

# Committed Towards A Sustainable Future



# IVL's 10-Year Sustainability Journey

In 2020, IVL celebrated the 10-year mark of our sustainability journey and reporting. Over the past decade, we have expanded our sustainability initiatives supporting our business purpose through the 3Ps – People, Planet and Profit. We are seizing important opportunities by focusing on our sustainability strategy and reimagining a healthier future. Our 2025 Sustainability Ambitions are rapidly moving us towards a circular economy and carbon neutrality as we build a more sustainable new normal and take part in contributing to the UN SDGs.

In the decade ahead, we will accelerate sustainable solutions to the world's biggest challenges and facilitate further dialogue to shape an agenda for a better world and more sustainable future.

Our collective efforts have demonstrated important progress in the last 10 years:

- 10% Reduction in GHG Intensity
- 4% Reduction in Energy Intensity
- 7% Reduction in Water Intensity
- Total waste diverted from landfill increased from 48% to 84%
- Post-Consumer PET Bottles Recycled increased 600%
- Completed Thailand's first ever cross-border Sustainability-Linked Ninja Loan worth US\$225 million.
- Has been continued a member in Dow Jones Sustainability Indices (DJSI) for 4 consecutive years.

## Our Sustainability Platform



For More Information

Member of  
**Dow Jones Sustainability Indices**  
Powered by the S&P Global CSA

**Sustainability Award**  
Silver Class 2021  
**S&P Global**

- Indorama Ventures was **recognized in SAM's Sustainability Yearbook 2021 with the Silver Class distinction and was listed in the Dow Jones Sustainability Indices (DJSI) -World and Emerging Markets.**
- We were **ranked third** among 115 of the world's leading sustainable chemical companies.



- In 2020, Indorama Ventures **remained at the Gold Level**, recognized as one of the top 2% of companies (98<sup>th</sup> percentile) rated by EcoVadis in the manufacture of basic chemicals.



- Indorama Ventures was awarded "**Best Regional Loan**" in the manufacturing sector for its US\$300 million Blue Loan – **the first of its kind granted to a plastic resin manufacturer.**

For More Information

**MSCI**

- Indorama Ventures **improved its ESG rating** from BB to BBB in 2020.

**CDP**  
DISCLOSURE INSIGHT ACTION

- Indorama Ventures **achieved a B Rating** in the **CDP's Climate Change Assessment** in 2020.

**Sustainalytics**  
ESG INDUSTRY TOP RATED

for 2<sup>nd</sup> consecutive year



- Sustainalytics assessed IVL as a leader in the chemicals industry placing the company 7<sup>th</sup> out of 202 companies, as per their report in January 2021.**



**FTSE4Good**

- Indorama Ventures **remained a constituent of the FTSE4Good Index Series** following the **October 2020 index review**, achieving the **top rank among chemical companies globally (scoring 4.6 out of 5).**
- We received a **Best ESG score** standing at the **top of the group with a 100<sup>th</sup> percentile rank.**

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# Group CEO Message

Our efforts in embedding sustainability throughout IVL for over a decade has enabled us to achieve responsible growth while ensuring business resilience through unprecedented times. The COVID-19 pandemic has had an impact globally over the past year, testing our ability at all levels to manage the well-being of our employees and the communities around us. We are gratified by the responsible actions of all those across our organization and the seamless alignment in adjusting to rapid changes in the working ecosystem. We have continued to create value for stakeholders across our value chain despite these challenges.

## Ensuring Health and Safety during COVID

Our employees' well-being has always been a key driver in our sustainability efforts. We focused first and foremost on ensuring their safety while maintaining business continuity and actively supporting our communities as they adapted to the pressures of the COVID-19. We quickly mobilized our efforts worldwide by creating a Global Emergency Management Team (GEMT) and empowered our local leadership to ensure employee safety and oversee preventive measures at our sites, including increased health and security protocols and proper protection and sanitation. We acted swiftly in following and implementing the guidelines and regulatory requirements of local authorities and adopted the necessary workplace controls.

As some countries face second and third waves, or localized outbreaks, we continue to remain vigilant and ready to respond as circumstances change. Our head office and subsidiaries contributed a combination of monetary donations, medical equipment, medicines, PPE and hygiene and food products to employees, hospitals, institutes and community groups. Our commitment to being a responsible industry leader remains stronger than ever in these challenging times.

## Business Resilience and Portfolio Expansion

As the COVID-19 pandemic continues to create global supply chain disruptions, we remain steadfast in our values and see change as an opportunity. Our continued efforts in sustainability, particularly in areas of innovation and strong stakeholder relationships with our industry partners has enabled us to be operationally resilient throughout this crisis. Our significant investment in recycling businesses demonstrates the growth of our recycling portfolio resulting in minimal environmental impact.

In line with our strategy, in January 2020 we acquired Huntsman's world-class integrated oxides and derivatives businesses. With a cash value of US\$2 billion, this represents the largest and most ambitious acquisition ever by IVL. It strengthens our R&D, technical capabilities, international footprint through a flagship site on the US Gulf Coast, Chocolate Bayou and Dayton in Texas, Ankleshwar in India and Botany in Australia. By combining IVL and Huntsman's experience, our access to market, technical and intellectual properties, we will also lower corporate overheads and consolidate supply chain and procurement, boosting EBITDA contribution by US\$40 million by 2021.

## Sustainable Finance

We continue to successfully secure financing for our sustainability-linked initiatives. In 2020, we received two significant environmental, social and governance (ESG) linked loans, of which the commercial terms are linked to improvements in IVL's ESG performance. We successfully completed Thailand's first ever cross-border Sustainability-Linked Ninja Loan worth US\$225 million from 16 Japan-based banks and institutions. This is structured in response to our sustainability performance, and interest is adjusted based on our ESG score. In November 2020, IVL also received the International Finance Corporation (IFC)'s

first-ever blue loan to a global plastic manufacturer addressing marine plastic pollution. This landmark US\$300 million financing package, comprising a US\$150 million senior loan from IFC and parallel loans of US\$150 million from the Asian Development Bank (ADB) and Deutsche Investitions- und Entwicklungsgesellschaft (DEG), will help increase our recycling capacity in Thailand, Indonesia, the Philippines, India and Brazil. Through this financial capacity, we are empowered to address the issue of plastic waste management in our environment, support our global recycling commitments and improve the socioeconomic development of the communities surrounding our operations by creating jobs.

## The Value of our Transformation

Our journey to continued excellence is never-ending – even during this pandemic. While I have previously noted that our transformation is to create value, it is also a mean to accelerate our decision-making capacity and execution within the company. However, this transformation effort is different from previous initiatives due to its comprehensive nature. We are positioning the company towards new full potential with an ambition that incorporates all levers of value creation. IVL's Olympus project, a cost transformation initiative, including deployment of a global business solutions throughout finance, operations, procurement, supply chain, sales and HR Functions, is expected to deliver savings of approximately US\$610 million by 2023. We must continue to put integrated efforts across businesses and functions as we lead our transformation from the front and sustain a new way of working. These actions are being taken by our team through greater empowerment and accountability, together with a more refined and best-in-class approach as we continue to grow in size.

In 2020, IVL was recognized by the International Data Corporation (IDC) Thailand and I was acknowledged as the "2020 DX CEO" for Thailand in 2020's IDC Digital Transformation Awards (DX Awards). This recognition further strengthens our motivation to forge global collaborations in the future.

## Climate-focused in Action

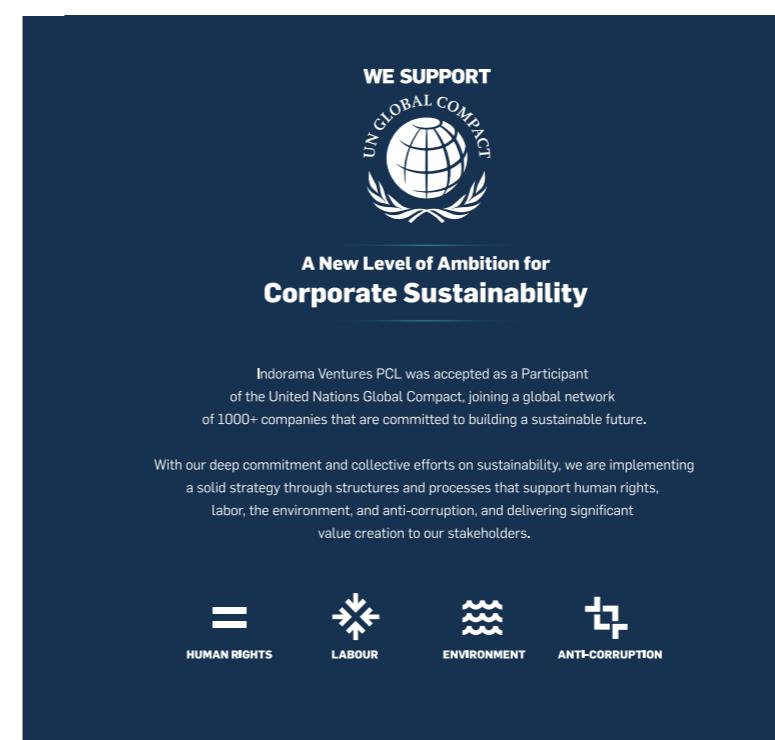
Our efforts in mitigating climate change are driven by our Climate Change Strategy 2025 which focuses on the four key pillars of preserving natural resources, investing in the circular economy, building resilience to climate change and driving continuous improvements in our product and process efficiencies. This includes ensuring that we work to minimize energy intensity and GHG emissions, despite continuing to grow. One critical area is responsible water management. We seek to reduce the use of energy and freshwater in our operations and remain focused on our 2025 ambition.

IVL joined the 50 Climate Leaders campaign in 2020, which includes the Task Force on Climate-related Financial Disclosures (TCFD) and the United Nations Global Compact (UNGC) among others, to showcase our collective work as part of the international business community and to demonstrate our leadership and determination in taking effective action against climate change.

## Focusing on our Full Potential

As a leadership team, we have come together as one voice on our transformation - to which we are all committed. We remain focused on incorporating all levers of value creation and will ensure that our portfolio is integrated and responsibly serves the end use of consumers' demands while keeping in mind the importance and commitment to the circular economy.

In 2020, we continued our progress in implementing our Leadership Curriculum program targeted at empowering leaders within all levels of our organization with the necessary skills and tools to ensure a sustainable business performance. In 2020, a mix of e-learning, virtual training, and in-person training were deployed globally. A total of 200 leaders completed the Leadership training program and approximately 1,000 leaders were trained via e-learning in the fundamentals of IVL Leadership Skills. We also customized the Mentoring Program for junior and middle management participants, while Executive Coaching was initiated with two leaders to support targeted leadership development. We will continue to deploy and expand the curriculum to achieve IVL's leadership development objectives.



## Recognitions to Reflect Our Sustainability Leadership

The dedication of IVL's team has once again been reflected in the numerous recognitions received over the past year. We are honored to have been listed in the DJSI World Index for the second consecutive year and the DJSI Emerging Markets Index for the fourth consecutive year with the 2020 results putting IVL in the top three among the world's leading chemical companies.

IVL has been a UN Global Compact participant since 2020 and continues to actively support its ten principles. IVL participated in the "Thailand Business Leadership for SDGs" organized by the Global Compact Network Thailand (GCNT) Forum 2020 at the UN Conference Center in Bangkok. This conference helped to convey how we are operating our business through a circular economy concept with a long-term focus. During the conference, IVL pledged THB 1 billion in the event towards projects and initiatives that directly support achieving the United Nations Sustainable Development Goals (UN SDGs) and committed to embedding them in our core business strategies and activities.

## Creating a Sustainable Future

As we move into the next decade, we remain committed in creating value for the 3Ps - People, Planet and Prosperity. Our journey requires that we consistently focus on our five key priorities of Cost Transformation, Full Asset Potential, Adjacency Growth, Recycling Leadership, and Leadership Development.

We have a responsibility towards our key stakeholder groups including 25,000 employees and their families, as well as our customers and industry partners. We endeavor to create positive value for the communities surrounding our operations. As our responsibility to our stakeholders increases in tandem with our organizational growth, we are cognizant of the need to be transparent. Our deeply entrenched "Winning" spirit drives our perseverance and has enabled IVL to deliver progress even in times of great uncertainty. Our sustainability culture from our spirit within IVL is the success factor to create a better tomorrow.

We remain on alert and vigilant as COVID-19 remains an ever-present threat into 2021. However, the way in which we navigated this crisis gives us confidence that we will emerge from it more resilient and stronger than ever, with even more innovative solutions for plastic waste and focused on increasing our sustainable footprint across all geographies.

Finally, we would like to acknowledge our employees, stakeholders, business partners and associates for their continued support in making 2020 a year of accomplishment under such challenging circumstances.

Aloke Lohia

Group Chief Executive Officer



# Chief Strategy Officer Message

We embraced sustainability early in the last decade and have prepared ourselves for the next decade as the world is placing sustainability at the forefront of all our actions and behaviors. We are honored to have been listed in the DJSI World Index for the second consecutive year and the DJSI Emerging Markets Index for the fourth consecutive year as a result of the concerted efforts of IVL global team and with the active support of all of our stakeholders. We are beginning to see a culture of sustainability taking shape across the organization and a mindset that helps strike a balance between economic goals and responsibility towards our planet for the coming generations.

This year, the pandemic has forced the world to pause and reflect on our resource heavy consumption and behaviors. However, we are seeing increased awareness as consumers are demanding concrete actions for a sustainable future, and all stakeholders including corporates, communities, policymakers, research institutes and universities among others, are converging on a common objective – sustainable living.

## Contributing to a cleaner future

It is encouraging to see that some corporates are proactively setting internal sustainability targets ahead of regulatory compliance requirements. Besides individual actions, collaborative alliances are emerging which help drive awareness and build momentum to achieving targets within timelines. At IVL, we have set our targets to reduce GHG emissions by 10%, reduce water consumption by 10%, reduction in energy use by 5%, and increase renewable electricity use by 10% (of our overall energy consumption) by 2025. We are also pursuing setting up Science Based Targets (SBTs). We continuously look for new tools and technologies which can be embraced by our businesses, to help standardize our business processes, approach carbon neutrality, and optimize resource use with minimal impact to the environment.

## Strengthening recycling partnerships

We believe that a collaborative approach can have a wider impact and are therefore working closely with industry associations such as NAPCOR, the Ellen MacArthur Foundation, as well as recycling collaborations with our key customers. We are also working with several technology providers, our feedstock suppliers and customers to continuously improve the quality of our products and services including advanced recycling solutions. We remain focused on developing an all-inclusive circular economy in part by educating students, teachers, communities and other enablers to positively influence consumer behavior in support of a circular economy ecosystem.

Our commitment to recycling since the start of 2011 reached an important milestone in March of 2020 as we recycled our 50 billionth PET bottle. We further pledged to invest US\$1.5 billion to increase our recycling capacity to 750,000 tons of post-consumer bottles and 50 billion bottles per year by 2025.

## Pioneering green finance

Financial institutions and investors are increasingly viewing corporations through a sustainability lens while investing, approving, and extending financial support. We have secured approximately US\$1 billion in sustainability linked loans from various banks and financial institutions, and a portion of these funds are considered "Blue Loan" to address plastic waste. Sustainability linked loans are tied to a company's ESG rating, while improvements in ESG ratings enable more sustainable finance at favorable lending terms. We have more sustainability linked loans in the pipeline from various banks and financial institutions.

## Sustainable and future ready

These actions are paving the way towards creating a sustainable culture in our organization while serving the needs of consumers and creating new engines of growth for IVL, supported by our enterprise-wide transformation initiatives and enabling functions.

Our vision, efforts and actions on sustainability have started setting the direction for a future ready organization wherein sustainability has become our competitive advantage. This year, we created 16 application-focused and fully empowered businesses in three segments. And in order to help them in their growth, we created six enabling functions namely, Sustainability, Environment, Health and Safety, Indorama Ventures Excellence, Digital, Business Continuity and Communications, which are directed by experienced professionals identified within the organization and recruited from the industry. We are separately investing in the necessary IT infrastructure to provide the standardized data and capabilities required of a future ready organization.

For continuous improvements, the enabling functions and business units continue to create a pipeline of ideas to improve the efficiency and effectiveness of the enterprise. We have put in place managing processes for change in a way where solutions are embedded in our culture through training, conferences, communications, digital support, safety of people, and plants to ensure business continuity, care for the environment, responsibility to society and governance for discipline and compliance.

Our response to COVID-19 underscores our resilience, adoption of technology, focus on business continuity, skills development and internal-external communications, which collectively helped us in implementing our transformational and growth projects while sustaining outstanding business performance despite the pandemic.

## The enabling functions approach to assist the business units and journey so far is explained in the following paragraphs.

### Digital-enabled operations

Digital tools are changing the way we conduct our business and interface with the internal and external environments. We accelerated our digital journey in the past few years and have used digital tools at various sites to improve our efficiency and effectiveness. To promote a digital culture across the organization, this year, we established a digital academy to provide training on various digital tools and also organized digital conferences and created digital lighthouses. The digital team is collaborating with other enabling functions in addressing capability gaps and aligning their KPIs with business KPIs to target a common goal of digitization at all levels in the organization.

### Environment, Health and Safety

We continue to attach our highest importance to environment, health and safety. We have created a central EHS enabling function with responsibility to standardize policies and common guidelines on environmental impacts, the safety of employees and

assets and to ensure business continuity. The EHS team's KPIs are closely aligned with the businesses. An enterprise-wide EHS specialized management software was introduced for the smooth and seamless flow of data across the organization and to take necessary actions at the right time. The EHS function is bringing synergies with other enabling functions, particularly with the Sustainability and Business Continuity functions, as both are helping the organization in achieving its sustainability goals through a culture of continuous improvements.

### Indorama Ventures Excellence

We have been deploying various tools and continuous improvement processes over the years and decided to embrace the Indorama Ventures Excellence (IVEX) program across the organization. The IVEX team, in collaboration with the Digital team, has identified opportunities which will help the businesses improve process efficiencies along with resource optimization. To ensure the effectiveness and efficiency of solutions, ensuring they do not diminish over time due to the dynamic nature of the enterprise, IVEX aims to sustain positive change by creating a culture backed by intensive training and skills enhancements through a continuous increase in the number of green belts, black belts and master black belts across the organization.

We see the convergence of enabling functions as a single body and are working together with business units to identify any gaps and find appropriate and sustainable solutions. The primary purpose of the enabling functions is to build an ecosystem to sustain a culture focused on continuous improvements throughout the organization. Positive outcomes and achievements depend on the success of the respective business units, therefore, the alignment of KPIs with business units is imperative. We are shaping up the enabling functions, keeping in mind the short-term and long-term targets of the business units.

On the sustainability front, we believe in collaborating with other like-minded industry players to leverage technologies and experience in carbon neutrality, clean energy and positive impacts on the environment. The sustainable values resulting from IVL's initiatives and actions are a reflection of our ongoing efforts in support of the UN Sustainable Development Goals (UN SDGs) and the UN Global Compact principles. We are also working on evolving our EHS, CSR and Sustainability functions into a broader Environmental, Social and Governance initiative. Our aim is to incorporate innovation as part of our sustainability/ ESG focus which will provide us with a competitive advantage in addition to contributing positively to our operational performance.

I would like to thank all of IVL's employees, the leadership team, and our partners who are helping us in managing un-interrupted operations during this ongoing pandemic, and I wish you all the very best and a safe new year.



**Uday Paul Singh Gill**  
Chief Strategy Officer



# Chief Sustainability Officer Message

## Ten Years of Sustainability – Past, Current and Future

IVL is continuing to work towards a sustainable future through our recycling commitment and by moving towards circularity in line with our vision "to be a world-class sustainable chemical company making great products for society." Our collective efforts have shown important progress in the last 10 years:

- 10% Reduction in GHG intensity
- 4% Reduction in Energy intensity
- 7% Reduction in Water intensity
- Total waste diverted from landfill increased from 48% to 84%
- 600% increase in post-consumer PET bottle recycling

Over the last decade, IVL has built a solid foundation for sustainability through strategic actions. These include adopting international standards and guidelines to mitigate the risk of climate change and incorporating ESG factors across our operations. We are actively engaged with stakeholders to further strengthen our approach by deploying relevant tools such as the Materiality Assessment, Customer Satisfaction Survey, Life Cycle Assessment, GHG Accounting and public sustainability disclosures to build trust and demonstrate our transparency. Our participation in corporate sustainability assessments through various organizations have contributed to continued improvements our operations and our customer offering.

This report, marking ten years of sustainability-linked disclosures, has been prepared with guidance from the International Integrated Reporting Council (IIRC)'s International Integrated Reporting <IR> Framework 2021. By structuring our report based on this framework, we endeavor to create a clear picture on how our organization creates value for our stakeholders through our short, medium and long-term strategies.

2020 was a particularly challenging year; impacts were felt at the individual, community, business, national and international level. During this time, we undertook various company-wide initiatives across our operations, systems and teams which have positioned us for continued growth. We have reorganized the business and strengthened our leadership teams. Our 2021-2023 strategy, based on investing in our people, recycling leadership, refreshing of segment-specific strategies and business transformation enable us to maintain strong operating cash flows and achieve 2025 sustainability ambitions. Despite the challenges that remain, we will leverage this strategy to foresee, adapt, and respond to the global climate change accordingly.

The decade ahead will be even more important as we establish a new sustainable ecosystem focused on recycling and the circular economy, bringing together all players in the value chain. IVL's ambition is to be a thought leader in the industry, and we will achieve this by meeting our recycling commitments, creating products, innovations and solutions for the new normal, continuing our engagement with stakeholders for shared value creation, and transitioning to a carbon neutral business.

## Ambitions Towards Carbon Neutrality

Our 2025 Sustainability Ambitions serve as a guide to actively reduce our carbon footprint and reduce our climate change impact. We are continuing our efforts to reach our carbon reduction targets including GHG (Scope 1&2) intensity reduction of 10% by 2025 (from 2020 base year), increase the usage of renewable electricity 10% by 2025 and 25% by 2030. We are also pursuing setting up Science-Based Targets (SBTs). Multiple efforts and initiatives to reduce our carbon footprint are already underway.

We seek to drive efficiencies throughout our supply chain and will continue to actively identify and implement decarbonization solutions.

We have also demonstrated our leadership towards climate action by becoming the first chemical company in Thailand and second company in Southeast Asia to support the Task Force on Climate-related Financial Disclosures (TCFD's) recommendations. In this report, we have further mapped out our current focus as well as future focus towards mitigating climate change. To achieve SBTs and the vision of becoming the carbon neutral, we are assessing opportunities to improve efficiency in our operations, renewable electricity, and future technologies.

## Circular Economy Thought Leadership

IVL is fully committed to addressing the issue of plastic waste and enhancing the circularity of PET and continues to make important progress. Since 2011 to the end of 2020, we have recycled 58 billion PET bottles. IVL is accelerating efforts to achieving our pledge of recycling at least 50 billion bottles per year, and investing US\$1.5 billion by 2025.

In 2020, we acquired new recycling facilities in Brazil and Poland, and expanded in Verdun, France.

We have also partnered with Coca-Cola Beverages Philippines to establish a new, state of the art PETValue recycling facility in the Philippines capable of recycling 30,000 MT of post-consumer PET bottles per year towards our overall goal of recycling 50 billion bottles per year by 2025 which resonates with our local communities, suppliers and customers. Our existing facilities successfully recycled over 222,288 tons of post-consumer PET bottles equivalent to 10.1 billion bottles throughout 2020 and we are well on target to achieve our 2025 ambitions.

We are members of industry associations such as NAPCOR, Petcore Europe, Ellen MacArthur, GPAP and the Recycling Partnership to promote PET and recycling. We formed partnerships with organizations including Less Plastic Thailand, working with them to make PPE suits for medical personnel, and the Trash Lucky initiative, which encourages disadvantaged communities to learn about the benefits of recycling.

Last November, I took part in the World Bank's "Marine Plastics in East Asia and the Pacific: Crisis and Opportunity" event detailing our recycling commitment and sustainable business focus as part of the solution to this pressing development challenge in the region. I specified that our commercial success is tied to environmental responsibility, that there is a market for sustainability and that consumers want sustainable packaging – and confirmed we are leading on this front. We are honored to receive the first blue loan from IFC. This drives improvements in waste collection systems, meaning less waste and cleaner oceans by recycling post-consumer PET bottles into new bottles. In this way, we give waste an economic value.

## Sustainable Organization Growth

We have been able to sustainably run our global businesses despite the pandemic. Our new Integrated Oxides and Derivatives (IOD) business acquisition and Fibers portfolio strengthens our businesses and provides diversification and integration along the entire value chain. IVL makes products that meet daily consumer needs and that are resilient to external threats. It is crucial that we continue to work together and focus on driving sustained innovations and successes.

In addition, Wellman International, our subsidiary, joined forces with the HealthGuard® Corporation to develop a range of antiviral, antimicrobial and antibacterial polyester staple fibers which mitigate the transmission of COVID-19. We are, therefore,

looking to find potential sustainable solutions in this and other areas with a longer payback horizon and which offer even more potential.

We closely monitor the sourcing and use of chemicals and other substances necessary in our operations. We comply with the European Chemicals Agency (ECHA)'s list of substances of very high concern (SVHC) and continue to seek solutions that avoid using chemicals on the SIN (Substitute It Now!) list. In 2020, we replaced cobalt acetate color control with toners in our Auriga facility product portfolio in South Carolina, USA, thus enabling us to provide our customers with a more cost-efficient product while ensuring the safety of end consumers. As a result, our product safety management has helped us achieve the second with a B grade in ChemScore's ranking of the world's largest chemical companies in 2020.

## Committing to A Sustainable Future

Our commitment to sustainability remains steadfast through the global pandemic. Adopting and integrating the UN SDGs and guiding principles of the UN Global Compact (UNGC) into our sustainability strategy will ensure we operate responsibly and with a sustainability mindset. To further advance our position, we became a "Participant" member of the UNGC, demonstrating our commitment to advancing ethical business practices across our value chain to promote human and labor rights, environmental protection, and anti-corruption. We are committed towards implementing the ten principles of the UNGC and are in the process of producing our first Communication on Progress report by June 2021.

We continue to be recognized by organizations such as DJSI as well as MSCI and improved our position last year with our top-ranked inclusion in the FTSE4Good index. Receiving the Gold recognition, we were recognized as one of the top 2% of companies in the manufacture of basic chemicals from EcoVadis underscoring the

results of our combined efforts. We also received a suite of prestigious awards such as the Best Polymer Producers Awards for Europe 2020 in the PET category and the Sustainable Business Awards, Thailand – a testament to how we are pushing the envelope on sustainability and innovation.

As COVID-19 continues to impact the world, we are reminded of the ongoing risks and vulnerabilities. It is, therefore, crucial for us to remain vigilant and prepared. The well-being of our employees, customers, suppliers and communities will continue to be at the forefront of our fight against the pandemic. We continue to monitor the COVID-19 infection rates across our operations and remain hopeful that as vaccinations progress, we can ensure the safety of our key stakeholder groups.

We are thankful for the time and effort being put in by the IVL team and all our partners even during this unprecedented period, as we demonstrate our capacity for change and continue to pursue our ambitious efforts in making sustainability front and center in what we do.

**Yash Lohia**  
Chief Sustainability Officer

# IVL's Sustainable Value Creation for Stakeholders



## Overview of IVL

Underpinned by a clear strategy and visionary leadership, we deliver strong profits year-on-year, continue to improve our production efficiency and demonstrate our commitment to our workforce and the environment. The diversity of our end-use markets and our strong supply chains enables us to remain versatile and robust in difficult times.

In addition to the leading management, and the delivery and sustainability of our own operations, we continue to promote and support sustainability initiatives across our value chain. This means increasing our use of renewable energy, managing our environmental impacts, adhering to the principles of World-Class Manufacturing and meeting ambitious targets in PET recycling.

## Value Chain/Business Units

At the end of 2020, we had 123 operating sites in six continents to serve our customers in various applications and end markets in three key business segments: Integrated Oxides and Derivatives (IOD), Combined PET and Fibers. Additionally, with a total of 15 recycling facilities worldwide, we are a global leader in recycling and Europe's largest PET recycler. PET offers important advantages to the circular economy due to its energy-efficiency, 100% recyclability and high degree of raw material dependence can be reduced through recycling.

For More Information

## IVL Operations

As of 31 December 2020

**123\***  
Sites

**6**  
Continents

**33**  
Countries

**15**  
Recycling facilities

\* The Sustainability Report 2020 consists of data from 107 sites. Further details are provided under [About This Report](#) in the full Sustainability Report.



For More Information

## Business Segments



Combined PET



Fibers



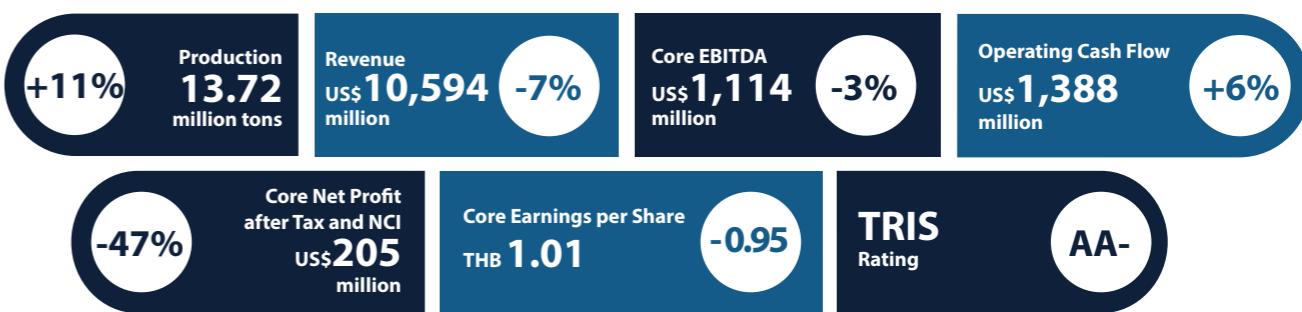
Integrated Oxides and Derivatives

## Financial Performance

IVL recorded organic volume growth of 5% and total volume growth of 18% despite the COVID-19 pandemic. This success was driven in part by our effective leadership team and focus on sustainability. 2020 presented a challenging year for IVL on account of the COVID pandemic, as well as the crude oil price collapse. Combined with a chain of natural disasters, the major impacts were the following:

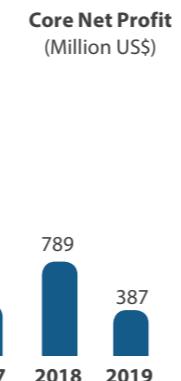
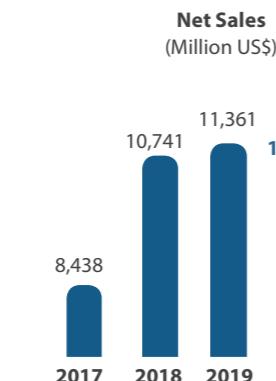
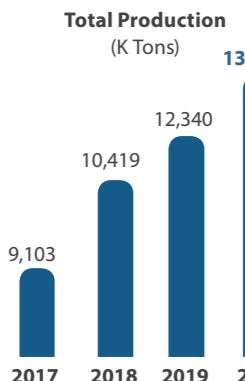
- COVID related reduction in polyester fiber demand of 9% from 2019, resulting in 47% drop in PX/PTA spreads across the industry and 20% drop in MEG spreads
- Drop in crude oil price to US\$42/bbl resulted in a 37% decline of the shale gas advantage from 2019, having a material impact on our MTBE and MEG businesses
- COVID lock down and uncertainty caused less light vehicle sales globally, impacting our Mobility fibers group by 10% lower sales volumes compared with 2019

Our full financial performance is disclosed in our [Annual Report 2020](#) and key financial figures are summarized as follows:



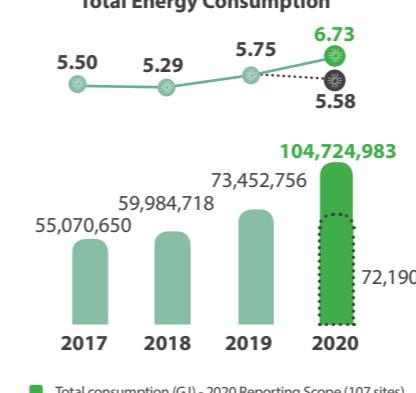
# Key Highlights 2020

## ECONOMIC PERFORMANCE



## ENVIRONMENTAL PERFORMANCE

### Total Energy Consumption



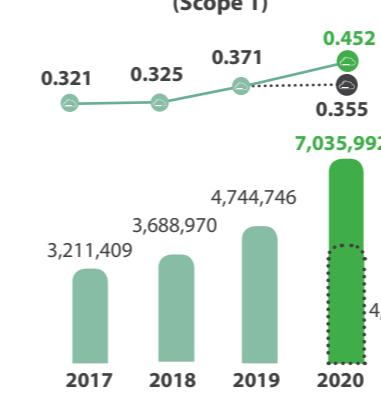
■ Total consumption (GJ) - 2020 Reporting Scope (107 sites)  
■ Total consumption (GJ) - 2019 Reporting Scope (94 sites)  
● Intensity (GJ / ton of production) - 2020 Reporting Scope (107 sites)  
● Intensity (GJ / ton of production) - 2019 Reporting Scope (94 sites)

### Total Renewable Energy Consumption



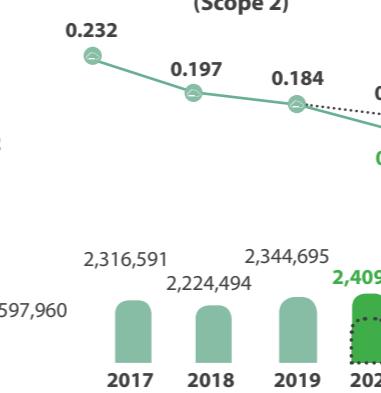
■ Total Renewable Biogas (GJ)  
■ Total Renewable Biomass (GJ)  
■ Total Renewable Electricity (GJ)

### Direct GHG Emissions (Scope 1)



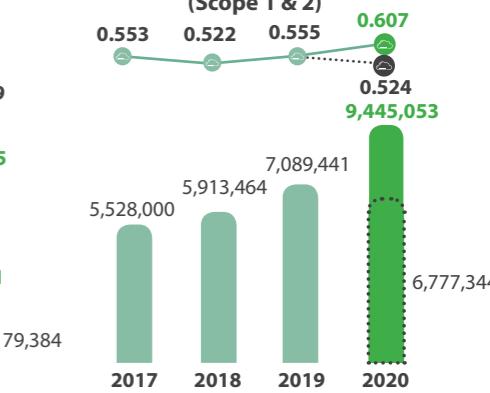
■ GHG emissions (tCO<sub>2</sub>e) - 2020 Reporting Scope (107 sites)  
■ GHG emissions (tCO<sub>2</sub>e) - 2019 Reporting Scope (94 sites)  
● Intensity (tCO<sub>2</sub>e / ton of production) - 2020 Reporting Scope (107 sites)  
● Intensity (tCO<sub>2</sub>e / ton of production) - 2019 Reporting Scope (94 sites)

### Indirect GHG Emissions (Scope 2)

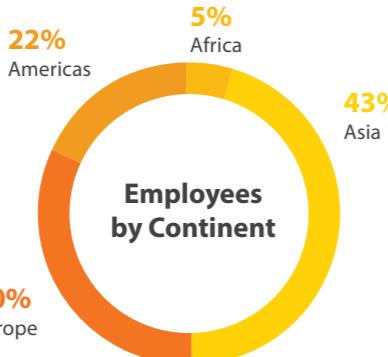


■ GHG emissions (tCO<sub>2</sub>e) - 2020 Reporting Scope (107 sites)  
■ GHG emissions (tCO<sub>2</sub>e) - 2019 Reporting Scope (94 sites)  
● Intensity (tCO<sub>2</sub>e / ton of production) - 2020 Reporting Scope (107 sites)  
● Intensity (tCO<sub>2</sub>e / ton of production) - 2019 Reporting Scope (94 sites)

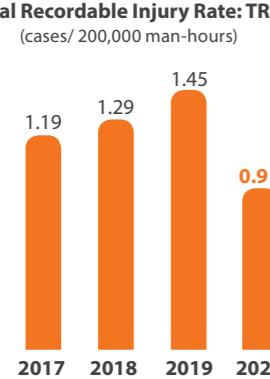
### Total GHG Emissions (Scope 1 & 2)



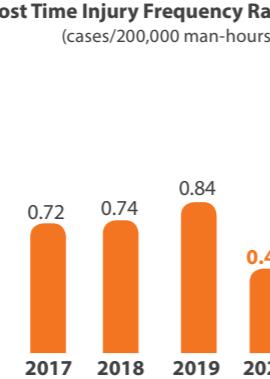
## SOCIAL PERFORMANCE



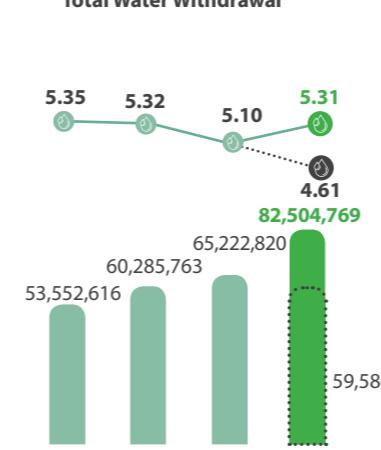
### Total Recordable Injury Rate: TRIR



### Lost Time Injury Frequency Rate: LTIFR

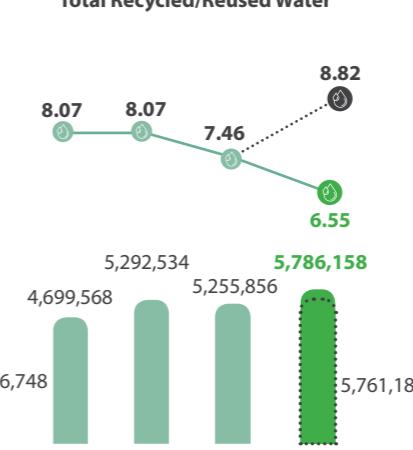


### Total Water Withdrawal



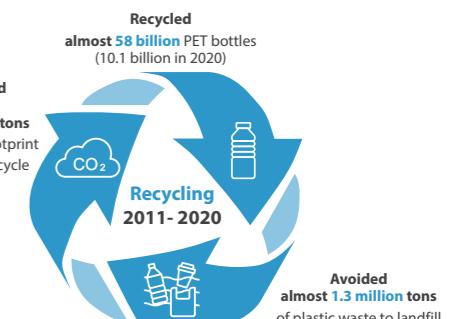
■ Total water withdrawal (m<sup>3</sup>) - 2020 Reporting Scope (107 sites)  
■ Total water withdrawal (m<sup>3</sup>) - 2019 Reporting Scope (94 sites)  
● Intensity (m<sup>3</sup> / ton of production) - 2020 Reporting Scope (107 sites)  
● Intensity (m<sup>3</sup> / ton of production) - 2019 Reporting Scope (94 sites)

### Total Recycled/Reused Water

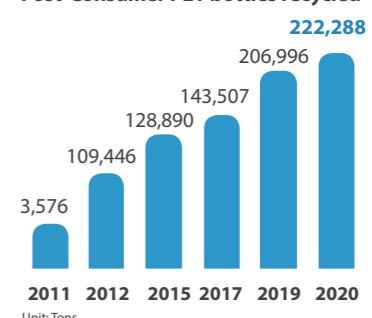


■ Total volume of recycled/reused water (m<sup>3</sup>) - 2020 Reporting Scope (107 sites)  
■ Total volume of recycled/reused water (m<sup>3</sup>) - 2019 Reporting Scope (94 sites)  
● Recycled/Reused water (%) - 2020 Reporting Scope (107 sites)  
● Recycled/Reused water (%) - 2019 Reporting Scope (94 sites)

## RECYCLING



### Post-Consumer PET bottles recycled



# Our Approach to Sustainability

Our overall business strategy is underpinned by a commitment to sustainability. This means integrating long-term environmental and social perspectives into our decision-making, and leveraging economic, environmental and social risks, obligations, and opportunities.

