



Impact Report 2023





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About this Report

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

This year, we continued to report on our milestones with our comprehensive reporting hub, designed to enhance the disclosure review experience for our stakeholders.

SUSTAINABILITY REPORTING HUB

Orbia's identity as a purpose-driven company is reflected in a growth strategy anchored in sustainability. This is Orbia's 2023 Impact Report detailing the company's annual business performance and its 15th annual sustainability disclosure, covering the company's commitments to people, the planet and our role in driving a thriving, net-zero world.

The financial data included in this report pertains to the 2023 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 are expressed in U.S. dollars (USD), unless otherwise specified.

Environmental and social data is culled from sites that were operational in 2023, from their date of acquisition or up to their date of divestment and excludes data on joint ventures (JV) where Orbia holds 50% or less ownership. Environmental data includes manufacturing facilities only (excludes offices, warehouses, distribution centers and other facilities, which represent less than 5% of our environmental footprint). Social data includes all facilities and represents manufacturing sites, offices, warehouses, distribution centers and research and development labs.

In 2023, sites acquired in previous years have continued to be integrated into the systems that impact our sustainability reporting. No restatements were made.

The selection of content for this report was informed by our [first double materiality assessment](#). This report has been prepared in accordance with the Global Reporting Initiative (GRI) Standards, the Sustainability Accounting Standards Board (SASB) 2018 Chemicals Standards and covers our progress in line with our [United Nations Global Compact commitment](#), the [CEO Water Mandate](#), and the [International Financial Reporting Standards Foundation Climate Disclosures S2](#) (formerly the Task Force on Climate-Related Financial Disclosures).

A selection of sustainability data was assured by an independent third party, for the period between January 1st and December 31st, 2023. The 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. The assurance statement is available [here](#).

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



Message from our Chairman and CEO



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

Dear stakeholders,

We are living through times of accelerated change. Each year, events perpetuate faster, pivot points appear more suddenly and we find ourselves navigating new and uncertain terrain. With fragmented media that rarely celebrates positive stories, we need to acknowledge the progress we have made on the ongoing journey to advance life around the world. This is what we seek to do through the annual Orbia Impact Report.

We want to first thank all of you in the Orbia community for your contributions and partnership in 2023. We are grateful for our long-term shareholders who have been on this transformation journey with us for many years, as well as our new shareholders, partners and customers who have more recently joined us and come to know us as a forerunner in sustainable solutions. Your belief in who we are and what we do to make a difference has supported our momentum. As we look back now on the prior year, we are proud that external pressures did not stall our delivery of offerings for the long-term viability of our company and the world.

While the most dramatic effects of the COVID-19 pandemic subsided in 2023, a host of compounding issues persisted. Geopolitical turmoil, supply chain disruption, inflation and economic stagnation lingered on. Our geopolitical situation took a devastating turn beyond the war in Ukraine with the horrific October 7 Hamas attacks against Israel, which directly affected all our employees in Israel and our partners in Kibbutz Hatzerim. Shockingly, loved ones were killed or taken hostage. Natural disasters in Turkey, Morocco and Mexico added to the toll of suffering. Amidst this turbulence, we took steps to first ensure the safety of our teams and then to ensure our business continuity. It took concerted efforts to protect

our people and support them in community recovery and restoration. It took all our employees working together to leverage our strategic acumen, customer focus and engineering expertise to meet global customer needs for cleaner, smarter, more efficient solutions in water and food security, connectivity and the energy transition.

Our resilience as a business comes down to exceptionally resilient and ingenious people: the kind who take their work seriously and personally. We share the conviction that our diversified offerings, customer-centered perspective and commitment to accelerating decarbonization are sustainable competitive advantages.

We are today of a scale to be an essential contributor to the global good. In 2024 and beyond, we will remain focused on creating market value that translates into lifetime value for our global stakeholders. This is our purpose-led path to prosperity.

Business Performance Update

As 2023 recedes, health and safety stay top-of-mind for us. Over the course of the year, we maintained safety protocols at all our sites and responded swiftly to ensure the safety of all 1,200 of our Israeli colleagues and those in regions impacted by disasters. Despite multi-year improvements in reducing our number of incidents, we are saddened to report that we had two fatal incidents in 2023.

These tragedies weigh heavily on our hearts: we must accept full responsibility for our failures and



work together to make sure that every member of our community can return home every day. Assessing our safety mindsets and practices, understanding our life-saving rules and recommitting to our goal of zero incidents is imperative for us in 2024, underscored by adherence to safety-first cultural transformation.

In 2023, the global economy continued to experience lingering effects from the pandemic, with various swings and contraction in our end markets. Overall, inflation was common across national economies and elevated interest rates constricted demand and slowed purchases, as many customers exercised due caution. Our revenues for 2023 totaled \$8.2 billion at year-end and represented a 15% decline as compared to 2022. Revenues were higher in Fluor and Energy Materials, particularly in the refrigerants vertical, but lower across other businesses. Primary drivers of the year-over-year decline included lower PVC and caustic soda pricing and volumes for Polymer Solutions, weaker demand in EMEA for Building and Infrastructure and deferrals of customer projects due primarily to high interest rates in Connectivity Solutions. EBITDA was \$1.46 billion, a year-over-year decline of 24%. This decline was mainly due to lower prices and softer demand across most markets, particularly in Polymer Solutions, Building and Infrastructure and Connectivity Solutions and was partially offset by higher profitability in Fluor and Energy Materials. Operating cash flow was \$931 million, down 16% from 2022, driven by lower EBITDA and partially offset by effective working capital management, lower cash taxes paid and positive currency fluctuations. Despite market forces beyond our control, we still delivered within our adjusted guidance for 2023 and held onto a solid market position.

As we move into 2024 anticipating headwinds, we are concentrating on driving revenue, upholding operational and commercial excellence and exercising the utmost financial discipline, as we did to navigate 2023.

In 2023, our **Polymer Solutions (Vestolit and Alphagary)** businesses faced lower volumes and prices in many of our segments, compounded by raw material shortages. Regardless, we realized some gains from optimizing production based on raw material access, controlling spending and investing in improving operating efficiencies. As **Building and Infrastructure (Wavin)** faced headwinds with weakened demand in Europe, we leveraged business optimization efforts, continued to refine the offerings in our urban climate resilience portfolio and capitalized on strength in Latin America. Given stagnation in some of our core markets worldwide, we closely monitored and managed costs in **Precision Agriculture (Netafim)** and focused on generating leads, building vendor partnerships and driving demand in extensive crops, greenhouses and digital farming solutions to increase farmers' capacities to grow more with less. While **Connectivity Solutions (Dura-Line)** experienced a temporary slowdown, we expanded our manufacturing footprint in North America to meet demand from capital flowing into government-funded telecommunications infrastructure programs. In **Fluor and Energy Materials (Koura)**, we focused on maximizing our volumes, maximizing our value and advancing our flagship projects in LiPF₆ and PVDF to ensure we can stay in step with North America's needs for high-performance battery materials. We secured the lithium-ion battery supply chain in North America by joining efforts with Polymer Solutions (Vestolit) and Syensqo (formerly Solvay) to produce PVDF (an essential lithium-ion battery binder coating);

received a \$100 million grant from the U.S. Department of Energy for a planned project to build the first large-scale manufacturing site for LiPF₆ (a highly conductive electrolyte salt used in lithium-ion battery cells) and locked in a technology licensing agreement with Kanto Denka Kogyo to develop LiPF₆. Demand for both materials is expected to ramp up significantly over the course of the decade as the need for lithium-ion batteries increases with the transition to electric vehicles (EVs) and growth in stationary storage applications. Our new positioning as "Fluor and Energy Materials" is intended to reflect the alignment of our business group to downstream energy applications with current and next-generation potential.

Extending from our efforts in 2022, all of our business groups doubled down on decarbonization and circularity initiatives that deliver lasting customer, industry and environmental value. As a few examples, in Polymer Solutions we prepared to expand our Vinyl in Motion post-industrial PVC recycling program to Mexico after two years of success in Colombia. In Building and Infrastructure, we built out our recycled content portfolio to meet demand for lighter footprint, longer-lasting solutions for heating, cooling, indoor climate and sewage pipe applications. In Precision Agriculture, we scaled up our carbon credit program for drip-irrigated rice to new crops and new regions across Europe and continued expanding, effectively removing around 20,000 tons of agriculture waste in 2023. In Connectivity Solutions, we augmented our eco-friendly portfolio with conduit solutions in up to 20 configurations for our European customers as well as launched the FuturePath ECO and MicroDuct ECO products in North America.

Results from a life cycle assessment showed a 44% reduction in the carbon footprint of the ECO products from using regrind verified for high-quality performance.



In Fluor and Energy Materials, we unveiled R-444A, a new, lower global warming potential (GWP) direct replacement for R-1234yf in the refrigerants automotive aftermarket that meets current and future U.S. environmental regulations. And additionally, through a partnership with Kindeva Drug Delivery, we will see existing pressurized Metered Dose Inhaler (pMDI) propellants substituted with our low-GWP medical propellant, Zephex® 152^a, for a 90% reduced carbon footprint.

To further our agenda, we invested more than \$7 million in climate-focused startups working across smart ecological sensing, crop protection, agriculture robotics and more through our corporate venture capital fund **Orbia Ventures**. Orbia Ventures also supported several key partnerships in 2023 to fuel the development of circular solutions. One game-changing example is the partnership between Orbia Ventures portfolio company Ascend Elements and Fluor and Energy Materials to explore commercialization of a patented Hydro-to-Anode® graphite recycling technology that generates 99.9% pure graphite from used lithium-ion batteries. This method would secure a tax credit-compliant source of battery-grade materials for North America's EV industry.

Reflective of the greenfield opportunities in recycled lithium-ion components, Ascend Elements just raised \$542M to stimulate production of U.S.-engineered materials at a more than \$1B valuation: this was one of the largest cleantech private equity placements in 2023.

Environmental, Social and Governance Updates

Achieving sustainable impact has shaped our dynamic 70-year history and today unites us in our pursuit of better solutions for the world's toughest challenges. Our ESG

performance is intrinsic to our business performance. In 2023, about 65% of our revenues contributed to the United Nations Sustainable Development Goals (SDGs).

Our ambitions are reinforced by a clear commitment to governance. In 2023, we continued to augment a robust governance structure with updated policies for the organization, including those related to tax strategy, materiality, ethics and data retention. We transitioned to make environmental and social aspects a key component of Orbia's Short-Term Incentive Plan to support sustainable value creation, responsible corporate behavior and management excellence. We updated our materiality assessment using a double-materiality approach to gauge financial and non-financial perspectives on topics that have impacts across our value chain and business, both positive and negative. This approach will help us harness synergies to improve our performance around material topics, mitigate potential risks and seize opportunities. And last but certainly not least, we began the process of upgrading our finance and IT systems and controls to the highest global standards.

Looking across all our achievements throughout the year, we saw profound impact from initiatives that elevated, celebrated and inspired our people in their everyday efforts as well as on their career trajectories with Orbia. The launch of our first employer brand and employer value proposition (EVP) mid-year became the defining celebration of our common drive to improve the world. It is also the foundation for present and future efforts to attract and retain the best and the brightest talent from different backgrounds and perspectives. Over 20,000 employees attended on-site and virtual gatherings throughout June, and the momentum has continued into 2024 with record-breaking engagement across our talent acquisition and external channels. Importantly, we

solidified our performance management process with goals around safety, sustainability, ethics and compliance, business and functional milestones as well as "One Orbia" contributions, connecting 'what' we do with 'how' we do it and achieve meaningful success together.

Committed to our core value of embracing diversity of thought and experience, we continued to strengthen representation across Orbia, reaching 23% women in management roles in 2023. This progress contributed to Orbia's inclusion in Forbes' 2023 ranking of the World's Top Companies for Women, based on evaluations from approximately 70,000 women across 37 countries, assessing factors such as employer reputation, leadership and workplace practices.

We also expanded our efforts to support our broader employee community through both hiring practices and humanitarian initiatives. In collaboration with the TENT Partnership for Refugees, we created employment opportunities for approximately 169 qualified employees across our operations in Mexico, Costa Rica, Colombia, Peru, Brazil and Poland.

As a sustainable supplier, our focus extends backwards from lighter-footprint products and applications into responsible sourcing, production and distribution. To those ends, we reduced Scope 1 and 2 emissions 10% vs. 2022 (-28% vs. baseline) and renewable energy consumption increased by 52% vs. 2022. We also reduced our SO_x emissions by 84% vs. our 2018 baseline, surpassing our sustainability-linked bond goal by 24%. With these improvements, we are confident that we are on track to achieve our 2050 net-zero operational goal.



We updated our Climate Risk and Opportunity Assessment in line with the International Financial Reporting Standards Foundation recommendations on climate-related disclosures to utilize the latest available science and stimulate the world's transition to renewables. And in recognizing the relationship between water and equity, we reached a key milestone in 2023: adopting a net positive water impact ambition to create ripples of access in resource-stressed communities through driving operational improvements at our sites, installing water and sanitation solutions and providing community programs that boost water awareness and security.

We continue to attend to preventing negative externalities from impacting our operations and see great potential in leveraging our solutions for community support in the years ahead. In 2023, we targeted areas spanning water management and access, food security and nutrition, climate change, STEM education and community health and committed over \$350,000 to global disaster relief efforts. In 2023, over 25,000 underserved people benefitted from our water and sanitation programs in Latin America and other initiatives including community gardens, promotion of STEM skills and volunteering activities took place across the globe. We are happy to report that we have maintained our place in the Dow Jones Sustainability Indices (DJSI), were upgraded by MSCI and Sustainalytics in our ratings, retained our gold medal from Ecovadis for our sustainability performance and saw 62% of our suppliers improving their sustainability score through our Ecovadis program. We were also pleased to receive recognition from Nasdaq as an ESG trendsetter, joining a global roster of pace-setting companies.

As we move into 2024, we do so with open eyes and awareness of our complex economic environment. We see challenges as well as a landscape rich with potential. We are confident in our ability to deliver solutions that the world needs for water and food security, connectivity and the energy transition with the determination that has come to define our community. The demand for our essentials will continue to build. We will be ready when the markets recover.

Thank you to all in the Orbia family: those who continually bring our purpose to life, every day and everywhere. Thank you to our customers, shareholders and partners for your loyalty and trust.

We are striding forward in advancing life together and building the thriving world we all envision.

Best regards,

Sameer Bharadwaj,
Chief Executive Officer

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



Sameer Bharadwaj,
Chief Executive Officer



Message from our
Chairman & CEO

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PURPOSE AND VALUES

BUSINESS GROUPS

GLOBAL IMPRINT

STRATEGY FOR VALUE CREATION

INVESTING IN CLEAN TECHNOLOGY



Purpose and Values

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 **Fluor and Energy Materials** (Koura) sectors. These five Orbia Business Groups have a collective focus on ensuring food and water security, connecting communities to information and enabling the energy transition 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

Our fears can't hold us back. In order to venture into the unknown, we need to move forward with curiosity and the ambition to create a better world.



Take Responsibility

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



Embrace Diversity

We envision a more diverse and inclusive world, starting with our own global community. We welcome diversity in all its forms—identity, culture, background, experience, abilities and opinions—promote fairness in policies and programs and strive for a culture where all employees feel that they belong and can thrive.



Business Groups



With applications extending from pipes and cables for building and infrastructure to bio-compatible medical devices to household materials and appliances that support everyday life, Orbia's Polymer Solutions business group and businesses Vestolit and Alphagary supply Orbia's downstream businesses and a global customer base with 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.



To connect cities, homes and people worldwide, Orbia's Connectivity Solutions business group and business Dura-Line produces more than 500 million meters of essential infrastructure annually—telecom conduit, cable-in-conduit and other HDPE products and solutions—to line physical pathways for fiber and other advanced network technologies.



Creating long-lasting, circular and efficient solutions, Orbia's Building and Infrastructure business group and business Wavin is working to ensure safe and efficient water supplies, sanitation and hygiene, climate-resilient cities and better building performance with its above- and below-ground technologies. The business group benefits from supply chain integration with the Polymer Solutions business group, a customer base spanning three continents, and investments in future-fit technologies.



To support modern life with a lighter footprint, Orbia's Fluor and Energy Materials business group and business Koura provides fluorine and downstream intermediates, refrigerants and propellants used in industries from automotive to infrastructure, health and medicine to energy storage, computing to telecommunications.



Helping farmers grow more with less, Orbia's Precision Agriculture business group and business Netafim is contributing to feeding the planet sustainably with leading-edge irrigation systems, services and digital farming technologies that generate significantly higher and better-quality yields using less water, fertilizer and other inputs.



Global Imprint

24,014
Employees

\$8.2B
Revenue

\$1.46B
EBITDA

17.8%
EBITDA Margin

\$176M
Free Cash Flow

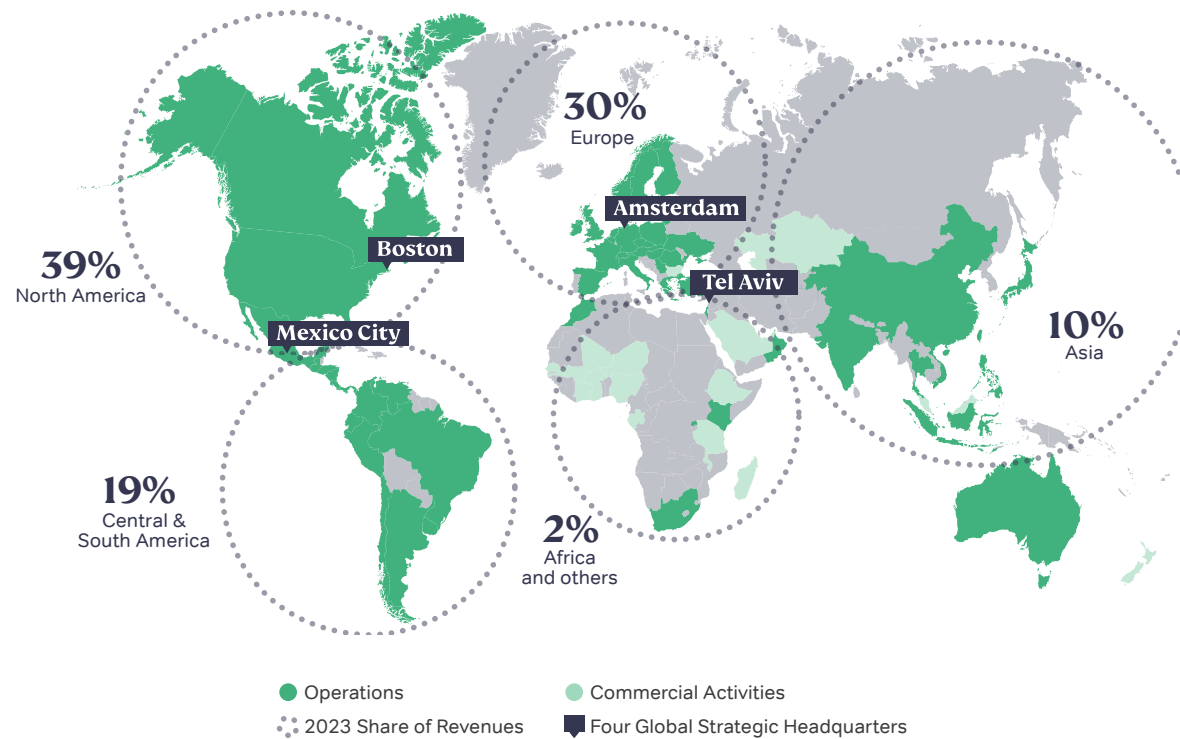
100+
countries
Commercial
Footprint

50+
countries
Operations
Footprint

136
production sites
(including one
active mine)

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

Diversified Global Footprint 2023 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.**

Addressing World Challenges

Orbia works to deliver sustained value for our customers and stakeholders worldwide and solid returns to shareholders. We match our commitment to our customers' needs, leading global positions and our organic growth goals with tackling some of the world's most pressing challenges. Our market activities are aligned with making an impact on the United Nations Sustainable Development Goals (UN SDGs).

Water & Food Security			Information Access & Connectivity	Decarbonization & Energy Transition
				
Polymer Solutions	Building and Infrastructure	Precision Agriculture	Connectivity Solutions	Fluor and Energy Materials
Advantaged player in PVC and specialty PVC, serving water, infrastructure, health and well-being, and other industries.	Leading global provider of innovative water management solutions for climate-resilient construction.	Global market leader in precision irrigation and other solutions that enable the world's farmers to grow more with less.	Market leader in data network solutions, including conduit and accessories designed to bring connectivity to all.	Largest global fluorspar provider with fluorine-based products for applications from medicine to refrigeration to energy storage.



Investment and Growth Strategy

Orbia is strategic in its investments, prioritizing a largely organic approach to drive growth and long-term resilience. We serve a broadening customer base in our core markets through portfolio and geographic expansion and pursue investments in adjacent markets and complementary products, services and technologies.

- Our approach to **capital allocation** throughout our growth journey is disciplined, prioritizing organic growth projects in our core markets that generally come at a cost at or below 4x expected EBITDA at maturity.
- Our plans include **organic investments** across all our businesses aligned to the three challenge areas we have the position, portfolio and intention to address: water and food security, information access and connectivity and decarbonization and the energy transition. We seek opportunities to innovate and develop fit-for-use solutions in these areas. For further information and examples, refer to our [Sustainable Solutions](#) section.
- We view **bolt-on acquisitions** as opportunities, seeking small-to-medium-sized investments that yield synergies and offer high growth potential across our business groups and value chains.
- We leverage **vertical integration** for supply security and cost efficiencies across our business groups (especially those participating in the PVC chain) and **geographic and asset optimization** to ensure we are making and scaling efficient use of our footprint and capabilities.
- We invest in an **operational excellence** system to take advantage of opportunities for standardization.

Many of our businesses provide solutions for climate resilience and decarbonization, and we will continue to move further in this direction as the need for a net-zero economy and world sharpens. See Orbia's strategic investment plans in our [2023 strategy update](#).

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.



Investing in Clean Technology

2023 was marked by substantial investment in clean tech and energy materials

Orbia Fluor & Energy Materials (Koura) has been developing its advanced battery materials capabilities in the past five years, with investments totaling approximately \$30M at the close of 2023. Building from core capabilities and raw material assets, we expanded our team and R&D facilities and engaged in new technology acquisitions (including Silatronix acquisition), licensing agreements and technology transfer for LiPF_6 and PVDF technologies. We also invested more than \$10 million in Ascend Elements, a leading battery recycling technology company. Our investments in 2024-2026 are estimated to reach approximately \$800 million, coupled with a \$100 million grant from the U.S. Department of Energy (DOE) for a planned project to bring online the first LiPF_6 manufacturing facility in North America. Through a JV with SYENSQO (formerly Solvay) we will additionally produce intermediates out of North America's first suspension-grade PVDF facility. Key developments from 2023 include:

orbia **Fluor & Energy Materials**

Orbia entered a technology licensing agreement with Kanto Denka Kogyo for LiPF_6 , a critical lithium-ion electrolyte salt. While we will provide raw material assets and development expertise, the agreement provides access to Kanto Denka Kogyo's world-class technology and expertise in commercial LiPF_6 production for a planned project to build the first LiPF_6 manufacturing plant in North America. Our facilities will help the U.S. produce high-performance batteries for more than one million electric vehicles every year.

orbia ventures

Reached an agreement with Ascend Elements (an Orbia Ventures portfolio company) to close the loop in battery material production. Through this partnership, Ascend Elements will supply us with 5,000 metric tons of recycled and recovered lithium carbonate per year to be used as source material for lithium-ion battery material components in the U.S. and Europe (including LiPF_6).

Click [here](#) for further information.

orbia **Polymer Solutions**

Orbia Polymer Solutions (Alphagary) is also making significant strides in the energy materials landscape. The GARAFLEX® series of PVC and thermoplastic elastomers, olefins and vulcanizates, for electric vehicle (EV) charging cables is gaining traction with key customers. Additionally, two key developments are moving along steadily. The first focuses on under-the-hood EV OEM materials, involving active formulation and collaborative efforts with valued partners. The second is the introduction of GARATHANE 6017 NATURAL UV-FG, a new product in EV charging cables that is now ready for customer sampling and in conformance with the BS EN 50620 standard for safety and reliability.

Click [here](#) for further information.

By 2030, our investments in this space could amount to more than \$1.2 billion, offering strong, long-term ROIC.



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OUR IMPACTMARK

SUSTAINABILITY ACHIEVEMENTS

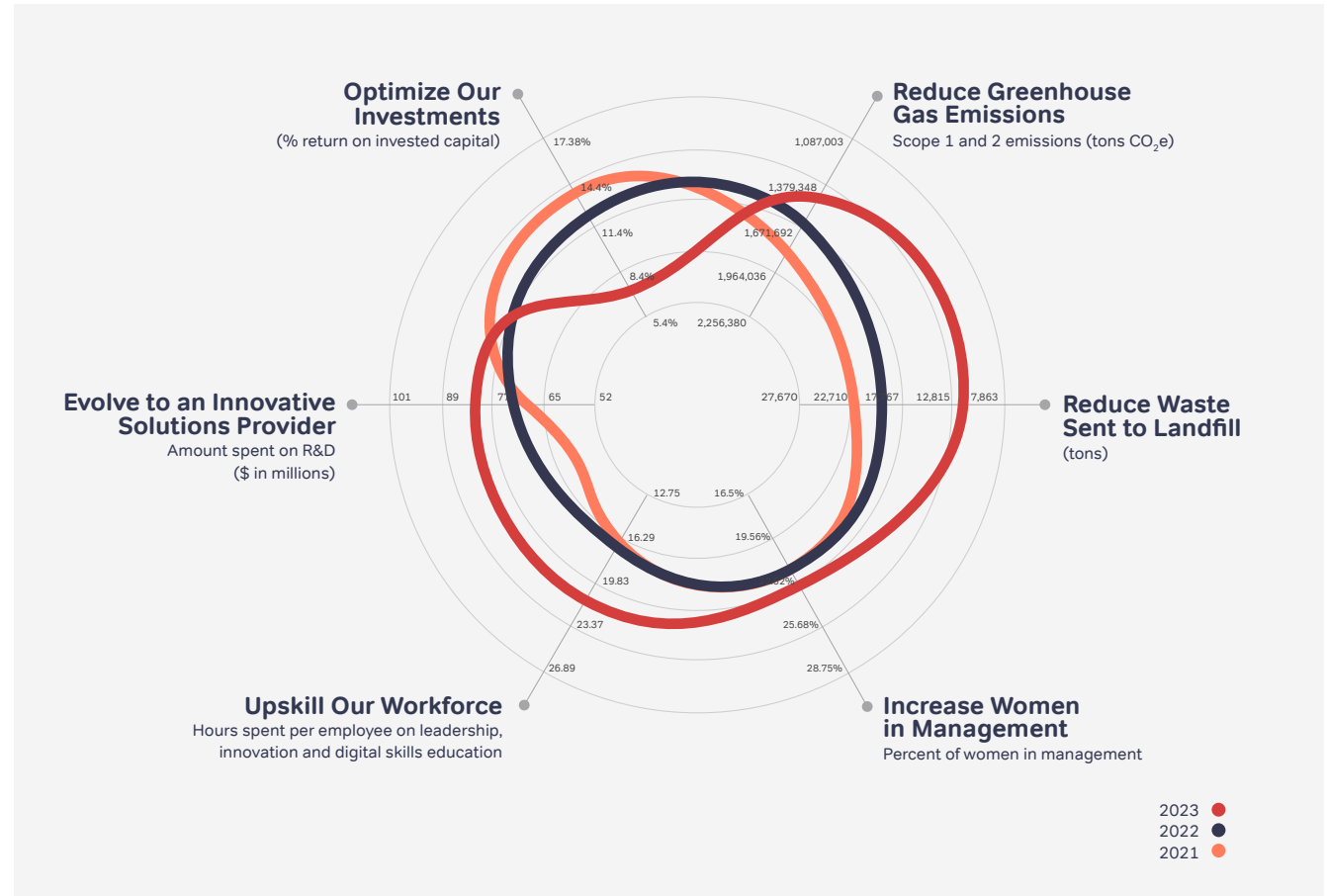
KEY FINANCIAL FIGURES



Our ImpactMark

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

At Orbia, we are passionate about tackling the challenges that define our day. To track progress on our journey to advance life around the world, our first-of-its-kind ImpactMark transparently displays our 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 our ongoing path towards a more perfect circle.





