

ESG Databook 2021





About this Databook

This Environment, Social and Governance (ESG) Databook is part of Orbia's 13th annual Sustainability Report covering the role we play in society and our impacts on people, communities and the environment. Data in this report relates to the 2021 calendar year. Our last report was published in 2021 covering 2020 performance. The scope of information in this report is all global businesses under Orbia's operational control. All monetary figures in this report are expressed in USD unless otherwise specified.

Environmental and safety data in this report covers sites that were active and operational during 2021, from their date of acquisition or up to their date of divestment for all sites where we have operational control and excluding joint ventures where we have 50% or less ownership. Environmental data includes manufacturing sites (excluding offices, warehouses, distribution centers or other sites).

Other Reports:

The 2021 ESG Databook is part of Orbia's annual reporting suite, available at orbia.com, which includes:



[Annual Report 2021](#)



[Sustainable Solutions Report](#)



[Sustainability Report 2021](#)



[Climate Report \(TCFD\) 2021](#)

Safety data includes all facilities including manufacturing sites, offices, warehouses, distributions centers and R&D labs.

The selection of content for this report was informed by a set of material topics developed through a process described in our [Materiality Assessment Results](#). This report includes disclosures in alignment with the Global Reporting Initiative (GRI) Standards: The Sustainability Accounting Standards Board (SASB) 2018 Chemicals Standard; Orbia's annual Communication on Progress for the UN Global Compact; and Orbia's CEO Water Mandate disclosure.

Data in this report was assured by an independent third party; the Assurance Statement can be found in p. 44.

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



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2021 ESG Highlights





Environment

-10% GHG
Scope 1 & 2 emissions
vs. 2019 baseline

+28%
renewable energy
vs. 2020
(renewables now represent 6% of total electricity consumption)

-20%
process waste
directed to disposal vs. 2020

New Goal to reduce
Scope 3 emissions by
30% by 2030

First investment in
green hydrogen
in [Verdagy](#)

-6%
water withdrawal
intensity

Social

-19% Total
Recordable Incident Rate
vs. 2020 (employee + contractor)

22% Women
in leadership roles
representing 33% of leadership hires

WASH projects provided
access to water
to **+30,000** people
in Brazil, Colombia, Ecuador, Mexico and Peru.

22,350
employees
in 50+ countries



Sustainable Solutions

Polymer Solutions



First two orders of **bio-based PVC** delivered to customers

Polymer Solutions



Developing a DOTP **plasticizer** and compound series made from **recycled PET**

Building and Infrastructure



Next-gen **AquaCell® stormwater** management solution **makes cities more climate resilient**
100% recycled material and stackable - reducing CO₂ emissions significantly

Precision Agriculture



Launched **Streamline X ReGen™ in Europe**, offering the highest-quality recycled driplines in the market

Data Communications



Installation of FuturePath via **MicroTrenching** **reduces environmental disruption by more than 6X** compared to traditional trenching and brings reliable high-speed internet connectivity to communities

Fluorinated Solutions



Advancing battery performance and recycling, with launch of new brand Koflyte®, acquisition of Silatronix and investments in **Ascend Elements**



7 out of 8 transactions by Orbia Ventures in **climate tech**

66% of 2020 revenues contributed to the UN SDGs
See results of our [first assessment](#).
Revenue from these solutions increased 24% in 2021





Governance & Finance

\$8.8B
of total revenue
(+55% EBITDA vs. 2020)

Currently our Board of Directors comprises

67% independent directors
and **25%** women

First full year applying the **ESG Modifier** for senior management compensation

Inaugural **Sustainability-Linked Bond** issuance tied to our SOx emissions target



ESG Indices

Orbia is a member of:

Dow Jones Sustainability Index
MILA since 2019

FTSE4Good Index
since 2015

S&P/BMV Total Mexico ESG Index
since 2012

Proactive engagement with rating agencies combined with strong performance have resulted in significant upgrades in our scores, including with [MSCI](#) and [Sustainalytics](#).

Other external recognition and ratings are available [here](#).





Sustainability Commitments and Progress in 2021

Baseline year is 2019 for all our goals, except SOx emissions. The baseline year we 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.

Impact Area	Goal	Target Year	Baseline	Performance in 2021
Climate Change	Achieve net zero carbon emissions (scope 1 + 2)	2050	2 million tons CO ₂ e	1.81 million tons CO ₂ e ✓
	Reduce Scope 1 and 2 GHG emissions by 47%*	2030	2 million tons CO ₂ e	1.81 million tons CO ₂ e ✓ (-10%)
	Reduce Scope 3** emissions by 30%	2030	90 million tons CO ₂ e	82 million tons CO ₂ e ✓ (-8%)
Air emissions	Reduce sulfur oxides (SOx) emissions by 60%	2025	1,355 tons	1,075 tons ✓ (-21% versus 2018)
Environmental Management	100% of sites certified with an environmental management system	2025	55% (70/127 sites)	61% (73/119 sites)
Waste	100% of plants will send zero waste to landfill**	2025	24% of plants	39% of plants ✓
Safety	Total Recordable Incident Rate (TRIR) below 0.2 total for employees and contractors	2025	0.71	0.61 ✓

Notes

(✓) Figures with this symbol are third party assured.

* Pending submission to the Science Based Target initiative (SBTi), and subsequent approval

+Goal covers categories 11 (use phase) and 12 (end of life), which represent more than 90% of our Scope 3 footprint

** Orbia adopts a definition of Zero Waste to Landfill that is 90% diversion of production-related waste sent to landfill or incinerated without energy recovery





ESG Performance Data Summary

Environment	Units	2019	2020	2021	YoY	GRI	SASB	SDG
Scope 1 Energy	MWh	2,931,020	2,835,871	2,989,931 ✓	5%	302-1	RT-CH-130a.1	13
Electricity, cooling heat and steam	MWh	4,525,516	4,357,821	4,557,157 ✓	5%	302-1	RT-CH-130a.1	13
Total energy consumption	MWh	7,456,536	7,193,692	7,547,087 ✓	5%	302-1	RT-CH-130a.1	13
Energy intensity	MWh/ton	0.90	0.87	0.88 ✓	1%	302-3	RT-CH-130a.1	13
Renewable energy purchased	MWh	81,890	130,983	169,451 ✓	29%	302-1	RT-CH-130a.1	7, 13
Renewable energy generated	MWh	1,773	3,587	2,347 ✓	-35%	302-1	RT-CH-130a.1	7, 13
Renewable energy as % of total energy	%	1%	2%	2% ✓	0%	302-1	RT-CH-130a.1	7, 13
GHG emissions Scope 1	Tons CO ₂ e	645,300	603,969	624,317 ✓	3%	305-1	RT-CH-110a.2	13
GHG emissions Scope 2	Tons CO ₂ e	1,354,235	1,262,425	1,180,795 ✓	-6%	305-2	RT-CH-110a.2	13
GHG emissions total Scope 1+2	Tons CO₂e	1,999,535	1,866,394	1,805,112 ✓	-3%	305-1	RT-CH-110a.2	13
GHG emissions Scope 3	Tons CO₂e	89,933,000	85,377,000	82,439,000 ✓	-3%	305-3		12
GHG emissions intensity Scope 1	Tons CO ₂ e/ton	0.08	0.07	0.07 ✓	0%	305-4	RT-CH-110a.2	13
GHG emissions intensity Scope 2	Tons CO ₂ e/ton	0.16	0.15	0.14 ✓	-7%	305-4	RT-CH-110a.2	13
GHG emissions intensity Scope 1+2	Tons CO₂e/ton	0.24	0.22	0.21 ✓	-5%	305-4	RT-CH-110a.2	13
Nitrogen Oxides (NOx) emissions	Tons	753	647	655 ✓	1%	305-7	RT-CH-120a.1	3, 12
Sulfur Oxides (SOx) emissions	Tons	1,181	952	1,075 ✓	13%	305-7	RT-CH-120a.1	3, 12
Volatile Organic Compounds (VOCs) emissions	Tons	92	114	121 ✓	6%	305-7	RT-CH-120a.1	3, 12
Total other air emissions	Tons	2,026	1,713	1,851 ✓	8%	305-7	RT-CH-120a.1	3, 12
Total water withdrawal	1,000 m ³	15,946	15,646	15,184 ✓	-3%	303-3	RT-CH-140a.1	6, 12
Total water discharge	1,000 m ³	11,902	11,725	11,539 ✓	-2%	303-4	RT-CH-140a.1	6, 12
Water withdrawal intensity	m³/ton	1.93	1.88	1.77 ✓	-6%	303-3	RT-CH-140a.1	6, 12
Total non-hazardous waste	Tons	56,104	52,124	53,560 ✓	3%	306-3		12
Total hazardous waste	Tons	13,251	7,593	5,875 ✓	-23%	306-3	RT-CH-150a.1	12
Total waste	Tons	69,355	59,717	62,535 ✓	5%	306-3		12
Percentage of total waste recycled, reused, recovered	%	50%	52%	52% ✓	0%	306-3	RT-CH-150a.1	12
Percentage of total waste to landfill	%	37%	38%	35% ✓	-3%	306-3		12
Waste intensity	Tons/ton	0.008	0.007	0.007 ✓	0%	306-3		12

Notes

- YoY: Year on year variation (2021 vs. 2020)
- Figures with this check mark (✓) are third-party assured.