Understanding the sustainability needs of our stakeholders is integral to our success. This is reflected in our rigorous and best-in-class approach that we take to stakeholder dialogues and in defining material issues. In doing so, we can continue to innovate, anticipate

## Sustainability Strategy

Our Sustainability Strategy focuses on the three core elements necessary to meet our 2025 targets – protecting the environment through responsible operations, empowering our people and transferring value to our stakeholders and driving economic prosperity ethically and innovatively.

### Environment - Responsible Operations

Our operations and products are focused on being environmentally-friendly, contributing to the circular economy, minimizing resource consumption and reducing emissions to fight climate change, and contributing to the circular economy.

### Social - Empowerment Culture

Our respect for human rights, engagement and investments in capacity building, and creating shared value for our stakeholders demonstrates our commitment to achieving long-term success.

### Governance - Business Potential

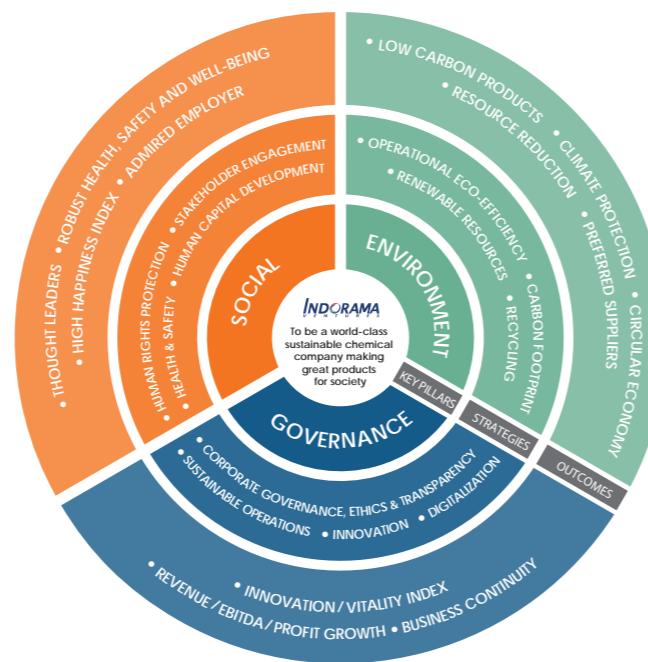
Our business is based on our integrity and ethical principles, driving customer experiences through our innovative products and moving forward in meeting societal needs for sustainable growth and leadership.



For More Information

and respond, create new products for our customers while pursuing our vision for a circular economy and greener planet.

In 2020, in light of our ongoing growth and our determination to place sustainability at the heart of our business decisions, we restructured our business portfolios and aligned our processes to achieve greater impacts. The introduction and integration of the enabling functions, such as the Sustainability and EHS functions, will further drive our mid-term and long-term sustainability ambitions.



## Sustainability Framework

Vision	To be a world-class sustainable chemical company making great products for society				
Values	"Always evidence-based"	☆☆☆	"Honesty in everything"	"Collaborative & Innovative"	"Visionary leadership"
Aspirations	Carbon Neutrality		Improving Lives		Trusted Partner
Differentiators	to sustain our world and business		through sustainable and affordable products		to the global community
Strategic priorities	Thought Leadership on sustainability and the circular economy	Global-Local close proximity to stakeholders	Circular Approach improving circularity in IVL's value chain	Early Adopter bringing innovation to our operations	ESG Best-in-Class investing in a sustainable business
Metrics	Must do Stakeholder Engagement Aligning our actions responsibly and in a way that benefits society	Recycling Building the recycling infrastructure the world needs to deliver a circular economy	Efficiency Efficient use of resources, delivering sustainability goals and ROCE, and energy transition/waste to resources	Measurable Understanding what will be covered in our sustainable commitments and how our products improve society	Enabler Education Scaling our education programs while leveraging our extensive global footprint
IVL goals shared and adopted by society	Recycling 750 kt (50 bn) PET bottles p.a. by 2025	Towards carbon neutrality	External validation	Educate 1,000,000 consumers by 2030	

## Sustainability Ambitions

Our business operations generate diverse and long-term value for our stakeholders. We remain committed to investing in the environment and the society where we operate and set clear and achievable targets. Our 2025/2030 sustainability ambitions focus on

finding efficiencies in our business operations, increasing our use of renewable energy, investing in recycling and lowering our carbon footprint. These initiatives will enable us to achieve our long-term ambition of carbon neutrality.



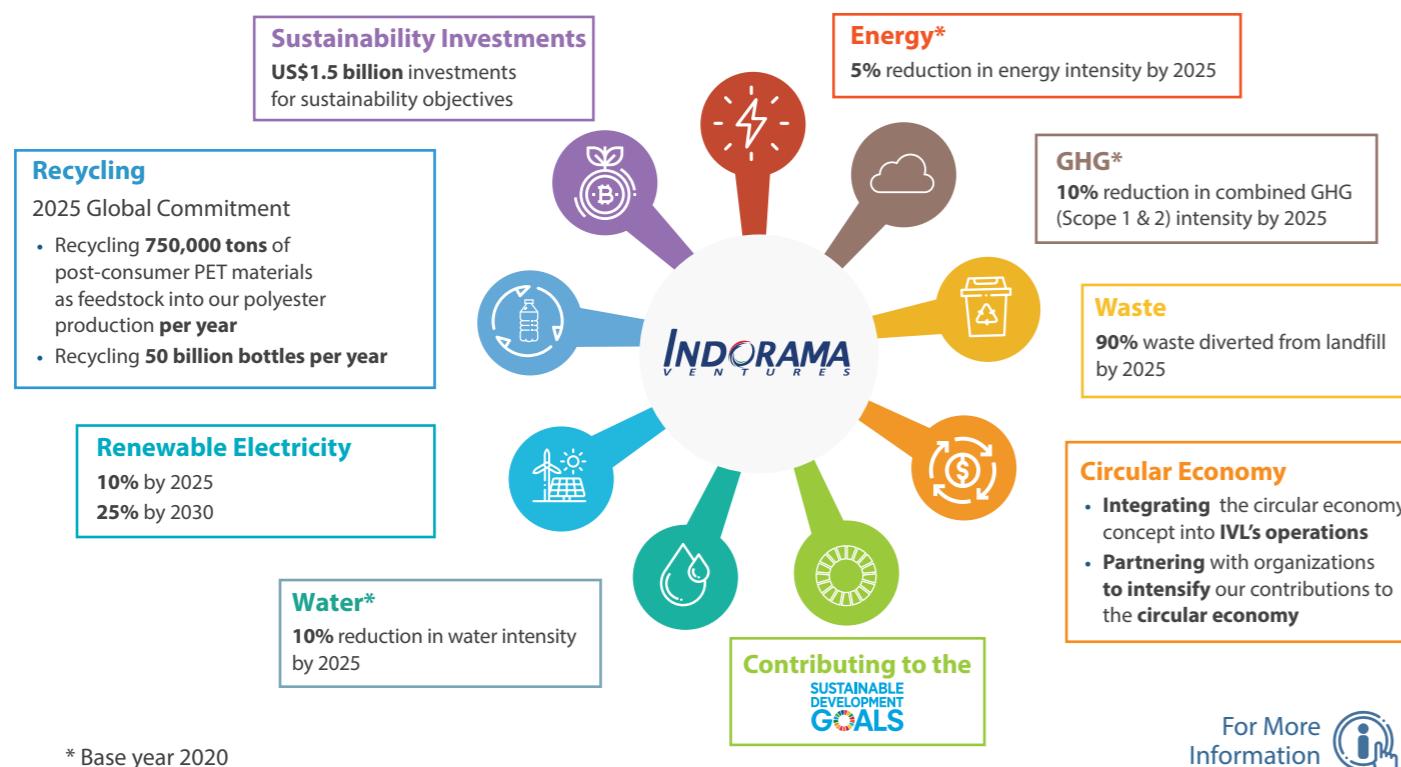
We acquired a number of energy-intensive plants in 2020, from which a significant percentage of our upstream chemicals are derived for PET production. As a result, our global operations now incur a different environmental footprint than in 2019. We reset the baseline to 2020 to clearly represent our current business scale and its impacts since these acquisitions, and to visibly set progress targets towards our 2025/2030 ambitions.

The change in baseline was also implemented to create a more holistic approach in setting up our Science-Based Targets (SBTs) which will account carbon footprint from our IOD business segment as well.

At the same time, we have achieved significant process improvements and implemented a number of green projects. Please refer to the Towards Carbon Neutrality Section on pg. 74.

# Our Sustainability Ambitions Towards Carbon Neutrality

Focusing on short and medium-term targets



\* Base year 2020

Recycling Global Commitments	
2025 Targets	2020 Performance
750,000 tons/year of post-consumer PET in polyester feedstock capacity by 2025	222,288 tons/year post - consumer PET bottles recycled in 2020
Recycling capacity of 50 billion bottles per year by 2025	10.1 billion bottles recycled in 2020 Approximately 58 billion bottles recycled as of 2020 since 2011

Operational and Environmental Targets		
KPIs	2025 Targets (Base year 2020)	2020 Baseline
Energy intensity	5% energy intensity reduction by 2025	6.73 GJ/ton of production
Water intensity	10% water intensity reduction by 2025	5.31 m³/ton of production
GHG intensity	10% GHG intensity reduction (Scope 1 and 2) by 2025	0.607 tCO₂e/ton of production
Renewable electricity	10% by 2025 25% by 2030	2.8%
Waste diverted from landfill	90% waste diverted from landfill by 2025	84% waste diverted from landfill

# Climate Change Strategy 2025

Our Climate Strategy 2025 incorporates four key focus pillars through process/product efficiency, natural resources, climate change resilience, and circular economy, which we actively support the transition to a low carbon economy. The strategy also clarifies in detail the climate-related output targets we intend to reach by 2025.

Pillars	Strategies	Outputs
Process/Product Efficiency	Upstream & Downstream Integration Climate Innovation	<ul style="list-style-type: none"> <li>Increase in the use of post-consumer recycled materials</li> <li>5% reduction in energy intensity by 2025*</li> </ul>
Natural Resources	Recycled Raw Materials Renewable and Low Carbon Energy Low Carbon Products Water and Wastewater Management	<ul style="list-style-type: none"> <li>Reduction in the use of virgin raw materials</li> <li>Renewable electricity consumption: 10% by 2025 and 25% by 2030</li> <li>10% reduction in combined GHG (Scope 1&amp;2) intensity by 2025*</li> <li>10% reduction in water intensity by 2025*</li> </ul>
Climate Change Resilience	Shadow Carbon Pricing Water Risk Analysis TCFD Framework Scenario Analysis	<ul style="list-style-type: none"> <li>Address climate-related risks</li> <li>Integrating ESG and carbon pricing into business decisions</li> </ul>
Circular Economy	Waste Management Sustainable Supply Chain Responsible Consumption Engagement with Stakeholders	<ul style="list-style-type: none"> <li>Reduce, recycle, reuse</li> <li>Reduction in the consumption of natural resources</li> <li>Reduction in PET waste</li> <li>Recycling education</li> </ul>

\* Base year 2020

We work to ensure that our business activities respect climate science and support global efforts to minimize rising global temperatures. **We are a signatory to the TCFD** and continually monitor and adapt our decisions to ensure our business is successful through an active focus on sustainability governance.



TASK FORCE ON CLIMATE-RELATED FINANCIAL DISCLOSURES



In October 2020, **we joined the World Economic Forum's Global Plastic Action Partnership** (GPAP), an initiative to minimize plastic leakage into the environment and a key step in enabling us to meet our target of ending PET plastic waste. This multi-stakeholder initiative creates and drives solutions towards a circular economy and leverages our unique position as the global leader in recycled PET. It represents another example of IVL harnessing our integrated business model to expand the global recycling landscape and help alleviate climate change.

In addition, **we participated in the 50 Climate Leaders campaign** in 2020, towards demonstrating our leadership and determination in taking effective action against climate change.



Click here to watch VDO



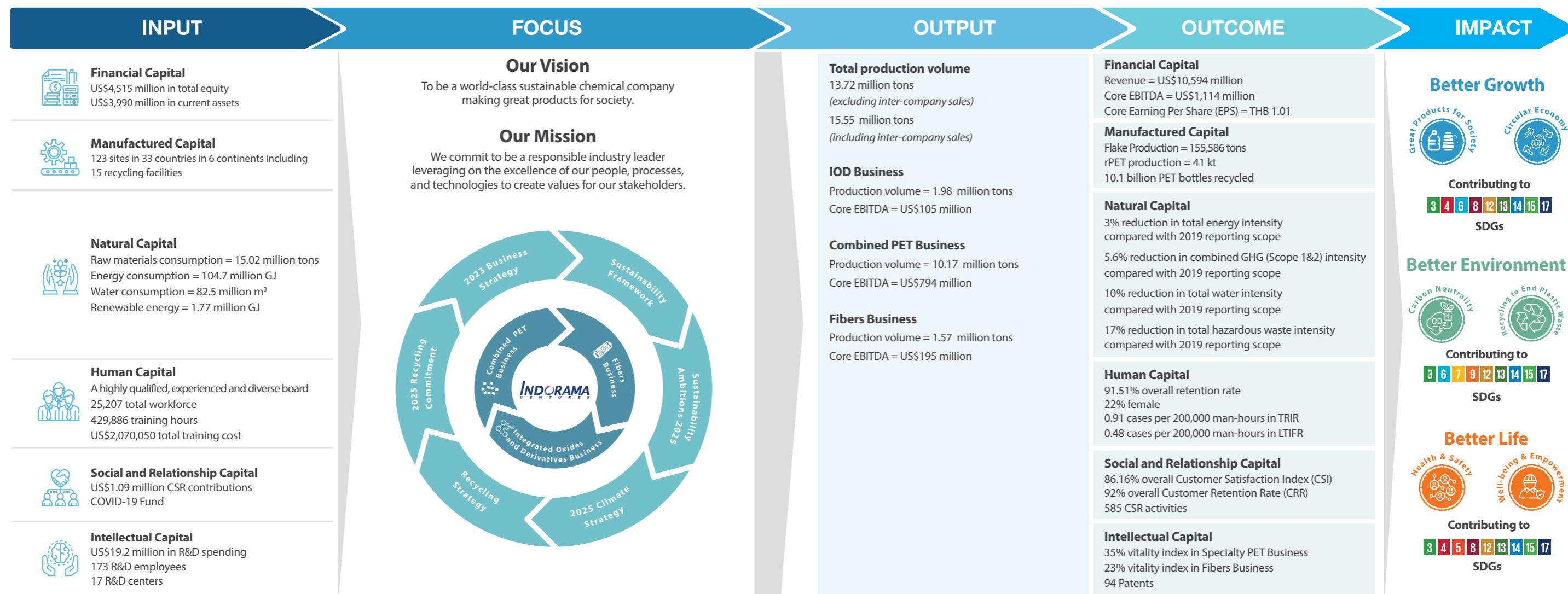
We have committed to set a science-based target through the Science Based Targets initiative and aim to set our SBTs by 2024.

# Our Approach to Value Creation

## Value Creation Model

For More Information 

As we enter our tenth year of sustainability reporting, we adopted the International Integrated Reporting Council (IIRC)’s International Integrated Reporting <IR> Framework. By structuring our report based on this framework, we can demonstrate to our stakeholders how we are creating value through our short, medium and long-term strategies through six capital inputs.



### Trade-Offs

Trade-Offs	Impacted Capital	IVL's Strategy	Trade-Offs	Capitals Impacted	IVL's Strategy
<b>Increased production volume versus environmental footprint</b>	<ul style="list-style-type: none"> <li>• Manufactured Capital</li> <li>• Natural Capital</li> </ul>	<p>We are maintaining our focus on growth and sustainably increasing production volumes while reducing environmental impacts by:</p> <ul style="list-style-type: none"> <li>• Driving operational efficiencies in existing and newly acquired operations.</li> <li>• Increasing our focus on renewable energy sources.</li> </ul> <p>In 2020, we achieved 5% organic growth while reducing our consumption intensity. Please refer to our environmental performance on pgs. 21, 25, 62-65, 76-89, 116-124 for more information.</p>	<b>Vertical integration versus dependency on suppliers</b>	<ul style="list-style-type: none"> <li>• Financial Capital</li> <li>• Social and Relationship Capital</li> </ul>	<p>We continue to focus on vertical integration to mitigate supply chain risks and improve business growth. In 2020, we acquired Huntsman's world-class integrated oxides and derivatives business marking a transformational opportunity.</p> <p>Despite vertical integration, we continue to develop strong relations with our suppliers, whom we view as key stakeholders in our value chain. We embed sustainable practices within our suppliers' operations by implementing supplier assessments ensuring adherence to sustainability policies and to safeguard human rights.</p> <p>Please refer to the Supply Chain Management section on pg. 50 for more information.</p>

## External Environment and Outlook

Our continued long-term business growth and sustainability requires that we work dynamically in the local, national, regional and global environments where we operate. This means understanding and responding to micro and macro influences and supporting our strategic vision with strong governance, planning and implementation systems. Leveraging these systems means we can foresee and effectively respond to opportunities, manage risks in the short, medium and long-term and realize continuous improvements across all business spheres.

### Global Economic Factors

Operating in 33 countries means working within diverse legal and regulatory frameworks. Our business functions in and is affected by local, national and global operating contexts and we remain closely attuned to these through our integrated risk-based approach.

The COVID-19 pandemic continues to have vast and wide-ranging economic impacts. It is significantly threatening supply chains, severely limiting customer choice and impacting global growth. While difficult to predict the full impact on the chemicals industry, the effects will likely be felt from practicalities at the operational level through to the health of credit markets.

#### Challenges

- Economic impacts of COVID-19
- US-China trade war tariffs
- Inconsistent or unexpected changes in foreign laws, currency controls, tax regulations
- Changes in international tax treaties
- Plastics tax in Europe

#### Opportunities

- Vertical integration of the business to prevent supply chain disruptions
- Developing cost-optimization strategies for improved revenue margins

### Increased Market Competition

We recognize the shift that is occurring with production capacities geared more to the competitive advantages of global emerging markets. We are closely monitoring increased market competition in the development, production, and distribution of comparable products and prioritizing innovation initiatives throughout our business.

#### Challenges

- Competition from large multinational companies
- Competition from regional and/or specialized producers in markets
- Margin pressure from, for instance, limited demand growth and overcapacity in a market

#### Opportunities

- Investments in R&D to drive product stewardship
- Developing new products and portfolios for improved profit margins
- Developing new technologies to address unmet sustainability needs
- Innovating new products to unlock potential revenue streams in new markets

### Climate Change and the Demand for Circularity

Climate change is driving shifts in regulations, access to capital and consumer expectations. We believe that business has a key role to play by implementing ethical, efficient and long-term responses to consumer demand that actively protect the environment and promote sustainability. We understand the value that is created by shifting to a circular economy and continue to invest significantly in new technologies, operational efficiencies and product stewardship initiatives.

#### Challenges

- Increase in carbon pricing regulations
- Increase in single use plastics due to the COVID-19 pandemic
- Lack of recycling awareness

#### Opportunities

- Increasing demand for environmentally friendly products
- Being a thought leader driving the circular economy agenda
- Empowering suppliers, manufacturers and retailers to adopt circularity in business models

### Human Capital

A skilled, thriving workforce represents the foundation of any successful business. As organizations worldwide face a global skills gap, we are cognizant of the role we play as a leading chemicals company in developing a future-proof workforce. COVID-19 is forcing businesses to support workforces beyond traditional human resources frameworks. A greater focus is being placed on boosting employee resilience and well-being.

#### Challenges

- Shortage of global talent
- COVID-19 impact on employee development and well-being
- Hiring and firing cycles according to economic fluctuations and their implications on the talent pool and future workforce vitality

#### Opportunities

- Investing in robust talent development and reskilling programs to create a highly capable workforce
- Succession planning
- Implementing employee well-being programs to enhance the retention rate and productivity
- Developing the talent pipeline via collaborations with external institutions such as schools and universities

## IVL's 2023 Strategy

Our 2023 Strategy is based on five strategic pillars focusing on Cost Transformation, Full Asset Potential, Adjacency Growth, Recycling Leadership, and Leadership Development. This strategy will contribute to double-digit ROCE, above average returns to shareholders and strong cash flow through the peaks and troughs of the chemicals cycle.

We pursue our vision - "To be a world-class sustainable chemical company making great products for society" every day across our business operations. Our values inform our day-to-day activities and encourage us to remain customer-focused, agile, proactive and with an ongoing duty of care for our workforce.

### Project Olympus

Initiated in 2020, Project Olympus is our overarching cost transformation program introduced under Strategic Priority 1 of our 2023 Strategy. We are ahead of schedule for the plan's first year by 21%+ in terms of cost-savings. Encouraged by an internal assessment and outstanding performance, we increased our Project Olympus ambition to deliver US\$610 million in EBITDA on an annual basis by 2023 over 2019 (versus US\$352 million announced last year), comprising of over 2,400 Cost Transformation and Business Full Potential initiatives. The multiplier impact and organic growth will be tremendously positive for our three segments covering 16 verticals through coordinated efforts across functions, comprehensive changes to our operating model further leveraging our integrated operations and the pursuit of commercial opportunities in sales and procurement excellence.

### Corporate

Three Priority Areas		
Enterprise Resource Planning (ERP)	Global Business Solutions	Digitalization
Implement an integrated SAP ERP system	Implement a Global Business Solution (GBS)	Scale-up our digital initiatives piloted in 2019

### Business Segments

Combined PET	Integrated Oxides and Derivatives (IOD)	Fibers
Focus on manufacturing and functional excellence, and procurement efficiency	Focus on the integration of existing facilities to streamline costs	Focus on margin expansion, cost innovation and asset efficiency

We fully appreciate the challenges that lay ahead, as additional efforts are needed for the next three years of Olympus. Yet we remain highly confident with a clear and detailed plan developed through a bottom-up approach through several project management offices (PMOs), consisting of the IMC, CXOs and other senior leaders. Furthermore, we established a transformation management office (TMO) specifically designed for IVL but drawing on leading best practices. The TMO, comprising chiefs of staff to IMC members supporting the IMC and PMOs in their transformation journey, has adopted a world-class tracking tool called "KEY"

which has become a critical enabler and the backbone of Olympus. PMOs have further rolled out result delivery offices (RDOs) for specific sites implementing significant transformative initiatives. The TMO, PMO and RDO structure and their facilitation through leading consultants and resources are critical capabilities which the IMC put in place for the success of our comprehensive transformation journey. Our leadership team is ready to deliver on IVL's value creation ambitions by deploying world-class tools and practices, backed by a qualified team, and supported by long-term incentive structures.

For More Information 

## Stakeholder Engagement

IVL's operations affect and are affected by a multitude of people, all of whom have a vested interest in how we run our business. We actively seek inputs from and dialogues with internal and external stakeholders and integrate the outputs of such discussions into our business planning and implementation on a routine basis. Stakeholder engagement means building our knowledge base, strengthening relationships and nurturing trust between people and groups with diverse needs.

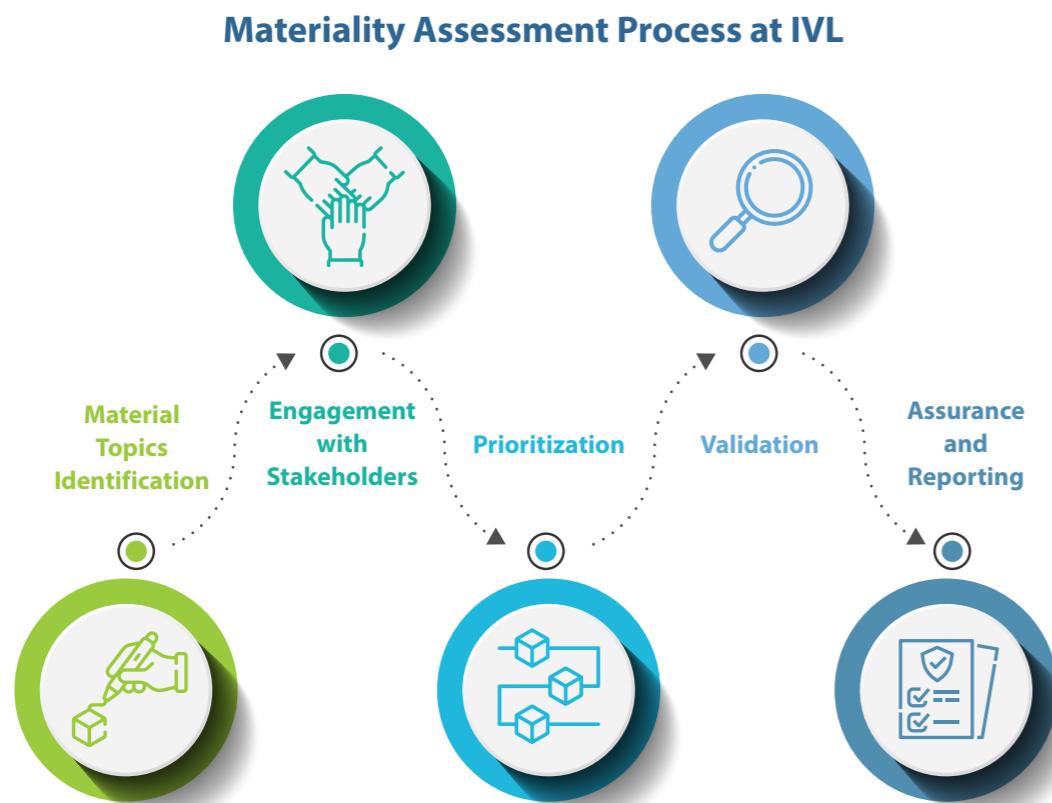
Employees					
Topics of interest:	How we respond:				
<ul style="list-style-type: none"> <li>Occupational health and safety</li> <li>Human rights</li> <li>Human capital development and recognition</li> </ul>	<ul style="list-style-type: none"> <li>Ensuring a Safe and Conducive Workplace, pg. 91-96</li> <li>Workplace Human Rights, pg. 98-99</li> </ul>				
How we engage and maintain our relationships:	The value we create:				
<ul style="list-style-type: none"> <li>Our Global Employee Engagement Survey (GEE) seeks feedback from every employee regarding working at IVL.</li> <li>Our Employee Health and Safety Policy, training programs and our ISO 45000 / OHSAS 18001 certification.</li> <li>Our Human Rights Policy, training is provided and we implement a Workplace Human Rights Assessment Framework across our businesses.</li> </ul>	<table border="0"> <tr> <td>Better Lives</td> <td>Better Growth</td> </tr> <tr> <td> <ul style="list-style-type: none"> <li>Human capital development</li> <li>Safe and conducive workplace</li> <li>Health and safety culture</li> <li>Fair compensation</li> <li>Zero human rights violations</li> </ul> </td> <td> <ul style="list-style-type: none"> <li>Talent attraction and retention</li> <li>Responsible operations</li> <li>Business potential</li> </ul> </td> </tr> </table>	Better Lives	Better Growth	<ul style="list-style-type: none"> <li>Human capital development</li> <li>Safe and conducive workplace</li> <li>Health and safety culture</li> <li>Fair compensation</li> <li>Zero human rights violations</li> </ul>	<ul style="list-style-type: none"> <li>Talent attraction and retention</li> <li>Responsible operations</li> <li>Business potential</li> </ul>
Better Lives	Better Growth				
<ul style="list-style-type: none"> <li>Human capital development</li> <li>Safe and conducive workplace</li> <li>Health and safety culture</li> <li>Fair compensation</li> <li>Zero human rights violations</li> </ul>	<ul style="list-style-type: none"> <li>Talent attraction and retention</li> <li>Responsible operations</li> <li>Business potential</li> </ul>				
Customers					
Topics of interest:	How we respond:				
<ul style="list-style-type: none"> <li>Good business ethics, supply chain management and compliance</li> <li>Recycling plastic waste</li> <li>Product stewardship</li> </ul>	<ul style="list-style-type: none"> <li>Responsible and Effective Governance, pg. 42-55</li> <li>Circular Economy Thought Leadership, pg. 57-59</li> <li>Safe and Sustainable Products, pg. 69-72</li> </ul>				
How we engage and maintain our relationships:	The value we create:				
<ul style="list-style-type: none"> <li>We monitor and respond to our annual Customer Satisfaction Index (CSI) (which seeks qualitative customer feedback), Net Promoter Score (NPS) and Customer Retention Rate (CRR) by improving on any issues raised and opening dialogues as appropriate.</li> <li>We develop innovative and sustainable products to meet our customers' commitments and our ambitions and have joined with our customers to collect PET bottles for recycling helping increase PET circularity.</li> </ul>	<table border="0"> <tr> <td>Better Growth</td> <td>Better Environment</td> </tr> <tr> <td> <ul style="list-style-type: none"> <li>Sustainable products</li> <li>Cost-effective offerings</li> <li>New and innovative alternatives</li> <li>Strong brand value</li> <li>Strong relationships</li> <li>Business potential</li> </ul> </td> <td> <ul style="list-style-type: none"> <li>Accelerating PET circularity</li> <li>Circular economy thought leader</li> <li>Reduce and end PET plastic waste</li> </ul> </td> </tr> </table>	Better Growth	Better Environment	<ul style="list-style-type: none"> <li>Sustainable products</li> <li>Cost-effective offerings</li> <li>New and innovative alternatives</li> <li>Strong brand value</li> <li>Strong relationships</li> <li>Business potential</li> </ul>	<ul style="list-style-type: none"> <li>Accelerating PET circularity</li> <li>Circular economy thought leader</li> <li>Reduce and end PET plastic waste</li> </ul>
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Communities					
Topics of interest:	How we respond:				
<ul style="list-style-type: none"> <li>Plastic waste and recycling</li> <li>Environmental preservation surrounding our areas of operation</li> <li>Community engagement and human rights</li> </ul>	<ul style="list-style-type: none"> <li>Driving Circularity Through Stakeholder Partnerships, pg. 60-61</li> <li>Towards Carbon Neutrality, pg. 74-81</li> <li>Empowering Our People and Communities, pg. 90-115</li> </ul>				
How we engage and maintain our relationships:	The value we create:				
<ul style="list-style-type: none"> <li>As a PET manufacturer, we educate our communities to properly separate plastic waste for recycling.</li> <li>We comply with environmental laws and regulations and are ISO 14001 certified.</li> <li>We engage with our communities on an ongoing basis and work collaboratively to seek multi-beneficial solutions.</li> <li>We maintain a strong license to operate via proactive and vibrant community engagement, which is of fundamental importance to IVL.</li> </ul>	<table border="0"> <tr> <td>Better Environment</td> <td>Better Growth</td> </tr> <tr> <td> <ul style="list-style-type: none"> <li>Safe and environmentally friendly products</li> <li>Improved circularity</li> <li>Cleaner and safer surrounding environment through green projects</li> </ul> </td> <td> <ul style="list-style-type: none"> <li>License to operate</li> <li>Responsible operations</li> <li>Strong relationships</li> <li>Business potential</li> </ul> </td> </tr> </table>	Better Environment	Better Growth	<ul style="list-style-type: none"> <li>Safe and environmentally friendly products</li> <li>Improved circularity</li> <li>Cleaner and safer surrounding environment through green projects</li> </ul>	<ul style="list-style-type: none"> <li>License to operate</li> <li>Responsible operations</li> <li>Strong relationships</li> <li>Business potential</li> </ul>
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Suppliers and partners							
Topics of interest:	How we respond:						
<ul style="list-style-type: none"> <li>Good business ethics, supply chain management and corporate governance</li> <li>Recycling and plastic waste</li> <li>Occupational health and safety</li> </ul>	<ul style="list-style-type: none"> <li>Responsible and Effective Governance, pg. 42-55</li> <li>Circularity Across Our Value Chain, pg. 58-59</li> <li>Ensuring a Safe and Conducive Workplace, pg. 94</li> </ul>						
How we engage and maintain our relationships:	The value we create:						
<ul style="list-style-type: none"> <li>Many of our supplier relationships have endured over many years and we are proud of our partnerships.</li> <li>We seek formal assurances upon signing contracts and conduct regular supplier ESG assessments.</li> <li>Engaging with our suppliers and partners in developing new circular products, e.g. PPE suits.</li> <li>Ensuring a safe working environment for our suppliers and contractors.</li> </ul>	<table border="0"> <tr> <td>Better Growth</td> <td>Better Lives</td> <td>Better Environment</td> </tr> <tr> <td> <ul style="list-style-type: none"> <li>Fair and transparent partnership opportunities</li> <li>Fair and timely compensation</li> <li>Promote sustainability via our Supplier Code of Conduct</li> <li>Responsible operations</li> </ul> </td> <td> <ul style="list-style-type: none"> <li>Health, safety and well-being</li> </ul> </td> <td> <ul style="list-style-type: none"> <li>Improved circularity</li> <li>Reduce and end PET plastic waste</li> </ul> </td> </tr> </table>	Better Growth	Better Lives	Better Environment	<ul style="list-style-type: none"> <li>Fair and transparent partnership opportunities</li> <li>Fair and timely compensation</li> <li>Promote sustainability via our Supplier Code of Conduct</li> <li>Responsible operations</li> </ul>	<ul style="list-style-type: none"> <li>Health, safety and well-being</li> </ul>	<ul style="list-style-type: none"> <li>Improved circularity</li> <li>Reduce and end PET plastic waste</li> </ul>
Better Growth	Better Lives	Better Environment					
<ul style="list-style-type: none"> <li>Fair and transparent partnership opportunities</li> <li>Fair and timely compensation</li> <li>Promote sustainability via our Supplier Code of Conduct</li> <li>Responsible operations</li> </ul>	<ul style="list-style-type: none"> <li>Health, safety and well-being</li> </ul>	<ul style="list-style-type: none"> <li>Improved circularity</li> <li>Reduce and end PET plastic waste</li> </ul>					
Government and regulators							
Topics of interest:	How we respond:						
<ul style="list-style-type: none"> <li>Regulatory compliance, risk management, corporate governance</li> <li>Legislation and policy advocacy</li> <li>Circular economy</li> <li>Energy intensity and emissions</li> <li>Carbon neutrality</li> <li>Health &amp; Safety</li> <li>Community engagement</li> </ul>	<ul style="list-style-type: none"> <li>Major Industry Associations &amp; Memberships, pg. 39</li> <li>Risks &amp; Opportunities, pg. 34-35</li> <li>Responsible and Effective Governance, pg. 42-55</li> <li>Driving Sustainable Growth, pg. 58-61</li> <li>Towards Carbon Neutrality, pg. 74-89</li> <li>Empowering Our People and Communities, pg. 91-96, 107-115</li> </ul>						
How we engage and maintain our relationships:	The value we create:						
<ul style="list-style-type: none"> <li>Maintaining strong relations with regulators is essential as we operate in multiple regions with various types of legislation.</li> <li>We regularly participate in global forums and summits to support new policies towards a sustainable future.</li> </ul>	<ul style="list-style-type: none"> <li>Thought leadership</li> <li>Input for policy development</li> <li>Partnerships and collaborations to support sustainable regulatory policies</li> </ul>						
Bankers, Investors and Fund Providers							
Topics of interest:	How we respond:						
<ul style="list-style-type: none"> <li>Regulatory compliance, risk management, good business ethics, customer relationship management and corporate governance</li> <li>Recycling and plastic waste</li> </ul>	<ul style="list-style-type: none"> <li>Risks &amp; Opportunities, pg. 34-35</li> <li>Responsible and Effective Governance, pg. 42-55</li> <li>Driving Sustainable Growth, pg. 56-73</li> </ul>						
How we engage and maintain our relationships:	The value we create:						
Ongoing engagement through face-to-face, group sessions, participation in events, presentations, reporting and responding to information requests provides a diverse and continuous approach to ensuring strong relationships. This transparency also builds trust and provides a foundation for favorable loans and loan terms.	<ul style="list-style-type: none"> <li>Return on investment</li> <li>Strong business performance</li> <li>Sustained and long-term profitability</li> <li>Transparency via regular and timely reporting</li> </ul>						
Consultants							
(In the areas of business, finance, sustainability, the environment, and IT)							
Topics of interest:	How we respond:						
<ul style="list-style-type: none"> <li>Corporate governance and good business ethics</li> <li>Recycling and plastic waste</li> <li>Climate change</li> <li>Occupational health and safety</li> </ul>	<ul style="list-style-type: none"> <li>Responsible and Effective Governance, pg. 42-55</li> <li>Driving Sustainable Growth, pg. 56-73</li> <li>Towards Carbon Neutrality, pg. 74-89</li> <li>Empowering Our People and Communities, pg. 91-96</li> </ul>						
How we engage and maintain our relationships:	The value we create:						
We enlist the support of industry and subject leaders when developing policies, procedures and frameworks and share best practices within our industry groups.	<ul style="list-style-type: none"> <li>Strong communications and collaborations</li> <li>Shared growth in industry specific sustainability knowledge through engagements</li> <li>Agile and resilient business</li> </ul>						

Please refer to Our Stakeholders for more information on stakeholder engagement process and a full list of engagement channels.

