouse gases (GHG)	60				11.1	3, 12, 13, 14 and 15	Planet
GRI 305: Emissions 2016	305-4 Intensity of greenhouse gas (GHG) emissions	59				11.1	13, 14 and 15	
	305-5 Reduction of greenhouse gas (GHG) emissions	59				11.1, 11.2	13, 14 and 15	
	305-6 Emissions of ozone-depleting substances (ODS)	<a href="http://www.braskem.com.br/ESGdashboard">www.braskem.com.br/ESGdashboard</a>					3 and 12	
	305-7 Emissions of NOX, SOX, and other significant air emissions	73				11.3	3, 12, 14 and 15	Planet





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<b>Waste</b>								
GRI 3: Material topics 2021	3-3 Management of the material issues 2021	73				11.5, 11.8	3, 6, 11 and 12	
GRI 306: Waste 2020	306-1 Waste generation and significant waste-related impacts	73				11.5	3, 6, 11 and 12	Planet
	306-2 Management of significant waste-related impacts	<a href="http://www.braskem.com.br/ESGdashboard">www.braskem.com.br/ESGdashboard</a>				11.5	3, 6, 11 and 12	Planet
	306-3 Generated waste	73				11.5, 11.8	3, 11 and 12	Planet
	306-4 Waste not intended for final disposal	<a href="http://www.braskem.com.br/ESGdashboard">www.braskem.com.br/ESGdashboard</a>				11.5	3, 11 and 12	
	306-5 Waste intended for final disposal	<a href="http://www.braskem.com.br/ESGdashboard">www.braskem.com.br/ESGdashboard</a>				11.5	3, 11 and 12	
<b>Environmental assessment of suppliers</b>								
GRI 3: Material topics 2021	3-3 Management of the material issues 2021	51						
GRI 308: 2016 Environmental assessment of suppliers	308-1 New suppliers selected based on environmental criteria	51						
	308-2 Negative environmental impacts of the supply chain and measures taken	51	308-2b 308-2c 308-2d 308-2e	<b>Information unavailable</b> Braskem will define a strategy to determine, based on these assessments, whether there is an impact and what type (actual or potential).				



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Employment								
GRI 3: Material topics 2021	3-3 Management of the material issues 2021	35				11.10, 11.11	5, 8 and 10	
GRI 401: Employment 2016	401-1 New hires and employee turnover	<a href="http://www.braskem.com.br/ESGdashboard">www.braskem.com.br/ESGdashboard</a>				11.10	5, 8 and 10	Prosperity
	401-2 Benefits provided to full-time employees that are not provided to temporary or part-time employees	<a href="http://www.braskem.com.br/ESGdashboard">www.braskem.com.br/ESGdashboard</a>				11.10	3, 5 and 8	
	401-3 Maternity/paternity leave	<a href="http://www.braskem.com.br/ESGdashboard">www.braskem.com.br/ESGdashboard</a>	401-3c 401-3d 401-3e	<b>Not applicable</b> Braskem does not consolidate the number of male employees who returned to work, as the issue is material for women.		11.10, 11.11	5 and 8	
Labor relationships								
GRI 3: Material topics 2021	3-3 Management of the material issues 2021	35				11.7, 11.10	8	
GRI 402: Labor relations 2016	402-1 Minimum notice period regarding operational changes	<a href="http://www.braskem.com.br/ESGdashboard">www.braskem.com.br/ESGdashboard</a>				11.7, 11.10	8	



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<b>Occupational health and safety</b>								
GRI 3: Material topics 2021	3-3 Management of the material issues 2021	35				11.9	3, 8 and 16	
GRI 403: Occupational health and safety 2018	403-1 Occupational health and safety management system	17, 38				11.9	8	
	403-2 Hazard identification, risk assessment, and incident investigation	38				11.9	8	
	403-3 Occupational health services	38				11.9	8	
	403-4 Worker participation, consultation and communication with workers regarding occupational health and safety	38				11.9	8 and 16	
	403-5 Training of workers in occupational health and safety	38				11.9	8	
	403-6 Worker's health promotion	38				11.9	3	
	403-7 Prevention and mitigation of occupational health and safety impacts directly linked to business relationships	38				11.9	8	