ESG Performance Data Summary

Social	Units	2019	2020	2021	YoY	GRI	SASB	SDG
Employees								
Total employees	No.	22,123	21,688	22,350	3%	102-8		8
Contractors	No.	2,649	3,727	4,045	11%	102-8		8
Women in management roles	%	19%	19%	22% ✓	3%	405-1		5
Employee training	hours	522,243	377,996	380,315 ✓	1%	404-1		8
Average training hours	hours/year/employee	23.61	17.43	17 ✓	-2%	404-1		8
Safety (total employees and contractors)								
Total Recordable Incident Rate	TRIR	0.71	0.75	0.61 ✓	-19%	403-9	RT-CH-320a.1	3
Lost time Incident Rate	LTIR	0.33	0.36	0.36 ✓	0%	403-9	RT-CH-320a.1	3
Severity Rate	SIR	6.62	11.58	6.90 ✓	-40%			3
Fatalities	No.	1	1	2 ✓	100%	403-9	RT-CH-320a.1	3
Community investment								
Total giving	\$	2,888,737	2,546,331	2,003,493 ✓	-21%	413		2,4,6
Total giving (cash)	%	54%	40%	78%* ✓	38%	413		2,4,6
Total giving (in-kind)	%	46%	60%	22% ✓	-38%	413		2,4,6
Governance								
Women Directors	Number (%)	3 (23%)	3 (21%)	3 (25%)	0 (4%)	405-1		5
Independent Directors	%	54%	64%	67%	3%	102-22		

Notes

- Safety rates are calculated on the basis of 200,000 hours.
- * From 2021, total giving data (cash) includes: community-related commercial initiatives and enhancements.



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Databook

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SASB Index

Figures with this check mark (✓) are third-party assured.

Chemicals Sustainability Accounting Standard Version 2018-10

Topic	Accounting Metric	Code			
Greenhouse Gas Emissions	Gross global Scope 1 emissions, percentage covered under emissions-limiting regulations.	RT-CH-110a.1			
		Unit	2019	2020	2021 ✓
	Gross global Scope 1 emissions	Tons CO ₂ e	645,300	603,969	624,317
<p>At least 107,331 metric tons or 17% of Scope 1 emissions are covered under emissions-limiting regulations. See Direct Scope 1 GHG emissions (GRI 305-1) data for further details.</p>					
	Discussion of long-term and short-term strategy or plan to manage Scope 1 emissions, emissions reduction targets and an analysis of performance against those targets.	RT-CH-110a.2			
<p>In line with our goal to achieve net zero carbon emissions (Scope 1+2) by 2050, and Scope 1+2 GHG emissions reduction of 47% by 2030 (target pending submission to the Science Based Target initiative, and subsequent approval), we are planning to drive decarbonization throughout our businesses at a steady pace. Scope 1 emissions have reduced 3% since our 2019 baseline, and strategies to achieve our 2030 goal include:</p> <ul style="list-style-type: none"> • Optimizing processes to drive efficiencies • Transitioning to lower carbon energy sources and renewables • Exploring carbon capture and hydrogen investment opportunities 					
Air Quality	Air emissions of the following pollutants: (1) NOx (excluding N ₂ O), (2) SOx, (3) volatile organic compounds (VOCs) and (4) hazardous air pollutants (HAPs)	RT-CH-120a.1			
		Units	2019	2020	2021 ✓
	NOx	Tons	753	647	655
	SOx	Tons	1,181	952	1,075
	VOCs	Tons	92	114	121
	Total other air emissions	Tons	2,026	1,713	1,851
<p>See Air emissions (GRI 305-7) data for further details.</p>					



Topic	Accounting Metric	Code			
Energy Management	(1) Total energy consumed, (2) percentage grid electricity, (3) percentage renewable, (4) total self-generated energy	RT-CH-130a.1			
		Units	2019	2020	
	Total energy consumed	GJ	26,843,530	25,897,288	
	Percentage grid electricity	%	35	35	
	Percentage renewable	%	1	2	
	Total self-generated energy	GJ	10,551,672	10,209,134	
	See Energy consumption (GRI 302-1) data for further details.				
Water Management	(1) Total water withdrawn, (2) total water consumed, percentage of each in regions with high or extremely high baseline water stress.	RT-CH-140a.1			
		Units	2019	2020	
	Total water withdrawn	1,000m ³	15,946	15,646	
	Total water consumed	1,000m ³	4,044	3,920	
	Based on our updated 2021 assessment using the World Resources Institute (WRI) Aqueduct Version 3.0 tool, 41 of our plants are in areas of high or extremely high water-stress, representing 34% of our sites and 47% of our total water withdrawal.	Brand	% Sites in water stressed areas at business group level		
		Vestolit & Alphagary	41%		
	See Water consumption (GRI 303-3 to 303-5) data for further details.	Wavin	21%		
		Netafim	72%		
		Dura-Line	17%		
		Koura	63%		
Orbia		34%			
Number of incidents of non-compliance associated with water quality permits, standards and regulations.	RT-CH-140a.2				
None in 2021. (Includes only those resulting in sanctions above \$10,000 USD)					
Description of water management risks and discussion of strategies and practices to mitigate those risks.	RT-CH-140a.3				
In 2021, we continued our water risk assessment program, covering the full spectrum of watershed risks (physical, regulatory and community-related). Vestolit completed assessments for all resin plants in Mexico and Colombia (representing 42% of Orbia's consumption and located in water stress areas). Based on these: context-based water targets for each of these sites are being analyzed; risk mitigation plans are being developed; alternative water sources are being evaluated; and water risks are being embedded in overall risk processes.					



Topic	Accounting Metric	Code			
Hazardous Waste Management	Amount of hazardous waste generated, percentage recycled	RT-CH-150a.1			
		Units	2019	2020	2021 ✓
	Hazardous waste generated	Tons	13,251	7,593	5,875
	Percentage recycled	%	-	5%	7%
See Waste generated (GRI 306-3 to 306-5) data for further details.					
Community Relations	Discussion of engagement processes to manage risks and opportunities associated with community interests.	RT-CH-210a.1			
<p>At Orbia, we fulfil our purpose through our solutions for resilience that address the world's most pressing social and environmental challenges. At the same time, we share a responsibility to contribute to improving the lives of the people in the communities where we do business. Our approach is based on helping alleviate urgent critical needs while contributing to strengthen communities through collaboration, partnership and the pursuit of longer term positive social impact. We engage with representatives of stakeholders in our communities to gain insight that will help us address their concerns and expectations. Specifically, we engage with local communities close to our factories and also with NGOs that represent broader national, regional and global interests relating to economic development, and social or environmental needs. We aim to develop contributions and partnerships to deliver long-term value that benefits communities and societies in general. Our engagements include: partnerships in programs for local impact; meetings with NGOs, community leaders and local governments to understand needs and identify common interests; academic forums on innovation, and sustainable development and engagement with Research Centers. Additionally, we are currently developing a set of tools that will help our operations assess risks, map their communities and interest groups to define strategic approaches for stakeholder engagement. Examples of these engagement activities can be found in different sections of our 2021 Sustainability Report.</p>					



Topic	Accounting Metric			Code
Workforce Health & Safety	(1) Total recordable incident rate (TRIR) and (2) fatality rate for (a) direct employees and (b) contract employees.			RT-CH-320a.1
	2019			
		Employees	Contractors	Total
	Total Recordable Incident Rates (TRIR)	0.76	0.48	0.71
	Lost Time Incident Rate (LTIR)	0.36	0.20	0.33
	Fatality rate	0	0.019	0.004
	2020			
		Employees	Contractors	Total
	Total Recordable Incident Rates (TRIR)	0.77	0.63	0.75
	Lost Time Incident Rate (LTIR)	0.36	0.37	0.36
	Fatality rate	0.005	0	0.004
	2021			
		Employees	Contractors	Total
	Total Recordable Incident Rates (TRIR)	0.61 ✓	0.59 ✓	0.61 ✓
	Lost Time Incident Rate (LTIR)	0.36 ✓	0.3 ✓	0.36 ✓
Fatality rate	0.008 ✓	0 ✓	0.007 ✓	
See Incident rates (GRI 403-9) data for further details.				



