



Impact Report

2022





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About this Report

We extend a special acknowledgement to all our colleagues and partners who have supported our sustainability and impact journey.

This year we launched a one-stop-shop reporting hub, consolidating our disclosures and facilitating access to our performance across topics and key standards.

SUSTAINABILITY REPORTING HUB

Orbia's identity as a purpose-driven, growth company is expressed by a business strategy that is anchored in sustainability. Orbia's 14th sustainability report is evolving to become an impact report, covering our responsibilities to society, people and planet, and our role as a driver for change, as reflected in our ImpactMark.

Data in this report relates to the 2022 calendar year and encompasses all global businesses under Orbia's operational and financial control (more than 50% of voting rights), which assures alignment between sustainability and financial reporting. All monetary figures in this report are expressed in U.S. dollars (USD), unless otherwise specified.

Environmental and social data in this report covers sites that were active and operational during 2022, from their date of acquisition or up to their date of divestment for all sites where we have operational control and excluding joint ventures where we have 50% or less ownership. Environmental data includes manufacturing sites only (excludes offices, warehouses, distribution centers or other sites, which represent less than 5% of our environmental footprint). Social data includes all facilities, comprising manufacturing sites, offices, warehouses, distributions centers, and R&D labs.

During 2022, major acquisitions from 2021 ([Vectus](#) and [Shakun](#)) were integrated into our reporting systems, impacting the performance of certain indicators this year. As part of the integration process, acquisitions will organically align to Orbia's commitments and goals.

The selection of content for this report was informed by a set of material topics developed through a process described in our [Materiality Assessment Results](#). This report has been prepared in accordance with the Global Reporting Initiative (GRI) Standards, the Sustainability Accounting Standards Board (SASB) 2018 Chemicals Standard; and includes Orbia's annual Communication on Progress for the UN Global Compact and our CEO Water Mandate disclosure. A selection of sustainability data was assured by an independent third party, for the period between January 1st and December 31st 2022. Their assurance statement can be found in our [Sustainability Reporting Hub](#). Throughout this report, data marked with a check mark (✓) is assured by an independent third-party.

We welcome your feedback, questions and suggestions. Please contact: sustainability@orbia.com



Message from our Chairman and CEO

Dear stakeholders,

This year we are transitioning from a Sustainability Report to an Impact Report: a marked shift to comprehensively communicate the impact of Orbia on the world. In this report, we include financial performance and strategic updates alongside environmental, social and governance milestones. We hope you will find this new format accessible, informative and engaging.

Since the start of the COVID-19 pandemic three years ago, we have found ourselves operating in an environment of increasing complexity, with our business challenges intensified. It is not an overstatement to say that the world has entered an era of polycrisis, with sweeping events including the pandemic, political strife, inflation, debt and climate change taking place in overlapping timeframes and with interrelated consequences. With the most recent earthquakes and devastating aftermath occurring in Turkey and Syria, our hearts and support go to the over 24 million people impacted: our global brothers, sisters, colleagues and friends.

Amidst this turbulence, it has been essential for us to accept a new reality in order to formulate timely strategies and take action to proceed. With resolve and ingenuity, our team of over 24,000 people has done that, and held true to what it means to advance life together, everywhere we are. Thanks to the contributions of our people, we have closed another growth year and are facing the future with confidence.

With six businesses united by the common purpose to advance life around the world, sustainable impact for humankind and the planet is our ambition and the reason for our existence. It has shaped our dynamic 70-year history, guided us on our current transformation journey and united us in our pursuit of better solutions for the world's most pressing challenges.

Despite macroeconomic volatility and supply uncertainty, we get up every day driven to deliver cleaner, smarter, more efficient solutions that serve the needs of our customers, never forgetting that our greatest challenges and opportunities are in decarbonization and resource security.

We believe better days are on the horizon. We will do our part to see them. At Orbia, sustainable impact is one of the critical bottom lines for our top line.

In 2022, we saw benefits from our diversified portfolio, realized by working as one Orbia. We continued to invest in collaborating across our businesses and capitalizing on synergies to improve the ways by which our basic and advanced material assets were made sustainable and into sustainable solutions.



Juan Pablo del Valle Perochena
Chairman of the Board of Directors



From mine to market, ground to home, field to table and lab to everyday life, we sought to support food and water security, building and infrastructure resilience, connectivity, health and well-being and a renewable-run world. This will be the key to our future success as well.

In 2022, putting health and safety first and caring for our stakeholders was a universal priority. We maintained safety protocols in all of our sites, kept teleworking for nearly half of our workforce and updated our health risk management policies as the pandemic continued to impact many of our global regions. This year, we were pleased to report an improvement in injuries and loss-of-containment events with an 8% reduction in recordable incidents vs. 2021 for Orbia employees and contractors. We will move forward with setting aggressive safety goals for our teams and work hard to achieve them, aligned with a target of zero accidents. In the face of the tragic war in Ukraine and earthquakes in Turkey and Syria, our teams mobilized immediately to relocate displaced Orbia workers and their families out of harm's way and lend help to the surrounding communities.

In 2022, we built on the momentum that started in 2021 and stayed focused on operating our sites, keeping our assets and individuals secure, exercising capital management rigor and investing in the differentiation of our portfolio. We are in a solid position today because of our strong performance and balance sheet maintained over the course of the year.

Revenues reached a historic high at \$9.6 billion in 2022, up 10% from 2021, supported particularly by favorable PVC pricing in our Polymer Solutions businesses, robust demand in Connectivity Solutions and improved pricing in Fluorinated Solutions. Operating cash flow was in excess of \$1.1 billion in 2022, up 13% from 2021, reflecting our focus on effective capital and cost management. Though EBITDA was down 7% year-over-year at over \$1.9 billion, we nonetheless exceeded the upper end of our annual EBITDA guidance having anticipated demand fluctuations, material cost increases and one-time charges. Optimizing our working capital and improving our operating cash flow will be an area of focus for 2023 and beyond. By continuing to invest in vertical integration, portfolio differentiation and strategic acquisitions to generate sustainable growth, we will be able to weather the storms ahead.

On May 17, we held our first investor day as Orbia, reintroducing ourselves as a purpose-led growth company to a global investor community. This offered us an occasion to share how our synergies and strategy to develop differentiated technologies can support sustained growth at an anticipated rate of 11 to 14% over the next five to six years.

And this past year, the value of integration and differentiation played out in supply security, production efficiencies, cost savings, lightened environmental impacts and most important, organic growth.

In our Polymer Solutions businesses, we started working with and supplying our downstream businesses with high-performance, bio-based general resins, specialty resins and compounds. Our Polymer Solutions businesses became our Building and Infrastructure business' partners of choice for stabilizers that make water and sanitation pipes perform efficiently while offering end-of-life recyclability. Our Polymer Solutions, Building and Infrastructure and Precision Agriculture businesses pioneered circular PVC for irrigation applications, and Polymer Solutions partnered with Fluorinated Solutions to design and deliver fluorinated products for grid and EV-scale energy storage. Thanks to our next-generation fluoropolymers, our Connectivity Solutions business will be able to meet the performance needs of some of the largest telecommunications and technology companies in the world with long-lasting fiber optic cable conduit.

With our eyes set on geographic expansion and adjacent market opportunities, our Building and Infrastructure business took on two Connectivity Solutions facilities to enter the APAC market, and Connectivity Solutions did the inverse in Europe. Our Building and Infrastructure business' integrations of two plumbing enterprises in India and North America have already yielded innovations and the construction of a new production plant in Indonesia is driving regional business. Precision Agriculture has initiated growth projects in extensive crops and Connectivity Solutions is moving into end-to-end network services with a recent acquisition. While there are many positives in being integrated today, imagine where we can be one year, five years or 10 years from now as we work together for better solutions and a better world.





To achieve greater customer, industry and environmental impact, we deeply embedded decarbonization and circularity into our production processes and solutions in 2022.

Our Fluorinated Solutions and Polymer Solutions businesses took leaps forward in securing the lithium-ion battery supply chain in North America with a joint venture with Solvay to produce PVDF, an essential lithium-ion battery binder and separator coating, in addition to securing a \$100 million U.S. Department of Energy grant to build the first U.S. manufacturing plant for the electrolyte salt LiPF6.

These ventures are anticipated to drive up the competitiveness of the North American clean energy and clean transportation markets in turn. Fluorinated Solutions also pioneered in the development of an industry award-winning, low-GWP refrigerant that reduces global warming potential by 46-90% as it cuts Scope 3 emissions, and offered a high-purity metspar to enable Scope 1 emissions reductions in cement production by up to 2.7 million MT of CO₂ annually. Notably, Precision Agriculture launched a carbon credit program to reduce methane emissions from drip-irrigated rice cultivation (~10% of global methane emissions) to almost zero while securing the long-term incomes of growers: the world's first carbon credit program for this essential crop.

Indeed, all of our businesses engaged in circularity initiatives and saw progress in the past year. Building and Infrastructure launched a bio-based drinking water solutions portfolio with a significantly lower carbon footprint. Precision Agriculture

launched a full-scale recycling program in Mexico to tackle the massive problem of plastic waste in agriculture. Polymer Solutions unveiled Future-Fit PVC using bio-based and circular feedstock. And Orbia Ventures, our corporate venture capital fund, invested \$10 million in sustainability-focused startups working across artificial intelligence (AI)-based crop protection, advanced battery technology and green hydrogen. At the year's end, we were closing on a climate tech investment for a carbon credit tracking platform.

Our success in 2022 wouldn't have been possible without a clear commitment to governance. We continued to augment a robust governance structure with updated policies for the organization, including those related to delegation of authority and Board commitments.

Our Board committee charters were comprehensively reviewed to strengthen committee roles and responsibilities and align with market best practices. In addition, Orbia's ethics program was enhanced in 2022 with training courses tailored for functional leaders. In the second year of using an environmental, social and governance (ESG) modifier for configuring senior management compensation, we are offering a mechanism to reward sustainable value creation and management performance.

To empower us to take on new challenges on our purpose-driven, growth path, we maintained focus on taking care of our people. To enhance employee fulfillment, development and well-being and to foster a diverse community of owners and problem-solvers, the People team introduced several initiatives with far-reaching impact. Building on our 2021 achievement of being named by Forbes as one of the world's best employers, we developed our first employer brand and defined our unifying story through our employer value proposition, which will officially launch in June 2023 as the foundation for all efforts to attract and retain the best and the brightest talent. In addition, we unveiled a new future-fit leader and employee development model, expanded our three internal leadership development programs to support high-potential talent at all levels and unify performance management and launched our first Orbia-wide employee resource groups (ERGs): Orbia Women's Network (OWN), Orbia Pride Network (OPN) and the Women's Mentoring Program.

Reassuringly, we increased female representation in leadership roles year-over-year, going from 22% in 2021 to 24% in 2022, and furthered our efforts to hire and train refugees from around the world. Together with the TENT Partnership for Refugees, we provided employment to 140 refugees in our operations in Mexico, Costa Rica, Guatemala, Colombia, Peru, Brazil and Poland, including 88 refugees from the Ukraine-Russia conflict. This amplifies the vibrancy, talents and perspectives of our employee community: those actively making a difference in and for the world.





2022 was also pivotal for making progress against our goals to reach net-zero by 2050. In line with our ambitions to mitigate climate change, the United Nations-backed Science Based Targets initiative (SBTi) approved our near-term targets to reduce Scope 1, 2 and 3 greenhouse gas emissions by 2030, placing us at the forefront of leading practices. In 2022, we saw the results of having worked closely across our businesses for wide adoption of renewables and green production processes:

We reduced Scope 1 and 2 emissions 11% vs. 2021, reduced Scope 3 emissions¹ by 9% vs. our 2019 baseline and we powered our operations with 16% renewable electricity, up from 6% in 2021.

Additionally, we began updating our Climate Risk and Opportunity Assessment in line with the Task Force on Climate-Related Financial Disclosures (TCFD) recommendations and the latest available science to accelerate our path to net-zero and lead on every metric relevant to speeding the world's transition to renewables.

As we aspire to go beyond net-zero with a customer focus, we invested in impactful initiatives in the communities we serve, connected to the United Nations 2030 agenda and our own corporate social responsibility (CSR) strategy. Recognizing the relationship between climate change, water access and community health, we continued to champion watershed protection initiatives through the Water Funds,

1. Categories 11 and 12

the Latin American Conservation Council and our Water, Sanitation and Hygiene (WASH) programs, through which we provided over 40,000 vulnerable citizens in Latin America with sanitation solutions. In swift response to the war in Ukraine and ongoing human crisis, our community raised over \$550,000 to aid local and global NGOs in refugee relief and relocation services. While our work is not done, recognition from well-known third parties in 2022 has been encouraging. We have maintained our place in the Dow Jones Sustainability Indices (DJSI). We were upgraded by MSCI and Sustainalytics in our ratings and earned a gold medal from EcoVadis for our sustainability performance.

The results of 2022 demonstrate that while consistently embedding sustainability into our structures, solutions, partnerships and engagements, we can achieve profitable long-term growth as we fulfill our purpose.

We have grown during testing times, and we will progress through the testing times that lay ahead.

There are abundant and promising opportunities as we step into 2023 and beyond. We can see a world where food and water are plentiful, cities and communities are climate-proof, connectivity to information and each other is extended everywhere, living clean and powering green is the common way of life and we can all breathe easier. This is the world we're making at Orbia.





Driven by purpose and unified by values, we transform basic and advanced materials into cleaner, smarter and more efficient solutions for life—that is, life as we all want to live it.

We wish to thank all Orbia employees around the world for their hard work and dedication in 2022, our customers for their partnership and loyalty and our shareholders for their support.

We are moving forward bravely, responsibly and decisively in advancing life for good.

Best regards,

Juan Pablo del Valle Perochena
Chairman of the Orbia Board of Directors

Sameer Bharadwaj
Chief Executive Officer



Sameer Bharadwaj
Chief Executive Officer



Message from our
Chairman & CEO

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at Orbia

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Solutions

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About Orbia



Orbia: a global, purpose-driven growth company





Orbia is a company passionate about tackling global challenges to advance life around the world.

Orbia operates in the Polymer Solutions (Vestolit and Alphagary), Building and Infrastructure (Wavin), Precision Agriculture (Netafim), Connectivity Solutions (Dura-Line) and Fluorinated Solutions (Koura) sectors. These five Orbia business groups have a collective focus on expanding access to health and wellness, reinventing the future of cities and homes, ensuring food and water security, connecting communities to information and accelerating a circular and low carbon economy with basic and advanced materials, specialty products and innovative solutions. Orbia has commercial activities in more than 100 countries and operations in over 50, with global headquarters in Mexico City, Boston, Amsterdam and Tel Aviv.

To learn more, please visit www.orbia.com

Orbia trades on the Mexican Stock Exchange (BMV: ORBIA) and has been included in the S&P/BMV Total Mexico ESG Index since 2012. Orbia has also been a component of the FTSE4Good Emerging Index since 2015 and of the Dow Jones Sustainability Indices (DJSI MILA Pacific Alliance Index) since 2019. For our latest external recognition and awards, please visit our dedicated page [here](#).

Our common values are:



Be Brave

We don't let our fears hold us back. In order to venture into the unknown, we move forward with curiosity and the ambition to create a better world.



Take Responsibility

We realize that our actions have impact. We hold ourselves to the highest level of accountability, never losing sight of the ripple effect we have on each other, our customers and the world.



Embrace Diversity

We know that every voice matters. Every community deserves respect. Every challenge has an opportunity. We are stronger because we bring different perspectives together, united by empathy.



Our Business Groups

Polymer Solutions



Orbia's Polymer Solutions business group and businesses Vestolit and Alphagary provide polyvinyl chloride (PVC) general resins, specialty resins, compounds and additives for vinyl compounds, including stabilizers and plasticizers. The group also provides compounds formulated from polyolefin (PO), thermoplastic polyurethane (TPU) and thermoplastic elastomer (TPE) polymers. Products made from these materials have a wide variety of applications to everyday life, from pipes and cables to household appliances to medical devices. The business group supplies Orbia's downstream businesses and a global customer base.

Building and Infrastructure



Orbia's Building and Infrastructure business group and business Wavin is redefining today's pipes and fittings industry by creating solutions that last longer and perform better, all with less installation labor required. The business group benefits from supply chain integration with the Polymer Solutions business group, a customer base spanning three continents, and investments in sustainable, resilient technologies for water and indoor climate management.

Precision Agriculture



Orbia's Precision Agriculture business group and business Netafim's leading-edge irrigation systems, agricultural and greenhouse projects, services and digital farming technologies enable stakeholders to achieve significantly higher and better-quality yields while using less water, fertilizer and other inputs. By helping farmers worldwide grow more with less, the business group is contributing to feeding the planet efficiently and sustainably.

Connectivity Solutions



Orbia's Connectivity Solutions business Dura-Line produces more than 500 million meters of essential and innovative infrastructure per year to bring a world's worth of information everywhere. The business group produces telecommunications conduit, cable-in-conduit and other HDPE products and solutions that create physical pathways for fiber and other network technologies-connecting cities, homes and people.

Fluorinated Solutions



Orbia's Fluorinated Solutions business group and business Koura provides fluorine and downstream products that support modern, efficient living. The business group owns and operates the world's largest fluorspar mine and produces intermediates, refrigerants and propellants used in automotive, infrastructure, semiconductor, health, medicine, climate control, food cold chain, energy storage, computing and telecommunications applications.





Global Imprint

Diversified Global Footprint

24,442
Employees

\$9.6B
Revenue

\$1.9B
EBITDA

19.8%
EBITDA Margin

\$466M
Free Cash Flow

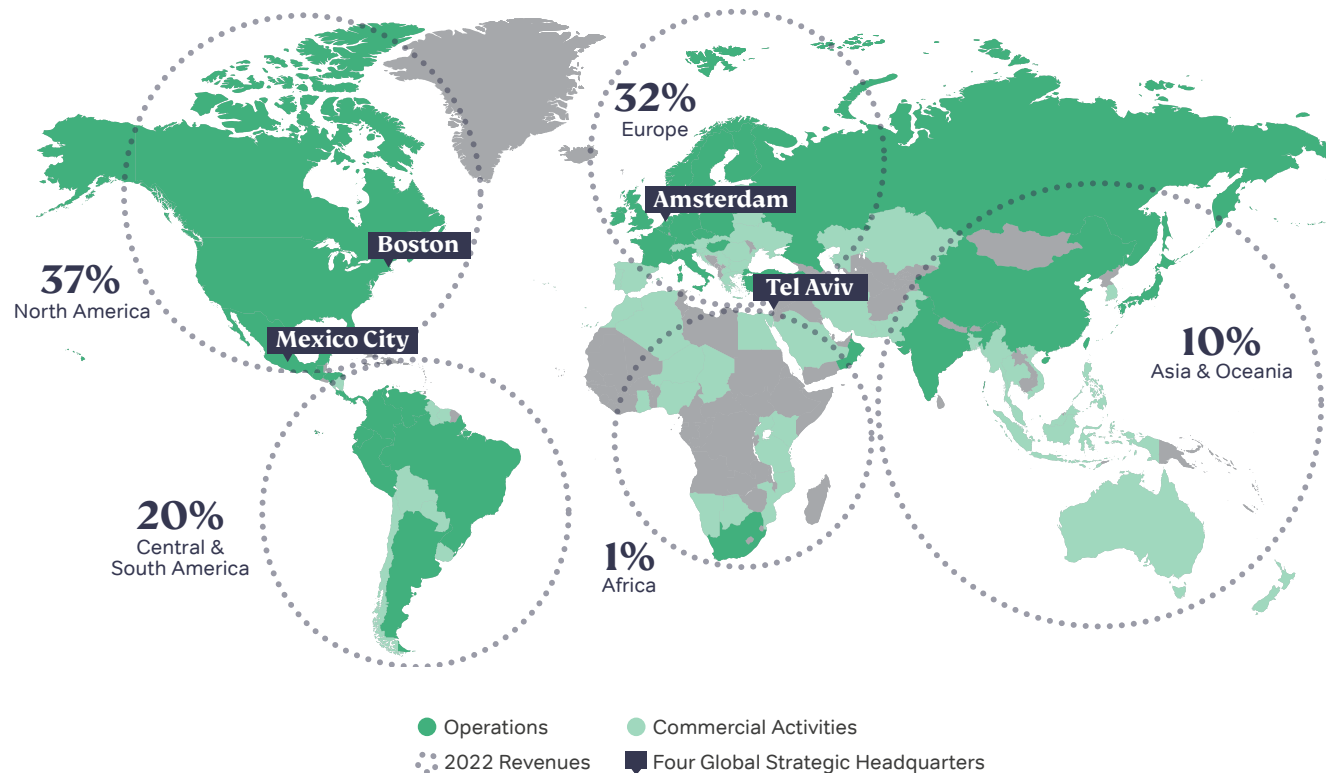
100+
countries
Commercial Footprint

50+
countries
Operations Footprint

134
production sites
(including one active mine)

5
R&D Labs
(in addition to our production facilities)

Diversified Global Footprint 2022 Share of Revenues by Region





Strategy for Value Creation

Key Focus Areas

1

Invest in profitable growth and innovation:

- To leverage our uniquely advantaged position and cutting-edge technologies globally and at scale.
- To serve our customers with new, differentiated solutions with an emphasis on decarbonization technologies.

2

Maximize the value of integration across Orbia and the value chains we participate in.

3

Create shareholder value by being thoughtful stewards of capital and disciplined operators.

Customer-Focused and Addressing World Challenges

Orbia works to deliver sustainable growth and returns to shareholders and sustained value to our customers and stakeholders worldwide. Our market and sector activities are aligned with making an impact on the United Nations Sustainable Development Goals (UN SDGs) as we work to advance life around the world and tackle some of its most pressing challenges:

Sanitation & Water Management	Health & Well-Being	Food & Water Security	Information Access & Connectivity	Climate Resilience & Decarbonization
				
3 of 5	5 of 5	3 of 5	3 of 5	5 of 5
Business groups	Business groups	Business groups	Business groups	Business groups
Polymer Solutions Building & Infrastructure Fluorinated Solutions	Polymer Solutions Building & Infrastructure Precision Agriculture Connectivity Solutions Fluorinated Solutions	Polymer Solutions Building & Infrastructure Precision Agriculture	Polymer Solutions Connectivity Solutions Fluorinated Solutions	Polymer Solutions Building & Infrastructure Precision Agriculture Connectivity Solutions Fluorinated Solutions



Our Investment Approach

Orbia takes a disciplined approach to investing in high-growth opportunities and markets. To drive growth, we invest in our core markets, in geographic expansion and in adjacent products, services and technologies. Many of our businesses provide solutions for climate resilience and decarbonization, and we will continue to move further in this direction.

Our plans include a significant investment in integrated PVC capacity, where we will leverage our access to raw materials to build market share at a time when supply is extremely tight and announced expansions do not meet medium-term demand. We will also leverage our unique position in fluorine to grow in high-value, high-growth applications connected to energy storage. Examples of this include our recently announced [joint venture with Solvay](#) in North America to supply critical battery materials.

We view mergers and acquisitions as opportunities to achieve our strategic objectives. Orbia will prioritize and invest in small-to-medium sized programs and transactions with material synergies and growth potential across our business groups and value chains.

Vertical integration brings supply security and cost efficiencies across our business groups, especially those participating in the PVC chain. We see opportunities to innovate and develop fit-for-use products. Our Building and Infrastructure group, for instance, supplies PVC pipes to our Precision Agriculture group.

We leverage geographic and asset synergies to ensure we are making optimal use of our footprint and capabilities.

Finally, we invest in an operational excellence system that seeks to deploy common tools, processes and frameworks across our business groups in specific-function verticals. Through this system, we will take advantage of opportunities for standardization.

Our approach to capital allocation throughout our growth journey is highly disciplined. We are encouraged that we can achieve our growth ambitions primarily through organic growth projects in our core markets. These initiatives are largely under our control and generally come at a cost below 4x expected EBITDA at maturity.

Investment Thesis

- Harnessing the power of material science and innovation to serve customer needs, address world problems and provide sustainable solutions.
- Investing in profitable growth, leveraging our uniquely advantaged positions to bring differentiated and value-added solutions to market.
- Maximizing the value of integration across Orbia and the value chains we participate in.
- Creating value as good stewards of capital and disciplined operators.
- Delivering double-digit earnings growth and returns to shareholders through stable growing dividends and value creation for all stakeholders.



Orbia has made considerable progress in integrating sustainability into strategy development and execution. We assess the sustainability impact of all our growth projects, whether organic or inorganic, to ensure that we remain on the path to deliver on our commitments."



Josh Preneta
Corporate Vice President, Strategy



2022 Highlights



Our ImpactMark

Orbia's ImpactMark represents areas where we seek impact and demonstrates our ongoing journey to achieve a more perfect circle.

Orbia is passionate about tackling the challenges that define how people can live better today and thrive tomorrow. To track and inspire momentum on our journey to advance life around the world, our first-of-its-kind ImpactMark transparently demonstrates year-over-year performance on six key environmental, social and governance (ESG) indicators, with the outermost ring representing the most recent year. More than a logomark, the ImpactMark is a continuous performance gauge that shows Orbia's progression towards a more perfect circle. As relevant topics emerge and change, we will work on evolving the ImpactMark metrics in the future.





Highlights

Environment


Near-term Scope 1, 2 & 3 emissions targets **approved by the Science Based Targets Initiative (SBTi)**




-11%
GHG Scope 1 & 2 emissions
vs. 2021



+146%
renewable electricity
vs. 2021
(renewables now represent 16% of total electricity consumption)




-28%
SOx emissions
vs. 2021



-12%
process waste
sent to landfill vs. 2021



70%
of sites in water-stressed regions
with **closed-loop water systems**



Social

-8%
Total Recordable
Incident Rate
vs. 2021
(employee + contractors)

New Orbia
**Employee Resource
Groups:**
OWN and OPN
(Orbia Women's Network &
Orbia Pride Network)

New
Future-Fit
leader and
employee model

+40K
people reached
through WASH
programs in LATAM

Over
\$550k
USD collected to
support those affected
by the Ukraine conflict



Highlights

Sustainable Solutions

Polymer Solutions

Vinyl in Motion:
the first PVC circularity program in Latin America

Learn more, [here](#).

vestolit

Precision Agriculture

First carbon credit program
for drip-irrigated rice

Learn more, [here](#).