Sustainability Achievements

Environment

-28%

GHG Scope 1 & 2 emissions
vs. 2019 baseline.



-84%

SOx emissions vs. 2018
baseline surpassing our 2023
[sustainability-linked bond](#) goal by 24%.



-45%

process waste
sent to landfill vs. 2022.



70%

of sites in water-stressed regions
with [closed-loop water systems](#).



Social

+3200

training hours provided to future leaders through
Orbia's Leadership Development programs.

+25K

people reached through WASH
programs in LATAM.

Featured on Forbes 2023 list of
[World's Top Companies for Women](#).

Over

\$350k USD committed

for emergencies in Turkey, Syria, Morocco,
Israel and Mexico.

Governance

Our Board of Directors is

67% independent and represents
4 different nationalities.

Launched [Orbia's Supplier Code of Conduct](#).

62% of suppliers have improved
their score in Ecovadis.

[Environmental and social aspects](#) are now a
key component of Orbia's [Short-Term Incentive
Compensation Plan](#).

ESG indices and recognition

- Orbia was highlighted as an ESG Trendsetter by Nasdaq.
- Gold medal from Ecovadis and low-risk profile in Sustainalytics for second-consecutive year.
- Upgraded rating by MSCI, to BBB.
- Member of the Dow Jones Sustainability Index MILA Pacific Alliance for 5th consecutive year and included for the third time in the S&P Sustainability Yearbook.

[For more recognitions and awards, click here.](#)



Sustainability Achievements

Sustainable Solutions

Polymer Solutions

Vinyl in Motion

recycles +60 tons/month of PVC in Colombia, with future expansion to Mexico.

Click [here](#) for further information.



Precision Agriculture

Launch of the Gabiro Agribusiness Hub,

a JV with the Rwandan government to provide ready-to-farm land with full access to water and energy networks.

Click [here](#) for further information.



orbia ventures

All 2023 transactions were climate-focused.



Polymer Solutions

Acquisition of Neotrimental

to expand into fumaric acid food additives space.

Click [here](#) for further information.



Connectivity Solutions

Expansion of ECO products offerings

now with quantified environmental impact through LCAs.

Click [here](#) for further information.



65%

of Orbia's 2023 revenues contributed to the UN SDGs.

Click [here](#) for further information.



Building & Infrastructure

34% growth in Urban Climate Resilience portfolio sales,

enabling cities to be more resilient to climate change globally.

Click [here](#) for further information.



Fluor & Energy Materials

First ever LiPF₆ facility in North America planned to be operational by 2026

F&EM is planning to invest in securing the production of LiPF₆ with targeted annual production enough to help the U.S. produce more than one million electric vehicles annually.

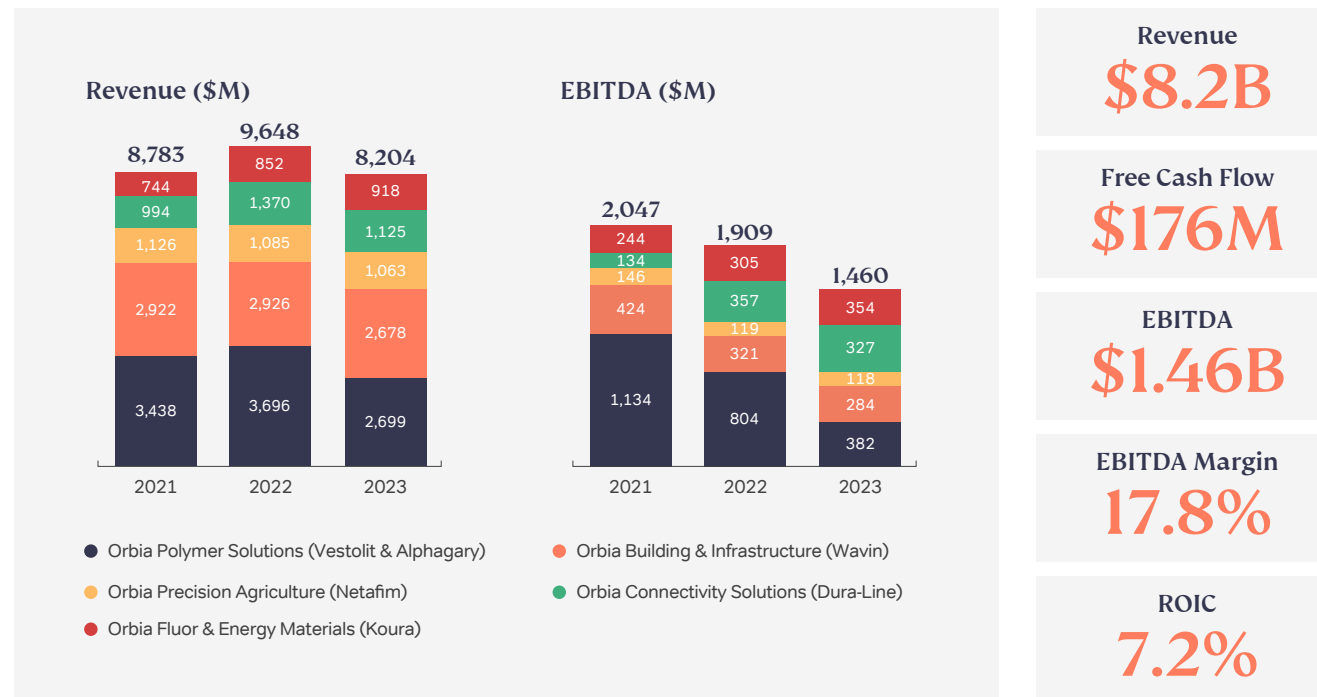
Click [here](#) for further information.





Key Financial Figures

Our revenues for 2023 totaled \$8.2 billion at year-end and represented a 15% decline as compared to 2022 and EBITDA was \$1.46 billion, a year-over-year decline of 24%. Primary drivers of the decline included lower prices and softer demand across most markets. These impacts were partially offset by higher profitability in Fluor and Energy Materials. Operating cash flow was \$931 million, down 16% from 2022, driven by lower EBITDA and partially offset by effective working capital management, lower cash taxes paid and positive currency fluctuations.





Key Financial Figures

In 2023, our Polymer Solutions (Vestolit and Alphagary) businesses faced lower volumes and prices in many of our segments, compounded by raw material shortages. Regardless, we realized some gains from optimizing production based on raw material access, controlling spending and investing in improving operating efficiencies. As Building and Infrastructure (Wavin) faced headwinds with weakened demand in Europe, we leveraged business optimization efforts, expanded our bio-based product range to meet growing customer interest and continued to refine the offerings in our urban climate resilience portfolio. Given stagnation in some of our core markets worldwide, we closely monitored and managed costs in Precision Agriculture (Netafim) and focused on generating leads, building vendor partnerships and driving demand in extensive crops, greenhouses and digital farming solutions to increase farmers' capacities to grow more with less.

While Connectivity Solutions (Dura-Line) experienced a temporary slowdown, we expanded our manufacturing footprint in North America in preparation to access capital flowing from several government-funded telecommunications infrastructure programs. And in Fluor and Energy Materials (Koura), we focused on maximizing our volumes, maximizing our value and advancing our flagship projects in LiPF₆ and PVDF to ensure we can stay in step with North America's needs for high-performance battery materials. We also secured the lithium-ion battery supply chain in North America by joining efforts with Polymer Solutions (Vestolit) and Syensqo (formerly Solvay) to produce PVDF (an essential lithium-ion battery binder coating), received a \$100 million grant from the U.S. Department of Energy to build the first large-scale manufacturing site for LiPF₆ and locked in a technology licensing agreement with Kanto Denka Kogyo to develop electrolyte salts. Our new positioning as "Fluor and Energy Materials" reflects the alignment of our business group to downstream applications with current and next-generation potential in the energy transition.

"2023 was a challenging year: high interest rates, economic stagnation in China and geopolitical turmoil affected our business. But despite market forces beyond our control, we still delivered within our adjusted guidance for 2023 and held on to or improved our strong market position across our business groups, especially with new offerings from our sustainable solutions portfolio. We also announced the formation of a joint venture with Syensqo (formerly Solvay) to manufacture and commercialize PVDF for the lithium ion battery market, helping to drive the energy transition in the United States. We continue to operate with strong commercial, operational and fiscal discipline and continue to meet our customers' needs for sustainable solutions."



Jim Kelly
Orbia Chief Financial Officer



For further information:

[Financial Reports](#)



Message from our
Chairman & CEO

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Orbia

2023
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Solutions

Impactful
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Business
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Data &
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Sustainability at Orbia

SCIENCE-BASED STRATEGY & MATERIALITY

GOVERNANCE STRUCTURE

COMMITMENTS & PROGRESS



Materiality-Based Sustainability Strategy

Our strategy was developed from an evidence-based assessment of our top material topics aligned with our purpose, intended impact and challenge-based approach to value creation.

To connect the dots between our company strategy and sustainability activities, we conducted a double materiality assessment in 2023. The assessment was designed to capture financial and non-financial perspectives alike as promoted by GRI, SASB, IFRS and European Sustainability Reporting Standards (ESRS). Analysis revealed alignment between corporate functions and external stakeholders in considering inbound and outbound impacts, risks and opportunities for Orbia.

The results will enable us to sharpen our strategic focus and related disclosure process as well as refine strategic action plans for each material topic.

See details of our double materiality assessment [here](#).

Sustainability Framework



Responsible Business

Scaling ESG practices to operate with the highest ethical standards, accountability, responsibility and transparency.



Aligning Strategy and Materiality

Click on each topic to go to these sections.

Sustainability strategy pillars	Topics
 Low Impact & Resilient Operations	Climate strategy* Water strategy* Pollution and effluents management+ Biodiversity+ Health & safety* Community empowerment+
 Sustainable Solutions	Solutions for a sustainable future* Circular economy* Quality and safety of products+
 Impactful Ventures	Innovation to support sustainable growth*
 Responsible Business Practices	Advancing Inclusion and Opportunity+ Employee development, engagement and retention+ Human Rights+
	Good governance and business ethics+ Cybersecurity and data privacy+ Economic performance+ Risk management and business continuity+
	Responsible value chain management+ Sustainable sourcing+

*Material topics that are key differentiators of our value & impact proposition and within top 10 ranking by all stakeholders (inbound x outbound materiality).

+Enablers for greater positive impact, where we aspire to implement best practices.



Collective Action for Sustainability and Responsible Business



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](#).



United Nations
Global Compact

Orbia became a signatory to the United Nations Global Compact in 2018, committing to uphold and promote UNGC principles within our spheres of influence.



Orbia's products and solutions support multiple industries including construction, infrastructure, agriculture, health, transportation, data communications, energy and petrochemicals. Many of these industries are essential for daily life and one of the ways in which we demonstrate our commitment and [contributions to the UN SDGs](#).



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. As part of our commitment to providing solutions to the global water crisis, Orbia has joined the Business Leaders' [Open Call for Accelerating Action on Water](#).



Orbia is also one of the companies taking action in the UN-sponsored [Forward Faster](#), a global initiative to guide companies in making significant and positive impact by 2030, particularly in regard to the Water Resilience target.

“The unifying theme behind Orbia's sustainability approach is to serve customer needs and address three world challenges where we have the position, portfolio and intention to invest: water and food security, information access and connectivity and decarbonization and the energy transition. In 2023 Orbia's sustainable business model continued to drive the transition to a low carbon, circular economy, and we will continue to move further in this direction as the need for a net-zero economy and world sharpens.”



Tania Rabasa

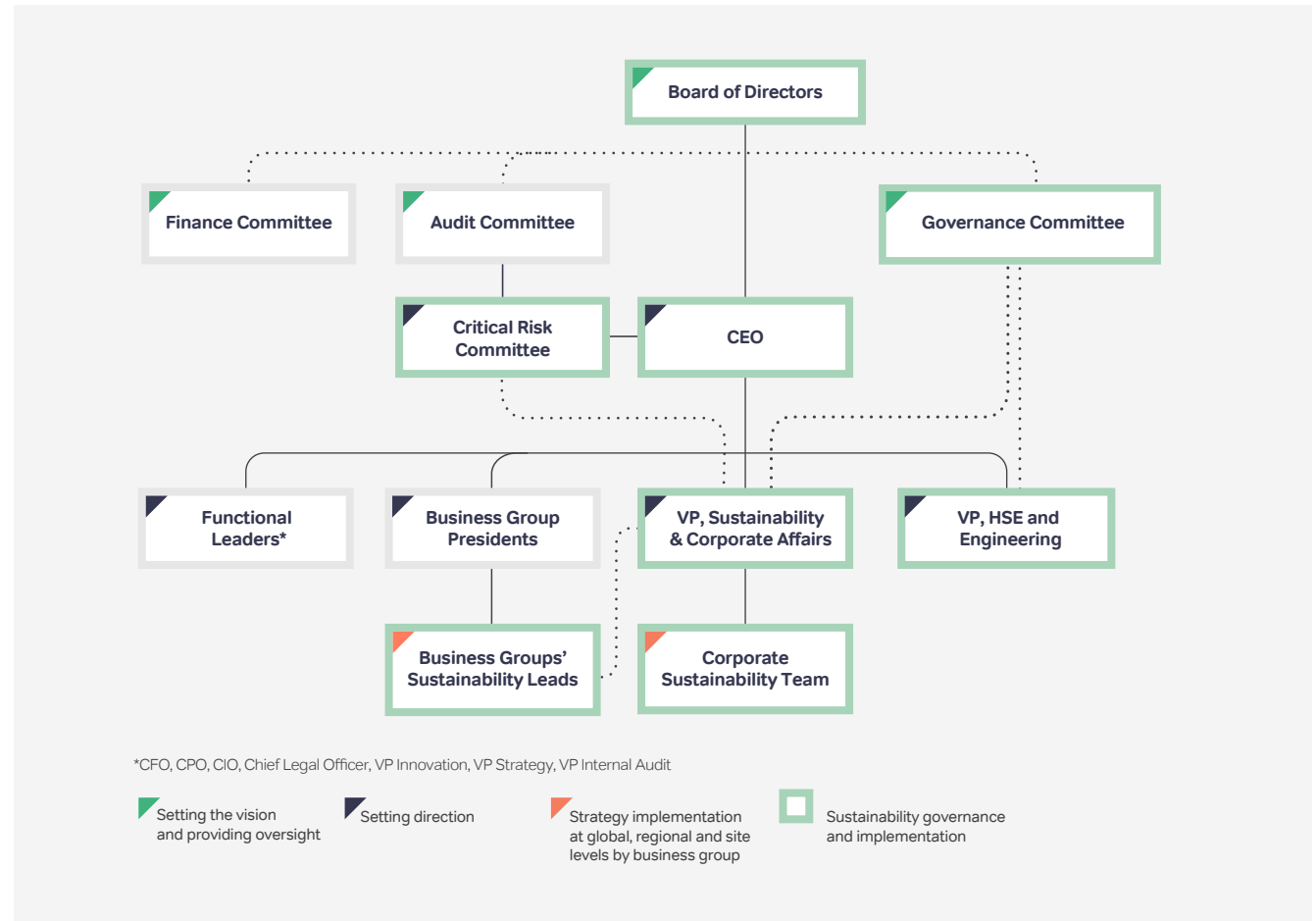
Corporate Vice President,
Sustainability & Corporate Affairs



Governance Structure

To ensure effective implementation of sustainability initiatives as well as collaboration across business groups, Orbia's Board of Directors oversees and provides guidance on Orbia's ESG strategy, as previously reviewed by the Governance Committee.

Our Vice President (VP) of Sustainability briefs and updates the Governance 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 function and business group levels. Each business group embeds sustainability in its business activities, working closely with the corporate sustainability team to implement corporate programs alongside business-specific opportunities. Regular communications are shared with all employees via companywide town hall meetings and sustainability goals and targets are part of everyone's performance review as well as embedded into executive and senior management compensation.





Through our sustainability operational model, Orbia sets the structure to implement its sustainability framework and develop action plans for its pillars:

Core Council

On monthly meetings, the Core Council constructs, implements and takes ownership of Orbia's sustainability strategy to make informed decisions with line of sight to sustainability commitments.

ESG-Sustainability Quarterly Reviews

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

Global Orbia Sustainability Forum

Twice a year, the Global Sustainability Forum seeks to embed sustainability across functions and BGs and update on initiatives.

In 2023, the Sustainability Core Council met regularly to design, implement and take ownership of Orbia's sustainability strategy. Key accomplishments include advancing our decarbonization, circularity, water and social impact strategies as well as preparing for upcoming ESG regulations. These topics have dedicated thematic groups, including a Circularity Community of Practice, a Social Impact Working Group, an ESG Regulations Steering Committee and a Sustainable Solutions Council.





Commitments & Progress

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

2025 Goals

Safety



Waste



Environmental Management



Air Emissions



Safety

Total Recordable Incident Rate (TRIR) below 0.2 for employees and contractors

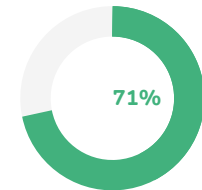
● Baseline ● Performance in 2023



Waste

100% of plants will send zero waste to landfill**

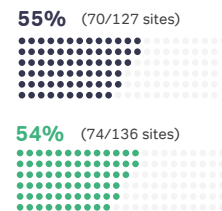
● Performance in 2023



Environmental Management

100% of sites certified with an environmental management system

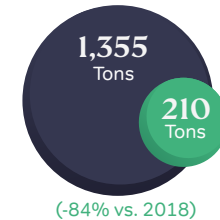
● Baseline ● Performance in 2023



Air Emissions

Reduce sulfur oxides (SOx) emissions by 60%

● Baseline ● Performance in 2023



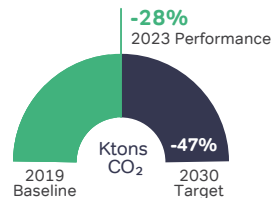
2030 Goals

Climate Change



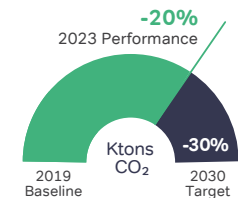
Scope 1 & 2 emissions

Reduce absolute Scope 1 & 2 GHG emissions by 47%



Scope 3 emissions

Reduce absolute Scope 3 GHG emissions from use and end-of-life treatment of sold products by 30%*



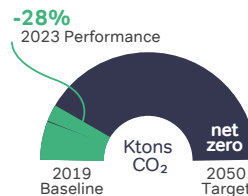
2050 Goals

Climate Change



Scope 1 & 2 emissions

Achieve net zero carbon emissions



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 88% 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.



Low Impact & Resilient Operations

ENVIRONMENTAL MANAGEMENT

CLIMATE & EMISSIONS

POLLUTION & EFFLUENT MANAGEMENT

WATER

BIODIVERSITY



Environmental Management

Environmental Governance

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

Environmental Management Systems

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

In 2023, 54% of sites (73 out of 136 that are eligible) were certified to ISO 14001 or equivalent external standards, and we have committed to achieving 100% certified sites by 2025.

Environmental Culture

Following best practices under the EMS approach, we provide ongoing training to employees on a wide variety of topics, including energy efficiency across our processes, waste management and circular economy, as well as sustainable water use. These trainings reinforce our resource-efficiency mindset. All sites provide environmental trainings.

In addition, our businesses are driving their own initiatives to foster an environmental culture. For example, our Polymer Solutions site in Altamira, Mexico, has created an energy efficiency committee focused on analyzing energy

saving and decarbonization opportunities. In Building & Infrastructure (Wavin) we have created a waste inventory to drive recycling opportunities as well as a water balance sheet to boost water efficiency practices. Across Polymer Solutions, Precision Agriculture and Building & Infrastructure we kicked off energy efficiency forums to share and deploy best practices.

Environmental Audits

All of our EMS-certified (ISO 14001 or equivalent standard) sites are subject to third party (ISO 14001 or equivalent) audits. In addition and since 2021, Orbia's internal audit plan includes environmental performance reviews. This program covers sites that are not yet certified in our EMS certification program, nor covered in the scope of our third-party limited assurance process. In 2023, the internal audit team audited 13 sites across our business groups (10% of our sites), further strengthening our reporting practices.

In addition to our internal audit function, Orbia's environmental performance team conducts internal audits across our sites to identify and seize improvement opportunities. With the objective of establishing high environmental standards for all our operations, we initiated second-party audit programs focused on environmental liability management, starting with two sites in Mexico during 2023. For 2024, we expect to extend environmental liability assessments across Orbia's basic materials manufacturing sites. This will provide a comprehensive understanding of our environmental protection actions at our sites, strengthening our commitment to business continuity and environmental stewardship.

Additionally, our business groups carry out specific audit efforts to identify improvement opportunities. Some examples include:

- U.K. sites from Orbia Building & Infrastructure and Orbia Fluor & Energy Materials completed phase 3 of The Energy Savings Opportunity Scheme (ESOS). This is a mandatory energy assessment scheme for UK organizations.
- At the Japan facility from Fluor & Energy Materials, energy audits are conducted to improve efficiency in steam usage and refrigerant equipment.
- Orbia Polymer Solutions (Alphagary)'s site in Leominster joined forces with Compressed Air Technologies Inc. to carry out efficiency audits on their compressed air system.
- Orbia Connectivity Solutions (Dura-Line) and Polymer Solutions (Vestolit) partnered with the U.S. Department of Energy to join the Better Climate Challenge. As part of this program, both business groups have committed to reducing scope 1 & 2 GHG emissions by at least 50% in their U.S. operations by 2030 (vs. 2019 baseline) and conduct energy audits twice a year.



Environmental Compliance

In 2023, we continued working with ENHESA to monitor HSE compliance across Orbia manufacturing sites to stay up to date with regulatory developments. Following self-assessments by all sites, 99% of all applicable regulatory requirements had been reviewed for compliance at the end of 2023 (up from 98% from 2022 on the same basis of manufacturing facilities and continued the process to include into ENHESA recently acquired manufacturing facilities mainly in Asia).

Overall, in 2023, we achieved significant improvements in environmental performance versus 2022:

Following best practices under the EMS approach, we provide ongoing training to employees on a wide variety of topics, including energy efficiency across our processes, waste management and circular economy, as well as sustainable water use. These trainings reinforce our resource-efficiency mindset. All sites provide environmental trainings.

In addition, our businesses are driving their own initiatives to foster an environmental culture. For example, our Polymer Solutions site in Altamira, Mexico, has created an energy efficiency committee focused on analyzing energy saving and decarbonization opportunities. In Building & Infrastructure (Wavin) we have created a waste inventory to drive recycling opportunities as well as a water balance sheet to boost water efficiency practices. Across Polymer Solutions, Precision Agriculture and Building & Infrastructure we kicked off energy efficiency forums to share and deploy best practices.

-10%

Scope 1 & 2
GHG emissions.

+52%

Renewable
electricity.

70%

of sites in water-stressed
regions operate with
closed-loop water systems.

-73%

SOx emissions surpassing
our 2023 [sustainability-linked bond](#) goal.

+28%

of sites achieve our Zero
Waste to Landfill* goal.

-74%

Total hazardous process
waste sent to landfill.

+57%

Total hazardous process
waste diverted from disposal.

*In 2023, 71% of our sites achieve or ZWTL goal. 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.



Sustainable Design Principles

We prioritize responsible sourcing, low-impact manufacturing and impact mitigation actions across our value chain by integrating circularity principles from product inception to ensure sustainability throughout the product lifecycle (extraction, manufacturing, storage and distribution, usage performance and final disposal, reuse and/or recycling). Our business groups advance their specific Life Cycle Assessment (LCA) Programs based on both market and customer demand as well as our commitment to minimize the environmental impact of our product portfolio. Some examples to increase transparency include:



Building & Infrastructure

Following last year's efforts to begin delivering Environmental Product Declarations (EPDs)* for its products in the European market based on third-party verified LCAs, Orbia Building & Infrastructure (Wavin) is now able to offer product-specific [verified EPDs for the majority of in-house produced articles in the European market](#). In 2023, the scope was extended to Latin America, where an LCA program has been piloted at two sites in Brazil and Colombia. The pilot's success paves the way for coverage across sites in Brazil, Colombia and Ecuador. Results will inform continuous improvements that contribute to lower greenhouse gas emissions.

*An EPD transparently maps production processes to resource sourcing, offering details of environmental impacts across the entire life cycle. With these EPDs, we are supporting customers in selecting the best products for their projects that also have the lowest footprints.



Precision Agriculture

In addition to lifecycle assessments for corn and rice conducted in previous years comparing drip irrigation vs. traditional methods, Orbia Precision Agriculture (Netafim), completed a new LCA in 2023 during potato harvesting season in the U.K. The assessment compared using drip irrigation with traditional rain-gun method. Preliminary results indicate a significant positive impact: a ton of potatoes grown using drip irrigation has a 54% lower carbon footprint per kilo and 20% lower carbon footprint per hectare vs. traditional methods.



Connectivity Solutions

Orbia Connectivity Solutions (Dura-Line) obtained a third-party Life Cycle Analysis verification in 2023 for [FuturePath ECO and MicroDuct ECO](#) products in relevant manufacturing sites across Europe, with results showing a 44% reduction of carbon footprint for the products and locations evaluated. In 2024, Orbia Connectivity Solutions (Dura-Line) will work with a third party to complete an LCA for the North American market, inclusive of the Smoothwall ECO products.



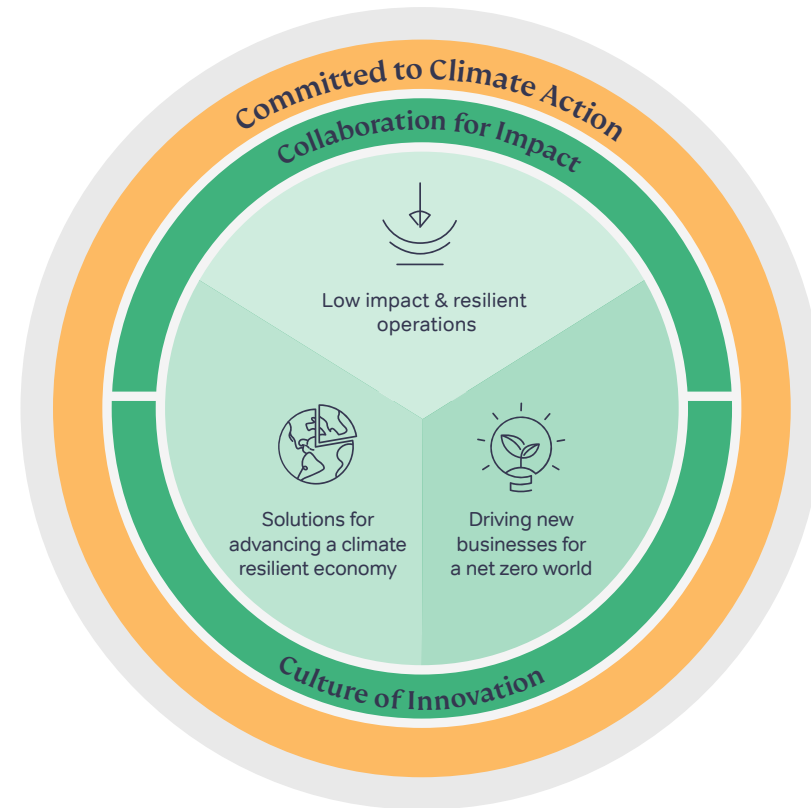


Climate & Emissions

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

Through Orbia's Climate Action Framework we are focused on addressing climate risks and opportunities from an operational perspective, delivering low-carbon and solutions for climate resilience, investing in climate tech, as well as fostering a culture of collaboration and innovation.

In 2023, we continued to advance our actions to mitigate climate change, reinforcing our commitment to our [validated](#) science-based targets of reducing Scope 1 and 2 GHG emissions by 47% by 2030 (from a 2019 base year) and reducing Scope 3 GHG emissions (categories 11 & 12) by 30% within the same timeframe. In 2023, we have achieved a -28% reduction of scope 1 & 2 emissions and a reduction of -20% of scope 3 emissions versus baseline.