Topic	Accounting Metric	Code								
	<p>Description of efforts to assess, monitor and reduce exposure of employees and contract workers to long-term (chronic) health risks.</p> <p>We aspire to create safe places to work throughout Orbia, with a community of individuals who are committed to working safely and to implementing all our policies, standards, frameworks, supported by processes that enable them to do so. In this way, we make safety a habit that is consistently embedded in everything we do. No rule book can account for every eventuality, so we rely on a safety mindset and culture to complement the systems we have in place. While we must continue this work to achieve our vision of zero injuries, we are encouraged by a notable reduction in incident rates across the business over the past several years.</p> <p>Work-related hazards are assessed through our regular safety risk assessments, and we have not identified any significant hazards that pose a risk of ill-health. Instances of work-related ill-health reported for 2021 were not identified with specific hazards.</p> <p>Work-related hazards that pose a risk of high-consequence injuries are not specifically identified as distinct from other hazards. All work-related hazards are addressed through our safety assessments and risks are minimized through targeted improvements in procedures, protocols, training and communications. See Health & Safety for further details.</p>	RT-CH-320a.2								
Product Design for Use-phase Efficiency	<p>Revenue from products designed for use-phase resource efficiency.</p> <p>23% This figure represents the percentage of revenues from precision irrigation (water reduction, reduced soil contamination), stormwater management (climate resilience addressing flooding and groundwater depletion); indoor climate solutions (energy reduction); low GWP medical propellants (low-carbon); trenchless pipe rehabilitation solutions (fewer emissions and pollution, longevity, reduce water loss); resins that result in energy consumption reduction by our customers; and those that extend product use such as Dura-Line's FuturePath. This figure excludes revenue from Orbia products made using recycled content, per SASB definition, although a portion of the products in some of the mentioned ranges are made with recycled raw materials. See Orbia's Sustainable Solutions report for further details and examples.</p>	RT-CH-410a.1								
Safety & Environmental Stewardship of Chemicals	<p>(1) Percentage of products that contain Globally Harmonized System of Classification and Labeling of Chemicals (GHS) Category 1 and 2 Health and Environmental Hazardous Substances, (2) percentage of such products that have undergone a hazard assessment.</p> <p>Currently, the following information is available at Orbia level, regarding this topic. The majority of our products from Koura, Vestolit, Alphagary, and Dura-Line businesses have undergone risk assessments. These are considered our highest risk businesses. Wavin and Netafim products are considered significantly lower risk.</p> <table border="1"> <thead> <tr> <th></th> <th>% in terms of revenues</th> </tr> </thead> <tbody> <tr> <td>Products that contain restricted substances in the Annex XVII of REACH Regulation</td> <td>6% ✓</td> </tr> <tr> <td>Products that contain substances on the Candidate List of substances of very high concern (SVHC) for Authorization above 0.1% by weight</td> <td>2% ✓</td> </tr> <tr> <td>% of products that have undergone risk assessment for their potential impact on human health and the environment</td> <td>61% ✓</td> </tr> </tbody> </table>		% in terms of revenues	Products that contain restricted substances in the Annex XVII of REACH Regulation	6% ✓	Products that contain substances on the Candidate List of substances of very high concern (SVHC) for Authorization above 0.1% by weight	2% ✓	% of products that have undergone risk assessment for their potential impact on human health and the environment	61% ✓	RT-CH-410b.1
	% in terms of revenues									
Products that contain restricted substances in the Annex XVII of REACH Regulation	6% ✓									
Products that contain substances on the Candidate List of substances of very high concern (SVHC) for Authorization above 0.1% by weight	2% ✓									
% of products that have undergone risk assessment for their potential impact on human health and the environment	61% ✓									



Topic	Accounting Metric	Code
	<p>Discussion of strategy to (1) manage chemicals of concern and (2) develop alternatives with reduced human and/or environmental impact.</p> <p>Product Stewardship Approach: We maintain compliance with key standards and good practices. Our business group teams have been staffed with subject matter experts to ensure full compliance across our wide range of geographies and products.</p> <p>Various activities, in particular targeted at finding viable replacements for phthalate-based products are being undertaken by Alphagary. Our Leominster production site is part of the Toxic Use Reduction Institute (TURI) See Health & Safety for further details.</p>	
Genetically Modified Organisms	<p>Percentage of products by revenue that contain genetically modified organisms (GMOs).</p> <p>Not applicable. None of our products contain GMOs.</p>	RT-CH-410c.1
Management of the Legal & Regulatory Environment	<p>Discussion of corporate positions related to government regulations and/or policy proposals that address environmental and social factors affecting the industry.</p> <p>Some examples from our Business Groups include:</p> <p>Koura is an active member of the Global FACT (Forum for Advanced Climate Technologies), promoting the development of low GWP propellants and refrigerants alongside other key players in the fluorinated gas market such as Arkema, Chemours and Honeywell. They are also members of the Alliance for Responsible Atmospheric Policy.</p> <p>Our Wavin Sustainability leaders are very active with the TEPPFA regarding circular economy initiatives and influencing policy around this topic in Europe. Wavin was also active in the 2021 Climate Adaptation Summit.</p> <p>Vestolit and Alphagary are members of Asociación Colombiana de Plásticos (ACOPLASTICOS), a Colombian association that promotes sustainable development in the sector while serving as a spokesperson before the government and society to comply with best-in-class standards.</p> <p>In the U.S., Vestolit is an active member of The Vinyl Institute, where there are ongoing discussions to promote a per pound tax to fund \$25M of recycling infrastructure investment. This would be an industry led/managed initiative.</p>	RT-CH-530a.1



Topic	Accounting Metric	Code	
Operational Safety, Emergency Preparedness & Response	Process safety incidents count (PSIC), process safety total incident rate (PSTIR) and process safety incident severity rate (PSISR)	RT-CH-540a.1	
		2020	2021
	Tier 1 incidents	7	9 ✓
	Tier 2 incidents	8	7 ✓
<p>Notes:</p> <ul style="list-style-type: none"> All figures refer to employees and contractors in total. <p>2016 PMV Pajaritos Complex Incident update: The remediation plan was authorized by the authorities and completed in 2020. The conclusions of the remediation program were submitted to the authorities in August 27, 2020. At the date of this report, Orbia is still awaiting final release by the authorities (SEMARNAT), which processes have been delayed during the COVID-19 pandemic. All actions required by Orbia have been completed. See Health & Safety for further details on progress regarding overall safety measures.</p>			
	Number of transport incidents	RT-CH-540a.2	
		2020	2021
	Transport Incidents	22	28
<p>Transport incident data includes Vestolit, Alphagary, Koura, and Wavin. All transportation is done by contracted companies. One incident resulted in a third-party injury. No incidents involved hazardous material.</p>			

Activity Metric			Code
Production by reportable segment			RT-CH-000.A
Business Group	Units	2020	2021 ✓
Polymer Solutions	Tons	4,466,881	4,753,144
Building & Infrastructure	Tons	707,783	773,188
Precision Agriculture	Tons	159,518	163,208
Data Communication	Tons	252,266	274,213
Fluorinated Solutions	Tons	2,714,327	2,602,413
Orbia	Tons	8,300,774	8,566,164





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GRI Index





GRI Index

Figures with this check mark (✓) are third-party assured.

GRI 102

GRI Standard 102: General Disclosures 2016		Page/Response
102-1	Name of the organization	Orbia Advance Corporation, S.A.B. de C.V.
102-2	Activities, products, and services	About Orbia
102-3	Location of headquarters	About Orbia
102-4	Location of operations	About Orbia
102-5	Ownership and legal form	About Orbia
102-6	Markets served	About Orbia
102-7	Scale of the organization	About Orbia
102-8	Information on employees	page 23
102-9	Supply chain	Supply Chain
102-10	Significant changes	None
102-11	Precautionary Principle	Environment
102-12	External initiatives	Thriving Communities
102-13	Membership of associations	page 24
102-14	Statement from senior manager	Message from Chairman and CEO
102-16	Values, principles, standards	About Orbia
102-18	Governance structure	Corporate Governance & Risk Management
102-40	List of stakeholder groups	page 25

GRI Standard 102: General Disclosures 2016		Page/Response
102-41	Collective bargaining agreements	page 24
102-42	Identifying and selecting stakeholders	page 25
102-43	Stakeholder engagement	page 25
102-44	Key topics and concerns raised	page 25
102-45	Entities included	page 2
102-46	Report content and topic Boundaries	page 2
102-47	List of material topics	Materiality Assessment Results
102-48	Restatements of information	None
102-49	Changes in reporting	None
102-50	Reporting period	page 2
102-51	Date of most recent report	page 2
102-52	Reporting cycle	page 2
102-53	Contact point	page 2
102-54	Reporting in accordance with GRI Standards	page 2
102-55	GRI content index	page 21
102-56	External assurance	page 44