NETAFIM™

orbia ventures

4 out of 5 transactions
were environmental impact-focused

Polymer Solutions

Developed Infinite™
compound from recycled PVC

Learn more, [here](#).

alphagary

Connectivity Solutions

Introduction of MicroDucts ECO,
composed of up to 100% reground internal scrap, which are then bundled to create FuturePath ECO

Learn more, [here](#).

dura-line

61%
of Orbia's 2022 revenues contributed to the UN SDGs.

Building & Infrastructure

First bio-based product portfolio
for water solutions is now available

Learn more, [here](#).

wavin

Polymer Solutions and Fluorinated Solutions

Joint venture with Solvay,
to create the largest polyvinylidene fluoride (PVDF) capacity for battery materials in North America

Learn more, [here](#).

koura

vestolit



Highlights

Governance

Our Board of Directors is

67% independent
and 25% female, representing
4 different nationalities

Enhanced Ethics program with
customized

tailored-to-job-role
training

Second Sustainability- Linked Bond

issuance tied to our SOx
emissions target

58%

of suppliers have **improved**
their score in EcoVadis

ESG indices and recognition

During 2022, Orbia's proactive engagement
with rating agencies combined with improved
performance yielded strong results, such as:

- Gold medal from EcoVadis.
- Low risk profile in Sustainalytics.
- Upgraded rating by MSCI, to BB.
- Member of S&P Sustainability Yearbook.

Learn more, [here](#).

For further information: [Corporate Governance](#)



Financial Summary

During 2022, revenues reached a historic high of \$9.6 billion, an increase of 10% compared to 2021, while EBITDA decreased by 7% to over \$1.9 billion. Revenues were supported by strong PVC pricing in the Polymer Solutions business, particularly during the first half of the year; strong demand in Connectivity Solutions and improved pricing across the Fluorinated Solutions product portfolio. The decline in EBITDA was driven by the softening of demand in certain markets, particularly during the second half of the year, and pressures from rising input costs, mainly in our Polymer Solutions and Building and Infrastructure businesses. These factors were partially offset by higher profitability in Connectivity Solutions, as well as in Fluorinated Solutions. Operating cash flow was in excess of \$1.1 billion in 2022, compared to \$982 million in 2021. This increase was mainly driven by effective management of working capital, which was partially offset by lower EBITDA and higher taxes paid.



The issuance of a second Sustainability-Linked Bond in 2022 demonstrates Orbia’s commitment to sustainability, embedding it into our financial strategy. At Orbia, sustainability performance is inseparable from financial performance. A portion of the funds from these bonds will be invested in capital projects that will allow Orbia to contribute to solving some of the world biggest challenges, such as climate change and decarbonization."



Jim Kelly
Orbia Chief Financial Officer

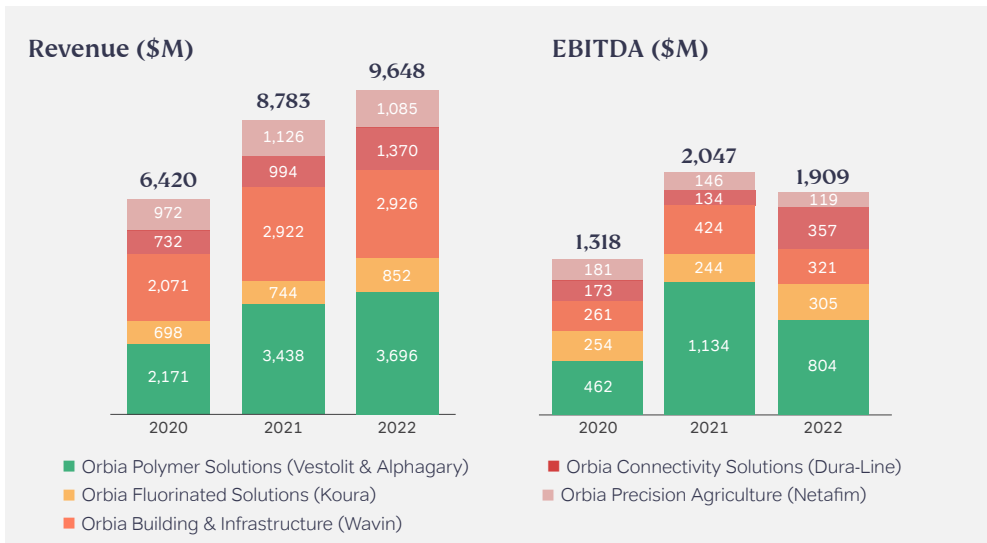
Revenue
\$9.6B

Free Cash Flow
\$466M

EBITDA
\$1.9B

EBITDA Margin
19.8%

ROIC
12.3%



Learn more, [here](#).



Message from our
Chairman & CEO

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Sustainability at Orbia



Science-Based Strategy & Materiality

Our strategy was developed from an evidence-based assessment of our top material sustainability topics, which aligns with our purpose and the impact we can make.

As part of our materiality assessment, we engaged with hundreds of stakeholders (investors, employees, customers, suppliers, authorities and NGOs) across 50 countries to solicit their views on Orbia's most significant economic, social and environmental impacts, relevant trends and expectations of our business. The results yielded material sustainability topics both at the corporate and at the business group level, for which we aim to establish science-based targets where relevant.

This exercise started to integrate the concept of double materiality, considering the interconnectivity between the financial and non-financial perspectives, as promoted by the GRI and SASB standards.

As part of our processes to continually identify emerging risks and opportunities across our business, we plan to update our materiality assessment during 2023 to further evolve in our impact journey and align with emerging standards, requirements, and practices.

This update will involve a comprehensive analysis and integrated approach to evaluate double materiality: the external factors that have an impact on Orbia's performance and value, as well as the impact that Orbia's activities have on the planet and people.



Orbia's Top Ten Material Topics

Click to go to these sections.

Supply Chain

- [Sustainable sourcing](#) 
- [Quality & safety of products](#) 




Products

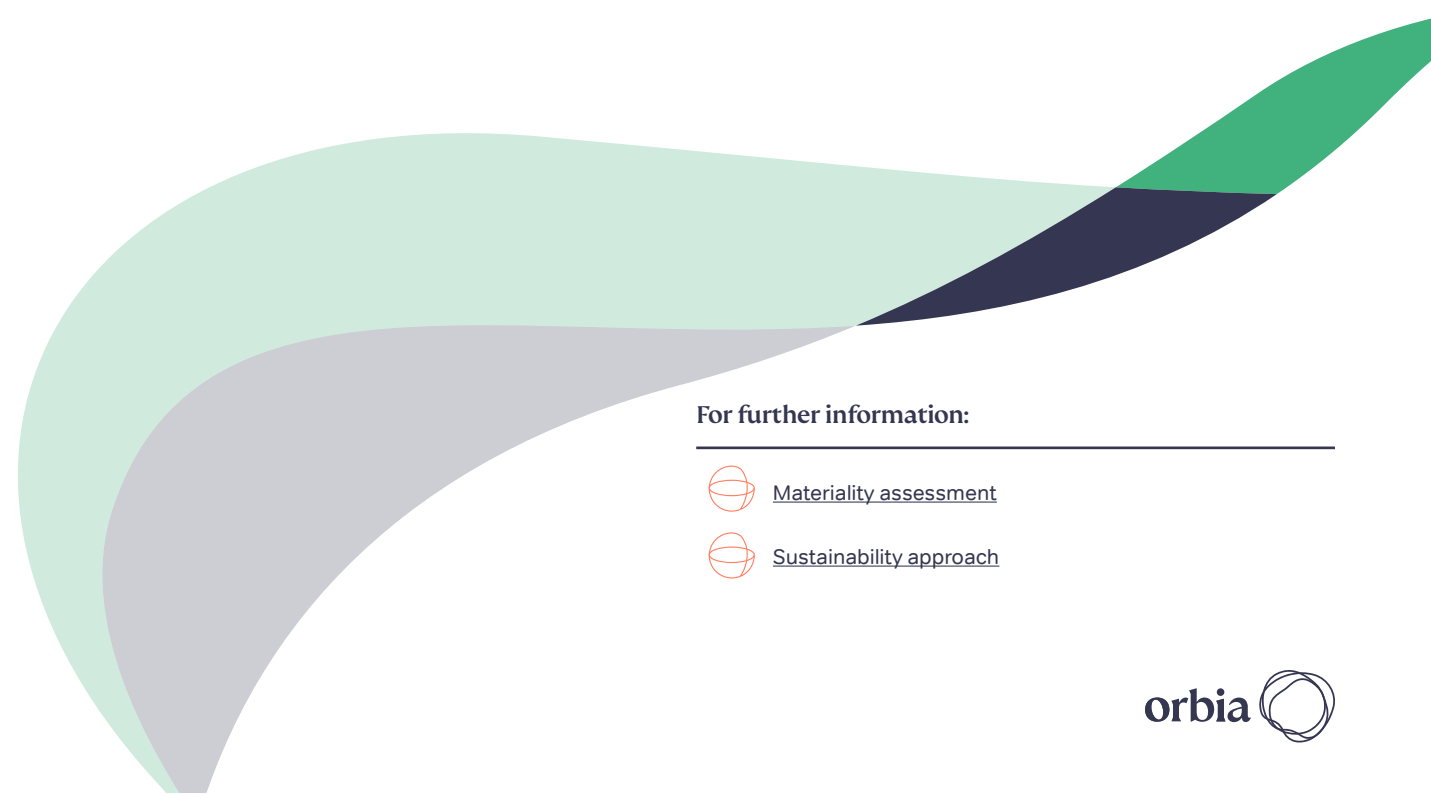
- [Solutions for resilience](#) 
- [Innovation](#) 

People & Communities



- [Health & safety](#) 
- [Employee engagement](#) 
- [Local communities](#) 

Environment

- [Circular economy](#) 
- [Emissions](#) 
- [Water use and discharge](#) 



For further information:

-  [Materiality assessment](#)
-  [Sustainability approach](#)



Our Approach to Sustainability

To fulfill our value creation thesis, we deeply embed sustainability in our businesses as a core component of our growth strategy and culture.

From mine to market, ground to home, field to table and lab to everyday life, we seek to support food and water security, building and infrastructure resilience, data connectivity and health and wellbeing with the lightest possible footprint.

Sustainability framework

Our strategy rests on three pillars, supported by specific action programs:



Low-Impact and Resilient Operations

Seeking opportunities to minimize or eliminate negative impact, while implementing projects to become climate-resilient.



Sustainable solutions

Developing products and services with improved environmental performance and supporting the United Nations Sustainable Development Goals (SDGs).



Impactful ventures

Accelerating new technologies and business models for a net-positive world.

Responsible Business (Foundational ESG practices)

Operating in line with the highest ethical standards, accountability, responsibility and transparency.



2022 brought key milestones to our impact journey. Our progress was recognized by third parties; in particular, the Science-Based Targets initiative validated our near-term decarbonization goals. We are confident that Orbia is on the right track to fulfill our ambitions to create positive impact at speed and scale.



Tania Rabasa

Corporate Vice President, Sustainability & Corporate Affairs

For further information:



[Sustainability approach](#)



[Sustainability policy](#)

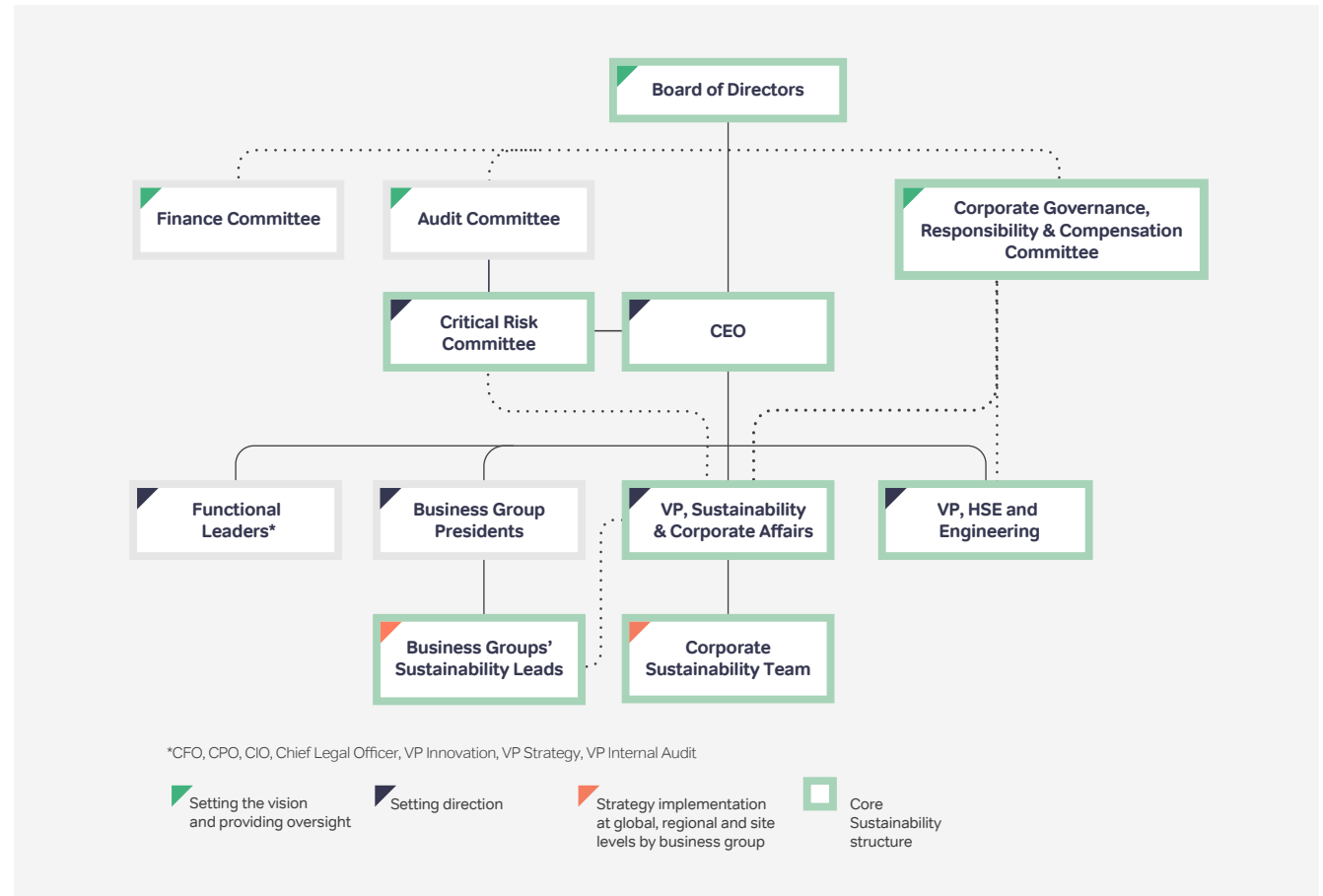


Sustainability Governance Structure

To ensure implementation and encourage collaboration across business groups, Orbia’s Board oversees and provides guidance on Orbia’s ESG strategy previously reviewed by the Corporate Governance, Responsibility and Compensation Committee.

Our Vice President (VP) of Sustainability briefs and updates the Committee regularly, while providing progress on our goals on a quarterly basis. Orbia manages sustainability efforts through a matrix structure, with leadership and functional specialties held at global and corporate levels. Each business group drives sustainability throughout its business, working closely with the corporate sustainability team to implement corporate programs alongside business-specific opportunities. Regular communications are shared with all employees via Town Hall meetings, and sustainability goals and targets are part of everyone’s objectives and embedded into executive and senior management compensation.

In 2022, the Sustainability Council met regularly to design, implement, and take ownership of Orbia’s sustainability strategy. Key accomplishments include advancing our decarbonization, circularity and social impact strategies.



For further information:





Commitments & Progress

Orbia's long-term sustainability pathway includes several milestones, backed by science-based commitments.

<p>2025 Goals</p> <ul style="list-style-type: none"> Safety Waste Environmental Management Air Emissions 	<p>Safety Total Recordable Incident Rate (TRIR) below 0.2 for employees and contractors</p> <p>● Baseline ● Performance in 2022</p> <p>0.71 (Baseline) 0.56 (Performance in 2022)</p>	<p>Waste 100% of plants will send zero waste to landfill**</p> <p>● 2019 ● Performance in 2022</p> <p>24% (2019) 43% (Performance in 2022)</p>	<p>Environmental Management 100% of sites certified with an environmental management system</p> <p>● Baseline ● Performance in 2022</p> <p>55% (70/127 sites) (Baseline) 53% (71/134 sites) (Performance in 2022)</p>	<p>Air Emissions Reduce sulfur oxides (SOx) emissions by 60%</p> <p>● Baseline ● Performance in 2022</p> <p>1,355 Tons (Baseline) 772 Tons (Performance in 2022)</p> <p>(-43% vs. 2018)</p>
<p>2030 Goals</p> <ul style="list-style-type: none"> Climate Change <p> SCIENCE BASED TARGETS DRIVING AMBITIOUS CORPORATE CLIMATE ACTION</p>	<p>Scope 1 & 2 emissions Reduce absolute Scope 1 & 2 GHG emissions by 47%</p> <p>2019 Baseline -20% 2022 Performance -47% 2030 Target</p>	<p>Scope 3 emissions Reduce absolute Scope 3 GHG emissions from use and end-of-life treatment of sold products by 30%*</p> <p>2019 Baseline -9% 2022 Performance -30% 2030 Target</p>		
<p>2050 Goals</p> <ul style="list-style-type: none"> Climate Change 	<p>Scope 1 & 2 emissions Achieve net zero carbon emissions</p> <p>2019 Baseline -20% 2022 Performance net zero 2050 Target</p>	<p>Notes In December 2022, the Science Based Targets initiative (SBTI) validated Orbia's near-term Scope 1, 2 and 3 emissions reduction targets as being in conformance with the latest SBTi Criteria and Recommendations (Version 5) for climate actions to mitigate the impacts of global warming. *Goal covers categories 11 (use phase) and 12 (end of life), which represent around 87% of our Scope 3 footprint. ** Orbia adopts a definition of Zero Waste to Landfill that is sending a maximum of 10% of all hazardous and non-hazardous waste to landfill by 2025. 2019 is the baseline year for all our goals, except SOx emissions. The baseline year established for SOx emissions is 2018, as 2019 was an atypical year in terms of operations at our main contributing site, due to a one-month planned shutdown for maintenance.</p>		



Low Impact & Resilient Operations

Seeking opportunities to minimize or eliminate negative impacts to become climate-resilient, while aiming to maximize positive impacts.



Environmental Governance

This report's [Sustainability Governance section](#) outlines Orbia's oversight, responsibility and management of environmental issues. Our Corporate Governance, Responsibility and Compensation Committee, CEO and Business Group Presidents are part of the core governance structure responsible for oversight of material environmental topics including climate, GHG emissions, non-GHG emissions, waste and water. Progress on these topics, and on our ESG goals overall, is reviewed quarterly.

Sustainability Operational Model



Core Council:

Construct, implement and own the Orbia sustainability strategy, make informed decisions with line of sight to environmental commitments.

Implementation Council:

Monitor sustainability progress on Orbia's sustainability aspirations with a strong focus on needle mover projects and align sustainability plans with relevant operations.

Sustainable Solutions Council:

Catalyze action on the Sustainable Solutions pillar of our strategy and ensure measurable impact.

ESG Sustainability Quarterly Reviews:

Business Group Presidents and Sustainability Leaders present progress on ESG commitments and initiatives to CEO.



Environmental Management

Orbia adheres to a global sustainability policy, supported by our Environmental Management Systems (EMS) which comply with applicable environmental laws and regulations. We pursue external quality and environmental certifications to support continuous improvement across our global operations.

In 2022, 53% of sites (71% of 134 that are eligible) were certified to ISO 14001 or equivalent external standards, and we have committed to achieving 100% certified sites by 2025. During 2022, additional sites achieved EMS certification, however, the percentage of sites with certification dropped when compared to 2021. This was the result of the closure of some certified sites and the acquisition of sites that are not yet certified*. The certification process will remain a priority for the following years as we integrate newly acquired sites.

Environmental Audits

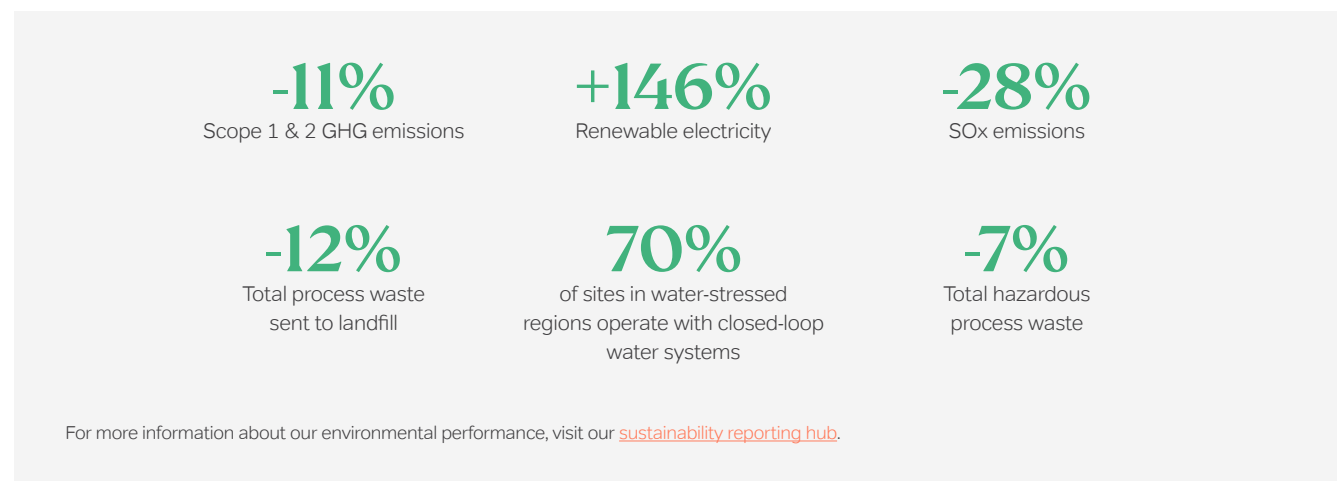
The audit process allows us to identify both opportunities to improve and potential risks to avoid. All our EMS-certified (ISO 14001 or equivalent standard) sites are subject to third party (ISO 14001 or equivalent) audits. In addition, Orbia's internal audit plan continued including environmental performance during 2022. This program covers sites that are not yet certified in our EMS certification program, nor covered by our third-party limited assurance Scope. In 2022, the internal audit team audited 9 sites across our business groups, further strengthening reporting practices.

Also, Vestolit's environmental team continues to perform internal audits on sites to identify improvement opportunities and aims to establish environmental standards for all operations in addition to those required by environmental management systems.

Environmental Compliance

In 2022, we continued working with ENHESA to monitor health, safety and environmental (HSE) compliance across Orbia manufacturing sites and stay up to date with regulatory developments. Following self-assessments by all sites, 91% of all applicable regulatory requirements had been reviewed for compliance at the end of 2022 (up from 70% in 2021). Regulatory compliance will be continuously monitored, thus mitigating possible regulatory risks.

Overall, in 2022, we achieved significant improvements in environmental performance versus 2021:



* During 2022, 18 new sites were acquired.



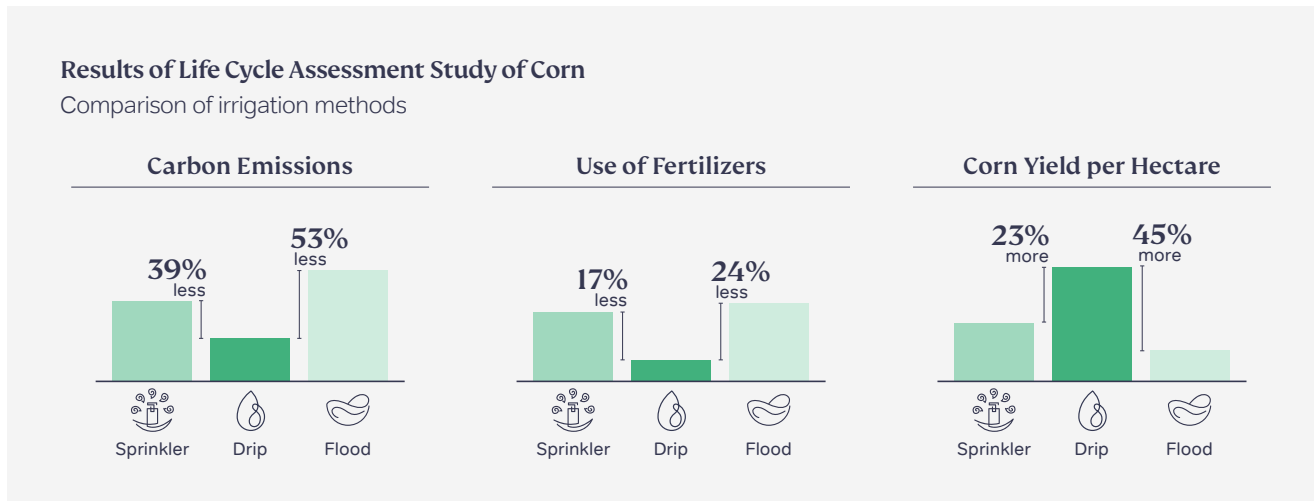


Sustainable Design Principles

We prioritize responsible sourcing, low-impact manufacturing, impact mitigation actions across our value chain, and integrating circularity principles from the design stage of new products to ensure sustainability throughout product lifecycle (extraction, manufacturing, storage and distribution, usage performance and final disposal, reuse, or recycling). Business groups advance their specific Life Cycle Assessment (LCA) Programs based on both market and customer demand as well as our commitment to minimize our product's environmental impact. Examples of progress to increase the transparency of the environmental impact of our products include:

Precision Agriculture

The infographic shows the results of an LCA conducted for corn, demonstrating the benefits from drip irrigation across key factors.