Orbia's Climate Action Framework

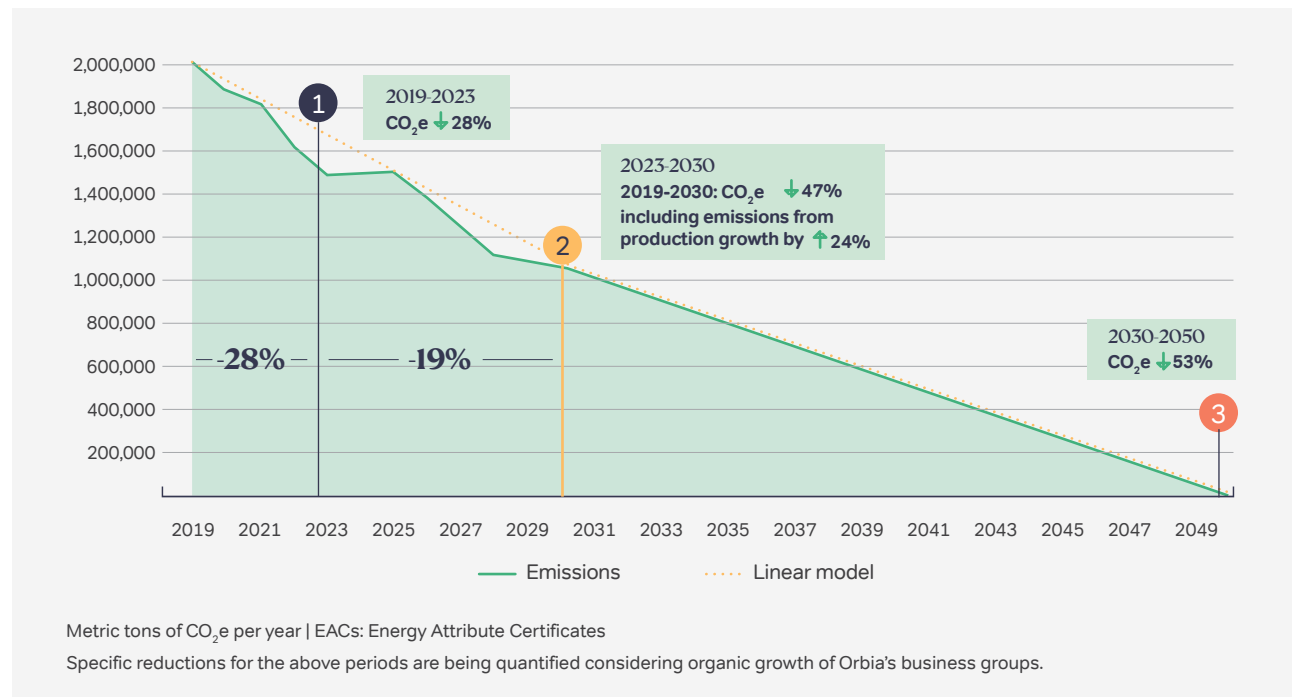


Net Zero Roadmap (Scope 1 & 2 emissions)

Orbia has defined a roadmap that outlines the instruments needed for accelerating our path to net-zero, in line with our near-term targets to reduce Scope 1 & 2 GHG emissions validated by the Science-Based Targets Initiative.

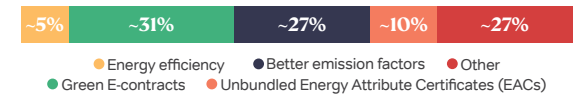
Our roadmap includes replacing fossil-based electricity sources with renewables, phasing out coal-powered equipment, increasing energy efficiency and investing in efforts to transition and incorporate the use of hydrogen and carbon-capture technologies in our operations. This is a work in progress that will incorporate growth in future versions.

Details of our plans are shown [here](#).



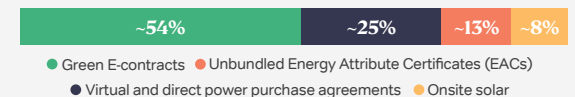
Committing to a net-zero pathway requires innovative thinking and continuous improvement in our production practices. As part of our company's transformation, we are taking on the massive challenge of decarbonization as we balance growth and profitability.

- 2019 – 2023:**
Reduction of 28% vs. baseline mainly as a result of instruments like green electricity contracts, on-site solar, contracts with suppliers offering improved emission factors, unbundled EACs and energy efficiency.



- 2024 – 2030:**
Reduction of 19% vs. baseline mainly as a result of 5% Scope 1&2 reductions driven by energy efficiency practices and 100% decarbonization on Scope 2 electricity reached through several instruments such as long-term virtual and direct power purchase agreements, on-site solar, green tariffs or green e-type contracts, and unbundled EACs sourcing.

Scope 2 electricity decarbonization instruments:



* Data may depend on planned PPAs and on-site solar projects coming online on-time and future availability of renewable electricity procurement options in key regions.

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

- 2031 – 2050:**
By 2050, Orbia aspires to be net-zero, which means, Scope 1 & 2 emissions are equal to zero. Plans are to achieve this through energy efficiency, electrification, technologies under development like Carbon Capture and Storage, green hydrogen fueled equipment and innovative solutions identified through Orbia Ventures.



Climate Risk and Opportunity Assessment Overview

An update to our Climate Risk and Opportunity Assessment has been completed, covering 134 Orbia sites* globally with a deep dive on a priority sample of 12 sites, considering two future scenarios in 2030 and 2050 with both physical and transition risks and improved financial quantification aligned with Orbia's Enterprise Risk Management (ERM) processes and risk thresholds.

The priority sample was determined from a vulnerability screening as well as gauging sites' strategic relevance to our business. The resulting sample includes three sites from Polymer Solutions, two from Building & Infrastructure, three from Precision Agriculture, two from Connectivity Solutions and two from Fluor & Energy Materials.

For detailed methodology, see our [Climate Risk & Opportunity Assessment](#) dedicated page.

*134 active sites in 2022 (when assessment started).



Climate Assessment – Key steps

1 Scenario Analysis

The selection of the scenarios used in our assessment follows the recommendations from the International Financial Reporting Standards Foundation for climate disclosures S2 (under the formerly known TCFD approach) to use two scenarios per type of risk, with one being a ‘well-below 2°C’ scenario and the other, with an emissions trajectory where global average temperature increase to 4°C above the pre-industrial average.

2 Risks and Opportunities Screening (Data sources and tools)

To identify possible climate risks and opportunities, a variety of data sources and tools were used according to physical and transition risks as well as opportunities. These sources included the World Bank’s Climate Change Knowledge Portal, the IPCC WGI Interactive Atlas, The World Bank, Climate Transparency and Climate Policy Tracker. Additionally, stress-testing was used in the priority sample to deepen physical risks results.

3 Assessment and Modeling

Following the guidance of ISO14090 and ISO14091, risks and opportunities were assessed based on magnitude/likelihood, exposure and vulnerability (sensitivity and adaptive capacity) of the hazard or trend. For physical risks, hazard types assessed include extreme heat, cold spells and frosts, floods, landslides, aridity, droughts, wildfires and sandstorms, and future trends. In the case of transition risks, the International Institute for Applied Systems Analysis’ NGFS Scenario Explorer was used to extract information on transition-related climate change risks. Finally, identified opportunities were classified into four categories: market, law and policy changes, social value changes and technology changes.

Supply Chain Analysis

A high-level overview of climate risks linked to our main value chains (PVC, Polyolefins and Fluorspar, which are the most critical to our business), was performed to inform potential impacts to suppliers, infrastructure, and consumers. Higher risks that may impact Orbia’s supply chains include transportation issues, especially related to extreme climatic events such as floods, hurricanes, and cold spells; damage or destruction of facilities, infrastructure, and physical assets; and production disruption linked to extreme weather events.

4 Results

Below is a high-level overview of the key risks and opportunities identified. For further detailed results and quantification, see our Climate Risk & Opportunity Assessment page [here](#).

The most significant physical risks identified are those associated with rising temperatures (extreme heat and drought) and precipitation changes (floods and landslides impacting supply chains or causing disruptions to local infrastructure).

High-rated transitional risks are more stringent law and policy, raw materials price volatility and shift in consumer demand for low carbon (or low GWP), circular and bio-based products.

Main climate-related opportunities include increased demand for innovations in low-carbon and climate-adaptation technologies, reduced costs and taxes derived from using lower-emission sources of energy, and positive reputational benefits resulting in potential increase in profit margins.

Visit our [Climate Action section](#) for examples of actions to mitigate climate risks.

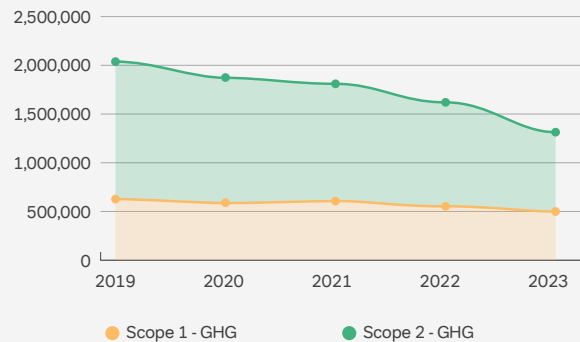
Visit our [Sustainable Solutions section](#) for examples of portfolio developments related to climate opportunities.



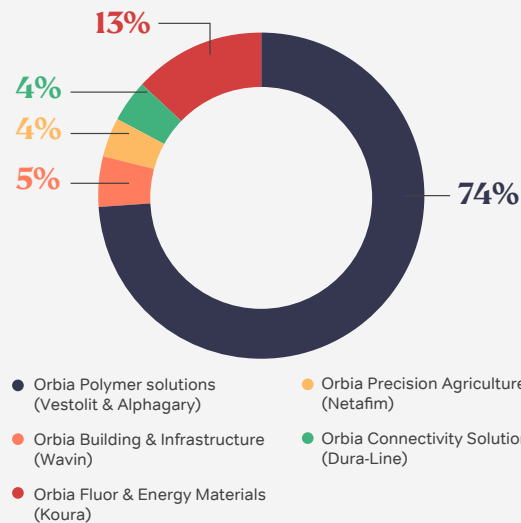
Greenhouse Gas Emissions

We plan to drive decarbonization throughout our business at a steady pace with the 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 maintain 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](#)).

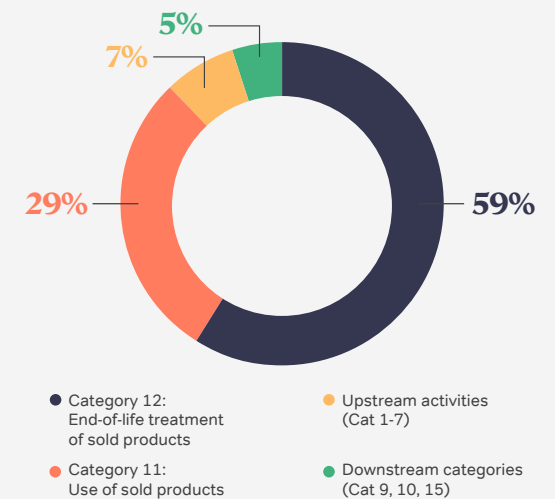
Scope 1 & 2 emissions (Total CO₂e) ✓



Scope 1 & 2 GHG emissions breakdown by business group



Scope 3 GHG emissions distribution upstream / downstream



Details of our 2016-2023 emissions performance can be found [here](#). 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 88% of our overall footprint.



Scope 1 & 2 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.

Leveraging Orbia's Net-Zero Roadmap, each of our businesses has further developed their own roadmaps and yearly targets that will accelerate the procurement of renewable electricity in key regions.

In 2023, these efforts resulted in strong performance that reinforced our goal to reduce our climate impact. We reduced 10% of our Scope 1 & 2 emissions compared to last year.

Optimizing Processes to Drive Efficiencies

We estimate to have reduced around 9,593 tons of CO₂ through implementing enhanced manufacturing technology and energy-efficient processes that range from advanced process control to equipment improvements.

In 2023, Orbia Connectivity Solutions (Dura-Line) and Polymer Solutions (Vestolit) partnered with the U.S. Department of Energy to join the Better Climate Challenge. As part of this program, both business groups have committed to reducing scope 1 & 2 GHG emissions by at least 50% in their U.S. operations by 2030 (vs. 2019 baseline).

To achieve this, Polymer Solutions (Vestolit) committed to conduct routine energy assessments through the Industrial Assessment Center Program, which will provide insight into energy savings and efficiency opportunities in the U.S. sites. The U.S. footprint of Connectivity Solutions (Dura-Line) and Polymer Solutions (Vestolit) represent roughly 80% and 5% of their own global footprint respectively and contribute to 7% of Orbia's global footprint.

For our Latin American sites, Polymer Solutions (Vestolit) has reduced energy intensity by 9% since 2019 and is now exploring the use of combined heat and power systems as well as energy purchasing changes to further reduce Scope 2 emissions. Meanwhile, emissions reduction initiatives have yielded strong results at the Polymer Solutions (Vestolit) Marl plant in Germany: CO₂ emissions have been reduced by 275k tons vs. a 2019 baseline which represents approximately 25% of Orbia's total Scope 2 footprint.

Other 2023 highlights include:



Polymer Solutions

Energy recovery

The team at our Orbia Polymer Solutions (Alphagary) Tlaxcala, Mexico facility is piloting a residual heat recovery system in one extrusion line. By adding a small heat exchanger and circulating the hot oil system through the jacket of the mixer, the residual heat from the extruder barrel cooling can be recovered. Estimates of savings in energy consumption are more than 37 MWh per year which translates to more than \$4,000 per year. This project can be expanded to all Polymer Solutions (Alphagary) compound sites and supports our decarbonization goals.



Building & Infrastructure

Cross Collaboration for Decarbonization

Across EMEA and LATAM, Orbia Building & Infrastructure (Wavin) has started hosting an energy forum which brings together energy experts across all sites to share and discuss best practices around energy efficiency. As one of the main actions resulting from the forum, our Chippenham, U.K. site is replacing 14 oil-fired heaters and 5 red diesel tanks with new high-efficiency heat pump technology. The oil-fired heating system consumed 294,681 liters of oil per year (825 tons CO₂ emissions per year). The new heat pumps will be operating with 100% renewable electricity with zero emissions, thereby reducing safety and environmental risks associated with storing significant volumes of diesel oil on-site.

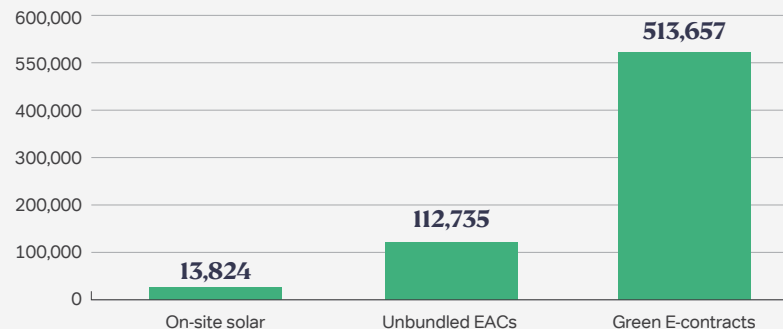


Transitioning to renewables and lower carbon energy sources

We increased our use of renewable energy by 52%, reducing around 67,500 tons of GHG emissions, and bringing our total purchased and generated renewable electricity to 26% of total electricity consumption.

In 2023, 46% of Orbia plants utilized renewable energy sources. During the year, efforts to increase renewables were focused on exploring long-term PPAs in the European & U.S. regions and increasing our own solar installations across key sites. Orbia has developed an internal GHG investment template to compare several decarbonization scenarios at site level and inform relevant investment decisions.

Renewable energy sourcing methods (MWh) in 2023



Some examples of progress in this front include:

On-site Solar Projects

Orbia Building & Infrastructure

Orbia Building & Infrastructure (Wavin) continues to progress in its transition to renewable electricity, focused on solar energy:

- 926 bifacial PV panels installed in Poland generate 387 MWh of renewable power annually, reducing CO₂ by around 300 tons.
- In the U.K., an estimated annual production of 2,282 MWh from a solar array with an installed capacity of 2,550 kWp is expected as soon as final agreement with the grid operator is completed.
- 9,798 m² ground-mounted solar panels were installed in Sweden and Poland, producing an estimated 2,224 MWh (installed capacity 1,929 kWp) annually.
- In Mexico, panel installations have begun for some sites.

The on-site solar projects installed for Building & Infrastructure (Wavin) were completed partnership with SolarAccess and Triodos Investment Management. With rooftop solar assets up and running in the Netherlands, Poland and Sweden, next steps will include constructing and operating both rooftop and on-the-ground solar assets at multiple sites across the U.K., France and Germany.

Orbia Connectivity Solutions

Our facility located in Oman installed a 400 kW onsite rooftop solar array in late 2023 that will offset approximately 30% of their annual electric consumption.

Orbia Precision Agriculture

Sites in Israel and the Netherlands increased their use of on-site solar energy, resulting in an 30% increase of their renewable electricity consumption.



Orbia Polymer Solutions (Vestolit)

Orbia Polymer Solutions (Vestolit) is expanding the use of green energy across all sites through on-site solar arrays, community solar programs and PPAs and VPPAs. In Mexico, plans to utilize lower carbon energy sources have begun, with a first site completing the installation of solar panels in early 2024. Arrays at other plants in Latin America are expected to follow as well. In the U.S., partnerships to procure green electricity via PPAs and community solar programs are being explored.

Orbia Polymer Solutions (Alphagary)

Orbia Polymer Solutions (Alphagary) and partner Shakun Polymers have installed a captive solar array at a key site in India, capable of generating 700 kWh of power. The group will enter a PPA in 2024 to source up to 40% of the site's power consumption from solar sources (amount to be certified by the contracting party). This installation closely follows the success of the existing solar plant located on a nearby site that generates 285 kWh yearly and will reduce Scope 2 CO₂ emissions for the business group by an estimated six percent combined annually.

Other Renewable Sources

- Orbia Building & Infrastructure (Wavin) continues to use 100% renewable electricity in EMEA and Brazil sites and has now also added renewable electricity procurement for specific sites in Colombia and India.
- Orbia Precision Agriculture (Netafim) also signed a contract with a new supplier to provide 100% green energy in Chile.

Exploring Carbon Capture and Hydrogen Investments

Orbia Ventures and our businesses continue to evaluate technologies for hydrogen electrolyzer stacks as well as carbon capture for in-house ethylene production projects. In 2024, Orbia Polymer Solutions (Vestolit) will continue to explore the development of the hydrogen market and carbon capture initiatives in Germany and elsewhere in Europe.





Scope 3 GHG Emissions Decarbonization Progress

Orbia Fluor & Energy Materials (Koura) is transitioning to low-GWP refrigerants and propellants as the key driver of Orbia's Scope 3 GHG emissions reduction strategy.

During 2023, Fluor & Energy Materials (Koura) added the refrigerant R-444A to its solutions portfolio. This is an innovative refrigerant that meets the need for a more sustainable, lower global warming potential (GWP) solution as the automotive industry advances to meet current and future U.S. regulations for carbon emissions, including those that restrict refrigerants with a GWP greater than 150. In line with previous low-GWP refrigerants offerings (KLEA® 456a and 473a) and propellants (Zephex® 152a), Fluor & Energy Materials (Koura) is on the right path to achieve Orbia's Scope 3 ambitions.

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 (categories 11 and 12). Some of our businesses are implementing improved transportation measurement tools to identify more efficient routes that can result in emission reductions. For example, Building & Infrastructure (Wavin) is using circular (recycled) materials to lower the carbon footprint of our products by up to 80%. Polymer Solutions (Vestolit) has developed Future-Fit PVC, which lowers the environmental footprint of our products in the range of 60-90%, according to the bio-based feedstock used. These low-carbon products are designed from circular raw materials, to maintain high functional requirements and a lifetime of 100 years.

All our businesses operate circular programs and products.

Visit our [Sustainable Solutions](#) and [Circularity](#) sections for further details.

Collective Action for Climate

- The Alliance for Responsible Atmospheric Policy, of which Orbia Fluor & Energy Materials (Koura) is a member, joined U.S. Senate leaders to celebrate the one-year anniversary of the U.S. ratification of the Kigali Amendment to the Montreal Protocol. We joined in recognizing the strong bipartisan support that resulted in an impactful environmental policy with protected economic benefits. We are proud of the work the Alliance is doing to foster continued collaboration among industries, non-governmental organizations (NGOs) and governments on these important regulations.
- Orbia Ventures joined the PLANETech Investors Alliance, a community of investors committed to backing and accelerating the growth of climate tech solutions.
- Orbia participated in 2023's Mexico Business Meeting for Sustainability, where we took part in a symbolic signing ceremony as an expression of our continued adherence to the Science-Based Targets initiative (SBTi). Click [here](#) for further information.

See [Open Innovation](#) examples for more partnerships for climate action.



For further information:

[View Orbia's 2023 CDP Climate Change response](#)



Pollution & Effluent Management

Orbia is committed to operating and maintaining our manufacturing facilities in a manner that not only minimizes the consumption of resources, but also ensures the appropriate management of all industrial discharge and effluents.

Other Air Emissions (Non-GHG)

Orbia's focus on non-GHG air emissions is on sulfur oxides (SOx) emissions, which represent over 23% of our non-GHG air emissions.

Orbia's Fluor & Energy Materials chemical plant in Matamoros (Mexico), as the main contributor of Sulphure Oxide (SOx) emissions to air, replaced 100% of its catalyst system in late 2022. This important technology update, meant into a 2023 year with a significant SOx air emissions reduction by 73%. This means an 84% reduction against 2018, keeping Orbia on track to achieve our 2023 and 2025 commitments detailed in the [Sustainability-Linked Bond framework](#).

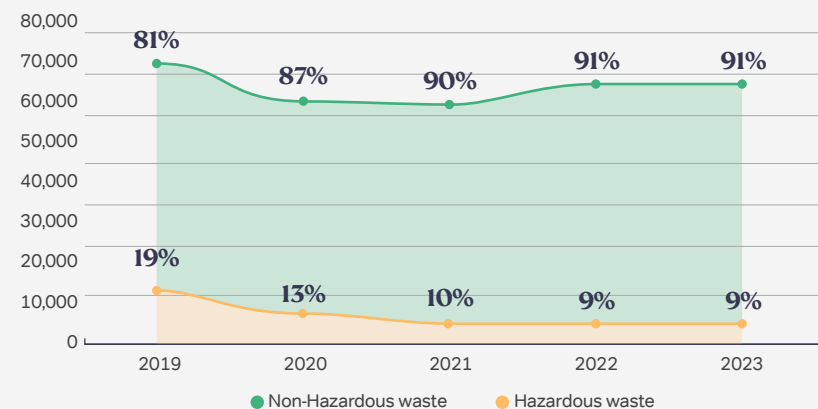
We track and report other non-GHG air emissions, such as NOx and VOCs (data available [here](#)). Our emission intensities and absolute volumes are in the lower ranges when compared to those of a selected group of peers in the commodities and petrochemicals industries (based on public information available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

Waste Management

Our approach to waste is focused on reducing the amount of hazardous and non-hazardous waste generated at the source, sending zero waste to landfill and promoting circularity principles.

Waste Composition at Orbia*

Non-hazardous and hazardous waste production (Ton) ✓



At Orbia, hazardous waste represents only 9% of our waste footprint, and 83% of this type of waste is diverted from disposal through different methods.

*Excludes waste from special projects.

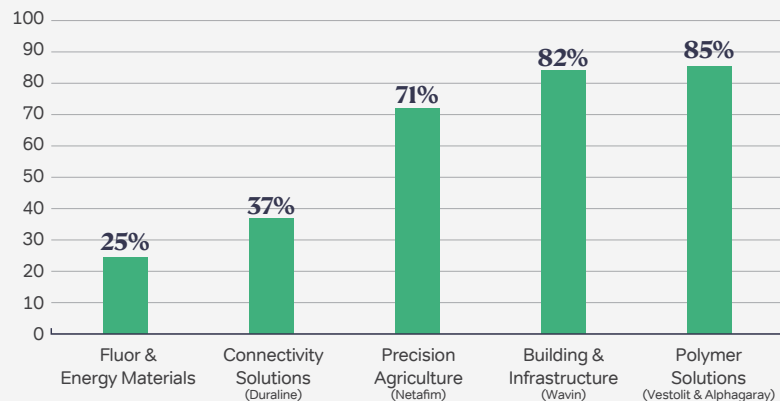
*From 2023 onwards, waste data related to 2022 acquisitions is included.



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 45% lower in 2023 compared to 2022.

Sites sending zero waste to landfill by business group (%)



Orbia Polymer Solutions (Vestolit) is disposing of 3,294 fewer tons of waste via landfill or incineration without energy recovery compared to 2022. This resulted in 71% of Polymer Solutions (Vestolit) sites achieving our 2025 Zero Waste to Landfill¹ commitment, with the support of our Latin American sites. In the U.S., our plant teams are partnering with a variety of companies to explore alternative uses of our process waste.

7 out of 19 sites from Orbia Connectivity Solutions (Dura-Line) achieved our Zero Waste to Landfill¹ commitment in 2023, through reviewing contracts and partnering with new vendors to reduce the amount of waste to landfill in 2023 by approximately 24%.

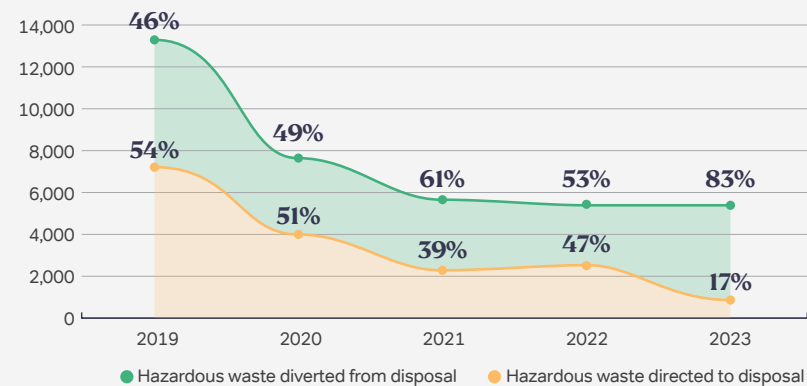
1. Orbia adopts a definition of Zero Waste to Landfill that is sending a maximum of 10% of all hazardous and non-hazardous process waste to landfill by 2025.

Orbia Precision Agriculture (Netafim) efforts were focused on five sites with a combination of improved segregation practices, awareness programs and new partnerships with vendors offering improved recycling and reuse capabilities, bringing them closer by 29% to achieve ZWTL goal.

82% of Orbia Building & Infrastructure (Wavin) sites have already achieved ZWTL status according to Orbia's definition¹.

Overall, in 2023, Orbia plants diverted
+50,000 tons
of process waste from landfill.

Hazardous waste disposed and diverted from landfill (ton)



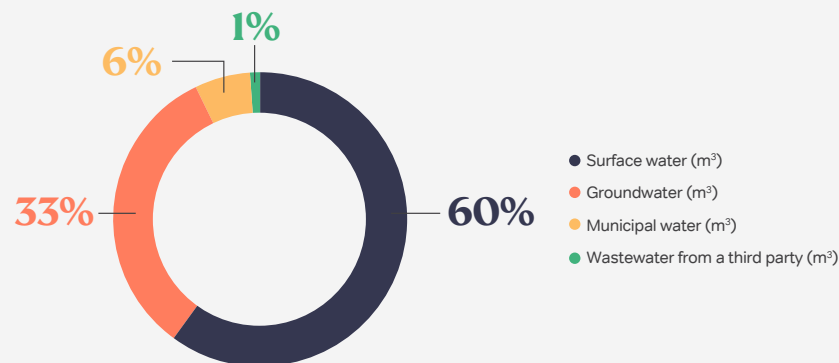
*Excludes waste from special projects



Water

At Orbia, we recognize the interdependencies between climate and water and acknowledge the role our actions related to water can play towards climate change mitigation. Our ambition is to achieve net positive water impact by conducting water risk assessments, developing water stewardship plans and targets and engaging in collective action in priority basins.

Water withdrawal by source



*Following independent assurance review, from 2023 onwards, water data from a F&EM site in the U.K. is excluded since the water is consumed by a third-party within the same complex. This explains some of the year-on-year variation.