## Materiality Assessment

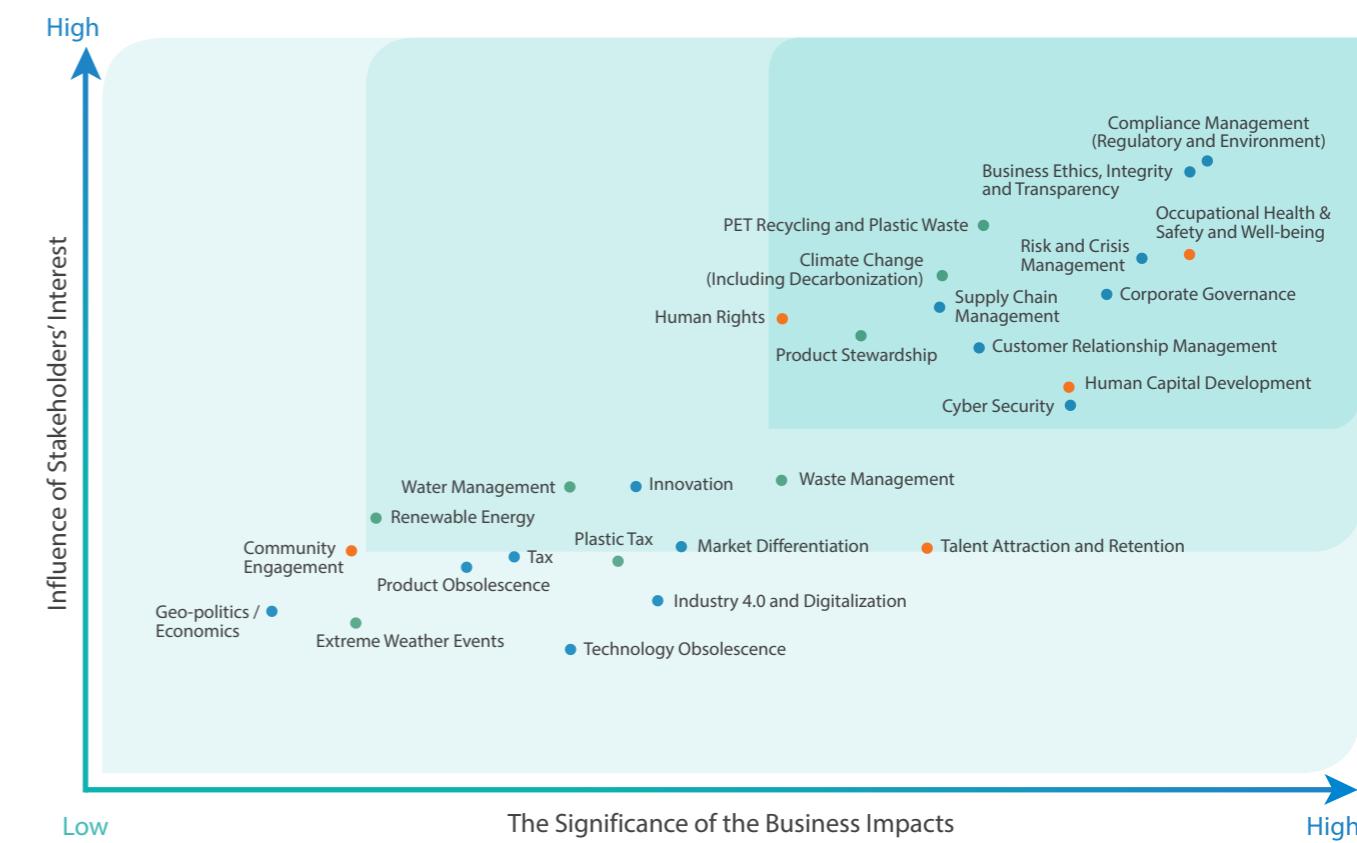
We regularly and comprehensively identify and assess issues that may have a material impact on our long-term sustainability. Our materiality assessments are conducted in alignment with the Global Reporting Initiative (GRI) Standards to include internal and external stakeholders, which helps us identify our significant economic, environmental, social and governance impacts.



In 2020, we engaged with our internal stakeholders and external stakeholder groups which included customers, suppliers, bankers, investors, and consultants on a global scale. Our materiality survey was conducted via standardized questionnaires with clear definitions which enabled us to receive meaningful responses. Through the inputs received from our survey, we were able to map out an updated materiality matrix. This mapping directly informs our business strategy, environmental, social and governance priorities. The mapping required consideration on a range of opinions and detailed internal analysis sessions with senior management across our business units. It also means understanding IVL's impact boundaries and clarifying our spheres of control and influence.

Initiative (GRI) Standards to include internal and external stakeholders, which helps us identify our significant economic, environmental, social and governance impacts.

## Materiality Matrix 2020



## Key Material Topics

### 13 Key Material Topics in 2020



## Risks and Opportunities

We manage risks via our Enterprise Risk Management Framework which is based upon the Committee of Sponsoring Organizations of the Treadway Commission (COSO) Framework and forms the basis upon which we identify and manage business risk at all levels throughout the business and our subsidiaries. The Sustainability and Risk Management Committee(SRMC) is the sub Board committee which oversees the effectiveness of the overall risk management to align with the company strategies. A Risk Management Council (RMC) has been established to serve as the central platform to assist Indorama Management Council (IMC), SRMC or Board to identify and deliberate principal risks and drive risk governing matters. This is to provide assurance on enterprise risk, crisis and business continuity management implementation to protect and create value for IVL.

Moreover, in this current volatile, uncertain, complex and ambiguous (VUCA) business environment, we embedded a business continuity management (BCM) framework within the organization aligned with the global ISO 22301 standard to build resilience and capabilities that safeguard the interest of our

key stakeholders, our reputation, brand and our value-creating activities. In doing so, we developed clear roles and responsibilities together with recovery strategies and plans for relevant scenarios to ensure that business continuity is well-defined and communicated, with continuous testing to reinforce the robustness of our strategies and planning.

Risks are categorized into Emerging Risks, Strategic Risk, Business Risks, Operational Risks, Functional Risks which includes Environmental, Health & Safety Risks, Information Technology Risks, Financial Risks, Legal & Compliance Risks, etc, which makes up our enterprise risk management as a whole. While Emerging Risks are analyzed as they develop, it can be challenging to quantify these risks due to the high degree of uncertainty or high loss potential.

The different risk categories identified are of equal importance to IVL as an organization. We have included disclosures on key emerging risks in this report to illustrate its alignment with our sustainability-linked material topics in this report. For more information about other risk categories and our risk monitoring and control mechanisms, please refer to our [2020 Annual Report pg.127](#)

Emerging Risks	Opportunities	Link to Material Topics	IVL's Response
The evolving sophistication of emerging cyber threats could have an adverse impact on our business financially and reputationally	<ul style="list-style-type: none"> <li>Implement robust cyber security measures to be a trusted partner and leader in data privacy.</li> <li>Educate users on the risks of cyber security and train them on safe usage of the system.</li> <li>Opportunity for continuous cyber security improvement.</li> </ul>	Cyber Security	Cyber Security Management, pg. 55
Disruptive innovations/ technologies potentially leading to vulnerabilities such as PET alternatives	<ul style="list-style-type: none"> <li>Market disruptor in producing innovative products for continued growth.</li> <li>Promote recycling campaigns and provide education to differentiate PET from other plastics.</li> <li>Circular Economy Thought Leadership</li> </ul>	Product Stewardship PET Recycling and Plastic Waste	Safe and Sustainable Products, pg. 69-72 Circular Economy Thought Leadership, pg. 57-59 Continuous Improvements in Recycling, pg. 62-65
Failure to address anti-plastic campaigns may adversely impact the industry's growth potential	<ul style="list-style-type: none"> <li>Increase our investments in recycling plants.</li> <li>Working with several industry partners to achieve a circular economy for sustainable plastics.</li> <li>Educating consumers on the need to recycle and adopt a lifestyle focused on sustainability.</li> <li>Acquiring proprietary knowledge of mechanical recycling, and established partnerships to develop and test next-generation chemical recycling technologies.</li> </ul>	PET Recycling and Plastic Waste	Driving Circularity Through Stakeholder Partnerships, pg. 60-61 Circular Economy Thought Leadership, pg. 57-59 Continuous Improvements in Recycling, pg. 62-63 Recycling Education, pg. 111-113

Emerging Risks	Opportunities	Link to Material Topics	IVL's Response
Water crises may disrupt business operations and economic activities	<ul style="list-style-type: none"> <li>Leader in water stewardship by reducing freshwater consumption.</li> <li>Implement more stringent and more effective sustainable water management.</li> <li>Close working with local authorities to ensure adequate water supply and avoid potential conflicts with nearby stakeholders and maintain business continuity.</li> </ul>	Risk and Crisis Management Water Management	Risks & Opportunities, pg. 34-35 Environmental Management, pg. 83-85
Adversely impacted by economic uncertainties given the evolving coronavirus pandemic	<ul style="list-style-type: none"> <li>Potential to develop strong governance function to weather the impact of the pandemic.</li> <li>Leaders in best practice employee safety management</li> <li>Strengthen supply chain value across our business risks</li> <li>Leverage on our facilities and networks allows us the opportunity to deliver products to our customers as a reliable partner, even in time of uncertainties</li> </ul>	Risk and Crisis Management Occupational Health and Safety	Our Response to the COVID-19 Pandemic, pg. 40-41 Ensuring a Safe and Conducive Workplace, pg. 94

## Sensitivity Analysis

Sensitivity analysis covering strategy, operations, the environment, water stress analysis, shadow carbon pricing analysis, financial sensitivity and reputation are conducted on half-year basis or yearly basis at the corporate level. These are focused on sustainability

and analyze the environmental, social and governance impacts to our business operations. We also conduct scenario analysis and refer to the TCFD as guidelines on climate change. Sensitivity analysis covers the impacts on our production, revenue and EBITDA.

## Risk Culture

Built into the day-to-day execution of our corporate strategy, and through the daily activities and decision-making of our employees, risk management provides the core of our approach. Throughout the business, management, committees and embedded risk champions have clear roles and responsibilities for assessing risks and identifying associated controls to mitigate and/or reduce risk.

Risk Capability & Culture Leadership Program has been developed and implemented to elevate risk thinking and strengthen risk capability for agility to address changes in business environment. This program aims to strengthen risk leadership mindset in leaders to shape the masses, envision and galvanize future state of risk.

This comprehensive infrastructure helps to build awareness, ownership and management of risks through the organization, leading to improved business performance. Continuous monitoring further ensures the supervision, critical observation and determination of risk status to identify any gaps and instigate risk response, identifying control activities and any performance level changes that may be necessary.

Supported by our group governance structure, ethics programs and codes of conduct, we can ensure that we work with heightened awareness to risk and respond effectively and efficiently. Proactively managing potential risks in this way provides necessary assurance and significantly enhances our business performance.

# Our Contributions to the UN SDGs

For More Information 



With a strong focus on creating value for the 3Ps - People, Planet and Prosperity, we continue to support and contribute to the UN SDGs.

## Recycling and Circular Economy

3 8 9 11 12 13 14 15 17

Bringing customers into the product value chain cycle and developing ways to support the circular economy.

- Recycling Commitment
- Industry Partnerships
- Recycling Education

## Climate Change and Energy

7 9 11 12 13 14 17

Being fully aligned with global initiatives that develop strong low-carbon strategies.

- Renewable Energy
- Science-Based Target (SBTs)
- GHG Reduction & Energy Efficiency

## Environmental Stewardship

3 6 7 9 12 13 14 15 17

Improving resource efficiencies and ensuring that our production is environmentally-friendly.

- Water Stress Analysis
- Waste Diverted from Landfill
- Plastic Bottle Collection

## Health, Safety and Well-being

3 4 5 8 12 14 15

Guaranteeing that health and safety are at the forefront of our activities.

## CSR and Collaborations

3 4 6 8 11 12 14 15 17

Making Recycling Education a global program and collaborating to have further positive impacts on society.

- Knowledge
- Environment
- Well-being

The progress we have made in our contributions to the UN SDGs has been monitored throughout the year and publicly reported in our Sustainability Report 2020, [IVL SDGs Report 2020](#) and in the [SDGs section](#) on our website.

At the "GCNT FORUM 2020: Thailand Business Leadership for the SDGs" held at the United Nations Conference Center, Bangkok, to celebrate both the 20<sup>th</sup> anniversary of the UNGC and the 75<sup>th</sup> anniversary of the United Nations, IVL pledged that by 2030, we will collectively invest a total of THB 1 billion (approximately US\$33 million) in sustainability projects and initiatives that directly support achieving the UN SDGs and also commit to embedding the UN SDGs into the core of our business strategies and activities. This declaration reaffirms our commitment to supporting the Thai government in its efforts to achieve the 2030 agenda.



Mr. Aloke Lohia, Group CEO of Indorama Ventures PCL, joined a panel discussion on "Leadership for Sustainability under the New Normal towards the SDGs" at the GCNT Forum 2020: Thailand Business Leadership for UN SDGs on August 31, 2020, at the United Nations Conference Center in Bangkok, Thailand.



This year's UN Global Compact Leaders Summit marks 20 years of uniting business for a better world. We joined this virtual event in the Global Townhall Session under the topic "Build Back Better: Business Resilience for our Future" and address our commitment and contribution to the sustainable development goals through our circular economy concept focusing on the PET bottle recycling.

As a result of our commitment and actions, IVL won the Sustainable Business Awards, Thailand 2019 for the UN Sustainable Development Goals from Global Initiatives which was announced on December 4, 2020.



# Major Sustainability Awards & Recognitions

For More Information 

Member of  
**Dow Jones Sustainability Indices**

Powered by the S&P Global CSA  
**Sustainability Award**  
Silver Class 2021

**S&P Global**

- Indorama Ventures was **recognized in SAM's Sustainability Yearbook 2021 with the Silver Class distinction and was listed in the Dow Jones Sustainability Indices (DJSI) - World and Emerging Markets.**
- We were **ranked third** among 115 of the world's leading sustainable chemical companies.

- Indorama Ventures **achieved a B Rating** in the CDP's Climate Change Assessment in 2020.



**MSCI** 

- Indorama Ventures **improved its ESG rating from BB to BBB in 2020.**
- In 2020, Indorama Ventures **remained at the Gold Level, recognized as one of the top 2% of companies (98th percentile)** rated by EcoVadis in the **manufacture of basic chemicals**.



for 2nd consecutive year

- Sustainalytics assessed IVL as a leader in the chemicals industry** placing the company **7th out of 202 companies**, as per their report in January 2021.



**Bloomberg**

- We achieved Rank #1, the leading Bloomberg ESG disclosure score among companies on the Stock Exchange of Thailand (SET50).

- IVL was ranked #2 with a grade of B- (B Minus) following DSM with a grade of B, **among 35 of the world's largest chemical companies.**
- We received this score for the first time in 2020.



- Indorama Ventures was awarded "Best Regional Loan" in the manufacturing sector for its US\$300 million Blue Loan - **the first of its kind granted to a plastic resin manufacturer.**



- IVL won three awards for Climate Change, Supply Chain Management and UN Sustainable Development Goals.
- IVL also received another four Special Recognition Awards in the categories of Strategy and Sustainability Management, Workforce, Water Management, and Waste and Material Productivity.

# Major Industry Associations & Memberships

For More Information 

## Global

- United Nations Global Compact (UNGC)
- World Economic Forum
- Global Plastic Action Partnership (GPAP)
- Task Force on Climate-related Financial Disclosures (TCFD)



## Americas

- Americas Fiber Manufacturing Association, USA
- Association of Plastics Recyclers (APR), USA
- PETRA - PET Resin Association, North America
- National Association for PET Container Resources (NAPCOR), USA, Canada and Mexico
- Operation Clean Sweep, USA
- American Chemistry Council (ACC)

## Europe

- The Committee of PET Manufacturers in Europe (CPME), Europe
- European Man-Made Fibres Association (CIRFS), Belgium
- IVC - Industrievereinigung Chemiefaser e.V., Germany
- World Economic Forum, Switzerland
- Plastics Recyclers Europe (PRE), Europe
- EDANA, Europe

## Asia

- The Federation of Thai Industries, Thailand
- Thai Beverage Industry Association, Thailand
- Global Compact Network Thailand (GCNT), Thailand

## American Chemistry Council (ACC)

We joined the American Chemistry Council (ACC) and Mr. Aloke Lohia, our GCEO, is on the ACC board which focuses on setting organizational policy, approving budgets, determining advocacy priorities and providing overall strategic direction for the ACC. This forum focuses in part on sustainability and energy and represents a platform that addresses environmental and social concerns collaboratively. We continue to provide insight and advocacy on key issues through our involvement in these ACC committees, which help protect and ensure greater sustainability of our integrated US supply chains. IVL is increasing its active engagement and industry leadership in 2021 through greater committee participation at the ACC.

## Responsible Care

IVL is a Regular member of the ACC which represents a set of diversified organizations in the field of chemistry and innovation. The ACC seeks to make progress in sustainability-linked issues in today's landscape.

In addition, IVL US subsidiaries adhere to the 'Responsible Care' program are seeking certification by end of 2022. This is a commitment by the ACC members of the global chemical industry whose members and partners pledge to improve environmental, health, safety and security performance throughout their entire operating systems.

For more information: <https://responsiblecare.americanchemistry.com/>

## Roundtable on Sustainable Palm Oil (RSPO)

Our subsidiaries in US, India and Australia, Indorama Ventures Oxides LLC Port Neches Operations, Indorama Ventures Ankleshwar Pvt Limited and Indorama Ventures Oxides Australia Pty Limited are members of the RSPO. They are found to be in compliance with the RSPO Supply Chain Certification Standard and have excellent environmental and safety record. This guarantees that the environmental and social criteria for processing RSPO certified palm oil products through one or more of the supply chain models as stated in the RSPO Supply Chain Certification Systems have been met.

For more information: <https://rspo.org/members/10802>

# Our Response to the COVID-19 Pandemic

The COVID-19 pandemic incurred significant disruptions to businesses globally in 2020, testing our ability at all levels to manage the well-being of our employees and surrounding communities. From extensive measures

## Employee Care

Protecting the health and safety of our employees is our number one priority; 2020 saw widespread steps taken to keep our employees and their families safe, including safeguarding sites and ensuring compliance with local authorities. Our newly introduced EHS enabling function continues to coordinate policies, procedures and data related to employee health and safety (including tracking COVID-19 cases across our operations). Our "Work from Home" policy was announced and implemented with immediate effect and remains valid until further notice. Additionally, regular IVL emails

to protect employee health and safety, through to compromised supply chains and fluctuations in cost and availability of raw materials, no industry was exempt from the impacts of the pandemic.

provide guidance together with precautionary measures for employees. The situation in Thailand is assessed bi-weekly and measures change accordingly.

While our overall performance regarding management of COVID-19 has been very good, it is with a heavy heart that we share the news of two colleagues passing away in 2020. One colleague was from Mexico and another one in the U.S. We would like to extend our sincere condolences to their families.

## Business Continuity

At the group level, the Indorama Management Council (IMC) closely monitors our response to COVID-19. The Business Continuity enabling function, comprised of IVL leaders across functions and businesses, monitors any risks and works closely with local plant management to address operational and tactical issues. Our senior-level Global Emergency Management Team (GEMT) is tasked with formulating and responding to the pandemic, and ensuring the safety of our workforce and operational efficiencies. Weekly meetings are carried out to monitor the situation around the world and provide updates, including employee well-being and business impacts, to ensure that the proper duty of care and

programming continuity decisions are being made for each location while providing clear communications.

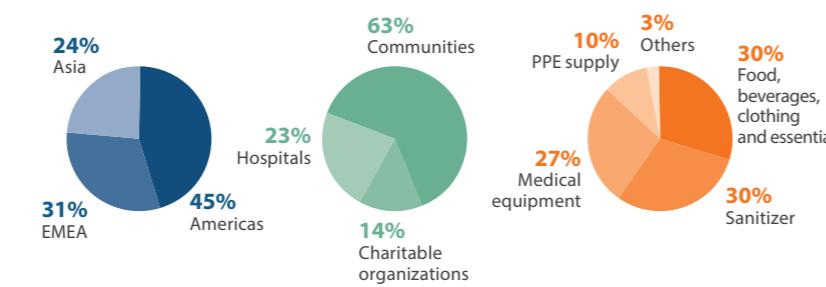
We also work with specialists to analyze the potential security and safety impacts to our employees. We are closely following the rules put in place by governments in multiple countries where we operate and offer ongoing communications across the organization and to our stakeholders providing updates on developments, impacts and solutions in relation to our plants, people and business. We are proactively communicating with partners, suppliers and our customers to avoid disruptions during this period of enhanced demand for essential products.

## Contributions to Society

Together through the COVID-19 pandemic together, we actively responded and supported our communities through the IVL Foundation and CSR activities around the world. Furthermore, in 2020, we established an IVL COVID-19 Fund (US\$ 2.5 million) to support the provision of necessary supplies for communities and hospitals.

### Contributions through IVL's COVID-19 Fund (US\$1.88 million)

Support for 135 organizations in 29 countries



\* Data as of December 2020, % of total contributions.



We took the opportunity in 2020 to adapt our products and manufacturing capabilities to create value that meets consumer and environmental needs. With innovation at the heart of our response to COVID-19, we became the first company in Thailand to utilize high quality and durable rPET to develop PPE suits through our partnerships with Less Plastic Thailand, Thai Taffeta, T-Plus, TOA Paint and GoWith20.

We distributed over 20,000 coverall PPE suits to 200 hospitals across Thailand, using 80,000 post-consumer PET plastic bottles.

We also adapted our Integrated Oxides and Derivatives (IOD) business facility in the United States to manufacture hand sanitizer to protect against COVID-19.

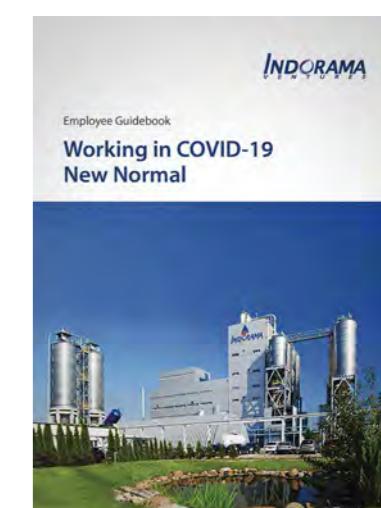
For More Information

## Adapting to the New Normal

Throughout 2020, the world made significant progress in addressing the challenges of COVID-19 yet we continue to feel the impacts on many levels. As vaccination drives gather steam, coronavirus variants remain a concern. As people around the world have adapted, behaviors have changed and expectations continue to shift. We took the opportunity during 2020 to invest in various areas of our business and entered 2021 prepared and resilient.

We unveiled a "New Normal" booklet for employees which outlines new standard operating procedures in the workplace and provides guidance on staying healthy. We cancelled business travel, moved to virtual meetings and made efforts to support our employees as they worked remotely.

We offer our gratitude to everyone who helped safeguard the well-being of our employees and look forward to working alongside our partners, suppliers, customers and other stakeholders to continue delivering outstanding products that benefit society in 2021 and beyond.





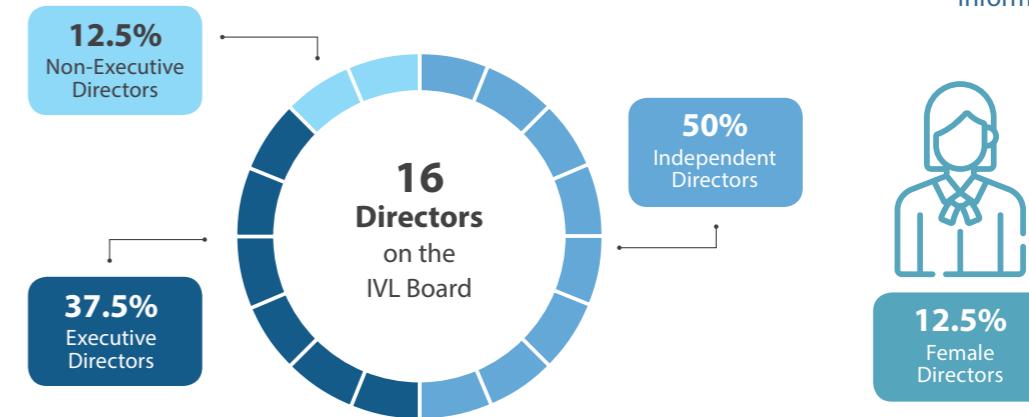
## Corporate Governance and Compliance Management

### Board of Directors

Effective governance at IVL and its subsidiaries relies upon a strong focus on business growth and having an experienced and high-caliber Board of Directors. Our Board oversees IVL's entire business portfolio and ensures adherence to our vision, mission, strategies, policies and budgets, as well as national and international laws. The Board typically meets every three months, with additional meetings convened when necessary. The meetings provide an opportunity to review IVL's operations and discuss financial issues, plans and other matters.

Directly assisting the Board are three Committees - the Audit Committee, Nomination, Compensation and Corporate Governance (NCCG) Committee and Sustainability & Risk Management Committee (SRMC). These committees ensure that strong governance processes are in place across areas such as risk management, financial reporting, compliance, audit and control, the Code of Conduct and sustainability-related strategies, risks and opportunities.

For More Information 



# RESPONSIBLE AND EFFECTIVE GOVERNANCE

### Capitals Linked in this Chapter



Intellectual Capital  
(Organizational)



Social and  
Relationship Capital



Financial Capital

### Value Created

With strong and robust governance mechanisms, we generate sustained growth benefiting the organization and key stakeholders throughout our value chain including our customers and suppliers.

In 2020, the Board was comprised of 16 directors who met on seven occasions, during which they approved the company's financial statement and SRMC Charter. For more information on key deliberations and Board meeting attendance, please refer to pgs. 150 and 166 of our [2020 Annual Report](#).

Our responsive, two-way reporting lines through senior management teams to the executive teams and Board ensure that corporate targets are met,

internal controls and audits drive continuous improvements, and risks and opportunities are leveraged. We also engage regularly and comprehensively with our wider stakeholders. Internal policies shape our interactions and are supported by tools such as feedback surveys through our supply chain, grievance mechanisms and employee training outcomes. Outputs from these interactions are consolidated and reported to the relevant business leaders for action and follow-up.

Key Deliberations	Actions Taken by the Board
Strategy and Annual Business Plan meeting	<ul style="list-style-type: none"> <li>Vision and mission statement is reviewed.</li> <li>Company strategy is reviewed.</li> <li>Opportunity for the Board to interact with the respective executives.</li> <li>Where necessary, suggestions are made by the Board.</li> </ul>
Annual review of the Evaluation Form on the Sufficiency of Internal Control Systems	<ul style="list-style-type: none"> <li>Evaluate the efficacy and sufficiency of the Company's internal controls.</li> <li>Initially reviewed by the Audit Committee and forwarded to the Board.</li> </ul>

In 2020, Mrs. Kaisri Nuengsigkapien was appointed to the Board as an Independent Director at the IVL Annual General Meeting (AGM) in June 2020, in line with our diversity and equality agenda. Mrs. Nuengsigkapien is the second female director and the first female Independent Director of the Company. Other changes to the Board in 2020 included the departure of Mr. Maris Samaram who withdrew from re-election due to non-eligibility related to the retirement age criteria defined for independent directors.

Key Performance Indicators (KPIs) are set by the Board for the Group CEO and other executive directors on

the recommendation of the NCCG Committee. At the end of each year, their performance is evaluated against the KPIs forming the criteria for their compensation evaluation.

Having operations in multiple countries and jurisdictions increases the risk of non-compliance, which is a major concern. Through a top-down approach, the Audit Committee, NCCG Committee, SRMC and senior management continue to advise all concerned on emerging risks and compliance requirements. The Company also has in place a robust grievance system through its Whistleblower Policy.

## 2020 Highlights



IVL received an "Excellent-5 Star" CG score by the Thai Institute of Directors (IOD) for the eighth consecutive year.



IVL was one of the recipients of the Asset Class PLC award for the 2019 ASEAN CG Scorecard (ACGS) announced in 2020.

## Whistleblower Policy

Empowering all employees to report concerns or evidence of unethical practices is an important function in ethical and responsible organizations. Our Whistleblower Policy provides anonymous channels to communicate directly with the Whistleblower Committee, which then initiates an investigation and takes appropriate action. The Whistleblower Policy and the reporting website are compliant with the EU's General Data Protection Regulation (GDPR). Concerns can be raised on our website, by email or regular mail.

The Board appointed new members to the Whistleblower Committee and approved the Whistleblower Committee Charter in November 2020.

In 2020, the Whistleblower Committee received 20 complaints. 15 cases were resolved, two are under investigation, while three were not whistleblower cases. All cases carried over from 2019 have been resolved. A summary of the investigations and the actions taken were reported to the NCCG Committee and the Board.



- Employment Disputes
- Health and Safety
- Human Rights - Discrimination
- Human Rights - Harassment/Hostile Behavior
- Human Rights - Unfair Termination
- Conflict of Interest
- Potential Violation of the Law
- Transparency

\* Another three cases were not considered as whistleblower cases.  
More detail is given in the [Annual Report 2020 pg.159](#).

## Enhancing Our Whistleblowing Channels

To further improve our Whistleblower capabilities, in 2019, we launched a standalone website, [whistleblower.indoramaventures.com](http://whistleblower.indoramaventures.com), which offers more convenience, is easier to use and acts as a consolidated portal for any concerns that are raised.

This website streamlines communication more efficiently between the whistleblower and the Whistleblower Committee. The Whistleblower Committee guarantees total confidentiality and no actions will ever be taken against whistleblowers.

## Business Ethics, Integrity and Transparency

### Business Ethics Mechanisms at IVL

The Audit Committee	The Nomination, Compensation and Corporate Governance Committee	The Whistleblower Committee	Corporate Governance Policy Awareness Campaign (CGPAC) Team	Site/Human Resource Heads	Employees
Assists the Board of Directors in reviewing financial reporting and monitoring internal controls and audits, compliance with laws and regulations and the CG Manual.	Ensures business ethics are applied through the Code of Conduct and arranges introductory training on policies.	Examines issues raised by whistleblowers and processes cases deemed appropriate. The Whistleblower Committee provides a summary of the received cases to the NCCG Committee and Board.	Facilitates and monitors progress of the CGPAC program and provides status reports of the project to the NCCG Committee, which updates the Board.	Implements and communicates the CG manual to all employees.	Attend the CG Manual and related trainings and adhere to its contents in daily operations.

Published in 2019, the Corporate Governance Manual (CG Manual) provides all directors, employees and stakeholders with a clear focus on how IVL's values are being implemented, how they are linked to the Company's long-term objectives and how corporate governance is being realized. Translated into 20 languages at the end of 2019, the manual was distributed to all sites including those newly acquired.

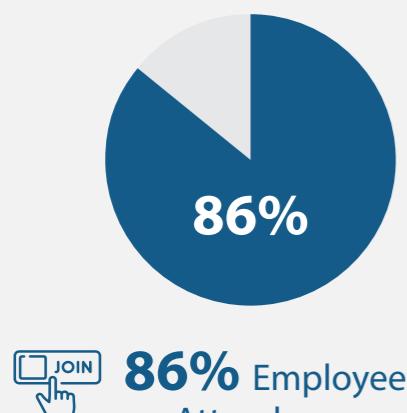
Established in 2013, the Corporate Governance Policy Awareness Campaign (CGPAC) is an ongoing global program which involves communicating, providing training, evaluating the understanding of employees and monitoring implementation of the CG Manual. This includes training on related policies, procedures and protocols, an assistance package, and whistleblower mechanisms at IVL's head office and at the site level. The CGPAC Team monitors the campaign's progress through dedicated resources that ensure improved awareness among all IVL associates.

All employees are informed about the Manual when joining the Company and must acknowledge that they have read and understood its contents. Site heads are in charge of this reporting and convey the results through the CGPAC Team at head office to the NCCG Committee and the Board. The CG Manual and related policies are reviewed annually and the CGPAC Team submits recommendations to the Board for changes to policies each year as required.

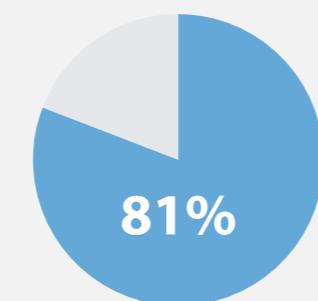
To continue our momentum in 2020, the CGPAC Team continued to support the implementation of the CG Manual at all IVL units by:

- Developing an Anti-Corruption Assistance Package as a guideline for units on how to effectively implement the Anti-Corruption Policy. Further details are provided in the Anti-Corruption section of the [Annual Report](#) on pgs. 158-159.
- Adapting to pandemic-related travel restrictions by intensifying their online training sessions and meetings with local teams responsible for communicating the CG Manual's contents and implementing the Anti-Corruption Policy. Details of the online training are available on pg. 151 of the [Annual Report 2020](#).

## CGPAC Implementation Report 2020



**86% Employee Attendance**



**81% of Sites With 100% Training Coverage**

Our CGPAC Implementation Report for 2020, which covered the new version of our corporate policies and Code of Conduct (approved in 2019), revealed that as of the end of December 2020, training had been completed at 81% of sites with 100% training coverage, with an employee attendance rate of 86%,

and contractor attendance rate of 74%. The CGPAC Team aims to deliver training sessions for all units in Asia and at least four training sessions for units in EMEA (Europe, the Middle East and North Africa) and the Americas.

Based on the requirements of each unit, the CGPAC Team used both lectures and in-depth discussions when delivering online sessions, ensuring consistency and a clear approach to the material.

Distributing quiz questions introduced in 2020 to all units for use in their training and testing employees on their understanding of the CG Manual after each training session.

- Developing and distributing a set of training videos on the CG Manual to facilitate local teams in delivering their training through online platforms. The duration of each video is about 15 minutes and subtitles were made available in Dutch, Polish, Portuguese (Brazil), Spanish and Turkish to ensure the full attention and engagement of trainees.
- Developing and distributing an eBook version of the CG Manual. The eBook aims to make the CG Manual more interesting and easier to navigate. Viewers can click on its contents, access the page containing annexes, or a webpage directly. The eBook is available on IVL's website in English, Thai, Chinese and Spanish.