Building & Infrastructure

In 2022, Wavin began delivering Environmental Product Declarations (EPDs) for its products in the European market. Based on third-party verified LCAs, EPDs transparently map production processes to resource impacts offering details of environmental impacts across the entire life cycle. With these EPDs, Wavin is supporting customers in selecting the best products for their projects that also have the lowest footprints. Wavin will use the insights provided by LCAs and EPDs to inform continuous improvements that contribute to lower greenhouse gas emissions.

Polymer Solutions

Has been developing a portfolio of sustainable PVC solutions, like [Future-Fit PVC](#), that embed sustainability criteria since the early phases of design, considering circularity and re-usable raw materials, such as used cooking oil, while additionally reducing carbon emissions associated with the production of high-quality PVC resins. The cradle-to-gate life cycle of our future-fit PVC has been assessed and results have been certified according to ISO 14067 and GHG protocol. Additional LCAs will cover PVC resins produced in US, Mexico and Colombia.

Connectivity Solutions

Is committed to enabling Circular Economy initiatives that reduce the environmental footprint (Scope 3 emissions) of our telecommunication customers' network deployments. As part of this, LCAs for recently launched FuturePath ECO and MicroDuct ECO products will be performed in relevant manufacturing sites.

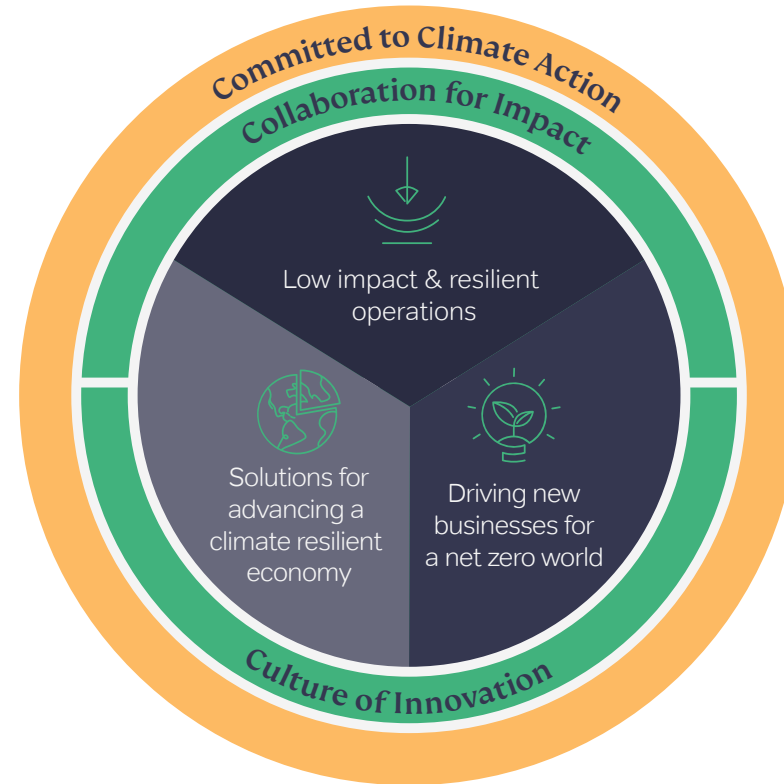


Climate & Emissions

Climate change is one of the greatest challenges the global community will ever face and presents both risks and opportunities to our business.

Orbia is taking actions to contribute to the decarbonization of our economy and our [climate strategy](#) is focused on accelerating our actions through three pillars:

We continued to advance in line with our commitment to mitigate climate change. In December 2022, the Science Based Targets initiative (SBTi) [validated](#) our near-term targets to reduce Scope 1 and 2 GHG emissions 47% by 2030 (from a 2019 base year) and our Scope 3 GHG emissions from use of and end of life treatment of sold products by 30% within the same timeframe.



Orbia's Climate Action Framework

For further information:

 [Climate action at Orbia](#)

 [TCFD index](#)



Net Zero Roadmap (Scope 1 & 2 emissions)

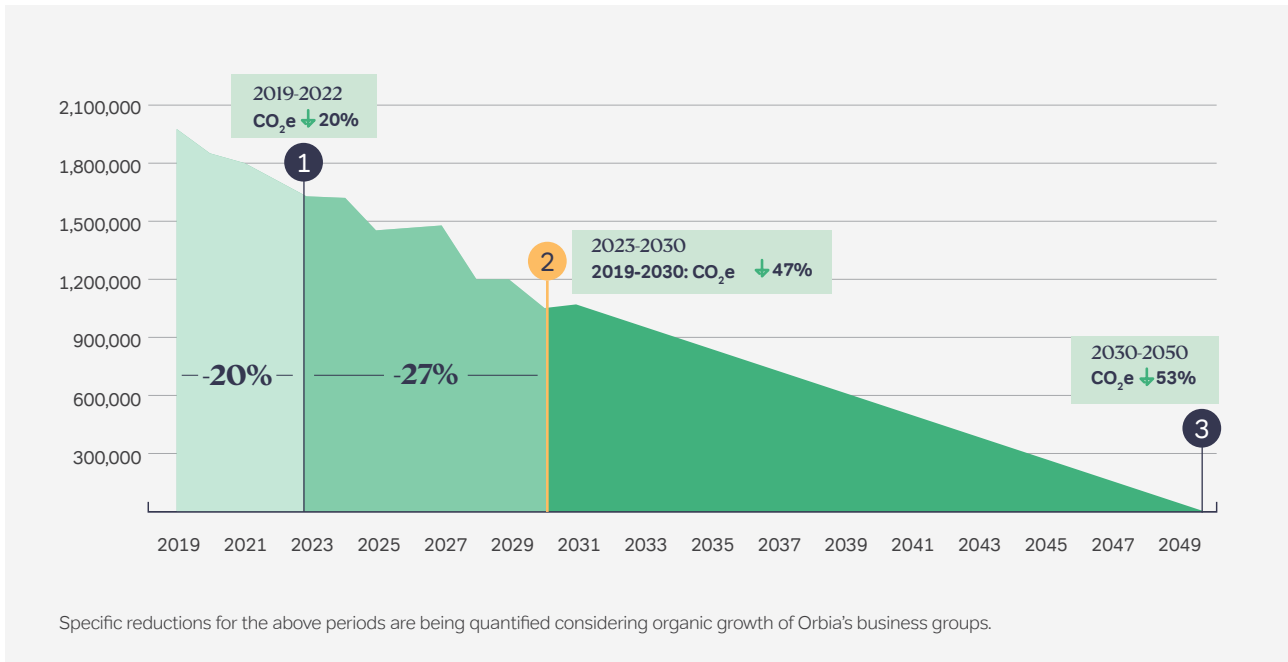
Orbia has defined a roadmap that outlines the instruments needed for accelerating our pathway to become net-zero (Scope 1 & 2). This includes replacing electricity sources based on fossil fuels with renewables, phasing out coal-based equipment, increasing energy efficiency, and doubling efforts to understand how to transition and incorporate the use of hydrogen and carbon capture technologies at our operations. This is a work in progress that will incorporate growth in future versions. We acknowledge that a net-zero pathway requires courage to think in innovative ways and implies a robust transformation of how we produce things today. We are committed to facing this challenge as we also balance growth and profitability.

1 2019 – 2022:
Reduction of 20% vs. baseline mainly as a result of instruments like green tariffs, on-site solar, contracts with suppliers offering improved emission factors, unbundled EACs and energy efficiency projects.

2 2023 – 2030:
Reduction of 27% vs. baseline mainly as a result of instruments like green tariffs, virtual and direct power purchase agreements, contracts with suppliers offering improved emission factors, energy efficiency projects and innovative technologies under development.

By 2030, we would have achieved our GHG emission reduction target (-47% vs 2019, meaning an accumulated reduction of 940 ktCO₂e).

3 2030 – 2050:
By 2050, Orbia aspires to be net-zero, which means, Scope 1 & 2 emissions are equal to zero. Plans are to achieve this by using innovative technologies under development.





Climate Risk & Opportunity Assessment

An update of our Climate Risk and Opportunity Assessment is currently underway; it will cover all Orbia sites globally, with a deep dive on a priority sample, consider two future scenarios to 2030 and 2050 for both physical and transition risks, and improved financial quantification aligned with Orbia's Enterprise Risk Management (ERM) processes and risk thresholds. This exercise will also include an overview of climate risks linked to our main value chains, and inform of potential impacts to suppliers, infrastructure, and consumers, among other fundamental criteria.

The selected scenarios for assessing physical risks are those defined by the IPCC corresponding to:

A lower-emissions scenario
(SSP1: Sustainability – Taking the
Green Road)

A higher emissions scenario
(SSP5: Fossil-fueled Development)

For transition risks, we will use the Network for Greening the Financial System (NGFS) climate scenarios. Results of this assessment will be published in our 2023 report.

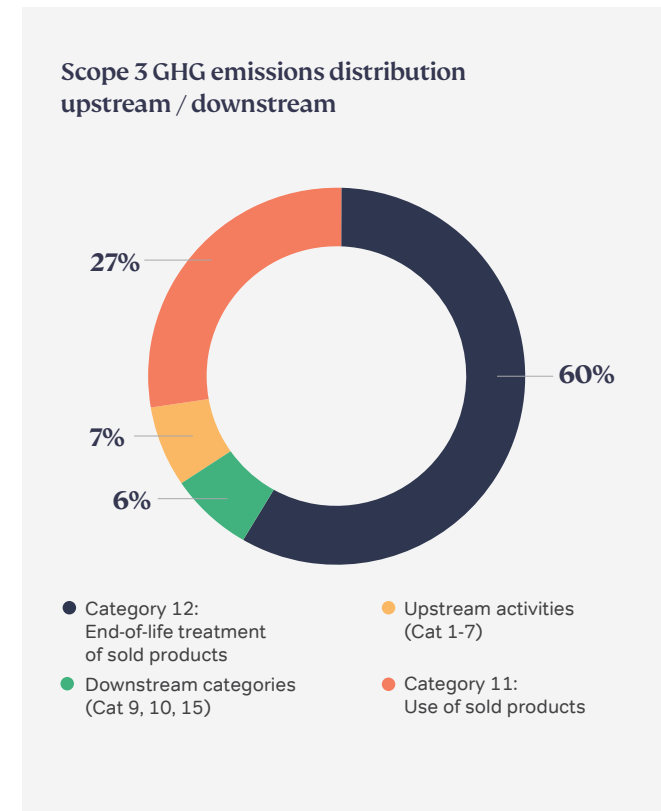
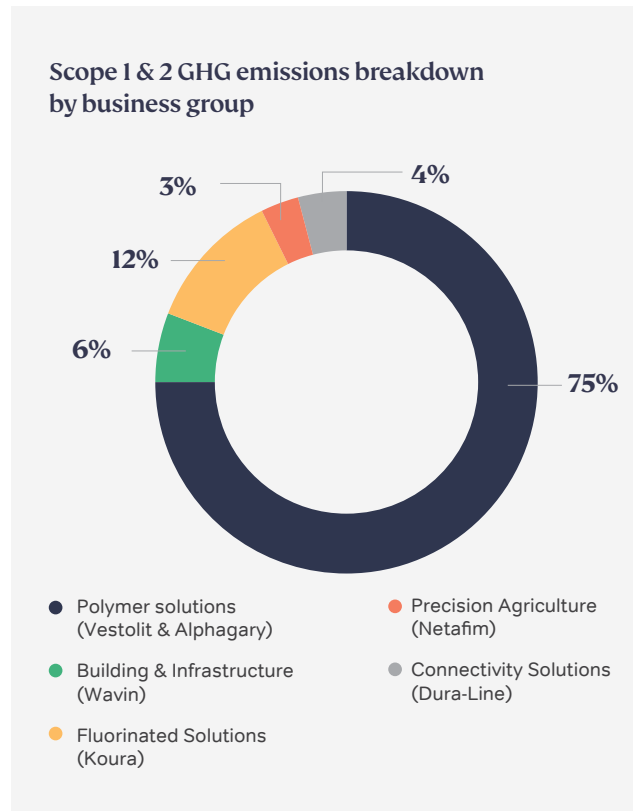
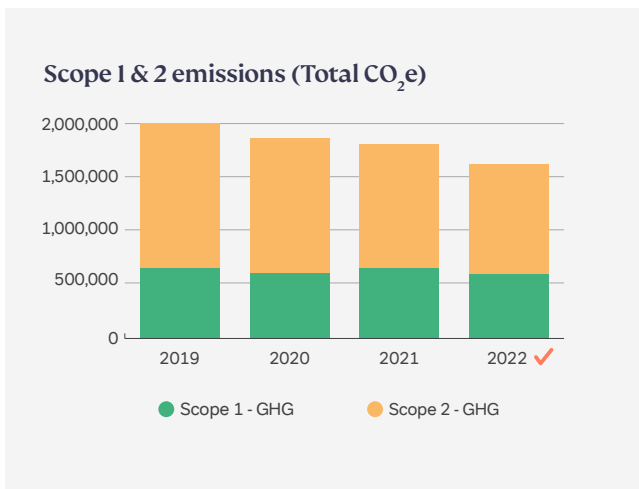




Greenhouse Gas Emissions

We plan to drive decarbonization throughout our business at a steady pace with an ambition to achieve net zero carbon emissions (Scope 1 & 2) by 2050. Our near-term plan includes reducing Scope 1 and 2 GHG emissions by 47% by 2030 and reducing Scope 3 (categories 11 & 12) emissions by 30% by 2030.

To achieve our decarbonization targets, we have set up a comprehensive carbon inventory, based on globally accepted standards and protocols, including The Greenhouse Gas Protocol. In addition, our GHG reporting is assured by a leading third party every year (assurance statement is available [here](#)).



Details of our 2016-2022 emissions performance can be found [here](#). In 2022, a revised inventory of our Scope 3 GHG emissions inventory led to updated figures, in line with the Technical Guidance for Calculating Scope 3 Emissions: Corporate Value Chain Accounting (Scope 3) and Reporting Standard. Our Scope 3 reduction efforts will be concentrated on categories 11 (Use of Sold Products) & 12 (End-of-life Treatment of Sold Products), as they represent around 87% of our overall footprint.



Scope 1 & 2 GHG emissions decarbonization progress

A robust carbon inventory has enabled Orbia's business groups to plan and implement Scope 1 & 2 decarbonization efforts on three main fronts:

- Optimizing processes to drive efficiencies.
- Transitioning to renewables and lower carbon energy sources.
- Exploring carbon capture and hydrogen investment opportunities.

Based on Orbia's general decarbonization roadmap, the Business Groups further developed their individual roadmaps during 2022 and agreed on cross-business initiatives that will accelerate our transition to longer term renewable electricity procurement in key operating regions.

As shown by our energy use and emissions performance, we continued to deliver on our commitment to reduce our impact on the climate during 2022. We have reduced 11% of our Scope 1 & 2 emissions compared to last year. This was achieved in part by the following highlighted projects:

Optimizing processes to drive efficiencies

We estimate to have reduced around 2,500 tons of CO₂ through implementing enhanced manufacturing technology and energy efficient processes that range from advanced process control to equipment improvements.

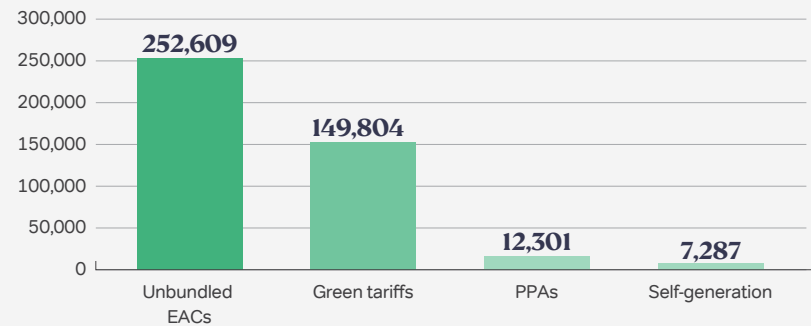
As an example, Connectivity Solutions Business Dura-Line has upgraded electrical connection conditions, resulting in both cost and GHG emissions reductions. Polymer Solutions Business Alphagary's plant in Leominster installed a new air compressor designed for superior energy efficiency. The system recovers over 90% of the heat generated by electrical energy and ducts it back into the building, providing warmth to employees during the colder New England months. Polymer Solutions Business Vestolit's La Presa plant has been working on implementing fuel energy savers to use natural gas more efficiently, while El Salto is completing the transition to a co-generation system.

Transitioning to renewables and lower carbon energy sources

We increased our use of renewable energy by 146%, reducing around 74,000 tons of GHG emissions, and bringing our total purchased and generated renewable electricity to 16% of total electricity consumption.

In 2022, 37% of Orbia plants utilized renewable energy sources. During 2023, efforts to increase renewables will be focused on launching a Renewable Electricity Opportunity Assessment across the US & Canada, exploring long term PPAs in the European region, and increasing own solar installations across key sites. Orbia has developed an internal GHG investment template to compare several decarbonization scenarios at site level, which informs investments in additional relevant decarbonization actions.

Renewable energy sourcing methods (MWh) in 2022





Some examples of progress in this front include:



4,000 m² of solar panels were installed in Sweden.

+3,000 m² of solar panels began to be installed in Poland.

5+ LED lighting systems were installed in plants located across Peru and Colombia.



100% of electricity in Pedricktown, US will be sourced from a solar array from 2023 after considering several scenarios. The same decarbonization model is being explored for its site in Henry, Illinois.

64,000 tons of CO₂ were reduced in Henry, Illinois after the phase-out of its coal-fired boiler.



Exploring carbon capture and hydrogen investments

Orbia Ventures and our businesses continue to evaluate technologies for hydrogen electrolyzer stacks. During 2022, Vestolit signed a collaboration agreement with Verdagy (an Orbia Ventures portfolio company) to evaluate the economics of building a hydrogen production facility in our plant in Marl, Germany. A multi-background team was formed to advance this initiative, while exploring additional alternatives to capturing carbon and using it to produce ethylene in-house.

In addition, Wavin's Hazlehead site in the UK has been selected to participate in the 'Hydrogen for the Ceramics Sector' project by the UK government. This will review the feasibility of converting the UK ceramics sector from natural gas fired kilns, to kilns that can be fired with hydrogen fuels (up to 100%), laying the groundwork for industrial-scale hydrogen trials.

Solar panels installation at Wavin facility in Sweden.





Scope 3 GHG emissions decarbonization progress

Our main strategy to decarbonize our value chain is linked to Orbia's Fluorinated Solutions Business Koura's vision to transform its portfolio of mid Global Warming Potential (GWP) refrigerants and propellants (mainly R-134a) to low GWP alternatives. Some of these next-generation refrigerants are now on the market with others undergoing evaluation and testing by customers.

[Klea 456A](#) and [Klea 473A](#) are supporting our customers' transition to more energy efficient and lower carbon applications. Both products have significantly lower GWP than incumbent refrigerants: Klea 456A has a 46% lower GWP when compared to R134A, while Klea 473A's GWP is 90% lower when compared to R-23 or R-508A/B. This refrigerant won [Refrigeration Innovation of the Year](#) at the 2022 Cooling Industry Awards.

Koura is developing refrigerant replacements for a range of applications with a focus on LFR3, an exciting new product. LFR3 is designed as a more energy-efficient alternative to CO₂ in applications such as heat pumps, commercial refrigeration, and mobile air conditioning.

See [Klea's website](#) and [Fluorinated Solutions Spotlight](#) for further details.

Another example of helping customers reduce their footprints is Orbia's Precision Agriculture Business Netafim's first carbon credit program for drip-irrigated rice. The aim of this inaugural program is to dramatically reduce methane emissions from rice cultivation to almost zero, while providing additional long-term income to growers. The carbon credits program will be registered by Verra and available to farmers interested in regenerative agriculture practices from 2023.

See [Precision Agriculture Spotlight](#) for further details.

Orbia's efforts to reduce GHG emissions across our value chain are not limited to the use phase and end-of-life of our products. Some of our businesses are implementing improved transportation measurement tools to identify more efficient routes that can result in emission reductions.

As an example, Building & Infrastructure Business Wavin partnered with XPO Logistics to introduce road-rail freight that will significantly reduce CO₂ emissions by an estimated 58% and NOx by 18.8 tons annually. Also, Connectivity Solutions Business Dura-Line completed the measurement of almost 80% of its transport-related emissions through BIGMILE software, which generates recommendations that will lead to decreased emissions >5% annually (2021 baseline), covering operations in the U.S., Canada, Poland, France and Germany. This assessment will be updated on a bi-yearly basis.

Other air emissions (non-GHG): SOx

Orbia's focus on non-GHG air emissions is on sulfur oxides (SOx) emissions - which represent over 50% of our non-GHG air emissions. Until 2021, over 95% of SOx emissions were generated at two Orbia sites: Polymer Solutions Business Vestolit in Henry (US) and Fluorinated Solutions Business Koura in Matamoros (Mexico).

Both sites made significant progress in 2022:

Vestolit Henry effectively decommissioned its coal-fired boiler, eliminating 99% of SOx emissions and contributing to a 27% reduction for Orbia overall. Koura's Matamoros site improved processes (catalyst technology) will result in a 30% SOx emissions reduction compared to the 2018 baseline. These efforts will allow us to achieve and maintain a long-term reduction of 60%, keeping Orbia on track to achieve our 2023 & 2025 commitments, as defined in our [Sustainability-Linked Bonds](#) framework.

We track and report other non-GHG air emissions, such as NOx and VOCs (data available [here](#)). Our emission intensities and absolute volumes are in the lower ranges when compared to those of a selected group of commodity chemicals peers (based on public information available for selected peers) and specific to certain parts of our businesses only.



Circularity

Orbia’s approach to circularity includes the incorporation of Sustainable Design Principles as explained earlier in this chapter. This means reducing waste at the source, eliminating waste sent to landfill, and a strong focus on integrating recycled plastics content in our products as part of our ambition to decarbonize our product portfolio.

By addressing all dimensions of our product lifecycle, we advance a circular economy and improve the environmental impacts of our products overall. To accelerate our journey towards circularity, Orbia’s recycling community of practice provides insights on new technologies and circularity-related regulations, while sharing best practices and identifying cross-business initiatives. In 2022, we progressed several initiatives across all mentioned fronts.

Driving Use of Recycled Content

We consider environmental criteria when selecting raw materials. All relevant Orbia businesses (Building & Infrastructure, Connectivity Solutions, Precision Agriculture and Polymer Solutions) continue to target increased use of recycled raw materials in manufacturing of driplines, pipes and conduits.

	Circularity target	2022 Performance
Building and Infrastructure Business: increase recycled content in construction pipes and materials	70 kTon in 2025	32.2 kTon
Precision Agriculture Business: increase recycled content in driplines for irrigation	45% in 2030	12.4%

The main innovations our Building & Infrastructure Business Wavin is currently working on are developed with sustainable design principles, including the uptake of low carbon and circular feedstock and designing for recycling and re-use (with a goal of 90% products to be 100% recyclable by 2025).

In 2022, [Wavin launched its first bio-circular product ranges](#). Bio-circular feedstocks are renewable and have a very low carbon footprint. Especially in high-demand areas with higher pressure and hygienic requirements, bio-circular applications are a great addition to mechanically recycled feedstock as part of our circular economy roadmap. Other circular innovations will be launched in 2023.





Diverting Waste from Landfill

All our sites are on a mission to reduce waste at the source and divert waste from landfills. Overall, waste generated on a per ton basis has been consistently decreasing, and our absolute volume of process-related waste to landfill or incinerated without energy recovery was 12% lower in 2022 compared to 2021. We continue to focus on solutions for waste diversion at all our sites.

Our Polymer Solutions Business Vestolit completed a significant achievement in Coatzacoalcos (Mexico), one of its key plants. Vestolit partnered with Fefermex, a fertilizer producer, to divert more than 6,500 tons of calcium carbonate produced every year, which were previously disposed of in a controlled landfill. In 2022, this project contributed significantly to a 12% reduction of Orbia's total process waste to landfill vs. 2021. In addition, this new partnership will avoid the opening of additional controlled landfills. Also, Vestolit's Altamira I site is working on a project to dry the sludge generated by the site's wastewater treatment plant and enable it for use in different processes, avoiding landfill.

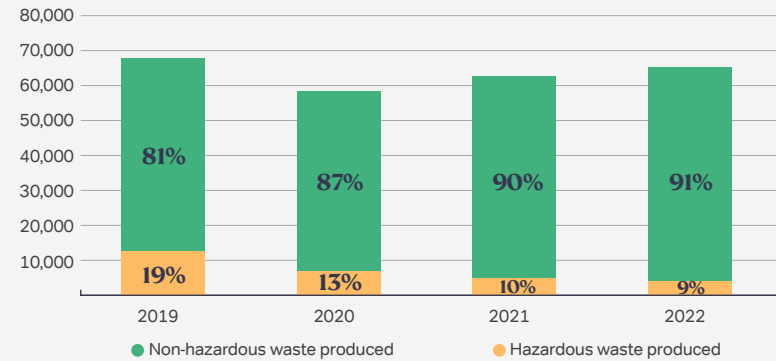
For our Building & Infrastructure Business Wavin, becoming Zero Waste to Landfill (ZWTL) is part of the circular economy program within its sustainability strategy. 50% of Wavin sites have already achieved ZWTL status according to Orbia's definition¹ and the focus is now on Latin America, where a ZWTL Committee was created to identify effective action plans and monitor performance with multidisciplinary teams in each country to meet the 2025 goal.

Overall, in 2022, Orbia plants diverted **+43,000 tons** of process waste from landfill

¹ Orbia adopts a definition of Zero Waste to Landfill that is sending a maximum of 10% of all hazardous and non-hazardous process waste to landfill by 2025.