GRI Index: GRI 200, 300, 400 Standards

Material Topic	Standard	Item	Description	Disclosure
Solutions for resilience	Non-GRI topic		Sustainable Solutions	All
Innovation	Non-GRI topic		Sustainability Report 2021	Impactful Ventures
Circular economy	Non-GRI topic		Sustainability Report 2021	Circularity
Quality and safety of products	GRI 416: Customer Health and Safety 2016	416-1	Assessment of the health and safety impacts of products	61% of our products are assessed
		416-2	Incidents of non-compliance concerning the health and safety impacts of products	None
Greenhouse gas emissions	GRI 302: Energy 2016	302-1	Energy consumption within the organization	page 26
		302-3	Energy intensity	page 27
	GRI 305: Emissions 2016	305-1	Direct (Scope 1) GHG emissions	page 27
		305-2	Energy indirect (Scope 2) GHG emissions	page 27
		305-3	Other indirect (Scope 3) GHG emissions	page 28
		305-4	GHG emissions intensity	page 28
		305-7	Nitrogen oxides (NOx), sulfur oxides (SOx), and other air emissions	page 28
Water use and discharge	GRI 303: Water 2018	303-1	Interactions with water as a shared resource	Water
		303-2	Management of water discharge-related impacts	Water
		303-3	Water withdrawal	page 29
		303-4	Water discharge	page 30
		303-5	Water consumption	page 31
Waste management*	GRI 306: Waste 2020	306-1	Waste generation and significant waste-related impacts	Circularity
		306-2	Management of significant waste-related impacts	Circularity
		306-3	Waste generated	page 31
		306-4	Waste diverted from disposal	page 32
		306-5	Waste directed to disposal	page 33

* Other material topics, not in the top ten most material topics.



Material Topic	Standard	Item	Description	Disclosure
Employee development, engagement and retention	GRI 401: Employment	401-1	New employee hires and turnover	page 34
		GRI 404: Training and Education 2016	404-1	Average hours of training per year per employee
	404-2		Programs for upgrading employee skills and transition assistance programs	Development
	404-3	Percentage of employees receiving regular performance and career development reviews	Development	
Diversity and Equal Opportunities*	GRI 405: Diversity and Equal Opportunity 2016	405-1	Diversity of governance bodies and employees	page 36
		405-2	Pay Equity by level and region	page 37
Health and Safety	GRI 403: Occupational Health and Safety 2018	403-1	Occupational health and safety management system	Health & Safety
		403-2	Hazard identification, risk assessment, and incident investigation	Health & Safety
		403-3	Occupational health services	Health & Safety
		403-4	Worker participation, consultation, and communication on occupational health and safety	Health & Safety
		403-5	Worker training on occupational health and safety	Health & Safety
		403-6	Promotion of worker health	Health & Safety
		403-7	Prevention and mitigation of occupational health and safety impacts directly linked by business relationships	Health & Safety
		403-9	Work-related injuries	page 37
		403-10	Work-related ill health	page 39
		Investments in local communities	GRI 413: Local Communities 2016	413-1
GRI 203: Indirect economic impacts 2016	203-1		Infrastructure investments	page 10
Ethical Behavior and Compliance*	GRI 205: Anti-corruption 2016	205-2	Communication and training about anti-corruption policies and procedures	Ethics & Compliance
	GRI 307: Environmental Compliance 2016	307-1	Non-compliance with environmental laws and regulations	page 33

* Other material topics, not in the top ten most material topics.



GRI 102-8 Information on employees

Employees by region and gender	2019				2020				2021		
	Women	Men	Undeclared	Total	Women	Men	Undeclared	Total	Women	Men	Total
U.S. & CANADA	266	1,488	55	1,809	305	1,636	14	1,955	383	1,818	2,201
LATAM	1,871	8,896	7	10,774	1,780	8,651	6	10,437	2,007	8,687	10,694
EUROPE	1,246	5,044	25	6,315	1,242	4,940	7	6,189	1,306	5,054	6,390
AMEA	446	2,748	31	3,225	459	2,636	12	3,107	500	2,595	3,095
TOTAL	3,829	18,176	118	22,123	3,786	17,863	39	21,688	4,196	18,154	22,350

Employees by contract	2019				2020				2021		
	Women	Men	Undeclared	Total	Women	Men	Undeclared	Total	Women	Men	Total
Full time	3,599	17,985	173	21,702	3,582	17,707	118	21,328	3,935	17,971	21,947
Part time	230	191	2	421	204	156	0	360	220	183	403
% Full time				98%				98%			98%
Permanent	3,634	17,654	174	21,406	3,621	17,336	118	20,994	3,940	17,503	21,443
Temporary	195	522	1	717	165	527	0	694	256	651	907
% Permanent				97%				97%			96%

Non-payroll workers	U.S. & CANADA	LATAM	EUROPE	AMEA	TOTAL
2019	97	1,141	273	1,138	2,649
2020	112	2,174	434	1,007	3,727
2021	77	2,156	620	1,192	4,045
% in 2021	2%	53%	15%	30%	18%



GRI 102-13 Membership of associations

The following are key global or regional associations we are members of or significantly support. There are additional memberships we maintain on a country-by-country basis.

Brand	Name of the Organization	Country
Koura	Global Forum for Advanced Climate Technologies (FACT)	United States
Koura & Vestolit	Asociacion Nacional de la Industria Química AC (ANIQ)	Mexico
Koura & Vestolit	Acoplásticos	Colombia
Vestolit	The Vinyl Institute (VI)	United States
Vestolit	European Council of Vinyl Manufacturers (ECVM) VinylPlus	European Union
Wavin	The European Plastic Pipes and Fittings Association (TEPPFA)	European Union
Wavin	British Plastics Federation (BPF)	United Kingdom
Wavin	Asociación Mexicana de Industrias Plásticas A.C. (Mexican Association of Plastic Industries A.C.) (AMITUP)	Mexico
Netafim	Irrigation Association	United States
Netafim	Israel Export Institute	Israel
Netafim	Sustainable Agriculture Initiative (SAI) Platform	Global
Dura-Line	Fiber to the Home - COUNCIL EUROPE (FTTH)	European Union
Dura-Line	Plastic Pipe Institute (PPI)	United States

GRI 102-41 Collective bargaining agreements

Employees with collective bargaining agreements	U.S. & CANADA	LATAM	EUROPE	AMEA	TOTAL
2019	21	7,689	4,588	128	12,426
2020	-	6,308	3,371	152	9,831
2021	0	6,526	2,849	129	9,504
% in 2021	0%	68%	30%	1%	41%

A dash means data was not available. It does not indicate zero employees.



GRI 102-42 Identifying and selecting stakeholders

GRI 102-43 Stakeholder engagement

GRI 102-44 Key topics and concerns raised

Stakeholders are individuals or groups who are affected by and influence our business operations. We engage with representatives of a wide group of stakeholders in order to gain insight that will help us minimize risk to our business, understand and benefit from opportunities and address stakeholder concerns and expectations.

Our ongoing consultations with stakeholders have influenced the development of our sustainability strategy and priority sustainability issues. We conducted specific engagement to define our material topics in 2019 as described in the [Materiality Assessment Results](#).

Who	What	How
Customers	Thousands of customers around the world in different business sectors.	Customer service, quality and compliance, competitive pricing, overall value chain efficiency. <ul style="list-style-type: none"> • Client meetings • Industry meetings and conferences • Joint projects including workshops, training and education programs, and field trials.
Employees	More than 22,000 direct employees in our businesses around the world.	Professional development, fair compensation and benefits, a safe and healthy workplace, and meaningful work. <ul style="list-style-type: none"> • Satisfaction surveys • Performance reviews • Internal communications
Investors	Current shareholders and institutional investors, investment analysts and stock exchange.	Return on investment through constant and sustainable growth, robust governance, transparency. <ul style="list-style-type: none"> • Annual financial and sustainability reporting • Investor meetings and roadshows • Notifications through the Mexican Stock Exchange and the National Securities Commission
Communities, NGOs and academia	Local communities close to our factories and broader national, regional and global NGOs with interests relating to economic development, social or environmental needs.	Contribution and partnership to deliver long-term value that benefits communities and societies in general, engagement to understand community needs and responsiveness, and upholding human rights. <ul style="list-style-type: none"> • Partnerships in programs for local impact • Meetings with NGOs, community leaders and local governments to understand needs and identify common interests • Academic forums on innovation and sustainable development • Engagement with research centers
Suppliers and Distributors	A wide range of thousands of suppliers across all our business sectors in tens of countries.	Long-term commercial partnerships, fair dealing, opportunities for diverse suppliers, fair negotiations. <ul style="list-style-type: none"> • Supplier evaluation systems • Supplier meetings • Conferences and tradeshows • Joint projects
Regulators	National governments, regional councils and local municipalities in all the countries in which we operate.	Trusting relationships based on compliant and ethical conduct and respect for Human Rights, transparency and timely reporting, collaboration to advance public policy. <ul style="list-style-type: none"> • Public-private partnerships for social benefit • Industrial guilds and associations • Discussion forums on sector and social policies • Government reviews and audits • Reporting on corporate performance