The training session for the CG Manual introduces the document to employees and provides guidance on how they can take part in promoting good governance at the Company. The session began with an concept of corporate governance and how it applies to IVL is introduced, followed by a discussion on the Code of Conduct with examples of employees facing various ethical dilemmas. Employees are then briefed on whistleblower reporting channels and encouraged to report any wrongdoing they may witness. Following the training, employees are tested on their understanding of the CG Manual.

## Anti-corruption

We continue to maintain a zero tolerance approach to bribery and corruption and abide by strict policies, and all local, national and international laws.

Our CG Manual includes a comprehensive Anti-Corruption Policy where we define corruption and explain key practices to avoid any forms of engagement or corrupt practices.

The Internal Audit Department monitors the implementation of the policy by initiating checks across all units and functions and reports its findings to the Audit Committee.

More information regarding our anti-corruption is given in the Annual Report 2020 pg. 151-158.



In 2013, we declared our intention to join the Thailand Private Sector Collective Action Coalition Against Corruption (CAC) demonstrating our commitment to preventing bribery and corruption.

The CAC Certification was first received by the Company in 2014 and successfully renewed in 2018 for another three years. The Company submitted all documents for the 2021 renewal in mid-December 2020.

## Political activities and contributions

As a leading chemical company, IVL demonstrates leadership in regards to driving sustainable development, innovation, product stewardship, creating positive impact on the climate.

The company participates in trade associations, lobbying or tax-exempt groups for multiple reasons, including networking, building industry skills, representing / raising awareness to society, creating / monitoring public policy, legislation or regulations and taking collective actions to bring some changes.

Our participation in various associations allows us to stay connected with stakeholders and address public authorities' requests regarding the development of the relevant industries. We maintain memberships with multiple trade associations expressly for that purpose. In 2020, we did not make any political contributions.

For More Information

## Tax Strategy

IVL has a robust tax governance process in place headed by the Group's Chief Financial Officer - a Board member, who monitors and controls tax related affairs and risks. The Audit Committee reviews the Company's tax strategies, risks, internal controls and governance with respect to tax functions.

Our internal policies ensure compliance with the letter as well as the spirit of applicable tax laws, while internal and external resources are utilized to ensure tax obligations are properly understood.

Our Tax Policy encourages advance rulings from tax authorities and/or opinions from reputable advisors on all important issues to mitigate uncertainty. Multiple training sessions are also organized to develop and strengthen internal competencies on tax related matters.

For More Information 

## Sustainability Governance

### Sustainability and Risk Management Committee (SRMC)



**Mr. Aloke Lohia**  
Chairman



**Mr. Rathian Srimongkol**  
Member



**Mr. Russell Leighton Kekuewa**  
Member



**Mr. Kanit Si**  
Member



**Mr. Tevin Vongvanich**  
Member



**Mr. Dilip Kumar Agarwal**  
Member



**Mr. Uday Paul Singh Gill**  
Member



**Mr. Yashovardhan Lohia**  
Member

Sustainability is integral to the way we do business. In mid-2020, Mr. Yash Lohia was appointed as Chief Sustainability Officer of IVL Group and the Sustainability enabling function became a core component of the organization along with IVEX, Digital, Business Continuity, Communications and EHS.

The four key elements under the Sustainability enabling function encompass environmental sustainability, sustainability reporting & disclosures, sustainability communications and advocacy and global product innovation and stewardship. These are aligned with our 2023 Business Strategy.

As a sub-committee, the SRMC ensures that sustainability is reflected in day-to-day business decisions throughout the organization, operates in accordance with the SRMC Charter and reports directly to the Board. Members of the SRMC are chosen for their valuable experience in sustainability and risk management; the SRMC is the second highest authority related to sustainability within IVL, comprising four independent and four executive directors.

The SRMC meets at least twice a year and advises, implements and monitors activities through multi-disciplinary departments including strategy, risk and corporate governance. These meetings allow members to analyze macro trends, review the business plan for the year and discuss IVL's strategy and performance. The meetings also offer an opportunity to review and acknowledge recommendations from various sustainability indices and assessments and enable the sharing of best practices.

In 2020, there was a specific focus on the wider impact of COVID-19 and the severe decline in the crude oil market on IVL's overall business outlook, operations status and estimated financials.

The SMRC followed up on progress from activities in 2019 including carbon reduction strategies, increases in the use of renewable electricity, climate strategy, SBTs targets, hazardous and non-hazardous waste to landfill, sustainability targets and health and safety. The SRMC also discussed specific sustainability ambitions and progress against 2025 targets.

Following the meetings, the Secretary updates members on key initiatives that are in progress to drive IVL's mid and long-term strategies, including the global recycling commitment, low carbon products, phasing-out coal, SBTs, zero waste to landfill audit, phasing-out hazardous substances and UN Global Compact participation. The full Sustainability and Risk Management Committee Report to Shareholders for 2020 is available in [the Annual Report 2020](#).

### Maintaining Continuity on Sustainability Governance

With the Huntsman asset acquisition in 2019, we introduced our sustainability governance systems through organized introductions and training and will convene to set commitments, targets and action plans in the event of any concerns with IOD. Huntsman supports and contributes to IVL's sustainability vision and maintains strong health and safety practices which are being shared among IVL Group. Huntsman's targets will also form part of IVL Group's targets and we expect that following the acquisition, our IOD division will report some of the strongest GHG reductions, innovations and performance in product stewardship.



For More Information 

## Supply Chain Management

Integrating sustainability into our supply chain is a core focus, and we have robust mechanisms in place to confirm that suppliers adhere to strict ESG compliance. At the same time, many of our suppliers are multinational industry leaders that maintain strict policies of their own and with whom we are aligned.

Our suppliers must comply with IVL's Policies, Supplier Code of Conduct and a Supplier Self-Assessment adhering to proper business ethics and environmental regulations and recognizing the importance of human rights. The coverage areas include ethics, human rights, EHS and mutual trust and respect.

## Sustainable and Green Procurement

IVL uses and purchases environmentally and socially responsible materials, products and services whenever they perform satisfactorily, are safe and provide value over their lifetimes. We must be aware of any potential impacts that a product's life cycle will have on environmental and human health with an aim to:

- Encourage sustainable consumption
- Reduce its impact on the environment and human well-being
- Support sustainable long-term markets for recyclable materials
- Contribute to community and societal progress towards sustainability

Our sustainability performance on supply chain management has been continuously improving year-on-year, allowing us to remain at the **Gold level for three consecutive years** in the EcoVadis rating. In 2020, our score improved to 72 and was among the **top 2% of companies in the manufacture of basic chemicals**



Suppliers must acknowledge receipt and properly communicate the policies and Code of Conduct. Terms and conditions are also written into the supplier self-assessment documentation.

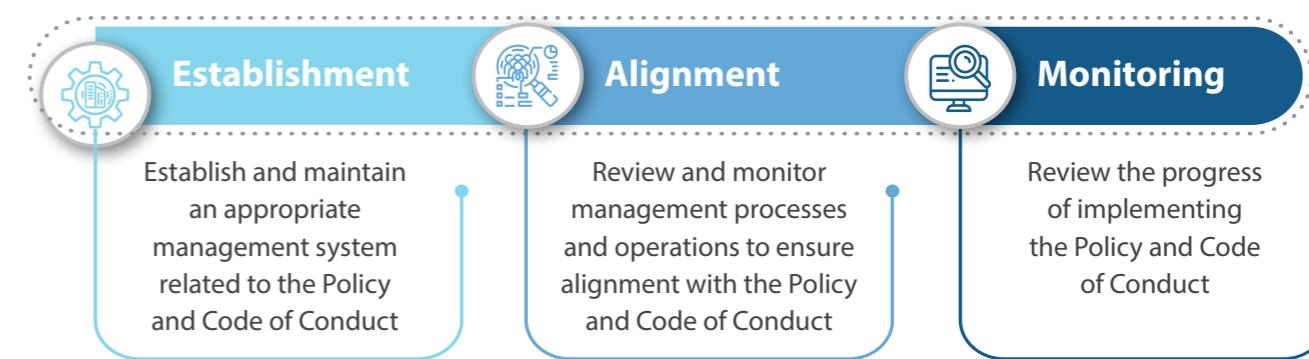
Legally binding contracts with key suppliers include detailed ESG compliance requirements according to IVL's policy and Codes of Conduct. The contracts contain specific references to comply with IVL's ESG requirements with appropriate sustainable development practices in addition to suppliers' own standards and Business Codes of Conduct. In 2020, there were no situations where suppliers did not meet regulations.

## Human Rights and Compliance in the Supply Chain

Our Human Rights Policy provides clear guidance on upholding and promoting human rights throughout the value chain. Wherever we operate, our suppliers must comply with all applicable laws and regulations, conduct business with ethical and transparent labor practices and adhere to health and safety protocols in the workplace. We follow strict due diligence processes during contract arrangements and negotiations including adherence to numerous quality standards such as REACH certification. We also include specific quality control and traceability clauses in our supplier contracts. This approach confirms that we avoid low-quality products, reduce waste and as an example, that we procure A-grade glycols that are cost competitive.

Compliance requires ongoing monitoring, analysis and adherence to proper standards and we work hard to continuously evaluate and manage risk throughout our end-to-end supply chains. By adhering to standards set by the UNGC, ILO and ISO, we ensure that our suppliers comply in core areas such as labor conditions, human rights, anti-corruption and environmental and social responsibility. We also review supplier websites for verification of policies and performance. The Sustainability and Risk Management Committee serving across all of our businesses meet to review supply chain risks and risk mitigation actions where necessary.

### Human Rights Policy and Supplier Code of Conduct Requirements



### Child Rights Protection – Ranked first among Chemical Companies in Southeast Asia

The Global Child Forum Southeast Asia benchmark study, conducted by Boston Consulting Group and the Global Child Forum, involved children's rights practices of 232 of Southeast Asia's largest companies covering the workplace, marketplace and community and environment.

**IVL was ranked in first place among leading chemical companies in Southeast Asia** with an overall score of 7.3/10, above an industry average of 5.5. We received the best scores in all three areas.



For More Information

## Supplier ESG Assessments Actions Taken

Through our Human Rights Policy and Supplier Code of Conduct apply to all operating sites, IVL safeguards human rights and ESG within our supplier selection process. We insist that suppliers be responsible for overseeing and ensuring compliance of their subcontractors, and, through our global procurement directive, ensure that the Code of Conduct and Policy are binding.

The Code of Conduct covers legal compliance, ethics, human rights, the environment, health and safety, the handling of proprietary information, mutual trust and respect and reporting of any misconduct.

On a consistent and regular basis, suppliers are asked to self-certify compliance with the Supplier Code of Conduct in addition to undertaking reviews and onsite evaluations of their own sub-contractor facilities. Depending on the outcome of these audits, remedial action is taken with the support of IVL Group and monitored until completion. A supplier partner's relationship with IVL may be in jeopardy if issues are not promptly and effectively addressed.

For More Information 

## Decarbonization Targets and the Supply Chain

The supplier assessment is essential to ensure social compliance, labor standards (including human rights, labor safety, a workforce free of child labor and discrimination in the supply chain), as well as environmental compliance by suppliers within the supply chain.

For More Information 

As a responsible partner in the value chain with a sustainably-focused business, we are working towards supply chain decarbonization in the following areas: incorporating sustainability in procurement contracts, supplier risk assessments and performance evaluations;

## Methodology and Results

Suppliers must respond to a self-assessment questionnaire which highlights areas of opportunity and potential risk with regulatory compliance, child and forced labor, human rights and sustainable supply chain management. Child labor and forced or compulsory labor were identified as the most urgent items needing attention.

### 2020 Assessment Results

 100%	of raw material suppliers and critical non-raw material suppliers were assessed based on human rights related risks.
 No	key raw materials and critical non-raw materials suppliers were identified as human rights related risks.
 No	key raw materials and critical non-raw materials suppliers were specified as being exposed to risks of incidents of child, forced and compulsory labor.
 No	complaints concerning human rights were submitted through the grievance reporting system.

This effort also supports climate action based on the Paris Agreement and the SBTs, together with the UN SDGs. Carbon footprint planning is required in supply chain modeling for decisions on supply chain network design, selecting modes of transportation, product mix, inventory control, and the selection of suppliers, among others. To continue playing an active role, we will explore the viability of supply chain decarbonization projects and assess valuable lessons from industry leaders. We look forward to working with suppliers to build a complete view on emissions with supplier-specific data, set emission reduction targets, and increase trust and strengthen our relationships to achieve greater collaborations in the supply chain as part of a focused decarbonization strategy.

The following examples of our ongoing initiatives demonstrate our strong support and commitment to operating responsibly through sustainable supply chain management together with our business partners.

## Transportation Management

- rearranging transportation patterns :
  - » replacing truck with rail transportation
  - » shifting to pipeline transportation for hazardous materials and/or the large supply of raw materials and feedstock
  - » transforming multiple transportation routes to single routes
- reducing the number of shipments required by increasing packaging sizes
- hiring storage tanks near production plants to reduce road transportation



## Co-location Strategy

We work with our suppliers and customers to avoid the transportation of raw materials and products through a co-location strategy. For instance, in Poland, India and Thailand, with our suppliers in the same location, we receive raw materials and feedstock through pipelines. For our customers in the beverage industry in Thailand and the Philippines, co-location helps to combine different steps into a single continuous process that helps to enable a high level of productivity with no risk of workplace injury.

We operate a co-location model at additional locations. These initiatives optimize operational efficiency, minimize fuel consumption, reduce logistics costs, carbon emissions and injuries. At the same time, we can collaborate with our suppliers and customers on sustainability and climate change initiatives, providing win-win solutions.

## Improving efficiency and safety, and lower carbon emissions in our supply chain

Our PTA plants in Rayong, Thailand shifted from truck to rail transport when carrying their products from the plant and containers (for loading and emptying) at Map Ta Phut Port before continuing on to Laem Chabang Port. However, for a short distance within Map Ta Phut district, trucks are still being used for container movements between the station and the port.

The shift from road to rail transport has also been implemented at several other locations in Thailand and the United States. This lowers fuel consumption per trip by almost 76%, reducing carbon emissions in the process. An added benefit is the reduction in road traffic accidents. We are considering expanding this model to other locations.



## Collaborating through Industry Memberships

We are working in partnership to steer the specialty products industry in an increasingly sustainable direction through our memberships in global industry organizations. In 2021, we joined the American Chemistry Council (ACC). This forum focuses in part on sustainability and energy and is an important platform from which to collaboratively address environmental and social concerns, and many of our suppliers are existing members. We continue to provide insights and advocate on key issues through our involvement on ACC committees which helps both protect and ensure greater

sustainability of our integrated US supply chains; we are pleased that Mr. Aloke Lohia, IVL's Group CEO, is on the ACC Board. In 2021, the ACC will be focusing on sharing best practices around sourcing and strategic supplier spending and will be further evaluating ESG considerations into supplier selection and contracting.

For more information on our association with the ACC, please refer to the Major Industry Associations & Memberships section on pg. 39.

## Cyber Security Management

Technology plays an increasingly important role in global business, and our dependence on it continues to grow. At the same time, the risks of complex cyber-attacks increase. Customer data and information flows through the supply chain and the basic functioning of our operations can be at risk without adequate protection. We work hard to ensure that our operations, systems and processes are safeguarded from malicious intent and we have advanced threat protection measures in place.

IVL's cyber security resilience is overseen by the SRMC and the Audit Committee, tasked with developing robust policies and procedures that are aligned to our risk appetite. Our disaster recovery and business continuity plans ensure smooth and uninterrupted operations.

The Chief Strategy Officer, Head of BCP and Head of IT work in synergy to develop a culture of risk awareness within the organization.

The Business Continuity Management team works in collaboration with our Group-wide Information Technology (IT) team and the newly established Digital enabling function to strengthen our cyber security risk mitigation and work towards developing short-term and long-term cyber risk mitigation plans.

We have seen no material impact on our business operations from the cyber security attacks and data breaches to date with the implementation of our robust cyber security governance mechanisms and best practice procedures.

## IVL's Cyber Risk Mitigation Measures

### Investing in Robust IT Applications

Network segmentation is planned to keep users, servers, and applications on different network segments and passes inter-segment traffic through firewalls.	Adopting emerging and modern Artificial Intelligence (AI) & Machine Learning (ML) based protection & detection technologies such as Endpoint Detection and Response (EDR) and Next-Gen Firewalls (NGFW)	Implementation of advanced multi-layered firewall defense on network, email phishing protection, antivirus, antimalware, latest system patch applications and advanced threat protection
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### Best Practice Procedures and Awareness

Comprehensive three-fold backup strategy for data recovery.	Establishment of control over user IT activities in order to keep sensitive information secure and prevent insider breaches.
Ongoing assessment of security threats, balanced against the existence and adequacy of security controls.	Bitesize employee security awareness-raising via email occurring on a monthly basis.



# DRIVING SUSTAINABLE GROWTH

## Capitals Linked in this Chapter



Financial Capital



Intellectual Capital



Social and Relationship Capital

## Value Created

Our significant investments in recycling are leading to increased market share and reduced GHG emissions that help us towards achieving our carbon neutral ambitions. Meanwhile, IVL's innovative and sustainable portfolio offers best-in-class products, which improves customer satisfaction. Additionally, the flagship recycling education program is leading to increased awareness among communities and driving more responsible consumer behavior.

## Our Ambitions for Better Sustainable Growth



### Short-Term (2021–2024)

- Vitality Index 34% for the Specialty PET business and 22% for the Fibers business in 2021
- Customer Satisfaction Index (CSI) ≥ 86.0% in 2021
- Leading rPET player in core markets



### Medium-Term (2025)

- 750,000 tons of total post-consumer PET as feedstock into our polyester production per year
- To recycle 50 billion bottles per year
- US\$1.5 billion sustainable investments for sustainability objectives
- 7% revenue from low carbon products



### Long-Term (2050)

- Towards A Circular Economy by:
  - developing partnerships with external associations and organizations
  - becoming a circular economy thought leader
  - innovating sustainable products serving customers' needs
  - diverting plastic waste from the environment and oceans

## Circular Economy Thought Leadership



Globally, one in every five PET bottles are made with our PET resins, one in every two premium baby diapers are made from our fibers and one in four airbags are made

from our yarns. We are building a leading infrastructure network in PET recycling with double-digit returns and demand for PET is likely to continue to grow.

PET is the preferred beverage packaging material given its superior economics - it is more cost-effective, with a lower carbon footprint and is safe for transportation.\*

#### Price ratio

(cents per bottle, PET = 1X):



1x



1.6x



1.7x

PET bottle      Aluminum can      Glass bottle

#### GHG ratio

(GHG per 100 Koz liquid, PET = 1X):



1x



1.5x



2.4x

PET bottle      Aluminum can      Glass bottle

Note: \*Price and GHG ratio is based on the Lifecycle Inventory Analysis, which includes total solid waste produced from cradle-to-disposal/recycling of products.

Source: Euromonitor; Franklin Associates; Cleanmetrics Corp; Goldman Sachs Global Investment Research.

We understand that driving a circular economy relies on partnerships throughout the value chain. We combine our expertise in innovation and human capital to participate in policy advocacy and industry collaborations and work hard to keep the plastic that we produce in the economy, ensuring it is used as a resource and not treated as waste. We provide stakeholders with quantitative and qualitative information and disclose our recycling initiatives and collaborations with targets through to 2025.

## REUTERS NEXT

RETHINK, REBUILD, RECOVER

A NEW VISION FOR A BETTER TOMORROW

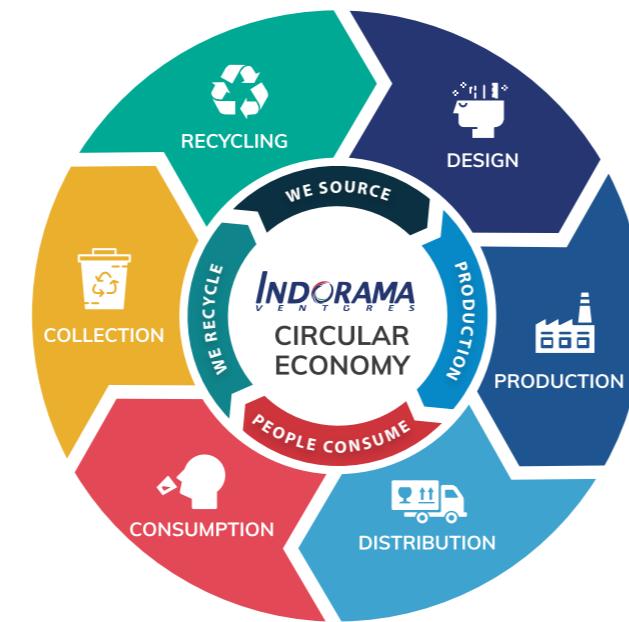


Urban Mining: Recycling on a Mass Scale\* with

**YASH LOHIA**  
Chief Sustainability Officer, Indorama Ventures

## Circularity Across Our Value Chain

We see the positive impacts that a circular value chain has on society, the environment and our business performance, and being a responsible operator means creating long-term value for all our stakeholders. IVL is working hard to continue contributing positively across all areas of the value chain through innovative designs, efficient and greener production, streamlined logistics, advocacy for responsible consumption, proactive waste collection and widespread recycling.



Our Processes	Sourcing	Design	Production	Distribution	Consumption	Collection	Recycling
Stakeholders	Suppliers Our operations	Our operations Business Partners	Our operations	Suppliers	Consumers Governments	Consumers Communities	Our operations Business Partners
<b>Steps Taken</b>	<p>Integrating supplier ESG performance into our procurement process as a first step towards supply chain circularity.</p> <p>For more information, please refer to pg. 50-54</p> <p>Consuming sustainable raw materials from renewable sources and recycled products as well as renewable electricity in our operations.</p> <p>For more information, please refer to pg. 76-77</p>	<p>Our design criteria is tailored to develop lightweight and high-performance products with greater utilization of sustainable and recycled raw materials which enables easier end of life management and sustainable product choice.</p> <p>For more information on our products designed with circularity considerations, please refer to pg. 64-65, 67-68</p>	<p>We embrace the concept of circularity in our production by progressively increasing our mix of renewable energy, biogas, biomass and renewable electricity.</p> <p>We reduce the use of critical resources, replace potentially harmful resources with safe and renewable alternatives, and recover waste streams by viewing waste as a resource and diverting waste from landfill.</p> <p>For more information on how we harness renewable energy, please refer to pg. 50, 76 and how we manage the waste, please refer to pg. 85-86.</p>	<p>We encourage value chain partners to adopt circularity to have a lower carbon footprint and impact.</p> <p>For more information on GHG Scope 3 emissions, please refer to pg. 52, 65, 75-76</p>	<p>Strongly encourage behavioral changes among consumers and work with our customers to drive rPET demand in their packaging.</p> <p>Collaborate with the government, beverage and plastic industry groups to advocate for changes to current laws, rules and regulations preventing the use of rPET content in food packaging in order to advance the collection and recycling of plastic waste.</p> <p>For more information on how we engage with multiple stakeholders, please refer to pg. 60-61</p>	<p>We conduct our flagship "Recycling Education" program to raise environmental awareness and increase the collection rate of post-consumer PET.</p> <p>For more information on our recycling education program, please refer to pg. 61, 111-113</p>	<p>We are driven by our 2025 commitments and leverage our expertise in mechanical recycling and chemical recycling.</p> <p>For more information on our growth in mechanical and chemical recycling, please refer to pg. 62-63</p>
<b>2020 Highlights</b>	<ul style="list-style-type: none"> <li><b>20,884 tons</b> of renewable raw material (bio-MEG, cellulose, PLA) consumption.</li> <li><b>1,767,434 GJ</b> of renewable energy consumption.</li> <li><b>230,912 tons</b> of total recycled materials consumption</li> </ul>	<ul style="list-style-type: none"> <li><b>Deja™</b> products</li> <li><b>Newlife™</b> products</li> <li>PPE coverall suits.</li> </ul>	<ul style="list-style-type: none"> <li><b>Four of our sites</b> are utilizing <b>100% renewable electricity</b>.</li> <li>In 2020, we initiated the installation of solar rooftops at five sites which are due for completion in 2021.</li> <li><b>Solar fencing</b> generating 55.82 MWh</li> <li><b>70%</b> total reused, recycled and recovered waste</li> </ul>	<ul style="list-style-type: none"> <li><b>100% coverage of GHG Scope 3 data collection</b> in five categories.</li> <li><b>100% external audit</b> of purchased goods and services.</li> </ul>	<ul style="list-style-type: none"> <li><b>rPET supply agreements</b> with our customers in food and beverages and global FMCG brands.</li> <li><b>PETValue project</b> - a recycling JV between IVL and Coca-Cola Beverages Philippines Inc, in the Philippines.</li> </ul>	<ul style="list-style-type: none"> <li>A total of <b>27,906 people</b> were educated on recycling and waste separation.</li> <li><b>424,530 PET bottles</b> were collected globally for recycling.</li> <li>A <b>16.5 tCO<sub>2</sub>e</b> reduction from post-consumer bottle recycling.</li> </ul>	<ul style="list-style-type: none"> <li>Acquired <b>three recycling facilities</b> in Brazil and Poland (2 facilities).</li> <li><b>Expanded at site in Verdun, France.</b></li> <li><b>10.1 billion post-consumer PET bottles</b> recycled.</li> <li>Approximately <b>58 billion bottles</b> recycled as of 2020 since 2011.</li> <li><b>222,288 tons</b> of total post-consumer PET <b>bottles recycled</b> into flakes as polyester feedstock.</li> </ul>

## Driving Circularity Through Stakeholder Partnerships

Embedding the circular economy as best practice locally, nationally and internationally requires working together across diverse stakeholder groups. Driving circularity at IVL means developing and distributing products that exceed customer expectations while contributing to business growth and financial sustainability. In 2020, we actively increase our participation in industry associations and memberships and extended our contributions in existing partnerships. We also identified a number of new opportunities for collaborations; all of which support our mid-term ambitions. For more information on our industry associations and memberships, please see pg. 39.



Last year, we participated in the World Economic Forum's Global Plastic Action Partnership (GPAP), supporting our commitment to increase recycled content volumes of PET by at least 750,000 tons together with our pledge of US\$1.5 billion towards achieving this goal by 2025. With our extensive and long experience in plastic collection together with our global scale and capabilities, we intend to add significant value and insights working with regulators and peers through our membership.

Through our trade associations, we actively participate in legislative engagements to promote sustainability, including our work with the European Commission to ban the use of plastics as packaging for extra virgin olive oil in Spain and contributing to the EU's non-recycled plastic packaging waste policy.

### Be part of the Circular Economy Accelerator

In 2020, Indorama Ventures was proud to support the Circular Economy Accelerator policy.



As a recycler, we want to raise awareness about the value of circular packaging solutions, like PET. Increasing recycling knowledge moves all of us towards a greener future. By working together, we can build a better recycling system in the US. This will result in a stronger, sustainable economy and environment by creating jobs, protecting natural resources, and reimagining how we design and deliver goods along the way. Bold new steps in recycling policies are required to make this happen. A new policy approach, released by the Circular Economy Accelerator, led by The Recycling Partnership, is an important opportunity to advance the US recycling system helping it evolve into one that is dramatically more efficient and effective, benefiting every part of the value chain in the circular economy.



## Other Key Engagements in 2020

### Financial Institute



Engaged with the IFC to receive the first-ever blue loan to a global plastic manufacturer addressing marine plastic leakage.

For more information, refer to pg. 7, 8, 16

### Customers



Partnered with Coca-Cola Beverages Philippines, Inc. (CCBPI) to develop a state-of-the-art recycling facility.

For more information, refer to pg. 62

### Society



Engaged with our business partners to develop and produce PPE from recycled PET.

For more information, refer to pg. 108

## Green Industry Level 5 Award Recycling for Sustainable Consumption and a Green Society

Indorama Polyester Industries PCL (Nakhon Pathom) received a Green Industry Level 5 award (Green Network) in 2020 from the Ministry of Industry, underscoring IVL's commitment to sustainability. Each year, the factory is capable of recycling 1.8 billion PET bottles, helping Thailand reduce crude oil consumption by 560,000 barrels and reducing CO<sub>2</sub> emissions by 133 million kilograms, as well as averting PET plastic waste in landfills. Additionally, treated water within the factory is 80% reusable, focusing on stringent quality control and assurance policies to ensure maximum safety to consumers, which is IVL's top priority.



### Recycling Education for Society

We firmly believe that education is the key to supporting and sustaining a circular economy, and that together, we can all play our part. Sustainable consumption, when combined with more efficient production techniques, can drive major improvements in environmental protection and long-term social

well-being. In 2020, we trained 27,906 people across diverse communities and consumer bases in global programs to promote recycling and waste separation. Further information is available in the Recycling Education section on pg. 111-113.

## Continuous Improvements in Recycling

<b>Our Recycling Mission</b>	<b>To serve the recycling needs of IVL's customers by building a leading, differentiated, and economically attractive recycling business.</b>		
<b>Our Recycling Strategy</b>	<b>Strengthening global recycling capability</b>	<b>Ensuring a fully closed loop</b>	<b>Contributing to a circular economy</b>
<b>2020 Progress</b>			
<b>2025 Recycling Commitment</b>	<b>US\$1.5 billion total investments in recycling</b>	<b>50 billion bottles recycling capacity per year</b>	<b>750,000 tons total post-consumer PET in polyester feedstock per year</b>

From 2011 to December 31, 2020, we recycled approximately 58 billion PET bottles; this translates to a cumulative carbon footprint reduction of 1.9 million tons in GHG emissions and 1.3 million tons of plastic that have avoided landfill. In 2020 alone, we recycled 10.1 billion bottles.

Our global reach and leadership position in PET production and recycling allows us to leverage opportunities from a closed-loop system. We have achieved further growth in mechanical recycling by investing in three facilities in 2020, one in Brazil which

handles approximately 9,000 metric tons per year, and two in Europe which will process an additional 1.7 billion bottles for recycling in 2023 (one new facility in Poland and an expanded facility in France). The proprietary technology used at these facilities has enabled us to produce a variety of recycled products with a greater range of qualities. This additional production capacity will allow us to achieve our ambition of utilizing 750,000 tons per year of total post-consumer PET in polyester feedstock.

### PETValue Recycling Facility

Coca-Cola Beverages Philippines, Inc. (CCBPI), the Bottling arm of Coca-Cola in the country, and Indorama Ventures Plc., signed a joint-venture agreement to establish PETValue, the largest state-of-the-art,bottle-to-bottle recycling facility in the Philippines.

PETValue will ensure that used PET plastic bottles that are 100% recyclable, and therefore not "single-use" are given new life and used again and again within a circular economy. The plant's projected capacity is 30,000 MT/year of flakes which will recycle almost two billion plastic bottles with an output of 16,000 MT/year of recycled PET resin in the first phase. A second extruder will subsequently be installed to consume the remaining quantities of flakes.

With this collaboration, we aim to create value for both our customers and society. By investing in and expanding our recycling capabilities, we are able provide our closed-loop solutions to meet the sustainability targets of our customers while creating a positive impact for society by further reducing the amount of plastic waste directed to landfills.



Click here to watch VDO.

### Supporting the UN SDGs via Sustainable Growth

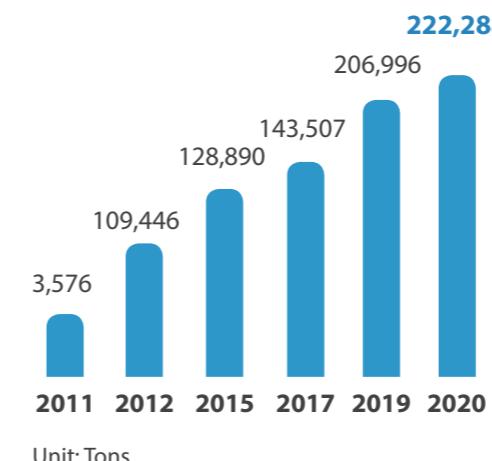
As a leading recycler in North America, Asia and Europe with over 30 years of recycling expertise and longstanding partnerships, we remain committed not only to such partnerships but also to incorporating circular processing into our business models and maintaining our competitive advantage in recycled PET (rPET). We are strong supporters of the UN SDGs, and our recycling efforts specifically target:



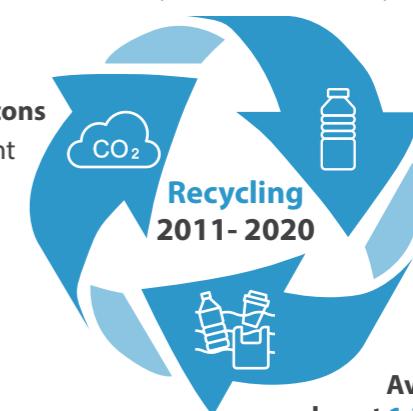
PET is a 100% recyclable and versatile plastic with a lower carbon footprint than alternative packaging materials and we are the largest virgin PET producer globally. In 2020, we recycled 222,288 tons of post consumer PET bottles, a significant increase from a production capacity of roughly 3,576 tons in 2011. While we intend to continue growing our PET production significantly and remain leaders in the field, we are also proud of our commitment to rPET, a material highly suited to the circular economy and which we believe offers consumers an opportunity to contribute to a closed-loop system.

**"Amid the global COVID-19 pandemic, our commitment to recycling remains strong and our recycling production volume reached 222,288 tons, an increase of over 15,000 tons from 2019."**

### Post-Consumer PET bottles recycled



**Reduced almost 1.9 million tons** of carbon footprint in their life cycle



**Avoided almost 1.3 million tons** of plastic waste to landfill

Chemical recycling technology is another focus area for IVL. In a partnership with start-up Ioniqa and Unilever, we are pioneering a new technology that converts PET waste back into virgin grade material for use in food packaging. Through Ioniqa's innovative chemical recycling process, non-recycled PET waste, such as colored bottles, are broken into the base molecule level, contaminants are removed, and the molecules are converted back into PET at virgin grade quality.



## DEJA™ – Sustainable for life

Through **Deja™** a global, sustainable ingredient brand, we are differentiating IVL in the marketplace by offering a performance-led suite of sustainable solutions that help our customers to achieve their sustainability targets, while also responding to end consumers demand for transparency and environmental responsibility. IVL's unique access to recycling sources through our own global supply chain ecosystem means we can power sustainability and support customers that are aiming to close the loop.

Working throughout the supply chain, **Deja™** offers sustainability by giving converters credibility, retailers accreditation, and end consumers the assurance of transparency and high performance as standard.



Visit DEJA™

The **Deja™** brand platform is inspired by IVL's vision to be a world-class sustainable chemical company making great products for society. The **Deja™** portfolio, which includes sustainable PET, rPET, polymer and fiber range of products available across flake, pellet, fiber and filament ingredients, offers high performance and versatility, with a lower carbon footprint. **Deja™** solutions can be applied to a wide range of applications across the Hygiene, Lifestyle, Automotive and Packaging sectors, while meeting the exacting standards demanded by the specialist sectors.

## DEJA™ Products Value-Added Benefits

**Traceability** - Full supply chain traceability across raw materials and processes.

**Closed-loop** - The use of post-consumer raw materials enables closed-loop applications.

**Locally sourced** - 100% rPET materials allow for regional supply and a low carbon footprint.

**Multi-purpose** - High performance and versatile material characteristics.

## Deja™ Carbon Neutral

The **Deja™ Carbon Neutral** PET pellet is our latest innovation. It has been sustainably produced throughout its supply chain and helps environmentally conscious companies to achieve their sustainability targets by lowering their Scope 3 GHG emissions.

**Deja™ Carbon Neutral** is a PET proposition with neutralized raw material emissions, from cradle to IVL's plant gates. The **Deja™ Carbon Neutral** pellet is produced with locally sourced materials, recycled water and a low impact transport network and where we have unavoidable emissions, we offset them to ensure our carbon footprint is reduced to neutral. It comes with an independently verified carbon neutral certification of compliance from globally established providers. Through a partnership with South Pole, a leading project developer and provider of global climate solutions, IVL offsets unavoidable carbon emissions through water and forestry stewardship projects that helps transform lives and protect the environment.



### Locally sourced material

Our PTA & IPA comes from co-location plants and our rPET is sourced locally, reducing carbon emissions.

### Vertical integration

Methane produced during water treatment is used to power our onsite boiler. CO<sub>2</sub> byproduct of production is used by a neighbouring plant to carbonate beverages.

### Water transport

90% of our MEG (Mono-Ethylene Glycol) supplies are transported to our facilities by barge from local sources.

### south pole Verified carbon offsets

In partnership with South Pole, we offset our unavoidable carbon emissions by supporting verified carbon emissions reduction projects.

## NewLife™ - Upcycling plastic into premium yarns

Newlife™ is the product of an ambitious project developed by Sinterama in creating a circular economy that significantly reduces ecological impacts. This technologically innovative platform is certified through a comprehensive production approach and offers a wide range of excellent quality, high performance recycled polyester yarns made from post-consumption plastic bottles collected in northern Italy in order to avoid deterioration of PET plastic. The production process is 100% Made in Italy and 100% traceable.

Newlife™ uses a mechanical process to transform bottles into a polymer, without the use of chemicals which could be harmful to the environment. Recycled polyester, which requires fewer processing stages, consumes less energy during the production process, resulting in a considerable reduction in carbon emissions compared with virgin polyester.