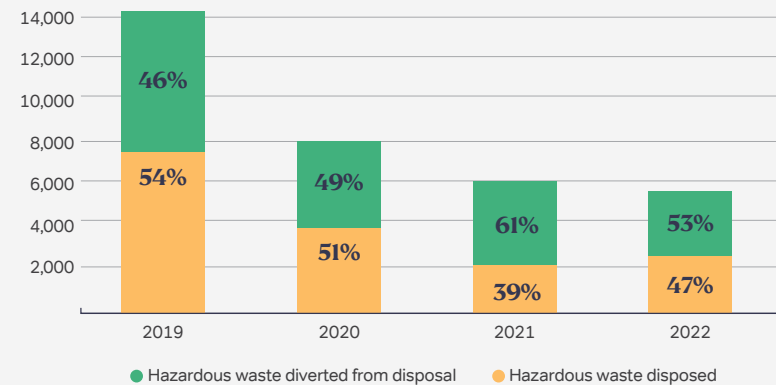
Waste Composition at Orbia*

Non-hazardous and hazardous waste production (Ton)



At Orbia, hazardous waste represents only 9% of our waste footprint, and 53% of this type of waste is diverted from disposal through different methods. In 2022, hazardous waste volume was reduced by 7% compared to 2021 and our businesses strive to generate the lowest possible volumes of this type of waste.

Hazardous waste distribution (Ton)



*Excludes waste from special projects



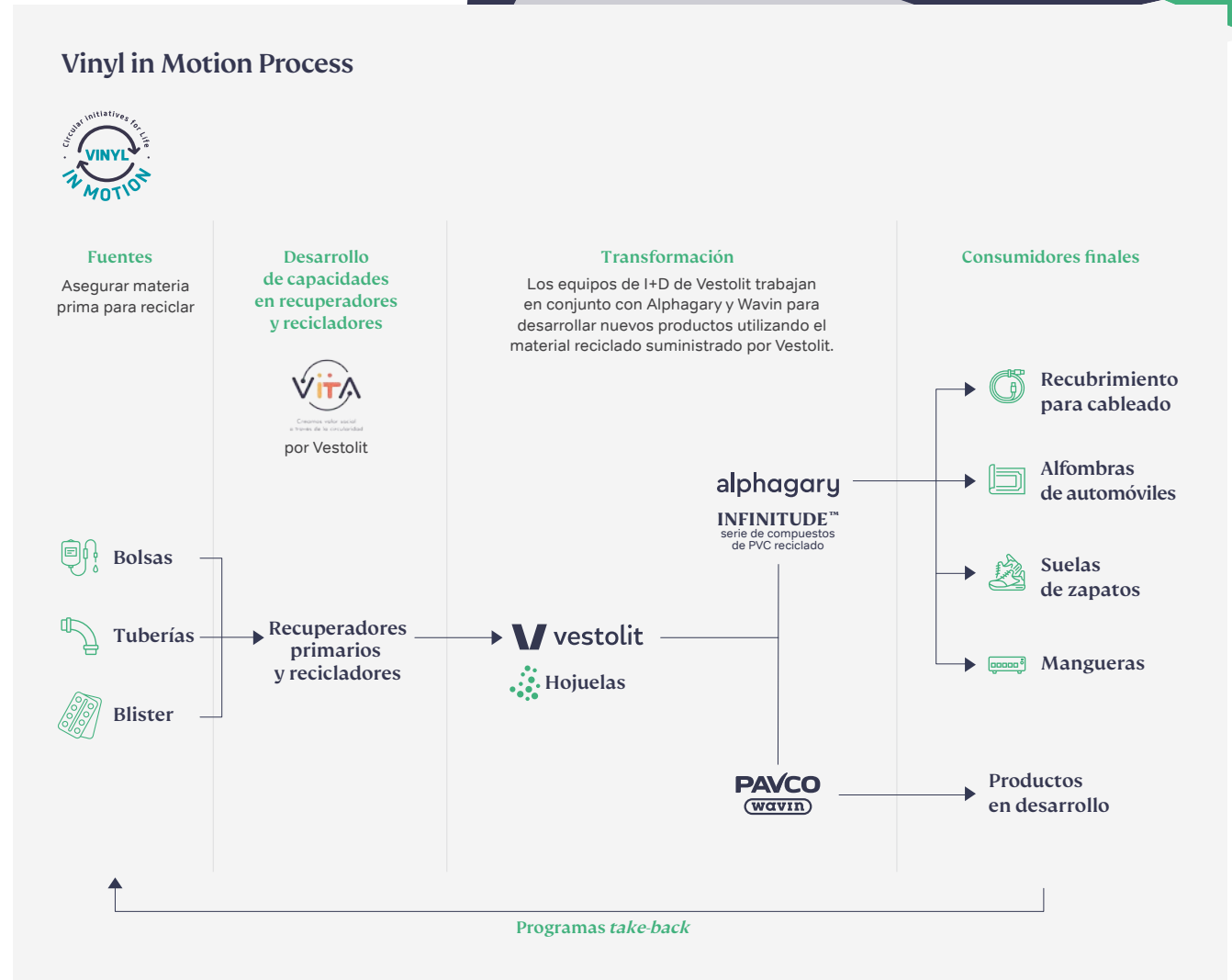


Actions beyond our operations

Vinyl in Motion

Vinyl in Motion is a program created by our Polymer Solutions Business Group to promote the collection of discarded PVC products that can be transformed into useful products. Vinyl in Motion is allowing us to advance our post-consumer and post-industrial PVC circularity activities in Latin America by partnering with customers, final consumers, and relevant players of local PVC value chains. Some examples of the recycled materials are IV bags collected from hospitals, which are transformed by Alphagary into “Infinite”, a reborn compound which can then be used to manufacture hoses, wire jackets, car mats and shoe soles. Other discarded PVC items like pipes and blister packaging are re-incorporated in the production of PVC pipes.

Under Vinyl in Motion, the VITA initiative was developed to create additional social value through PVC recycling. Through this, Vestolit supports the development of PVC recyclers in Latin America, who collect post-industrial and post-consumer waste at the main generation points, allowing for an improved chain that facilitates transformation of PVC waste into recycled raw materials ready to be incorporated in manufacturing processes. See [Thriving Communities section](#).





Additional take-back programs

Connectivity Solutions



Dura-Line's take-back program allowed the repurposing of over 120,000 conduit reels, resulting in savings of \$4.5M in 2022.

Building and Infrastructure



Wavin started a pilot project in The Netherlands to test closed loop collection services branded as Wavin Take Back Service, to facilitate access to circular feedstock.

Fluorinated Solutions



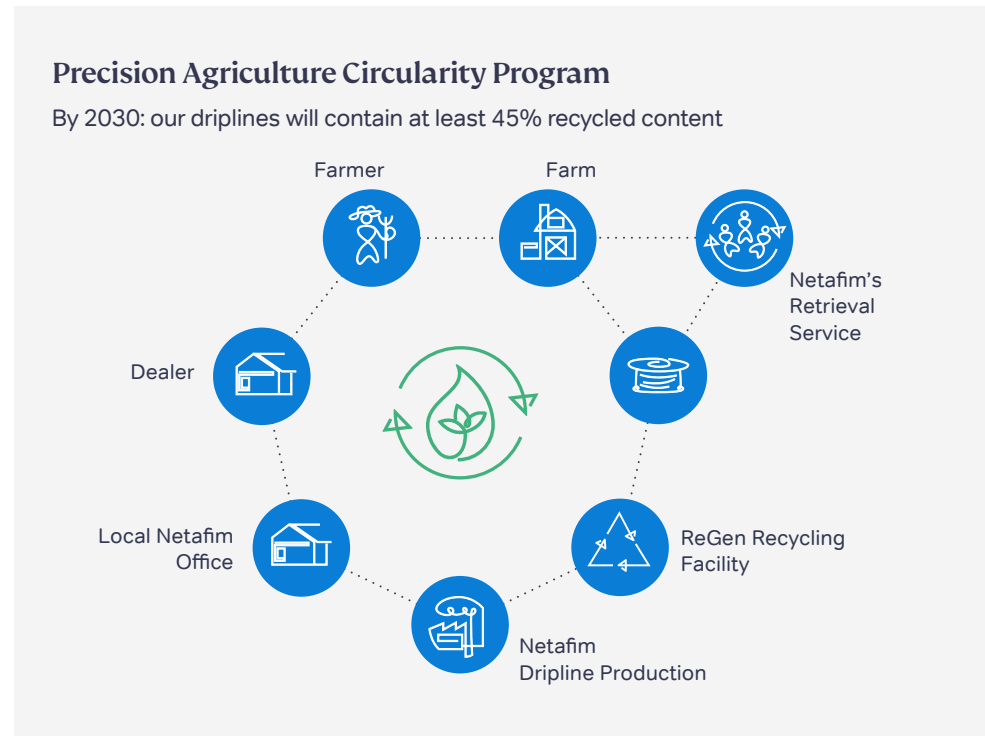
Koura's refrigerant recovery plant in Japan doubled its processing capacity in 2022. The Mihara plant continues to implement this successful recovery technology and practices to further reduce global warming impacts. During 2022, approximately 772 tons of refrigerants were recovered, avoiding around 1.5 million tons of GHG emissions.

Precision Agriculture



Netafim operates a take back program to collect end-of-life driplines in nine countries. In 2022, more than 18,000 tons were collected, a 23% growth from 2021.

During 2022, [Precision Agriculture launched a full-scale circularity program in Mexico](#) to tackle plastic waste in agriculture. By opening Mexico's largest agricultural plastics recycling facility in Culiacán, which will be able to initially process over 3,000 tons of plastic per year, Netafim will collect used driplines from farmers across the country, where end-of-life irrigation pipes from any manufacturer will be shredded, washed, and pelletized.



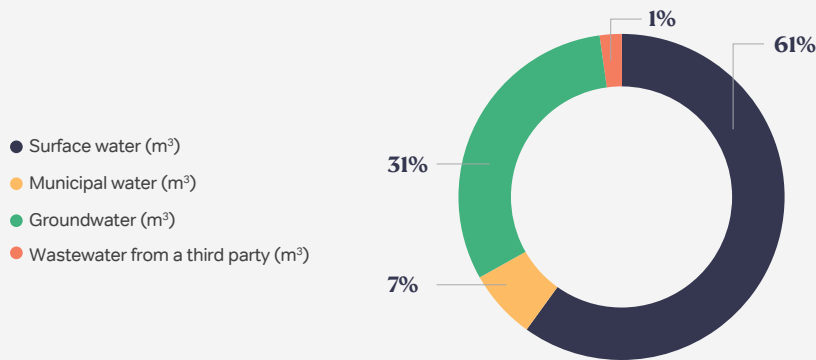


Water

At Orbia, we recognize the interdependence between climate and water. Therefore, we acknowledge our role as responsible stewards of water and aim to achieve a net positive water impact, supported by the goal to conduct water risk assessments, develop water stewardship plans and targets and driving collective action by engaging in relevant net positive water impact pilots.

A key milestone on this journey will focus on assessing risks in sites operating in water-stressed areas and developing relevant water stewardship programs and goals.

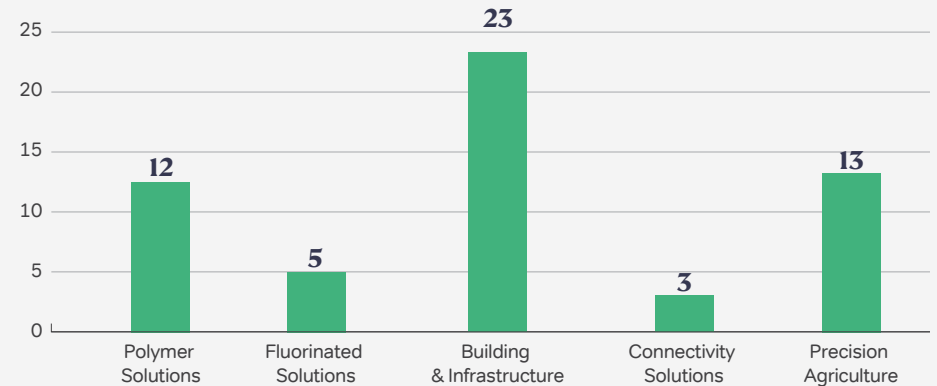
Water withdrawal by source



At Orbia, water is critical, especially for our chemical businesses that consider it a raw material in many cases. Our manufacturing plants therefore operate under high water efficiency principles, including considering alternative water sources where available.

Less than one third of our water withdrawal comes from groundwater.

Sites in "Extremely high" or "High" water stress areas



We continuously monitor water use in areas of water stress using the Aqueduct tool of the World Resources Institute (WRI). According to the tool, 42% of our sites were in areas of high or extremely high stress at end 2022, representing 47% of total water withdrawal.

However, 70% of our sites in stress areas have closed loop water systems in place to minimize water withdrawal.

In 2022, we expanded our water journey by conducting a comprehensive water risk analysis, in partnership with Waterplan, to further understand, quantify and prioritize water-related risks covering all sites of our Polymer Solutions Business Vestolit. The project considers a deep dive into our Coatzacoalcos, Mexico site, which through detailed analysis will enable it to establish a water stewardship plan and context-specific goals. In addition, as we update our climate risk assessment, physical, regulatory, and community water-related risks for all Orbia plants will be covered.

Also, Orbia responded to the CDP Water Security questionnaire for the second time in 2022 and obtained a B score.





Wastewater Circularity

Orbia's Polymer Solutions Business Vestolit's El Salto (Mexico) plant continues to progress on its project to source treated (grey) water from the municipal water treatment plant and return it for treatment after use in its production process. Work to build the pumping system is underway and the project is expected to be completed in 2023. Through this project, groundwater will no longer be withdrawn, reducing impact on the basin, which is already impacted by water-stress.

Water Reuse

Orbia's Polymer Solutions Business Vestolit's Cartagena (Colombia) plant, has progressed on its partnership with a neighboring company that will reuse our plant's water discharge. The system is ready to be fully tested in 2023 to determine additional reconditioning activities for full implementation. This project will benefit local factories, residents and alleviate water stress levels in the watershed.

Water Recovery in Mining

Orbia's Fluorinated Solutions Business Koura continues its program of responsible mining practices. The installation of process water recovery systems has resulted in an average recovery of 85% at Las Cuevas mining site in Mexico. Equipment installed in 2022 included three decanter centrifuge systems. Three additional decanter centrifuges will be installed and operational in 2023. This equipment increases water recovery rates and enables tailings to be dry-stacked and stored safely.

Mangrove reforestation at Cartagena by Vestolit team





Actions Beyond Our Operations

Supporting Water Security through Water Funds

Since 2012, Orbia has supported the [Latin American Water Funds Partnership](#), providing financing, products and technical knowledge to the development of five Water Funds located in areas near its operations: Ecuador, Peru, Colombia, Brazil and Mexico. Orbia and its business groups have invested over \$700,000 in water funds in these countries to date.

Agua Capital, Mexico

In 2022, Orbia’s chairman Juan Pablo del Valle, continued to preside over Agua Capital, an organization that promotes water security in Mexico City. In alliance with NGOs, academia, and various public and private partners (including Orbia), Agua Capital successfully implemented the following projects:

- Implemented conservation and restoration efforts in Mexico City’s external water sources, sheds and diverse ecosystems.
- Designed an initiative aimed to foster appropriate conditions to achieve a proper water governance system in the state of Hidalgo.
- Installed Rainwater Harvesting and WASH systems in 35 schools in Mexico City.
- Published a document of analysis: “Water Challenges in Mexico,” to inform and propose a course of action to key decision makers across sectors.
- Launched a Massive Open Online Course with UNESCO and UNAM on “Hydro-intelligent Cities”.
- Participated in the Steering Committee of the “National Water Award for Young People”, presented at the World Water Week in Stockholm.
- Chaired the “Water Resilience Committee of Mexico City”, sponsored by the Mexico City government.

Sao Paulo Water Fund, Brazil

Amanco Wavin became the newest partner of The Nature Conservancy to advance solutions for water security in rural areas that are a priority for water conservation in the hydrographic basin of the Paraíba do Sul River, through the Water Funds in São Paulo, Brazil. During 2023, biodigestive septic tanks will be installed to guarantee the safe disposal of sewage while preserving groundwater.

Learn more [here](#).

Aquafondo, Peru

Aquafondo, a Water Fund focused on Lima’s three main basins, announced that a technical irrigation system will be installed in the community of San Juan de Iris in Huarochirí in 2023. This will improve water management and distribution while enabling the development of sustainable agricultural activities.

Learn more [here](#).

Orbia businesses also operate WASH (Water, Sanitation and Hygiene) programs in communities. For further details, read our [WASH section](#).

Global Water Action

In 2022, Netafim joined the [UN Global Compact Water Resilience Coalition](#), a business pledge to preserve the world’s most water-stressed river basins by elevating global water stress to the top of the corporate agenda and preserve the world’s freshwater resources through collective action in water-stressed basins and ambitious, quantifiable commitments.

Also, Wavin and Netafim have been actively participating in the consultation process to prepare for the 2023 UN Water Conference. These are some of the many ways Orbia demonstrates its commitment to being responsible water stewards and promoting collective action.



Biodiversity

At our fluorspar mining operation in San Luis Potosi, Mexico, efforts to protect biodiversity continue. 2022 saw significant projects centered on natural habitats restoration, relocation of species, and reforestation.

In 2021, Fluorinated Solutions Business Koura renewed its collaboration with the National Forestry Commission of Mexico (CONAFOR) to provide joint funding for an environmental services payments program, for the conservation of the natural area “Sierra de Alvarez.” 2022 was the second year of a 5-year agreement benefitting the Ejido Santa Catarina (rural collective land ownership), located in the San Nicolas Tolentino County in San Luis Potosi, Mexico. Ejido members continue to be the main recipients of this private-public association.

During this year, several workshops were held covering environmental services, education, reinforcement, and environmental awareness, to promote the importance of natural resources and their management within the community. Among the environmental services payments made this year was the authorization to protect 1,000 hectares of common use of the Ejido by the Secretary of Environment and Natural Resources (SEMARNAT), the construction of a log cabin, and the acquisition of necessary tools for biodiversity monitoring.

Reforestation

12,000 stone pine trees (pinus pinea) were planted in La Salitrera, San Luis Potosi, Mexico (Las Cuevas Mining Unit) as part of World Environment Day. This was done with the participation of 130 volunteers, including Koura employees, contractors, and community members. This reforestation effort contributes to the conservation of the border line with the Sierra de Alvarez ecosystem and helps prevent soil erosion.

Koura volunteers during reforestation activities at La Salitrera.

Supporting Conservation in Latin America

Founded in 2011, the [Latin America Conservation Council \(LACC\)](#) is a group of global leaders who work with The Nature Conservancy and hundreds of partners to mainstream nature-based solutions that protect, restore, and better manage biodiversity to tackle climate change and reach the United Nations Sustainable Development Goals (UN SDGs).

In addition to providing leadership and funding, Orbia plays an active role in the LACC: Orbia’s Chairman of the Board, Juan Pablo del Valle Perochena, co-chairs the council.





Sustainable Solutions

We provide solutions designed to support clean water and sanitation, food and water security, urban resilience, connectivity, circularity and energy efficiency.



Addressing Global Challenges

Orbia aspires to benefit global sustainable development and deliver solutions to the world's most pressing challenges by supporting the United Nations Sustainable Development Goals (UN SDGs).

In 2020, we determined which of the 17 SDGs we can most effectively contribute to and aligned with eight that represent the greatest opportunities for Orbia to make an impact. These eight SDGs are aligned with the five key global challenges Orbia has identified as part of our business strategy.

Food & Water Security



- Precision agriculture solutions.
- Infrastructure to guarantee supply and access to water.

Sanitation & Water Management



- Pipes and resins to provide better sanitation.
- Caustic soda & derivatives for water treatment and cleaning agents.

Information Access & Connectivity



- Connectivity infrastructure and materials for fiber cables.

Health & Well-Being

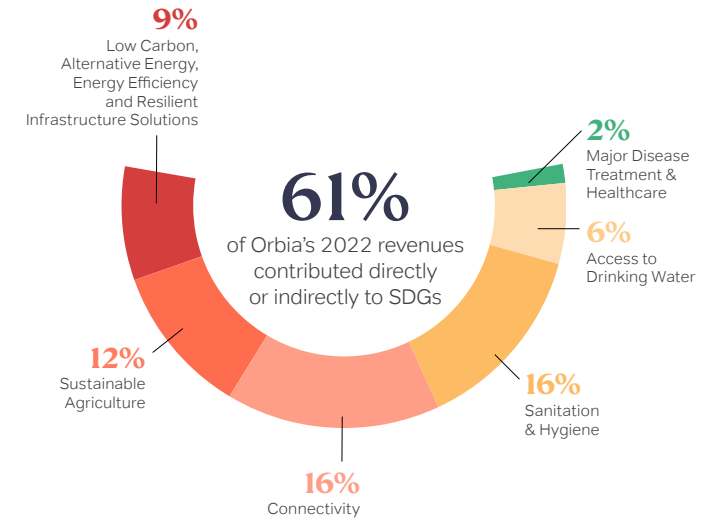


- Resins and compounds for essential medical applications.
- Medical propellants for asthma treatment.

Climate Resilience & Decarbonization



- Low temperature fusion resins.
- Low GWP propellants and refrigerants.
- Indoor Climate Solutions increase energy efficiency by 34%.
- Stormwater management solutions reduce flooding risk and cost.
- Circular products; using recycled & bio-based raw materials.
- Smart blue-green infrastructure.
- Advanced fluorine materials improve lithium-ion battery performance, a key enabling technology in the transition to cleaner sources of energy.



For further information:

- [Orbia's global impact](#)
- [Sustainability Reporting Hub](#)
- [Business Group Spotlights](#)



Impactful Ventures

As a purpose-driven, growth organization, innovation has a pivotal role in our mission to advance life around the world.



Orbia Ventures

We believe innovation is a catalyst for positive impact on the planet and its people.

This innovation aspiration unfolds through our main innovation endeavors:

- **Orbia Ventures:** Orbia's corporate venture capital fund.
- **Capacity building:** the constant nurturing of an innovative culture.
- **Open innovation:** identifying opportunities for our business groups to collaborate with external entities.
- **LaunchPad:** our ever-expanding intrapreneurship program.

In 2022, we made new strides in advancing our commitment to making a positive impact through innovation. We increased investments in startups, while LaunchPad reached new heights of success. Simultaneously, we carried out innovation training for employees globally and made a major effort to assess Orbia's innovation culture to further inform our strategy.

Orbia Ventures is Orbia's corporate venture capital fund and supports a collaborative, human-centered approach to creating a better future. By supporting startups that share our vision and are committed to developing leading-edge innovations and smart technologies, we can address the world's biggest challenges and help global communities become future-fit.

In 2022, we screened over 1,000 investment opportunities and conducted due diligence on more than 25 promising startups that offer new technologies across our focus areas.



Climatech



Sustainability & Circular Economy



Sustainable Energy & Energy Storage



Agriculture



Water Infrastructure



Building & Infrastructure



Communications Infrastructure

\$72M

Invested in innovation and R&D in 2022

(Excluding investments by Orbia Ventures)

\$10.3M

Invested by Orbia Ventures in 2022

13%





of revenues* came from new products and services

*Vitality Index based on 2021 data

We have exchanged knowledge and collaborated with dozens of innovation and investment entities who share similar values, and sponsored global climate tech and AgriTech conferences where we shared our approach. In parallel, our team continued supporting our portfolio companies in building management teams, strategy, business development, and financing.



During the year, Orbia Ventures completed five transactions, four of which were environmental impact-focused investments, amounting to a total of \$9.3M, emphasizing Orbia’s commitment to addressing global challenges. These include:

Investments	Alignment to Global Challenges
 <p>Greeneye Technology develops AI and deep learning technology for the precise application of chemicals in agriculture.</p>	<ul style="list-style-type: none"> • Health & Well-Being • Food & Water Security
 <p>FortePhest develops innovative products to control both regular and herbicide-resistant weeds.</p>	<ul style="list-style-type: none"> • Health & Well-Being • Food & Water Security
 <p>Ascend Elements manufactures advanced battery materials using valuable elements reclaimed from recycled lithium-ion batteries. (Follow-on investment)</p>	<ul style="list-style-type: none"> • Climate Resilience & Decarbonization
 <p>Verdagy develops water electrolysis technology for very large-scale production of green hydrogen.</p>	<ul style="list-style-type: none"> • Climate Resilience & Decarbonization

Focus on Climate Tech

In line with our net-zero commitment, our fund is actively involved in the climate tech space, always on the lookout for new developments. As a result, in early 2023, Orbia Ventures invested in **Chloris Geospatial**, which provides data for the measurement and ongoing tracking of forest carbon anywhere on Earth. Comprehensive conservation and restoration of forests is needed to prevent the loss of natural capital that underpins healthy economies and for the global economy to be on track to achieving a net-zero carbon world by 2050.

Orbia believes that measurement, and verification technologies of carbon stock, gains, and losses, such as the Chloris platform, could be the answer to the demand for generating trust and reliability within the growing market of carbon credits.

More information on how [Orbia is addressing world challenges](#).





Capacity Building

Innovation is a core part of our culture. We aim to establish an environment in which innovation can systematically be fostered and integrated into everything we do.

In 2022, our innovation training sessions and curated innovation-related content included hundreds of engaged employees in more than thousands of hours of specialized training, webcasts, and workshops including innovation methodologies and entrepreneurial leadership, circular economy, and more.

Orbia's Innovation Culture assessment

In our efforts to become a future-fit organization, we embarked on a journey to design Orbia's Innovation Culture Model, involving experts from within and outside of Orbia. The model consists of five pillars: "Purpose Driven", "Growth mindset", "Customer Centricity", "Looking out, Reaching Out" and "Relationships Matter".

A survey to assess the innovation culture at Orbia and its business groups was applied to a sample group of about 4,000 employees based on the model. Results will be used to define future actions to enhance Orbia's innovation culture.

+6,000

innovation-related training hours for +1,800 employees across Orbia in 2022

Open Innovation

At Orbia, we welcome an open innovation approach and collaborate with external partners with complementary skills to accelerate the development of innovative solutions.

Below are some examples of how we amplify this agenda within Orbia's businesses:

Building & Infrastructure



Commercial collaboration with [TaKaDu](#), an Israeli-based startup, to offer Water Network Management Services in Latin America.

Fluorinated Solutions



Ongoing multi-year collaborations with start-up companies, universities, and national laboratories. These external collaborations expand Koura's efforts in developing advanced battery materials. For example:

- Joint development projects with start-up companies that are creating exciting technologies and sustainable processes to recycle critical battery materials.
- On-going collaborations with leading researchers at major universities and national laboratories in the US and in EU.