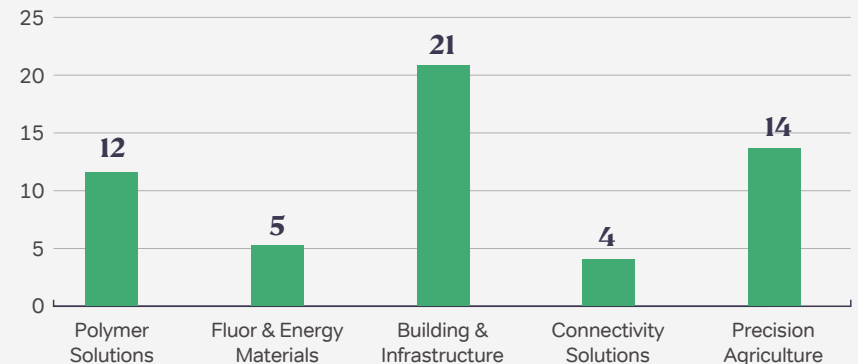
Our water footprint is largely associated with Orbia Polymer Solutions, which accounts for 64% of our water withdrawal. In addition, 55% of our consumption in Mexico, followed by our sites in Colombia and Germany.

One third of our water withdrawal comes from groundwater

*Orbia maintains the use of the Aqueduct version 3.0 tool for 2023 as this is the version used to establish our water stewardship strategy.

Water is a critical resource for our business. From an operational perspective, it is particularly important for our petrochemical and basic materials businesses, as it is an important raw material. Our manufacturing plants therefore operate under high water-efficiency principles, including considering alternative water sources where available. All of our advanced materials sites operate with closed water loop systems, making their water footprint significantly lower in comparison with our petrochemical and basic materials sites.

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) version 3.0*. According to the tool, 41% of our sites were in areas of high or extremely high water stress at end 2023 and represented 49% of total water withdrawal. ✓ However, 70% of our sites in stressed areas have closed-loop water systems in place to minimize withdrawal.

We track and report other water quality indicators, such as TSS, COD and BOD (data available [here](#)).



Net-Positive Water Impact Framework

In 2023, we refined Orbia's water framework to advance towards becoming Water Positive and honor the commitments we made during the year as members of the UN CEO Water Mandate:

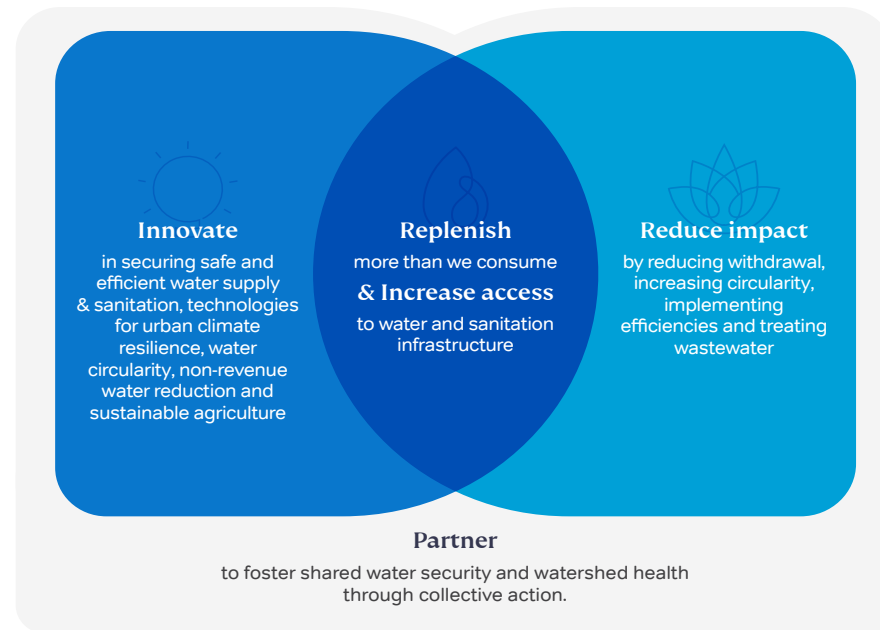


Orbia was an early adopter of the [Open Call to Accelerate Action on Water](#) launched during the UN Water Conference in March 2023.



[Forward Faster](#) which includes a Water Resilience target to build water resilience across global operations and supply chains and join efforts to achieve collective positive water impact in at least 100 vulnerable prioritized water basins by 2030.

Our approach focuses on risk mitigation and embracing opportunities through our operations, solutions, and ventures, especially in priority basins and scarcity areas. Our framework is aligned with the Volumetric Water Benefits Accounting methodology, covering the three dimensions of water: quantity, quality and access (and contributing to SDG 6).



Water Framework

As part of the development of our strategy, a water risk assessment pilot in partnership with Waterplan was completed in our Orbia Polymer Solutions (Vestolit) site in Coatzacoalcas, Mexico. It provided important insights on water risks and set the foundations for our global water strategy, focusing on our operational footprint (petrochemical and basic materials businesses) and solutions (advanced materials businesses). The aim is to establish specific goals for prioritized sites and basins by late 2025. In addition to establishing these goals, Polymer Solutions (Vestolit) will use the outcomes from this pilot to introduce new solutions to our other sites in 2024.



For further information:

[View Orbia's 2023 CDP Water Security response](#)



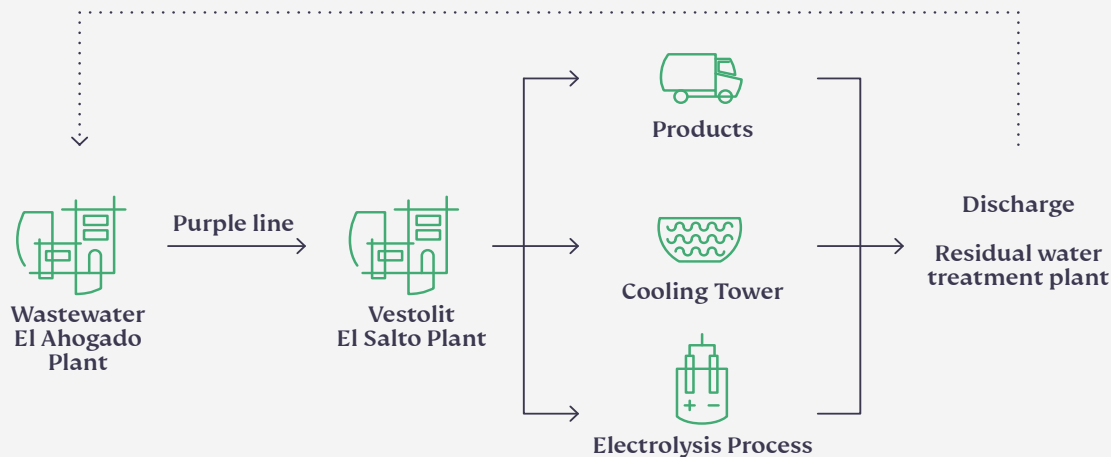
Operational Improvements for a Water-Positive Future

While our advanced materials businesses operate with closed-water loop systems, our petrochemical and basic materials businesses take different approaches to improve water efficiency. Some examples include:

Wastewater Circularity

At the *El Salto* site in Mexico, Orbia Polymer Solutions (Vestolit) completed the construction of our Purple Line system: a pipe network which secures a 100% treated wastewater supply for manufacturing activities (400,000 m³ annually), eliminating groundwater usage. Since 2017, the site has ceased the discharge of water into rivers or lakes, marking considerable progress towards achieving net-positive water operations.

Purple Line at El Salto



Water Reuse

The Orbia Polymer Solutions (Vestolit) Cartagena plant has successfully tested the process that will allow a neighboring company to reuse the site's discharge, using a sample of 1000 m³ of discharged water. Preliminary results of the pilot have been positive and tests for full implementation of the system are scheduled to be completed in 2024. This project is a regional reference for the petrochemical sector, alleviating water stress levels in the watershed and benefiting both residents and local factories alike.

Water Recovery in Mining Operations

Orbia Fluor & Energy Materials (Koura) maintained responsible water, environmental and tailings management practices across its fluor spar mining sites. With a recently-installed process water-recovery system at our Las Cuevas mine and an efficient water recirculation system at Rioverde's beneficiation plant, we maintained an average process water recovery rate of 82%. During 2024, a tailings separation optimization process will be implemented in order to maintain water recovery rates.



Solutions for Positive Water Impact

Orbia Building & Infrastructure (Wavin) and Precision Agriculture (Netafim) offer solutions that enable positive water impact through different water replenishment alternatives, based on the Volumetric Water Benefits Accounting framework:

In urban and built environments:

- Urban climate resilience solutions promote the shift from linear to circular water system design with blue-green infrastructure.
- Water network management solutions enable utilities to reduce water loss across networks through monitoring and detection tools.



In agriculture:

- Precision irrigation solutions allow farmers to grow more with less water and other inputs. Key benefits include water savings of 50% on average depending on the crop, increased yields without expanding the cultivated area and limited fertilizer use, contributing to soil and watershed health (quality) as well as GHG emission reductions.



Click [here](#) to learn more about our Water & Food Security solutions.





Supporting Water Security through the Water Funds

Since 2012, Orbia has supported several water funds in Latin America, providing financing, solutions and technical knowledge in the following countries: Mexico, Colombia, Guatemala, Peru, Brazil and Ecuador. The funds contribute to water security through nature-based solutions and the sustainable management of hydrographic basins as well as coordinating action between the public, private and civil society sectors. During 2023, our contributions to multiple funds through Building & Infrastructure (Wavin) amounted to \$106,000, benefiting more than 10,000 people. Examples of actions in 2023 include:

Agua Somos, Colombia

Orbia Building & Infrastructure (Wavin) joined the Bogota Water Fund “Agua Somos” in 2021 as a founding partner and member of the board of directors. The fund promotes water security in the Bogota region by implementing resilient solutions for the sustainable management of the region's basin through collective work between communities and the public and private sectors. During 2023, interventions to improve the hydraulic networks have been carried out in the municipalities of Tausa, Villapinzon and Subachoque in the department of Cundinamarca. These improvements have enabled more than 1,500 people across rural communities to receive 8,469 m³ of water on a monthly basis.

Agua Capital, Mexico

In 2023, Orbia's Chairman of the Board of Directors Juan Pablo del Valle Perochena continued to preside over *Agua Capital*, an organization that promotes water security in Mexico City. In alliance with NGOs, academia, international organizations (such as the German Corporation for International Cooperation - GIZ) and various public and private partners (including Orbia), *Agua Capital* successfully implemented the following projects:

- Restoration of 133 hectares of Mexico City's external water sources and watersheds through multiple conservation efforts, including reforestation and infiltration initiatives, fire prevention trainings and agricultural community projects.
- Installations of rainwater harvesting systems and handwashing stations in 57 schools in Mexico City and the surrounding metropolitan area through the *Cosecha Capital* program.
- Publication of a whitepaper on “Water Perspectives in Mexico: Proposals for Water Security” to inform and develop public policy and resource planning and improvement opportunities. As a result, a workshop on water security and planning was offered to regional journalists to boost awareness.
- Delivery of the “Hydro-Intelligent Cities” UNESCO and UNAM-based course; a massive online course with over 600 participants in its second year.

Aqua fondo, Peru

Aqua fondo is a water fund focused on restoring Lima's three main basins. To date, the organization has contributed to replenishing more than 7.6 million m³ of water per year through nature-based solutions and public-private collaborations. Orbia Building & Infrastructure (Wavin) and Precision Agriculture (Netafim) have served on the fund's steering committee since 2016 and contributed with more than \$40,000 to date. Moreover, Aqua fondo is the only organization in Peru which is part of the 2024 World Water Forum's working groups. Key achievements in 2023 include the installation of a technical irrigation system across two hectares in the San Juan de Iris community to battle drought, water stress and strengthen agricultural resilience in the region, particularly for alfalfa harvesting. Click [here](#) for further information.

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



Global Water Action

The UN 2023 Water Conference was a call for #WaterAction: urging global leaders and all relevant sectors to mobilize partnerships and increase investment in science-driven and innovative approaches to advance the global water agenda. The Water Action Agenda was the main outcome of the conference and included all voluntary commitments to accelerate progress on the 2030 Agenda for Sustainable Development. During the conference, Orbia was an early adopter of the [Business Leaders' Open Call for Accelerating Action on Water](#). We pledged to build water resilience across our operations and supply chains and joining efforts to achieve collective positive water impact in at least 100 vulnerable prioritized water basins by 2030. This commitment was later further strengthened through the launch of its Water Resilience target, which is estimated to improve water security for 3 billion people while also enabling safe drinking water and sanitation for more than 300 million people across these priority basins.



Orbia Precision Agriculture (Netafim) President Gaby Miodownik addressed the General Assembly on the importance of water and food security. Additionally, our Building & Infrastructure (Wavin) submission for the Water Action Agenda was approved and published on the official United Nations website. Click [here](#) for further details.

As part of our commitment, Orbia's Building & Infrastructure (Wavin) and Precision Agriculture (Netafim) businesses significantly invested in delivering water access and sanitation (WASH) solutions as well as food security programs for communities worldwide. Read more about these programs in our [Thriving Communities](#) chapter.



Biodiversity

Orbia recognizes nature is the foundation of all life, acknowledging its critical role in maintaining the ecosystems that the planet and its people rely on.

Taking first steps to identify our nature-related risks and impacts

In order to factor preservation into our business performance, Orbia is taking the first step towards aligning its plans and operations to the Taskforce on Nature-related Financial Disclosures (TNFD) framework by adopting the LEAP approach.

Locate interfaces with nature

All Orbia sites have been assessed on their sensitivity towards nature using two international reference tools: the Integrated Biodiversity Assessment Tool (IBAT) and the World Wildlife Fund (WWF) Biodiversity Risk Filter. These trusted frameworks enhance the comprehensiveness and accuracy of our preliminary assessment to locate priority sites and ensure reliable and actionable insights into nature-related risks. The following table shows the results of our first screening and covers Orbia sites with a high-risk score for each of the categories, based on the tools and weighting methodology used.

Sites near 15 km of a protected area ¹	Sites near 15 km of a Key Biodiversity Area	Sites that coexist with protected species ² near 15 km	Sites with critical physical risks ³
7% (10/137)	4% (6/137)	24% (34/137)	12% (16/137)

1. Protected areas classified within categories V and VI of the IUCN are excluded, as they either refer to landscapes with conservation plans already being implemented or landscapes in which activities have had little permanent impact on the environmental health of the region.

2. Protected species consider the following categories from the IUCN Red List: Critically Endangered, Endangered and Vulnerable.

3. Physical risks are ranked according to the WWF Biodiversity Risk Filter methodology, which takes an integrated approach towards accounting: provisioning services (water scarcity, forest productivity, flora and fauna availability), regulating services (soil and water condition, ecosystems conditions, pollination, fire hazards, extreme heat and cyclones), cultural services (tourism attractiveness), and pressures on biodiversity (tree cover loss, pollution, freshwater use change, invasive species). Learn more [here](#).

Combining the mentioned frameworks and methodologies enhanced our understanding of risks to select priority locations based on conditions of the natural assets in the places we operate.

16% (22 sites) of Orbia's locations have been identified as having an overall high-risk score, combining results from IBAT and WWF's Biodiversity Risk Filter.*

Evaluate priority dependencies and impacts

We are diligently working on determining the thresholds for our nature risk assessment, focusing on identifying key dependencies and impacts on priority locations. While our findings are preliminary, they provide valuable insights for our next steps.

Assess material risks and opportunities

Once we identify our nature-related risks and opportunities, we will leverage risk mitigation and opportunity management processes to strengthen our resilience.

Prepare to report

We will remain committed to disclosing our annual progress on the journey to reducing our impacts on nature.

*These locations will be prioritized for future action in alignment with the TNFD framework.



Contributing to Maintaining Environmental Services

One of the factors included in our nature-risk assessment was the level of pressure on biodiversity services. WWF's Biodiversity Risk Filter identifies pressures as drivers that unquestionably influence biodiversity and ecosystem processes, with tree cover loss identified as one of the most damaging systematic disturbances to ecosystems.

Orbia Fluor & Energy Materials (Koura) continued working with the National Forestry Commission of Mexico (CONAFOR) within our public-private association agreement (2021-2026). This program benefits the Santa Catarina Ejido in San Luis Potosi, Mexico, providing joint funding for an environmental services payment program that collaborates with CONAFOR towards the conservation of the natural protected area of "Sierra de Alvarez".

Orbia and CONAFOR have been maintaining this partnership since 2016. In the last eight years, we have invested more than \$150,000 to promote continuous natural resource management in the community, including the maintenance of firebreaks and forest's roads, which have led to the conservation and rehabilitation of 300 hectares. Additionally, the program also supported training sessions for local artisans working on organic products.

Reforestation

Orbia's community continues to engage in reforestation activities. In June 2023, Orbia Fluor & Energy Materials (Koura) held its annual reforestation day at La Salitrera community in Mexico. More than 251 volunteers (including employees, community members and contractors) participated in reforestation activities, planting 1,200 different types of trees and rehabilitating 1.3 hectares of a decommissioned tailing dam. At their Rioverde site, the first reforestation activity took place, where more than 98 volunteers representing Orbia contractors and the community, planted 100 endemic trees in different recreational areas from neighboring communities in Ciudad Fernandez, San Luis Potosi, Mexico.

Additionally, the Polymer Solutions (Vestolit) team and local team members from the Altamira, Tlaxcala and Cajica sites partnered with NGO's and local organizations to plant 187 trees, enhancing different community spaces and promoting the conservation of paramo ecosystems.

Orbia Building & Infrastructure (Wavin) engaged in reforestation activities near our production facilities. During 2023, 8 reforestation initiatives involving 102 volunteers were carried out in Colombia, Peru, Brazil and Argentina. The activities involved various actions to prevent soil erosion, stabilize riverbanks and capture carbon to mitigate the effects of climate change.

Collective action for nature conservation

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, SDG-aligned solutions that protect, restore and cultivate biodiversity to for insulation against climate change. In addition to providing leadership support and funding, Orbia plays an active role in the governance space: Orbia's Chairman of the Board of Directors Juan Pablo del Valle Perochena co-chairs LACC.



Message from our
Chairman & CEO

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Responsible
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Spotlights

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Performance

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ADDRESSING GLOBAL CHALLENGES

CIRCULARITY



Addressing Global Challenges

Orbia's products and solutions support multiple industries essential for daily life and provide avenues for the ways in which we directly and indirectly contribute to solving key world challenges.

Delivering solutions for these 3 challenges is at the core of our sustainability strategy.

Water & Food Security



Impact category

- Sustainable Agriculture
- Access to Water
- Sanitation Infrastructure and Hygiene
- Urban Climate Resilience solutions to improve the use of rainwater

Orbia Solutions

- Precision irrigation solutions.
- Infrastructure to guarantee supply and access to water.
- Pipes and resins to provide better sanitation.
- Caustic soda and derivatives for water treatment and cleaning agents.
- Stormwater management solutions.
- Smart blue-green infrastructure.

Decarbonization & Energy Transition



Impact category

- Low-Carbon Solutions
- Alternative Energy
- Energy Efficiency
- Resource Efficiency

Orbia Solutions

- Low temperature fusion resins.
- Low-GWP propellants and refrigerants.
- Indoor climate solutions for improved energy efficiency.
- Circular, recycled and bio-based products.
- High performance fluorine-based lithium-ion battery materials.

Information Access & Connectivity

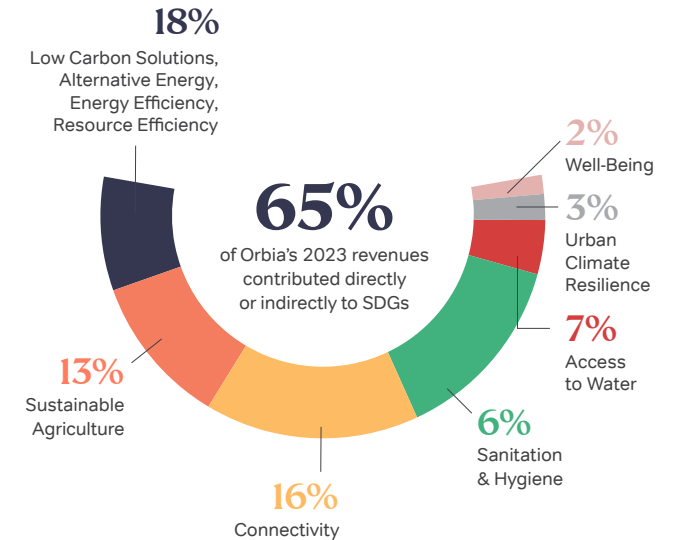


Impact category

- Connectivity

Orbia Solutions

- Long-lasting and durable connectivity infrastructure and materials for fiber cables.



For further information:

[Global Impact at Orbia](#)

Other contributions include solutions such as resins and compounds for essential medical applications from Orbia Polymer Solutions (Vestolit and Alphagary).



Circularity

Orbia's approach to circularity includes the incorporation of Sustainable Design Principles as part of our ambition to decarbonize our product portfolio: keeping materials in use for longer, integrating recycled plastics content and other post-consumer or post-industrial feedstock in our products and providing solutions to close the loop in our materials.

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 2023, we advanced several initiatives across all mentioned fronts.

Driving Recycled Content Use

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 and pipes.

Circularity target		2023 Performance
Building & Infrastructure: increase % of recycled plastics content in products*	9% by 2025	5.1%
Precision Agriculture: increase recycled content in driplines for irrigation	45% by 2030	18.7%

*Recycled plastics content (according to ISO 14021): The proportion (%) obtained by dividing the mass of recycled plastics used for products by the total mass of plastics in the final products.

Orbia Building & Infrastructure (Wavin) uses circular and low-carbon raw materials as well as a circular design for disassembly and recycling, with a goal of 90% of products to be 100% recyclable by 2025. Our performance in 2023 was 83.8% (vs 80.9% in 2022).

See the rest of this chapter for examples of circular product launches and circularity programs.

Sourcing Renewable Raw Materials

Orbia is striving to increase its share of renewable raw materials. Due to the nature of our businesses, water is considered a key raw material in some cases. Other examples of renewable raw materials include epoxidized soy oil, acetyltributyl citrate and quebracho.

Percentage of renewable raw materials used:

30%
2021

31%
2022

38%
2023

*Data is calculated based on internal estimations.



For further information:

[Circularity at Orbia](#)



Closing the Loop in Materials

Orbia Polymer Solutions

Vinyl in Motion

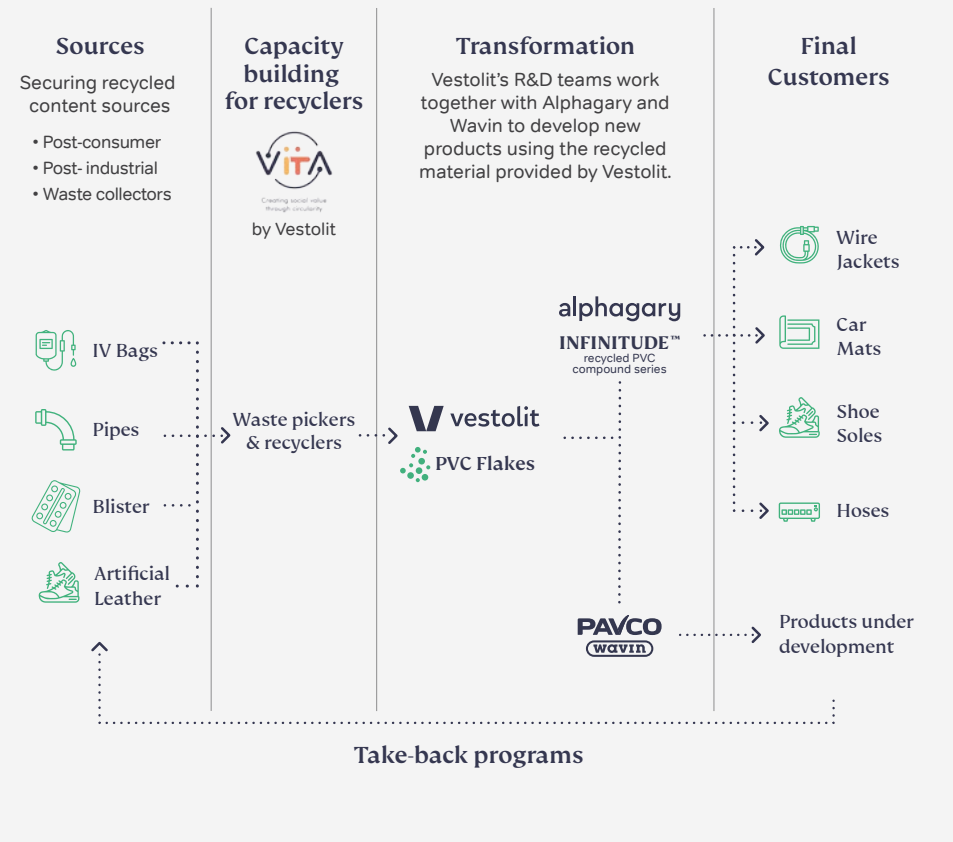
Vinyl in Motion is a program created by Orbia Polymer Solutions (Vestolit) to promote the collection of discarded PVC products that can be transformed anew. Vinyl in Motion is allowing us to advance our post-consumer and post-industrial PVC circularity activities in Latin America by partnering with customers, end users and relevant players of local PVC value chains. Example activities include IV bag collections from hospitals to reprocess material into the Polymer Solutions (Alphagary) “Infinitude” compound, which can 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. A well-established process has been set in Colombia and is due to be replicated in Mexico in 2024.

2023 results

More than 60 tons of discarded PVC are processed each month for several applications including, among others, IV bags, blisters and artificial leather components. These are being collected and processed in Colombia by five recycling companies sponsored by Orbia Polymer Solutions (Vestolit) and directly benefiting the local community by creating more than 20 jobs and supporting 100 recycling family members.

The program also serves as recycled content input for Orbia Building & Infrastructure (Wavin) to develop a new portfolio of products with recycled content. Based on a partnership with one of Colombia’s top universities, a Life Cycle Assessment of the process was carried out to show that the incorporation of recycled material can reduce more than 40% the carbon footprint of the product in the manufacturing phase. Through coordinated synergies with Orbia Polymer Solutions (Alphagary), the PVC recycling chain is reinforced while creating circular economy solutions for customers developing new compounds specifically formulated with recycled materials for pipe cores. An estimated 2,000 MT of compounds will be produced at full growth.

Vinyl in Motion Process





Orbia Polymer Solutions

Orbia Polymer Solutions (Alphagary) is working on several circularity programs for product development. In 2023, our Polymer Solutions (Alphagary) ECO compounds used up to 50% recovered PVC resin and plasticizers from wastewater, reducing the burden on wastewater treatment.

Orbia Connectivity Solutions

Orbia Connectivity Solutions (Dura-Line) continued its take-back program, which allowed the repurposing of over 138,000 conduit reels and resulting savings of \$4.5M in 2023.

Orbia Fluor & Energy Materials

Orbia Fluor & Energy Materials (Koura) continues to implement an HFCs recovery program, with improved capacity for refrigerants recycling in our Mihara plant in Japan. 865 tons of refrigerants were recovered, delaying around 1.6 million tons of GHG emissions.

Additionally, the Fluor & Energy Materials (Koura) Fluorocompound Innovation Center is developing fluorospar synthetic stones from the recovery of mineral tailings for manufacturing high-performance steel with a lighter environmental footprint. In 2023, analyses and feasibility and pilot tests were developed, with large scale production tests planned with selected clients in 2024.

Orbia Precision Agriculture

Orbia Precision Agriculture (Netafim) operates two ReGen recycling plants (in the U.S. and Mexico), with take-back programs underway to collect end-of-life driplines in 10 countries. In 2023, roughly 20,000 tons were collected, which exceeded 2022 collection quantities. Our Precision Agriculture (Netafim) team aims to extend the ReGen circularity program to Turkey, China and Morocco, collaborating with local partners to introduce greater amounts of recycled content into dripline manufacturing.

- During 2023, the Precision Agriculture (Netafim) Culiacan plant in Mexico (considered the country's largest agricultural plastics recycling facility) has processed over 2,000 tons of plastic in its first year of operation. Click [here](#) for further information.
- The Precision Agriculture (Netafim) U.S. recycling operation is now certified by SCS Global Services as the only precision irrigation company with a certified plastics recycling facility and certified recycled content in the country. This has allowed our U.S. team to launch ReGen™ AgVantage Certification Program, creating a new standard for Precision Agriculture (Netafim) grower partners to collaborate on dripline waste reduction and environmental impact activities. Through this program, partner growers and shippers will be recognized as Certified Irrigation Plastics Recyclers. Click [here](#) for further information.