Newlife™ received the following certifications:

- **Oekotex** Cert. n° 005339.0 - Centrocot
- **Global Recycle Standard** - Textile Exchange



Visit New Life Yarns

## Innovation Driven Growth

We believe that investments in innovation are essential to retain our competitive advantage. As of December 31, 2020, we had 17 R&D centers around the world, 173 R&D employees and 94 patents (applied and granted) in 2020 out of an overall 884 patents. Direct R&D spending in 2020 was US\$19.2 million. We continuously work to improve our systems and processes to deliver solutions that meet environmental needs and exceed customer expectations.

### Vitality Index\*



\* Vitality Index: Revenue generated from the sales of products developed during the last five years.

Promoting and supporting innovation through our workforce, products and processes provides the foundation for which we make quality products for society. We continue to enhance customer value by foreseeing market needs, working through

## Our Approach to Innovation

Our approach to innovation incorporates six categories – product innovation (linked to our vitality index above), process innovation (increasing yields through process improvements), environmental innovation (promoting sustainability through our value chain), open innovation (creating new revenue

### Product Innovation



Encompasses the portfolio of products we are developing including those with pending patents. We strive to make great products for society that exceed customer requirements incur minimal environmental impacts, and prioritize cleaner and more sustainable raw materials as measured via the Vitality Index.

### Process Innovation



2020 saw significant investments in the upgrading of our processes and the establishment of enabling functions. We work continuously to reduce our energy consumption, drive production efficiencies, increase our product consistency and minimize our environmental footprint.

### External Collaboration



Working in partnership with diverse stakeholders is integral to developing products that exceed customer expectations.



Innovation is at the heart of a sustainable business; it can be measured in part through a vitality index which demonstrates the revenue generated from the sale of products developed during the last five years. In 2020, our Specialty PET business recorded a vitality index of 35%, exceeding our previously set target of 34%. Our Fibers business achieved a vitality index of 23%, exceeding our previously set target of 22%.

## 2020 Highlights

- us\$19.2 million** in direct R&D Spending
- 173** R&D Employees
- 17** R&D Centers
- 94** Patents in 2020  
(applied and granted) out of overall 884 patents
- Over **300** Collaborative Projects

partnerships and maintaining a culture focused on continuous improvements. We remain leaders in integrating and promoting sustainability throughout our value chain.

streams and increasing differentiation), internal collaboration (promoting internal creativity) and external collaboration.

Below are three examples of strategic innovation approaches adopted by IVL to ensure market differentiation and responsible, thriving operations.

### Benefits

#### Value for Our Organization

Provides clarity to the sales and marketing teams on the value of the projects and their viability.

#### Value for Customers

Ability to scale up projects and products while mitigating the risk of not meeting our customer's needs.

#### Value for Society

Integration with product stewardship, through a formal assessment of a variety of environmental and social impacts.

## Innovative Product Portfolio

Our product portfolio reflects our strategic support for the circular economy, our focus on innovation and our vision of making great products for society. Our activities and targets are reflected in our climate change strategy and supported by our participation in Project Mainstream - a cross-industry, global World Economic Forum initiative that seeks to leverage the circular economy to function at scale.

### Innovative Products from the FIT strategy – creating value, flexibility and sustainability

Avgol's innovative FIT strategy turns the product development cycle on its head by creating value, flexibility and sustainability for brands and manufacturers from the outset.

With the COVID-19 pandemic still dominating headlines around the world, the global environmental effort has been relegated from the top of the agenda. However, Avgol's **benefIT Control** and **benefIT Defence** were designed to respond to antimicrobial needs, bringing attention to both improved health and reduced environmental impacts.

The next organic step in our strategy's development lies in the latest additions to the line-up, natureFIT

(reduced environmental impacts) and formFIT (structures and resins).

**One new product from the natureFIT range, natureFIT Gentle**, enables more effective value-driven product development across the hygiene sector. It reduces environmental impacts in terms of resource consumption and waste generation by **lowering resin use in production by as much as 40% and incorporating the application of resin alternatives and natural additive technologies**, while simultaneously enhancing softness and conformability and maintaining all of the performance characteristics of our traditional fabrics.



### Reimagine PET to enhance recyclability characteristics

Our PET resin innovation in 2020 focused on enhancing the sustainable performance across the entire value chain of our existing platforms whilst also working to reimagine PET to replace plastics that have unfavorable recyclability characteristics for a number of target applications.

**A couple of current platforms where we have made substantial progress include our Oxyclear® Barrier PET and Polyclear® EBM PET resins where new designs and enhanced value propositions have been validated at scale and are progressing towards commercialization.**

Credible progress has also been made with the development of new polyesters to replace recycle-challenged plastics. Effective customer and technology partnerships while leveraging global IVL resources has been a key enabler to accelerated learning and solution definition.

## Innovation-Driven Collaborations

Collaborating for success internally and externally is an integral part of IVL's strategy and commitment to sustainability. We nurture creativity and encourage our employees to take measured risks, while teams are empowered to develop and implement new ideas in the form of prototypes for further evaluation. Innovation councils meet to assess customer needs and review new proposals and technologies.

### HealthGuard® AMIC

One stand-out project in 2020 was a collaboration between **Wellman International and HealthGuard Corporation** in the development of an antiviral range of polyester staple fibers. These fibers, when treated with HealthGuard® AMIC, mitigate the transmission of the SARS-CoV-2 (COVID-19) virus and offer consumers viral protection across

#### Benefits of HealthGuard® AMIC



Visit HealthGuard® AMIC

Innovation, research and development also constitute key agenda items in our annual strategy meetings which draw on global input from all those involved in innovation. Our initiatives with external partners in areas such as advanced resins and fibers also enable us to remain at the forefront of wide-scale product innovation and production.

applications such as home furnishings, apparel and PPE. When applied to polyester fibers, HealthGuard® AMIC dissolves the COVID-19 virus particles on contact, rendering them non-infectious. **Testing at the Doherty Institute High Level Biocontainment Facility demonstrated that the treatment totally eliminated the COVID-19 strain virus.**

#### Features of Wellman HealthGuard® AMIC Fibres



## Growth potential in automobile airbags – mobility business

In 2020, **Indorama Polyester Industries PCL (IPI)** and **Toyobo Co., Ltd.** agreed to establish a joint venture firm to produce PA 6.6 yarns for automobile airbags in Thailand. The joint venture is building a new plant at the Indorama Polyester Industries (IPI) factory site in Rayong province and is set to commence operations in 2022. Consistent with IVL's intention to expand in the mobility-related business, the partnership offers significant business growth



potential. The airbag market is expected to grow at 3-4% annually.

In addition to traditional fossil-based PA 6.6 yarns used for automotive applications, we have developed a more environmentally friendly alternative. Enka® Nylon BIO – bio-based high-tenacity polyamide yarns for existing technical fiber applications are particularly advantageous if yarns manufactured from bio-based polymers can be considered as so-called "drop-in" alternatives for current fossil-based products.

#### Product value-added benefits

- Melting temperature and glass transition temperature are at the level of PA 6.6.
- Lower density than PA 6.6.
- Picks-up less moisture providing 40% higher tensile modulus under humid storage conditions.
- 70% bio-based.
- CO<sub>2</sub> emission balance is almost zero.

For More Information

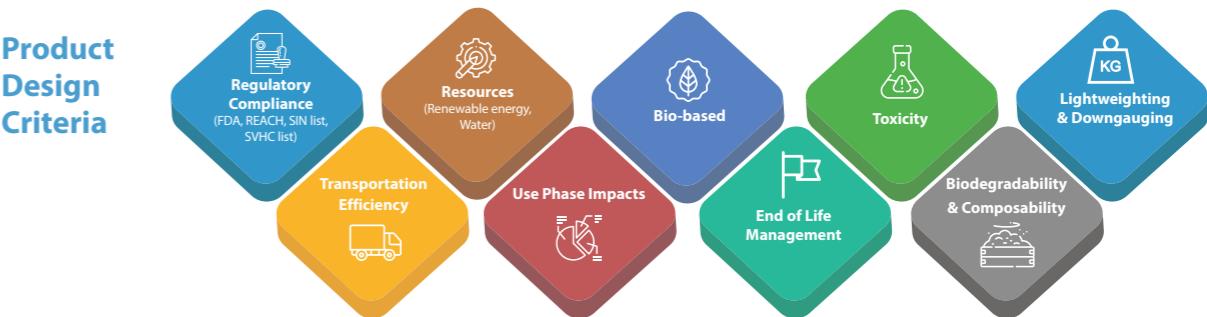
## Safe and Sustainable Products

We have an obligation to provide products that are designed, produced and sold with sustainability in mind. Our commitment to strong product stewardship starts with our raw materials and can be seen through all of the stages of our supply chain. Investing in product stewardship means improving the efficiency of our systems, developing increasingly innovative solutions and minimizing the full life cycle environmental impacts of our products where possible.

For More Information



## Our Approach to Product Stewardship



We conduct ongoing Life Cycle Assessments (LCA) in compliance with ISO 14040/44:2006 to evaluate the environmental impacts of our products. Our operations achieved 47% global LCA coverage by volume production in 2020. We were unable to achieve our target of LCA certification due to COVID-19 pandemic restrictions.

We work with partners through the supply chain to develop products that meet stakeholder expectations, and are proud of our proactive communications. We continue to seek feedback for improvements through the lifecycle of our products.

### 2020 Achievement: 47% Global LCA Coverage



## Ensuring Product Safety

**100%** of European entities were compliant with REACH regulations in 2020.

**100% compliance** with the **ECHA SVHC list** and proactively removing products on the SIN list.

IVL was not listed as a manufacturer of chemicals on the SIN list in 2020.

We have stringent processes and procedures in place to monitor chemicals and other substances used in our operations. Our target remains zero violation of domestic and international regulations and zero use of any substance of very high concern (SVHC). Any volatile substance that may be present from the SVHC list or the Substitute it Now (SIN) list and that may present a risk to health or the environment is monitored and managed via strict controls.

We comply with the European Chemicals Agency (ECHA)'s SVHC list and work hard to continue removing products on the SIN list. We closely assess our raw material streams to ensure compliance with SVHC updates and provide educational materials to our consumers on the nature of SVHCs. For example, a substance that may appear on the SVHC list in raw form poses no threat to product safety once converted to its final form.

## IVL's Product Safety Mechanisms

### Product Safety Mechanisms

#### Product Compliance Risk Characterization (PCRC) Process

Assessment conducted on 100% of our products for potential environmental and human health impacts.

Customer inputs collected to obtain downstream application information.

The PCRC process includes raw material assessments covering manufacturing hazards and product compliance (chemical registration and food safety) with a focus on new formulations in targeted markets.

### Management of Hazardous Chemicals/Substances

An improved approach and targets are set to phase out at risk chemical substances.

Products across the portfolios are assessed for challenged chemicals or substances.

**For the first time in 2020, IVL was ranked second with a grade of B-.**

ChemScore ranks the world's top 35 chemical companies on their work to reduce their chemical footprint and boost investments in safer and greener alternatives. The ranking was developed to provide investors with better information to assess which companies have strong chemical management strategies.

**The ranking is based on four categories:**

1. Hazardous product portfolios
2. Development of safer chemicals
3. Management and transparency
4. Impacts and controversies



ChemScore Report 2020

### iCare™ Heavy Metal-Free PET Fibers

Global awareness of the potential dangers in consumer products is increasing. Consumers are calling for more stringent safety standards, and governments, consumer safety organizations and testing agencies are tightening requirements. Though no safety risk has been proven, some substances have been termed as 'Substances of Interest' (SOIs). As fiber-based products associated with intimate hygiene products may have SOIs, IVL responded to customer anxieties by developing a heavy metal-free PET fiber.

iCare™ heavy metal free polyester is an IVL product produced at Indorama Polyester Industries (Thailand). Trevira (Germany), also produces Antimony Free Polyester Fibers. These products are available as filament yarns, polyester chips and staple fibers. iCare™ PET is compliant with the Toxic-Free Future Initiatives and has diverse applications across food packaging, personal care, home textiles and in the medical field.



Visit iCare™

## A Safe and Sustainable Product Portfolio

### Newlife™ - a premium yarn with a sustainable identity

Newlife™ is an ambitious project developed by Sinterama. This technologically innovative platform is certified through a comprehensive production approach and offers a wide range of excellent quality, high performance recycled polyester yarns, made from post-consumption plastic bottles collected in northern Italy.

Newlife's life cycle assessment was recently conducted by ICEA – Istituto per la Certificazione Etica e Ambientale (Institute for Ethical and Environmental Certification) which inspects and certifies firms that respect the environment, workers' dignity and collective rights.

According to a study carried out by ICEA using the LCA methodology in compliance with ISO 14040 and ISO 14044, producing one kilogram of Newlife™ allows for savings in consumption of energy resources and CO<sub>2</sub> emissions, compared to virgin polyester fibers production, that amount to:

	Consumption of energy resources	Global warming potential	Water consumption (*)
Newlife™	50.6 MJ	3.88 kg CO <sub>2</sub> eq	3.26 Litres
Virgin PET Fiber	127.2 MJ	5.7 kg CO <sub>2</sub> eq	60 Litres
Saving	- 60%	- 32%	- 94%

\* Water consumption is referred to the production of 1 kg. of recycled polymer, and is compared with the data of 1 kg. of virgin PET taken from "Eco-profiles and EPD of the European Plastics Manufacturers - Polyethylene Terephthalate (PET) Bottle grade, Plastics Europe 2011."



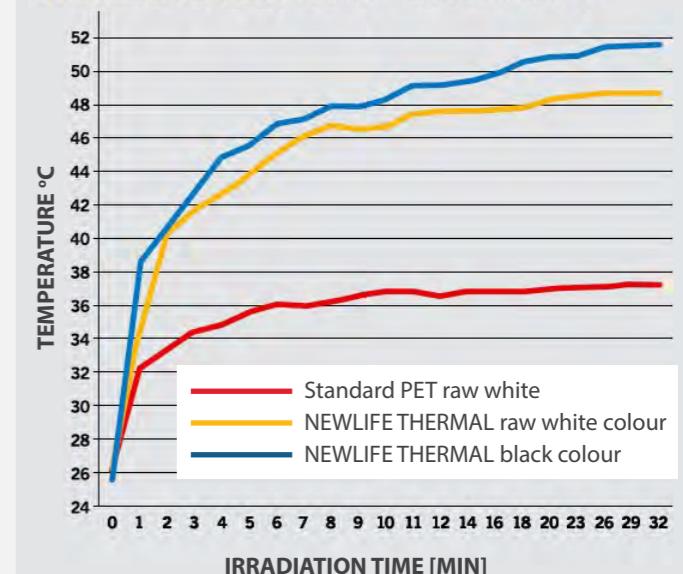
NEWLIFE  
THERMAL

NEWLIFE THERMAL is an eco-friendly – comfortable and high-tech yarn from the "Smart Polyester" range recently launched by Sinterama Group, subsidiary of IVL, to produce special thermal fabrics with comfort performance. The concentration of heating emissions allows this special product to reach exclusive technical features and performance for use in outdoor, sports and workwear clothing.

### NEWLIFE THERMAL

- 100% mechanically recycled polyester yarn, certified and fully traceable.
- Thermo insulating in its performance.
- Available in customized colors yet maintaining mechanical properties despite the yarn dyeing process.

### WARMING EFFECT COMPARISON GRAPH



## Trevira Sinfineco

Trevira manufactures high quality branded polyester fiber and filament yarns for the hygiene, technical, home textiles, apparel and automotive sectors. As the parent company, IVL works closely with Trevira in developing innovative solutions and responses to customer demands for cleaner, more sustainable products. Regranulate chips from IVL's recycled PET bottles comply with the Global Recycled Standard (GRS) and Recycled Claim Standard (RCS-NL); Trevira processes these chips and transforms them into 100% recycled filament yarns. This collaboration demonstrates a highly efficient and sustainable partnership.



For More Information

## Creating Strong Customer Relationships

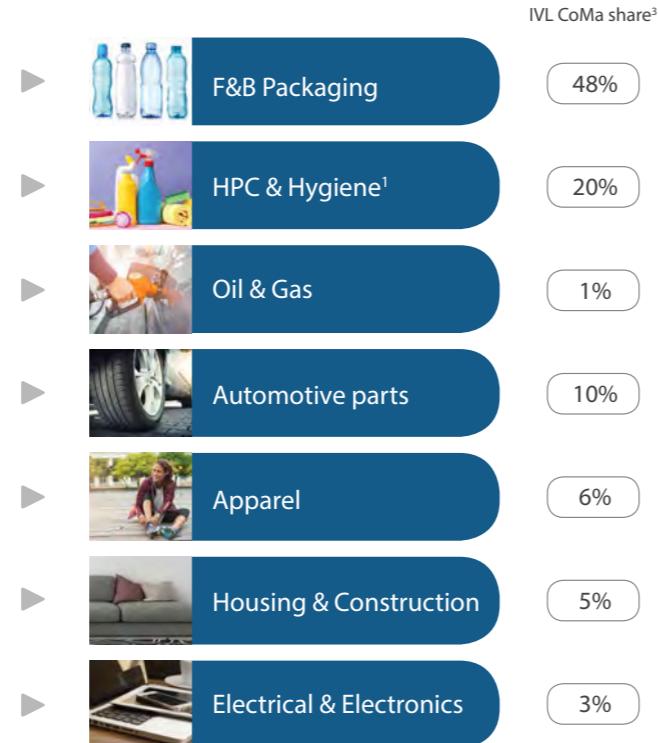
IVL is one of the world's leading chemical manufacturing companies. Our polyester value chain demonstrates significant scale, integration and differentiation, allowing us to manage complexity and deliver a sustained return on investment.

### What we offer

#### IVL Products

- PET, PTA, EG
- PET, PEO, Surf., Hygiene Fibers
- Oxyfuels, Surfactants
- Mobility Fibers, Lifestyle Fibers
- Lifestyle Fibers
- Lifestyle Fibers, PO, PEO
- PET, NDC

#### End uses and IVL CoMa share<sup>2</sup>



Notes: (1) Home, Personal Care and Hygiene products; hygiene products include baby diapers, adult incontinent, feminine care products, disposable wipes, as well as medical applications (e.g., masks and gowns).  
(2) CoMa (Contribution Margin) based on IVL 2020A; above end-market represents 94% of IVL's portfolio; 6% are others.  
(3) 2020A

## Our Approach to Customer Relationships Management

Through our regular two-way communications, we are able to better understand market dynamics and develop sustainable products based on our customers' needs making us a key competitor and leader in the industry.

Strong customer satisfaction is essential for a profitable and sustainable business. Every year, we conduct a customer satisfaction survey as part of our group sustainability strategy, designed to assess customer needs, expectations and satisfaction with our products. We systematically seek feedback across all business interactions and at all levels from our customers. It comprises 22 focus areas incorporated within six overarching factors. Responses are analyzed and reported through our Feedstock, PET, Fibers, Packaging, Wool, Recycling and IOD segments, and recommendations are incorporated into an ongoing improvement cycle.

In 2020, our Customer Satisfaction Index (CSI) reached 86.16%. Our overall Customer Retention Rate (CRR) score - which measures the number of customers. We continued to do business with throughout 2020 was at 92%. We are analyzing the results of these indices for root causes and are identifying areas for improvement in support of our core value to be a preferred supplier. We will also continue to integrate the future requirements and expectations of our customers into our business plan.

In addition, we also track our Net Promoter Score (NPS), a globally recognized metric which measures customer loyalty and the likelihood of recommending our products and services to others. Participants in the study have the opportunity to provide detailed qualitative feedback.

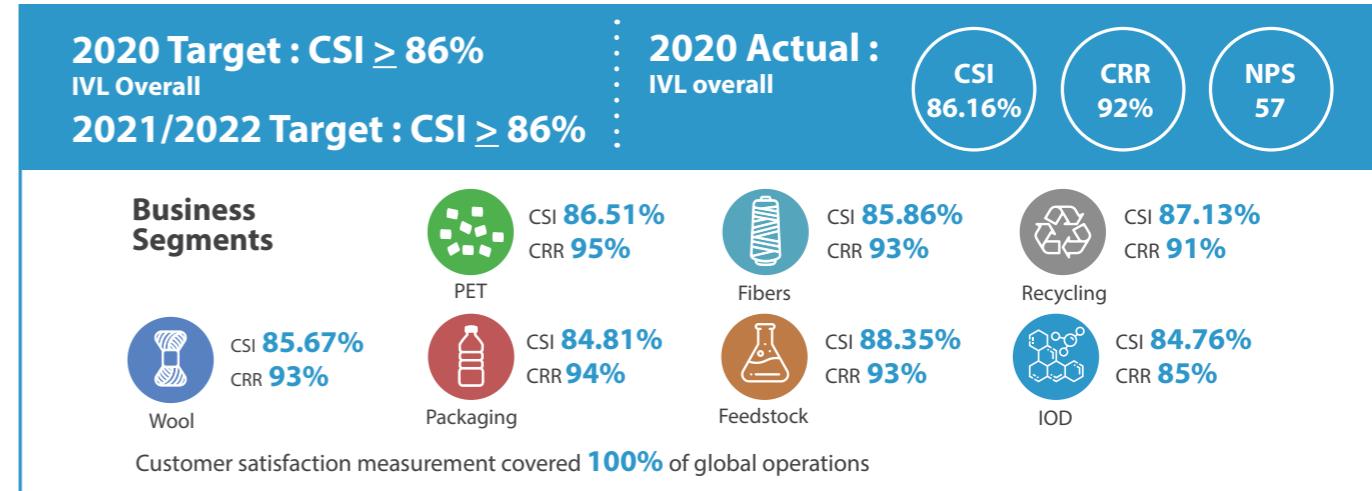


Results of the annual NPS are closely analyzed including in relation to our competitors, and trends over time are monitored. We consolidate or improve on any issues raised accordingly by adapting our CRM approach and monitoring our business performance. In 2020, our NPS was 57, demonstrating a 5.6% improvement from 2019.

In 2020, there are no incidents of non-compliance concerning:

- Marketing communication
- Health and safety impacts of products
- Breaches of customer privacy and losses of customer data

### 2020 Customer Satisfaction Index (CSI), Customer Retention Rate (CRR) and the Net Promoter Score (NPS)





# TOWARDS CARBON NEUTRALITY

## Capitals Linked in this Chapter



Natural Capital



Manufactured Capital



Social and Relationship Capital

## Value Created

We are focused on reducing our consumption of natural resources, improving our operational efficiencies and using more renewable energy at all of our projects and sites to support the environment in the communities where we operate.

## Our Ambitions for a Better Environment



### Short-Term (2021–2024)

- Set Science-Based Targets (SBTs)
- Set the Scope 3 GHG emissions target
- No major cases of environmental non-compliance



### Medium-Term (2025)

- 10% reduction in combined GHG (Scope 1 and 2) intensity\*
- Renewable electricity 10% by 2025 and 25% by 2030
- 5% reduction in energy intensity\*
- 10% reduction in water intensity\*
- 90% waste diverted from landfill



### Long-Term (2050)

- Towards A Circular Economy
- Towards Carbon Neutrality by:
  - continuously reducing our carbon footprint
  - > improving operational eco-efficiency
  - > procuring renewable and low carbon intensive energy
  - optimizing natural resource consumption

\* We changed our baseline year for our 2025 targets from 2019 to 2020 to reflect significant acquisitions during 2020; please refer to the Sustainability Ambitions section on pg. 24 for more details.

We are on track to deliver on our 2025 medium-term strategy in support of our longer-term 2050 ambitions. Acquisitions are integral to our growth agenda; in 2020, we increased the reporting scope from 94 to 107 sites. We have driven reductions across the 2019 scope for GHG, energy and waste, demonstrating greater operating efficiencies despite organic growth of 5%. Data for 2020 encompasses a number of new high intensity plants acquired in 2020 reflecting inorganic growth of 18% and shows an increase in overall intensities. We will continue to integrate best practice consumption and optimization initiatives in our newly acquired plants to drive down emissions in support of our targets.

## Decarbonization in our Value Chain



With a focus on creating value for our people and the planet, we have set a long-term target to become carbon neutral and are confident of achieving it driven by our 2025 Climate Strategy.

We apply a diversified approach in reducing our GHG emissions. Decarbonizing our operations and value chain means working with suppliers, contractors, partners and customers to find solutions. It also means remaining innovative and seeking efficiencies wherever possible.



For More Information



## Our Decarbonization Strategies

In order to decarbonize our carbon footprint in our operations and value chain, we are exploring a diverse portfolio of solutions including new ideas and working with others to drive innovation. IVL is exploring a combination of the following decarbonization strategies:



### Improving operational efficiency

Invest in operational and energy efficiency to reduce emissions in our operations



### Renewable Electricity

Decarbonize IVL's energy consumption via onsite vs. offsite renewable energy development



### Recycling

Invest in and expand recycling facilities to address plastic pollution and reduce lifecycle carbon emissions



### Natural Capital Solutions

Explore partial/full ownership of carbon offsetting projects



### Future Technologies

Explore opportunities for Carbon Capture Utilization and Storage (CCUS), green hydrogen, bio/renewable feedstock, Renewable Natural Gas (RNG)

**Offsite Renewable Electricity**

Renewable electricity procurement through global virtual power purchase agreements (VPPAs) can offer further opportunities to reduce our GHG emissions in line with our commitment to the Paris Agreement.

We are currently exploring procurement of renewable electricity through VPPAs.

**Onsite Renewable Energy**

Aside from biomass and biogas, we strive to generate an optimum amount of solar electricity at our sites. In 2020, we initiated the installation of solar rooftops at five sites which are due for completion in 2021.

We are also focusing on increasing our consumption of solar energy, through solar rooftop installations at other locations.

**Plants Utilizing 100% Renewable Electricity\***

- UAB Orion Global Pet Lithuania
- Wellman International Ireland
- UTT Technische Textilien Germany
- Indorama Ventures Portugal PTA

\* In 2021, Indorama Ventures Quimica, Spain commenced using 100% renewable electricity.

## Net-Zero Challenge: The supply chain opportunity

Mr. Yash Lohia, Chief Sustainability Officer at Indorama Ventures, is featured in the newest report on "The Supply Chain Opportunity". It outlines how tackling supply chain emissions can be a game-changer to climate action and what CEOs can do to take action, launched by the World Economic Forum and Boston Consulting Group.

Yashvardhan Lohia  
Chief Sustainability Officer  
Indorama Ventures

In collaboration with  
Boston Consulting Group

WORLD ECONOMIC FORUM

There are many things you can do with paybacks of only about 3 years - we are now looking at what else is possible with a longer payback horizon, and that offers even more potential

For More Information

**Innovative Solar Fencing**

In late 2020, Orion Global PET in Lithuania installed a 57kW solar fence in place of a conventional fence, enabling both a site boundary and electricity generation. This innovative fencing design maximizes renewable energy production by utilizing the most efficient placement of solar panels within a limited space. The project is expected to generate 55.82 MWh of renewable electricity per year bringing total solar energy capacity at the site to 390,000 kWh.

## Harnessing Renewable Energy

We are actively reducing our reliance on conventional energy and increasing our use of renewable energy sources such as solar energy, biomass, biogas and renewable natural gas. We continue to seek ways to reduce our carbon footprint in support of our ambition to be carbon neutral and in line with the UN SDGs.

### Total Renewable Energy Consumption



### 2025 Target

10% renewable electricity consumption

### 2030 Target

25% renewable electricity consumption

In 2020, our combined use of 1,767,434 GJ of renewable energy saved over 87,227 tCO<sub>2</sub>e.

We are working to achieve 10% renewable electricity consumption by 2025 and 25% by 2030. Though there was a decline in 2020, we continue to focus on adopting renewable electricity and are on track to achieve our targets.

- Total Renewable Biogas (GJ)
- Total Renewable Biomass (GJ)
- Total Renewable Electricity (GJ)

## GHG Strategies

We remain committed to reducing greenhouse gas emissions from our operations and are focusing on the entire value chain when looking for ways to improve resource productivity. In line with our Climate Strategy 2025 and the UNGC Communication on Progress (COP), we continue to develop low-carbon alternatives and find ways to reduce our environmental footprint. In 2020, we developed a Climate Strategy Corporate Standard that underpins the steps which all of our global operations must take to manage GHG emissions. This standard outlines key actions and KPIs towards achieving our sustainability ambitions and carbon neutral targets. We changed our baseline year for our 2025 targets from 2019 to 2020 to reflect significant acquisitions during 2020.

For More Information

### GHG (Scope 1&2) Intensity Targets

#### 2020 Performance :

**0.607** tCO<sub>2</sub>e / ton of production GHG (Scope 1 & 2) intensity

**5.6%** reduction in combined GHG (Scope 1 & 2) intensity

compared to the 2019 reporting scope

#### 2013-2020 Progress :

**10%** reduction in combined GHG (Scope 1 & 2) intensity

#### 2025 Target :

**10%** combined GHG (Scope 1&2) intensity reduction\*

\* Base year 2020

## GHG Reductions Across our Value Chain

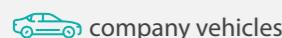
### In our Operations

Driving operational eco-efficiencies across our sites

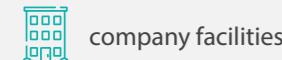
#### Scope 1



production plants



company vehicles



company facilities



GHG Scope 1 intensity  
= 0.452 tCO<sub>2</sub>e/ton of production

### Reporting Company

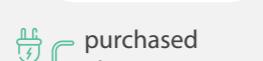
#### Scope 1: Direct

Greenhouse gas emissions from sources that are owned or controlled by a company.

### GHG Reduction through Business Partnerships

Collaborating towards efficiencies in new technologies such as recycling.

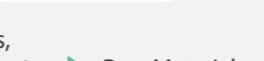
#### Scope 2



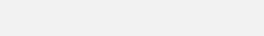
purchased electricity, steam, heating & cooling for own use



purchased goods, services and capital goods



fuel and energy-related activities



GHG Scope 2 intensity

- Location-based = 0.155 tCO<sub>2</sub>e/ton of production
- Market-based = 0.156 tCO<sub>2</sub>e/ton of production

• Location-based = 0.155 tCO<sub>2</sub>e/ton of production  
• Market-based = 0.156 tCO<sub>2</sub>e/ton of production



business travel and employee commuting = 35,777 tCO<sub>2</sub>e



waste generated in operations = 59,890 tCO<sub>2</sub>e



transportation, and distribution = 1,294,303 tCO<sub>2</sub>e

Raw Materials = 22,082,068 tCO<sub>2</sub>e

Electricity = 307,549 tCO<sub>2</sub>e

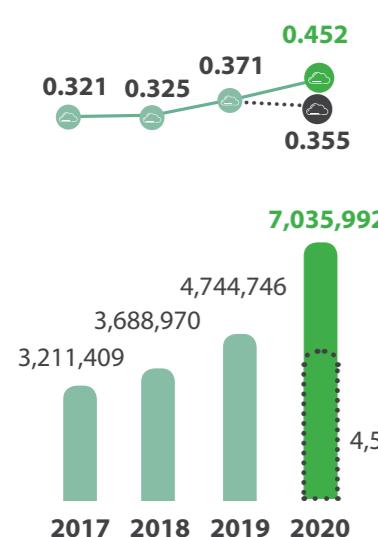
Fuel = 939,869 tCO<sub>2</sub>e

Upstream Activities

Upstream Activities

Upstream & Downstream

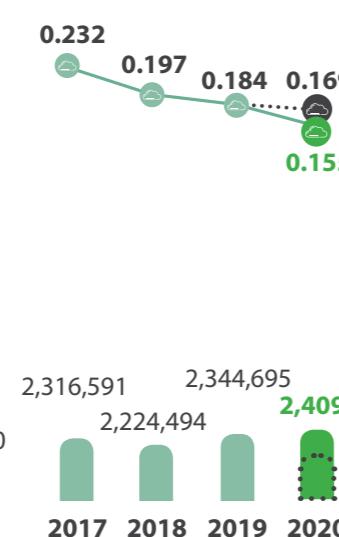
### Direct GHG Emissions (Scope 1)



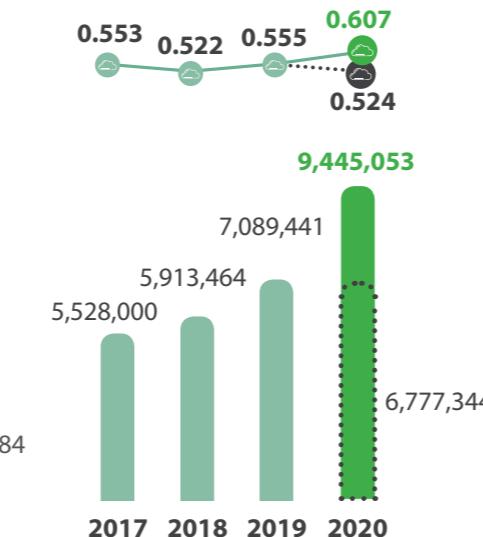
■ GHG emissions (tCO<sub>2</sub>e) - 2020 Reporting Scope (107 sites)  
■ GHG emissions (tCO<sub>2</sub>e) - 2019 Reporting Scope (94 sites)

Note: Intensities are calculated based on overall production including inter-company sales.  
2020 emissions has increased as IVL acquired cracker plants, which resulted in higher GHG emissions.

### Indirect GHG Emissions (Scope 2)



### Total GHG Emissions (Scope 1 & 2) - Location based



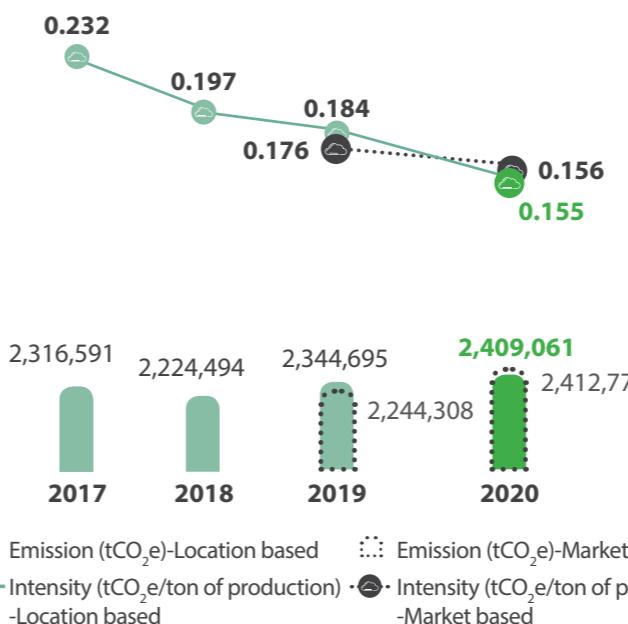
■ GHG emissions (tCO<sub>2</sub>e) - 2020 Reporting Scope (107 sites)  
■ GHG emissions (tCO<sub>2</sub>e) - 2019 Reporting Scope (94 sites)

Note: Intensities are calculated based on overall production including inter-company sales.  
2020 emissions has increased as IVL acquired cracker plants, which resulted in higher GHG emissions.

Routinely and consistently keeping track of greenhouse gas emissions from our operations is key to identifying reduction measures and their thorough implementation. Through cloud-based software, we collect and analyze GHG data on a monthly basis. We calculate direct and indirect greenhouse gas emissions (GHG Scope

1, 2 and 3) for our global operations through established international standards in line with the GHG Protocol on Corporate Accounting and Reporting. This includes the World Resources Institute (WRI), World Business Council for Sustainable Development and ISO 14064-1/ISO 14064-3.

### GHG (Scope 2) Emission



■ Emission (tCO<sub>2</sub>e)-Location based  
■ Emission (tCO<sub>2</sub>e)-Market based

■ Intensity (tCO<sub>2</sub>e/ton of production)-Location based  
■ Intensity (tCO<sub>2</sub>e/ton of production)-Market based

\* The information on GHG Scope 1 and 2 emissions has been verified by an independent external assurance auditor, TUV Nord GmbH, in accordance with GHG Protocols, ISO 14064-1, and ISO 14064-3.

### GHG (Scope 1&2) Emission (Market based)



■ Total GHG Scope 1 and Scope 2 (tCO<sub>2</sub>e)-Market based  
■ Total GHG Intensity Scope 1 and Scope 2 (tCO<sub>2</sub>e/ton of production)-Market based

For More Information



## As a Low-Carbon Manufacturing Role Model in the Eastern Economic Corridor

TPT Petrochemicals PCL, a subsidiary of Indorama Ventures Public Company Limited (IVL), the first producer of purified terephthalic acid (PTA) in Thailand, received an honorable trophy of being one of the low-carbon manufacturing role models. This recognition was given under the Development of Low carbon Industry for supporting Greenhouse Gas Mitigation in Eastern Economic Corridor Project (Low Carbon EEC).

This reflects the company's dedication to enhance production efficiency that results in lower greenhouse gas emissions. This is also in line with its commitment to leverage efficient resource consumption through recycling, lower carbon footprint and increase the use of renewable energy which will have a positive impact on sustainable development in the long term.

Carbon pricing mechanisms are increasingly being accepted as a cost-effective approach to managing climate change. Understanding carbon pricing and reflecting this in our strategic business planning is key to being a responsible operator.