Polymer Solutions



Joint project between its Marl and Cartagena plants and [NineSigma](#), an open innovation provider, to crowdsource a solution for an unsolved purification challenge in the vinyl separation process.



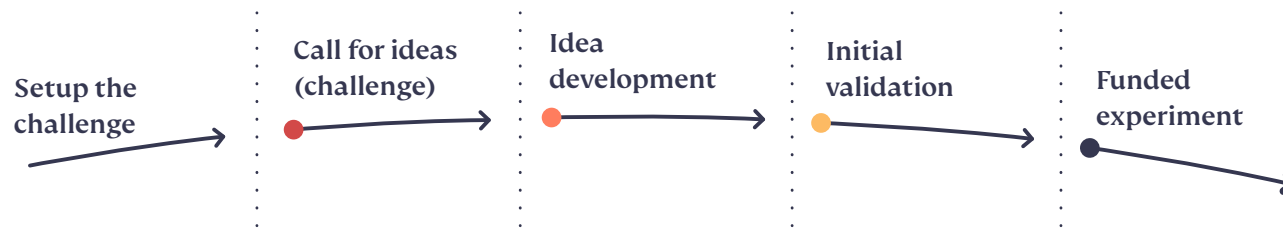


Empowering Intrapreneurship

Boosting Engagement and Collaboration with LaunchPad

LaunchPad, Orbia's entrepreneurship program, invites employees to suggest value-generating ideas that may receive development, funding and support. This innovation accelerator empowers Orbia employees to engage in supporting the delivery of resilient solutions for our customers in different sectors, further driving our culture of innovation and contributing to the attraction and retention of top talent.

orbia LaunchPad



In 2022:



Orbia Ventures had another very fruitful year, and I am also really proud of the engagement and impact LaunchPad delivered. Another important achievement in 2022 was the articulation of what innovation culture means to Orbia as an organization.”



Shai Albaranes
VP of Innovation & Ventures at Orbia

LaunchPad Impact at Vestolit





Responsible Business

Everything we do at Orbia is grounded in a strong foundation of ethical conduct as well responsible, accountable and transparent business practices.



Safety First

At Orbia, the safety of our employees is our obsession. In 2022, we continued our relentless drive to mitigate risk to people and the environment today while putting in place the means to achieve long-term, continuous improvement in these areas. This year, we continued our improvement trends reducing injuries and loss-of-containment events; and, most importantly, we experienced **zero Orbia employee or contractor on-the-job fatalities in 2022.** ✓

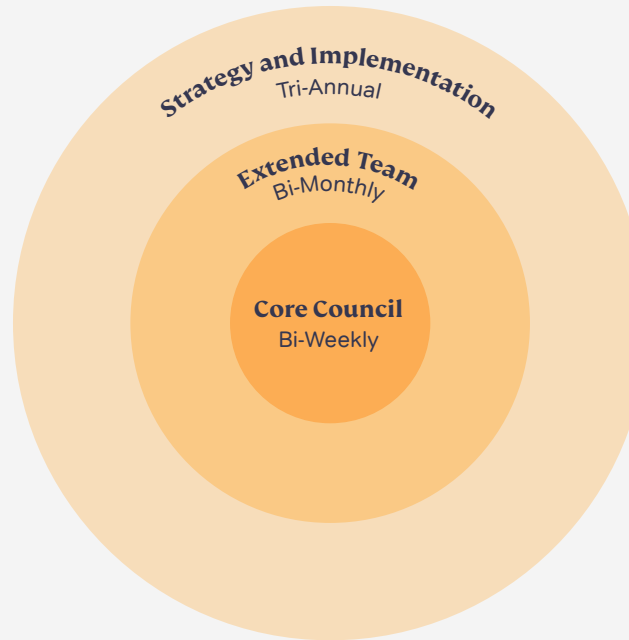
For more information about our safety performance, visit our [sustainability reporting hub](#).

Safety Governance

Three main structures define this strategy, promote alignment and partnership and achieve our Orbia HSE (Health, Safety & Environment) aspirations. The HSE Core, Extended, and Strategy & Implementation Councils meet on a bi-weekly, bi-monthly and tri-annual basis, respectively. Safety performance indicators form part of leadership strategic plans and compensation and are a part of the ESG modifier for senior management. Orbia HSE performance is reported quarterly to the Board's Corporate Governance, Responsibility and Compensation Committee by the HSE Vice President.

We continue our emphasis on systematic, intense learning reviews of recordable incidents and serious near misses. In these reviews the CEO, business group presidents, and Corporate HSE VP engage directly with the operations leads and the root cause investigation teams to probe findings and follow up on corrective actions. This approach drives our focus on learning and promotes rapid sharing of best practices across Orbia's business groups.

HSE operational model



Core Council:

Promote value adding partnerships between the different business groups and functions that drive achievement of Orbia's HSE aspirations. (HSE Business Leaders)

Extended Team:

Ensure that functional HSE SMEs are informed and aligned on direction and relevant decisions and that they have a forum for raising new issues associated with cross-business implementation.

Strategy and Implementation Council:

Construct, implement and own the Orbia HSE strategy, informed by internal and external best practices and leveraging opportunities for cross-business cooperation where performance improvement can be accelerated. (Operations, Functional, and HSE Leaders)



Safety Culture

In 2022, we engaged a leading third party to conduct a company-wide Safety Perception survey. Our goals were to understand how employees view Orbia's safety culture and compare our culture with industry benchmarks. Over 20,000 employees participated in the survey, a response rate of >90%. During 2023, each site and business group will develop specific objectives to address survey findings that we believe can drive significant improvement in our safety outcomes.

As a part of advancing our safety culture, in 2022 we worked to eliminate distracted driving risks associated with mobile phone use by our employees. Our executive team personally rolled out this policy to business groups and functions to ensure thorough understanding of the background, intent, and expected practice. In some cases, this roll-out involved changes in work patterns and time management, all of which were successfully implemented.

Safety Management Systems

Orbia implements internationally recognized management systems in all our facilities to ensure disciplined adherence to standards with a focus on continuous improvement. In 2022, 53% of Orbia's sites were certified to international safety standards such as ISRS, ISO 45001, or OHSAS 18001. During 2022, additional sites achieved safety certifications, however, the percentage of sites with certification dropped when compared to 2021. This was the result of the closure of some certified sites and the acquisition of sites that are not yet certified*. The certification process remains a priority for the following years as we integrate newly acquired sites.

While currently non-certified sites apply the same standards of care, all sites will have such certification by 2026. External audits are carried out at least every three years as part of these certifications.

* During 2022, 18 new sites were acquired.

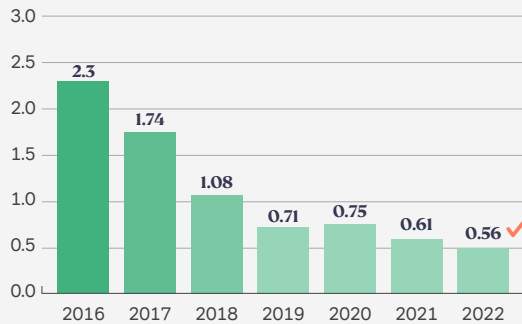


In 2022, as we continued to focus on the safety of our teams, we are pleased that we saw an 8% reduction in total recordable incident rate versus 2021. Most importantly, there were no on-the-job fatalities amongst our employees or contractors. We will keep working relentlessly to achieve our goals toward zero and avoid future incidents.”



John Branan
Corporate Vice President, Health, Safety, Environment & Engineering

Orbia Total Recordable Incident Rate



*Data includes employees and contractors



COVID-19

The beginning of 2022 saw the Omicron variant drive COVID impacts in some Orbia countries to new highs. During that first quarter, Orbia again curtailed travel, on-site gatherings, and implemented strict protocols across all sites, all while continuing to produce our essential products. As infection rates and associated hospitalizations dropped since that first quarter, Orbia has largely returned to a pre-pandemic level of activity. We continue to closely monitor national and global health recommendations on the topic and are prepared to reinstitute mitigations if required.

Orbia Life-Saving Rules – Audit program

Orbia recognizes the value of providing clear, simple, and consistent communication regarding risks in the workplace. In 2020, Orbia introduced 10 Life-Saving Rules for all employees and contractors at our sites, with the goal of helping them understand behaviors and workplace activities that could lead to serious injuries and:

- Create a culture of rigor and compliance with safety rules.
- Achieve zero work-related severe or fatal injuries (SIF) caused by non-compliance with the life-saving rules.
- Contribute to a culture of believing that injuries are preventable.

In 2022 we began a program whereby one Life Saving Rule is audited each month across all Orbia sites. These audits help us “Ensure that Nobody Gets Hurt” so we all safely return home to our families at the end of the day.

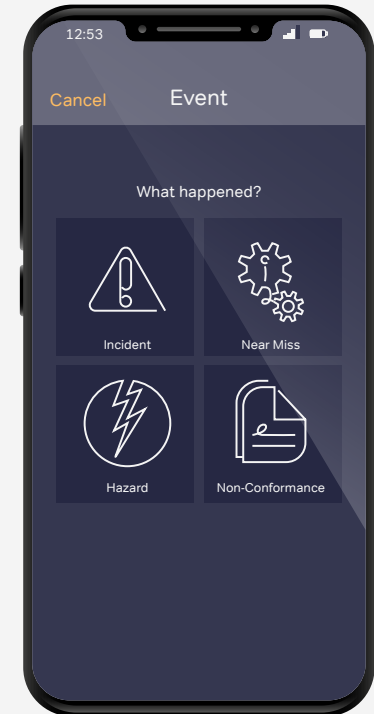
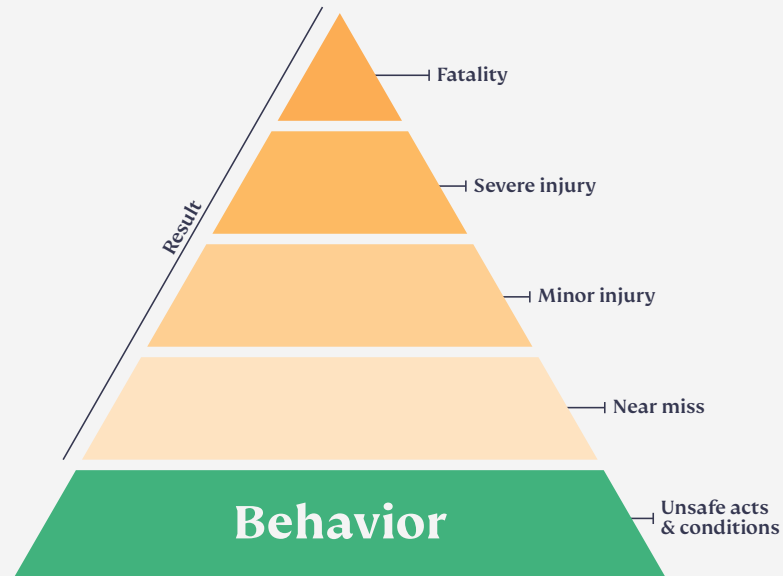




Orbia Safety Observation Program & App

At Orbia, our goal remains communicating with and educating everyone, so they understand that they have the right to stop work when it is thought to be unsafe. One method of doing this is through a robust Safety Observation Program. The Observation Program focuses on reporting behaviors, conditions, and near misses before they lead to an accident. Both safe and unsafe acts and conditions are reported, and the information is then used to improve safety performance and prevent accidents before they occur. In 2022, our Orbia plants reported, analyzed, and acted upon over 110,000 observations. Observation reporting by all employees facilitated by a mobile app where pictures and conditions could be reported simply and easily by anyone in the plants. Dangerous conditions or unsafe behavior were identified before it resulted in harm to an individual, the environment or property. This mobile app reporting capability gives us a tool that anyone can use to identify a potential hazard and reduce the likelihood that the condition will result in an injury to a fellow worker.

Safety Observation program + app





Process Safety

Process safety leaders directly deployed into our chemical businesses continue to work closely with each site to drive continuous improvement of Process Safety Management (PSM). These resources are integral to assessing and controlling risks at our plants and are used to understand and promote the rapid implementation of the best tools and practices.

The Orbia Process Safety Management System (PSMS) is built on the 20 elements of the Risk Based Process Safety model from the Center for Chemical Process Safety. All Orbia chemicals operations adhere to these principles.

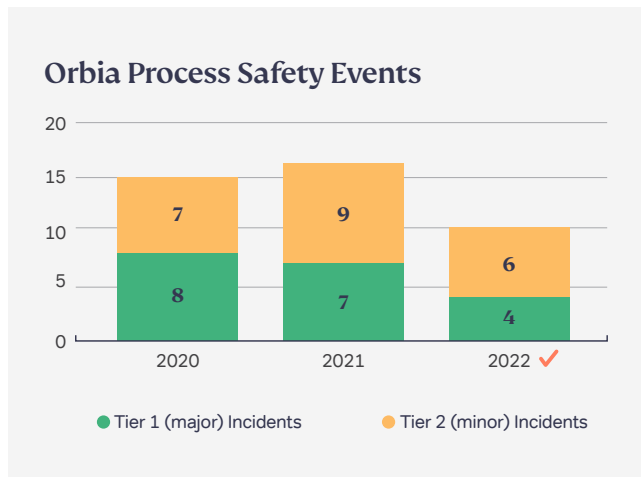
Orbia utilizes the Sphera Advanced Risk Assessment tool to drive excellence in our Process Hazard Analyses. As an important example, all of our chemical sites use this tool to guide hazard and operability studies during the development, design, and construction stages that are part of our 6-step project capital management process. The tool helps ensure every project is consistently assessed for process and operator risks that may arise during operation and maintenance of an asset. Our management of change processes were also enhanced in 2022 with the launch of the Sphera computer-based Management of Change software. This software replaced the last of our spreadsheet and paper-based systems.





All chemical plants have developed and implemented risk assessments (Process Hazard Analyses (PHAs)) of their process operations. Plant operations are assessed on a 5-year frequency to ensure risks are maintained at a level which is as low as reasonably practicable. All business groups completed their targeted number of PHAs and are actively closing actions resulting from those reviews.

Process safety performance continued to improve in 2022 with 6 minor (Tier 2) and 4 major (Tier 1) events. Orbia reporting guidelines are aligned with CEFIC/ICCA process safety metrics. All of these events have been subject to rigorous incident investigation and Root Cause Analysis (RCA) to understand the system root causes and put sustainable corrective actions in place. Lessons learned from these events were shared throughout the organization to promote proactive incident prevention.



Safety Recognitions

Polymer Solutions Business Vestolit general resins business (4 plants in Mexico) and the Fluorinated Solutions Business Koura Matamoros plants in Mexico received or maintained their Responsible Care™ certifications in 2022. This recognition is awarded by Mexico's National Association for the Chemical Industry (ANIQ) and is based on the excellent implementation of the Responsible Care™ program in the chemical industry. Also, Vestolit's Derivatives plant in El Salto, Mexico, received a recognition by the Ministry of Labor and Social Welfare of the state of Jalisco for its good labor practices. This award is valid for three years and recognizes best labor productivity and safety practices.

Product Stewardship Approach

We operate by maintaining compliance with key standards and good practices, and have staffed our business group teams with subject matter experts (SMEs) to ensure full compliance across our wide range of geographies and products.

Across Orbia, we remain focused on opportunities to reduce environmental and health risk in our product lines. Human health and environmental risk assessments have been conducted on 92% of products (in terms of revenues) to determine their potential impact. ✓

The majority of these products come from our Fluorinated Solutions, Polymer Solutions and Connectivity Solutions businesses.

We currently comply with the Registration, Evaluation, Authorization and Restriction of Chemicals (REACH) requirements for all substances produced or imported in Europe for all relevant operations across Orbia.

- One percent of products (in terms of revenues) contain restricted substances in Annex XVII of REACH. ✓
- We use no regulated substances of Very High Concern (SVHC) as defined by REACH legislation, or by the European Restriction of Hazardous Substances, or substances of international concern (RoHS) in our Koura, Vestolit and Dura-Line businesses.
- The Candidate List of substances of very high concern (SVHC) for Authorization above 0.1% by weight are in 2% (by revenue) of our products. Alphagary has taken a targeted approach to finding viable replacements for phthalate-based products. ✓

At Orbia, we also support and adhere to the Strategic Approach for International Chemicals Management (SAICM) of the United Nations Environmental Program (UNEP), which promotes the transparent exchange of data and information using a life-cycle approach.





Caring for our People

Our defining advantage is clear. Our people – totaling over 24,000 – are the drivers of our success.

On the People team, we are bringing our best and brightest minds, capabilities, and individual experiences to boost a culture of innovation, agility and collaboration that enables us to make a positive impact.

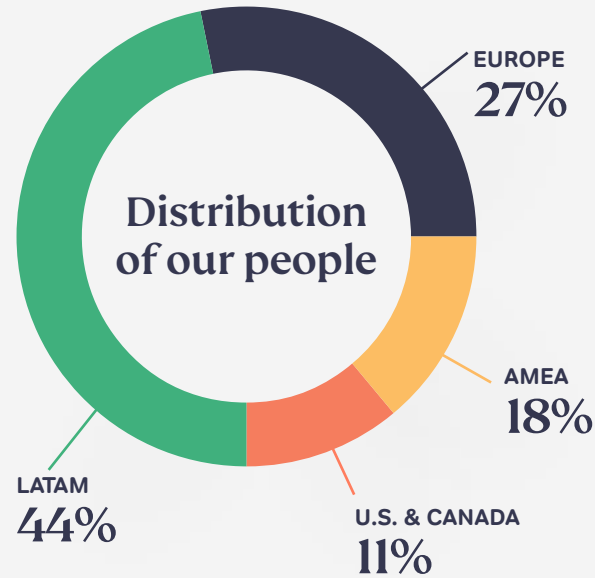
For more information about our people-related indicators performance, visit our [sustainability reporting hub](#).

Our Global Team in 2022

24,442
colleagues in
50+ countries

>400,000
hours invested in learning
and development

Women are
22%
of our Managers ✓



Key people-related metrics

54% of our employees were fully onsite

48% of employees have collective bargaining agreements

20% of open positions were filled by internal candidates

10% voluntary turnover rate



Our People Strategy & Pillars

Creating enduring experiences for our employees, made up of moments that matter.

Our People Strategy



What makes me happy?

Fulfillment

- A culture where I can thrive and be myself.
- People who guide me to do my best work.
- Leaders who value my work and give me opportunities to grow.
- Being part of something bigger than myself.



What helps me grow?

Development

- A culture that values development.
- People who guide help me identify future pathways.
- Leaders who recognize my potential.
- Having the time and space to grow my skills.



What makes me healthy?

Well-being

- A culture that embraces my wellness as a priority.
- Leaders who role-model.
- Having the freedom to balance my work and life that allow me to contribute the most.



Getting the Basics Right

This requires paying people fairly and competitively, offering excellent benefits, having the right individuals in the right roles, tailoring our recruitment processes to bring in the leaders we need and ensuring compliance with all global and local business standards. At Orbia, we care deeply about getting the basics right.





Fulfillment

Employer Value Proposition (EVP)

Building on our 2021 achievement of being named by Forbes as One of the World’s Best Employers, this year we embarked on a journey of redefining our Orbia Employer Value Proposition (EVP). This journey started with our employees sharing self-reflections about their workplace experience at Orbia, together with external research and data analysis, testing and refinement, in order to craft an EVP that is compelling to our current and future employees, and reflects how we act daily.

Our EVP will be communicated internally and externally during the second half of 2023, through various activities in which our current and future talent will engage.

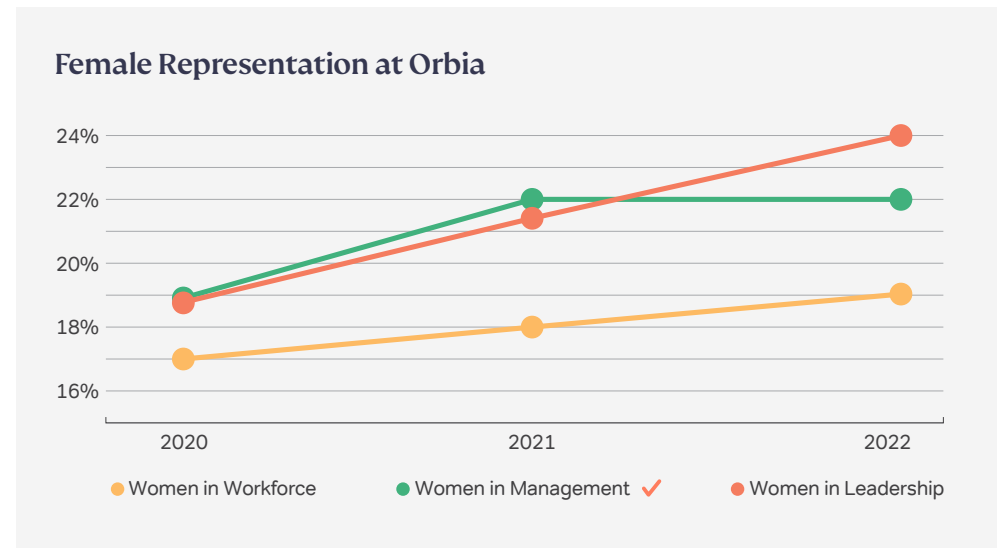
Diversity, Equity & Inclusion (DEI)

2022 has been the first year of implementing our multi-year DEI strategy. We are focused on promoting and leveraging diversity of thought by increasing the representation of women and other underrepresented groups, as well as fostering an inclusive workplace where everyone feels they can contribute and grow. This year we continued with our Talent Acquisition project launched in 2021, aiming to eliminate bias and bring more gender diversity through a thoughtful and systematic approach to talent acquisition. We also launched a number of new initiatives, aimed at increasing inclusion and belonging. Most notably, we developed a Women’s Mentoring Program and had 500 employees join OPN and OWN, our first two Orbia-wide Employee Resource Groups (ERGs).



DEI is also an integral component of our new Future-Fit Leader & Employee model, setting clear expectations for everyone in the organization to be collaborative and inclusive. In addition to strengthening our leadership pipelines, Orbia’s Leadership Development programs aim to increase gender diversity in them. Finally, we invested in bringing a dedicated DEI Leader on board, who will drive the roll out of our DEI strategy.

Continued focus on increasing female representation is yielding promising results, both across the organization overall and in management roles. We continue increasing female representation year-over-year, which is especially visible at leadership levels, increasing from 19% in 2020 to 24% in 2022.





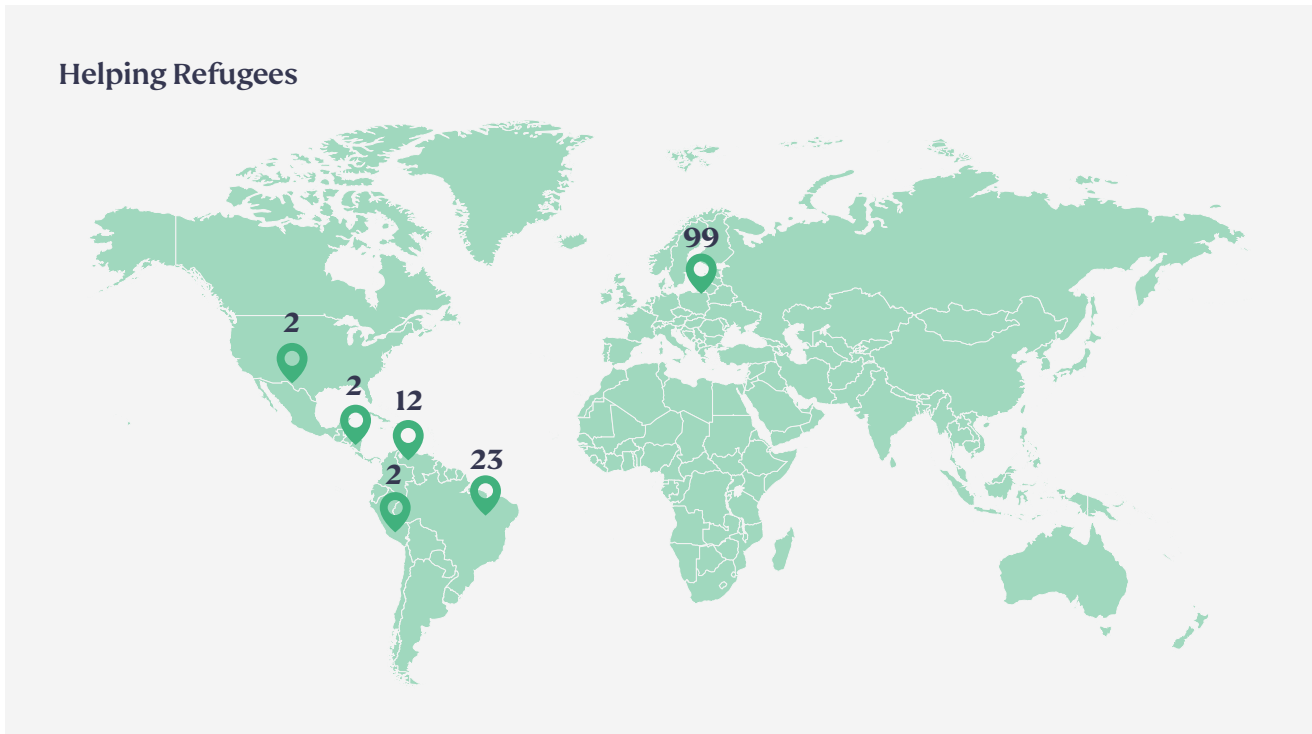
Orbia Helping Refugees

During 2022 we continued our efforts to hire and train refugees from around the world together with the TENT Partnership for Refugees and its global network. Overall, this year we provided employment directly and indirectly to 140 refugees in our operations in Mexico, Costa Rica, Guatemala, Colombia, Peru, Brazil and Poland. For more information, see [Orbia's Helping Refugees Program](#).