Orbia Building & Infrastructure

Orbia Building & Infrastructure (Wavin) operates take-back programs in multiple countries including the Netherlands, Germany and Colombia, with plans to roll out the service in other EMEA and LATAM countries in the future. These collection services are now ISO 14001-certified, allowing the issuance of credible certificates reporting avoided CO₂ emissions resulting from this service. Collecting and recycling material results in a reduction of 0.5 kg* of CO₂ per kg of products collected, compared to the emissions produced when pipes are disposed into mixed construction waste.

*Based on Life Cycle Assessment calculations, with an end-of-life scope considering regional recyclability rates.



Message from our
Chairman & CEO

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ORBIA VENTURES

INNOVATION CULTURE

OPEN INNOVATION

EMPOWERING INTRAPRENEURSHIP

Rechargeable Li-ion Battery. Mod.
fire or burning. Do not disassemble.
Designed by Apple in California. A
请勿拆解, 刺破, 挤压, 加热或投入火中.
标称电压和额定容量/额定电压和额定容量
A2171 充电限制电压: 13.05Vdc 制造
锂电池 苹果 2023 年 10 月 10 日



Orbia Ventures

Our practice of innovation is not just critical to competitive advantage: it is the catalyst for positive impact on the planet and its people and is embedded in the following flagship corporate endeavors:

- **Orbia Ventures:** Harnessing financial and human capital to select promising, impact-oriented investments from our \$130M corporate venture capital fund.
- **Training and capacity building:** Innovation upskilling and the nurturing of an innovative culture.
- **Open innovation:** Connecting our business groups with startup companies, research organizations, universities and other partners to accelerate new solution development.
- **LaunchPad:** Steering our globally-recognized intrapreneurship program and intrapreneur community.

In 2023, we continued to extend our investments in startups and propel LaunchPad to new heights. Simultaneously, we offered innovation training for employees and invested in an assessment of Orbia's innovation culture to inform our strategy.

\$80.4M Invested in innovation and R&D in 2023
(Excluding investments by Orbia Ventures).

\$7.1M Invested by Orbia Ventures in 2023
(accumulating \$41M since 2020).

9% of 2023 revenues came from new products and services.

Orbia Ventures is Orbia's corporate venture capital fund which promotes technologies to reduce the impact on our planet. 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 resilient.

In 2023, we screened over 800 investment opportunities, conducted preliminary due diligence on seven promising startups and completed due diligence on five that offer new technologies across our focus areas: climate tech, sustainability and circular economy, sustainable energy and energy storage, agriculture, water infrastructure, building and communication infrastructure.

We have collaborated and exchanged knowledge with dozens of innovation and investment entities who share similar values, and sponsored global climate tech and agritech conferences where we shared our investment theses. Our team also continued supporting our portfolio companies in building their management teams, developing their strategies, and assisting in business development and financing efforts.

Orbia Ventures completed seven climate-focused investments throughout the year for a total of \$7.1M, emphasizing the company's commitment to tackle global challenges.

Some of these include:



Nuclear fusion stellarator technology aiming to transform the clean energy sector to provide an abundant and equitable energy future.



Chloris uses remote sensing, machine learning and ecological science to measure natural capital (forest carbon stock gains and losses) to enable nature-based solutions to be accounted for to reach a net-zero and nature-positive world.



Tortuga has developed agriculture robotics to address labor shortages, enable regenerative farming practices and help farms become more resilient, sustainable and successful.

Click [here](#) to see Orbia Venture's full portfolio.



Innovation Culture

Training and 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 2023, 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 specializing in innovation methodologies, entrepreneurial leadership and circular economy, among others.

orbia innovation

+10,000 innovation-related training hours
for +3,000 employees across Orbia in 2023.

Orbia's Innovation Culture Assessment

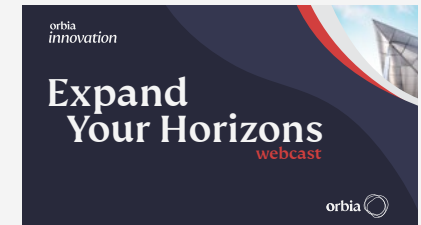
In 2023 we designed Orbia's Innovation Culture Model incorporating best practices from outside of Orbia as well as inputs from thousands of Orbia employees and senior leaders. The model consists of five pillars: "Purpose Driven", "Growth Mindset", "Customer Centricity", "Looking Out, Reaching Out" and "Relationships Matter". The model is intended to break down 'innovation culture' into practical areas of capability and skill development that we can focus on to foster a culture of continuous innovation.

Correspondingly, we launched an Orbia-wide survey to assess our business groups' performance across the five pillars of the Orbia Innovation Culture Model. The survey findings were shared with the leadership teams of each of the participating businesses, and the respective teams are preparing their 2024 plans based on feedback that emerged from the survey.

Expand your Horizon Webcast Series

Since 2020, Orbia has been hosting Expand Your Horizons webcast series where we invite ground-breaking innovators who tackle the world's toughest challenges into conversation with our leaders. In 2023, we opened the Expand Your Horizons series to the whole world.

Click [here](#) to learn more.





Open Innovation

At Orbia, we welcome an open innovation approach and collaborate with external partners with complementary skills to accelerate the development of better, smarter, more efficient solutions. In 2023, we launched two consultancy projects with students from the Rotterdam School of Management. One of them delivered a carbon abatement cost curve to guide the decarbonization roadmap of Orbia's operational emissions, while the second evaluated business case for Orbia to generate carbon credits for personal retirement with careful consideration of SBTi criteria.

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



Orbia Building & Infrastructure (Wavin) co-hosted The Boiling Point Challenge with Imagine H₂O during the 2023 UN Water Conference. This pitch competition provided a pathway to invest in companies that are using technology to solve everyday water issues. Click [here](#) to learn more.



Orbia Polymer Solutions (Vestolit) executed an inaugural collaboration with Shenkar College at their Marl facility to develop potential solutions for the recycling of PVC.



Orbia's Connectivity Solutions business has revolutionized field inspection through digital innovation, evolving from transactional to transformative customer engagement. Our first client, Clearwater County, utilizes Deepomatic's cutting-edge computer vision technology to offset operational cost increases and reduce vehicle emissions in perpetuity while improving field inspection efficiency.



Ascend Elements and Orbia's Fluor & Energy Materials business, Koura, are partnering to explore commercializing the Hydro-to-Anode® graphite recycling technology. This patented method can produce 99.9% pure graphite from used lithium-ion batteries, offering a valuable source of battery-grade anode materials for the electric vehicle industry that complies with tax credit requirements. For further information, click [here](#).

Orbia's Fluor & Energy Materials (Koura) also renewed a project with the University of Connecticut to use their state-of-the-art material characterization facilities to analyze energy materials. University experts are studying recycled graphite anode materials to identify the nature of organic impurities before purification and develop methods to quantify the ratio of synthetic graphite in recycled graphite.

More details on our investments in energy materials in our [Strategy for Value Creation](#) section.

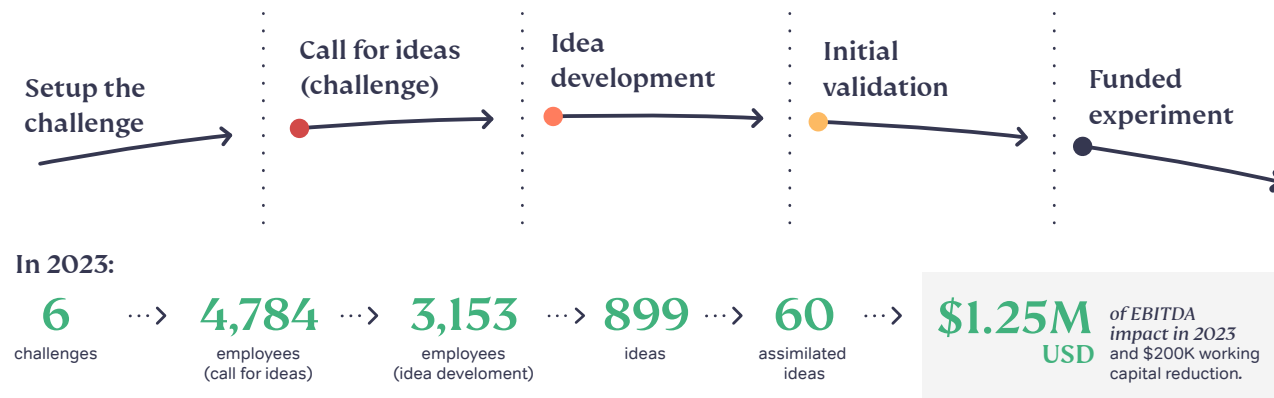


Empowering Intrapreneurship

Boosting Engagement and Collaboration with LaunchPad

Orbia's LaunchPad program, an initiative fostering innovation within the company, encourages employees to propose valuable ideas that undergo development, funding and support. This innovation accelerator empowers Orbia's workforce to contribute valuable solutions across diverse sectors, cultivating our culture of innovation and reinforcing the attraction and retention of top talent. Throughout 2023, LaunchPad concentrated on expanding the portfolio and number of challenges and projects, assimilating and expanding existing projects, establishing and positioning our community of champions and extending LaunchPad to new districts (universities and startups).

orbia LaunchPad



Global expansion of two central concepts that are expected to generate \$4.5M in projected outcomes.

We conducted regular monthly meetings with over 150 innovation champions who convened for a four-day executive workshop in Amsterdam. Since its creation in 2020, +75% of employees have participated in 21 LaunchPad challenges with over 2,800 ideas, representing a significantly above-average engagement rate.

“2023 was another impactful year. We increased our investments in climate related technologies such as carbon removal, nuclear fusion, energy storage and agtech. Launchpad, our internal innovation program, is delivering real financial impact and world-class employee engagement levels. The company-wide innovation culture survey demonstrated that Orbia’s purpose is motivating our employees and that customer-centricity is at the heart of what we do.”



Shai Albaranes
Corporate Vice President,
Innovation & Ventures



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SAFETY-FIRST

CARING FOR OUR PEOPLE

THRIVING COMMUNITIES

CORPORATE GOVERNANCE & RISK MANAGEMENT

ETHICS & COMPLIANCE

CYBERSECURITY

SUPPLY CHAIN



Safety-First

At Orbia, the safety of our employees is our priority. We continued our focus to mitigate risks, reducing injuries and loss-of-containment events.

This year we regret to record two employee fatalities that occurred this past year during plastic extrusion activities at our facilities in Denmark and India. Full investigation protocols and corrective actions have been taken to prevent reoccurrence: pausing all operations of the sites involved, standardizing the implementation of our [Life Saving Rules](#) and internal audit programs, enhancing the competence and skills of our supervisors and operators, establishing safer operational procedures, improving stress and fatigue management and better overall management systems.

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

Safety Governance

Three main structures define our approach to safety, promote alignment and partnership, and achieve our Orbia HSE aspirations. The HSE Core, Extended, and Strategy & Implementation Councils meet on a bi-weekly, bimonthly, and tri-annual basis, respectively. Safety performance indicators are an essential part of company leadership strategic plans aligned directly with compensation and senior management ESG execution. Orbia HSE performance is reported quarterly to the Board's Governance Committee by the HSE Vice President.

In 2023, we continued to emphasize systematic learning reviews of recordable incidents and near misses in which the CEO along with the Corporate HSE VP and business group leaders, investigated root causes and agreed on corrective actions. This approach demonstrates our focus on learning and sharing best practices companywide.

Safety Culture

Assessing our safety mindsets and practices, understanding our life-saving rules and recommitting to our goal of zero incidents is imperative for us in 2024, underscored by adherence to safety-first cultural transformation. All business groups developed an improvement plan to enhance safety culture after participating in an Orbia-wide safety perception survey in 2022. Key actions include:

Recognition Plan

Each business group is recognizing HSE activities and initiatives across sites that exemplify our fundamental safety rule: all injuries, occupational illnesses and HSE can be prevented. Some examples include:

Orbia Connectivity Solutions (Dura-Line) rolled out peer-to-peer recognition programs where employees are recognized and rewarded for working safely and going above and beyond to ensure the safety of themselves and others.

Orbia Fluor & Energy Materials (Koura) has an "Employee of the month" initiative, which is also linked to safety awareness.

Orbia Building & Infrastructure (Wavin) has several tools and programs such as: the "Expressing Gratitude Program" and the "Promotion of "Safe Behavior and Recognition" training, which contribute towards the transformation to a safety-centered company.

We will enhance our recognition activities in 2024 with the roll-out of an Orbia-level recognition of our manufacturing sites best demonstrating our safety culture.

Learning and Continuous Improvement

Orbia Connectivity Solutions (Dura-Line) has introduced the concept of Global Corrective Action Plans (GAPs) to leverage current safety management systems to share learnings and drive corrective actions across the globe by assigning GAPs to every operating site. This process has advanced our capabilities as a learning organization by driving continuous improvement and posting incident corrective actions. This pilot is being rolled out across all business groups in 2024.

Orbia Fluor & Energy Materials (Koura) also developed a similar initiative to collect safety improvement suggestions and reward and support the implementation of the best ideas. Leadership teams also actively participate in safety patrols to verify conditions and identify opportunity areas.



Orbia Safety Observation Program & App

Launched in 2022, Orbia's Safety 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 2023, our Orbia plants reported, analyzed, and acted upon over 150,000 observations. The upward trend in safety observations is evident in 2023, with a 36% increase compared to 2022. While this is a positive development, the Serious Injury and Fatality (SIF) events, along with a rise in recordable cases in 2023, prompt us to question the efficacy of early detection in identifying risks beforehand. In response, sites have devised plans to address critical safety observations and are actively encouraging employees to consistently report them.



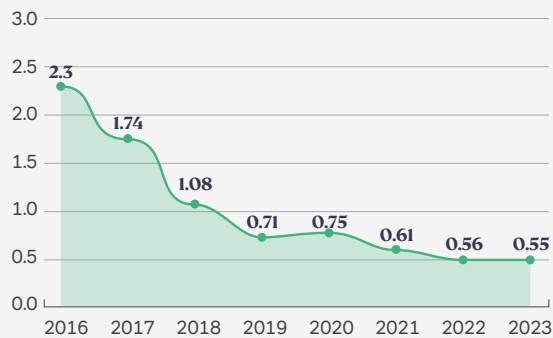
Orbia Building & Infrastructure (Wavin) has successfully implemented a unique app known as the “Active Supervision Tool” in the U.K. This tool enables users to choose from five categories, including Coaching, Praise, Nip in the Bud, Quiet Word and Follow-Up. Upon selection, the app generates an automated email acknowledging actions, behaviors, or job performance to leaders, whether positive or requiring improvement. Users can also personalize messages within the app.



World Day for Safety

On April 28th, 2023, Orbia celebrated its annual World Day for Safety. This initiative focused on key Orbia themes, including the belief that all work-related injuries are preventable and emphasizing the importance of a reward and recognition program in our organization. Various events took place at the site level and operations staff actively participated in the Orbia webcast via a live conference call, featuring the CEO and all business group Presidents. A safety pledge session facilitated discussions on global themes, fostering a commitment based on the messages conveyed by the CEO and business group presidents, guided by site manager, anchored to our target to keep our incident rate below 0.2.

Orbia Total Recordable Incident Rate ✓



*Data includes employees and contractors

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 2023, 53% of Orbia's sites were certified to international safety standards such as ISRS, ISO 45001, or OHSAS 18001. The certification process remains a priority for the following years as we integrate newly-acquired sites. A key milestone in this commitment happened at Las Cuevas (Mexico) mining site, with the completion of an upgraded program for the mine tailings storage facilities in 2023. All the structures now comply with recognized international standards.

Safety Audits

Second Party Audit Program

In 2023, Orbia Polymer Solutions (Vestolit and Alphagary) and Building & Infrastructure (Wavin) initiated a second-party audit program for PSM (Process Safety Management) and HSE, respectively, to guarantee the right on-site implementation of all elements and standards of safety management systems. Both programs considered auditors from different sites, ensuring experience, expertise and best practice sharing. This program will be an important input of the 2024 improvement plan for each audited site and is being adopted across all Orbia business groups.

Orbia's Life-Saving Rules Audit Program

In 2020, Orbia introduced 10 Life-Saving Rules (LSR) for all employees and contractors at our sites to create a culture of stringency and compliance with safety rules. In 2022, we began a program whereby one Life Saving Rule is audited each month across all Orbia sites and continued this practice into 2023. In 2024, we are enhancing the LSR campaign with detailed directives to ensure uniform implementation and rolling out second-party audits to ensure consistency and provide expert feedback for continuous improvement.

“In 2023, we saw injury reduction as measured by Total Recordable Incident Rate, but not at the pace that we want to join the industry leaders in safety. The loss of life in two of our facilities overshadows the year. A collective approach to injury reduction will drive our activities in 2024.”



John Branam

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



Process Safety

Process safety leaders directly deployed into our petrochemical and basic materials businesses continue to work closely with each site to drive continuous improvement of Process Safety Management (PSM). These resources are essential 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 petrochemical and basic materials operations adhere to these principles.

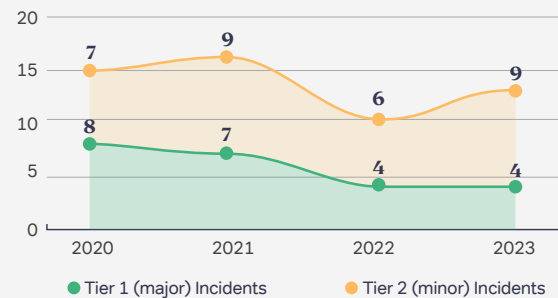


Orbia utilizes the Sphera Advanced Risk Assessment tool to drive excellence in our process hazard analyses (PHA). All our basic materials sites use this tool to guide hazard and operability studies during the development, design and construction stages of our six-step project capital management process. This approach has allowed the conclusion of the expansion project in Matamoros, with the third reactor of AIF3, with no injuries.



All petrochemical and basic materials plants have developed and implemented risk assessments for PHA in their process operations. Plant operations are assessed on a five-year basis so 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 completing actions resulting from those reviews.

Orbia Process Safety Events ✓



Process safety performance was unchanged regarding the Major (Tier 1) releases, but we are concerned to see the increase in number of Minor (Tier 2) releases from six to nine in 2023. Orbia reporting guidelines are aligned with CEFIC/ICCA process safety metrics, including Process Safety Near Misses (small releases from the process causing first aid injuries, pressure relief system activations, Safety Instrumented System (SIS) activations, and small ignitions). All these events have been subject to rigorous incident investigations and Root Cause Analyses (RCA) to understand the system root causes and put corrective actions in place to prevent reoccurrence and eliminate the potential for similar

events to occur and escalate. Lessons learned from these events were shared throughout the organization in 2023 to promote proactive incident prevention.

Safety Recognitions

Orbia Fluor & Energy Materials (Koura) received the White Flag Recognition (*Distintivo Bandera Blanca*) from the country's social security institute (IMSS) for having a strong health program for employees at the Matamoros plant in Mexico. Additionally, this site holds the "*Industria Limpia*" recognition awarded by the national environmental agency, as well as "SARI" (*Sistema de Administración de Responsabilidad Integral*) awarded by ANIQ (*Asociación Nacional de la Industria Química*), in recognition of outstanding environmental and safety performance.

The Orbia Building & Infrastructure (Wavin) Guachene site in Colombia also received two awards by ARL Sura for its outstanding practices in the Workplace Safety and Health category.

Product Stewardship Approach

We operate by complying with key standards and best practices and hire subject matter experts (SMEs) to ensure full compliance across our wide range of products and all regions.

Across Orbia, we remain focused on opportunities to reduce environmental and health risks across our product lines and portfolio. Human health and environmental risk assessments have been conducted on 94% of products (in terms of revenues) to determine their potential impact*.

*The majority of these products come from our Fluor & Energy Materials (Koura), Polymer Solutions (Vestolit and Alphagary) and Connectivity Solutions (Dura-Line) businesses.

Across Polymer Solutions (Alphagary), risk assessments are carried out for all our raw materials, with safe substitutes sought wherever possible. For medical and food grade solutions, we use U.S. Food and Drug Administration (FDA) approved materials.

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.

- Two 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 Polymer Solutions (Vesolit), Connectivity Solutions and Fluor & Energy Materials businesses.
- The Candidate List of substances of very high concern (SVHC) for Authorization above 0.1% by weight are in 11% (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 lifecycle approach.



Caring for our People

Our defining advantage is clear.
Our people—totaling ~24,000 in
number—are the drivers of our success.

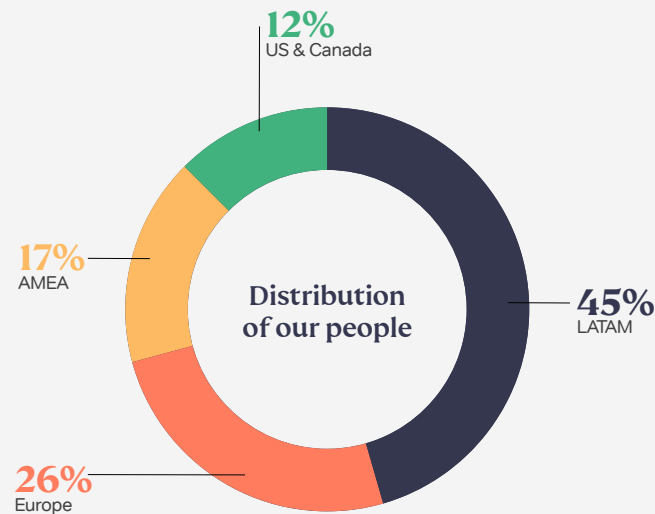
We bring the best and brightest minds, capabilities
and individual experiences to Orbia to boost our
culture of innovation, support our agility and fuel
collaboration that enables us to make a profound
and positive impact at work and in the world.

For a full view of people-related performance
indicators, visit our [sustainability reporting hub](#).

Our Global Team in 2023

24,014
colleagues in
50+ countries

>500,000
hours invested in learning
and development



Key people-related metrics

44% of employees have
collective bargaining
agreements

25% of open positions
were filled by
internal candidates

9% 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 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.





Our labor relations are predicated on overall respect for employee rights. As Orbia, we support the right to freedom of association to any political, professional and religious belief and reject any form of child labor, servitude or unpaid work or slavery as outlined in our [Humans Rights Policy](#).

We promote conditions that facilitate both personal and professional development for all of our employees, directly aligned with organizational goals. We carry out processes to ensure we are paying people fairly and competitively in line with local regulations and market practices, including overtime fees. We use external benchmark information to measure our competitiveness across markets.

Our recruitment and on-boarding processes are designed to place the right individuals in the right roles and follow equal opportunity best practices and laws in the jurisdictions in which we do business. We ensure we do not hire underaged workers by leveraging an age verification process to prevent child labor.

Through our local teams, we ensure all employees have access to social security and protection according to local regulations. Additional benefits may include weeks of extended parental leave, augmented health insurance, retirement plans, disability and life insurance, among another benefits in line with local regulations and market practices.

The safety of our people is our top priority. We assure the adequate infrastructure and conditions for our teams to work optimally, in addition to continuous training and certifications to meet requirements and standards. Learn more in our [Safety-First](#) section.

Fulfillment

Employer Brand and Employer Value Proposition (EVP)

During the first half of 2023, we unveiled our very first employer brand and introduced our Employer Value Proposition (EVP). The EVP became our guiding principle as a purpose-driven, values-aligned global force, encapsulating the essence of what makes working at Orbia meaningful for our present and future employees. It became our signature to attract talent, retain valued team members and nurture a culture of personal growth and continuous innovation.

The launch of our EVP brought employees together worldwide through hundreds of local events, where over 20,000 Orbia employees participated in both on-site and virtual gatherings.

+16,000 through on-site employee attendance, +2,000 through connections to live-streamed events, with +120 manufacturing sites joining the launch celebration in June.

In addition, the corresponding update of our [Careers site](#) experience and employer brand-aligned programming contributed to gains in the talent attraction and acquisition spaces, generating nearly double the engagement of 2022.

Where **purpose** comes to life.

Employer Brand Engagement Gains (vs. 2022)

- 1.8x year-over-year increase in Careers site traffic.
- 1.7x increase in job applications.
- 1.4x increase in subscriptions on the Careers site.
- 3,000 direct referrals to Orbia.com.
- 326% increase in impressions in LinkedIn and external channels and 355% increase in engagement.
- 293% increase in click-throughs.
- 11% organic impression rate vs. the 2% industry average.

Purpose Comes to Life Awards

In 2023, we also held the inaugural edition of the Orbia Purpose Comes to Life Awards, where we recognized teams and individuals that are making outstanding contributions to the company through leading by example, working as one Orbia and advancing life together. Orbia's Leadership Team presented 10 awards in the following four categories: Innovation Champions, related to solving [global challenges](#); Impact Makers related to progress on the metrics of our [ImpactMark](#); Safety Steward to honor a safety-first mindset; and One Orbia Trailblazer to represent companywide collaborators with exponential impact.



Inclusion at Orbia

At Orbia, we are committed to fostering a workplace where employees from a wide range of backgrounds, experiences and perspectives can contribute, grow and thrive. Our focus is on building an inclusive culture grounded in collaboration and respect, aligned with our company values.

Our Inclusion Program

In 2023, we introduced a global inclusion program designed to provide resources, educational opportunities and events that promote awareness and collaboration across our organization. Programming includes quarterly learning sessions and resources aligned with international days of recognition, supporting Orbia's Future-Fit Model, which sets clear expectations for how we work together inclusively.

The program generated over 33,000 interactions, showing strong employee engagement and we've seen increasing interest in inclusion-related learning, reflected in the growth of participation in Orbia's LinkedIn Learning courses.

Orbia's inclusion program is supported by two employee-led resource groups:



Together, these groups provide open forums for employees to connect, share experiences, and build community, with participation voluntary and open to everyone.

Our Inclusion Strategy

In 2023, we launched a global listening initiative to better understand employees' perspectives and opportunities to improve inclusion across Orbia. Through an organization-wide questionnaire, we collected voluntary feedback to help inform future programs, resources and workplace practices that support all employees in contributing to their fullest potential.

Inclusive Governance

To ensure alignment across the company, Orbia established an Inclusion Council comprised of senior leaders from all business groups and functions. The Council convenes regularly to review Orbia's inclusion priorities, guide programming and ensure consistency in execution across regions.

Looking ahead, we remain focused on three priorities:

1. Using workforce data responsibly to guide fairness and transparency.
2. Moving from awareness to action through inclusive practices.
3. Enhancing the employee experience by fostering a culture of respect and collaboration for all.



Advancing Inclusion

Orbia continues to make progress against our aspiration to strengthen inclusion and remove bias across the organization. This progress contributed to Orbia's inclusion in Forbes' 2023 list of the World's Top Companies for Women, an independent ranking based on evaluations from 70,000 women across 37 countries. Orbia was also recognized by 50/50 Women on Boards and Women Corporate Directors for its board composition, placing us among the top companies on the Mexican Stock Exchange for female inclusion among senior executives.