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GRI 403: Occupational health and safety 2018	403-8 Workers covered by an occupational health and safety management system	38				11.9	8	
	403-9 Occupational accidents	38				11.9	3, 8 and 16	People
	403-10 Occupational diseases	38, 39				11.9	3, 8 and 16	People
Training and education								
GRI 3: Material topics 2021	3-3 Management of the material issues 2021	35				11.7, 11.10, 11.11	4, 5, 8 and 10	
GRI 404: Training and education 2016	404-1 Average hours of training per year, per employee		<a href="http://www.braskem.com.br/ESGdashboard">www.braskem.com.br/ESGdashboard</a>			11.7, 11.10, 11.11	4, 5, 8 and 10	People
	404-2 Employee skills enhancement and career transition assistance programs		<a href="http://www.braskem.com.br/ESGdashboard">www.braskem.com.br/ESGdashboard</a>			11.7, 11.10, 11.11	8	
	404-3 Percentage of employees receiving regular career development and performance evaluations	37					5, 8 and 10	



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Diversity and equality of opportunities									
GRI 3: Material topics 2021	3-3 Management of the material issues 2021	31				11.11	5, 8 and 10		
GRI 405: Diversity and equality of opportunities 2016	405-1 Diversity in governance and employee bodies	<a href="http://www.braskem.com.br/ESGdashboard">www.braskem.com.br/ESGdashboard</a>				11.11	5 and 8	Governance principles	
	405-2 Proportion between the basic salary and remuneration received by women and those received by men	<a href="http://www.braskem.com.br/ESGdashboard">www.braskem.com.br/ESGdashboard</a>				11.11	5, 8 and 10	People	
Non-discrimination									
GRI 3: Material topics 2021	3-3 Management of the material issues 2021	29				11.11	5 and 8		
GRI 406: Non-discrimination 2016	406-1 Cases of discrimination and corrective measures taken	31				11.11	5 and 8	People	
Freedom of union and collective bargaining									
GRI 3: Material topics 2021	3-3 Management of the material issues 2021	<a href="http://www.braskem.com.br/ESGdashboard">www.braskem.com.br/ESGdashboard</a>					8		
GRI 407: Freedom of association and collective bargaining 2016	407-1 Operations and suppliers in which the right to freedom of association and collective bargaining may be at risk	<a href="http://www.braskem.com.br/ESGdashboard">www.braskem.com.br/ESGdashboard</a>				407b	Not applicable Although Braskem does not have a specific mapping for this issue, it was not observed that such a situation had occurred with our suppliers in our analysis processes.	8	People



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<b>Child labor</b>								
GRI 3: Material topics 2021	3-3 Management of the material issues 2021	<a href="http://www.braskem.com.br/ESGdashboard">www.braskem.com.br/ESGdashboard</a>					8 and 16	
GRI 408: Child labor 2016	408-1 Operations and suppliers with significant risk of child labor cases	<a href="http://www.braskem.com.br/ESGdashboard">www.braskem.com.br/ESGdashboard</a>	408-1c	<b>Not applicable</b> It was not observed in our mapping process that such a situation has occurred with our suppliers.			8 and 16	People
<b>Forced labor or slave-like labor</b>								
GRI 3: Material topics 2021	3-3 Management of the material issues 2021	<a href="http://www.braskem.com.br/ESGdashboard">www.braskem.com.br/ESGdashboard</a>					8	
GRI 409: Forced labor or slave-like labor 2016	409-1 Operations and suppliers with significant risk of cases of forced or compulsory labor	<a href="http://www.braskem.com.br/ESGdashboard">www.braskem.com.br/ESGdashboard</a>	409b	<b>Not applicable</b> It was not observed in our mapping process that such a situation has occurred with our suppliers.			8	People
<b>Security practices 2016</b>								
GRI 3: Material topics 2021	3-3 Management of the material issues 2021	51				11.18	16	
GRI 410: Security practices 2016	410-1 Security personnel trained in human rights policies or procedures	<a href="http://www.braskem.com.br/ESGdashboard">www.braskem.com.br/ESGdashboard</a>				11.18	16	





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Local communities								
GRI 3: Material topics 2021	3-3 Management of the material issues 2021	43, 54				11.15	1 and 2	
GRI 413: Local communities 2016	413-1 Operations with local community engagement, impact assessments, and development programs	<a href="http://www.braskem.com.br/ESGdashboard">www.braskem.com.br/ESGdashboard</a>				11.15	-	
	413-2 Operations with significant actual or potential negative impacts on local communities	<a href="http://www.braskem.com.br/ESGdashboard">www.braskem.com.br/ESGdashboard</a>				11.15	1 and 2	
Social evaluation of suppliers 2016								
GRI 3: Material topics 2021	3-3 Management of the material issues 2021	51				11.10, 11.12	5, 8 and 16	
GRI 414: Social evaluation of suppliers 2016	414-1 New suppliers selected based on environmental criteria	<a href="http://www.braskem.com.br/ESGdashboard">www.braskem.com.br/ESGdashboard</a>				11.10, 11.12	5, 8 and 16	