I started working on a temporary basis and within 6 months, the engineer Juan Camilo saw in me a good job performance, very collaborative. A vacancy opportunity arose, he applied for me and thankfully I passed all the tests, and all went well. Since December I started working directly with the company. I now have stabilized (economically), since my situation was complicated in Venezuela. My family is also stable, and I can support my mother more. I am very grateful, I can work, and I am willing to continue working in the company until I retire.”

Alfredo Mogollón
Logistics at Pavco Wavin, Building and Infrastructure



As part of our expanding efforts to support refugees, we posted several jobs on a dedicated platform targeted towards Ukrainian refugees that led to the hiring of 16 employees and 46 agency employees from Ukraine at Wavin's Poland site. We also currently have 26 Ukrainian employees hired directly or indirectly by Dura-Line's Poland site. We supported our employees who accommodated Ukrainian conflict refugees through the supply of clothes, food and hygiene products, and by joining volunteer efforts to support and entertain children and assemble food and supply packages to help people who are moving out of Ukraine.





Development

Future-Fit Model

In line with our direction toward a more aligned and unified Orbia as well as our continuing priority of people development, in 2022 we created Orbia's Future-Fit Leader & Employee Model. It sets clear expectations for everyone at Orbia, providing guidance for employee assessment, performance and development, setting them up for success today and in the future. The model outlines short and long-term expectations for behaviors related to business as well as people. The model will be integrated into all of Orbia's talent acquisition, performance management, succession planning and leadership development processes and programs.

Development Programs

Following the creation of Orbia's leadership pipeline development framework, aimed at targeted and systematic development of our current and future leaders in 2021, 2022 was the year of putting it into practice. We built three new Orbia Leadership development programs: Achieve, Succeed & Inspire. First cohorts include participants from all business groups, functions and geographical regions with intentional, gender balanced representation in order to support our objectives to increase the diversity of our leadership pipelines and future leadership teams. Each of the programs will run 12 months or longer to ensure well-rounded development and accelerate participant readiness for potential future leadership roles.



In addition to the above programs for a select group of employees, we offer broader development opportunities, including access to curated content on LinkedIn Learning for 5,000 employees. Due to differing needs of our businesses, many development programs are driven by and within our business groups to best meet their needs.

Performance Management

2022 saw the launch of our redesigned and simplified performance management process, rebranded as Performance & Development Process (PDP), reflecting an increased focus on people development. One of the key changes introduced to the process was aligning everyone across Orbia to the same focus areas, including 'One Orbia- From Me to We' reflecting our move to operate as one, unified organization. The process continues to be applicable to all 'office-based' employees, with some business groups starting to expand it beyond this population.



Well-Being

Volunteering

With the objective of deepening our relationships with our communities while enhancing our employees' well-being, fulfilment and engagement, Orbia launched [Volunteering with Purpose](#), an initiative that promotes volunteering activities across Orbia by providing detailed guidelines on how to volunteer with organizations and activities aligned to the UN SDGs. Employees could participate in Orbia volunteering activities during work hours, up to 10 hours per year as paid time.

Learn more in the [Thriving Communities section](#).



Collection efforts from Wavin volunteers to bring emergency relief for the Ukrainian conflict.



Netafim's volunteers in Australia helped mulching and weeding to improve the resilience of native vegetation and animal habitat in Truganina Park.

Global Guided Meditation & Yoga Sessions

During 2022, we continued creating a culture of self-care and held 10 Global Guided Meditation and Yoga sessions, providing a space for our employees to take a break, manage stress and relieve tension.

More than
3,500
attendees benefited from these sessions over the year.



Cultivating mental health and well-being is a priority for Orbia and those we serve. We encourage the development of everyone's best selves – mentally, emotionally and physically. Because ultimately, we want everyone to feel comfortable in bringing their whole selves to our work of advancing life around the world."

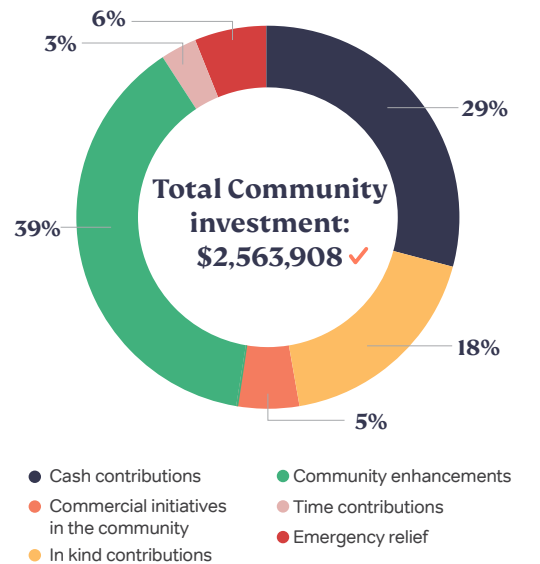


Deb Butters
Orbia Chief People Officer



Thriving Communities

Orbia’s social impact strategy is a key component of our sustainability framework. We aim to prevent negative impacts from our activities while maximizing positive impacts through community engagement, focused programs and our solutions.



Community Engagement

At Orbia, we share the responsibility to create shared value in the communities in which we operate. Our operational sites engage with representatives of stakeholders in the communities near our operations to gain insight that will help us address their needs, concerns, and expectations. Levels of community engagement and action vary depending on site location and type of production but is particularly relevant for our Polymer and Fluorinated Solutions operations in Latin America.

Polymer Solutions: community engagement plan for Mexico and Colombia

In 2022, Vestolit began a Social Impact Assessment in its seven sites in Mexico and Cartagena, Colombia. The assessment will consider a holistic analysis of the business and the community, alongside public consultation to identify local needs and define a social impact strategy together with the communities. The assessment will be completed by mid-2023.

Fluorinated Solutions: long record of community engagement in mining sites

Community engagement is a key element in Koura’s business and stakeholder engagement strategy. In 2021 Koura began a multi-year process to strengthen its Corporate Social Responsibility (CSR) & Community Engagement Management System. Initial steps included a third-party audit on social engagement; a social impact assessment within Koura’s influence zone; a stakeholder mapping tool to identify key groups; and defining a community interaction mechanism. In 2022, Koura grew its presence in communities, expanding engagement community offices from 1 to 3 and building a

stronger multidisciplinary team. This enables the business to reach over 2,000 people between small villages and neighboring communities close to mining operations in Mexico. As part of our goal to maintain our social license to operate in La Salitrera, where our main mining operation is based, we worked on:

- Strengthening and improving the dialogue with local communities and authorities, through committees.
- Identifying operational impacts and developing mitigation plans.
- Refining and standardizing legal operational agreements with individuals and communities.
- Building a common framework for compensation schemes for easement and land rights, and completing relevant compensations.
- Investing in local infrastructure improvements in agreement with beneficiaries.
- Co-developing La Salitrera’s five-year (2023-2028) Community Development Plan with key stakeholders, focusing on:
 1. Community engagement and communication.
 2. Minimizing the impact of operations to improve the coexistence of the mine and its neighboring communities.
 3. Social Investment: Key topics identified for potential collaboration include road safety, mobility, job creation, environmental and educational programs.

In 2023, Koura will continue working on the above plans and will begin a Community Emergency Plan based on operational impact to work hand-in-hand with the community in prevention and response.





Corporate Social Responsibility Programs

Our corporate social responsibility strategy provides an additional pathway to amplify the reach of our solutions and make communities stronger in the face of the world’s most pressing challenges: water & sanitation, food security, climate change, and access to knowledge.



Circularity & Social Value

VITA - Creating social value through circularity

Vinyl in Motion is Polymer Solutions Business Vestolit’s program to create customer-centered circular products and initiatives in Latin America. The program aims to collect post-consumer PVC and integrate it as a recycled raw material to manufacture products for other Orbia business groups.



As part of this program, VITA was developed to build capacities among recyclers and support their integration into our supply chain, improving their working conditions and formalizing their source of income. VITA focuses on 4 key interrelated aspects to build capacities among recyclers:

1. Technical training
2. Finding PVC post-consumer sources to generate volume
3. Closing the loop by purchasing the collected material
4. Finding solutions to access capital

By the end of 2022, the business was able to start purchasing the collected and pre-processed material. As part of the program, Vestolit donates PVC mills to participants to allow them to produce the required monthly quantities. Recycled material is integrated into some of Wavin’s new portfolio of recycled products, closing the loop in raw material sourcing.



WASH (Water, Sanitation and Hygiene)

Orbia supports WASH programs for communities in Latin America through partnerships with different organizations and community members.

As an example, in 2022, our Building and Infrastructure Business Wavin, operates **23 WASH programs that provide water access to more than 40,000 people in Brazil, Argentina, Colombia, Ecuador, Mexico, and Peru.** Support included 402 clean water storage tanks with a total capacity of 221,210 liters; 54 hand-washing stations; 178 rainwater systems; and 14 biodigesters. Wavin engineering teams also provide technical assistance to community members on the design and implementation of the systems. Examples of programs include:

- **Wavin and TECHO implemented several WASH projects in Colombia, Guatemala, Brazil, Peru, and Ecuador.**

The partnership focuses on delivering our products and solutions to people living under highly vulnerable conditions. Such is the case in [Colombia](#), where hydro-sanitary units and rainwater harvesting systems with water potabilization equipment supported more than 300 people. In [Guatemala](#), 37 rainwater harvesting systems and eight biodigesters benefited 322 people living in the El Durazno community.

- **Wavin continued its contribution to the “Safe Water for Cerro Colorado-Arequipa” soup kitchens program.**

Cerro Colorado is home to 40 soup kitchens that serve over 4,000 people. In alliance with the Municipality, Arequipa’s water utility (SEDAPAR), and [Agua limpia](#), we provided water access to ten additional kitchens, supporting a total of 25 kitchens that serve more than 1,200 people daily. Additionally, 386 women received technical assistance through the Women with Punch Program to improve their knowledge of water management & storage, and sanitary practices.



Wavin teams implementing a WASH project with TECHO.

Water Funds to promote water security

Orbia’s business groups also address water scarcity by supporting Latin American Water Funds Partnership in Mexico, Brazil, Peru and Colombia. These Water Funds design and promote financial and governance mechanisms, engaging public, private, and civil society stakeholders to contribute to water security through solutions grounded on nature-based infrastructure and sustainable management of watersheds. Since 2012, Orbia has donated over \$700,000 in water funds, reaching approximately 5,000 people.

See the [Water section](#) for more information on water stewardship actions.



STEM (Science, Technology, Engineering & Math)

Orbia is a dedicated supporter of scientific, technological, engineering, mathematical (STEM) education. We believe that fostering STEM skills, particularly in young people, is essential to achieve our purpose and promote societies that are more equitable. All Orbia business groups have incorporated programs to assist the acceleration and promotion of STEM careers. Examples of programs include:

- **The Green Project**, Netafim's educational program conducted jointly with the Israeli Ministry of Education, aims to develop girls' technological skills in the fields of agriculture, sustainability, and industry. This project encourages girls to solve problems using techniques they formulate. This year was the second cycle of the program, welcoming 20 new female students passionate about the connection between sustainability and technology. During this cycle, the students learned about the connection between these two topics, and they will experience programming as a means of solving different related challenges. As part of the project, eight Netafim female volunteers will continue to mentor the girls, providing 50 hours of personal and professional guidance. Additionally, the government of Israel and the Organisation for Economic Co-operation and Development (OECD) presented the Green Project in a joint education conference.
- **Story of an Engineer Project**. In 2022, Netafim partnered with leading technology institutions in Israel to sponsor a story, video, and comics competition with an engineering twist designed for students from third to sixth grades from all over the country. The winners of the first contest were four girls from four different primary school grades who wrote ingenious and innovative stories about challenges and how science would help to solve them. The winners received, among other things, a family subscription to the Museum of Science and Technology.
- **Becas Boomerang**, sponsored by Vestolit Colombia, continues supporting the two winners announced in 2021 from the Pasacaballos community. The scholarship covers tuition and English language courses during their studies. Additionally, as part of their efforts to support students and their approach to STEM areas, the Vibra STEM program was established in alliance with the Traso foundation. In 2022, 30 female students began working on design thinking and programming to improve their science, technology, and innovation skills. The program will run for a year and will accompany students and teachers to strengthen the learning process of STEM-related topics. As part of the program curricula, the girls visited the She Is Global Forum 2022: Women of The Future, a gender equity and women empowerment forum in Latin America.
- **STEM Bootcamp for Young Girls in Mexico**. In 2022, instead of providing a gift to Investor Day attendees, we announced our commitment to support a STEM-related program on behalf of investors closely tied to Orbia's purpose. The funds (\$50K) will contribute to a UNICEF-led bootcamp to develop STEM and socioemotional skills through hybrid sessions and mentorships. The program has already benefited more than 160 young girls in Chihuahua and The State of Mexico.



Nutrition Gardens

Orbia's Precision Agriculture Business Netafim has a history of supporting the adoption of community gardens to improve the health and economic wellbeing of families, by increasing consumption of vegetables while building farming skills in under-served communities. Every year, our Precision Agriculture business supports several projects in different countries. Since 2019, 146 such projects have been implemented, 45 of them being implemented in 2022.

An example is Netafim's partnership with the NGO Kusimayo, aiming to transform the subsistence economy in rural areas of Puno in Peru into an economy of entrepreneurs, where intense cold temperatures do not allow locals to produce their own food. The Productive Puno Program will train thousands of families to use our electric-powered water tanks to optimize their crop yields in their organic gardens. Using these tanks supports a range of crop production including tomatoes, carrots, turnips, beets, chard, cauliflower, cucumber, cabbage, lettuce, watermelon, and melons. Netafim has been working with Kusimayo for over three years, allowing 72 families to improve their livelihoods by giving them the opportunity to access a balanced diet and generating sustainable income streams by selling their vegetable and fruit production using drip irrigation.

They also had the opportunity to optimize the use of water and other resources, growing more with less.

In three years, the program has reached 72 families (290 people), enabling them to save over \$7,000 (from producing instead of buying food) and earn over \$2,000 in surplus product sales.



Beneficiaries at Puno, Peru, from Netafim and Kusimayo's partnership.



Volunteering

Community involvement is an intrinsic part of professional development and corporate responsibility at Orbia. Being a good citizen individually and as a business not only forges tangible connections to the wider world, but also enables satisfying employee engagement. Volunteering shows a real commitment to others in need, boosts performance on the job, and an overall sense of fulfillment.

Orbia's new volunteering program grants employees 10 hours of paid time to volunteer per year.

In 2022 more than 20,000 people benefited from more than 9,000 hours of volunteering from over 4,000 volunteers.

All our Business Groups have a strong sense of community and have shared their knowledge, commitment, and empathy through several activities from engaging with each other to delivering expertise and solutions to benefit others.



Wavin volunteers at a water harvesting system implementation.

Volunteers from Wavin and Vestolit have supported social-related projects by means of sharing expertise, installing our products, and delivering impactful solutions to communities that are facing water scarcity, or that are in need of WASH solutions.

Netafim runs a #UsingLessDoingMore initiative, in which every year volunteers from around 19 countries participate in over 40 activities spanning three weeks around world Earth Day, focusing on four SDGs: 2, 5, 11, 13.

Our volunteers across the world also engaged in humanitarian and social volunteering activities in which their knowledge and good will has represented a benefit for those in need.



Netafim volunteers at a river cleansing as part of Earth Day initiatives.



It is very gratifying for me to contribute with my knowledge and experience in water and sanitation issues to help improve the living conditions of the communities.”

Johan Danilo Beltrán
Building and Infrastructure

For further information:





Emergency Relief

As the humanitarian crisis in Ukraine and surrounding countries continues, Orbia is supporting relief efforts in collaboration with external aid organizations. Our Relief Task Force is headed by our most experienced leader in Central and Eastern Europe.

Since the crisis began in late February, we have worked to understand the situation and define the best ways to support those in distress and danger, especially displaced people, through global and local non-governmental organizations (NGOs) providing humanitarian aid in Ukraine and the surrounding countries.

Supported organizations

- **Let's Help:** medicine for seniors and assistance to nursing homes.
- **Lumos:** orphanages for children.
- **Paul Chester Children's Hope Foundation:** medical supplies and equipment for hospitals and refugee aid centers.
- **RAZOM:** medicine and supplies to hospitals and evacuation of vulnerable people.
- **UNHCR (United Nations High Commissioner for Refugees):** transit and reception centers, food and provisions, cash.
- **World Food Program:** food for displaced people.
- **World Central Kitchen:** meals for displaced people in transit.
- **Poland Fire Brigade:** firefighting and rescue system.



Collection efforts from Wavin volunteers to bring emergency relief for the Ukrainian conflict.

Over
\$550,000 USD
was collected

(36% from the Kaluz Foundation, 36% from Orbia and its businesses, and 28% from employee voluntary contributions).



Corporate Governance & Risk Management

Corporate Governance

Everything we do at Orbia is grounded in a strong foundation of ethical conduct as well as responsible, accountable and transparent business practices.

As a signatory to the UN Global Compact, and as a firm supporter of the UN SDGs, we strive to live up to the highest ethical standards every day.

Our Board of Directors (at the end of of calendar 2022) consists of 12 directors, eight (67%) of whom are independent, exceeding the minimum number of independent members (25%) required by Mexican Securities Market Law and our bylaws. Three Board members are women (25%) and altogether represent 4 different nationalities. Mr. Juan Pablo del Valle has presided as Non-Executive Chairman since 2011.



Antonio del Valle Ruiz
Honorary Chairman for Life



Juan Pablo del Valle Perochena
Chairman



Antonio del Valle Perochena
Non-Independent



Francisco del Valle
Non-Independent



María de Guadalupe del Valle Perochena
Non-Independent



Maria Teresa Arnal
Independent



Mihir Desai
Independent



Jack Goldstein Ring
Independent



Divo Milan Haddad
Independent



Alma Rosa Moreno Razo
Independent



Guillermo Ortiz Martinez
Independent



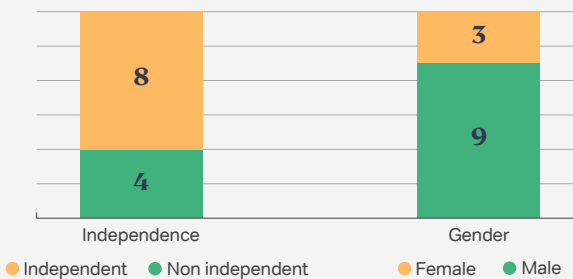
Mark Rajkowski
Independent



Eduardo Tricio Haro
Independent

Board Composition

(Number of Directors)





Three Committees assist the Board of Directors in carrying out its duties, and are mostly composed of independent Board members, as required by Mexican Securities Market Law.

Audit Committee

Assists the Board in fulfilling its responsibilities relating to matters of:

- Appointing and overseeing the performance of the Company's independent auditors.
- Ensuring the integrity of the Company's financial statements.
- Overseeing the Company's compliance with legal and regulatory requirements.
- Assessing the independent auditors' qualifications and independence.
- Evaluating and following up on the performance of the Company's internal controls and internal audit function.

Corporate Governance, Responsibility & Compensation Committee

Assist the Board in fulfilling its responsibilities relating to matters of:

- Corporate responsibility (including environmental, social and governance, "ESG" matters).
- Board composition and succession planning (nomination, membership, requirements, development).
- Sustainability and HS&E.
- Talent, compensation and performance.

Finance Committee

Supports the Board in monitoring and overseeing the Company's:

- Capital structure and capital allocation strategy.
- Financial policies and management of financial risks.
- Cash flow plans, dividend policy and investment strategy (including material mergers, acquisitions and divestures).

Orbia's [Leadership Team](#) is composed of highly experienced individuals from diverse backgrounds that enable the successful execution of our strategy. An [ESG modifier](#) for senior management compensation has been in place since 2021.

Orbia is also working on strengthening its Tax Governance Framework and Tax Strategy.



We continue to invest in a robust governance structure. In 2022, Orbia implemented a range of updated governance policies and procedures covering the entire organization, including those relating to the company's global delegation of authority and commitments. At Board level, our Board Committee Charters were comprehensively reviewed and updated to clarify and strengthen the roles and responsibilities of the Committees and align with best practices.



Sheldon Hirt
Orbia Senior Vice President
and General Counsel

For further information:

 [Corporate Governance](#)

 [Orbia Leadership Team](#)



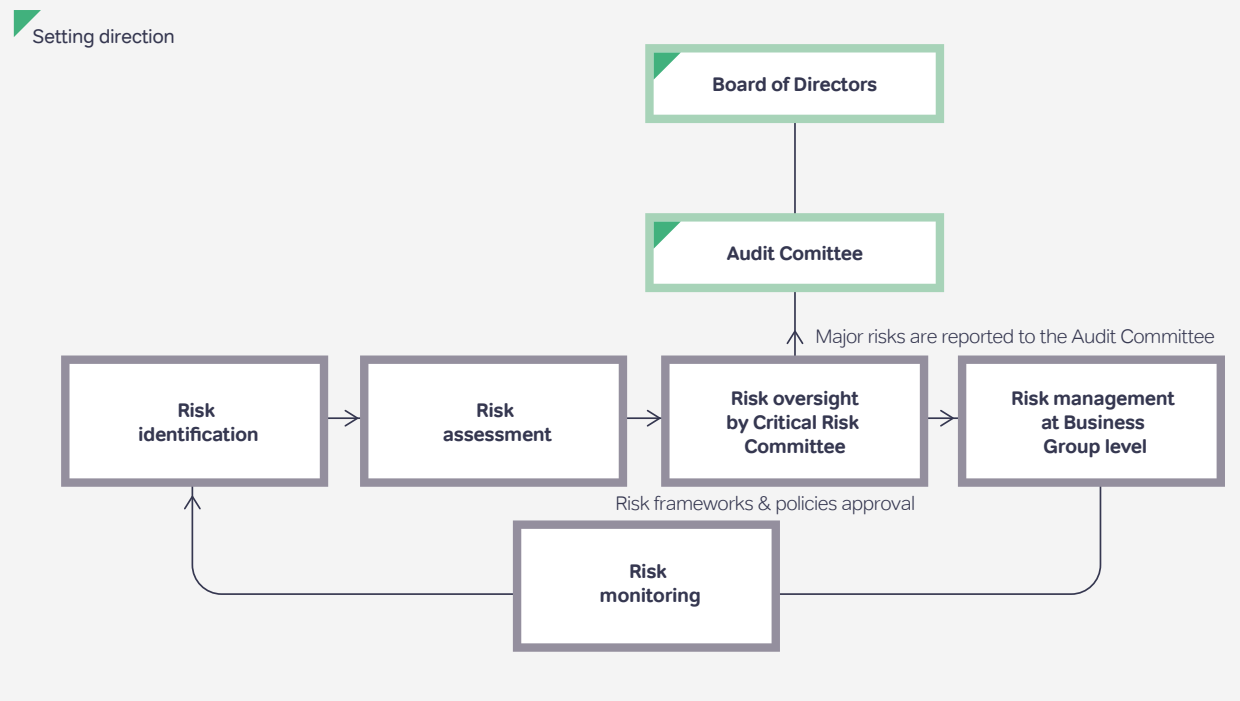
Risk Management

An executive Critical Risk Committee (CRC), chaired by our CEO and comprised of our CFO, Presidents from each of our business groups and other key functional heads, assists the Board of Directors in identifying and assessing enterprise risks, evaluating our risk profile, developing risk mitigation plans, and overseeing their implementation.

The CRC meets quarterly and reports directly to the Audit Committee and to the Board of Directors. This Committee oversees four primary risks to the Company: Strategic/ Business, Financial, Operational, and Reputational. Since 2020, climate and cyber risks are integrated into these Orbia multidisciplinary company-wide risk management processes.

Our risk management process is an ongoing, systematic approach, active across Orbia's corporate functional areas and business groups. The focus is on both strategic and operational issues, and changes in risks and opportunities status are promptly communicated to decision makers. Our risk profile, including short, medium, and long-term risks, is reviewed every few years.

Orbia's Risk Management Process



Orbia's Risk Register, approved by the CRC, and the results of Company-wide enterprise risk identification and assessment processes provide the CRC with prioritized risks across the business groups. Risk Registers are managed at the business group level, accompanied by an actionable mitigation strategy defined for each risk.



Ethics & Compliance

At Orbia, we believe that ethical conduct, in full compliance with applicable law, is fundamental to our long-term success.

We aim to instill a culture of personal accountability, so that all members of our global workforce understand what is expected and are motivated to do what is right, beyond rules and guidelines. Orbia's Code of Ethics is the foundational document – it sets forth the values, principles, standards, and policies that guide our workforce's daily actions in ways that continue to reinforce trust in our Company and purpose.

Orbia's Code of Ethics is a binding requirement for all Directors, executives, employees, contractors, temporary workers and business partners that do work on our behalf.

In 2022, Orbia continued to invest in its Ethics & Compliance program, and is committed to following compliance program international best practices, including robust compliance governance, instilling a compliance-driven culture, and implementing appropriate control mechanisms.

Compliance Governance and Resources

Reporting to the Audit Committee of Orbia's Board of Directors and administratively to Orbia's Senior Vice President and General Counsel, Orbia's Chief Compliance Officer is dedicated to reinforcing our culture of ethical conduct and overseeing ethics and compliance programming to underscore our policies, processes and ethics training. Orbia's Chief Compliance Officer reports on her progress to Orbia's business leadership and Orbia's Audit Committee quarterly, and chairs Orbia's Ethics Committee, which is comprised of Orbia's Chief Financial Officer, Chief People Officer, General Counsel and Head of Internal Audit, which meets monthly. Additionally, Orbia's Chief Information Security Officer and Chief Compliance Officer co-lead Orbia's Data Privacy Steering Committee comprised of senior Orbia personnel, providing oversight for this important area of compliance.

We maintain a strong corporate legal and compliance team consisting of experienced in-house lawyers and compliance professionals located in key jurisdictions where we do business. During 2022 we added full-time resources to the Ethics & Compliance function and will continue to invest in compliance programming and resources in 2023.