Supporting Inclusion Globally

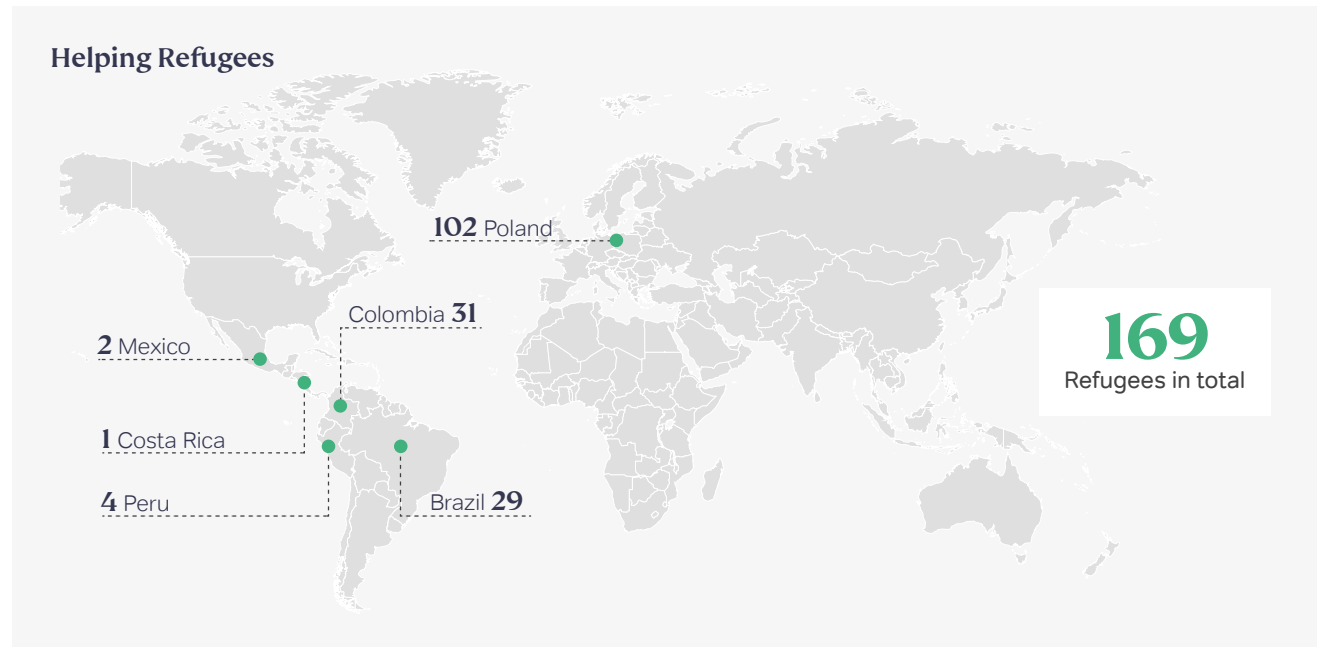
Orbia's local teams continue to develop region-specific [initiatives](#) that expand access to opportunities:

- In France, we partnered with ESAT (Établissement et Service d'Aide par le Travail) to support employment access for individuals with disabilities through educational and occupational programs.
- Through our partnership with the TENT Partnership for Refugees, we also created qualified employment opportunities for 169 employees across Mexico, Costa Rica, Colombia, Peru, Brazil and Poland in 2023.



Orbia Helping Refugees

Since 2021, Orbia has partnered with the TENT Partnership for Refugees and its global network to provide employment opportunities for qualified individuals who have been displaced and are rebuilding their lives. Through this collaboration, we have supported 169 employees—directly and indirectly—across our operations in Mexico, Costa Rica, Colombia, Peru, Brazil and Poland.



In 2023, we expanded our outreach by posting job openings on a dedicated platform designed to connect qualified Ukrainian refugees with opportunities at Orbia, resulting in the successful hiring of over 90 employees.

Across Latin America, our teams also supported refugees from Venezuela and other regions through workforce integration efforts and training programs. As a result of these initiatives, Orbia Precision Agriculture (Netafim) was recognized by HIAS Peru for its best-in-class practices in enabling the hiring and inclusion of refugees and immigrants into our workforce.

Learn more, [here](#).

“I am 32 years old; I live in Poland with my wife. In our spare time we like to go for walks and meet with friends. I am Ukrainian and currently working at Orbia Connectivity Solutions (Dura-Line) Poland as an Extrusion Line Operator. I am glad that I can work in a business that is part of an international company. Previously, before coming to Poland, I worked in various production plants, mainly in order picking and in the warehouse. The greatest support I received from Orbia is employment. Now I have direct employment with the company and enjoy stable working conditions.”

Andrii Makarov

Extrusion Line Operator at
Connectivity Solutions Poland



Volunteering with Purpose

Aligned with our EVP, our Volunteering with Purpose program supported our efforts to bring Orbia's purpose to life, everywhere our people are. Through pursuing an increased number of cross-company initiatives that furthered our environmental and community development goals in high-need regions, we strengthened our employees' engagement with the world just as we marked positive impact, Visit our [Thriving Communities](#) section for further details and key achievements.

Development

Future-Fit Model

In 2022, we introduced Orbia's Future-Fit Model to set expectations and guide behaviors that add up to success for our employees and managers. The model, now represented as a compass, delineates higher expectations for managers in considering the longer-term vision for business growth and people development. In 2023, we focused on integrating the model into our People programs, processes and employee touchpoints, such as Orbia's talent acquisition, performance management, succession planning and leadership development cycles for an aligned and unified experience.



Future-Fit Model



Learning & Development Programs

Following the creation of Orbia's Leadership Pipeline Development framework, we launched three new Orbia leadership development programs in 2022: Achieve, Succeed and Inspire.

These programs were rolled out during 2023 with close to 100 participants from across business groups, functions and regions. The participation process was grounded in leadership potential, with a focus on inclusive talent identification to help strengthen diversity across our future leadership pipeline. Each of the programs ran over 12–24 months to ensure well-rounded leadership development and bring other organizational benefits. For example, the retention rate of participants in the Succeed program after 18 months has been 97%.

Collectively, in 2023, more than 3,200 hours were provided in training as part of these three Orbia Leadership Development programs.

In addition to the above programs available for senior leaders, we offered various education and development offerings for managers and employees, including access to curated content through online platforms such as Orbia's LMS (Learning Management Systems) and LinkedIn Learning.

In 2023:

+5,300 Learners on Orbia online platforms.

+70,000 Courses available in Orbia's LMS with +18,000 LinkedIn Learning offerings.

+140,000 Learning hours spent online.

Due to the differing needs across our businesses, many learning and development programs were driven by and within our business groups to best meet their specific needs.





Performance Management

Our performance management framework emphasizes accountability, linking performance to salary increases and short and long-term compensation and fostering a culture of continuous improvement. In 2023, Orbia's Performance & Development Process (PDP) evolved by integrating the Future-Fit Model and our core values, aligning 'what' we do with 'how' we do it and achieve our objectives.

The first phase of the year-long PDP is goal setting. All employees establish performance objectives across three crucial dimensions:

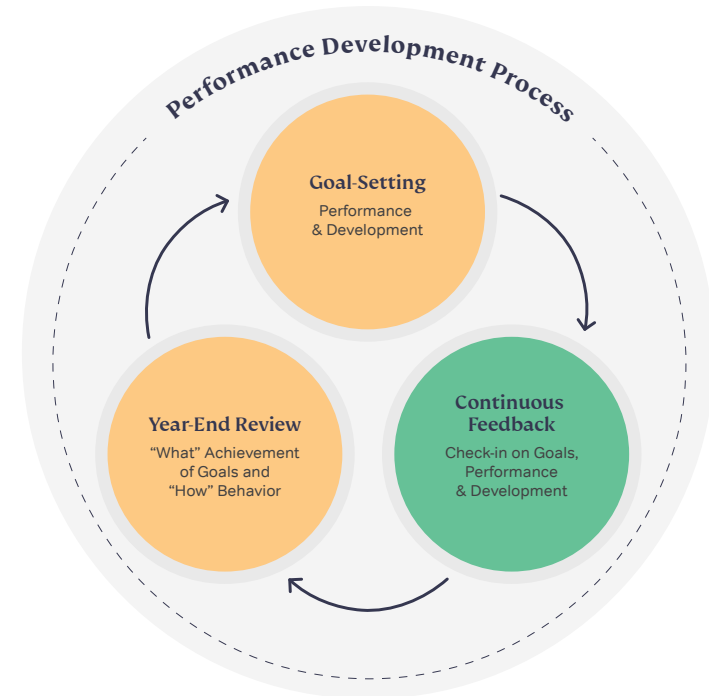
- Health & Safety, Sustainability and Ethics & Compliance goals contribute to achieving Orbia's commitments in these areas.
- Business and functional goals that go beyond day-to-day job responsibilities to contribute to our overall annual performance.
- "One Orbia" goals focus on contributions to the organization's broader purpose across teams, functions and business groups.

In addition to the above, senior managers and other leaders are expected to have long-term strategic goals for projects that could span multiple years. People leaders must define goals to develop, engage and support their teams.

Subsequent phases of the PDP focus on sharing continuous feedback, overall progress tracking, professional development, celebrating achievements and planning practices.

Finally, the Year-End Review comprehensively assesses employee performance through a self-evaluation and employee-managers discussions to help calibrate final performance and deliver a final yearly evaluation around goal completion.

Orbia performance management and compensation practices have been tied to compliance for several years, and the 2023 changes outlined above have not changed our commitment to operating ethically.



Throughout Orbia's formal performance management lifecycle, "how" employees achieve their goals is emphasized. Each employee is required to set a specific performance goal in the areas of Ethics & Compliance, Sustainability or Health & Safety. Compliance communications and training then reinforce the concept that business objectives must be achieved ethically and compliantly. Compliance with the Code of Ethics is also built into Orbia's performance evaluation and remuneration systems, where managers evaluate employees' performance in achieving their goals in a manner consistent with our Future-Fit Model, which includes operating according to Orbia's values, and remuneration is then tied to performance.



Well-Being

Our employees' well-being is crucial to us. Therefore, several programs and action plans have been put in place, both on local and global levels, to foster employee wellness.

Employee Assistance Program

As part of our People Strategy, Orbia offers Employee Assistance Programs to every employee and their family, which includes resources and support for navigating crises and personal challenges as well as free access to psychological assistance. In 2023, we emphasized the importance of psychological safety by reinforcing a culture of speaking up through our internal communication channels to identify concerns and foster a respectful environment that allows employees to openly express ideas.

SANO wellness program

SANO is designed to keep employees informed and updated on relevant health, nutrition, exercise and mental health topics for wellness and work-life balance. With origins as a local initiative for Mexico-based employees launched during the COVID-19 pandemic, the program was expanded to all Orbia in 2023. SANO (which means "healthy" in English) is now available for every employee.

Global Guided Meditation & Yoga Sessions

During 2023, we continued creating a culture of self-care and streamed 10 global guided meditation and yoga sessions, now available anytime through our internal channels for our employees to manage stress and relieve tension, along with self-care and self-awareness resources and a community of support.

"In our people, we have more than 24,000 reasons to be proud. It has been very inspiring to witness the power of one Orbia: the creativity that happens when we convene across businesses and functions, perspectives and backgrounds, languages and locations to bring our purpose to life every day, from every corner of the world. As we always hoped: Orbia's story has become our people's story."



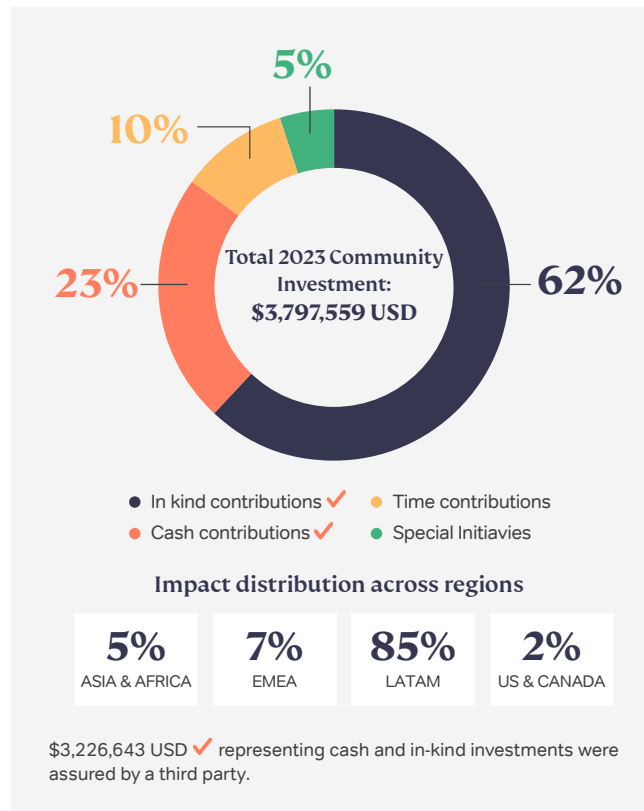
Deb Butters

Orbia Chief People Officer



Thriving Communities

Orbia engages many stakeholder groups worldwide to fulfill its purpose. Our social impact strategy allows us to dedicate our time and talents to create positive change for the communities where we live and work. We strive to maximize our positive impact by solving community needs through our programs, solutions and expertise.



Community Engagement

Creating value for the communities surrounding our operations starts with taking time to understand their needs and expectations. In moving from idea to action, we ensure that our offerings have impact.



Community Engagement Plan for Latin America (Vestolit):

In 2023, Orbia Polymer Solutions (Vestolit) concluded social impact assessments for all its Latin American facilities, comprising seven sites in Mexico and one in Colombia. The assessments evaluated the company's area of influence to better understand the surrounding communities' perception of the industrial sector, and incorporated perspectives from multiple stakeholder groups, including over 2,400 interviews within the community, 400 interviews with employees, 14 focus groups, six leadership workshops. Additionally, over 40 interviews with leadership highlighted the need for social impact programming to serve community needs.

The findings from this process will help support our Polymer Solution (Vestolit) business' future social investments in the region. The anticipated result is high-tailored programs and volunteering engagements that address specific socioeconomic and environmental community needs, strengthen our local relationships and enhance our impact.



Responsible and Proactive Community Engagement in Collaboration with Local Stakeholders (Koura):

Community engagement is a key pillar for Orbia Fluor & Energy Materials (Koura) in all of its sustainability and social responsibility strategies. Throughout our Mexican petrochemical and basic material sites, our social license to operate is sustained by continued dialogue and close partnerships with stakeholder groups including social organizations, local leaders and authorities.

At the Las Cuevas mine and Rioverde mining process plant in San Luis Potosi, Mexico, infrastructure improvement projects were executed to prioritize benefits to regional inhabitants and stakeholders. Leaders at the Matamoros petrochemical plant in Tamaulipas, Mexico also strengthened relationships with neighboring communities by supporting different projects related to health, education, recycling and safety. In-person events were resumed this year as pandemic restrictions were lifted.

2023 marked a special year regarding social responsibility for our petrochemical plant team in St. Gabriel, Louisiana, as momentum in community engagements resulted in jumpstarting local hiring and planning a high-impact educational project for 2024.





Community Investment Programs

Our community investment programs demonstrate how we can leverage our knowledge and expertise to address local and global social issues. In strong alignment with our overall business and sustainability strategies, our social impact focus areas are high-impact in vulnerable and underserved communities, spanning: water security, access and sanitation, food security, circularity and decarbonization, and connecting communities to information and services.

Water Security and WASH (Water, Sanitation and Hygiene)

For over 15 years, ensuring access to running water and improved water management systems in local communities has been a standing priority for Orbia, particularly within our Building & Infrastructure (Wavin) and Polymer Solutions (Vestolit) businesses.

In 2023, Orbia Building and Infrastructure (Wavin) implemented 29 WASH programs to provide water access to more than 25,000 people in Argentina, Brazil, Colombia, Ecuador, Guatemala, Mexico and Peru. The business distributed 372 clean water storage tanks with a total capacity of 224,550 liters as well as 331 rainwater systems and 2 hand-washing stations. Select programs by Orbia Building & Infrastructure (Wavin) include:

- A partnership with TECHO Brazil to build the first eco-sustainable house in the Favela Porto Areia, a community founded by recyclable waste collectors near Sao Paulo. Made with recycled plastic blocks and a roof covered by 100% recycled post-consumer materials, the 27 m² house also incorporates rainwater storage and hydraulic and electric installations. The initiative was steered by 20 Orbia employees working alongside TECHO professionals. Rejane Alves de Souza, a mother of nine, became the first beneficiary of this project in Brazil, which aims to scale up and build 1,000 additional houses across other Brazilian favelas in the future.

- [The Safe Water for Soup Kitchens program in Cerro Colorado \(Peru\)](#), works in conjunction with the local municipality, SEDAPAR (the local water utility) and the NGO Agualimpia, to improve WASH conditions and empower women. The program has installed several 1,100-liter polyethylene water tanks, kitchen taps and biodigesters for the treatment of gray water, benefiting more than 1,550 persons daily. Since 2021, the program has reached 75% of all existing soup kitchens in Cerro Colorado with plans to implement six more next year focusing on sanitation and hygiene. In 2023, 600 women were empowered and trained with water management skills through the Women with Punch initiative.

Learn more about some of our impactful initiatives in [Colombia](#), [Guatemala](#) and [Ecuador](#).

- Orbia Polymer Solutions (Vestolit), in alliance with TECHO, installed their second rain-harvesting system in our plant in El Salto, Mexico. The system will benefit a local school with 60 students. Orbia technicians from El Salto donated 30 hours of their time to install the system, which included PVC pipes and materials donated by Orbia Building and Infrastructure (Wavin).

Improving How We Measure Impact

Through our UN Global Compact and CEO Water Mandate memberships, Orbia joined the WASH4Work working group in 2023 to design WASH programs that connect social, environmental, economic and health benefits. In the second half of the year, we participated in a pilot with other corporations to test the working group's WASH Benefits Framework to continuously improve our program offerings.

Water Funds to promote water security

Orbia also addresses water scarcity in Latin America by supporting water funds in Mexico, Colombia, Guatemala, Peru, Brazil and Ecuador. These funds help support the design, promotion financial and governance mechanisms to contribute to water security through solutions grounded on nature-based infrastructure and sustainable management of watersheds. Since 2012, Orbia has supported water funds with over \$800,000, reaching over 10,000 people in 2023 alone. See the [Water section](#) for more information on these and other water stewardship actions.



Food Security and Nutrition Gardens

Closely linked to the issue of clean water access is the challenge of food security for all. Orbia promotes best-in-class agricultural practices in underserved communities that empower families to fortify their economic well-being as well as their access to healthy, clean food.

Orbia Precision Agriculture (Netafim) has a history of implementing community programs on this topic by supporting the adoption of community gardens. Since 2019, 196 projects, including 50 projects that were completed during 2023, have been implemented by Precision Agriculture (Netafim). Select highlights include:

- Since 2020, we have supported economic development in the Puno Region in Peru in partnership with the NGO Kusimayo. To combat the cold temperatures and high altitudes often prohibitive to agriculture, the “Puno Productivo” program implements biogardens on family farms to support the cultivation of carrots, lettuce, spinach, broccoli and beets. Through the donation and installation of irrigation equipment and providing training for the “yachaquiq” (“master of agriculture” in Quechua), Precision Agriculture (Netafim) contributed to 31 biogardens in 2023, which have in turn improved economic security, fresh produce availability and quality of life for over 100 families since the project’s inception.
- In India, Orbia Precision Agriculture (Netafim) is providing technical and commercial training on our FlexNet drip irrigation solution and the benefits of the drip irrigation method, working in partnership with Swayam Sikshan Prayog, an NGO supporting 300 women in agricultural entrepreneurship and farm management.

The Orbia Polymer Solutions (Vestolit) operation in Cartagena is supporting the installation of shared gardens through the Sembrando Vida community program, which empowers economic autonomy for women who are heads of household. Polymer Solutions (Vestolit) employees helped set up the gardens and trained the women on how to best tend to them to optimize their crop yields. In 2023, these women have gained stability of livelihood through a model that promotes collective harvesting and tending of their green resources.

Through membership in the Coalition for Water Security of Ecuador, this year Orbia Building & Infrastructure (Wavin) established an alliance with FORAGUA-Regional Water Fund to support communities that commit to conserving and restoring water sources for human consumption in the southern part of the country. The alliance promotes sustainable agricultural production in municipal conservation areas using low-cost organic biofertilizers. Through Orbia’s donation of tanks to produce biofertilizers, farmers will be able to increase crop yields, reduce soil degradation and deforestation, and provide healthy sustenance to 112 rural families.



Circularity Programs

VITA - Creating Social Value Through Circularity

Orbia Polymer Solutions (Vestolit) has continued its support of circular initiatives in Latin America through Vinyl in Motion. As part of this program, the VITA component promotes a social impact pathway that adds value to the local community by skilling recyclers, ensuring best business practices, finding solutions to access capital while supporting our own supply chain integration.

In 2023, five recyclers aiming to manage plastics sustainably in Bogota and Cali, Colombia were sponsored by this program. The program included supporting the recyclers with larger facilities, proper equipment to transport materials and relevant training. By the end of the year, the program had expanded in the community, generating 22 new jobs while positively impacting 102 recycling family members.



For further information:

[Water & Food Security solutions](#)



STEM (Science, Technology, Engineering & Math) Initiatives

Orbia is a dedicated supporter of scientific, technological, engineering and mathematical (STEM) education. Fostering STEM skills among younger generations is the pathway to a better, brighter and more equitable world, as well as foundational to solving the toughest challenges of our time. All Orbia business groups have incorporated programs to assist the acceleration and promotion of STEM careers. Examples of programs include:



In alliance with *Fundación Universitaria Tecnológico de Comfenalco*, Orbia Polymer Solutions (Vestolit), sponsored the technical education of four young women in the Pascaballos community near Cartagena through the Becas Bomerang program. As of 2023, all beneficiaries have begun their professional careers in the local industrial sector with two joining the Orbia community.

Ruth Merys, a quality control specialist, began her career at Orbia as an intern and is now a full-time employee working as a Laboratory Assistant. Meraris Ariza studies Logistics and is currently doing her internship at Orbia. Additionally in 2023, Orbia Polymer Solutions (Vestolit) launched Beca Orbia to amplify our reach in supporting professional education. Our first recipient, Nataly Cervantes, has begun her studies in chemical engineering at the *Universidad Tecnológica de Bolívar* for a total of five sponsored young women in STEM.



The Green Project is an Orbia Precision Agriculture (Netafim) educational program conducted jointly with the Israeli Ministry of Education which aims to develop girls' technological skills in the fields of agriculture, sustainability and industry. Given past success and high demand, in 2023 we expanded the program to invite 60 new students from three different Jewish and Arabic schools to learn from and be inspired by our Orbia volunteer teachers on the opportunities and new horizons in agricultural technology and sustainable agriculture.

“I am proud to be a Boomerang scholarship recipient. This scholarship has changed my life completely by giving me the opportunity to grow professionally, emotionally and personally. Boomerang has opened the doors of education for me, being the first person in my family to attend university and changing my reality by increasing my possibilities for a better future. Thank you TRASO and Orbia for fulfilling my dreams of being a professional and giving me this wonderful opportunity.”

Meraris, current Boomerang scholarship holder and Polymer Solutions (Vestolit) Logistics intern



orbia Fluor & Energy Materials

Orbia Fluor & Energy Materials (Koura) partnered with “Education for Sharing”, an international nonprofit organization focused in developing global citizens through innovative and play-based learning methods that help students embrace the possibilities of STEM careers. The program developed a series of workshops called “My STEM life plan” at the middle and high school levels, which reached close to 500 students from eight public and rural schools in the Mexican states of Coahuila, San Luis Potosi and Tamaulipas. The workshops were led by 29 Orbia employee volunteers, who shared their experiences of studying and working in STEM industries.

orbia Polymer Solutions

Through VibraSTEM, Orbia Polymer Solutions (Vestolit) continues to impact students by providing extracurricular programming in coding and robotics. This technical training also includes a component to reduce gender bias in the sector and encourage girls to pursue STEM careers. In 2023, 30 students completed the second year of the three-year program.





Volunteering with Purpose

Volunteering with Purpose is the banner under which we organize as one Orbia to give back to society through dedicating our time and talents to volunteer initiatives. To encourage our employees to emerge as change agents for the environment and society, we give each employee up to 10 hours of paid volunteer time annually that they can spend by giving back to their communities and issues of interest.

In 2023, more than 20,000 hours of volunteering from all business groups were registered from over 300 activities globally.

Examples of some activities carried out this year include:

- As part of our partnership with TECHO across Latin America, in 2023, a total of 103 of our Orbia Building & Infrastructure (Wavin) employees volunteered their time and expertise to install WASH systems for vulnerable populations. In Europe, our Poland, U.K. and Netherlands sites for Orbia Building & Infrastructure (Wavin) partnered with numerous environmental organizations to transform ecosystems and communities through clean-ups in local water sources and basins.
- 2023 marked the third installment of Orbia Precision Agriculture (Netafim) investing in the #UsingLessDoingMore initiative. This global movement continues to call for carbon footprint reduction and promoting local volunteering activities to achieve progress in SDGs 2, 5, 11 and 13. This year alone, over 1,500 employees across 20 countries joined in using less to do more.
- To commemorate International Women in Engineering Day on June 23rd all Mexican Orbia Polymer Solutions (Vestolit) facilities connected 50 employees (primarily from STEM backgrounds) with 250 female students interested in STEM careers. Events of the day included conferences and coffee chats where our professionals shared their experiences and thoughts for these bright and curious talents.
- Orbia Fluor & Energy Materials (Koura) employees participated in tailored volunteering events to enliven local communities. Our U.K. site volunteered to support a local hospital's occupational therapy garden by refurbishing the facilities, planting a variety of vegetables and plants and creating a wall mural. In Japan, our facility's emergency responders were trained by Orbia staff on select safety procedures as they made meaningful connections.
- In Pineville, North Carolina, U.S., Orbia Polymer Solutions (Alphagary) held a donation drive to fund 960 meals being delivered to local Charlotte families in need, as part of a wider volunteer campaign for community donations and service.
- Orbia Connectivity Solutions (Dura-Line) took part in the [PUSH, Inc.](#) 2nd Annual Hands-On Skills Day in Rice Lake, Wisconsin, U.S. Over 300 students from 13 area school districts visited the PUSH yard to see hands-on demonstrations from several companies and organizations. From conduit to fiber splicing, to digging equipment and more, the students were eager to see and hear about possible futures in the utility construction industry from Orbia volunteers.

Volunteering with Purpose

Our volunteers across the world also engaged in humanitarian and social volunteering activities benefiting those in need.





Emergency Relief

2023 was a year marked by natural disasters and their devastating consequences in Turkey, Syria, Morocco and Mexico. Our Orbia community, including 1,200 Israeli colleagues, saw another crisis hit home following the October 7th attacks on Israel. Through grief and uncertainty, our local and global teams have come together to assist each other and provide immediate relief to displaced families.

Turkey and Syria | Earthquake

Following the high-magnitude earthquake in Turkey and Syria in early February and its impact on our Orbia Precision Agriculture (Netafim) and Building and Infrastructure (Wavin) facilities, Orbia raised over \$197,000 for relief efforts. Immediate responses from both businesses included providing shelter, meals, sanitation and financial aid to affected employees and their families. We amplified our relief efforts by partnering with NGOs like UNICEF and IsraAID, distributing essential supplies like hygiene products, winter clothing and assistance for trauma support. Funds also supported the Container City Project, which provides long-term shelter solutions by installing modular prefabricated containers.

Morocco | Earthquake

In response to the earthquake in Morocco in early September, Orbia Precision Agriculture (Netafim), raised over \$20,000 for emergency relief efforts in the business' region of operations. Immediate actions included allocating funds to provide 250 aid packages for three severely-affected employee communities. These packages contained food, essential supplies and winter clothing. The remaining funds were dispersed for long-term initiatives in the earthquake-affected area focusing on rebuilding infrastructure, reestablishing preschools and introducing educational programs supporting affected women and children, in partnership with the Ladies Circle Morocco (LCM) organization.

Israel | Conflict

At Orbia, our top priority is the safety and well-being of our global community. Since October 7th, 2023, our focus has been on ensuring the safety of our people in Israel amidst horrific wartime conditions.

In response to the Hamas attacks and ensuing human crisis, we have taken all necessary measures for the safety of our team members, their families and our business operations, maintaining continuous contact with our people. Internally, we scaled employee assistance and support programs for trauma and crisis counseling. Our local teams mobilized to provide displaced families with direct aid and donations including essential supply relief packages, communication devices, transport aid and personalized support for the elderly. Spearheaded by Orbia Precision Agriculture (Netafim) leaders, a 700-hour volunteer initiative significantly aided agricultural community recovery in Israel as well.

Through a strategic partnership between Orbia, the Kaluz Foundation and Orbia Precision Agriculture (Netafim), we committed an additional \$150,000 to aid displaced families, children and the agricultural community in Israel. To kickstart our efforts, we collaborated with the Israeli branch of the United Way, allocating \$25,000 from the funding pool for urgent aid activities.

Mexico | Hurricane Otis

In late October, Hurricane Otis caused extensive destruction to coastal towns in Acapulco, Guerrero in Mexico. The hurricane brought with it flooding, infrastructure damage, power outages and shortages of basic resources. In response, Orbia and the Kaluz Foundation launched a fundraising campaign, each committing to match employees' total donations and thereby tripling the impact of the relief efforts. In 2024, our efforts will pivot towards identifying impact projects through the Kaluz Foundation, aiming to contribute to the resilience and well-being of the affected population.