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<b>Public policies</b>								
GRI 3: Material topics 2021	3-3 Management of the material issues 2021	29					16	
GRI 415: Public polices 2016	415-1: Political contributions	<a href="http://www.braskem.com.br/ESGdashboard">www.braskem.com.br/ESGdashboard</a>	415-1a 415-1b	<b>Not applicable</b> Not applicable – Article No. 81 of Law No. 9,504/1997, subsequently revoked by Law No. 13,165/2015. Our Code of Conduct also makes this rule explicit.		11.22	16	Governance principles
<b>Consumer health and safety</b>								
GRI 3: Material topics 2021	3-3 Management of the material issues 2021	57				11.3	16	
	416-1 Evaluation of health and safety Impacts caused by product and service categories	<a href="http://www.braskem.com.br/ESGdashboard">www.braskem.com.br/ESGdashboard</a>				11.3		
GRI 416: Consumer health and safety 2016	416-2 Cases of noncompliance regarding health and safety impacts caused by products and services	<a href="http://www.braskem.com.br/ESGdashboard">www.braskem.com.br/ESGdashboard</a>	416-2a 416-2b	<b>Not applicable</b> No non-conformities, administrative or legal proceedings related to health and safety of impacts of products and services on customers were verified in the period in question.			16	



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Source	Publication	Page	Omission Omitted requirement(s)	Reason	Explanation	Industry GRI ref. no.	SDG ref. no.	WEF-IBC
<b>Marketing and labeling</b>								
GRI 3: Material topics 2021	3-3 Management of the material issues 2021	<a href="http://www.braskem.com.br/ESGdashboard">www.braskem.com.br/ ESGdashboard</a>					12 and 16	
	417-1 Requirements for information and product and service labeling	<a href="http://www.braskem.com.br/ESGdashboard">www.braskem.com.br/ ESGdashboard</a>					12	
GRI 417: Marketing and labeling 2016	417-2 – Cases of non-compliance in relation to Information and labeling of products and services	<a href="http://www.braskem.com.br/ESGdashboard">www.braskem.com.br/ ESGdashboard</a>					16	
	417-3 – Cases of non- compliance in relation to marketing communication	<a href="http://www.braskem.com.br/ESGdashboard">www.braskem.com.br/ ESGdashboard</a>	417-3a 417-2b	<b>Not applicable</b> There were no administrative or legal proceedings related to marketing and communication during the period in question.			16	
<b>Customer privacy</b>								
GRI 3: Material topics 2021	3-3 Management of the material issues 2021	<a href="http://www.braskem.com.br/ESGdashboard">www.braskem.com.br/ ESGdashboard</a>					16	
GRI 418: Customer privacy 2016	418-1 Proven complaints regarding privacy violations and loss of customer data	<a href="http://www.braskem.com.br/ESGdashboard">www.braskem.com.br/ ESGdashboard</a>	418-1a 418-1b 418-1c	<b>Not applicable</b> There were no complaints from owners or authorities regarding breaches of privacy or leaks of customer, member or supplier data.			16	





