



Climate Risk Assessment



Supplementary Disclosures

Aligned with the TCFD Recommendations

As part of our journey towards a low-carbon future, in 2019, Orbia completed the essential step of assessing the material impacts of climate risks, following the framework established by the Task Force on Climate-related Financial Disclosures (TCFD), with the support of ERM, an internationally renowned sustainability consulting firm.

The TCFD-aligned analysis covered twelve high priority sites from three of Orbia's Business Groups across six countries. The screening process considered prior risk assessment work done at Orbia combined with the financial exposure of site impacts. In order to complete the assessment, the Orbia team and climate-risk consultants engaged with business leaders and staff at the sites to review threats from climate change and initiate discussion on mitigation opportunities. The key findings of this analysis confirmed that although climate change can pose a risk for Orbia in some areas, the company is positioned to provide climate change adaptation solutions on several fronts.

The assessment was conducted for both 2018 (baseline) and a 2030 projected scenario and covered two risk categories:

Physical risks: Risks associated with direct physical impacts from chronic and more frequent and extreme changes to climate such as extreme heat, water stress, severe weather events (e.g. cyclones) and changes to precipitation levels. In general, the assessment concluded that the twelve sites have some exposure to these risks (see table).

Transition risks: Risks associated with changes to market & technology demands, evolving regulations, and increased stakeholder scrutiny and expectations as the world transitions to a low carbon economy. This analysis demonstrated that our high priority sites are exposed to these risks (see table).

Table: Overview of Climate Risks and Opportunities on Orbia's Value Chain

TYPE	CLIMATE RELATED RISKS	Time horizon	POTENTIAL IMPACT ON BUSINESS						POTENTIAL FINANCIAL IMPACT				POTENTIAL OPPORTUNITIES								
			Inability to do business	Supply chain disruption	Production or capacity disruption	Fines and reputational damages	Increased operating costs	Early write-off of assets	Reduced demand of products	Revenues	Expenditures	Assets & Liabilities	Capital	Increased efficiency	Diversify business activity	Emergence of new technologies	Climate change a adapted products, markets & solutions	Renewable and lower sources of energy	Participation in the carbon market	Resource diversification	
TRANSITIONAL	POLICY AND LEGAL																				
	Increased pricing of GHG emissions	LT					○□				○□										
	Enhanced emissions-reporting obligations	ST-LT*									○□										
	Mandates on and regulation of existing products and services	ST-LT*		□	○□					○□							○□				
	TECHNOLOGY																				
	Substitution of existing products and services with lower emissions options	ST-LT*		○□					○□	○□											
	Costs to transition to lower emissions technology	ST-LT*					□				□		□								
	MARKET																				
	Changing customer behavior of existing products and services with lower emissions options	LT																			
	Uncertainty in market signals	LT																			
	Rising energy costs	LT																			
	Rising water costs	LT																			
	Increased cost of raw materials	LT																			
	REPUTATION																				
Stigmatization of sector	LT	○□						○□	○□	○□											
Increased stakeholder concern or negative stakeholder feedback	ST-LT*																				
ACUTE																					
Increased severity of extreme weather events such as cyclones and floods	LT																				
CHRONIC																					
Changes in precipitation patterns and extreme variability in weather patterns	LT																				
Rising mean temperatures	LT																				

LEGEND	All Orbia	
	●	Fluent (Building and Infrastructure, Data Communication and Precision Agriculture)
	○	Polymer Solutions
	□	Fluor
	LT	Long term (10 yr)
	ST	Short term (1-3 yr)

*ST-LT: In some cases, risks and opportunities for the impacted businesses have already been anticipated and are being investigated. These will require short term to longer term mitigation and action.

The findings of the assessment are in-line with our expectations. Orbia is already experiencing market demands for low-carbon materials. More extensive carbon pricing regulations across the world are anticipated, along with increases in the cost of resources by 2030, notably electricity and water. Orbia acknowledges that these shifting conditions could have an effect on our supply chain and production processes, from a continuity and cost standpoint. Therefore, based on this first TCFD-aligned assessment Orbia is developing specific risk mitigation plans across all its businesses. Initial actions undertaken and in-line with the four pillars of the TCFD framework are as follows:

Governance: The Board's Corporate Practices and Sustainability Committee has oversight on Orbia's overall Sustainability strategy, including climate issues. A portion of the CEO and Executive Leadership Team's short-term incentive has been tied to improving performance of the metrics on our ImpactMark, including reducing greenhouse gas (GHG) emissions and waste generated.

Strategy: Orbia is a community of companies bound together by a shared purpose: to advance life around the world. Orbia's business groups have a collective focus on ensuring food security, reducing water scarcity, reinventing the future of cities and homes, connecting communities to data and information services, and expanding access to health and well-being through providing advanced materials, specialty products and innovative, human-centered solutions.

Climate change is at the core of these challenges as Orbia transforms into a future-fit and resilient business. Each of our business groups have taken on these challenges and are regularly developing and adapting their strategy to ensure Orbia's products and solutions address risks and opportunities of climate change. Examples of short-to-medium-term opportunities that Orbia is pursuing are:

- Developing low global warming potential propellants and refrigerants.
- Strengthening our Climate Resilience offering for cities (including storm water management and water reuse systems, Treebunkers, PlasticRoad, and green roofs).
- Growing our range of Building Performance systems (including low-energy heating and cooling, ventilation, humidity, air composition, and air quality).

- Investing in improving battery electrolyte performance; expanding our capability to produce fluorinated battery components; and working with partners to enable the recovery and recyclability of battery components including fluorine and lithium.
- Expanding the use of precision irrigation further, in particular in water-stressed areas.

Risk Management: In addition to the findings of the TCFD-aligned risk assessment, Orbia's Enterprise Risk Management will incorporate climate risks into its regular process. Details on mitigation plans, which include transitioning to renewable energies, will be disclosed in future reports.

Metrics & Targets: Orbia has made a commitment to achieve Net Zero emissions by 2050, and as part of that, setting science-based targets, which will be finalized and disclosed in 2021. We currently have a robust Scope 1 & 2 GHG emissions inventory and we are in the process of developing a process to evaluate, validate and track our Scope 3 GHG emissions. Performance against GHG emissions KPIs is tracked on a monthly basis and is reported quarterly to Orbia's leadership.

For more details on some of the opportunities mentioned above and Orbia's historical and most recent climate-related performance, please see our **2019 Sustainability Report** or visit www.orbia.com/sustainability