GRI 302-1 Energy consumption within the organization

Energy	Units	2016	2017	2018	2019	2020	2021 ✓	Change in 2021
Natural gas	MWh	2,526,510	2,450,339	2,471,052	2,519,303	2,512,007	2,695,655	7%
Gasoline	MWh	7,821	12,394	12,874	10,324	9,174	9,862	8%
Diesel	MWh	60,467	78,805	78,895	98,929	75,539	82,565	9%
LPG derived gases	MWh	113,434	112,891	136,741	130,179	106,963	124,689	17%
Mineral coal	MWh	192,298	198,269	183,184	169,816	127,836	73,953	-42%
Renewable electricity generated	MWh	-	-	-	1,773	3,587	2,347	-35%
Biofuels	MWh	-	-	-	696	765	859	12%
Total Scope 1- Energy	MWh	2,900,530	2,852,698	2,882,746	2,931,020	2,835,871	2,989,931	5%
Purchased electricity	MWh	2,445,311	2,457,173	2,723,899	2,580,558	2,486,917	2,590,547	4%
Renewable electricity purchased	MWh	-	-	55,737	81,890	130,983	169,451	29%
Scope 2 - Energy (electricity)	MWh	2,445,311	2,457,173	2,723,899	2,662,448	2,617,900	2,759,998	5%
Scope 2 - Energy (cooling, heating, steam)	MWh	N/A	N/A	N/A	1,863,068	1,739,921	1,794,811	3%
Total energy consumption	MWh	5,345,841	5,309,871	5,606,645	7,456,536	7,193,692	7,544,740	5%

Notes

- Data for purchased cooling, heating and steam, is available from 2019.
- Precision agriculture business group data (Netafim) is included from 2018.
- A dash means data was not available. It does not indicate zero consumption.
- Renewable electricity purchased was not reported separately in our 2018 report. This value was included in purchased electricity.
- Total energy consumption is reported as gross energy.
- LPG derived gases contain butane, propane and LPG.

Energy consumption summary	Units	2016	2017	2018	2019	2020	2021 ✓	Change in 2021
Scope 1 - Energy	MWh	2,900,530	2,852,698	2,882,746	2,931,020	2,835,871	2,989,931	5%
Scope 2 - Energy (electricity)	MWh	2,445,311	2,457,173	2,723,899	2,662,448	2,617,900	2,759,998	5%
Scope 2 - Energy (cooling, heating, steam)	MWh	N/A	N/A	N/A	1,863,068	1,739,921	1,794,811	3%
Total energy consumption	MWh	5,345,841	5,309,871	5,606,645	7,456,536	7,193,692	7,544,740	5%

Net energy consumption	Units	2020	2021
Gross energy consumption	MWh	7,193,692	7,547,087
Sold energy	MWh	277,836	284,726
Net energy consumption	MWh	6,915,854	7,262,362

Notes

- Systems to capture sold energy are in place since 2020.



GRI 302-3 Energy intensity

	Units	2016	2017	2018	2019	2020	2021 ✓	Change in 2021
Total Scope 1 - Energy	MWh/ton	0.68	0.64	0.61	0.36	0.34	0.35	3%
Scope 2 - Energy (electricity)	MWh/ton	0.58	0.55	0.58	0.32	0.32	0.32	0%
Scope 2 - Energy (cooling, heating, steam)	MWh/ton	-	-	-	0.23	0.21	0.21	0%
Total energy	MWh/ton	1.26	1.19	1.19	0.90	0.87	0.88	1%

Notes

- In 2019, we adopted a new methodology for calculating intensities, as requested by key stakeholders. Figures from 2019 show intensities on the basis of tons of product manufactured (including production of intermediate materials). In prior years, intensities were calculated mainly on the basis

of tons sold, always lower than tons manufactured. Therefore, from 2019 onward, intensity figures for energy, GHG emissions, water and waste are not directly comparable to prior years, although they are a closer reflection of our actual impact. Data considers gross energy consumption.

GRI 305-1 Direct (Scope 1) GHG emissions

GRI 305-2 Energy indirect (Scope 2) GHG emissions

Greenhouse gas emissions	Units	2016	2017	2018	2019	2020	2021 ✓	Change in 2021
Scope 1 - GHG (energy)	Tons CO ₂ e	613,004	587,487	589,078	588,002	547,669	565,790	3%
Scope 1 - GHG (process)	Tons CO ₂ e	-	-	-	57,298	56,300	58,526	4%
Scope 2 - GHG (electricity)	Tons CO ₂ e	1,061,637	1,173,202	1,215,035	1,046,742	965,325	865,820	-10%
Scope 2 - GHG (cooling, heating, steam)	Tons CO ₂ e	-	-	-	307,493	297,100	314,975	6%
Total Scope 1 and Scope 2	Tons CO₂e	1,674,641	1,760,689	1,804,113	1,999,535	1,866,394	1,805,112	-3%

GHG emissions: Market vs. Location-based	Units	2020		2021 ✓	
		Market-based	Location-based	Market-based	Location-based
Scope 2 (purchased electricity)	Tons CO ₂ e	965,325	1,088,758	865,820	1,024,656
Scope 2 (cooling, heating, steam)	Tons CO ₂ e	297,100	297,100	314,975	314,975
Total Scope 2	Tons CO₂e	1,262,425	1,385,858	1,180,795	1,339,631

Notes

- Scope 1 emission factors for fuels and gases use DEFRA 2019 and EPA 2018.
- Scope 2 emission factors for cooling, heating and steam use factors provided by our suppliers. When these are not available, EPA factors are used.
- Scope 2 emissions are market based from 2019, but location based in prior years.
- Scope 2 market-based emission factors are sourced from the International Energy Agency (IEA) data 2021 version where supplier emission factors are not available.
- Our inventory does not consider residual emission factors yet. However, 71% of our scope 2 emissions are calculated using supplier emission factors.
- Scope 2 location-based emissions use IEA data 2021 version for all sites except Mexico facilities which used CRE, 2020 version.
- 2019 Scope 1 and 2 data has been updated to include process emissions not related to energy in Scope 1 and purchased heating, steam and cooling in Scope 2. This change impacts intensities.



GRI 305-3 Other Indirect (Scope 3) GHG emissions

Category	Units	2019	2020	2021 ✓
Upstream activities (Cat 1 – 7)	Tons CO ₂ e	6,006,000	6,026,000	6,221,000
Category 11: Use of sold products	Tons CO ₂ e	26,499,000	25,964,000	23,158,000
Category 12: End-of-life treatment of sold	Tons CO ₂ e	56,882,000	52,841,000	52,514,000
Downstream activities (Cat 8, 9,15)	Tons CO ₂ e	546,000	546,000	546,000
Total Scope 3	Tons CO₂e	89,933,000	85,377,000	82,439,000

Notes

- New figures reflect improvements in our Scope 3 inventory completeness.
- Relevant category 11 and 12 emissions are based on IPCC's AR4 GWP factors.
- Orbia is not a lessor and does not operate franchises, therefore categories 13 and 14 are not applicable.
- The highly considerable efforts required to calculate category 10 emissions have been determined as not cost-effective.
- For further methodology details, please refer to our [CDP Climate Change response](#).

GRI 305-4 GHG emissions intensity

	Units	2016	2017	2018	2019	2020	2021 ✓	Change in 2021
Scope 1	Tons CO ₂ e/ton	0.14	0.13	0.13	0.08	0.07	0.07	0%
Scope 2	Tons CO ₂ e/ton	0.25	0.26	0.26	0.16	0.15	0.14	-7%
Total Scope 1 and Scope 2	Tons CO₂e/ton	0.39	0.39	0.38	0.24	0.22	0.21	-5%

Notes

- See note to calculation of intensities in GRI 302-3.
- 2019 Scope 1 and 2 data has been updated to include process emissions not related to energy in Scope 1 and purchased heating, steam and cooling in Scope 2. This change impacts intensities.

GRI 305-7 Nitrogen oxides (NOx), sulfur oxides (SOx), and other air emissions

	Units	2016	2017	2018	2019	2020	2021 ✓	Change in 2021
NOx	Tons	760	779	689	753	647	655	1%
SOx	Tons	1,309	1,257	1,355	1,181	952	1,075	13%
VOCs	Tons	0	83	108	92	114	121	6%
Total other air emissions	Tons	2,069	2,119	2,152	2,026	1,713	1,851	8%

Notes

- VOCs from 2020 include data from our Marl site (Vestolit), extrapolated based on historical and production data.