IVL also measures climate-related regulatory risks through financial impact modelling. Our Carbon Pricing Impact Model forecasts the annual payments IVL makes towards emissions trading schemes (ETS) worldwide.



The results of the model indicate that IVL's compliance costs are projected to increase from less than US\$10 million over the previous decade to between US\$120 - 170 million over the next decade, with US\$20 million of the figure expected from new ETS expected to come into operation. ETS coverage is also expected to rise from 8% of IVL's Scope 1 emissions in 2020 to 37% by 2030 based on current production.

Visit [2021 TCFD report](#).



## TCFD Reporting

In July 2020 we became the first chemical company in Thailand and the second chemical company in Southeast Asia to become a TCFD Supporter. We are guided by the TCFD's recommendations in providing our climate-related financial disclosures.

### Our Climate Focus on

	Present	Future
	<ul style="list-style-type: none"> <li>Operational eco-efficiency</li> <li>Recycling</li> <li>Onsite and offsite renewable electricity</li> <li>Setting up Science-Based Targets (SBTs)</li> <li>Digitalization</li> </ul>	
		<ul style="list-style-type: none"> <li>Carbon neutrality</li> <li>Adoption of future technologies (Carbon Capture Utilization and Storage (CCUS) technology and green hydrogen)</li> <li>Carbon offsets</li> <li>Natural Capital Valuation (NCV)</li> </ul>

### Governance

IVL's Board integrates climate risk and opportunity management across the Company and links executive compensation to sustainability and ESG performance. The SRMC evaluates sustainability and risk-related issues, advises the Board and executes its directives. The Chief Strategy Officer, Chief Sustainability Officer and Group Chief Technical Officer of respective businesses oversee the implementation of ESG initiatives throughout IVL. In addition, our Sustainability Champions formulate and drive initiatives to ensure best practices are in place.

### Strategy

Our strategy towards climate change includes support for external initiatives as well as internally setting overarching sustainability targets. We are proud to support the Paris Agreement which sets out nationally determined contributions (NDCs) to reduce GHG emissions. We are taking the necessary steps to set our targets for GHG emissions in line with the SBTi and are working towards setting our SBTs by 2024.

## Risk Management

Our approach to risk management is based on the enterprise risk management (ERM) framework, which is comprehensive and embedded across our corporate and global subsidiaries, with continual information flows from both top-down and bottom-up. As part of the ERM framework, we assess risks and opportunities associated with climate change and adapt our approach accordingly.



### Our Risk Assessment Tools

- We considered the **IEA Stated Policies Scenario (STEPS)** and **IEA Sustainable Development Scenario (SDS)** for financial analysis.
- We examine current and projected climate related issues via **WRI's AQUEDUCT Water Risk Analysis, Climate Resilience Evaluation & Awareness Tool (CREAT)** and the **Climate Information Portal (CLIPC)**.

### Metrics and Targets

Our plants around the world work with bespoke GHG reduction plans, implemented with the use of renewable energy, ensuring that projects are energy efficient through close monitoring of energy consumption. These actions are supported by IVL's head office and monitored by senior management. Our 2025 sustainability goals related to environmental performance are summarized on pg. [24](#).

# Environmental Management



We are conscious of the impact we may have on the environment given our global operations as well as the nature of our business. Our immediate focus is on efficiency – by continuously improving our internal processes and managing our energy consumption. This reduces our environmental footprint and contributes to our goal of becoming carbon neutral by 2060.

## Energy Management

We changed our baseline year for our 2025 targets from 2019 to 2020 to reflect significant acquisitions during 2020; we remain committed to our 2025 target of reducing our energy intensity by 5% compared to the 2020 baseline. In order to become carbon neutral, we continue to drive diverse and multiple energy savings initiatives throughout the business. Our increasing focus on energy efficiency enables us to be more competitive by reducing our energy costs, minimizing our impacts and contributing to a lower-carbon economy. Further information is available in our Global Performance Data section on pg. 119.



### Energy Intensity Targets

#### 2020 Performance :

**6.73** GJ/ton of production

**3%** reduction in energy intensity compared to the 2019 reporting scope

#### 2013-2020 Progress :

**4%** reduction in energy intensity



#### 2025 Target :

**5%** energy intensity reduction\*

For More Information

### Total Energy Consumption



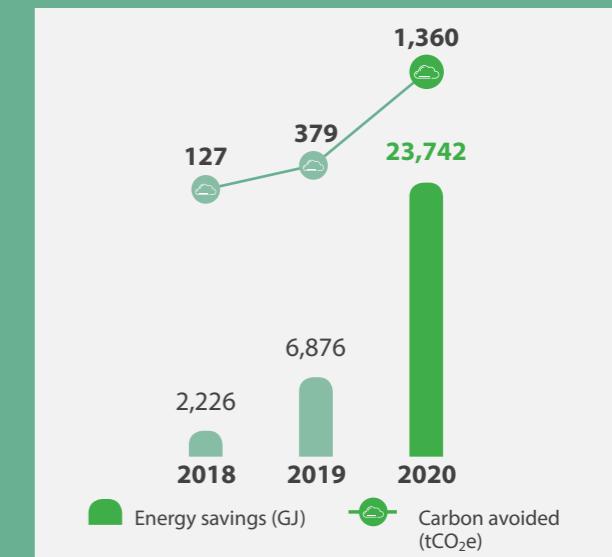
- Total consumption (GJ) - 2020 Reporting Scope (107 sites)
- Total consumption (GJ) - 2019 Reporting Scope (94 sites)
- Intensity (GJ / ton of production) - 2020 Reporting Scope (107 sites)
- Intensity (GJ / ton of production) - 2019 Reporting Scope (94 sites)

Note: Intensities are calculated based on overall production including inter-company sales.  
2020 energy has increased as IVL acquired cracker plants, which resulted in higher energy consumption.

## Waste Heat Recovery and Utilization

Optimizing our systems to reduce carbon emissions and energy consumption is integral to reaching our 5% energy intensity reduction by 2025. In support of these reductions, our Trevira Bobingen site in Germany has been utilizing waste heat exchangers. Heat generated by air compressors is recycled and used within the manufacturing process to preheat boiler feed water and finish dip baths. This technology avoids the use of steam for heating purposes, minimizes energy consumption and avoids carbon emissions, bringing us closer to becoming carbon neutral.

In addition to optimizing existing sites, we continuously share best practices and implement positive changes in our operations.



## Water Management

We recognize that some of our sites operate in water stressed environments. Effective water management ensures that we operate responsibly while mitigating any negative impacts to the people and environment surrounding our operations. To ensure accountability in the area of responsible water management, we continue towards our 2025 goal of 10% water intensity reduction compared to the 2020 baseline.

### Water Intensity Targets

#### 2020 Performance :

**5.31** m<sup>3</sup> / ton of production

**10%** reduction in water intensity compared to the 2019 reporting scope

**10%** increase in volume of recycled/reused water over 2019

#### 2013-2020 Progress :

**7%** reduction in total water intensity



#### 2025 Target :

**10%** water intensity reduction\*

\* Base year 2020

We comply with all environmental laws, international standards and regulations in the countries where we have operations. Our Global Corporate Water Management Policy and Strategy outlines how we manage our water sustainably, including water withdrawal and discharge. Underpinned by our values such as embracing change and growing responsibly, this Policy and Strategy is part of IVL Group's EHS policy and enables us to explore new ways to go beyond compliance. In 2020, we began reporting our water consumption and water discharge metric based on the new version of GRI's reporting standards. Further information is available in our Global Performance Data section on pg. 120.

We continuously pursue improvements in water management through process efficiencies and technology enhancements. The 3Rs define our approach, in conjunction with building wastewater treatment plants and reducing the use of freshwater in our operations.

For More Information



## Water Risk Management

### Water Sensitivity Analysis

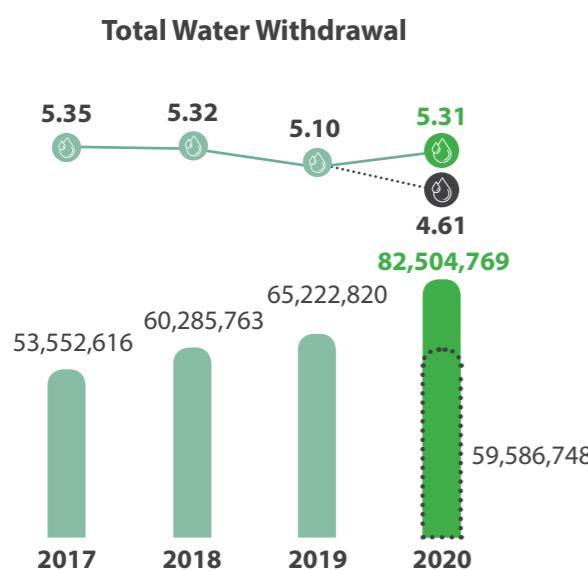
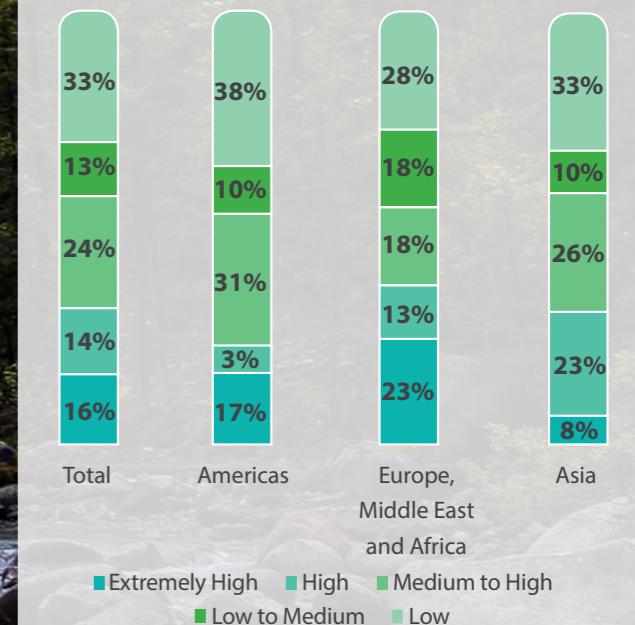
We conducted a water sensitivity analysis using the AQUEDUCT Water Risk tool developed by WRI to identify water stress locations in 2020.

### Utilizing WRI's AQUEDUCT Water Risk Tool to:

- Evaluate changes in water demand, water supply, stakeholder risk, and regulations based on current and future conditions.
- Foresee changes to water risk forecasting in 2020, 2030 and 2040.
- Discuss assessment results during risk assessment committee meetings on a yearly basis.
- Identify mitigation measures and initiatives for plants located in areas facing extreme water stress or significant risks to water usage.

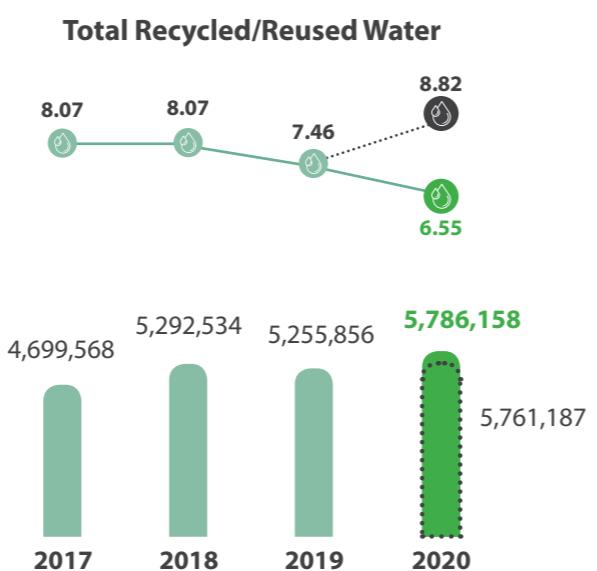
### 2020 Water Stress Assessment

(% of IVL's operations identified in water stress areas using the AQUEDUCT Water Risk Tool)



- Total water withdrawal (m³) - 2020 Reporting Scope (107 sites)
- Total water withdrawal (m³) - 2019 Reporting Scope (94 sites)
- Intensity (m³ / ton of production) - 2020 Reporting Scope (107 sites)
- Intensity (m³ / ton of production) - 2019 Reporting Scope (94 sites)

Note: Intensities are calculated based on overall production including inter-company sales.  
2020 water has increased as IVL acquired cracker plants, which resulted in higher water withdrawal.



- Total volume of recycled/reused water (m³) - 2020 Reporting Scope (107 sites)
- Total volume of recycled/reused water (m³) - 2019 Reporting Scope (94 sites)
- Recycled/Reused water (%) - 2020 Reporting Scope (107 sites)
- Recycled/Reused water (%) - 2019 Reporting Scope (94 sites)

Effective water management is a critical risk that we must manage across our operations, and we acknowledge that each site works within a unique operating context. The AQUEDUCT Water Risk tool combines 12 indicators to create a clear picture of relative water risks, total water available and total withdrawal. Through this tool, we conduct local water risk assessments and regularly assess both limitations and opportunities related to water.

## Waste Management

We continue to reduce waste from our operations in line with our goal of diverting waste from landfill with an approach to waste management that complies with regulatory requirements and exceeds them where possible.

Reducing waste also means applying responsible principles throughout the value chain; we seek sustainable vendors that reuse, recover or recycle. We also work hard to ensure that our hazardous waste is handled appropriately, conducting site visits of key vendors ensuring their waste management standards comply with local regulations. Further information is available in our Global Performance Data section on pg. 120.

As part of our integrated risk analysis, EBITDA and the financial impact on revenue and cost of goods sold are discussed annually during management meetings which result in the development of action plans and remedial activities where necessary. Individuals based at each of our operating plants are designated as water champions to coordinate an integrated approach and ensure regular reporting to management. Further information is available in our [2020 Annual Report](#) on pg. 130.

### Waste Intensity Targets

#### 2020 Performance :

**0.0202 tons/ton of production**

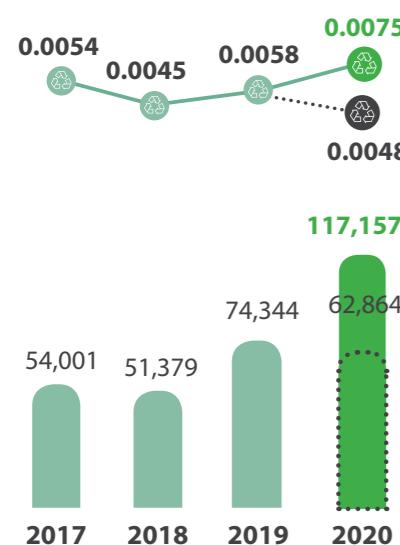
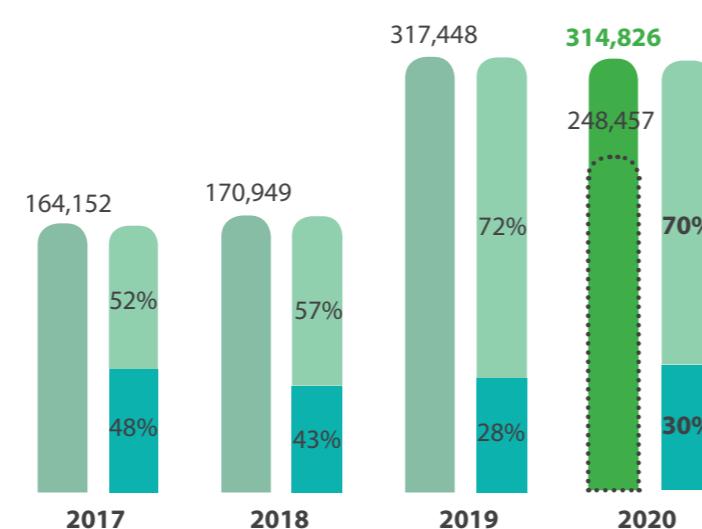
**17%** reduction in total hazardous waste intensity compared with the 2019 reporting scope

#### 2013-2020 Progress :

Total waste diverted from landfill increased from **48%** to **84%**

#### 2025 Target :

**90%** Waste diverted from landfill

**Total Hazardous Waste****Total Waste**  
Generated, Disposed, Reused, Recycled and Recovered

█ Total hazardous waste (tons) - 2020 Reporting Scope (107 sites)  
█ Total hazardous waste (tons) - 2019 Reporting Scope (94 sites)  
█ Intensity (tons / ton of production) - 2020 Reporting Scope (107 sites)  
█ Intensity (tons / ton of production) - 2019 Reporting Scope (94 sites)

█ Total generated waste (tons) - 2020 Reporting Scope (107 sites)  
█ Total generated waste (tons) - 2019 Reporting Scope (94 sites)  
█ Total reused, recycled and recovered waste (% of total generated waste)  
█ Total disposed waste (% of total generated waste)

Note: Intensities are calculated based on overall production including inter-company sales.

For More Information

**Waste Diverted from Landfill**

We have a waste reduction ambition to achieve 90% waste diverted from landfill by 2025. In order to achieve this target, in 2020, we carried on the zero waste to landfill certification by independent external parties, TUV India Pvt. Ltd.

**Platinum Certification**

5 plants were certified with a more than 95% hazardous waste diversion rate.

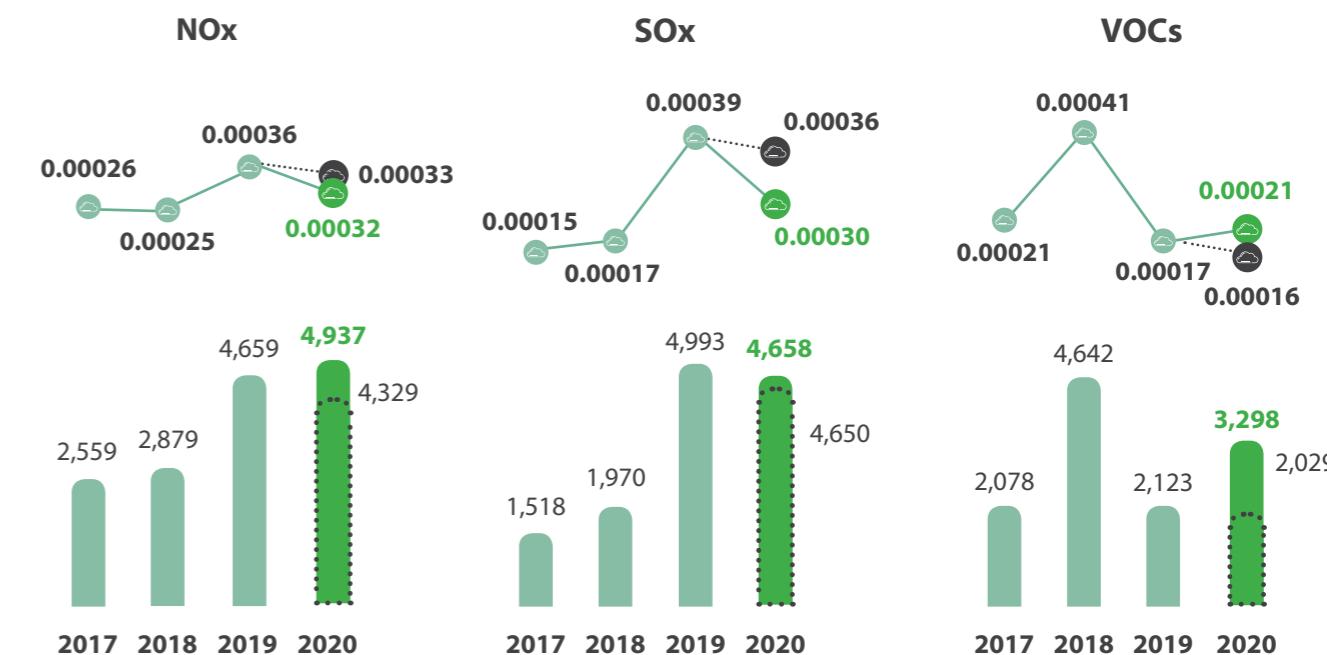
8 plants were certified with a more than 95% non-hazardous waste diversion rate.

**Gold Certification**

6 plants were certified with a 90-95% non-hazardous waste diversion rate.

**Air Emissions Management**

We closely monitor and minimize our air emissions ensuring compliance with laws and regulations and to improve our emissions standards. Further information is available in our Global Performance Data section on pg. 120.



█ Emissions (tons) - 2020 Reporting Scope (107 sites)  
█ Emissions (tons) - 2019 Reporting Scope (94 sites)  
█ Intensity (tons / ton of production) - 2020 Reporting Scope (107 sites)  
█ Intensity (tons / ton of production) - 2019 Reporting Scope (94 sites)

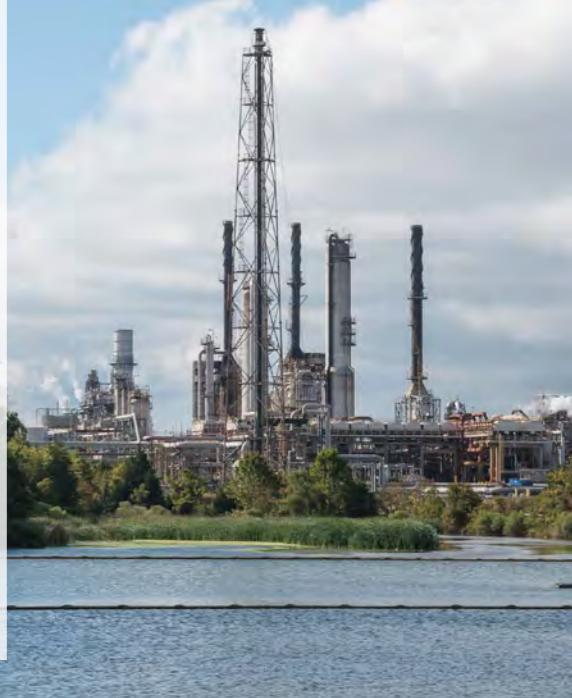
Note: Intensities are calculated based on overall production including inter-company sales.

**Process improvements to reduce air and water pollutants**

Indorama Petrochem Limited (PET)'s plant in Rayong, Thailand continues to demonstrate strong stakeholder engagement and significant process optimizations. In end of 2019, the plant installed the stripping column to reduce the COD/BOD in wastewater prior deliver to wastewater treatment plant. In addition, the catalytic incinerator was installed in order to remove the off gas from process.

In 2020, Electrostatic Precipitators (ESP) were used to replace the cyclonic separation process for particulate collection. This initiative reduced total suspended particulates by 91% and reduced the NOx emissions rate by 29%.

These actions demonstrate IVL's solutions that meet or exceed stakeholder expectations.



# Strong Environmental Governance

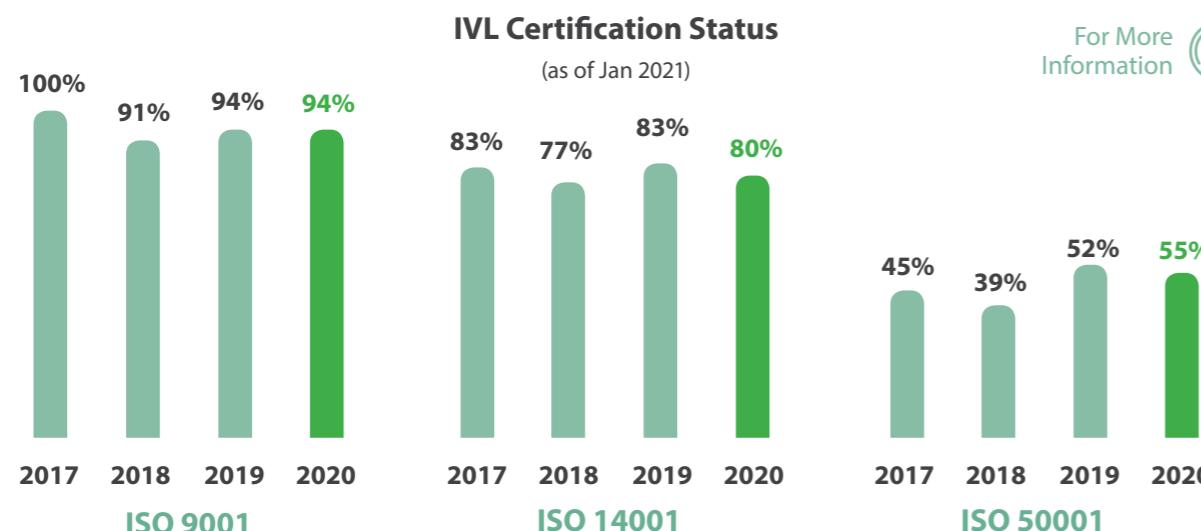
## Environmental Management System

We have robust internal mechanisms that guide IVL's environmental best practices across our value chain and strive to maintain zero material non-compliance issues to protect the environment within the communities where we operate. We remain apprised and supportive of legislation that promotes environmental sustainability.

Our Environmental Management System (EMS) is based on the ISO 14001 standard. It offers a comprehensive framework for improving environmental performance, lowering business costs, building a marketing advantage and demonstrating environmental leadership. Integral to the planning and implementation of our environmental protection measures, it also ensures that we set targets for renewable energy procurement for GHG emissions reductions and meet our environmental commitments and policy requirements. We were unable to achieve our target of ISO certification due to Covid-19 pandemic restrictions.

Our EMS empowers employees by providing them with opportunities to increase awareness of environmental issues and responsibilities. It also enables us to leverage internal environmental knowledge, enhance morale and build credibility with our stakeholders.

Our corporate values outline a commitment to responsibly pursue business growth and profitability, with due consideration of economic, environmental and social factors. Our Environmental Policy aims to protect and enhance the environment around us and applies to the Board of Directors, management, employees, trainees and those authorized to act on behalf of or represent the Company. It also provides criteria which we apply in conducting due diligence prior to mergers and acquisitions and when planning greenfield projects and expansions. Comprehensive environmental compliance standards throughout IVL ensure that our operations comply with applicable environmental laws, regulations and standards in the countries where we operate.



We have a consistent and organized environmental compliance management system in place and are proactive throughout the year in ensuring that our operations are in accordance with all applicable environmental laws, regulations, standards and other requirements.

In 2020, there were no incidents of major regulatory non-compliance (greater than US\$100,000). However, there were the following two cases at our plants in the Netherlands and the United States respectively:

- Distribution of plastic scraps outside the premises (US\$590 penalty).
- VOCs and Hazardous Air Pollutants (HAPs) released (US\$22,357 penalty).

Corrective actions were taken in both cases and the lessons learned were shared with all concerned in the group as part of our knowledge sharing efforts. We are currently implementing a regulatory compliance system to provide better visibility to regulatory requirements and real time compliance status reports at every operating location.

# Operational Excellence Awards

Our annual Operational Excellence Awards recognize employees, teams and Business Units for outstanding financial, operational and sustainability performance achievements. Bringing attention to these successes not only enhance employee engagement but provides a platform for sharing best practices and showcasing best-in-class results. Business Units benchmark performance against ten criteria within the above-mentioned categories and winners are awarded at the annual Global Management Conference (GMC).

For More Information



PET Business winner: AlphaPet Inc., USA



PET Business winner:  
PT Indorama Polypet Indonesia (PTIPPI), Indonesia



Fibers Business winner:  
Indorama Polyester Industries PCL. (Rayong), Thailand



Packaging Business winner:  
BevPak, (Nigeria) Ltd., Nigeria



Aromatics Business winner:  
Indorama Ventures Química S.L.U., Spain



IOD Business winner:  
Indorama Ventures Oxides LLC. USA



### Capitals Linked in this Chapter



Human Capital



Intellectual Capital



Social and Relationship Capital

### Value Created

Our employees are our greatest asset. We empower our workforce through a variety of developmental programs, meaningful employee engagements, and robust mechanisms to ensure their safety.

As a leading chemical manufacturing company, we are aware of the important role we play in giving back to society and creating a better tomorrow.

### Our Ambitions for Improving Lives



#### Short-Term (2021–2024)

- EHS operationalized standards and strengthening EHS talent by 2024
- About 1,000 leadership positions involved in succession planning by 2023
- 3,500 leaders involved in leadership development curriculum by 2024



#### Medium-Term (2025)

- LTIFR < 0.5 cases per 200,000 man-hours
- Educating one million consumers around the world on recycling by 2030

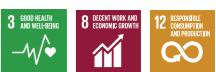


#### Long-Term (2050)

- LTIFR < 0.1 cases per 200,000 man-hours
- Protecting our people and planet, enabling further prosperity
- Having a positive impact on society by delivering social, economic and environmental value

As we complete a decade of building sustainability within our organization, we remain committed to empowering our people and the societies surrounding our operations by supporting the development and safety of our greatest asset – our employees. Our global team continues to strengthen our position as a world-class sustainable chemical company while our commitment to creating a better tomorrow is driven by our structured approach to corporate social outreach, anchored by our flagship Recycling Education program.

### Ensuring a Safe and Conducive Workplace



### Robust Health and Safety Management

A strong, happy and healthy workforce is integral to a successful and sustainable business. It is also a vital component in attracting and retaining the best employees and reinforcing our position as a leading global brand. In addition, we have adopted measures so that those who engage with our business, whether within the supply chain or in wider communities, benefit from the initiatives and safeguards we have in place as a responsible operator.

Our core values are firmly focused on the safety of our workforce and the maintenance of responsible operations. Our Environmental, Health and Safety Policy integrates health, safety and hygiene into all business management processes through regular communications and training, controls at the individual plant level, periodic site risk assessments, and monitoring and evaluation activities, thereby safeguarding product safety. Disciplinary action is taken if and when necessary.

In 2020, despite the pandemic, we continued to grow our global business. To support this growth and ensure that our health and safety management evolves accordingly, we established the Environment, Health and Safety (EHS) enabling function. The new corporate EHS organization supports the existing site-based model while delivering a more aligned risk-based and strategic approach.

Four organizational groups make up our EHS – Corporate EHS, Regional EHS, Segment EHS and Business/Site EHS, each of which maintain specific roles in governance, audit, standardization, assurance, sharing of best practices and capacity-building at the site, regional and global levels. This represents a true enabling model that supports businesses and regions while maintaining accountability.

The four key mandates within the EHS organization include clear capabilities, specific and measurable parameters for success, specific decision-making rights and defined accountabilities.

- The Head of EHS, who reports to IVL's Group CSO, defines the Company's EHS strategy and direction, drives the agenda and monitors adherence to the EHS vision across the organization.
- The EHS Topic expert defines EHS standards and policies and establishes governance mechanisms that are clearly understood and incorporated throughout IVL.
- The Regional EHS expert manages the audit process, serves as a regional POC for EHS emergency response and builds capability at the regional level.
- Segment EHS Heads manage and work with Site EHS Heads in implementing EHS standards and practices at site level.

Placing the EHS function at the core of the business provides continuity, realizes efficiencies and allows us to achieve synergies with other enabling functions such as Sustainability and Business Continuity. The EHS function also allows for stronger central steering, increased expertise and is integral to achieving our sustainability vision.

We are on track to achieving an important change in how we manage, integrate and leverage EHS throughout IVL. Foundation work conducted in 2020 included refining our KPIs, understanding our EHS capabilities and practices, and building baselines for action. Our approach is managed through the four above-mentioned accountabilities.

Going into 2021, we will review and refine our KPIs, construct corporate EHS audit protocols, better understand our EHS capabilities and talent pipeline, and strengthen our subject matter expert network. Beyond this, we will continue to develop and operationalize standards and drive continuous improvements in assurance processes, improved risk visibility/reduction and EHS proficiency.



## EHS's four core accountabilities

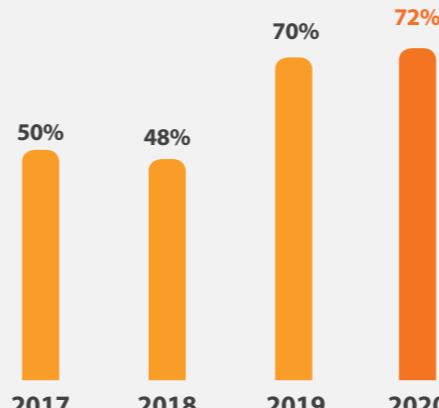
			
<b>Governance and Standardization</b> <p>Standardize practices across process safety, environmental compliance, industrial health &amp; hygiene, general safety and software.</p> <p>Define systems, a common methodology, and new tools to facilitate the execution and monitoring of standards via audit protocols.</p>	<b>Assurance</b> <p>Develop &amp; deploy EHS KPIs for use across the Company.</p> <p>Design an audit system and analysis of EHS maturity across programs.</p> <p>Evaluate regulatory compliance, adherence to EHS standards at sites, and transparent reporting to management through monitoring.</p>	<b>Building EHS Capabilities</b> <p>Investment in the EHS capabilities.</p> <p>Strive for high standards of EHS performance from all employees.</p> <p>New activities, such as audit member participation, networking, and serving on Communities of Practice (COP).</p>	<b>EHS Communications</b> <p>Systematic approach to communications via the Global EHS SharePoint site, monthly reports, quarterly discussions with C-Suite, networking meetings and Group Share events.</p> <p>Focus on a communications strategy for external stakeholders.</p>

The implementation of health and safety activities is overseen by our global team of EHS professionals. They provide the assurance that safety directives are implemented and frequently audited across IVL's operations covering our workforce and contractors.

All new employees undergo comprehensive occupational health and safety training upon joining the Company. Our training is personalized and fit for purpose according to the project type, role and element of risk and responsibility. We provided 214,305 training hours in 2020 to maintain a high level of awareness

around potential risks in the workplace. In addition, our risk management approach is applied through regular team and management meetings and employees are reminded of the expectations related to keeping safe while at work and at home. Instilling an awareness of and respect for health and safety practices is integral to the way we do business at all of our sites on a daily basis. These expectations are apparent to visitors and contractors, who receive safety training prior to entering our facilities. Beyond just risk mitigation, we intend for these expectations to create a culture of care and respect.

## Certifications OHSAS 18001/ISO 45001\*



\* Applicable for IVL Group sites as of December 2018 (72 sites).

We routinely go beyond the minimum local and national requirements in enhancing the safety and well-being of our employees; as of December 2020, 72% of our operations around the world were OHSAS 18001/ISO 45001 certified. We were unable to achieve our target of 98% certification due to COVID-19 pandemic restrictions.

Through our effective management approach, in 2020, there were no incidents of significant non-compliance with respect to regulations or voluntary codes concerning the health and safety of our operations as well as the impacts of our products.

## Occupational Health and Safety Performance

Two indicators offer insights into our OHS performance: Total Recordable Injury Rate (TRIR) and Lost Time Injury Frequency Rate (LTIFR). These metrics are useful for comparative purposes and allow us to track and drive improvements over time. We also collect various additional and accompanying OHS data through our corporate and business operations giving us the ability to analyze performance and adapt accordingly.

In 2020, over 41% of our operations (44 of 107 sites) attained the goal of Zero Lost Time Injury and we reported a total of 1,977 near-miss incidents compared to 3,015 in 2019. The improvements were in part due to the outstanding performance of new assets acquired in 2020, as well as the additional focus placed on safety improvements while some portion of the improvement is statistical variability.

**How we determine work-related hazards**

Safe Work Permitting Systems, Job Safety Analysis, Job Hazard Analysis, Management of Change, Process Hazard Analysis, Incident Investigation and Root Cause Analysis form some of our tools in identifying and mitigating work-related hazards.

**ZERO Fatality in 2020**

### Total Recordable Injury Rate: TRIR (Cases/200,000 man-hours)

**37.5% overall decrease in 2020**



### Lost Time Injury Frequency Rate: LTIFR (Cases/200,000 man-hours)

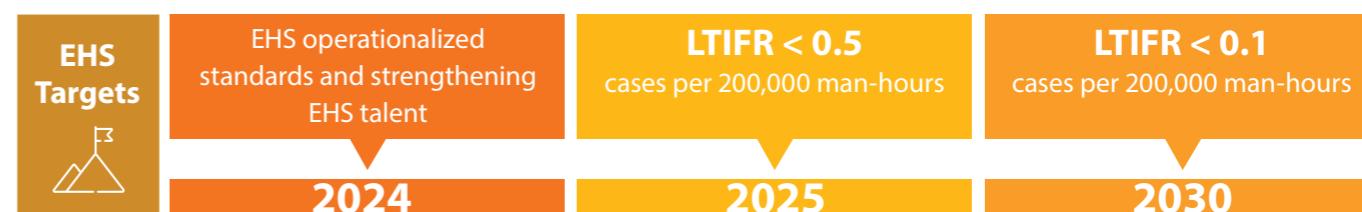
**43% overall decrease in 2020**



Moving forward, we have revised our targets. While the 2025 target may not appear ambitious and is actually higher than our 2020 performance, it should be noted that the contractor LTIFR was extremely low in 2020 due primarily to limited contractor activity associated with the impacts of COVID-19. Sustaining the target at below 0.5 cases per 200,000 man-hours will require continued programmatic improvements and focus.

**How we go beyond compliance**

Certain IVL sites have the internal infrastructure to provide occupational health services including fitness tests, respirator fit tests, spirometry and audiometry. Some sites outsource this work to external providers to support employee health efforts locally.