Compliance-driven Culture

To ensure Orbia’s values and compliance procedures are top of mind for all the company, our 2022 initiatives include:

Instilling our values as new employees join Orbia

As Orbia has grown through acquisitions in 2022, the Ethics & Compliance function has scaled with the business. For acquisitions, we conduct risk-based compliance due diligence prior to acquisition. After closing, we work closely with new colleagues in acquired businesses to implement [Orbia’s Code of Ethics](#), Ethics Helpline, and other compliance program initiatives into the newly acquired company or joint venture. We provide live training, which can include Ethical Leadership training for new leaders and managers, and antitrust and anti-corruption training for sales teams, among other tailored training.

Ethics Month

Orbia hosted its third annual month-long Code of Ethics awareness campaign, during which all employees complete an annual Ethics training. Orbia executives, senior leaders, and managers actively set the tone and delivered employee communications to reinforce Orbia’s core values and the importance of acting with integrity. Line managers were provided with a new manager dashboard, which enhanced their ability to take responsibility for ensuring their teams completed the training on time.

Enhanced Ethics Training

As part of Orbia’s annual Ethics Month, all employees completed training courses (online or on-site), receiving specialized training modules. To enhance our Ethics training

program in 2022, customized, tailored-to-job-role online training courses for employees in sales, procurement, Finance, HR and Legal were added. This scenario-based course included examples of “lessons learned” from actual Orbia investigations, and shared Orbia’s 2021 Ethics Helpline data and metrics to provide employees with transparency about the Ethics Helpline process.

Ethics Survey

For the third year in a row, we conducted our voluntary Ethics & Culture Survey, with employees in over 40 countries participating. The 2022 survey results continue to demonstrate an overall positive trend-line, with employees having a positive perception of senior leadership that is above the survey’s benchmark, among other important metrics. Orbia plans to repeat the Ethics Survey in the fall of 2023.

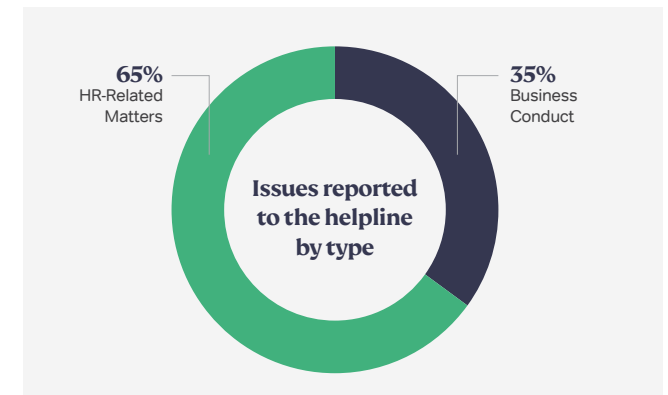
Control Mechanisms & Programmatic Updates

Ethics Helpline

We operate a confidential whistleblowing mechanism for reporting suspected or possible violations of our Code of Ethics or any other violation of law or regulation. Orbia’s Ethics Helpline allows anonymous reporting and is available 24/7 with operators who speak all the languages of the countries in which we do business. During Ethics Month and periodically throughout the year, we provide information and examples of anonymized real situations that emerged through use of the [Ethics Helpline](#), to reassure employees that it is safe and worthwhile to speak up and that retaliation is strictly prohibited.

In 2022, we received **314 reports via the Ethics Helpline** or directly to a company representative, which is a **25% increase from last year**. We see this as a positive trend, as Orbia’s overall reporting rate is approaching industry standards based on the benchmark reporting rate provided by Orbia’s Ethics Helpline provider.

Orbia investigates 100% of the allegations brought to its attention, following documented investigations procedures. We review metrics including anonymity and substantiation rates, consistency of discipline, and case closure time, among others, and monitor these leading indicators of the health of Orbia’s speak up culture and the efficacy of Orbia’s investigations program. Selected metrics and matters are shared with Orbia’s Ethics Committee monthly and Audit Committee quarterly. Additionally, as we close investigations, we conduct a root-cause analysis as necessary, and recommend corrective measures, including discipline and process improvements to prevent a reoccurrence. Our processes include ensuring that remediation efforts identified as a result of an investigation are implemented.





Antitrust Compliance

Orbia takes its obligations to compete fairly and lawfully in the global marketplace seriously and makes clear to its employees that it will not tolerate or condone activities that breach antitrust laws. Over the last several years, we have invested in our antitrust program by providing meaningful tailored training for commercial teams across Orbia. In May 2022, all office staff received online antitrust training, with all commercial teams receiving a dedicated antitrust module. This training is supplemented with live training and communication reminders. This area will remain a focus in 2023.

Data Privacy

At Orbia, we take a cross-functional approach to data privacy compliance, where Information Security and Ethics & Compliance partner together to enhance systems and processes to protect employee, customer and other partners' data. In 2022, Orbia hired dedicated data privacy professionals and invested in compliance tools and technology. In addition to configuring and operationalizing a new data privacy compliance tool, the data privacy team delivered data privacy training and enhanced processes and procedures.

Internal Audits

Orbia conducts internal process audits, to provide reasonable assurance on the effectiveness and efficiency of operations and the accuracy of financial records. Sites are selected based on a rating system that integrates factors such as percentage of total Orbia contribution, significant changes over the past year, time elapsed since last audit, previous performance, and ethical concerns (e.g., number of Ethics Helpline reports). In addition to testing anti-corruption and fraud prevention controls, the Internal Audit (IA) team also conducts IT and sustainability reviews. Orbia's Head of Internal Audit reports to the Orbia's Audit Committee Chairman and IA operates independently from the business groups and conducts audits, outsourcing those that require subject-matter expertise. IA also develops analytical tools that aid in continuous monitoring.

Human Rights

Orbia remains committed to operating its business in full compliance with Human Rights principles and has continued to invest in ensuring its supply chain does the same, in accordance with our [Human Rights Policy](#).

Over the last two years, we have been implementing two main tools in our supplier due diligence processes:

- An anti-corruption and reputational due diligence check via Ethixbase (for a sub-set of suppliers based on risk), where we are notified of any adverse media or human rights violation records.
- EcoVadis program, where suppliers are assessed in various topics, including human rights. Orbia evaluates a supplier's risk profile in this area and those scoring below our threshold are required to present an action plan for improvement. (See [Supply Chain section](#) for further details).

Orbia's compliance team also conducts an enterprise compliance risk assessment periodically, and human rights is a topic considered as part of that assessment. This year we formally announced that our Chief Compliance Officer will take responsibility for Orbia's Human Rights program going forward. Further investment in this area is on our Compliance team's 2023 programming roadmap.



Cybersecurity

Our cybersecurity program is reaching important milestones and progressing at a solid pace. The first phase projects activated in 2021 have now landed across IT compliance and human security, vulnerability management, and cyber incident response with key milestones:

- Digitized cybersecurity control standard on IT compliance, with processes to manage our cyber maturity.
- Completed the centralization of our scanning capability on vulnerability management and established processes to follow up vulnerability remediations.
- On cyber incident response, completed the deployment of our new security logging and monitoring solution and implemented top runbooks for incident response.

These capabilities increase our ability to detect or even prevent cyber-attacks early, bringing value to our businesses by reducing the risk of downtime, outages, or significant data loss. We are now focused on improvements, among others, in project and third-party risk management, deploying fundamental Operational Technology (OT) security controls in our manufacturing plants, centralization of our cyber testing services, and engineering cyber solutions to protect our cloud and SAP assets.

Cybersecurity Culture

- Our enhanced edition of October Cybersecurity Awareness Month aimed to further instill a culture of responsibility for our digital safety through a new Cybersecurity Hub, six cyber essentials, webcast as well as roadshows organized in various Orbia sites.
- Conducted Orbia-wide Acceptable Use Policy training with more than 95% completion rate as well as continued specialized live training for our People, Finance and IT teams together with global phishing campaigns.

In 2023 we will continue to build organizational capability in this critical space and perform a cyber program evaluation to help us assess our progress and course correct if necessary.

Supply Chain

Our responsible business practices do not start or stop at the gates of our factories; they apply across our entire value chain, and specifically, through engagement of our supply network and more than 29,000 suppliers who support our business around the world through the provision of raw materials, products, equipment, and services. Our objective is to establish reliable supply chains that meet high ethical, social, and environmental standards, which is why suppliers are expected to align to the highest standards and acknowledge their review and acceptance of [Orbia's Code of Ethics](#). An Orbia common Supplier Code of Conduct will be deployed in 2023, to ensure suppliers engaging with any of our legal entities comply with the same standards.

In addition to this, through our EcoVadis Supply Chain Sustainability Program, Orbia receives sustainability ratings from participant suppliers derived from an evidence-based evaluation across four broad ESG topics: Environment, Labor & Human Rights, Ethics, and Sustainable Procurement. The program also allows for monitoring performance and improvement. This program is key to minimize sustainability-related risks across Orbia's supply chain, enable improvement in our supply chain impacts (e.g., through targeted supplier selection and performance management), and increase transparency within all parties of our supply chain. Our implementation of this program adopts a risk-based, phased approach and currently covers Building & Infrastructure, Connectivity Solutions, Polymer Solutions (Vestolit), and Fluorinated Solutions (UK), with the remaining business groups to adopt this program in the future. As of 2022, our supplier assessment program covers 80% of our total spend across these brand operations. More than 90 additional suppliers were onboarded during 2022.

Training Procurement Teams

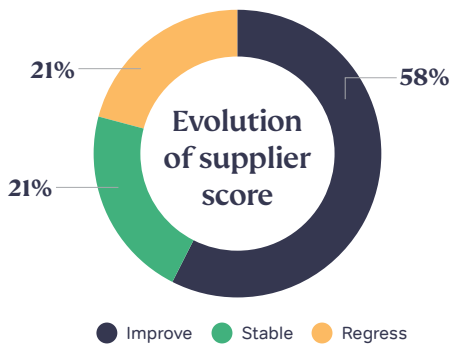
As of 2022, 43% of buyers of the participating business groups have received EcoVadis training, including 20 additional relevant buyers from Orbia's Polymer Solutions business Vesolit, the newest addition to our program. Training actions will continue through and beyond 2023.



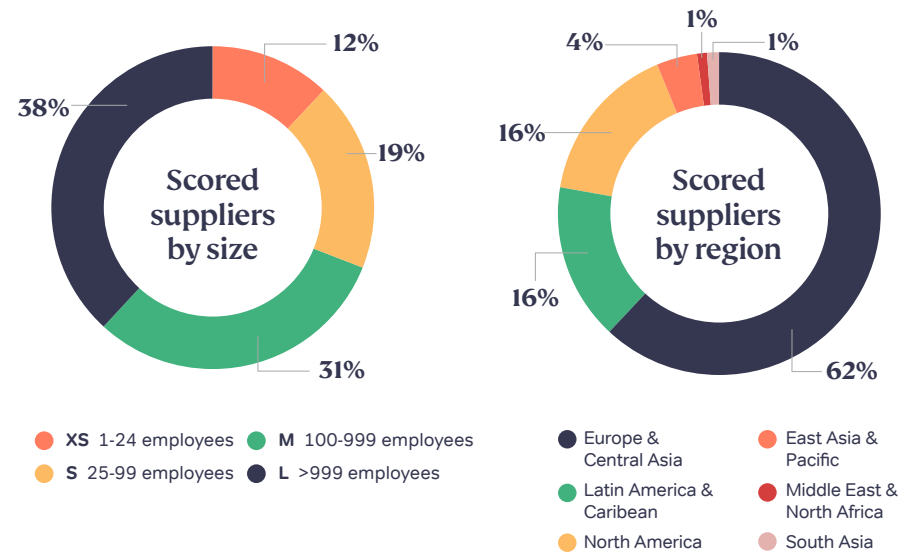
Supplier performance

In 2022, Orbia organized training webinars for suppliers participating in our EcoVadis program, to further engage them in advancing sustainability together and to reinforce the importance to drive continuous improvements across ESG topics; more than 200 suppliers attended. Additionally, we have provided them access to EcoVadis Academy, an online program that contains courses designed to help our suppliers learn about and improve their sustainability management practices. The courses cover policies, actions and reporting across the four sustainability themes as well as broader topics such as training, certification, risk management, and more. As of 2022, 60% of our participant suppliers have interacted with the provided resources.

Suppliers are held to a minimum performance score of 35-45, under which we will require them to present an action plan for improvement, or even consider switching to a supplier with a superior sustainability performance. In general, re-evaluated suppliers show an average increase of 10 points comparing their first and second assessments. In 2022, 58% of the suppliers that took an EcoVadis assessment in 2021 have shown an improvement in their score, and 21% show a stable score. Most suppliers that have been required to present action plans have shown progress, with most improvement areas linked to having specific targets around labor & human rights, corruption risk assessment, and sustainability procurement practices. The average score is currently 53 and 83% of our re-assessed suppliers are above required performance level.



During 2023, we will continue to implement our supplier assessment program and will review risk mitigation measures to address gaps in supplier performance based on initial assessment. Our objective is to work with suppliers in a collaborative and supportive way to deliver the best outcomes for Orbia's business and for our suppliers. Overall, we are working on identifying strategies to improve the scores of our suppliers, especially of those with higher risks identified. The plan for 2023 is to work on corrective action plans that encourage continuous improvement for low scoring suppliers and to increase supplier coverage.





Collaboration across our value chain to drive sustainability

Joining efforts to expand electric mobility

Solvay and Orbia joined forces to create a joint venture in North America to supply polyvinylidene fluoride (PVDF) capacity for battery materials. With a vertically integrated value chain and material holdings, Orbia's Fluorinated Solutions business Koura and Polymer Solutions business Vestolit will supply hydrofluoric acid, vinyl chloride monomer (VCM) and chlorine respectively. In combination, Solvay's Solef® PVDF innovations and Orbia's raw material assets and production expertise will enable delivery of PVDF that optimizes energy storage efficiency by increasing battery energy density, safety, and power.

Collective action for sustainability in vinyl's value chain

For the third year in a row, Vestolit is pleased to announce it has successfully met all the requirements of +Vantage Vinyl™, an industry-wide sustainability initiative that engages companies across the entire U.S. vinyl value chain to promote continuous improvement on sustainability topics aligned with the United Nations Sustainable Development Goals, including environmental stewardship to optimize resource use and protect biodiversity, disclosure of good practices around product safety management, and ethical business practices among others.

Engaging on climate action

Our continued collaboration with suppliers is key to a successful and sustainable future. In 2022, Orbia obtained an A- score in the Carbon Disclosure Project (CDP)'s annual Supplier Engagement Rating (SER), which evaluates corporate supply chain engagement on climate issues to promote the transition to a net-zero economy.

**For more examples on our collaboration
with suppliers, refer to:**



[Circularity – Actions Beyond our Operations](#)



Business Groups Spotlights



Sustainability Spotlight 2022

Key Activities

Orbia's Polymer Solutions businesses Vestolit and Alphagary, focus on PVC general and specialty resins, and PVC and zero-halogen specialty compounds with a wide variety of applications in solutions that undergird everyday life. Orbia's Vestolit and Alphagary businesses supply Orbia's downstream businesses and global customers seeking applications in pipes, cables, flooring, auto parts, household appliances, clothing, packaging, health and safety and medical devices.

Key Markets

Orbia's Polymer Solutions businesses are leading global vinyl players, with strong positions in the Americas and Europe.

Total Sales
\$3,780M

(39% of Orbia revenues)

Total Employees
3,831

(16% of Orbia headcount)

Top five material topics



Health and safety



Energy & emissions



Quality & safety of products



Innovation



Employee development, engagement & retention

Environmental highlights:

-10%

absolute Scope 1 & 2 GHG emissions vs. 2021

52%

waste recycled/reused/recovered

-99%

SOx emissions vs. 2021

Selected Metrics	Units	2020	2021	2022
Energy intensity	MWh/ton	1.26	1.24	1.26
Renewable energy	% of total electricity consumption	2.9%	3%	3.8%
GHG intensity	Tons CO ₂ e/ton	0.31	0.28	0.28
Water intensity	m ³ /ton	2.22	2.11	2.23
Waste recycled/reused/recovered	% of total waste	34%	43%	52%
Incident rate	(TRIR) total employees and contractors	0.41	0.53	0.28





Sustainability Spotlight 2022

Future-Fit PVC

In 2021, Vestolit marked a milestone with the incorporation of bio-based* ethylene in vinyl chloride production and during 2022, with an increase in production and relevance from this product, sales are increasing year on year.

The introduction of [Future-Fit PVC](#) brings to market a:

- Bio-attributed PVC, which is produced using non-food production vegetable oils (more than 60% lower carbon emissions vs. fossil feedstocks), with 100% renewable energy use during production and ISC PLUS certified.
- Circular PVC, produced using pyrolysis oil from post-consumer recycling, avoiding sending waste to landfill or incineration.
- PVC produced from carbon capture from industrial off-gas while using 100% renewable energy in the production process.
- Our approach to Future-Fit PVC results in no change in end-product quality and ensures that our customers reduce their carbon footprint, provable through LCA or EPC declarations.



We are embracing every opportunity to apply circularity principles across our operations: bio-based feedstocks, strengthening recycling infrastructure to integrate recycled content into our portfolio, and taking advantage of progress in green hydrogen technology by partnering with cutting edge innovators like Verdagy. By focusing on decarbonization in every possible area, we are fulfilling our role as a game changer in the PVC value chain.”



Nicholas P. Ballas

Executive Vice President & President, Polymer Solutions (Vestolit) and Building & Infrastructure (Wavin)

*by mass balance approach.



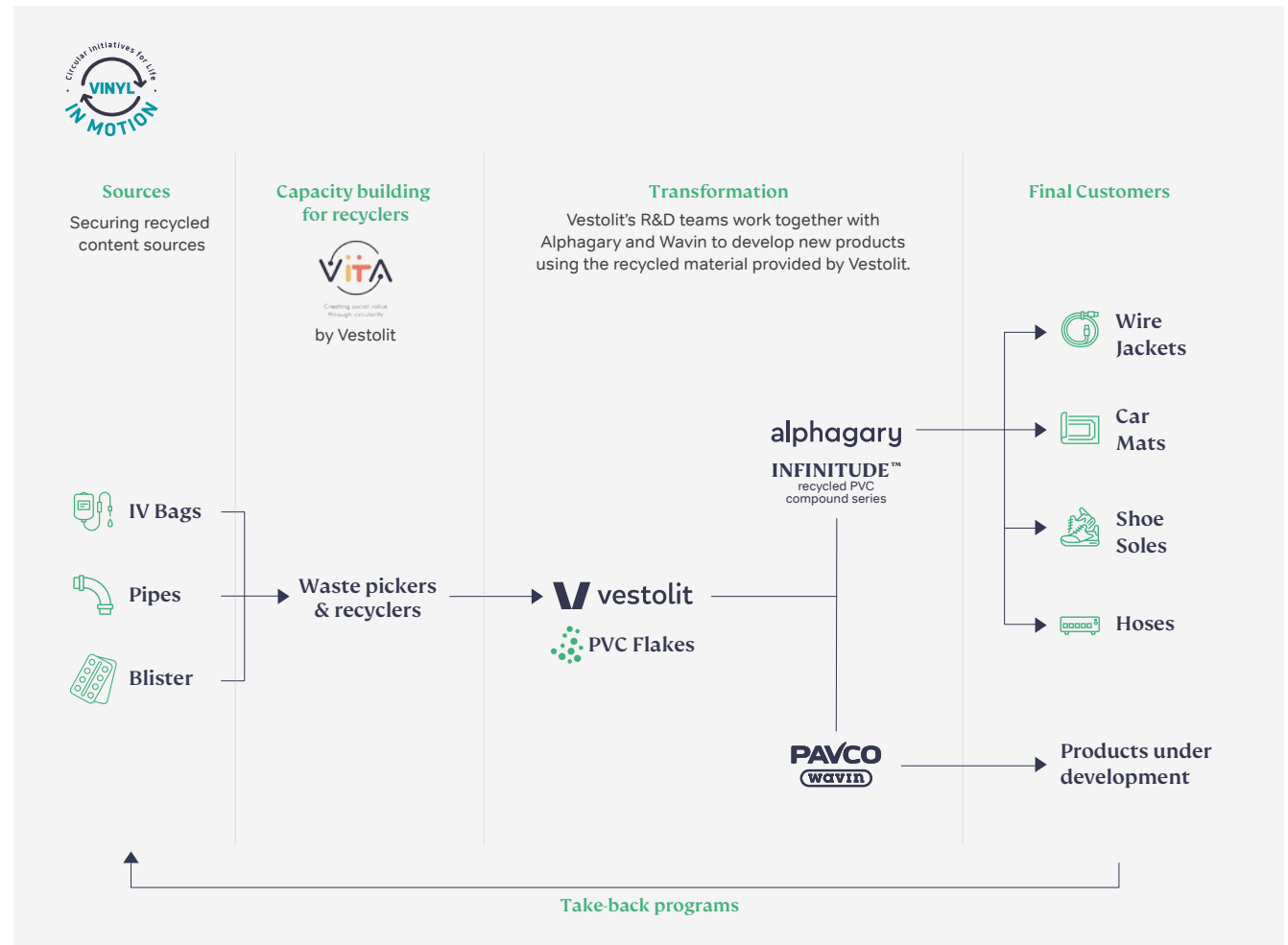


Sustainability Spotlight 2022

Driving PVC circularity in Latin America

As the PVC market leader in Latin America, Vestolit has developed the first PVC Circularity program in the region. Vinyl in Motion has well-structured chains to collect used PVC to clean, shred into flakes and deliver to transformers for applications such as IV Bags from hospitals, blisters from pharmaceutical companies, vinyl artificial leather and labels from bottles. The program has developed several pilots in Colombia and is expanding to markets such as Mexico and Brazil in 2023. The goal is to recover more than 20,000 tons/year by 2025 in Mexico.

In addition, VITA was developed by Vestolit to build capacities among recyclers and support their integration into our supply chain, improving their working conditions and formalizing their sources of income.





alphagary

Sustainability Spotlight 2022

Infinitude™ – circular PVC compound

As part of the larger Vinyl in Motion project pioneered by Orbia's Polymer Solutions business, Vestolit, the Infinitude vinyl compound series formulated and manufactured by Alphagary offers a second life for plastics that have been discarded. This new series of PVC compounds are formulated with up to 70% recycled content and are available in natural base or pre-colored, are designed for both molding and extrusion applications. Learn more [here](#).

Keeping beehives healthy

Bees play a special part in our ecosystem by pollinating plants and flowers that we depend upon for survival. According to the US Department of Agriculture, bees pollinate 80 percent of the foods we eat. To prevent mite infestation in hives, beekeepers put strips in the hive that deliver necessary mite protection to the beehive without harming the bees or ending up in the honey. Alphagary's [SUPERKLEEN™ vinyl compounds](#) a starting point for this application since it's cleared for use in food contact products. This vinyl meets the physical properties needed by customers, including ease of processing, and is able to extrude into strips that deliver the necessary mite prevention to the beehive. Learn more [here](#).



We continue to be encouraged by our customers and their aspiration to reduce their carbon footprint. Their increased interest in sustainability and our own emission reduction targets informs us to innovate new materials with substantially lower carbon footprint and invest in technologies to improve manufacturing efficiencies. Setting aggressive goals for net-zero emissions, zero waste to landfill, water stewardship and social responsibility enable us to serve the needs of our customers more effectively.”



Gautam Nivarthi

Executive Vice President
& President, Polymer Solutions (Alphagary)





Sustainability Spotlight 2022

Key Activities

Orbia's Building & Infrastructure business Wavin is an innovative solutions provider for the global building and infrastructure industry. Creating long-lasting, circular and energy-efficient solutions, the business is tackling some of the world's toughest challenges relevant to ensuring safe and efficient water supplies, sanitation and hygiene, climate-resilient cities and better building performance.

Key Markets

Orbia's Building & Infrastructure business is a leading producer of above and below-ground building and infrastructure solutions in Latin America, Europe, and Asia.

Total Sales

\$2,926M

(30% of Orbia revenues)

Total Employees

11,872

(49% of Orbia headcount)

Top five material topics



Health and safety



Circular economy



Sustainable sourcing



Innovation



Water management solutions

Environmental highlights:

-35%

absolute Scope 1 & 2 GHG emissions vs. 2021

-7%

total process waste vs. 2021

62%

share of renewable electricity

Selected Metrics	Units	2020	2021	2022
Energy intensity	MWh/ton	0.83	0.86	0.89
Renewable energy	% of total electricity consumption	15.3%	20.2%	61.9%
GHG intensity	Tons CO ₂ e/ton	0.17	0.18	0.13
Water intensity	m ³ /ton	2.41	2.27	2.35
Waste recycled/reused/recovered	% of total waste	80%	87%	74%
Incident rate	(TRIR) total employees and contractors	0.64	0.46	0.43





Sustainability Spotlight 2022

The value of rainwater in cities

In many parts of the world, countries with abundant rainfall still experience water scarcity. Wavin unlocks the full value of rainwater by transforming urban surfaces to capture and reuse it.

- The acquisition of [MetroPolder](#) (and its smart blue-green roof system, the Polder Roof) has enabled Wavin to expand its expertise in urban climate resilience. In fact, Wavin MetroPolder was selected as one of the top three innovators of the [Circular Water Cities Challenge by uplink](#), the World Economic Forum's open innovation platform.
- Wavin [AquaCell](#) units help close the water cycle in urban environments. They can be used in various standalone applications, and in combination with blue-green roofs, to successfully manage excessive rainfall within an underground, modular structure, and then use it for attenuation or infiltration.
- Wavin's [TreeTanks](#) can be installed around a void where the tree is planted and anchored in place before being carefully backfilled with non-compacted soil, allowing for ventilation and irrigation from rainwater. The presence of trees in global cities and urban environments increases climate resilience, boosts biodiversity and integrates blue-green infrastructure.

Water management goes digital

Wavin is adding innovative digital services to its offering across four segments: Integrated Building Performance, Smart Blue Green Infrastructure, Smart Urban Drainage and Water

Distribution Services. Globally, 30-50% of valuable water is lost in water networks. Wavin's Water Distribution Services constantly monitor water networks in real-time, using data analytics to identify leaks and create action reports, and helping plan fact-based network repairs and replacements. Learn more [here](#).

Wavin now partners with a leading water utility in Brazil that provides water and sewage services to 9.5 million consumers in 345 municipalities. The objective is to reduce more than 40% of high network water losses via constant detection of network leak ages.