GRI (2018) 303-3 Water withdrawal by source

Source	Units	2016	2017	2018	2019	2020	2021 ✓	Change in 2021
Surface water (including rainwater)	1,000 m ³	8,171	8,670	8,262	9,843	9,315	9,253	-1%
Groundwater	1,000 m ³	4,937	5,178	5,341	4,861	5,163	4,703	-9%
Third party water (municipal)	1,000 m ³	2,895	2,480	2,150	1,242	1,168	1,228	5%
Total water withdrawal	1,000 m³	16,003	16,328	15,753	15,946	15,646	15,184	-3%
Water withdrawal intensity	m³/ton	3.76	3.66	3.35	1.93	1.88	1.77	-6%

GRI (2018) 303-3 Water withdrawal in water stress areas

	Units	2019	2020	2021	Change in 2021	
High to extremely high water stress area (40%->80%)	Surface water	1,000m ³	5,029	4,825	4,541	-6%
	Groundwater	1,000m ³	2,106	2,497	2,133	-15%
	Municipal	1,000m ³	281	199	224	13%
	Wastewater from a third party	1,000m ³	0	156	211	36%
	Total	1,000m³	7,416	7,677	7,110	-7%
Medium water stress or lower (<40%)	Surface water	1,000m ³	4,814	4,490	4,712	5%
	Groundwater	1,000m ³	2,753	2,666	2,571	-4%
	Municipal	1,000m ³	960	813	792	-3%
	Total	1,000m³	8,527	7,969	8,075	1%
Total	1,000m³	15,946	15,646	15,184	-3%	



GRI (2018) 303-4 Water discharge by quality and destination

Destination	Units	2019	2020	2021 ✓	Change in 2021
Surface water	1,000 m ³	9,408	8,036	7,670	-5%
Seawater	1,000 m ³	-	1,339	1,448	8%
Groundwater	1,000 m ³	14	7	11	53%
Third party (municipal)	1,000 m ³	2,481	2,343	2,411	3%
Total water discharge	1,000 m³	11,902	11,725	11,539	-2%

Water discharge quality	Units	2019	2020	2021 ✓	Change in 2021
Total Suspended Solids (TSS)	Tons	131	151	138	-8%
Chemical Oxygen Demand (COD)	Tons	378	403	481	19%
Biochemical Oxygen Demand (BOD)	Tons	87	129	152	18%
Total organic carbon (TOC)	Tons	120	142	162	14%
Total solids	Tons	716	826	933	13%

Notes

- Wastewater quality is strictly governed by local regulations, and parameters are set specifically for each watershed. Orbia's operations comply with these local regulations. Therefore, wastewater discharge quality is reported as applicable only to chemical plants.

GRI (2018) 303-4 Water discharge in water stress areas

	Units	2019	2020	2021	Change in 2021	
High to extremely high water stress area (40%->80%)	Surface water	1,000m ³	3,314	3,375	3,155	-7%
	Groundwater	1,000m ³	6	0	0	NA
	Sewage	1,000m ³	573	509	540	6%
	Total	1,000m³	3,893	3,884	3,695	-5%
Medium water stress or lower (<40%)	Surface water	1,000m ³	6,094	4,661	4,515	-3%
	Seawater	1,000m ³	-	1,339	1,448	8%
	Groundwater	1,000m ³	8	7	10	50%
	Sewage	1,000m ³	1,907	1,834	1,871	2%
	Total	1,000m³	8,009	7,841	7,845	0%
Total	1,000m³	11,902	11,725	11,539	-2%	



GRI (2018) 303-5 Water consumption

Water balance	Units	2019	2020	2021 ✓	Change in 2021
Water withdrawn	1,000 m ³	15,946	15,646	15,184	-3%
Water discharged	1,000 m ³	11,902	11,725	11,539	-2%
Water consumed	1,000 m³	4,044	3,920	3,645	-7%
Water % discharged	%	75%	75%	76%	1%

Notes

- Details of water quality (freshwater and other water) split not currently available.

GRI (2020) 306-3 Waste generated

		Units	2019	2020	2021 ✓	Change in 2021
Production - related waste	Hazardous waste	Tons	13,251	7,593	5,875	-23%
	Non-hazardous waste	Tons	56,104	52,124	53,560	3%
Special project waste	Hazardous waste	Tons	-	-	143	NA
	Non-hazardous waste	Tons	-	-	2,958	NA
Total waste	Ton		69,355	59,717	62,535	5%
Waste intensity	Tons/ton		0.008	0.007	0.007	0%

Notes

- Values represent waste disposed.
- See note to calculation of intensities in GRI 302-3.
- Split of waste generated by composition not available.
- From 2021, waste from special projects is reported separately. Waste from special projects refers to activities unrelated to normal production operations in our sites and can include construction, demolition, soil removals, etc.



GRI (2020) 306-4 Waste diverted from disposal

	Units	2019	2020	2021 ✓	Change in 2021
Hazardous waste					
Preparation for reuse	Tons	303	227	224	-1%
Recycling	Tons	2,122	184	161	-12%
Recovery	Tons	3,634	3,303	2,303	-30%
Incineration with energy recovery	Tons	-	-	877	NA
Special project waste	Tons	-	-	-	NA
Total	Tons	6,059	3,714	3,565	-4%
Non-hazardous waste					
Preparation for reuse	Tons	6,064	4,881	4,835	-1%
Recycling	Tons	20,973	19,979	22,555	13%
Recovery	Tons	2,001	2,476	2,739	11%
Incineration with energy recovery	Tons	-	-	2,717	NA
Special project waste	Tons	-	-	977	NA
Total	Tons	29,038	27,336	33,823	24%
Total waste diverted	Tons	35,097	31,050	37,388	20%

Notes

- Values reported under recovery include a portion of waste incinerated with energy recovery. From 2021, this data is broken down.
- Orbia considers incineration with energy recovery as a diversion method, and is aligned with our Zero Waste to Landfill definition.





GRI (2020) 306-5 Waste directed to disposal

	Units	2019	2020	2021 ✓	Change in 2021
Hazardous waste					
Incineration without energy recovery	Tons	1,284	2,660	1,335	-50%
Landfill	Tons	1,599	798	717	-10%
Other	Tons	4,309	420	257	-39%
Special project waste	Tons	-	-	143	NA
Total	Tons	7,192	3,878	2,452	-37%
Non-hazardous waste					
Incineration without energy recovery	Tons	1,654	1,716	421	-75%
Landfill	Tons	24,485	22,031	19,663	-11%
Other	Tons	926	1,041	630	-40%
Special project waste	Tons	-	-	1,980	NA
Total	Tons	27,065	24,788	22,694	-8%
Total waste directed to disposal	Tons	34,257	28,666	25,139	-12%

GRI (2016) 307-1 Non-compliance with environmental laws and regulations

	Units	2019	2020	2021 ✓
Violations of environmental laws and/or regulations	Number	0	0	0
Fines and penalties related to said violations	USD	0	0	0

Notes

- Includes violations resulting in fines or penalties above 10,000 USD only



GRI 401-1 New employee hires and turnover

Employee new hires summary	2021		
	Women	Men	Total
< age 30	398	1,456	1,854
age 30 - 50	560	1,656	2,216
> age 50	73	338	411
All new hires	1,031	3,450	4,481
New hire percentage (of year end headcount)	23%	77%	100%

Employee turnover summary	2021		
	Women	Men	Total
< age 30	168	921	1,089
age 30 - 50	357	1,456	1,813
> age 50	99	657	756
All leavers	624	3,034	3,658
Turnover percentage (of year end headcount)	17%	83%	-

Employee new hires by gender and region	2021		
	Women	Men	Total
U.S. & CANADA	167	710	877
LATAM	545	1,370	1,915
EUROPE	187	751	938
AMEA	132	619	751
All new hires	1,031	3,450	4,481
Percentage by gender	23%	77%	100%

Employee turnover summary	2021		
	Women	Men	Total
Voluntary turnover rate	2%	7%	9%
Involuntary turnover rate	1%	7%	8%
Total	3%	14%	17%

Notes

- Voluntary / involuntary rates calculated on basis of total company headcount.