### Performance Fibers in China Achieves Excellent Safety Performance

Performance Fibers (Kaiping), an Indorama Ventures company in China achieved excellent safety performance at the end of Q1 2021 and confirms 2020 as the best safety and environment performance year from the past 11 years at the site. Over 5.7 million man-hours of zero LTI (Lost Time Injury) was achieved, and no single environmental incident was recorded during the same period.

Under the leadership of the management team, employees conducted activities such as safety month, safety oath, Behavior-Based Safety (BBS) and others to effectively raise safety awareness, setting an example of safety performance at an IVL manufacturing site.



### Process Safety

In addition to prioritizing workforce safety, we make sure that our plant's infrastructure and equipment are regularly maintained and tested to meet international health and safety standards. We also invest heavily in ensuring that processes across our value chain function safely. This not only reduces the risk of safety incidents but improves efficiencies and maintains our position as a partner and employer of choice. It also helps us

to avoid potential incidents, many of which can have major adverse social and environmental implications. We comply with the OHSAS 18001/ISO45001 standards, and one of the benefits is their individual applicability at the business and plant level. While we adhere closely to these standards and others, including Process Safety Management (PSM) principles; we also retain the flexibility to adapt our responses when appropriate.

Standard Operating Procedures (SOPs) help us to provide a safe and well-maintained working environment for employees and contractors. Our risk assessments and monitoring and implementation of protection measures often go beyond local legal requirements.

Process Safety	Tier 1		Tier 2		
	2019	2020	2019	2020	
No. of Events	24	18	25%	14	13
Rate (Cases/200,000 man-hours)	0.088	0.064	27%	0.052	0.046

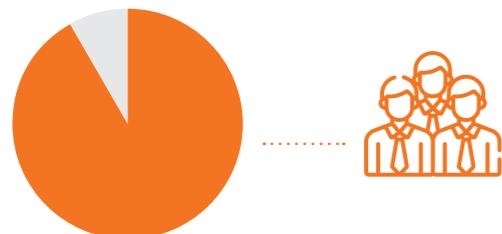
## Safe and Secure Transportation

We ensure product safety throughout the different stages of our value chain. Beyond designing and developing safe and sustainable products, our robust measures incorporate the safe handling and transportation of our raw materials and hazardous chemicals. For example, in the United States, we select reliable logistics partners with a proven track record who apply rigorous inspection procedures throughout

the different loading processes of the trucks transporting our raw materials. We also adhere to the US Department of Transportation's (DOT) training requirements. Our employees are provided with initial and recurring training on hazardous materials transportation through online training modules developed by the DOT's Office of Hazardous Materials Safety.

## Employee Well-being

Maintaining a healthy work-life balance is the key to sustaining a thriving and motivated workforce. We invest in our employees and encourage them to collaborate in joint management worker health and safety committees, which provide a platform and voice



**91.80%** of our employees are represented in formal joint management worker health and safety committees



**41.40%** of our employees are covered by collective bargaining agreements

We promote the importance of physical and mental well-being and encourage our workforce to participate in healthy activities such as cycling, running, yoga and team sports. We regularly engage with our employees through team building initiatives and offer access to fitness centers, opportunities to join charity fitness challenges and various community engagement activities. Beyond occupational related health services, our employees receive regular medical check-ups, flu shots and extended Employee Assistance Programs.

Offering employees a well-designed and comfortable work environment is integral to our commitment to investing in our workforce. This includes the provision of well-ventilated offices and manufacturing facilities where air quality and noise pollution are in line with applicable regulations.

We appreciate that diverse roles require different working hours, routines and approaches. Production processes, for example, require shift and rotation work that offer less flexibility; our site managers are

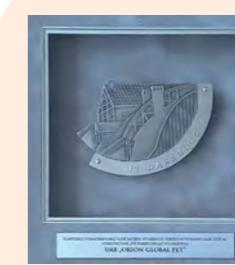
responsible for discussing individual needs to maintain a balance between work and rest and responding appropriately. At the same time, employees in desk-based roles may accrue more work hours over a week or month than is legally required. In such cases, calls for flexible working hours and the option of working from home are explored.

During the COVID-19 pandemic, many of our employees were given the option of working from home. At our sites around the world, we provided hand sanitizer, face masks and face shields, and increased safety protocols and standards. We also introduced preventive measures on our premises to safeguard our employees. Supporting mental well-being and recognizing and reducing stress remains a priority for IVL, particularly during the remote working challenges in 2019 and 2020. For more information on how we managed the well-being of our employees throughout the COVID-19 pandemic, please refer to pg. 40-41.



**Indorama Ventures Poland Sp. z o.o.**, was awarded first place in the Employer - Safe Work Provider competition organized by the National Labour Inspectorate. The award recognizes Indorama Ventures Poland as the top company at a regional level and is also in the running for the title of the best company on the national level.

To achieve this award, we executed exemplary compliance with the Polish regulations, provided financial contributions to improve the conditions of work for our employees and supply personal protective equipment (PPE). Our employees contributed in performing their tasks safely on a daily basis, wearing PPE, following procedures and remaining active in health and safety related matters.



**UAB Orion Global PET (OGP)**, a wholly owned subsidiary of IVL in Klaipeda, Lithuania, was a warded first prize in the "For Employee" category by the Klaipeda Industrialist Association, a business organization operating as part of the Lithuanian Industry Confederation.

This recognition acknowledges OGP's initiatives and policies in creating a motivating environment, a more educated workforce, and delivering a stable workplace for employees. OGP goes above and beyond the requirements with policies providing additional holidays, financial assistance for selected personnel and much more.

For More Information

## Workplace Human Rights

IVL respects the human rights of all its workers and supports the local communities where we operate. We have robust mechanisms in place to safeguard the human rights of all our key stakeholders. In 2015, we began a yearly global survey on human rights, and in 2017, we formalized our commitment to the UN Guiding Principles on Business and Human Rights. We continue to work on action plans to mitigate risks, and also engage with our suppliers on their commitment to address human rights issues. Our respective units have taken the initiative in getting SA8000 certification (or its equivalent) to ensure that there are no human rights violations across the organization.

For More Information 

We are signatories to the United Nations Global Compact and closely align our Workplace Human Rights Assessment (WHRA) framework to its standards and policies. IVL's WHRA framework incorporates four different levels: corporate, country, site and product, and covers the following stakeholders for our operations, including joint ventures:

- Own employees
- Children
- Indigenous people
- Migrant labor
- Third-party contracted labor
- Local communities

### 1 Corporate Level

The corporate level identifies emerging trends in human rights and initiates risk mitigating actions.

### 3 Site Level

Site/business units initiate specific actions based on the Human Rights Risk Assessment.

### 2 Country Level

A country initiates specific actions based on the Human Rights Risk Assessment.

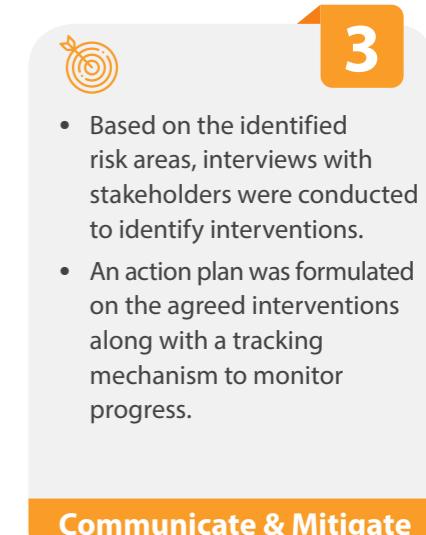
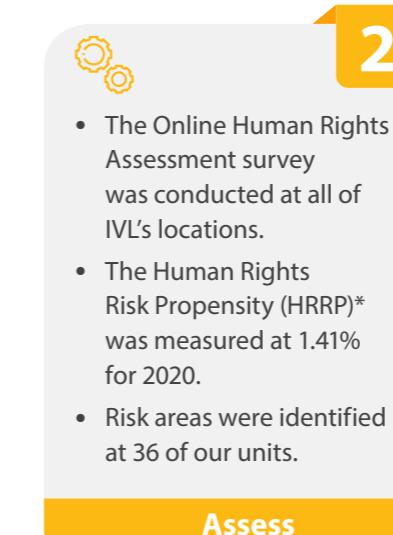
### 4 Product Level

Product specific risks are to be mitigated in consultation with manufacturing heads.

In 2016 we introduced an online tool developed by WHRA which focuses on identifying, assessing, communicating and mitigating potential issues. This tool provides a comprehensive framework for managing workplace human rights in the 33 countries where we operate and encompasses vulnerable groups such as senior citizens, people with HIV, the LGBT community, disabled persons and national minorities.

In 2020, the questions were enhanced to include an indicator related to environmentally friendly technologies. With the new addition, it brings a broader human rights aspect into the assessment including forced labor, child labor, discrimination, freedom of association, collective bargaining, safe workplace, fair employment, harassment, community & indigenous people, security arrangements and misuse of products. Feedback is gathered via individual and group responses and discussions conducted throughout the communities where we work and from our business partners.

## 2020 Survey Outcomes



\*HRRP = The number of potential human rights risks identified/(Responses from total units \* total questions)

The following areas for improvement and remedial actions were identified:

Areas for Improvement	Remedial Actions	
	Corporate Level	Country/Site Level
Environment, Health, and Safety	<ul style="list-style-type: none"> <li>Better manage risks with regard to EHS at IVL by designing the dedicated function.</li> </ul>	<ul style="list-style-type: none"> <li>Establish a Corporate EHS Center of Excellence.</li> </ul>
Whistleblower Process	<ul style="list-style-type: none"> <li>A more robust and timely process to deal with whistleblower issues/concerns.</li> </ul>	<ul style="list-style-type: none"> <li>Refine the current process and streamline the roles and responsibilities of the whistleblower committee.</li> </ul>

## Major Areas for Improvement:

No major risks were observed for the five vulnerable groups.

We will continue to implement our three-stage assessment approach and manage issues according to IVL's stringent risk-based approach and unique operating context. All issues that are raised will continue to be assessed and elevated to senior decision-makers, while resulting actions will be monitored to ensure continuous improvements.

# Investing in Our People

Our workforce is our most valuable asset, and with our strong leadership team as a core enabler, we are achieving our vision of becoming a world-class sustainable chemical company. We support and encourage our staff in their career development and promote a corporate culture that nurtures growth and innovation. Our HR strategy delivers value to the business and creates positive employee

## Developing strong leadership, a future-ready workforce and robust talent pipeline



We encourage our leaders and employees to adopt a growth mindset where learning and development is an ongoing process. There are different ways to learn and grow, depending on the development needs and



Throughout 2020, we continued developing our people and adapted our delivery approach to ensure that continued learning and development remains a core component at IVL.

For More Information

experiences. Our focus on integration and digitalization is reflected in our global approach, with processes and tools deployed at key touchpoints in our employee journey - Talent Acquisition and Management, Leadership and Competence Development, Performance Management and Rewards and Employee Engagement.



## Training

We deployed a mix of e-learning, virtual live training and in-person training with clear safety measures in place. In addition to equipping our employees with functional and technical competencies, our training

programs also covered key impact areas such as leadership, environment health and safety, quality as well as robust induction activities and language training.

## Leadership Development as a Strategic Enabler

Leadership development is one of IVL Group's five strategic priorities, and an important enabler of success. Our approach is focused on developing effective leaders who contribute to our strengths as an organization and our long-term performance.

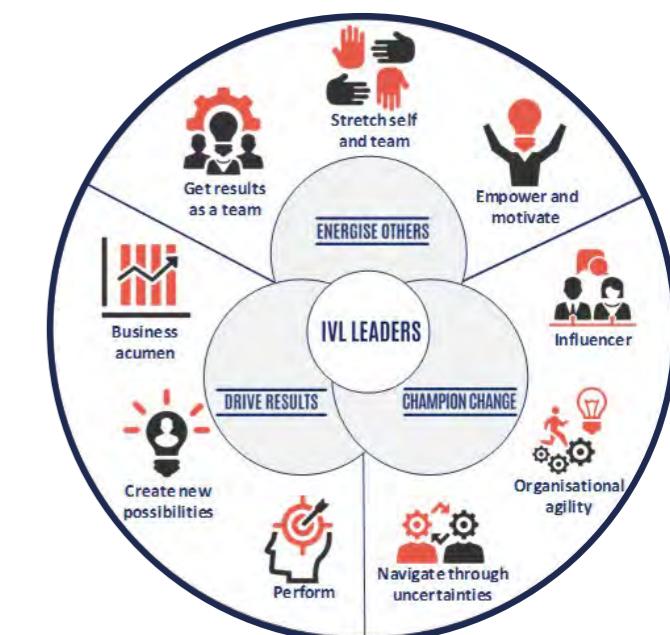
## IVL's Leadership Curriculum

We have around 3,500 leaders globally and a leadership curriculum designed to provide effective and targeted development was implemented in 2020.

In 2019, we initiated a project to define the Leadership Skills Profile applicable to all levels of leadership across the IVL Group - junior, middle and senior management leadership levels.

To support the development of leadership skills and behaviors, we also designed and created a Leadership Curriculum, implemented in 2020, which is tailored to the leadership experiences and development needs of the different leadership levels. It offers a suite of approaches and programs ranging from training, coaching, mentoring and experience/assignment-based development.

Our goal is to develop a total of 3,500 leaders by 2024 through a phased implementation approach to ensure quality learning outcomes and which consider operational/resource demands. In 2020, more than 200 leaders participated in various leadership programs including training, coaching and mentoring.



## Developing Business Leadership

We offer varied and ongoing division-specific training throughout IVL.

An example is our V-Lead program, led by segment CEOs, which nurtures younger individuals with high potential towards senior management roles and develops a robust leadership pipeline within respective business units.

Launched in 2018, the V-Lead program provides development opportunities to over 100 employees: including 30 from the Integrated PET Division, which we have now also expanded to include our PET and Feedstock divisions, and 60 leaders from the Fibers Division.

This program was tailor-made for the leadership development needs at IVL and includes hands-on experience based on a stretch assignment designed by the V-Lead cohort and validated by management following the initial business understanding phase:

- The cohort creates a business case and strategic recommendations for the Leadership team based on a thorough business analysis, external benchmarks and out-of-the-box approaches.

- They are supported by two senior leaders assigned to each of the cohorts who share their perspectives, insights and ideas to strengthen the recommendations forwarded to the leadership team and to present them with the most impact.
- It gives a unique opportunity of visibility with the highest level of leaders to these young talents, and it is a great opportunity for Senior leaders to assess the next level of leadership in action.

V-Lead Program Performance	
Combined PET Division	Fibers Division
<b>30 leaders</b> trained in 2020	<b>33 leaders</b> trained in 2020
More than <b>120 leaders</b> trained across our three divisions since 2018	

## Indorama Ventures Excellence (IVEX) Program

IVL is constantly seeking ways to become a world-class sustainable chemical company. We continuously streamline our internal mechanisms to become more productive and cost-efficient without compromising on quality. In this regard, our dedicated employees have been actively participating in IVEX programs since 2012.

To further prepare our organization towards Industry 4.0, we developed collaborative programs between the newly introduced digital enabling function and our IVEX department/division/project heads.

In 2020, 1,720 employees participated in projects totalling over 14,500 training hours. This resulted in a 39% increase in our participation rate compared to 2019. We implemented numerous projects around the world, while several that were more complex, known in the program as Green Belt and Black Belt projects, included:

- 39 projects to reduce the waste of raw materials
- 67 projects focusing on cost reductions
- 43 projects focusing specifically on energy reduction

## Achievements in 2020 via IVEX



## Growth of IVL's IVEX Program since 2012



IVL's IVEX program has sharpened our employees' focus on sustainability, extending beyond the various projects that were implemented. Through this program, our employees are given a valuable leadership development opportunity to work on projects that improve our efficiency, generate cost-savings, and reduce our consumption which further supports our long-term sustainability ambitions.

Driven by our core values:

- Our people make the difference
- Diversity is our strength

Grew from 4 sites in 2012 to 60 sites across 5 continents in 2020



## Progressive Impacts

One example of how the IVEX program has had a positive impact on our operational excellence over the course of eight years is at our IVL FiberVisions site. From 2012 to 2020, this site has averaged US\$1.9 million in savings per year and about 10% of their entire global workforce is trained as either a Green Belt or Black Belt.

## Attract, Develop and Engage

People are a company's ultimate competitive advantage. We strive to attract, develop and engage our employees because our people's success is IVL's success.

### Attracting Talent

We continually attract qualified and talented personnel and nurture our workforce, so they are ready to take on new challenges. Our ambition is to facilitate a seamless integration of talent into the organization and build on our brand as an employer of choice.

As an organization with a value chain that spans five continents, our global workforce is made up of a diverse pool. In 2020, we welcomed 2,511 new employees representing an 11.06% increase in our global workforce.

To attract talent, we conduct a mix of programs targeted at partnerships with higher education institutions and site visits. This enables us to promote our expertise as a leading global employer recognized as a sustainable and rewarding workplace that attracts young talent to be part of our organization in the future.

#### Our Year-Long Engagement with Students and Universities

##### February 2020

Hosted 50 students from MBO College in a visit to the Indorama Ventures Europe BV site in Rotterdam as part of the 'Processtechniek' week.

##### April 2020

Indorama Polyester Industries PCL Rayong arranged a site visit for 29 university students and four teachers from the Department of Chemistry, Faculty of Science and Technology, Chiang Mai Rajabhat University.

##### September 2020

Indorama Polyester Industries PCL Rayong arranged a site visit for 58 students and four teachers from the Department of Biological Sciences, Ubon Ratchathani University.

##### November 2020

The Scholarship Committee at Indorama Holdings Limited in Lopburi selected 10 children among employees' families as academic scholarship recipients in 2020.

### Employee Engagement

Highly engaged employees are essential for our business success and help us achieve and sustain our vision.

In 2020, we launched a new Employee Engagement approach to help us to understand how we can better engage our workforce and create a workplace of choice. Our approach considers the different touchpoints during our employees' journeys with IVL and focuses on identifying and enabling the right actions. Therefore, we deploy a mixed approach, one of which is the Global Employee Engagement survey.

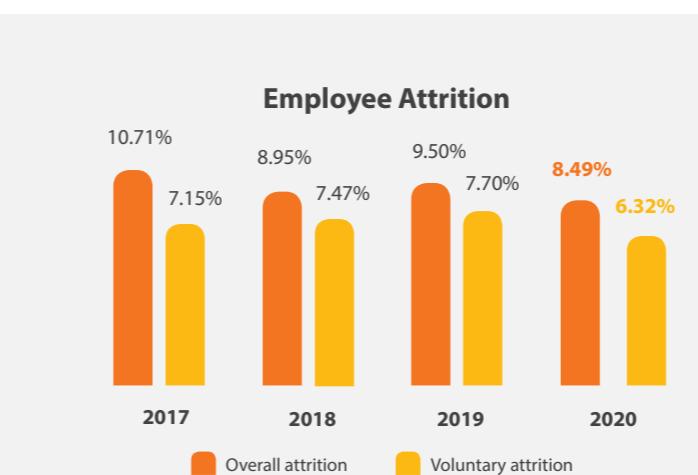
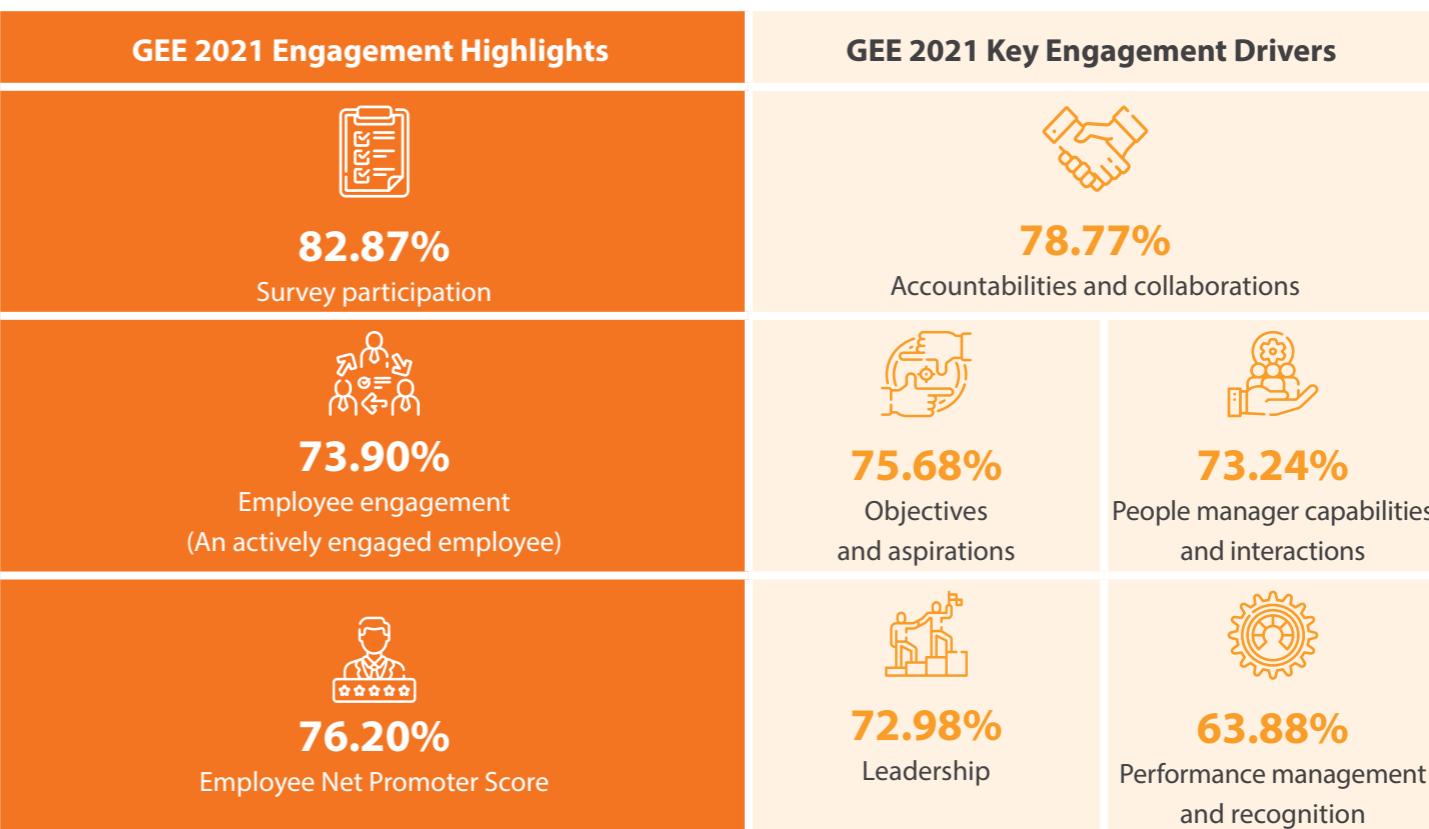
The Global Employee Engagement survey is carried out every two years and measures:

1. Engagement level: Employee Net Promoter score
2. Key engagement drivers

- a. Accountabilities and collaborations
- b. Objectives and aspirations
- c. People manager capabilities and interactions
- d. Performance management and recognition
3. Sense-checking with other feedback channels and data sources to improve the reliability of our engagement level evaluation
4. Focuses on improvement actions

The survey was conducted from January - February 2021 in 23 languages. Due to the COVID-19 pandemic, careful planning and arrangements took place at local sites to allow our employees to safely participate.

At the IVL Group level, we achieved a participation rate of 82.87% and engagement level of 76.2% Employee Net Promoter score.



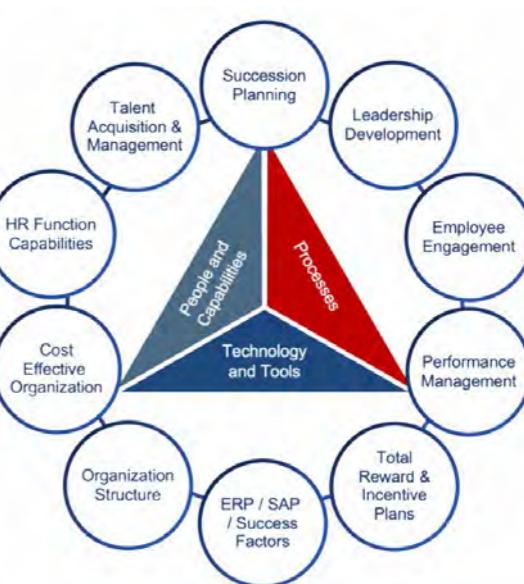
#### 2020 Employee Attrition Highlights

**10.6%** decrease in overall attrition compared to 2019

**17.9%** decrease in voluntary attrition compared to 2019

### Ensuring sustainable improvement in people practices

Our People vision is to deliver value to business positive employee experience by being integrated and digitally enabled. We continuously improve our people practices.



## Succession Planning

A strong talent pipeline is critical to ensure sustained quality leadership and organizational success.

We have a well-structured and consistent process that builds a robust pipeline of competent candidates and targeted development plans that is ready to fill the positions.

Therefore, our Succession Planning process aims to:

- Identify a deep pool of potential successors, each with an individual development plan.
- Identify and accelerate the development of future talents.
- Mitigate the risk and impact of losing experienced leaders, including when leaders assume different roles within the organization.

- Support employee engagement and talent retention.
- Promote diversity.

Our methodology is built on four key processes:

- Alignment with key business objectives.
- Determine key positions for succession based on organizational demands.
- Review of talents based on consistent performance and potential.
- Targeted development plans.

Our ambition is to expand the scope of succession planning to cover about 1,000 leadership positions by 2023. By 2020, we had already created a leadership pipeline of close to 400 successors for about 200 senior management positions.

## Creating a Diverse and Inclusive Workplace

IVL's Diversity Framework				
Commit to boosting our own cultural competencies	Actively seek out new perspectives and ideas	Treat others how they want to be treated	Observe diverse traditions, celebrations and holidays from other cultures	Contribute to the cultural diversity of our own workplace
Diversity and inclusivity are core focuses to maintaining a sustainable workplace at IVL. We embrace employees from different ethnicities, cultures, nationalities and educational backgrounds. Our framework, comprising five core strategies, ensures inclusivity is practiced throughout our organization.	continues to seek differences in opinions, viewpoints and ideas, we do not discriminate on the basis of language, culture, age, gender or nationality and offer employees promotions and rewards based on merit.	From the outset in our recruitment activities, we demonstrate our commitment to diversity and inclusion. When we hire, both internally and externally, we search for a diverse pool of candidates based on individual qualities. Diversity is also a key focus in succession planning.		

 Visit [2020 Diversity and Inclusion Report](#)

A diverse workforce is essential for continued innovation, a growth mindset and sustained business growth. As a diverse and inclusive organization that



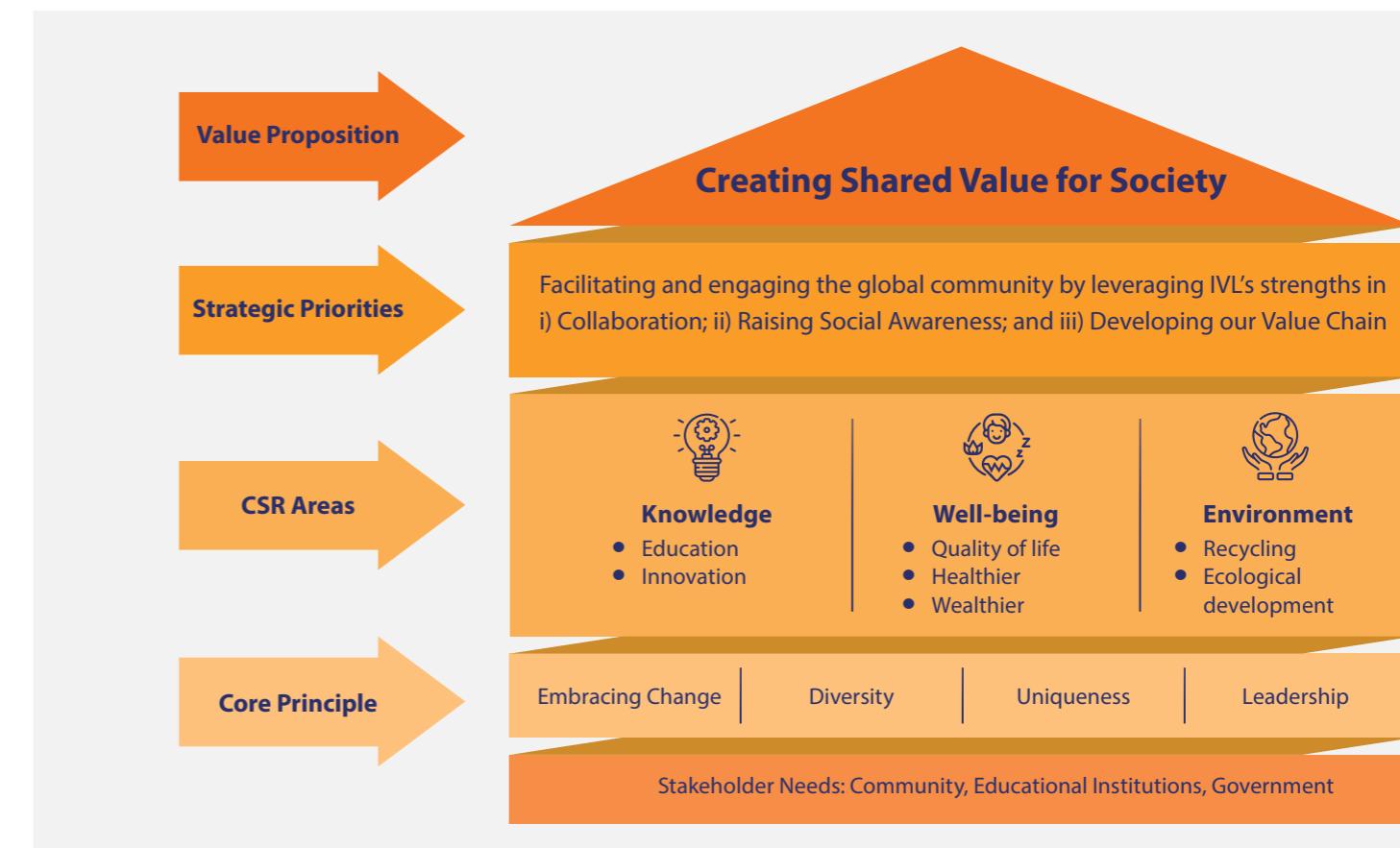
For more information, please refer to the Global Human Resources Data on pg. 125-127

## Giving Back to Our Communities

### Corporate Social Responsibility (CSR)

is a process where companies integrate social and environmental concerns into their businesses and interactions with stakeholders. Our CSR goal is to have a positive impact on society and deliver social, environmental or economic value. We focus on creating value for our business and society to ensure the company remains sustainable.

We are achieving this by facilitating and engaging the global community leveraging strengths in collaboration, raising awareness and developing the value chain. This is separated into three key areas of focus which are knowledge, well-being and the environment, which together cover an extensive scope of concepts. Within these areas, operations are based on four core principles of embracing change, diversity, uniqueness and leadership, affecting key stakeholders such as communities, educational institutions, government organizations, employees, customers and more.

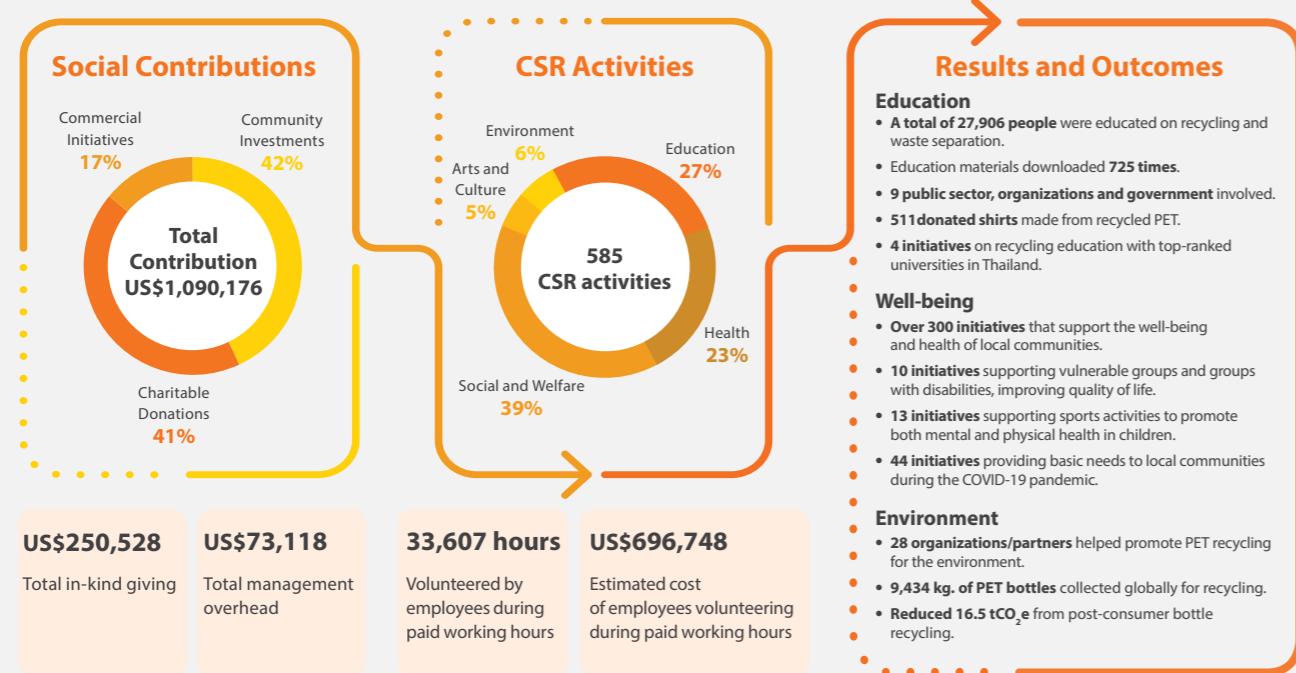


Our CSR practices are being implemented to share our values. To promote the global contributions of Indorama Ventures sites and motivate our employees, we encourage their participation in CSR activities through the "IVL Shared Value Award" which incorporates the Creating Shared Value (CSV) concept.

This award allows us to address societal challenges through our corporate expertise and accelerate initiatives to create benefits for businesses and communities.

For More Information 

## Overall CSR results in 2020



\*Social contributions and activities exclude initiatives from the COVID-19 fund and IVL Foundation.

## Key Activity Highlights in 2020

### From PET bottles to PPE coveralls

With the support of 16 partners, over four tons of post-consumer PET plastic bottles were given new life and recycled into personal protective equipment (PPE) suits. We distributed 19,100 coveralls, of which 18,600 were level 2 and 500 were level 3, to more than 200 hospitals and the Dental Council for medical staff working day and night to fight the Covid-19 outbreak across Thailand.

IVL remains the first and only company able to produce 100% recycled PET fibers for use in PPE coveralls. The material is made from domestic post-consumer

PET bottles and manufactured at IVL's plant at Nakhon Pathom, Thailand, which is the only local producer of rPET yarns for PPE.

In partnership with Less Plastic Thailand, we promote waste separation and encourage the public to support the circular economy of PET bottles through two collaborative projects, "Separate PET Bottles to Help Doctors" and "Separate PET Bottles to Help Dentists" with community partners. This includes the collection and recycling of post-consumer PET plastic bottles into PPE suits for frontline healthcare workers.



## CSR Global Activity Highlights 2020

We continue to focus on creating value while contributing to society. This ensures that we benefit, both as a company and a community, and remain positively engaged in our CSR activities based upon the three value areas of knowledge, well-being and the environment.

### Education



#### 1. Collaborating on Recycling Education: USA

Indorama Ventures Xylenes & PTA (IVXP) joined with AlphaPET to work directly with a local school board on a recycling program and competition, and provided additional educational support and training for local schools and students in the US state of Alabama. The program increased awareness around recycling and keeping communities clean with less waste going to landfill, and provided monetary awards to schools that collected the most plastic for recycling. A total of 1,000 students participated in this virtual program.



#### 2. Recycling Education for Children: Poland

Indorama Ventures Poland Sp. z o.o., in association with Akademia Zabawy i Ruchu and Anima Show, organized recreational activities and provided educational supplies about recycling. A total of thirty children from Włocławek and Michelin enjoyed learning about different types of materials and waste separation.

Indorama Ventures Poland believes that educating the younger generation contributes to stronger environmental awareness for a greener future and hopes this fun learning experience for the children provided an important boost during the pandemic.



#### 3. Marine Waste Trap Innovation: Thailand

Indorama Ventures and the IVL Foundation, together with Kasetsart University's Faculty of Fisheries established the "Marine Waste Trap" Innovation Award. This award promotes awareness about waste management and separation to a younger audience. We hope to discover innovative models to trap and catch waste reducing leaking into marine environments.

### Well-being



#### 1. Covid-19 Response: Turkey

Indorama Ventures Corlu PET Sanayi A.Ş helped healthcare workers from being infected during the pandemic while treating patients under challenging conditions. Over 1,000 masks and 1,000 pairs of gloves, visors and protective clothing (including high-flow oxygen devices) were donated to local medical personnel through the healthcare institute and four hospitals in the region.