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## Material themes

Sustainability	Material themes	GRI indicators
ENVIRONMENTAL	1. Biodiversity and land use	3-3 304; 304-1; 304-2; 304-3; 304-4
	2. Climate changes	201-2; 3-3 201; 305-1; 305-2; 305-3; 305-4; 305-5; 305-6; 305-7
	3. Post-consumer plastics	301-2; 301-3
	4. Air pollution	3-3; 305-1; 305-2; 305-3; 305-4; 305-5; 305-6; 305-7
	5. Energy efficiency	3-3 302; 302-1; 302-2; 302-3; 302-4
	6. Waste management	301-2; 301-3; 3-3 306; 306-1; 306-2; 306-3; 306-4; 306-5
	7. Water and effluent management	3-3 303; 303-1; 303-2; 302-3; 303-4; 303-5
	8. Raw material impacts	3-3 301; 301-1; 301-2; 301-3; 3-3 308; 308-1; 308-2
SOCIAL	9. Diversity, equity and inclusion	202-1; 3-3 405; 405-1; 405-2; 3-3 406; 406-1
	10. Communities and social investments	201-1; 202-2; 203-2; 204-1; 3-3 413; 413-1; 413-2
	11. Health, safety and well-being	3-3 403; 403-1; 403-2; 403-3; 403-4; 403-5; 403-6; 403-7; 403-8; 403-9; 403-10
	12. Human rights	401-3; 3-3 407; 407-1; 3-3 408; 408-1; 3-3409; 409-1; 3-3 410; 410-1
	13. Employment, development and retention	201-3; 202-1; 3-3 401; 401-1; 401-2; 3-3 402; 402-1; 3-3 404; 404-1; 404-2; 404-3
ECONOMICS	14. Responsible production and consumption	204-1; 3-3 308; 308-1; 308-2; 3-3 414; 414-1
	15. Innovation, technology and digitalization	
	16. Economic and financial performance	2-6; 203; 3-3 201; 201-1; 201-3; 203-1; 203-2
	17. Product management	301-3; 302-3
	18. Supply chain management	204-1; 3-3 308; 308-1; 308-2; 3-3 414; 414-1
GOVERNANCE	20. Risk and opportunity management	2-6; 2-12; 2-13; 2-14; 2-18; 2-20; 2-21; 2-24; 205-1; 207-1; 207-2; 207-4; 3-3 407; 3-3 408; 3-3 409
	21. Management of relationship with stakeholders	2-3; 2-4; 2-5; 2-7; 2-8; 2-17; 2-23; 2-25; 2-28; 2-29; 2-30; 201-3; 205-2; 207-3
	22. Governance, ethics and compliance	2-1; 2-2; 2-9; 2-10; 2-11; 2-15; 2-16; 2-19; 2-22; 2-26; 2-27; 205-3; 206-1; 207-2



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# Assurance Letter



KPMG Auditores Independentes Ltda.  
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## Independent auditors' limited assurance report on non-financial information included in the Integrated Report

(A free translation of the original report in Portuguese, containing the Assurance Report).

To the Board of Directors and Shareholders  
Braskem S/A.  
São Paulo - SP

### Introduction

We have been engaged by Braskem S/A. ("Company") to present our limited assurance report on the non-financial information included in the "Integrated Report for the year ended December 31, 2022" of Braskem S/A. for the year ended December 31, 2022.

Our limited assurance does not extend to prior period information or to any other information disclosed in conjunction with the Integrated Report, including any embedded images, audio files or videos.

### Responsibilities of Braskem S/A.'s management

The management of Braskem S/A. is responsible for:

- select and establish appropriate criteria for the elaboration of the information contained in the Integrated Report;
- prepare the information in accordance with the criteria and guidelines of the Global Reporting Initiative (GRI - Standards), with the Sustainability Accounting Standard - Chemicals and Oil & Gas Midstream of the Sustainability Accounting Standards Board (SASB) and the CPC 09 Guidance - Integrated Reporting, correlated with the Basic Conceptual Framework of Integrated Reporting, prepared by the International Integrated Reporting Council (IIRC);
- design, implement, and maintain internal control over information relevant to the preparation of Integrated Reporting that is free from material misstatement, whether due to fraud or error.



### Responsibility of the independent auditors

Our responsibility is to express a conclusion on the non-financial information included in the Integrated Report 2022, based on the limited assurance engagement conducted in accordance with Technical Communication CTO 07/2022 issued by the CFC, and based on NBC TO 3000 - Assurance Engagements other than Audits and Reviews, also issued by the CFC, which is equivalent to international standard ISAE 3000 - Assurance engagements other than audits or reviews of historical financial information, issued by the International Auditing and Assurance Standards Board (IAASB). These standards require compliance by the auditor with ethical requirements, independence, and other responsibilities relating to it, including the application of the Brazilian Quality Control Standard (NBC PA 01) and, therefore, the maintenance of a comprehensive quality control system, including documented policies and procedures on compliance with ethical requirements, professional standards, and applicable legal and regulatory requirements.

Additionally, the standards require that the work be planned and performed with the objective of obtaining limited assurance that the non-financial information in the Integrated Report 2022, taken as a whole, is free from material misstatement.

A limited assurance engagement conducted in accordance with NBC TO 3000 (ISAE 3000) mainly consists of inquiries to Braskem S/A.'s management and other Braskem S/A.'s professionals who are involved in the preparation of information, as well as the application of analytical procedures to obtain evidence that enables us to conclude, in a limited assurance manner, on the information taken as a whole. A limited assurance engagement also requires the performance of additional procedures when the independent auditor becomes aware of matters that lead him to believe that the information disclosed in the Integrated Report, taken as a whole, may present material misstatements.