Employee leavers by age and region	2021			Total
	< age 30	age 30 - 50	> age 50	
U.S. & CANADA	195	289	130	614
LATAM	459	783	254	1,496
EUROPE	146	361	280	787
AMEA	289	380	92	761
All leavers	1,089	1,813	756	3,658
Percentage by age	30%	49%	21%	100%

Employee leavers by gender and region	2021		Total
	Women	Men	
U.S. & CANADA	94	520	614
LATAM	301	1,195	1,496
EUROPE	140	647	787
AMEA	89	672	761
All leavers	624	3,034	3,658
Percentage by gender	17%	83%	100%

GRI 404-1 Average hours of training per year per employee

Employee training by category (hours)	2019	2020	2021 ✓
Managers and professional employees	211,826	167,546	204,676
Other employees	310,416	210,450	175,639
All training hours	522,243	377,996	380,315
Average hours per employee per year	23.61	17.43	17



GRI 405-1 Diversity of governance bodies and employees

Employees by level and age	Age	2019	2020	2021
Managers	<age 30	94	72	87
	age 30-50	1,548	1,553	1,670
	>age 50	732	766	839
Professional employees	<age 30	1,636	1,301	1,146
	age 30-50	4,702	5,004	4,623
	>age 50	1,449	1,600	1,503
Other employees	<age 30	2,649	2,155	2,503
	age 30-50	6,271	6,476	6,979
	>age 50	2,617	2,761	2,913
All employees	<age 30	4,379	3,528	3,736
	age 30-50	12,521	13,033	13,274
	>age 50	4,798	5,127	5,253
All employees by age as a percentage of total employees	<age 30	20%	16%	17%
	age 30-50	57%	60%	59%
	>age 50	22%	24%	24%

Employees by level and gender	Levels	2019	2020	2021 ✓
Women	Managers	452	455	561
	Professional employees	2,301	2,306	2,210
	Other employees	1,076	1,026	1,423
Men	Managers	1,922	1,920	2,036
	Professional employees	5,486	5,596	5,072
	Other employees	10,461	10,337	10,970
% of women by level as a percentage of total employees by level	Managers	19%	19%	22%
	Professional employees	30%	29%	30%
	Other employees	9%	9%	11%
	All employees	17%	17%	19%



GRI 405-2 Pay Equity by level and region

Region	2021 Pay Equity by level and region			
	Total	Executives	Managers	Non-Managers
U.S. & CANADA	0.02	-0.05	0.02	0.03
LATAM	0.09	-0.02	0.01	0.13
EUROPE	0.04	0.07	0.05	0.01
AMEA	0.02	0.15	-0.09	0.08
Total	0.06			

Notes

- Pay equity is calculated based on compa-ratio.
- Close to 0 = there is no gap between the compensation of men and women at that level/region
- > 0 (positive) = men have higher remuneration than women at that level/region
- < 0 (negative) = women have higher remuneration than men (no gap) at that level/region

GRI (2018) 403-9: Incident rates ✓

Hours worked	2021		
	Employees	Contractors	Total: Employees and Contractors
U.S. & CANADA	4,223,533	527,730.13	4,751,263
LATAM	22,263,458	8,791,934	31,055,391
EUROPE	10,293,441	1,407,724	11,701,165
AMEA	10,558,525	1,111,294	11,669,820
Total	47,338,957	11,838,682	59,177,639

Number of lost time incidents (LTI)	2021		
	Employees	Contractors	Total: Employees and Contractors
U.S. & CANADA	17	1	18
LATAM	36	14	50
EUROPE	16	4	20
AMEA	17	2	19
Total	86	21	107

Number of incidents by region (TRI)	2021		
	Employees	Contractors	Total: Employees and Contractors
U.S. & CANADA	46	6	52
LATAM	53	15	68
EUROPE	24	8	32
AMEA	22	6	28
Total	145	35	180

All Orbia incident rates 2021	2021		
	Employees	Contractors	Total: Employees and Contractors
Total Recordable Incident Rate (TRIR)	0.61	0.59	0.61
Lost Time Incident Rate (LTIR)	0.36	0.35	0.36
Fatality rate	0.008	0	0.007



Recordable Incident rates by region (TRIR)	Employees			Contractors			Total: Employees and Contractors		
	2019	2020	2021	2019	2020	2021	2019	2020	2021
U.S. & CANADA	2.03	2.62	2.18	0.00	1.11	2.27	1.85	2.43	2.19
LATAM	0.52	0.35	0.48	0.35	0.46	0.34	0.48	0.38	0.44
EUROPE	0.76	1.00	0.47	2.10	2.61	1.14	0.88	1.16	0.55
AMEA	0.85	0.84	0.42	0.00	0.07	1.08	0.68	0.61	0.48
Total	0.76	0.77	0.61	0.48	0.63	0.59	0.71	0.75	0.61
Lost time incident rates by region (LTIR)	Employees			Contractors			Total: Employees and Contractors		
	2019	2020	2021	2019	2020	2021	2019	2020	2021
U.S. & CANADA	0.37	0.37	0.81	0.00	0.37	0.38	0.34	0.37	0.76
LATAM	0.26	0.22	0.32	0.19	0.35	0.32	0.25	0.25	0.32
EUROPE	0.28	0.49	0.31	0.65	1.14	0.57	0.31	0.55	0.34
AMEA	0.77	0.65	0.32	0.00	0.07	0.36	0.62	0.48	0.33
Total	0.36	0.36	0.36	0.20	0.37	0.35	0.33	0.36	0.36
Fatalities	Employees			Contractors			Total: Employees and Contractors		
	2019	2020	2021	2019	2020	2021	2019	2020	2021
U.S. & CANADA	0	0	0	0	0	0	0	0	0
LATAM	0	1	2	1	0	0	1	1	2
EUROPE	0	0	0	0	0	0	0	0	0
AMEA	0	0	0	0	0	0	0	0	0
Total	0	1	2	1	0	0	1	1	2
Fatality rates	Employees			Contractors			Total: Employees and Contractors		
	2019	2020	2021	2019	2020	2021	2019	2020	2021
U.S. & CANADA	0	0	0	0	0	0	0	0	0
LATAM	0	0.009	0.018	0.027	0	0	0.006	0.007	0.013
EUROPE	0	0	0	0	0	0	0	0	0
AMEA	0	0	0	0	0	0	0	0	0
Total	0	0.005	0.008	0.019	0	0	0.004	0.004	0.007



GRI (2018) 403-10 Work-related ill-health ✓

	Employees		Contractors	
	2020	2021	2020	2021
Fatalities as a result of work related ill health	0	0	0	0
Cases of recordable work related ill health	0	0	Not measured	Not measured

Notes

- Rates are calculated on the basis of 200,000 hours. Data includes all facilities including manufacturing sites, offices, warehouses, distributions centers and R&D labs.
- Current Orbia systems do not allow for a split of recordable injuries to reflect high-consequence injuries, although these are estimated to be less than five. We are reviewing our systems to establish a reporting mechanism for high consequence injuries in the future.
- We do not record work-related ill-health cases for contractors. We are evaluating how we can obtain reliable data for future disclosure.
- Main types of work-related injuries are cuts and lacerations, strain and sprains, crush injuries (fingers) and slips and falls. Main types of work-related ill health recorded are due to general pain - not associated with specific roles.
- We regret to record two employee fatalities in 2021 caused by underground blasting activities at the Las Cuevas mine in Mexico. Full investigation protocols and corrective actions taken, including removal of all underground personnel prior to blast initiation, new blasting planning process, use of electronic blasting initiators, physical barricades and banners in place at each mine level, and redundant physical verification of all underground personnel.
- Work-related hazards are assessed through our regular safety risk assessments, and we have not identified any significant hazards that pose a risk of ill-health. Instances of work-related ill-health reported for 2021 were not identified with specific hazards.
- Work-related hazards that pose a risk of high-consequence injuries are not specifically identified as distinct from other hazards. All work-related hazards are addressed through our safety assessments and risks are minimized through targeted improvements in procedures, protocols, training and communications.
- We provide medical assistance and consultation for employees through our Health and Safety Officers at each site. All employees have access to these services.
- 100% of employees are represented by Health and Safety Committees or equivalent.



UN Global Compact Commitment





COMMUNICATION ON PROGRESS



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

We welcome feedback on its contents.

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

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





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UN CEO Water Mandate





WE SUPPORT CEO WATER MANDATE

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

Water Mandate Principles		Our progress
Element 1	Direct operations	In 2021, we continued our water risk assessment program, covering the full spectrum of watershed risks (physical, regulatory and community-related). Vestolit completed assessments for all resin plants in Mexico and Colombia (representing 42% of Orbia's consumption and located in water stress areas). Based on these: context-based water targets for each of these sites are being analyzed; risk mitigation plans are being developed; alternative water sources are being evaluated; and water risks are being embedded in overall risk processes. For further details, see section: Water
Element 2	Supply chain and watershed management	From 2020, we include water performance as part of our EcoVadis-based screening of suppliers and take a risk-based approach to managing performance, including watershed risks.
Element 3	Collective action	See section on our support for Water Funds in Latin America and other initiatives: Water
Element 4	Public policy	We do not make political contributions. We support public policy on water through our engagement with industry associations and support for Water Funds. See section Water + Thriving Communities
Element 5	Community engagement	See section Thriving Communities for examples of community support and engagement in Water Access, Sanitation and Hygiene (WASH) initiatives.
Element 6	Transparency	We report on our water consumption and other water impacts in line with GRI and SASB standards.