Efficient buildings for resilient cities

Buildings consume 40% of global resources – about 40% of energy, 25% of water, and emit approximately 1/3 of GHG emissions. [Wavin's Indoor Climate solutions](#) (including Sentio) monitor and optimize temperature throughout a building, ensures ventilation and comfort, and also significantly minimizes energy consumption. This supports the transition to zero emission buildings.

Energy savings with Sentio:

Up to 21% using zone control	Up to 20% using underfloor heating vs. radiators	Up to 34% in cooling vs. air conditioning
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The need to have a resilient water cycle and to mitigate and adapt to climate change are top of mind at Wavin. We continue to expand our solutions ensuring resilient infrastructure as well as increasing our impact in new markets, as we [announced](#) the plan to open a new production facility in Indonesia to help alleviate some of the acute water challenges the region is facing as it becomes increasingly urbanized.”



Nicholas P. Ballas

Executive Vice President & President, Polymer Solutions (Vestolit) and Building & Infrastructure (Wavin)





Sustainability Spotlight 2022

Key Activities

Orbia's Precision Agriculture business Netafim's leading-edge irrigation systems, services and digital farming technologies enable stakeholders to achieve significantly higher and better-quality yields, while using less water, fertilizer and other inputs. By helping farmers grow more with less, Netafim is contributing to feeding the planet more efficiently and sustainably.

Key Markets

Orbia's Precision Agriculture business Netafim is the world leader in the production and sale of advanced precision agriculture solutions, with strong presence in the U.S., India, Latam, Turkey and Europe.

Total Sales

\$1,085M

(11% of Orbia revenues)

Total Employees

4,423

(18% of Orbia headcount)

Top five material topics



Precision irrigation solutions



Farmer capacity building



GHG emissions



Innovation



Employee development, engagement & retention

Environmental highlights:

-12%

absolute Scope 1 & 2 GHG emissions vs. 2021

-6.6%

water intensity vs. 2021

18%

share of renewable electricity

Selected Metrics	Units	2020	2021	2022
Energy intensity	MWh/ton	0.85	0.86	0.88
Renewable energy	% of total electricity consumption	5.9%	10.7%	18.2
GHG intensity	Tons CO ₂ e/ton	0.39	0.37	0.34
Water intensity	m ³ /ton	0.84	1.06	0.99
Waste recycled/reused/recovered	% of total waste	71%	73%	68%
Incident rate	(TRIR) total employees and contractors	0.64	0.65	0.52





Sustainability Spotlight 2022

Carbon credits for drip-irrigated rice

Rice is a staple and significant source of caloric intake for more than half of the world's population, but also consumes 30-40% of the world's annual freshwater and contributes to over 10% of the world's methane emissions. Netafim's first-ever carbon credit program for drip-irrigated rice aims to reduce methane emissions from rice cultivation to almost zero. It will provide carbon credits (registered with Verra) as a key financial mechanism and long-term income assistance to farmers interested in regenerative agriculture practices that reduce or sequester CO₂ emissions. The first project for this program is on a farm in Venice, Italy and will be available globally in 2023. Learn more, [here](#).

Supporting UK carbon sequestering

Netafim has implemented its drip irrigation system in a plantation growing carbon-storing trees in Suffolk, England, to increase yield and carbon-storing capabilities. In the first-of-its-kind project in the UK initiated by Carbon Plantations, a variety of Paulownia trees are being planted across about 330 acres of land to produce fast-growing hardwood and absorb carbon dioxide.

The initiative is a part of the UK government's goal of achieving net-zero emissions. The trees will be thinned out after seven years, their timber sold for light construction.

Carbon credits will either be claimed or auctioned for corporate carbon offsetting. The project is expected to absorb 165,346 tons of CO₂ over the first 10 years of its lifetime.

Learn more, [here](#).

Zero-waste in farming

As part of its Zero Waste in Farming strategy, in October 2022, Netafim launched a full-scale circularity program in Mexico. By opening Mexico's largest agricultural plastics recycling facility in Culiacán, Netafim will collect used driplines from farmers across the country, where end-of-life irrigation pipes from any manufacturer will be shredded, washed, and pelletized.

The 40,000 m² project has generated more than 2,500 indirect and 29 direct jobs and features:

- The ability to process over 3,000 tons of plastic per year;
- a water recirculation system for all material processing;
- a photovoltaic setup for 100% renewable power;
- a modern laboratory to ensure that every regenerated pellet and dripline is manufactured to the strictest industry standards.

The plant is a notable addition to Netafim's existing takeback programs, now operating in over nine countries, resulting in over 18,000 tons of end-of-life driplines collected in 2022.

Learn more, [here](#).



If just 10% of paddy rice farmers switch to drip, the drop in emissions will be equivalent to taking 40 million cars off the road. This program marks the first time that carbon credits are being generated based on the application of irrigation technology. Netafim is extremely proud to lead this initiative. In the face of climate change, the only surefire route to sustainable agriculture is to grow more with less land, less water and significantly less greenhouse emissions.”



Gaby Miodownik
Executive Vice President & President,
Precision Agriculture (Netafim)





Sustainability Spotlight 2022

Key Activities

Orbia's Connectivity Solutions business Dura-Line produces more than 400 million meters of essential and innovative infrastructure annually –telecom conduit, cable-in-conduit and other HDPE products and solutions that create physical pathways for fiber and other network technologies that connect cities, homes, and people worldwide.

Key Markets

Orbia's Connectivity Solutions business Dura-Line's main market is the U.S., with a presence in Asia and Europe.

Total Sales

\$1,370M

(14% of Orbia revenues)

Total Employees

2,210

(9% of Orbia headcount)

Top five material topics



Health and safety



Solutions for connectivity



GHG emissions



Innovation



Employee development, engagement & retention

Environmental highlights:

-8%

absolute Scope 1 & 2 GHG emissions vs. 2021

-5.6%

energy intensity vs. 2021

63%

waste recycled/reused/recovered

Selected Metrics	Units	2020	2021	2022
Energy intensity	MWh/ton	0.72	0.71	0.67
Renewable energy	% of total electricity consumption	3.7%	0.4%	5.4%
GHG intensity	Tons CO ₂ e/ton	0.29	0.26	0.22
Water intensity	m ³ /ton	0.49	0.47	0.43
Waste recycled/reused/recovered	% of total waste	56%	61%	69%
Incident rate	(TRIR) total employees and contractors	1.9	1.76	2.34





Sustainability Spotlight 2022

Solving global connectivity challenges

Dura-Line achieved an incredible milestone in 2022 with the acquisition of Biarri Networks, a leading Denver-based telecom engineering company specializing in fiber optic network design solutions for the global telecommunications industry. This investment enables Dura-Line to expand into customized network solutions providing scalability, reliability, and efficiency that revolutionizes design and deployment. Biarri Networks brings a reputation for data-driven engineering services for broadband networks that supplements Dura-Line's connectivity infrastructure pathways for the telecommunications, transportation, and electrical markets.

Learn more [here](#).

Debating new Micro-Technology

Sustainability has become a modern prerequisite for investments in optical fiber networks. The majority of an operator's carbon emissions are Scope 3 (i.e. caused by upstream and downstream activities), of which purchased goods and services account for as much as half. With fiber deployments ramping up and 5G driving massive power requirements, sustainable supply chains will be critical to control the future environmental impact of communications networks.

In response, Dura-Line has introduced MicroDucts ECO using up to 100% reground Dura-Line scrap HDPE from Dura-Line's internal manufacturing process. MicroDucts ECO are bundled to create FuturePath ECO, which may only use virgin materials in their colored identification stripes and protective jackets – though 100% reground jackets are also available. All standard MicroDuct sizes and bundle combinations are available, and all products meet stipulated parameters for virgin-based products. Learn more [here](#).



We couldn't be more excited to have Biarri Networks as part of our business, with their leading intellectual property and brilliant team. This acquisition is an important strategic step to continue to add value to our solutions portfolio. Combined, we can address the most critical customer needs ahead when it comes to the digital infrastructure that will bring reliable connection everywhere."



Peter Hajdu

Executive Vice President & President,
Connectivity Solutions (Dura-Line)





Fluorinated Solutions

Koura

Sustainability Spotlight 2022

Key Activities

Orbia's Fluorinated Solutions business Koura provides fluorine and downstream products that support modern living in a number of significant ways. Koura operates the world's largest fluorspar mine and produces intermediates, refrigerants and propellants used in automotive, infrastructure, semiconductor, health, medicine, climate control, food cold chain, energy storage, computing and telecommunications applications.

Key Markets

Global presence.

Total Sales

\$852M

(8% of Orbia revenues)

Total Employees

1,741

(7% of Orbia headcount)

Top five material topics



Health and safety



Investment in local communities



Governance



Innovation



Sustainable lifecycle of products

Environmental highlights:

-3%

absolute Scope 1 & 2 GHG emissions vs. 2021

7.4%

share of renewable electricity

-22%

SOx emissions vs. 2021

Selected Metrics	Units	2020	2021	2022
Energy intensity	MWh/ton	0.24	0.25	0.33
Renewable energy	% of total electricity consumption	0%	0%	7.4%
GHG intensity	Tons CO ₂ e/ton	0.08	0.08	0.10
Water intensity	m ³ /ton	1.39	1.19	1.76
Waste recycled/reused/recovered	% of total waste	37%	30%	34%
Incident rate	(TRIR) total employees and contractors	0.42	0.66	0.43





Sustainability Spotlight 2022

Decarbonizing refrigerants and propellant footprints throughout their lifecycles

[Klea 456A](#) continues to gain momentum in the EU & UK as a “drop in” replacement for R134a in the mobile air conditioning (MAC) aftermarket sector, with only half its Global Warming Potential (GWP). [Klea 473A](#) is also growing as a non-flammable replacement in ultra-low temperature cooling applications (e.g. vaccine storage, test chambers, and transportation), offering the same performance as R-23 or R-508A/B while reducing GWP by 90%. Klea 473A won [Refrigeration Innovation of the Year](#) at the 2022 Cooling Industry Awards.

In March, Koura opened the world’s first HFA 152a (Zephex 152a) production facility at its Runcorn site in the UK, marking a key milestone in delivering [low GWP medical propellants](#). Several pharma companies are working with Koura to develop low GWP inhalers for asthma and respiratory treatments; initial commercial production is expected in 2025.

Koura also operates a refrigerant recovery service in Mihara, Japan. The plant successfully recovered approximately 772 tons of refrigerants and avoided around 1.5 million tons of GHG emissions in 2022.

Advancing the transition to low carbon mobility

Orbia announced a [joint venture with Solvay](#) to build the largest polyvinylidene fluoride (PVDF) facility in North America.

Orbia’s Fluorinated Solutions business Koura and Polymer Solutions business Vestolit will supply key materials and expertise to close a significant supply gap while promoting regional production and security of a material that optimizes battery energy storage efficiency.

Additionally, [a \\$100 million grant](#) was awarded from the U.S. Department of Energy (DOE) to build the first U.S. manufacturing plant for lithium hexafluorophosphate (LiPF6) on the grounds of Koura’s existing production site in St. Gabriel, Louisiana. This plant will produce enough LiPF6 to support domestic production of more than one million full electric vehicles annually.

Boosting battery performance and circularity

Koura is focused on both improving the performance and circularity of Li-on batteries through investments and research. The [Silatronix OS3®](#) material was launched last year and used in commercial lithium-ion batteries manufactured by Amprius Technologies. OS3® enables Amprius battery cells to achieve and maintain an industry-leading energy density.

Koura has invested in a leading Li-on battery recycling technology developed by [Ascend Elements](#), combining the best of hydro and direct recycling methods. With Koura’s assistance, Ascend is setting up commercial Li-on recycling operations in the United States where they will recover battery-grade materials from spent lithium-ion batteries.



Decarbonization is the greatest challenge of our lifetimes. At Koura, we are partnering across Orbia, particularly with Vestolit, to design and deliver fluorinated products that can enable batteries for electric vehicles and the storage of renewable energy.”



Gregg Smith

Executive Vice President & President, Fluorinated Solutions (Koura)





Data & Performance

For complete data across all topics
and key standards (GRI, SASB, TCFD)
please visit Orbia's:

SUSTAINABILITY REPORTING HUB



ESG Data Summary

Environment	Units	2020	2021	2022	YoY	GRI (2016)	SASB	SDG
Scope 1 Energy	MWh	2,836,718	2,990,035	2,836,025 ✓	-5%	302-1	RT-CH-130a.1	13
Electricity, cooling heat and steam	MWh	4,359,449	4,559,549	4,238,762 ✓	-7%	302-1	RT-CH-130a.1	13
Total energy consumption	MWh	7,196,167	7,549,583	7,074,787 ✓	-6%	302-1	RT-CH-130a.1	13
Energy intensity	MWh/ton	0.87	0.88	0.94 ✓	7%	302-3	RT-CH-130a.1	13
Renewable energy purchased	MWh	130,983	169,451	419,144 ✓	146%	302-1	RT-CH-130a.1	7, 13
Renewable energy generated	MWh	3,587	2,371	2,857 ✓	21%	302-1	RT-CH-130a.1	7, 13
Renewable energy as % of total energy	%	2%	2%	6% ✓	4%	302-1	RT-CH-130a.1	7, 13
GHG emissions Scope 1	Tons CO ₂ e	609,772	627,937	581,864*	-7%	305-1	RT-CH-110a.2	13
GHG emissions Scope 2	Tons CO ₂ e	1,263,457	1,184,236	1,029,234 ✓	-13%	305-2	RT-CH-110a.2	13
GHG emissions total Scope 1+2	Tons CO₂e	1,873,229	1,812,173	1,611,696 ✓	-11%	305-1	RT-CH-110a.2	13
GHG emissions Scope 3	Tons CO₂e	90,039,293	88,625,713	88,385,981**	0%	305-3		12
GHG emissions intensity Scope 1	Tons CO ₂ e/ton	0.07	0.07	0.08 ✓	5%	305-4	RT-CH-110a.2	13
GHG emissions intensity Scope 2	Tons CO ₂ e/ton	0.15	0.14	0.14 ✓	0%	305-4	RT-CH-110a.2	13
GHG emissions intensity Scope 1+2	Tons CO₂e/ton	0.22	0.21	0.21 ✓	0%	305-4	RT-CH-110a.2	13
Nitrogen Oxides (NOx) emissions	Tons	646	655	626 ✓	-4%	305-7	RT-CH-120a.1	3, 12
Sulfur Oxides (SOx) emissions	Tons	952	1,075	772 ✓	-28%	305-7	RT-CH-120a.1	3, 12
Volatile Organic Compounds (VOCs) emissions	Tons	114	121	102 ✓	-16%	305-7	RT-CH-120a.1	3, 12
Total other air emissions	Tons	1,662	1,851	1,500 ✓	-19%	305-7	RT-CH-120a.1	3, 12
Total water withdrawal	1,000 m ³	15,646	15,198	15,153 ✓	0%	303-3	RT-CH-140a.1	6, 12
Total water discharge	1,000 m ³	11,727	11,539	9,770 ✓	-15%	303-4	RT-CH-140a.1	6, 12
Water withdrawal intensity	m³/ton	1.88	1.77	2.01 ✓	14%	303-3	RT-CH-140a.1	6, 12
Total non-hazardous waste	Tons	52,211	53,560	58,566 ✓	9%	306-3		12
Total hazardous waste	Tons	7,594	5,875	5,476 ✓	-7%	306-3	RT-CH-150a.1	12
Total waste	Tons	59,805	62,535	66,608 ✓	7%	306-3		12
Percentage of total waste recycled, reused, recovered	%	52%	55%	61% ✓	5%	306-3	RT-CH-150a.1	12
Percentage of total waste to landfill	%	46%	37%	30% ✓	-7%	306-3		12
Waste intensity	Tons/ton	0.007	0.007	0.009 ✓	22%	306-3		12

YoY: Year on year variation 2022 vs 2021

Figures with this check mark (✓) are assured by an independent third-party for the period January 1st - December 31st 2022.

Waste-related data from 4 recently acquired sites in India has not been included.

* Independent limited assurance for Scope 1 GHG emissions covers emissions related to energy and processes (575,644 tons CO₂e). Leased vehicles under our control are excluded from the assurance Scope, but represent 1% of Scope 1 emissions. ✓
 ** Independent limited assurance for Scope 3 GHG emissions covers categories 11 and 12 from refrigerant sales (74,875,279.75 tons CO₂e). ✓



ESG Data Summary

Social	Units	2020	2021	2022	YoY	GRI (2016)	SASB	SDG
Employees								
Total employees	No.	21,688	22,350	24,442	9%	102-8		8
Contractors	No.	3,727	4,045	4,111	2%	102-8		8
Women in management roles	%	19%	22%	22% ✓	0%	405-1		5
Employee training	hours	377,996	380,315	401,168	5%	404-1		8
Average training hours	hours/year/employee	17.43	17	17.15*	1%	404-1		8
Safety (total employees and contractors)								
Total Recordable Incident Rate	TRIR	0.75	0.61	0.56 ✓	-8%	403-9	RT-CH-320a.1	3
Lost time Incident Rate	LTIR	0.36	0.36	0.28 ✓	-24%	403-9	RT-CH-320a.1	3
Severity Rate	SIR	11.58	7.86	8.66 ✓	10%	403-9		3
Fatalities	No.	1	2	0 ✓	-100%	403-9	RT-CH-320a.1	3
Community investment								
Total giving	\$	2,544,415	2,003,493	2,563,908 ✓	28%	413		2,4,6
Total giving (cash)	%	40%	78%	82% ✓	2%	413		2,4,6
Total giving (in-kind)	%	60%	22%	18% ✓	-2%	413		2,4,6
Governance & Compliance								
Women Directors	Number (%)	3 (21%)	3 (25%)	3 (25%)	0 (0%)	405-1		5
Independent Directors	%	64%	67%	67%	0%	102-22		-
Revenue share from Sustainable Solutions	%	66%	60%	61%	1%	Non-GRI topic		Link
Instances of non-compliance with environmental law*	No.	0	0	1** ✓	100%	307-1		16

*Includes only those resulting in sanctions above \$10,000 USD.

Notes

YoY: Year on year variation 2022 vs 2021

Figures with this check mark (✓) are assured by an independent third-party for the period January 1st - December 31st 2022.

2022 was a transition year to adopt the latest set of GRI standards. During 2023, Orbia will continue with its disclosure agenda to complete the transition. Learn more [here](#).

* In 2022, average annual headcount (HC) was used to calculate average training hours. It provides a more accurate value since Orbia's businesses experienced significant HC increase during 2022, resulting from expansion and acquisitions. Average annual headcount for 2022 was 23,396 employees.


** During 2022, we paid two material fines (>\$10,000 USD each): one related to the conclusion of the PMV Pajaritos Complex incident in Mexico from 2016 that was formally resolved; and another related to the exceedance of two wastewater discharge parameters in one of our facilities in Guatemala, which have been resolved and under control. The total amount paid for both fines was \$86.8K USD.



Financial Summary

Indicators	2020	2021	2022	YoY
Net sales	6,420	8,783	9,648	10%
SG&A	1,048	1,178	1,241	5%
Operating income	720	1,449	1,328	-8%
EBITDA	1,318	2,047	1,909	-7%
EBITDA margin	20.5%	23.3%	19.8%	-352 bps
Financial cost	242	297	160	-46%
Earnings before tax	479	1,154	1,034	-10%
Income tax	151	381	369	-3%
Consolidated net income (loss)	319	772	665	-14%
Net majority income	195	657	567	-14%
Operating cash flow	871	982	1,107	13%
Capital expenditures	(228)	(311)	(549)	77%
Free cash flow	552	572	466	-19%
Net debt	2,751	2,738	3,149	15%

*in million dollars



Additional Resources
For complete data across all topics and key standards (GRI, SASB, TCFD), please visit Orbia's:

[SUSTAINABILITY REPORTING HUB](#)

Notes
YoY: Year on year variation 2022 vs 2021





GHG emission calculation methodology

We develop our GHG inventory based on globally accepted standards and protocols including The Greenhouse Gas Protocol. (No material restatements have been done in 2022).

	Definitions*	Methodology
Scope 1	Direct emissions from sources owned or controlled by the company.	Calculated with average fuel CO ₂ emission factors published by DEFRA and EPA,
Scope 2	Electricity, heating, steam and cooling indirect emissions from upstream sources not owned or controlled by the company.	Calculated with both market-based and location-based emission factors from the International Energy Agency (IEA). IEA factors are used when supplier emission factors are not available.**
Scope 3	Other indirect, upstream and downstream emissions from sources not owned or controlled by the company.	All data was calculated using our internal database to assess the consumption of the different raw materials and other purchased goods and services. Emission factors were sourced from public databases and specialized consultancy services. The calculations were done following the GHG Protocol "Technical Guidance for Calculating Scope 3 Emissions", considering Categories 11 (Use of Sold Products) and 12 (End-of-Life Treatment of Sold Products) as the most significant for the organization (around 90% of total Scope 3 emissions)

For further details on our reporting methodology and boundaries, please refer to our [reporting hub](#).

*The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (Revised Edition).

**Orbia is not using any residual emission factor values. However, 13% of our Scope 2 emissions are calculated using supplier-specific emission factors.





United Nations Global Compact

COMMUNICATION ON PROGRESS



This is our **Communication on Progress** in implementing the Ten Principles of the **United Nations Global Compact** and supporting broader UN goals.

We welcome feedback on its contents.

Orbia endorses the Universal Declaration of Human Rights adopted by the United Nations and condemns all forms of human rights abuse, as stated in our Human Rights Policy. Orbia became a signatory to the UNGC at the participant tier level in 2018, committing to uphold and promote UNGC principles within our spheres of influence. This is our fifth Communication on Progress and we will report annually.

UN Global Compact Principles	Our Position
1 Businesses should support and respect the protection of internationally proclaimed human rights.	At Orbia, we acknowledge, respect and uphold human rights. Our Code of Ethics binds all employees around the world to the highest ethical standards and we reinforce ethical practices with communication, training and immediate attention to ethical issues as they arise. We maintain a Human Rights policy confirming our support for the Universal Declaration of Human Rights and other universally accepted standards. We drive similar standards throughout our supply chain.
2 Businesses should make sure that they are not complicit in human rights abuses.	
3 Businesses should uphold the freedom of association and the effective recognition of the right to collective bargaining.	We respect the rights of employees to freedom of association and collective bargaining. We aim to maintain a collaborative, open and positive relationship with employees and address issues relating to their rights in a positive manner. We drive similar standards throughout our supply chain.
4 Businesses should support the elimination of all forms of forced and compulsory labor.	We do not engage in any practice which could be construed as forced labor. All Orbia employees are legally employed and join our business of their own free will. We drive similar standards throughout our supply chain.
5 Businesses should support the effective abolition of child labor.	We respect and support the rights of all children, and we are committed to preventing harm and actively safeguarding their interests. We do not employ children in any part of our business. We drive similar standards throughout our supply chain.
6 Businesses should support the elimination of discrimination in respect of employment and occupation.	We maintain a policy of equal opportunity and enjoy a high level of diversity among our workforce around the world. A key Orbia value is embracing diversity. Recruitment and human resources policies are designed to nurture inclusive practices for new and current employees in all matters relating to their employment with Orbia. See our Diversity and Inclusion policy .
7 Businesses should support a precautionary approach to environmental challenges.	Many of Orbia's products are designed to minimize environmental impacts, and provide benefits to our consumers, and to support sustainable construction, smart cities, sustainable agriculture, water conservation and clean energy, low carbon and circular solutions. Such products form part of our customers' own greenhouse gas emission reduction programs as they enable lower footprint. In our own operations, we work to reduce our toxic emissions, drive down our carbon and water footprints and act as environmental stewards in all that we do.
8 Businesses should undertake initiatives to promote greater environmental responsibility.	See Low Impact & Resilient Operations , Sustainable Solutions , and Impactful Ventures sections.
9 Businesses should encourage the development and diffusion of environmentally friendly technologies.	
10 Businesses should work against corruption in all its forms, including extortion and bribery.	We are committed to behaving with integrity and acting against all forms of corruption. Our Code of Ethics and our Integrity and Anticorruption Handbook guide our actions binding all employees to uphold these policies. See Ethics & Compliance section.





CEO Water Mandate



**WE SUPPORT
CEO
WATER
MANDATE**

The CEO Water Mandate is a special initiative of the UN Secretary-General and the UN Global Compact, providing a multi-stakeholder platform to advance corporate water sustainability policies and practices. Orbia became a signatory to the CEO Water Mandate in 2018, confirming our commitment to sustainable water management and practices. This is our fourth progress report to the CEO Water Mandate, as part of our GRI-based sustainability disclosure.

Water Mandate Principles		Our progress
Element 1	Direct operations	In 2022, we conducted a comprehensive water risk analysis in partnership with Waterplan to understand, quantify & prioritize water-related risks covering all Vestolit's sites to enable them to establish a water stewardship plan and local goals. In addition, as we update our climate risk assessment, water-related risks for all Orbia plants will be covered. For further details, see section: Water
Element 2	Supply chain and watershed management	From 2020, we include water performance as part of our EcoVadis-based screening of suppliers and take a risk-based approach to managing performance, including watershed risks.
Element 3	Collective action	Our business groups are active in the global water agenda, including actions to preserve water basins around the world, as well as contributing in key events that promote collective action, such as the 2023 UN Water Conference and World Water Week. See Global Water Action section . In addition, Orbia has been a longtime supporter of initiatives such as the Water Funds in Latin America and other initiatives: See Water section.
Element 4	Public policy	We do not make political contributions. We support public policy on water through our engagement with industry associations and support for Water Funds. See section Water + Thriving Communities .
Element 5	Community engagement	See section Thriving Communities for our approach to community engagement as well as examples of community support and engagement through Water Access, Sanitation and Hygiene (WASH) programs.
Element 6	Transparency	We report on our water consumption and other water impacts in line with GRI and SASB standards.





Impact Report 2022

Additional Resources

For complete data across all topics and key standards (GRI, SASB, TCFD), please visit Orbia's:

SUSTAINABILITY REPORTING HUB

orbia.com