The procedures selected were based on our understanding of the aspects relating to the compilation, materiality and presentation of the information contained in the Integrated Report 2022, other circumstances of the engagement and our consideration of areas and the processes associated with the material information disclosed in the Integrated Report 2022 where material misstatements could exist. The procedures comprised, among others:

- a. planning the work, considering the materiality of the aspects for Braskem S/A.'s activities, the relevance of the information disclosed, the volume of quantitative and qualitative information and the operating and internal control systems that served as a basis for the preparation of the information contained in the Integrated Report 2022.
- b. the understanding of the calculation methodology and the procedures for the compilation of the indicators through inquiries with the managers responsible for the preparation of the information;
- c. the application of analytical procedures on the quantitative information and inquiries on the qualitative information and its correlation with the indicators disclosed in the information contained in the Integrated Report 2022; and
- d. for the cases in which the non-financial data correlate with indicators of a financial nature, the confrontation of these indicators with the accounting statements and/or accounting records.

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- e. analysis of the processes for preparing the Report and its structure and content, based on the Content and Quality Principles of the Sustainability Reporting Standards of the Global Reporting Initiative - GRI, with the Sustainability Accounting Standard - Chemicals and Oil & Gas Midstream of the Sustainability Accounting Standards Board (SASB), with the CPC 09 Guidance - Integrated Reporting (which correlates to the Basic Conceptual Framework of Integrated Reporting, prepared by the International Integrated Reporting Council - IIRC);
- f. evaluation of the sampled non-financial indicators;
- g. understanding the calculation methodology and the procedures for the compilation of the indicators through interviews with the managers responsible for the preparation of the information;
- h. analysis of the reasonableness of the justifications for the omission of performance indicators associated with aspects and topics indicated as material in the Company's materiality analysis.

The limited assurance work also comprised adherence to the guidelines and criteria of the GRI - Standards elaboration framework applicable in the preparation of the information included in the Integrated Report 2022.

We believe that the evidence we have obtained is sufficient and appropriate to provide a basis for our limited assurance conclusion.

**Scope and limitations**

The procedures performed in limited assurance work vary in nature and timing, and are smaller in extent than in reasonable assurance work. Consequently, the level of assurance obtained in limited assurance work is substantially lower than that which would be obtained if reasonable assurance work had been performed. If we had performed reasonable assurance work, we could have identified other issues and possible distortions that may exist in the information contained in the Report. Therefore, we do not express an opinion on this information.

Non-financial data are subject to more inherent limitations than financial data, given the nature and diversity of the methods used to determine, calculate or estimate these data. Qualitative interpretations of materiality, relevance, and accuracy of the data are subject to individual assumptions and judgments. Additionally, we did not perform any work on data reported for prior periods, nor in relation to future projections and targets.

The preparation and presentation of sustainability indicators followed the GRI - Standards criteria and, therefore, are not intended to ensure compliance with social, economic, environmental or engineering laws and regulations. These standards do, however, provide for the presentation and disclosure of any non-compliance with such regulations when significant sanctions or fines are incurred. Our assurance report must be read and understood in this context, inherent to the selected criteria (GRI - Standards).

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**Conclusion**

Based on the procedures performed, described in this report and the evidence obtained, nothing has come to our attention that causes us to believe that the non-financial information included in the Integrated Report for the year ended December 31, 2022 of Braskem S/A., have not been prepared, in all material respects, in accordance with the Sustainability Reporting Standards of the Global Reporting Initiative - GRI, the Sustainability Accounting Standard - Chemicals and Oil & Gas Midstream of the Sustainability Accounting Standards Board (SASB) and with the Guidance CPC 09 - Integrated Reporting (which correlates to the Integrated Reporting Framework prepared by the International Integrated Reporting Council - IIRC).

São Paulo, March 23, 2023

KPMG Auditores Independentes Ltda.  
CRC 2SP014428/O-6

  
Sebastian Yoshizato Soares  
Accountant CRC 1SP257710/O-4

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## ***Credits***

### **Braskem**

Carolina Rodrigues Pignata  
Gabriela Linhares Bacarín  
Marina Muniz Rossi  
Tamiris Yuri Sakamoto  
Thiago Gonçalves  
Vittoria Neves Picarelli

### **TheMediaGroup**

Consulting, content and design

### **Images**

Brand Center Braskem  
Getty Images

### **Verification**

KPMG GRI 2-5