Assurance Statement





Assurance Statement



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Independent assurance report on 2021 Sustainability Report of Orbia Advance Corporation, S.A.B. de C.V. (Orbia)

To Management of Orbia Advance Corporation S.A.B. de C.V.

Assurance report subject matter

We have been engaged by Orbia Advance Corporation S.A.B. de C.V. (the "Company") to perform assurance procedures to provide limited assurance on the 2021 Sustainability Report in accordance with the criteria set out in Global Reporting Initiative ("GRI") Standards and Sustainability Accounting Standards Board ("SASB") disclosures for the year ending December 31, 2021. This assurance engagement was performed by a multidisciplinary team that includes assurance professionals and sustainability specialists.

Criteria

The criteria used by Orbia Advance Corporation S.A.B. de C.V. to prepare the identified sustainability information, which is subject of the limited assurance report, were established considering the terms and conditions set forth in the GRI Standards and SASB disclosures.

Management's responsibility for the 2021 Sustainability Report

Management is responsible for the preparation of the 2021 Sustainability Report in accordance with the criteria established in the GRI Standards and SASB disclosures. Such responsibility includes the design, implementation and maintenance of internal control relevant to the preparation of a 2021 Sustainability Report statement that is free from material errors, whether due to fraud or error.

The 2021 Sustainability Report is subject to inherent uncertainty due to the use of non-financial information which is subject to greater inherent limitations than financial information, given the nature of the methods used to determine, calculate, sample or estimate such information. In the preparation of the 2021 Sustainability Report, Management makes qualitative interpretations about the relevance, materiality and accuracy of the information that are subject to assumptions and judgments.

Our independence and quality control

We have complied with the ethical and independence requirements of the Code of Professional Ethics of the Public Accountant issued by the International Ethics Standard Board for Accountants (IESBA), which is based on the principles of integrity, objectivity, professional competence and due care, confidentiality and professional behavior.

Our Firm applies the International Standard on Quality Control 1 (ISQC 1), and therefore maintains a comprehensive quality control system that includes documented policies and procedures related to compliance with ethical requirements, professional standards and requirements of applicable laws and regulations.

Responsibility of independent assurance practitioner

Our responsibility is to express a limited assurance conclusion about the 2021 Sustainability Report based on the procedures we have performed and the evidence we have obtained. We conducted our limited assurance work in accordance with the "International Standard for Assurance Engagements, Other Than Audits or Reviews of Historical Financial Information" ISAE 3000 - Revised, issued by the International Auditing and Assurance

Standards Board (IAASB). Such standard requires us to plan and conduct our work to obtain limited assurance as to whether the information in the 2021 Sustainability Report is free of material error.

The procedures we conducted were based on our professional judgment and included inquiries, observation of the processes performed, inspection of documentation, analytical procedures, assessment of the adequacy of quantification methods and reporting policies, and agreement or reconciliation with the underlying records.

Given the circumstances of the engagement, we have performed the following procedures:

- a. Through inquiries, we gained an understanding of Orbia's control environment and relevant information systems, but we did not evaluate the design of specific control activities or obtain evidence on their implementation, nor test their operational effectiveness.
- b. Understanding of the processes and tools used to generate, aggregate and report non-financial information through inquiries with those responsible for related processes.
- c. Substantive testing, based on a sample basis, of sustainability information identified by the Company, to determine the indicators subject to limited assurance and verify that the data have been adequately measured, recorded, collected, and reported through:
 - i. Inspection of policies and procedures established by the Company.
 - ii. Inspection of supporting documentation of internal and external sources.
 - iii. Recalculation
 - iv. Comparison of the contents presented by Management with the provisions of the GRI Standards and SASB disclosures.
- d. On-site visits to the following Orbia's locations: Netafim Magal, Israel; Koura St. Gabriel, United States; Alphagary Melton Mowbray, United Kingdom; Vestolit Altamira, Mexico; DuraLine Tlumacov, Czech Republic; Wavin Hardenberg, Netherlands and Wavin Costa Rica, Costa Rica to gather evidence and inspect supporting documentation.
- e. For those indicators of the GRI Standards and SASB disclosures where Orbia S.A. did not report figures quantitatively, only qualitative information was assessed, including procedures, policies, evidence of activities performed, among others.

The following table details the sustainability performance disclosures included in the scope of our work:

GRI disclosure	Description
302-1	Energy consumption within the organization
303-3	Water withdrawal
303-4	Water discharge
305-1	Direct (Scope 1) GHG emissions
305-2	Energy indirect (Scope 2) GHG emissions
305-3	Other indirect (Scope 3) GHG emissions
305-7	Nitrogen oxides (NOX)
305-7	Sulfur oxides (SOX)





Assurance Statement

305-7	Other significant air emissions
306-2	Waste by type and disposal method
307-1	Non-compliance with environmental laws and regulations
403-2	Hazard identification, risk assessment, and incident investigation
403-9	Work-related injuries
403-10	Work-related ill health
404-1	Average hours of training per year per employee
405-1	Diversity of governance bodies and employees
413-1	Operations with local community engagement, impact assessments, and development programs

The following table details the Accounting Metrics within the SASB Chemicals Sustainability Accounting Standard Version 2018-10 standards, included in the scope of our work:

SASB disclosure	Description
RT-CH-000.A	Production by reportable segment
RT-CH-110a.1	Gross global Scope 1 emissions, percentage covered under emissions-limiting regulations
RT-CH-120a.1	Air emissions of the following pollutants: (1) NOX (excluding N2O), (2) SOX, (3) volatile organic compounds (VOCs), and (4) hazardous air pollutants (HAPs)
RT-CH-130a.1	(1) Total energy consumed, (2) percentage grid electricity, (3) percentage renewable, (4) total self-generated energy
RT-CH-140a.1	(1) Total water withdrawn, (2) total water consumed, percentage of each in regions with High or Extremely High Baseline Water Stress
RT-CH-150a.1	Amount of hazardous waste generated, percentage recycled
RT-CH-210a.1	Discussion of engagement processes to manage risks and opportunities associated with community interests
RT-CH-320a.1	(1) Total recordable incident rate (TRIR) and (2) fatality rate for (a) direct employees and (b) contract employees
RT-CH-320a.2	Description of efforts to assess, monitor, and reduce exposure of employees and contract workers to long-term (chronic) health risks
RT-CH-410b.1	(1) Percentage of products that contain Globally Harmonized System of Classification and Labeling of Chemicals (GHS) Category 1 and 2 Health and Environmental Hazardous Substances, (2) percentage of such products that have undergone a hazard assessment
RT-CH-540a.1	Process Safety Incidents Count (PSIC), Process Safety Total Incident Rate (PSTIR), and Process Safety Incident Severity Rate (PSISR)

Our limited assurance engagement was made only with respect to the sustainability performance disclosures included in the tables above, for the year ended December 31, 2021; and we have not performed any procedures with respect to previous years, projections and future targets, or any other items included in the 2021 Sustainability Report for the year ended December 31, 2021 and therefore do not express a conclusion thereon.

A limited assurance engagement involves evaluating the appropriateness, in the circumstances, of the Company's use of the criteria as a basis for the preparation of the sustainability information report; assessing the risks of material errors in sustainability reporting due to fraud or error; responding to risks assessed as necessary in the circumstances; and evaluating the overall presentation of sustainability information report information. The scope of limited assurance engagement is substantially less than that of reasonable assurance engagement in relation to both risk assessment procedures, including an understanding of internal control, as well as procedures performed in response to the risks assessed. Therefore, we do not express a reasonable assurance conclusion as to whether the information in the Company's sustainability information report has been prepared in all material respects, in accordance with the criteria of the GRI Standards and SASB Disclosures.

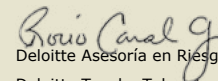
We believe that the evidence we have obtained is sufficient and appropriate to provide a basis for our conclusion.

Conclusion

Based on the work we have done, the procedures we have performed and the evidence we have obtained, nothing has come to our attention that causes us to believe that the GRI and SASB disclosures, as detailed under the "Responsibility of independent assurance practitioner" section of this report above, have not been prepared in all material respects in accordance with the reporting requirements established in the GRI and SASB Standards.

Restriction of use

Our report is issued solely for the purpose set forth in the first paragraph and should not be used for any other purpose or distributed to other parties on its own. This report refers only to the matters mentioned in the preceding sections and to the sustainability information identified and does not extend to any other financial and non-financial information included in Orbia S.A.'s Sustainability Report for the year ended December 31, 2021, nor to its financial statements, taken as a whole.


Rocío Canal Garrido
Deloitte Asesoría en Riesgos, S.C.

Deloitte Touche Tohmatsu Limited affiliated Firm

Rocío Canal Garrido
Partner of Deloitte Asesoría en Riesgos, S.C.
March 4th, 2022