+\$350,000 USD
were contributed to Emergency
Relief causes in 2023.





Corporate Governance & Risk Management

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 a firm supporter of the UN SDGs, we strive to live up to the highest ethical standards every day.

Our Board of Directors is 67% independent and represents 4 different nationalities. Seven (64%) of them are independent, exceeding the minimum number of independent members (25%) required by Mexican Securities Market Law and our bylaws. Mr. Juan Pablo del Valle has presided as Non-Executive Chairman since 2011.

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.



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 Martínez

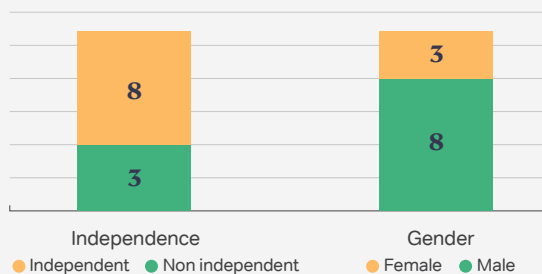
Independent



Mark Rajkowski

Independent

Board Composition (2023)
(Number of Directors)





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.

Governance 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 was introduced in 2021 and became a key component of our Short-Term Incentive Plan during 2023.

Our tax strategy plan was updated during 2023, alongside our tax policy. The program strengthens our commitment to responsible tax practices, compliance with tax laws and transparency in our business operations. At Orbia, we believe tax plays a critical role in our sustainability ambitions, by serving as a crucial tool for incentivizing sustainable practices and responsible corporate behavior.

"In 2023 we continued to strengthen our governance practices by expanding and deepening engagement throughout the Company to better assess and help mitigate risk. We established a cross-functional ESG steering committee to support our efforts to prepare for the implementation of developing sustainability reporting and other ESG requirements, including a more comprehensive double-materiality assessment as required under the European Corporate Sustainability Reporting Directive. With improved governance, we are confident we will be able to rapidly align with global best practices as we achieve our business goals."



Sheldon Hirt

Orbia Senior Vice President
and General Counsel



For further information:

[Orbia's Tax Policy](#)

[Executive Compensation](#)

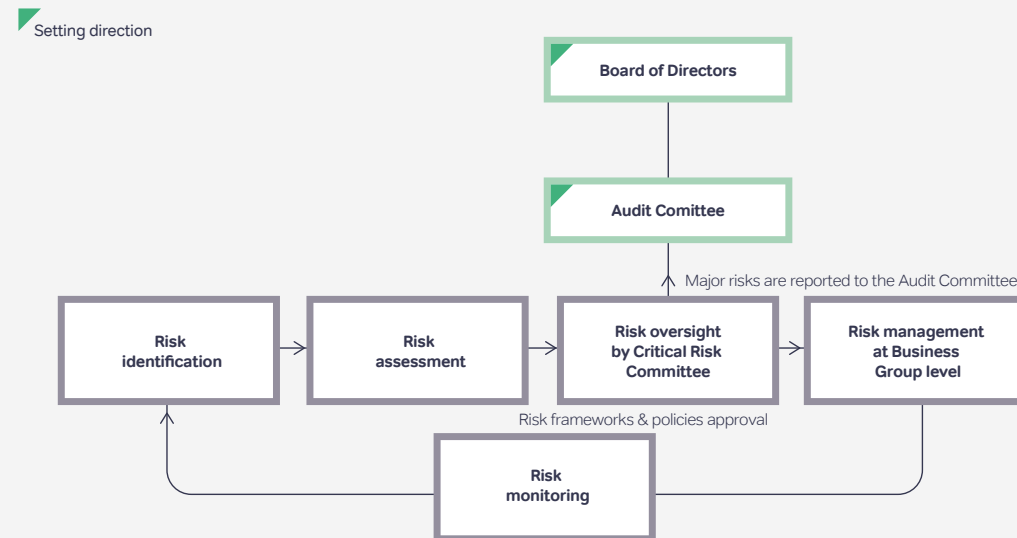


An executive Critical Risk Committee (CRC), chaired by our CEO and comprised of our CFO, Presidents from each of our business groups and other key functional heads, assists the Board of Directors in identifying and assessing enterprise risks, evaluating our risk profile, developing risk mitigation plans,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

The CRC meets quarterly and reports directly to the Audit Committee and the Board of Directors. This Committee leverages documented risk evaluation framework that considers and updates risk exposure in four key areas: Strategic/Business, financial, Operational and Reputational, updating the CEO and senior executives quarterly. Orbia's risk management framework considers both the likelihood and impact of potential risks, and requires enterprise risk owners to have documented risk mitigation and action plans for enterprise risks. Since 2020, climate and cyber risks are integrated into these Orbia multidisciplinary company-wide risk management process. For example, environmental risks are integrated into product development through life-cycle assessments.

The CRC promotes an appropriate risk management culture, and our risk management procedures require and ongoing, systematic approach, and active engagement 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. For more information about how risk management is incorporated into compensation, [click here](#).

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.

In 2023, we carried out an improved [materiality assessment](#), adopting a double materiality approach to bring together sustainability topics on which we have a potentially positive or negative impact across our value chain, and those topics that have or could have a positive or negative impact on our business performance. With an updated set of material topics, we will continue to monitor Orbia's potential impacts as well as risks and opportunities related to them.



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, where each member of our global workforce understands what is expected and is motivated to do what is right. Orbia's Code of Ethics is the foundational document that sets forth our values, principles, and policies and guides the daily actions of our directors, executives, employees, contractors, temporary workers and business partners who work on our behalf.

In 2023, 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

Orbia's Ethics & Compliance program is designed to meet international best practices. 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. Our 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 legal and compliance team that consists of experienced in-house lawyers and compliance professionals located in key jurisdictions where we do business. This allows us to provide localized, proactive advice and training.

Compliance-Driven Culture

To ensure Orbia's values and compliance procedures are top of mind for all across the company, our 2023 initiatives included:

Enhanced Policies and Accessibility of Information

This year, our Compliance team reviewed and enhanced all existing compliance policies, including Orbia's Anti-Corruption; Conflict of Interest; Gifts & Hospitality; and Speak Up, Investigations and Non-Retaliation policies, which were translated into multiple languages including Arabic, Chinese, Czech, Polish, Portuguese, Spanish and Turkish, among others. These four policies, as well as Orbia's new global Data Retention Policy, were launched during Ethics Month, reinforcing awareness of Orbia's policy portal where all policies are easily accessible.

Ethics Month 2023

Orbia hosted its fourth annual month-long Code of Ethics awareness campaign, during which all employees complete an annual Ethics training, focused on a deep dive into Orbia's policies. 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.

Enhanced Ethics Training

As part of Orbia's annual Ethics Month, all employees completed training courses (online or on-site), receiving specialized training modules. As in 2022, over 99% of administrative employees completed a customized, tailored-to-job-role online training course by the training deadline. This course contained specialized content for sales, procurement, export, logistics, finance, HR and legal team members. The course was scenario-based and included examples of "lessons learned" from actual Orbia investigations, Orbia's 2022 Ethics Helpline data and metrics to provide employees with transparency about our Ethics Helpline process. Employees in operations received a custom-built course on safety and a speak-up culture.



For further information:

[Orbia's Code of Ethics](#)

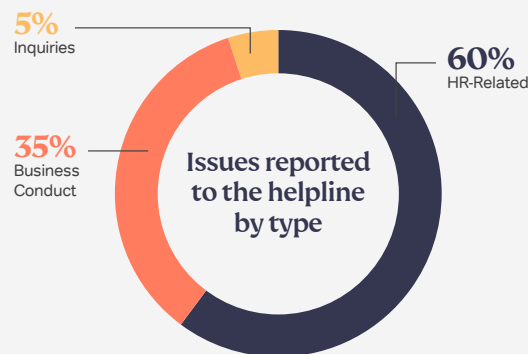


Control Mechanisms & Programmatic Updates

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.

Ethics Helpline reports



In 2023, we received 374 reports via the Ethics Helpline or directly to a company representative, which is a 19% 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 which were enhanced in 2023. 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 an RCA as necessary, and recommend corrective measures, including discipline and process improvements to prevent recurrence. Our processes include ensuring that remediation efforts identified as a result of an investigation are implemented.

Anti-Corruption Program

Orbia is committed to operating in full compliance with international anti-corruption laws and has implemented policies and procedures, internal controls, training and awareness campaigns and auditing and monitoring protocols around this important topic. Annually, all employees receive anti-corruption training, with employees in jurisdictions that have a high-risk of corruption receiving supplemental training and communications.

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 2023, 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 priority through 2024.

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 2023, Orbia onboarded a lead data privacy counsel based in Europe to continue enhancing Orbia's data privacy program. In 2023, we completed a review of data privacy policies and notices, reinforcing those as needed, published a global Data Retention Policy, delivered live data privacy training for all HR personnel in EMEA and the U.S., and enhanced and prepared systems and processes to meet regulatory changes in California, India and other regions.



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. Orbia has a Human Rights Policy, Modern Slavery Policy and a Diversity and Inclusion Policy which outline Orbia's commitment to these principles. These policies make clear that Orbia prohibits any forced or child labor, discrimination, harassment, excessive force or threatening tactics such as holding work papers. Orbia has implemented human rights systems and processes so that our operations comply with local labor laws in the countries where we do business. Orbia's Ethics Helpline is available to all Orbia business partners, including our suppliers, which would allow a supplier's workforce member to report any human rights concern to Orbia.

In 2022, we announced that our Chief Compliance Officer would assume responsibility for Orbia's human rights program, and in 2023 we invested in this area of programming leveraging a cross-functional approach.

Orbia has required that its supply chain comply with local labor and human rights legislation as outlined in our Code of Ethics. This year we published the first Orbia-level [Supplier Code of Conduct](#), which details Orbia's expectations relating to human rights, environmental health and safety and other important legal requirements. Additionally, we participated in the UN's Human Rights Global Accelerator Program to integrate best practices into our human rights program. As part of the program, an action plan and risk assessment were developed. This area will remain a priority through 2024.

Orbia leverages two main tools to conduct supplier due diligence processes:

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



For further information:

[Human Rights Policy](#)

[Anti-Slavery & Human Trafficking Policy](#)



Cybersecurity

In 2023, we achieved significant milestones in strengthening our cybersecurity posture. Recognizing the evolving cyber landscape, we began the year with a comprehensive, external evaluation of our cyber program against our strategic roadmap. This substantiated the direction for our program, which delivers a threat-based, defense-in-depth approach against the top cyber and privacy risks facing Orbia.

We strengthened our resilience against operational disruption and data loss from cyber incidents through added safeguards for IT equipment, expanding our advanced threat detection, vulnerability management processes and testing robust incident and cyber crisis response capabilities. We've also forged strategic vendor partnerships and initiated a comprehensive third-party cyber & privacy risk management program.

Key Achievements

2023 saw the deployment of best-in-class solutions for security logging and monitoring and email security, consolidation of our technology stack and the initiation of a robust third-party risk management capability. Our global identity operations now benefit from standardized services through a strategic partnership, whereas a new mandatory cybersecurity training program for employees and contractors strengthens our compliance regime and protects against the risk of cyber fraud.

Progress in Operational Technology (OT) security included the initiation of a focused security program for high-risk sites and the expansion of IT services into the OT domain.

95% of eligible employees completed mandatory cyber training.

Embracing Innovation

We have also positioned ourselves for the strategic future integration of Artificial Intelligence (AI) into our operations by crafting a comprehensive position paper on AI deployment. By joining forces with colleagues from the Innovation team, we established the GenAI Task Force, which has positioned us to explore the use of artificial intelligence in our business while maintaining secure, responsible and ethical standards.

As the team continues its journey, the focus remains on refining, expanding and optimizing cybersecurity capabilities for a secure and resilient future.





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, to our network of more than 32,000 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. This year, the first Orbia-level [Supplier Code of Conduct](#) was published (previously, supplier codes of conduct were available at business group level), defining our expectation that all suppliers align to the highest of ethical standards and comply with all applicable laws. We are in the process of deploying this new Code of Conduct to our supply base.

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 monitoring performance and improvement, which 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 Fluor & Energy Materials Solutions (UK), with the remaining Business Groups to adopt this program in the future. As of 2023, our supplier assessment program covers 80% of our total spend across these brand operations. More than 70 additional suppliers were onboarded during 2023.

Training Procurement Teams

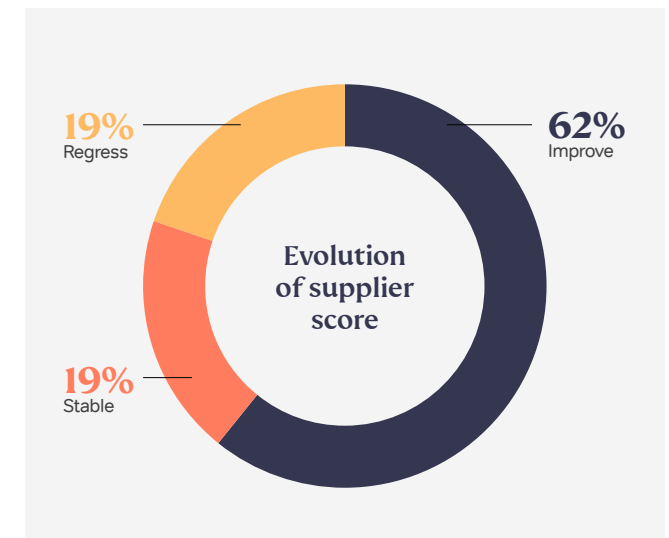
As of 2023, 22% of buyers of the participating business groups have received Ecovadis training. These actions will continue through and beyond 2024.

Supplier Performance

In 2023, Orbia organized training webinars for suppliers participating in our Ecovadis program to further engage them in advancing sustainability goals as well as to reinforce the importance of driving continuous improvements across ESG topics. Over 140 suppliers attended and additionally, we have provided our suppliers with access to Ecovadis Academy, an online program that contains courses on sustainability management practices, policies and reporting across the four sustainability themes as well as broader topics such as training, certification, risk management and more. As of 2023, 69% of our participant suppliers have utilized the Academy platform.

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.

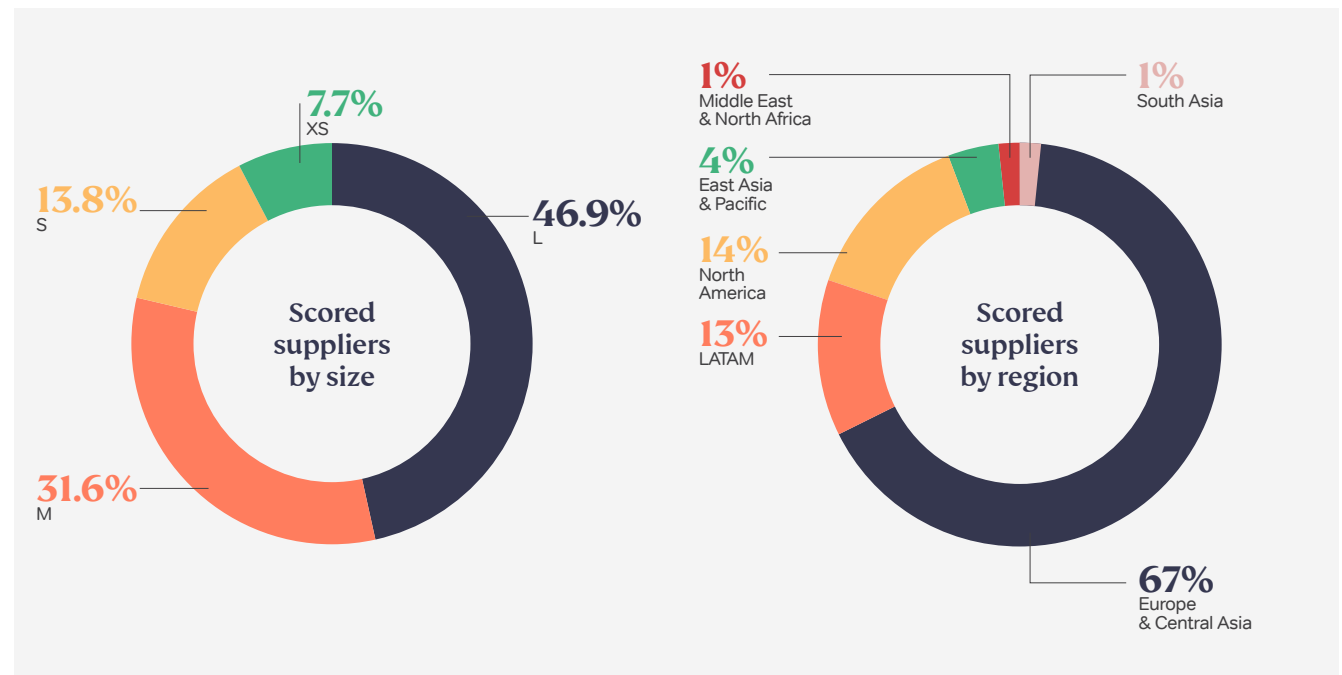
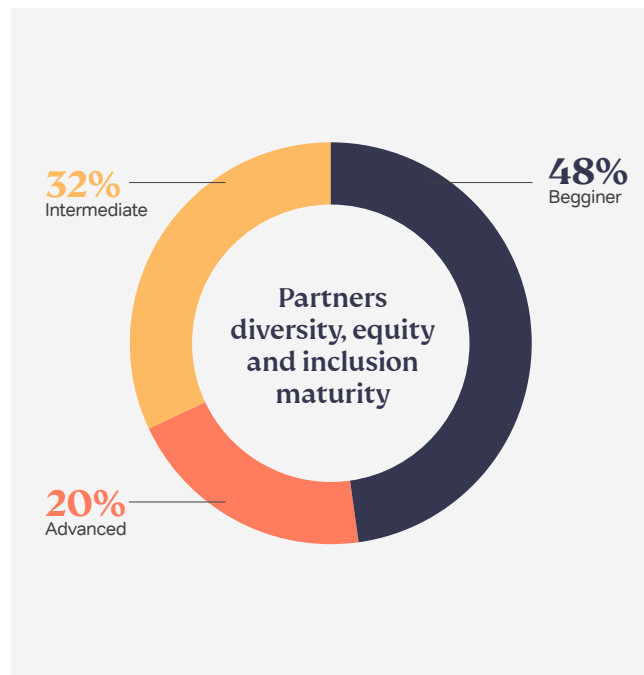
In general, reevaluated suppliers show an average increase of 12 points compared to their first assessment score. In 2023, 62% of the suppliers that took an Ecovadis assessment have shown an improvement in their score, while 19% show a stable score. Most suppliers that have been required to present action plans have shown progress linked to having specific targets around labor and human rights and environmental practices. The average score is currently 58.5, with 97% of reassessed suppliers are above the required performance level.





Additionally, this year some of the most relevant insights from our suppliers that took the Ecovadis assessment indicate that pertinent to modern slavery and DEI, more than 55% of our evaluated suppliers have specific documentation and measures for policies on child labor, forced labor and human trafficking, while 31% have shown a solid maturity level in their DEI system.

In 2024, we will continue to implement our supplier assessment program and will review risk mitigation measures to address gaps in supplier performance based on initial assessments. 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 2024 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

Our continued collaboration with suppliers is key to a successful and sustainable future.

Recognition as Sustainable Suppliers



In Colombia received a sustainability award from the customer Sodimac Colombia in recognition of both our sustainability practices and meeting Sodimac's sustainability standards.



Received Verizon's 2023 Supplier Sustainability Award in recognition of our sustainability efforts and commitment to new sustainable solutions used by Verizon worldwide, with accolades for our Hand Hole product range made entirely from 100% recycled polypropylene.





Business Group Spotlights

POLYMER SOLUTIONS (VESTOLIT & ALPHAGARY)

BUILDING & INFRASTRUCTURE (WAVIN)

PRECISION AGRICULTURE (NETAFIM)

CONNECTIVITY SOLUTIONS (DURA-LINE)

FLUOR & ENERGY MATERIALS (KOURA)



Polymer Solutions

vestolit alphagary

Sustainability Spotlight 2023

Key Activities

Orbia's Polymer Solutions business (Vestolit) is a leading raw material suppliers for polyvinylchloride (PVC) specialties, operating the largest integrated PVC production plant in Europe out of Marl, Germany. With over 70 years of experience, it's durable and high-performing products are trusted by major industry players and used in everyday applications that span building and infrastructure, household materials and medical supplies.

Orbia's Polymer Solutions business Alphagary is a global leader in the design and manufacture of specialty polymer compounds and additives for polyvinyl chloride formulations including stabilizers, plasticizers, and colorants. Compounds are generated from a variety of polymers including polyvinyl chloride (PVC), polyolefin (PO), thermoplastic polyurethane (TPU) and thermoplastic elastomer (TPE).

Both businesses supply downstream businesses and global customers seeking applications in pipes, cables, flooring, auto parts, household appliances, clothing, packaging, health and safety devices and medical equipment.

Key Markets

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

Total Sites

26 Manufacturing Sites
(19% of Orbia sites)

Total Sales

\$2,699M
(32% of Orbia revenues)

Total Employees

3,739
(15% of Orbia headcount)

Top five material topics



Health & safety



Quality & safety of products



Pollution or effluents management



Solutions for a sustainable future



Climate strategy

Environmental highlights:

-11%
absolute Scope 1 & 2 GHG emissions vs. 2022

83%
Waste diverted from disposal

17%
Share of renewable electricity

Selected Metrics	Units	2021	2022	2023
Energy intensity	MWh/ton	1.24	1.26	1.23
Renewable energy	% of total electricity consumption	3%	3.8%	17%
GHG intensity	Tons CO ₂ e/ton	0.28	0.28	0.27
Water intensity	m ³ /ton	2.11	2.23	2.33
Waste diverted from disposal	% of total waste	43%	63%	83%
Incident rate	(TRIR) total employees and contractors	0.53	0.28	0.36





Polymer Solutions



Sustainability Spotlight 2023

Positioning Future-Fit PVC

Our [Future-Fit PVC](#) has achieved significant milestones since its introduction in 2021. After certification by ISCC+, it was determined that our carbon footprint can be reduced by about 60-90% based on whether the product's feedstock is bio-attributed, circular, or from CCU as compared to fossil-based PVC. By improving feedstock and energy sources as well as overall energy efficiency, our goal is to approach carbon neutrality in the Future-Fit PVC line. Lifecycle assessments will be conducted for Future-Fit PVC and our most important resins produced in Germany, Mexico, Colombia and the U.S., to continue identifying ways to reduce our products' footprint, in collaboration with stakeholders in our value chain.

Driving PVC Circularity in Latin America

In 2022, Orbia Polymer Solutions (Vestolit) introduced Vinyl in Motion, a program that promotes the collection of discarded PVC products and their transformation into new 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, end consumers and relevant players of local PVC value chains.

A well-established process has been set in Colombia and is ready to be replicated in Mexico in 2024. More than 60 tons per month of discarded PVC from construction, medical and textile applications are being collected thanks to the direct work of five recycling companies sponsored by Vestolit, creating more than 20 jobs, and benefiting more than 100 recycling family members.

Through other Orbia brands, we are developing several applications for recycled PVC, such as compounds for wire jackets, car mats, shoe soles and construction materials. This integration supports the PVC recycling chain and creates circular economy solutions for customers, end consumers, recyclers and all vinyl industry stakeholders. The use of recycled resin reduced the carbon footprint of the manufacturing process of such applications by approximately 40% according to the results of a lifecycle assessment conducted in partnership with a Colombian University.

“Through our Future Fit PVC and our Vinyl in Motion programs, we are reducing environmental impact as well as fostering job creation and other benefits for the communities where we operate. Through these programs, we are driving the circular economy and creating solutions that resonate across industries. Our journey is marked by innovation, collaboration and a carbon footprint that is 40% lower. This is more than a mission; it's a legacy we're proud to build.”



Nicholas P. Ballas

Executive Vice President & President,
Polymer Solutions (Vestolit)





Sustainability Spotlight 2023

Making DOTP Plasticizer with Recycled PET from Used Water Bottles

The Orbia Polymer Solutions (Alphagary) site in Altamira, Mexico converts used plastic water bottles into DOTP (Diethyl Terephthalate) plasticizers. In the past two years, more than 50 MT of recycled DOTP were manufactured using 27.6 MT of recycled PET, which amounts to a total of one million PET recycled bottles to date. The business also used recycled DOTP to produce over 360 MT of compounds during 2023. PVC compounds using DOTP plasticizer made with recycled PET content recently received certification by NAMS for use in medical applications. Orbia Polymer Solutions (Alphagary) continues to develop new materials for essential applications and customers seeking footprint-reducing solutions.

Boosting Food Preservation

In May 2023, Orbia Polymer Solutions (Alphagary) acquired the Mexico-based food additive business Neotrimental (formerly known as Andercol Mexico) located at the business' production site in Altamira, Mexico. The acquisition of Neotrimental expands access in the fumaric acid food additives space to enable safe and stable preservation of food including baked goods, candy, jellies, dry mixes and powdered drinks to in turn mitigate waste. With additional applications in personal care and animal nutrition products, Orbia Polymer Solutions (Alphagary) has received FSSC 22000 Food Safety Certification as well as Kosher Certification for our food-grade fumaric acid.

By integrating the Neotrimental business at our Altamira site, we are expanding our portfolio while enabling production control and byproduct recycling, contributing to our net-zero goals.

“In 2023, we reached a significant milestone by recycling more than one million plastic PET bottles. Our material scientists were able to reengineer DOTP plasticizer with a chemical made from recycled bottles, allowing us to produce and sell plasticizers and compounds with recycled PET. Converting waste into innovative materials is a powerful demonstration of our commitment to reducing our carbon footprint and helping our customers achieve their own carbon-reduction goals.”



Gautam Nivarthi
Executive Vice President & President,
Polymer Solutions (Alphagary)



**Building & Infrastructure**

Sustainability Spotlight 2023

Key Activities

Orbia Building and Infrastructure (Wavin) is an innovative solutions provider for the global building and infrastructure industry. Backed by more than 60 years of product development experience, the business is advancing life around the world by building healthy, sustainable environments for global citizens. Whether it's to improve the distribution of clean drinking water, to make sanitation accessible for everyone, to create climate-resilient cities or to design comfortable living spaces, Orbia Building and Infrastructure (Wavin) collaborates with municipal leaders, engineers, contractors and installers to help future-proof communities, buildings and homes.

Key Markets

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

Total Sites

62 Manufacturing Sites
(46% of Orbia sites)

Total Sales

\$2,678M
(31% of Orbia revenues)

Total Employees

11,583
(48% of Orbia headcount)

Top five material topics

**Quality & safety of products****Solutions for a sustainable future****Health & safety****Innovation to support sustainable growth****Circular economy**

Environmental highlights:

-12%
absolute Scope 1 & 2 GHG emissions vs. 2022

+2%
total process waste vs. 2022

67%
share of renewable electricity

Selected Metrics	Units	2021	2022	2023
Energy intensity	MWh/ton	0.86	0.89	0.86
Renewable energy	% of total electricity consumption	20.2%	61.9%	67%
GHG intensity	Tons CO ₂ e/ton	0.18	0.13	0.11
Water intensity	m ³ /ton	2.27	2.35	2.24
Waste diverted from disposal	% of total waste	87%	85%	90%
Incident rate	(TRIR) total employees and contractors	0.46	0.43	0.46





Sustainability Spotlight 2023

Boosting Urban Climate Resilience

- Introduced in 2023, PolderRoof is a blue-green solution that increases the amount of rainwater captured on urban roofs for effective stormwater management, water reuse for irrigation and cooling effects. This smart solution addition helps to increase biodiversity and provide greener, healthier overall environments for urban residents to enjoy. Accompanying PolderRoof is a state-of-the-art platform that allows customers to delve into their rainwater capture and usage data as well as control water management remotely.
- Wavin's AquaCell can be used in various standalone applications, and in combination with other Wavin Climate Resilience solutions, to successfully manage excessive rainfall within an underground, modular structure, and then use it for attenuation or infiltration. AquaCell has superior attenuation and infiltration capabilities that play a vital role in achieving water neutrality. Its use of 100% recycled materials, swift installation process, and space-saving design demonstrate Wavin's commitment to sustainable practices.
- Climate change, increasing heat, drought, and heavy rainfall events, as well as high urban density, have a negative impact on sustainable and healthy tree growth. Against this backdrop, high-quality root chamber systems like Wavin's TreeTank ensure that tree roots have a comfortable space underground to absorb enough nutrients and develop freely. The presence of trees in cities and urban environments increases climate resilience, boosts biodiversity and integrates blue-green infrastructure.

Water Management Goes Digital: From Rainwater Harvesting to Distribution

Globally, 30-50% of drinking water is lost in water distribution networks. The Orbia Building & Infrastructure (Wavin) Water Network Management solution aids utilities in enhancing their efficiency through a strategic, cloud-based decision-making tool augmented by Orbia's Central Control Room service and support from expert water engineers. This solution empowers utilities to identify, examine and address water network incidents effectively, whether leaks, bursts, defective assets, operational issues, telemetry or data discrepancies. Recent agreements have led to conserving over 1.3 million cubic meters of water, the equivalent of more than 520 Olympic swimming pools.

Using Low-Carbon materials

Orbia Building & Infrastructure (Wavin) is an early adopter of low-carbon (including recycled) materials for our products. Our present portfolio already offers rainwater harvesting units and road gullies made from 100% recycled materials. In addition, Recycore PVC pipes are produced with at least 40% recycled plastics, without compromising performance or quality and tested against current standards to fulfill the same mechanical properties and product lifetimes as those made with virgin material. In 2023, our low-carbon portfolio expanded with the introduction of bio-circular PE-RT for heating, cooling and indoor climate applications. The commercialization of circular low-carbon sewage pipes started this year in Poland and the first PVC pipe containing recycled content was launched in Colombia.

“At Building & Infrastructure, the interdependence between climate change and the water cycle is what drives our unwavering commitment to develop climate-resilient water infrastructure solutions. Our approach encompasses the distribution of clean drinking water, wastewater transport to support sanitation and hygiene, and rainwater management to mitigate the impacts of floods and droughts. This year, our approach was strengthened by introducing more low-carbon materials in our products, so that we can also reduce the carbon footprint of our portfolio.”



Dave Smith

Executive Vice President,
Building & Infrastructure (Wavin)



Precision Agriculture



Sustainability Spotlight 2023

Key Activities

Orbia Precision Agriculture (Netafim) is the world's largest irrigation company and a global leader in precision agriculture solutions that address food, water and land scarcity for a sustainable future. Founded in 1965, the business pioneered drip revolution, creating a paradigm shift toward precision irrigation. Today, by specializing in end-to-end solutions from the water source to the root zone, Orbia Precision Agriculture (Netafim) delivers irrigation and greenhouse projects as well as landscape and mining irrigation solutions supported by engineering, project management and financing services. The business is today leading the way in digital farming, irrigation and fertigation by integrating real-time monitoring, analysis and automated control into one state-of-the-art system for innovative, tailor-made irrigation and fertigation solutions that serve millions of farmers. From smallholders to large-scale agricultural producers and investors in over 100 countries, Orbia Precision Agriculture (Netafim) enables a world of customers to grow more with less™.

Key Markets

Orbia Precision Agriculture (Netafim) is the world leader in the production and sale of advanced precision agriculture solutions, with a strong presence in the U.S., India, LATAM, Turkey and Europe.

Total Sites

21 Manufacturing Sites
(15% of Orbia sites)

Total Sales

\$1,063M
(13% of Orbia revenues)

Total Employees

4,443
(19% of Orbia headcount)

Top five material topics



Solutions for a sustainable future



Quality & safety of products



Innovation to support sustainable growth



Circular economy



Employee development, engagement and retention

Environmental highlights:

-3%
absolute Scope 1 & 2 GHG emissions vs. 2022

+23%
water intensity vs. 2022

19%
share of renewable electricity

Selected Metrics	Units	2021	2022	2023
Energy intensity	MWh/ton	0.86	0.88	0.89
Renewable energy	% of total electricity consumption	10.7%	18.2%	19%
GHG intensity	Tons CO ₂ e/ton	0.37	0.34	0.34
Water intensity	m ³ /ton	1.06	0.99	1.22
Waste diverted from disposal	% of total waste	73%	71%	75%
Incident rate	(TRIR) total employees and contractors	0.65	0.52	0.47



Precision
Agriculture



Sustainability Spotlight 2023

Pioneering Agribusiness Models in Rwanda

In collaboration with the Rwandan Government, Orbia Precision Agriculture (Netafim) has been leading the Agribusiness Gabiro hub project since 2019. This unique initiative to combat food, water and land scarcity has created 2500 jobs within the community while providing farmers and agricultural workers on ready-to-use land with full access to water and energy networks within an 80 hectares radius. The initiative has practically eliminated rainwater dependence and enabled year-round cycles of high-quality crop production. Click [here](#) for additional information.

Scaling Carbon Credits for Drip-Irrigated Rice

Orbia Precision Agriculture (Netafim) launched a carbon credit program to provide long-term income assistance to rice farmers interested in using precision irrigation as a driver for regenerative agriculture practice, improved soil health and significantly reduced GHG emissions (virtually eliminating methane emissions as compared to the flooding method). Launched in 2022, this program was extended in Italy in 2023. Click [here](#) for additional information.

Digital Farming Solutions Optimize Resource Use

Orbia Precision Agriculture (Netafim) launched GrowSphere™, a digital operating system for precision irrigation and fertigation that facilitates management in changing weather, soil and crop conditions while optimizing the use of water, fertilizer, energy and labor. With greater reliability and transparency, this simple and intuitive work tool helps farmers plan and execute irrigation plans with ease. Click [here](#) for additional information.

Solutions for Smallholder Farmers

In 2023, Orbia Precision Agriculture (Netafim) was selected for funding by the Inter-American Development Bank to establish the first productive ecosystem for growing sustainable cocoa in Peru. This initiative aims to double the productivity and enhance the quality of the product for 200 farmers across the Peruvian Amazon while increasing capacity of family producers and mitigating deforestation and drought risks. Working together with other local organizations such as AGROS and *Cuencas del Huallaga*, the partnership brings together our drip irrigation solutions and digital identity technology with the opportunity to export cocoa collectively to the European market.

Six pilots were carried out in 2023, with small-scale producers (1-4 hectares) using Orbia Precision Agriculture (Netafim) family drip kits (our customized product range for small-scale farming) and fertigation practices, resulting in the duplication of crop yield in six months, just by changing irrigation practices. The goal is for farmers to achieve profits of over \$2,500 per hectare (in some cases increasing from \$170/hectare) as the initiative is scaled-up in the next four years to alleviate poverty in the region. Click [here](#) for additional information.



Sustainability Spotlight 2023

Boosting Food Security in North America

Orbia Precision Agriculture (Netafim) partnered with Vermillion Growers (through Gakon, our commercial greenhouse project division), to build the first large-scale vegetable greenhouse in Manitoba, Canada. The greenhouse will begin growing tomatoes year-round across 10 acres, with plans to expand and grow additional crops. The roof structure of the greenhouse will collect enough water to meet 50% of the facility's irrigation needs while a double-screen system will minimize light pollution and reduce overall energy use by 50%. Canada currently imports more than 75% of its vegetables and 50% of its tomatoes. By reducing shipping time, customers can get fresh, higher-quality tomatoes at their local grocery stores, even in remote communities. By reducing transit time and spoilage, this program also significantly cuts down on food waste and will provide 200 local jobs.

“Our precision irrigation technologies are ideal for use in arid and changing climate conditions to maximize yields while conserving resources. This year saw the [opening of our first manufacturing site in Morocco](#), as both the pinnacle of our investment in the region and a gateway to further expansion. We are proud to support the “Green Morocco” and “Green Generation” plans championed by the government to enhance the potential of Morocco’s diverse and rich natural landscape. Our sustainable farming practices will help the Moroccan people and the wider region achieve prosperity and agricultural resilience: a true achievement.”



Gaby Miodownik

Executive Vice President & President,
Precision Agriculture (Netafim)





Connectivity
Solutions



Sustainability Spotlight 2023

Key Activities

Orbia Connectivity Solutions (Dura-Line) is a leading manufacturer and distributor of telecommunications conduit, cable-in-conduit and other high-density polyethylene (HDPE) and connectivity infrastructure solutions that serve telecommunications, transportation and network electrical markets. With more than 50 years of experience and a long-standing reputation for the safety, efficiency and durability of its products and installations, the business' more than 500 million meters of essential and innovative infrastructure produced annually line the physical pathways for fiber and network technologies that connect cities, homes and people worldwide.

Key Markets

Orbia Connectivity Solutions (Dura-Line) serves the U.S. as its main market, with an additional presence in Asia and Europe.

Total Sites

19 Manufacturing Sites
(14% of Orbia sites)

Total Sales

\$1,125M
(13% of Orbia revenues)

Total Employees

2,126
(9% of Orbia headcount)

Top five material topics



Quality & safety
of products



Risk management
and business
continuity



Health
& safety



Solutions for
a sustainable
future



Innovation
to support
sustainable growth

Environmental highlights:

-14%
absolute Scope 1 & 2 GHG
emissions vs. 2022

+3%
energy intensity
vs. 2022

83%
Waste diverted
from disposal

Selected Metrics	Units	2021	2022	2023
Energy intensity	MWh/ton	0.71	0.67	0.69
Renewable energy	% of total electricity consumption	0.4%	5.4%	5%
GHG intensity	Tons CO ₂ e/ton	0.26	0.22	0.23
Water intensity	m ³ /ton	0.47	0.43	0.47
Waste diverted from disposal	% of total waste	61%	70%	83%
Incident rate	(TRIR) total employees and contractors	1.76	2.34	1.69





Connectivity
Solutions



Sustainability Spotlight 2023

Expanding Circular Offerings

In 2023, Orbia Connectivity Solutions (Dura-Line) scaled its FuturePath ECO and MicroDucts ECO product offerings in Europe and launched the new ECO product offering in North America.

- In Europe, we scaled up the ECO portfolio to deliver 20 configurations aligned with local customer needs. In collaboration with a third party, we completed Life Cycle Assessments (LCA) for both FuturePath ECO and MicroDucts ECO. Results showed a 44% reduction in our carbon footprint by using regrind verified for quality performance.
- In 2023, we also introduced Smoothwall ECO into the North American market. With growing demand for sustainable products (such as Powerguard ECO (our HDPE conduit for electrical applications with a three-layer and chamber design made with post-consumer recycled plastics), we are expanding manufacturing capability at new and existing facilities in Alberta, Canada, Ohio and Texas. An LCA is now underway for this new product.

Using Fiber-Sensing for Situational Awareness in Roadways

With over 3,250 miles of fiber, the Utah Department of Transportation (DOT) has one of the most robust, DOT-owned fiber optic networks in the U.S.

Distributed Acoustic Sensing (DAS), or “fiber sensing”, uses fiber optic cable buried alongside the road to monitor roadways in real time by detecting acoustic events in the vicinity of the fiber, such as crashes, avalanches, vehicle speeds and travel times. This information can be transmitted to UDOT’s Traffic Operations Center to assess traffic conditions, dispatch response vehicles, or warn motorists of hazardous conditions. Orbia’s Connectivity Solutions business enabled this UDOT fiber sensing project, one of the first in the nation. It aims to provide critical safety and maintenance information.

This project was selected as a [joint winner](#) by the Fiber Optic Sensing Association (FOSA).

Click [here](#) for additional information.

“Our ambition in Connectivity Solutions (Dura-Line) is to build from our legacy of providing durable, high-quality and long-lasting connectivity solutions to become the world’s leader for low-impact, sustainable solutions that connect the world to information and open up access everywhere. This past year’s launch and expansion of the ECO portfolio contribute to this vision.”



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





Fluor & Energy
Materials

Koura

Sustainability Spotlight 2023

Key Activities

Orbia Fluor & Energy Materials (Koura) is a global leader in the development, manufacture and supply of fluoroproducts that play a fundamental role in enhancing everyday lives and shortening the path to a sustainable, circular economy. Backed by over 35 years of experience, Orbia Fluor & Energy Materials (Koura) products are used in a vast range of applications including electric vehicles and energy storage, urban and rural infrastructure, indoor climate management, cold storage and refrigeration and even in health and medicine, treating respiratory conditions through the development of healthy and innovative low-GWP propellants for metered-dose inhalers.

In 2023, Orbia Fluor & Energy Materials (Koura) U.K. operations achieved an Ecovadis Gold Rating.

Key Markets

Orbia Fluor & Energy Materials (Koura) serves 60 countries through a global sales and distribution network.

Total Sites

8 Manufacturing Sites
(6% of Orbia sites)

Total Sales

\$918M
(11% of Orbia revenues)

Total Employees

1,751
(7% of Orbia headcount)

Top five material topics

 **Quality & safety of products**

 **Solutions for a sustainable future**

 **Water strategy**

 **Climate strategy**

 **Innovation to support sustainable growth**

Environmental highlights:

-5%
absolute Scope 1 & 2 GHG emissions vs. 2022

4%
share of renewable electricity

-73%
SOx emissions vs. 2022

Selected Metrics	Units	2021	2022	2023
Energy intensity	MWh/ton	0.25	0.33	0.37
Renewable energy	% of total electricity consumption	0%	7.4%	4%
GHG intensity	Tons CO ₂ e/ton	0.08	0.1	0.11
Water intensity	m ³ /ton	1.19	1.76	1.98
Waste diverted from disposal	% of total waste	30%	34%	50%
Incident rate	(TRIR) total employees and contractors	0.66	0.43	0.62



Fluor & Energy
Materials

Koura

Sustainability Spotlight 2023

Decarbonizing refrigerants and medical propellants

Orbia's Fluor & Energy Materials business (Koura) unveiled R-444A, a new direct replacement for R-1234yf for the refrigerants' automotive aftermarket. This innovative refrigerant provides the auto industry with a more economical and sustainable option with lower global warming potential (GWP), meeting current and future U.S. environmental regulations restricting refrigerants with a GWP greater than 150. Click [here](#) for additional information.

The previously-launched Klea® 456A refrigerant, a lower GWP direct replacement for R-134a and suitable for application the automotive aftermarket sector, was shortlisted as a finalist in the RAC Cooling Awards 2023 across three categories: Air Conditioning Innovation of the Year (Components or Peripherals), Refrigeration Innovation of the Year, and Air Conditioning Product of the Year.

Fluor & Energy Materials continues to partner with major pharmaceutical companies to ensure a smooth transition to low GWP Zephex® 152a medical propellant. This enables a significant carbon footprint reduction whilst making sure delivery of the active ingredient is safe and efficacious for patients. This technology is gaining widespread recognition with leaders in the market. Click [here](#) for additional information.

Advancing the Transition to Low-Carbon Mobility

Fluor and Energy Materials is planning to invest in the USA's first ever LiPF₆ facility to build North America's capacity and secure production of lithium hexafluorophosphate (LiPF₆; a lithium-ion battery grade electrolyte salt). The investment will be supported by an additional contribution in the form of a \$100 million grant from the U.S. Department of Energy (DOE) in 2022. Orbia Fluor & Energy Matierlas (Koura) is planning to have their LiPF₆ production plant operational by 2026. The plant's annual production targets equal 10,000 metric tons of the key battery material: enough to help the U.S. produce more than one million electric vehicles annually. Click [here](#) for additional information.

Boosting Battery Performance and Circularity

In 2023, the U.S. Department of Energy (DOE) announced a \$2M investment across eight projects to drive innovation in lithium-ion battery recycling and remanufacturing. Orbia Fluor & Energy Materials (Koura) received awards in two topic areas supported by the DOE: Development of Room Temperature Process for Recycling for its project upcycling first-generation spent graphite with the National Renewable Energy Laboratory (NREL) and Reuse of Electrodes & Recycling of Electrolytes for its project in recovery and rejuvenation of electrolyte salts with the Idaho National Lab (INL). Click [here](#) for additional information.

“We believe our new name more accurately captures our identity and vision for the future. We are committed not only to the production of fluorine but also the end uses that make a positive impact for the planet. As a global leader in fluorine, we at Orbia Fluor & Energy Materials are advancing life around the world by ensuring this critical element is available for our existing applications, the key materials essential for lithium-ion batteries and any new innovations that might come up in the future.”



Gregg Smith

Executive Vice President & President,
Fluor & Energy Materials (Koura)



Message from our
Chairman & CEO

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Data & Performance

ESG DATA SUMMARY

FINANCIAL SUMMARY

CEO WATER MANDATE



ESG Data Summary

Environment	Units	2021	2022	2023	YoY	GRI ⁺	SASB	SDG
Scope 1 Energy	MWh	2,990,035	2,836,025	2,579,159	✓ -9%	302-1	RT-CH-130a.1	13
Electricity, cooling heat and steam	MWh	4,559,549	4,238,762	3,949,539	✓ -15%	302-1	RT-CH-130a.1	13
Total energy consumption	MWh	7,549,583	7,074,787	6,528,698	✓ -8%	302-1	RT-CH-130a.1	13
Energy intensity	MWh/ton	0.88	0.94	0.95	✓ 1%	302-3	RT-CH-130a.1	13
Renewable electricity consumed	MWh	171,822	422,001	640,216	✓ 52%	302-1	RT-CH-130a.1	7, 13
Renewable electricity as % of total energy	%	2%	6%	26%	✓ 4%	302-1	RT-CH-130a.1	7, 13
GHG emissions Scope 1	Tons CO ₂ e	627,937	581,864	536,915 ²	✓ -8%	305-1	RT-CH-110a.1	13
GHG emissions Scope 2	Tons CO ₂ e	1,184,236	1,029,234	912,900 ³	✓ -11%	305-2	RT-CH-110a.1	13
GHG emissions total Scope 1+2	Tons CO₂e	1,812,173	1,611,696	1,449,815^{2,3}	✓ -10%	305-1	RT-CH-110a.1	13
GHG emissions Scope 3	Tons CO₂e	88,625,713	88,385,981	77,361,457⁴	✓ -12%	305-3		12
GHG emissions intensity Scope 1	Tons CO ₂ e/ton	0.07	0.08	0.08 ²	✓ 0%	305-4	RT-CH-110a.1	13
GHG emissions intensity Scope 2	Tons CO ₂ e/ton	0.14	0.14	0.13	✓ -7%	305-4	RT-CH-110a.1	13
GHG emissions intensity Scope 1+2	Tons CO₂e/ton	0.21	0.21	0.21	✓ 0%	305-4	RT-CH-110a.1	13
Nitrogen Oxides (NOx) emissions	Tons	655	626	596	✓ -5%	305-7	RT-CH-120a.1	3, 12
Sulfur Oxides (SOx) emissions	Tons	1,075	772	210	✓ -73%	305-7	RT-CH-120a.1	3, 12
Volatile Organic Compounds (VOCs) emissions	Tons	121	102	102	✓ 0%	305-7	RT-CH-120a.1	3, 12
Total other air emissions	Tons	1,851	1,500	908	✓ -39%	305-7	RT-CH-120a.1	3, 12

✓ Data partially assured by an independent third-party. See rest of the notes for further context.

1. Internal metric based on the stated GRI standard.

2. Independent limited assurance for Scope 1 GHG emissions covers emissions related to energy and processes (531,020.68 tons CO₂e). Leased vehicles under our control are excluded from the assurance Scope, but represent 1% of Scope 1 emissions. ✓

3. Independent limited assurance for 2023 Scope 2 GHG emissions covers emissions related to purchased electricity, heating, steam and cooling (912,604 tons CO₂e). Leased vehicles under our control are excluded, but they represent less than 1% (296 tons CO₂e). ✓

4. Independent limited assurance for Scope 3 GHG emissions covers categories 11 and 12 from refrigerant sales (64,743,308 tons CO₂e). ✓

5. Following independent assurance review, from 2023 onwards, water data from a Fluor & Energy Materials site in the UK is excluded since the water is consumed by a third-party within the same complex. This explains some of the year-on-year variation.

6. Waste-related data includes special project waste figures. From 2023 onwards, waste-related data from 2022 acquisitions are included. Independent limited assurance for 2023 total waste generation (63,423.97 tons) excludes special project waste. ✓

7. Orbia considers incineration with energy recovery as a diversion method, and is aligned with our Zero Waste to Landfill definition.

YoY: Year on year variation 2023 vs 2022

Figures with this check mark (✓) are assured by an independent third-party for the period January 1st - December 31st 2023.

+ Orbia uses 2021 GRI standards for general sustainability disclosures. For disclosures related to the management of material topics (GRI 3-3), we use a combination of 2016 and 2020 GRI standards (as well as internal metrics and other disclosure guidelines), as they include specific performance metrics for a wide range of sustainability topics.



ESG Data Summary

Environment	Units	2021	2022	2023	YoY	GRI ¹	SASB	SDG
Total water withdrawal	1,000 m ³	15,198	15,153	14,745 ⁵ ✓	-3%	303-3	RT-CH-140a.1	6, 12
Total water discharge	1,000 m ³	11,539	9,770	8,524 ⁵ ✓	-13%	303-4	RT-CH-140a.1	6, 12
Water withdrawal intensity¹	m³/ton	1.77	2.01	2.14⁵ ✓	6%	302-3		6, 12
Production	Tons	8,590,417	7,522,216	6,886,989 ✓	-8%		RT-CH-000.A	12
Total non-hazardous waste	Tons	53,560	58,566	57,916 ✓	-1%	306-3		12
Total hazardous waste	Tons	5,875	5,476	5,508 ✓	1%	306-3	RT-CH-150a.1	12
Total waste	Tons	62,535	66,608	72,793⁶ ✓	9%	306-4		12
Percentage of total waste recycled, reused, recovered	%	55%	61%	72% ⁷	11%	306-4 ⁷	RT-CH-150a.1	12
Percentage of total waste sent to landfill	%	37%	30%	17% ⁷	-14%	306-5 ⁷		12
Waste intensity¹	Tons/ton	0.007	0.007	0.01⁶ ✓	19%	302-3		12

✓ Data partially assured by an independent third-party. See rest of the notes for further context.

1. Internal metric based on the stated GRI standard.

2. Independent limited assurance for Scope 1 GHG emissions covers emissions related to energy and processes (531,020.68 tons CO₂e). Leased vehicles under our control are excluded from the assurance Scope, but represent 1% of Scope 1 emissions. ✓

3. Independent limited assurance for 2023 Scope 2 GHG emissions covers emissions related to purchased electricity, heating, steam and cooling (912,604 tons CO₂e). Leased vehicles under our control are excluded, but they represent less than 1% (296 tons CO₂e). ✓

4. Independent limited assurance for Scope 3 GHG emissions covers categories 11 and 12 from refrigerant sales (64,743,308 tons CO₂e). ✓

5. Following independent assurance review, from 2023 onwards, water data from a Fluor & Energy Materials site in the UK is excluded since the water is consumed by a third-party within the same complex. This explains some of the year-on-year variation.

6. Waste-related data includes special project waste figures. From 2023 onwards, waste-related data from 2022 acquisitions are included. Independent limited assurance for 2023 total waste generation (63,423.97 tons) excludes special project waste. ✓

7. Orbia considers incineration with energy recovery as a diversion method, and is aligned with our Zero Waste to Landfill definition.

YoY: Year on year variation 2023 vs 2022

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ESG Data Summary

Social	Units	2021	2022	2023	YoY	GRI ¹	SASB	SDG
Employees								
Total employees	Number	22,350	24,442	24,014	-2%	102-8		8
Contractors	Number	4,045	4,111	6,661	62%	102-8		8
Women in management roles	%	22%	22%	23% ✓	1%	405-1		5
Employee training	Hours	380,315	401,168	521,586	30%	404-1		8
Average training hours	Hours/Year/Employee	17	17.15	21.51 ³	25%	404-1		8
Safety (total employees and contractors)								
Total Recordable Incident Rate	TRIR	0.61	0.56	0.55 ✓	-2%	403-9	RT-CH-320a.1	3
Lost time Incident Rate	LTIR	0.36	0.28	0.32 ✓	14%	403-9	RT-CH-320a.1	3
Severity Rate	SIR	7.86	8.66	11.66 ✓	35%	403-9		3
Fatalities ² (Fatality rate)	Number	2 (0.01)	0 (0)	2 (0.01) ✓	100%	403-9	RT-CH-320a.1	3
Community investment¹								
Total giving	\$	3,163,959	3,927,708	3,787,559	48%	413-1		2,4,6
Total giving (cash)	\$	2,758,586	3,472,376	860,399 ✓	-59%	413-1		2,4,6
Total giving (cash)	%	78%	82%	23% ⁴	44%	413-1		2,4,6
Total giving (in-kind)	\$	405,303	455,332	2,366,244 ✓	44%	413-1		2,4,6
Total giving (in-kind)	%	22%	18%	62% ⁴	44%	413-1		2,4,6
Governance and Compliance								
Women in Board	Number (%)	3 (25%)	3 (25%)	3 (27%)	0 (2%)	405-1		5
Independent Directors	%	67%	67%	72%	5%	102-22		-
Revenue share from Sustainable Solutions	%	60%	61%	65%	4%	Non-GRI topic		Link
Instances of non-compliance with environmental law*	Number	0	1	0 ⁵ ✓	-100%	2-27	RT-CH-140a.2	16

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

YoY: Year on year variation 2023 vs 2022

Figures with this check mark (✓) are assured by an independent third-party for the period January 1st - December 31st 2023.

+ Orbia uses 2021 GRI standards for general sustainability disclosures. For disclosures related to the management of material topics (GRI 3-3), we use a combination of 2016 and 2020 GRI standards (as well as internal metrics and other disclosure guidelines), as they include specific performance metrics for a wide range of sustainability topics.

1. Internal metric based on the stated GRI standard.

2. In addition, one employee recordable work-related illness was recorded during 2023 at a facility in the U.S, in accordance with U.S. OSHA Guidelines. (GRI 403-10) ✓

3. In 2022 and 2023, average annual headcount (HC) was used to calculate average training hours. It provides a more accurate performance to due to expansion and acquisitions in 2022, and reductions in HC in 2023. Average annual headcount for 2022 was 23,396 employees. Average annual headcount for 2023 was 24,244 employees.

4. Share variations are a result of improved definitions and breakdowns to categorize our community investments. For full details, see our [reporting hub](#).

5. During 2022, we paid two material fines for instances that have been resolved and under control. The total amount paid for both fines was \$86.8K. By the end of 2023 we had (6) ongoing administrative procedures related to environmental regulations which will be resolved during 2024. ✓



Financial Summary

Indicators	2021	2022	2023	YoY
Net sales	8,783	9,648	8,204	-15%
SG&A	1,178	1,241	1,323	7%
Operating income	1,449	1,328	849	-36%
EBITDA	2,047	1,909	1,460	-24%
EBITDA margin	23.3%	19.8%	17.8%	-10%
Financial cost	297	160	366	128%
Earnings before tax	1,154	1,034	485	-53%
Income tax	381	369	329	-11%
Consolidated net income (loss)	772	665	156	-77%
Net majority income	657	567	65	-89%
Operating cash flow	982	1,107	931	-16%
Capital expenditures	982	(549)	(658)	20%
Free cash flow	572	466	176	-62%
Net debt	2,738	3,149	3,430	9%

*in million dollars

YoY: Year on year variation 2023 vs 2022

Additional Resources

For complete data across all topics and key standards (GRI, SASB, IFRS S1 and S2), please visit Orbia's:

[SUSTAINABILITY REPORTING HUB](#)

For comprehensive financial performance, please visit Orbia's:

[FINANCIAL REPORTS](#)



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, 67% of our Scope 2 emissions are calculated using supplier-specific emission factors.



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 2019, confirming our commitment to sustainable water management and practices. This is our fourth progress report to the CEO Water Mandate.

Water Mandate Principles		Our progress
Element 1	Direct operations	Our water risk assessment pilot concluded in 2023. This project provided important insights on water risks and set the foundations for our global water strategy, focusing on our operational footprint (chemical businesses) and solutions (extrusion businesses). Learn more, here. In addition, we updated our climate risk assessment and water-related risks for all Orbia plants were covered. For further details on operational improvements for a water-positive future, click here.
Element 2	Supply chain and watershed management	Since 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. Additionally, our climate risk and opportunity assessments included a supply chain analysis where water-related risks were covered. Learn more, here.
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 to 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 Water section.
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 2021

Additional Resources

For complete data across all topics and key standards, please visit Orbia's:

[SUSTAINABILITY REPORTING HUB](#)

orbia.com