## 2. Social Support for People with Disabilities: Mexico

Performance Fibers Operations Mexico and Indorama Ventures Polymers Mexico supported "Manos Capaces" organized by the Capable Hands Institute. This activity assists young people as well as adults with disabilities by engaging them in supportive work environments which allow them to carry out different activities increasing their capacities and contributing to their full development.



We provided space in the cafeteria which was used as a small market to sell their hand-crafted products including piñatas and piggy banks among others. This program has helped improve the quality of life of over forty individuals with disabilities in Queretaro, Mexico.



## 3. Mobile Medical Clinic: Thailand

Indorama Petrochem Limited (PTA), TPT Petrochemicals Public Company Limited and Indorama Polyester Industries (Rayong) joined together to fund a mobile clinic to benefit residents living in their surrounding communities. This included a medical doctor, nurses, medical team members, medications, and other related expenses. Over 250 residents living in the communities surrounding Nong Faeb and Nikompattana had an opportunity to access quality health services and resources contributing to their well-being and quality of life.

## Environment

### 1. Environmental Conservation: China

Glanzstoff Industries (Qingdao) in China improved waste separation and recycling awareness in the local community through an education initiative, which gained the strong interest of employees and their families who joined the CSR campaign. The collected waste was divided into recyclables, food waste, hazardous waste, and other waste.



### 2. Supporting Environmental Conservation: Thailand

TPT Petrochemicals PCL, Indorama Polyester Industries PCL (Rayong), Petform (Thailand) Ltd. and ES Fibervisions (Thailand) Company Limited joined a coastal development and conservation project in Rayong province on "International Coastal Clean-up Day." This initiative increased awareness about mismanaged waste impacting the environment.

Together with other organizations, over 1,800 volunteers, including 155 employees from the four companies and their families, and a representative of the Governor of Rayong participated in this clean-up day. We will continue promoting waste separation and recycling after this important collection effort.



## 3. Recycling Collaboration with Wetlands Edge Environment Center (WEEC): USA

Indorama Ventures Xylenes & PTA joined with WEEC on an initiative to protect the environment, and promote sound stewardship and wise management of natural resources for the benefit of people and all living things. This 'place-based' educational approach allows students to appreciate biodiversity and the natural environment.

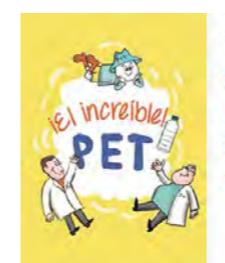


## 4. ECOCE: Mexico

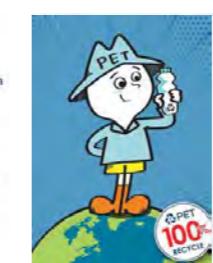
Indorama Ventures Ecomex became a member of the ECOCE. This non-profit environmental civil association was created and sponsored by the beverage and food industry. Moreover, this is the first agency in Mexico to propose specific actions in handling packaging and packaging waste. Joining this association helps create a recycling network and a chance to study other companies' best practices and learn how ideas can be introduced or applied to our business.

## Recycling Education

IVL's Recycling Education program is an important 30-year initiative which we believe is vital given the long-term value of education which cannot stop – even during a pandemic. In response to the rapid advent of COVID-19 and the ensuing lockdowns throughout the world, we shifted our efforts in some locations to virtual messaging platforms. As a global company, we develop our training materials so they have more variety and are available in multiple languages to allow people to easily understand the value of plastics and the importance of recycling PET and creating a circular economy. Our education materials were shared with our global team for use in their training sessions and distributed to spread the message more widely around the world.



Amazing PET Vol. 1  
 • Chinese  
 • Polish  
 • French  
 • English  
 • Lithuanian  
 • Turkish  
 • Dutch  
 • Spanish



Let's find out about types of plastic Recycling PET and Waste separation  
 • English



Recycling PET (Spanish)

Plastics in the oceans have a detrimental impact on marine life and people living along coastlines and on islands where they wash up. Our first roadshow prior to the COVID-19 pandemic took place with Morgan Kids on Koh Phayam and Koh Lao Liang, and the Mud Brick Learning Center and HDF Mercy Center in Ranong province. These helped 63 children and teachers whom we educated on separating plastic, and the importance of recycling PET which can save the environment and create jobs. Our education materials were highly appreciated by the children.



This year, we expanded our target group to universities as we believe they are proactive, can spread the message and increase awareness both on and off-campus, contributing to change that creates a positive impact on society. At Kasetsart University after we provided our training, an internal activity was arranged to raise awareness among both staff and students who collected 100 kilograms of PET bottles to be turned into PET recycling PET T-shirts. They also provided us with PET bottles for recycling at our factory. In addition, the Faculty



We carried our message of recycling and sustainability to some of the most successful companies and worked with the leading international business association in Thailand. After the training, some of them arranged CSR activities with their employees in their communities to collect PET bottles which were provided to IVL for recycling thereby having a positive impact on society.



Our education campaign collaborates with governmental organizations including both teachers and students, as well as a public-private partnership (PPP) encompassing the public and private sectors, civil society and international organizations. As a member of the PPP for Sustainable Plastic and Waste Management, we participated in their workshop which focused on incorporating the positive message and benefits of a circular economy in schools and provided

our recycling education materials for all participants. We contributed to a training program administered by the Office of the Basic Education Commission, which established a workshop for their environmental education officers exploring the waste problem and how to manage plastic waste in schools. We also provided our recycling education materials for all participants to ensure that children were properly educated on separating waste and the importance of recycling plastic.



of Fisheries established the "Marine Waste Trap" Innovation Award which traps waste thus reducing waste leakage into the marine environment. At Suan Sunandha Rajabhat University, students communicated and worked with restaurants on-campus and provided containers to collect PET bottles. The university also joined the "Separating PET Bottles to Help Dentists" project by providing 110 kilograms of PET bottles to be recycled into yarns and then made into PPE coveralls for the Dental Council of Thailand in support of dental students.

Our global teams were quick to adapt and continued to reinforce our recycling message online encouraging the collection of PET bottles in each country so that waste does not end up in the environment.

**United States** – Our team arranged 30 virtual training sessions and provided education materials to schools. We worked with the Huntsville Trash Panda Team which provided us with two locations to broadcast our recycling information signs – 1. Recycle shaped bottle collection bins (roughly 30) with Indorama and Pepsi's messaging on recycling and a collaborative short recycling video clip which played continuously on all of their concession stand TVs. Through our recycling education program and the support of Trash Panda baseball team, we collected 1,171 pounds of PET for recycling.

**Mexico** – We arranged a virtual training session and collected 340 kilograms of PET bottles from schools and communities.

**Brazil** – In light of the COVID-19 pandemic, schools were closed and some area schools were unable to access the internet. However, PET collection in communities continued and they collected a total of 1,652 kilograms of PET bottles for recycling.

**The Philippines** – We provided recycling education to communities raising awareness of the need to save the environment by recycling PET (pre-COVID-19).



## 2030 Target

Educating **one million** consumers around the world on recycling

2020 Recycling Education		27,906	2,806	153	23,562
People Received Trainings		People Received Trainings	Students	Teachers	Public and Community People
60 Schools	9 Public Sector, Organizations and Government	34 Virtual Trainings	30 Classroom Trainings	732 Teaching Hours	
5 Public Events	24 Recycling Talks	279 Recycling Articles	725 Downloads of Recycling Education VDOs		96 Downloads of Recycling Education VDOs
250 Recycling Bins Donated	511 rPET Shirts Donated	6 Recycling Factory Visits	424,530 Bottles Collected Globally	6,109 kg.	Bottles Returned to Recycling Factories

For More Information

# IVL Foundation



For More Information

Established in 2018, the IVL Foundation supports philanthropic, social and environment-related initiatives in Thailand and globally. Over the last two years, the foundation has been increasingly involved in **Education & Empowerment, Environment & Communities, and Healthcare** projects that create positive and meaningful impacts on people's lives.

The IVL Foundation supported 14 focus projects and five activities related to COVID-19 in 2020.



## COVID-19 Relief Projects (2020)

With the impact of COVID-19 on people's health and the hardships faced by communities, the IVL Foundation supported the following projects:

- A donation of 1,000,000 baht each was provided to the Ramathibodi Foundation and King Chulalongkorn Memorial Hospital to treat patients with COVID-19 and to purchase medical equipment to support medical teams.
- A donation of 500,000 baht was provided to the Duang Prateep Foundation (DPF) for their activities in support of residents of the Klong Toei Community amid the COVID-19 pandemic. The funds were used to install disinfectant equipment and provide essential supplies to 300 families impacted by job losses. DPF also created short-term (two-month) jobs for 25 people who prepared food and distributed hygienic necessities to senior citizens, disabled residents and children in the community.
- Together with AsiaPet (Thailand) Limited, Indorama Polymers Public Company Limited, Petform (Thailand) Limited and Indorama Holdings Ltd., the IVL Foundation provided sets of essential supplies for 300 families in Tha Klong Sub-district and 300 families in Khao Samo Kon Sub-district in Lopburi.
- A total of 300 sets of essential supplies were donated to the homeless and communities in Phra Nakhon District in Bangkok to help relieve the impacts of unemployment and economic challenges during the COVID-19 pandemic.



## Education and Empowerment

### • Dao Women's Empowerment Program

The Dao Women's Empowerment Program, an initiative by the Baan Dek Foundation (BDF), is being supported by the IVL Foundation. This program empowers marginalized women, many of whom are victims of domestic abuse, to look after themselves and their children through various training modules including goal-setting and life coaching, financial literacy, life skills, work readiness, as well as counseling sessions with a goal of helping them regain their self-esteem and become independent.

In 2020, the BDF team identified 40 campsites and accepted 100 women who joined the Dao training program. Twelve portable sewing machines and four factory sewing machines were purchased to initiate independent economic activities. IVLF also supported the Grant Me a Future program which awards three women who completed the program's requirements with a grant of 30,000 baht to start their own businesses.



### • IVL Innovation and STEM Clubs in Ghana

The IVL Foundation sponsored Dext Technology Limited, a startup in Ghana that develops and deploys innovative, user-friendly and affordable tools to enhance productivity in learning science, technology, engineering and mathematics (STEM), in setting up the IVL Innovation and STEM Clubs at five schools near Indorama Ventures Packaging Ghana Ltd. A total of 300 students from these five schools will be trained in STEM subjects through the Science Set, a highly scalable science laboratory. The students will perform a series of STEM-based

activities which will involve problem identification, simple research, problem-solving, solution implementation and basic presentation skills.

### • Educating Unregistered Children

The IVL Foundation continued to support the Good Shepherd Home Foundation's education program in 2020, which is assisting 70 unregistered refugees aged 6-18 years with competency in the Thai language, including knowledge of Thai culture, which will be an advantage for them while living in Thailand, along with English and Mathematics skills.



## Environment and the Community

### • Clean Water Project

Due to the worst drought in 60 years in Loei, the World Vision Foundation Thailand approached the IVL Foundation to sponsor the provision of clean water facilities at Bann Sum-Plaow School and Bann Non Kok Kha School. IVLF handed off the water filtration systems to both schools in September 2020. The installed system can filter between 2,000–3,000 liters of clean water per day, which can support approximately 1,000 people and will greatly improve the quality of life of the children and communities and reduce water-borne diseases.



### • Equipment Donation to two BMA Schools

The IVL Foundation donated scientific equipment to Kaen Thong Uppatham School and Matthayom Suwitserianusorn School. These two schools, under the Bangkok Metropolitan Administration (BMA) in Prawet District, were set up to support underprivileged children experiencing difficult family conditions. The schools reached out to the Joint Foreign Chambers of Commerce in Thailand and the IVL Foundation requesting equipment for their science experiments such as fertilizer composting, mushroom cultivation, and agri-product processing. Products made by the

students are sold to parents, people in their communities and visitors allowing them to earn an extra allowance while they are studying. The donated equipment will help increase the productivity of the schools' current science experiments, which in turn, will boost their revenue. This will allow many students to gain a sustainable income to support themselves and their families avoiding any need for alternate employment or neglecting their studies.



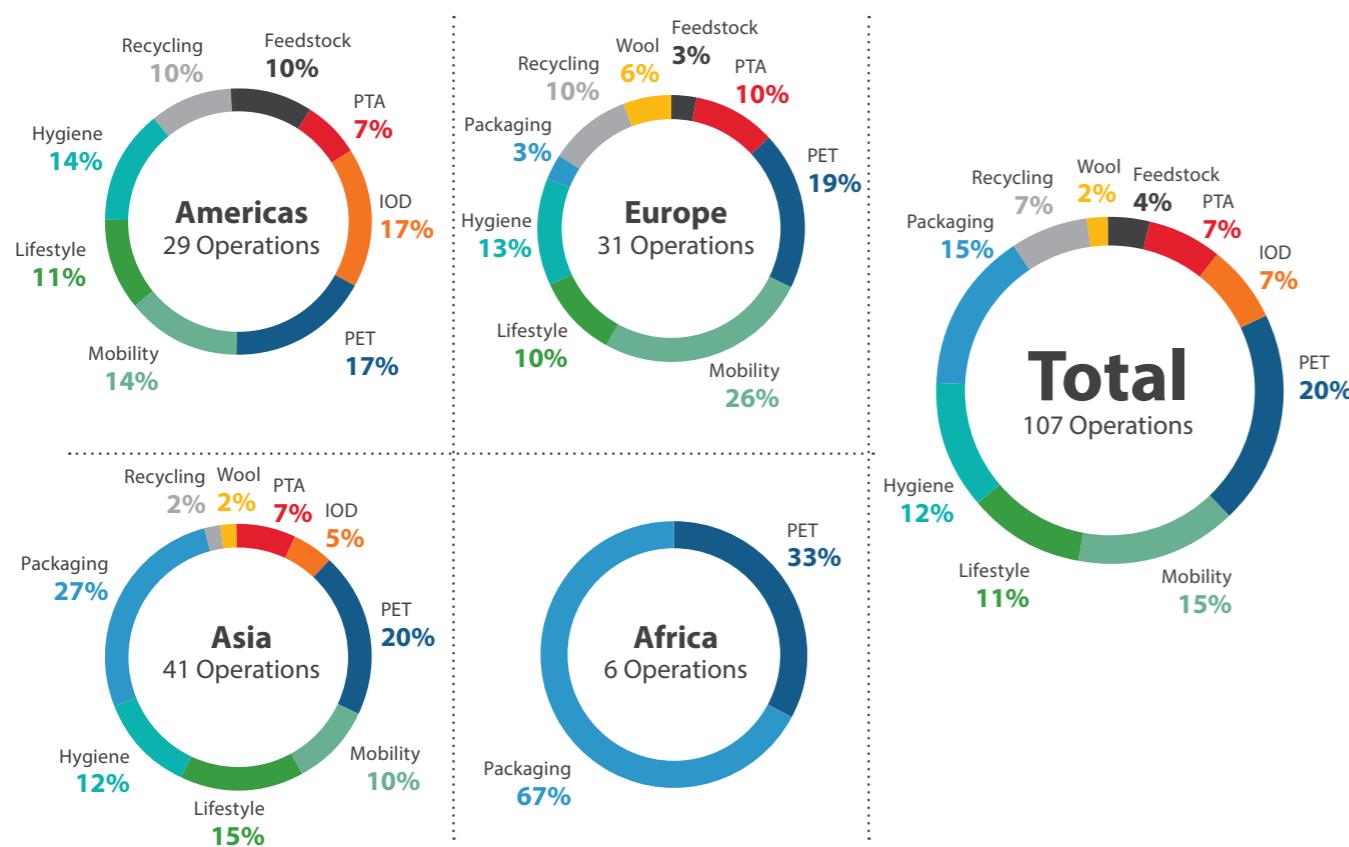
## Healthcare

The IVL Foundation and employees from Indorama Ventures head office jointly participated in the medical weekly missions in Mae Hong Son and Sisaket organized by Operation Smile Thailand. The weekly mission was held to provide surgery for economically disadvantaged patients suffering from cleft lip or palate conditions, or other facial deformities, at no cost. In 2020, 85 patients were treated in Mae Hong Son and 32 patients were able to undergo surgery in Sisaket during the mission.



# Global Performance Data

Our 2020 Sustainability Report covers 107 sites across the globe in all business units including PET, Feedstock (PTA, PIA, EO/EG, PX, NDC), IOD, Fibers, Packaging, Recycling and wool as listed below.



## Coverage of Data Collection (% of Total IVL Global Production)

Material Indicators	2017	2018	2019	2020
Total energy consumption	100	100	100	100
Direct GHG Emissions Scope 1	100	100	100	100
Indirect GHG Emissions Scope 2	100	100	100	100
Total NOx Emissions	100	100	100	100
Total SOx Emissions	100	100	100	100
Total VOC Emissions	100	100	100	100
Total waste (excluding reused and recycled)	100	100	100	100
COD in treated wastewater discharged	100	100	100	100
BOD in treated wastewater discharged	100	100	100	100
Total water withdrawn by sources	100	100	100	100
Wastewater discharge	100	100	100	100
Health & safety	100	100	100	100
Process safety events	30	50	100	100
Spills	100	100	100	100
CSR	91	94	88.3	91
HR	100	100	100	100

## Operations Information Included in 2020 Sustainability Report

Region / Operation	Country	Business
<b>Americas</b>		
AlphaPet, Inc.	USA	●
Auriga Polymers Inc.	USA	● ●
Avgol America Inc.	USA	●
FiberVisions Manufacturing Company	USA	●
FiberVisions Products Products, Inc.	USA	●
Indorama Ventures (Oxide & Glycols) LLC	USA	●
Indorama Ventures Fibras Brazil Ltda	Brazil	●
Indorama Ventures Olefins LLC	USA	●
Indorama Ventures Oxides International LLC	USA	●
Indorama Ventures Oxides LLC	USA	●
Indorama Ventures Polymers Mexico, S. de R.L. de C.V.	Mexico	● ●
Indorama Ventures Polymeros S.A.	Brazil	●
Indorama Ventures Propylene Oxides LLC	USA	●
Indorama Ventures PTA Montreal LP	Canada	●
Indorama Ventures Solucoes Sustentaveis Brasil Ltda.	Brazil	●
Indorama Ventures Sustainable Solutions LLC	USA	●
Indorama Ventures Sustainable Solutions Fontana Inc.	USA	●
Indorama Ventures Xylenes and PTA LLC	USA	● ● ● ● NDC, PIA, PX
Performance Fibers Operations Mexico, S. de R.L. de C.V.	Mexico	●
PHP Fibers Inc.	USA	●
Sinterama do Brazil Ltda.	Brazil	●
StarPet Inc.	USA	●
UTT de México Technical Textiles S.A. de C.V.	Mexico	●
Winnsboro Fibres LLC	USA	●
<b>Europe</b>		
Avgol Limited Liability Company	Russia	●
Beverage Plastics Limited	Northern Ireland	●
FiberVisions A/S	Denmark	●
Glanzstoff Bohemia s.r.o.	Czech Republic	●
Glanzstoff Industries S.R.L.	Italy	●
Glanzstoff Longlaville S.A.S.	France	●
Indorama Ventures Corlu PET Sanayi Anonim Sirketi	Turkey	●
Indorama Ventures Europe B.V.	The Netherlands	● ●
Indorama Ventures Poland Sp. z.o.o.	Poland	●
Indorama Ventures Polymers Germany GmbH	Germany	●
Indorama Ventures Portugal PTA - Unipessoal, LDA.	Portugal	●
Indorama Ventures Quimica S.L.U.	Spain	● ● ● PIA
Kordára Plus a.s.	Czech Republic	●
Kordára Plus a.s.	Slovakia	●
PHP Fibers GmbH	Germany	●
Schoeller GmbH & Co KG	Austria	●
Schoeller Kresice s.r.o.	Czech Republic	●
Sinterama Bulgaria EOOD	Bulgaria	●
Sinterama S.p.A.	Italy	●
Textilcord Steinfort S.A.*	Luxembourg	●
Trevira GmbH, Bobingen	Germany	●
Trevira GmbH, Guben	Germany	●
UAB Orion Global Pet	Lithuania	●
UTT Technische Textilien GmbH & Co.	Germany	●
Wellman France Recyclage S.A.S	France	●
Wellman International Limited, Ireland	Ireland	●
Wellman International Limited, The Netherlands	The Netherlands	●
Wellman Neufchâteau Recyclage S.A.	France	●

Region / Operation		Country	Business
<b>Asia</b>			
Asia Pet (Thailand) Limited	Thailand	●	
Avgol India Private Limited	India	●	
Avgol Limited (Bagan)	Israel	●	
Avgol Limited (Dimona)	Israel	●	
FiberVisions (China) Textiles Products Limited	China	●	
Glanzstoff Industries (Qingdao) Co., Ltd.	China	●	
Guangdong IVL PET Polymer Company Limited	China	●	
Hubei Gold Dragon Nonwoven Fabrics Co. Ltd.**	China	●	
Indorama Holdings Limited	Thailand	●	
Indorama Petrochem Limited	Thailand	●	
Indorama Petrochem Limited (2 <sup>nd</sup> Branch)	Thailand	●	
Indorama Polyester Industries Public Company Limited, Nakhon Pathom	Thailand	● ●	
Indorama Polyester Industries Public Company Limited, Rayong	Thailand	● ●	
Indo Rama Synthetics (India) Limited	India	●	
Indorama Ventures Oxides Ankleshwar Private Limited	India	●	
Indorama Ventures Oxides Australia Pty Limited	Australia	●	
Indorama Ventures Packaging (Myanmar) Limited	Myanmar	●	
Indorama Ventures Packaging (Philippines) Corporation, Bacolod	The Philippines	●	
Indorama Ventures Packaging (Philippines) Corporation, Batino	The Philippines	●	
Indorama Ventures Packaging (Philippines) Corporation, Davao	The Philippines	●	
Indorama Ventures Packaging (Philippines) Corporation, Meycauayan	The Philippines	●	
Indorama Ventures Packaging (Philippines) Corporation, MOP	The Philippines	●	
IVL Dhunseri Petrochem Industries Private Limited (Haldia)	India	●	
IVL Dhunseri Petrochem Industries Private Limited (Panipat)	India	●	
Performance Fibers (Kaiping) Company Limited	China	●	
Performance Fibers (Kaiping) No.2 Company Limited	China	●	
Performance Fibers (Kaiping) No.3 Company Limited	China	●	
Petform (Thailand) Limited, Korat	Thailand	●	
Petform (Thailand) Limited, Lopburi	Thailand	● ●	
Petform (Thailand) Limited, Pathumthani	Thailand	●	
Petform (Thailand) Limited, Rayong	Thailand	●	
PT Indorama Petrochemicals	Indonesia	●	
PT Indorama Polychem Indonesia	Indonesia	●	
PT Indorama Polypet Indonesia	Indonesia	●	
PT Indorama Ventures Indonesia	Indonesia	● ●	
Sinterama Yarns (Dongguan) Co., Ltd.	China	●	
TPT Petrochemicals Public Company Limited	Thailand	●	
<b>Africa</b>			
Bevpak (Nigeria) Limited	Nigeria	●	
Egyptian Indian Polyester Company S.A.E.	Egypt	●	
Indorama PET (Nigeria) Limited	Nigeria	●	
Indorama Ventures Packaging (Ghana) Limited	Ghana	●	
Indorama Ventures Packaging (Nigeria) Limited	Nigeria	●	
Medco Plast Co. for Packing & Packaging Systems (S.A.E.)	Egypt	●	

Remark:

● Feedstock    ● PTA    ● IOD    ● PET    ● Hygiene    ● Lifestyle    ● Mobility    ● Packaging    ● Recycling    ● Wool

Business Verticals: Combined PET – Feedstock, PTA, PET, Packaging, Recycling  
Fibers – Fibers (Hygiene, Lifestyle and Mobility) and Wool

Integrated Oxides and Derivatives – IOD

NDC Naphthalene Dicarboxylate

PIA Purified Isophthalic Acid

PX Paraxylene

\* One of the five Glanzstoff sites, the other four are Glanzstoff Bohemia and Glanzstoff Industries S.R.L., Glanzstoff Industries (Qingdao) and Glanzstoff Longlaville S.A.S.

\*\* One of the five Avgol sites, the other four are Avgol America Inc., Avgol India Private Limited, Avgol Limited Liability Company, Avgol Limited (Bagan) and Avgol Limited (Dimona)

## Global Performance Data

GRI Standards		Unit	2017	2018	2019	2020
<b>Production</b>						
General	Total production (captive consumption)	Ton of production	10,004,534	11,338,992	12,780,005	15,551,483
	PET	Ton	3,648,922	4,211,040	5,167,714	5,356,444
	PTA	Ton	3,735,362	4,192,671	4,191,627	4,243,812
	Packaging	Ton	134,838	155,319	226,184	223,333
	Fibers	Ton	1,320,941	1,438,564	1,850,305	1,757,260
	Feedstock (PIA/PX/NDC)	Ton	1,057,123	1,236,703	880,183	793,167
	Wool	Ton	2,188	2,712	6,622	4,600
	Recycling Plants Production (flakes+in process reuse)	Ton	105,160	101,983	149,734	155,586
	IOD	Ton	-	-	307,634	3,017,281
<b>Revenue</b>						
General	Total revenues (including inter-company sales)	USD (million)	10,575	12,933	14,089	13,769
<b>Materials</b>						
301-1	Total material used	Ton	10,656,101	11,418,542	13,058,127	15,019,567
	Raw materials					
	- PTA	Ton	4,061,686	4,281,652	5,195,207	5,260,904
	- MEG	Ton	1,492,315	1,647,427	2,034,280	2,071,956
	- Paraxylene	Ton	2,452,829	2,755,828	2,751,180	2,785,304
	- IOD raw materials	Ton	-	-	-	1,532,558
	- Acetic Acid	Ton	139,606	162,234	168,183	154,037
	- Purified isophthalic acid	Ton	64,042	70,510	88,511	96,462
	- PET	Ton	259,809	302,396	405,181	398,514
	- PP	Ton	123,825	118,622	274,540	274,328
	- PE	Ton	37,193	67,172	55,494	56,757
	- HDPE	Ton	5,481	7,134	9,140	8,211
	- Wool	Ton	2,521	2,600	5,096	3,400
	- Cardboard packaging	Ton	39,556	3,516	57,745	5,006
	- Partially oriented yarn (POY) + Textile grade chips	Ton	21,150	0	4,009	13,693
	Bio-raw materials					
	- Bio-MEG	Ton	7,447	15,808	9,130	10,031
	- Cellulose	Ton	11,043	11,004	10,079	7,212
	- PLA	Ton	2,383	1,088	2,023	3,641
	Others	Ton	1,791,707	1,830,309	1,781,332	2,106,641
301-2	Total recycled materials	Ton	143,507	141,242	206,996	230,912
<b>Energy</b>						
302-1	Total energy consumption	GJ	55,070,650	59,984,718	73,452,756	104,724,983
	• Fuel oil	GJ	89,531	109,772	308,901	431,744
	• Natural gas	GJ	23,905,980	28,089,267	31,777,505	64,265,634
	• LPG	GJ	71,919	60,629	69,024	57,672
	• Diesel	GJ	90,493	150,835	188,489	252,356
	• Gasoline	GJ	31,971	30,422	28,782	41,100
	• Fuel gas	GJ	31,676	7,709	-	-
	• Coal	GJ	13,921,799	14,143,189	23,190,958	20,796,788
	• Other	GJ	27,371	101,404	66,495	80,444
	• Renewable energy consumption	GJ	1,348,403	1,324,546	1,086,515	1,051,628
	Biomass	GJ	855,872	901,065	658,703	618,312
	Biogas	GJ	492,531	423,481	427,812	433,316
	• Direct energy sold	GJ	(1,416,948)	(1,961,330)	(2,422,922)	(3,077,614)
	Total Indirect energy consumption (electricity, cooling, steam purchased from outside of IVL group)	GJ	16,968,455	17,928,274	19,159,008	20,825,231
	Electricity purchased from conventional sources (e.g. natural gas, coal, nuclear, heating oil)	MWh	4,713,460	4,980,076	5,321,947	5,784,786
		GJ	11,934,309	12,684,116	14,060,847	15,353,390
		MWh	3,315,086	3,523,366	3,905,791	4,264,831
		GJ	3,763,243	3,723,250	3,492,387	4,803,741
		MWh	1,045,345	1,034,236	970,108	1,334,372
		GJ	414,514	428,143	489,516	461,978
		MWh	115,143	118,929	135,977	128,327
		GJ	371,063	300,998	292,655	222,781
		MWh	103,073	83,611	81,293	61,884
		GJ	6,237	6,072	11,964	23,326
		MWh	1,733	1,687	3,323	6,479
		GJ	1,221,327	1,423,629	1,489,077	667,280
		MWh	339,257	395,453	413,633	185,356
		GJ	421,526	417,225	396,190	428,058
	Total direct electricity sold					

GRI Standards		Unit	2017	2018	2019	2020
Total steam sold	MWh	117,091	115,896	110,053	118,905	
Total indirect electricity sold	GJ	257,933	165,745	221,703	215,102	
302-3 Energy intensity	MWh	71,648	46,040	61,584	59,751	
302-4 Energy saved due to conservation and efficiency improvement	GJ/Ton of production	5.50	5.29	5.75	6.73	
<b>Water Withdrawal and Consumption</b>						
303-1 Total water withdrawn by sources	m³	53,552,616	60,285,763	65,222,820	82,504,769	
- Surface water	m³	32,036,781	34,920,909	35,480,047	51,035,459	
- Once through cooling water	m³	2,533,355	1,681,646	263,010	-	
- Municipal water and water utilities	m³	13,630,142	18,229,684	21,826,915	18,123,024	
- Groundwater	m³	5,263,939	5,341,836	7,630,654	12,661,456	
- Rainwater	m³	88,398	111,689	22,194	-	
Water intensity	m³/Ton of production	5.35	5.32	5.10	5.31	
<b>Reused / Recycled Water</b>						
303-3 Total volume of recycled/reused water	m³	4,699,568	5,292,534	5,255,856	5,786,158	
% of recycled/reused water	%	8.07	8.07	7.46	6.55	
<b>Emissions</b>						
305-1 Direct GHG emissions of all sources owned or controlled by company (Scope 1 emissions)	tCO₂e	3,211,409	3,688,970	4,744,746	7,035,992	
305-2 Indirect GHG emissions resulting from the generation of electricity, heat, or steam (Scope 2 emissions)	tCO₂e	2,316,591	2,224,494	2,344,695	2,409,061	
Total GHG emissions (Scope 1 + Scope 2)	tCO₂e	5,528,000	5,913,464	7,089,441	9,445,053	
305-4 Scope 1 GHG intensity	tCO₂e/Ton of production	0.321	0.325	0.371	0.452	
Scope 2 GHG intensity	tCO₂e/Ton of production	0.232	0.197	0.184	0.156	
Scope 1 + Scope 2 GHG intensity	tCO₂e/Ton of production	0.553	0.522	0.555	0.607	
"GHG Intensity in tons of CO₂e per currency total revenue"	tCO₂e/USD (million)	522.74	457.24	503.19	685.97	
GHG Intensity in tons of CO₂e per full time equivalent (FTE) employees	tCO₂e/FTE	363.80	371.40	312.37	374.70	
305-7 Total NO <sub>x</sub> emissions	Ton	2,559	2,879	4,659	4,937	
Total SO <sub>x</sub> emissions	Ton	1,518	1,970	4,993	4,658	
Total VOC emissions	Ton	2,078	4,642	2,123	3,298	
Total PM emissions	Ton	423	639	1,136	872	
<b>Wastewater Discharge</b>						
306-1 Total water discharge volume	m³	32,222,930	33,659,202	28,812,422	48,753,356	
COD in treated wastewater discharged	Ton	1,542	2,357	1,693	12,560	
BOD in treated wastewater discharged	Ton	100	357	328	1,347	
TSS in treated wastewater discharged	Ton	295	478	532	1,540	
Oil and grease in treated wastewater discharged	Ton	15.60	16.70	20.45	124	
COD in untreated wastewater discharged to third party	Ton	4,090	4,374	2,578	2,861	
BOD in untreated wastewater discharged to third party	Ton	888	793	420	538	
TSS in untreated wastewater discharged to third party	Ton	421	302	146	139	
Oil and grease in treated wastewater discharged to third party	Ton	8.01	5.41	5.79	7.28	
<b>Solid Waste</b>						
306-2 Total hazardous waste	Ton	54,001	51,379	74,344	117,157	
- Reuse	Ton	30,248	28,959	43,574	39,840	
- Recycling	Ton	4,725	2,960	4,796	2,511	
- Recovery (including energy recovery)	Ton	1,748	2,188	2,542	52,439	
- Composting	Ton	-	-	0	77	
- Incineration	Ton	11,183	9,616	9,996	12,900	
- Landfill	Ton	5,376	7,349	12,260	6,416	
- Others	Ton	721	306	1,175	2,973	
Total non-hazardous waste	Ton	110,151	119,570	243,104	197,669	
- Reuse	Ton	5,810	7,960	120,151	65,318	
- Recycling	Ton	36,616	43,990	43,423	50,505	
- Recovery (including energy recovery)	Ton	5,919	11,959	12,835	10,245	
- Composting	Ton	5,911	6,850	11,235	12,829	
- Incineration	Ton	1,367	1,080	1,080	2,425	
- Landfill (General waste)	Ton	35,746	38,609	49,596	53,603	
- Deepwell injection	Ton	--	--	--	53	
- Others	Ton	18,781	9,122	4,784	2,692	
Total Reused, Recycled and Recovered Waste	Ton	85,066	98,017	227,321	220,857	
Total waste disposed (not Reused, Recycled or Recovered)	Ton	79,086	72,932	90,127	93,969	
306-4 Total weight of hazardous waste transported	Ton	57,724	48,388	67,709	56,733	
Total weight of hazardous waste treated	Ton	5,530	5,985	1,821	16,249	
The total weight of hazardous waste shipped internationally	Ton	183	362	261	258	

GRI Standards		Unit	2017	2018	2019	2020
<b>Spills</b>						
306-3 Total significant spills	Case	42	18	20	25	
- Hydrocarbon spills	Ton	513	28	89	49	
- Chemical spills	Case	4	5	6	18	
- Other spills	Ton	7	13	6	33	
Case	26	13	14	7	7	
Ton	30	15	83	17	17	
Case	12	0	0	0	0	
Ton	476	0	0	0	0	
<b>Process Safety Events</b>						
Tier 1						
- No. of events	Case	5	8	24	18	
- Rate	Case/Million man-hours	0.48	0.43	0.44	0.32	
Tier 2						
- No. of events	Case	3	4	14	13	
- Rate	Case/Million man-hours	0.29	0.21	0.26	0.23	
<b>Environmental Compliance</b>						
307-1 ALL FINES: Monetary value of ALL fines for non-compliance with environmental laws and regulations	USD	54,618	36,607	0	22,947	
FINES OVER USD 10,000: Monetary value of significant fines over USD 10,000 for non-compliance with environmental laws and regulations	USD	42,866	36,607	0	22,357	
Total number of non-monetary sanctions for non-compliance with environmental laws and regulations	Case	0	0	0	0	
Total number of non-monetary sanctions for non-compliance with environmental laws and regulations were incurred	Case	0	0	0	0	
<b>Employees</b>						
102-8 Total employees	Person	15,195	15,922	22,696	25,207	
- Male	Person	11,844	12,524	17,749	19,790	
- Female	Person	3,351	3,398	4,947	5,417	
Total contractors	Person	2,115	3,234	6,904	6,475	
- Male	Person	1,704	2,730	6,137	5,661	
- Female	Person	411	504	767	814	
<b>Occupational Health and Safety</b>						
403-1 Total workforce represented in formal joint management - worker health and safety committees	Person	12,461	13,118	19,310	23,140	
Percentage of workforce represented in formal joint management - worker health and safety committees	%	82.01	82.39	91.43	91.80	
403-2 Total Recordable Injury Rate (TRIR)	No/200,000 man-hours	1.19	1.29	1.45	0.91	
Employees	No/200,000 man-hours	1.21	1.41	1.59	0.99	
- Male	No/200,000 man-hours	1.41	1.52	1.60	1.02	
- Female	No/200,000 man-hours	0.50	0.98	1.57	0.86	
Contractors	No/200,000 man-hours	1.10	0.78	0.96	0.68	
- Male	No/200,000 man-hours	1.35	0.87	0.96	0.66	
- Female	No/200,000 man-hours	0	0.33	0.99	0.85	
"Total Recordable Injuries (not including first aid incidents)"	Case	206	241	394	259	
Employees	Case	176	214	335	209	
- Male	Case					

GRI Standards	Unit	2017	2018	2019	2020
Occupational Illness Frequency Rate (OIFR)	No/Million man-hours	0.14	0	0.02	0.18
Employees	No/Million man-hours	0.03	0	0.02	0.24
- Male	No/Million man-hours	0.04	0	0.03	0.06
- Female	No/Million man-hours	0	0	0	0.98
Contractors	No/Million man-hours	0.73	0	0	0
- Male	No/Million man-hours	0.90	0	0	0
- Female	No/Million man-hours	0	0	0	0
Total number of occupational disease cases	Case	5	0	1	10
Employees	Case	1	0	1	10
- Male	Case	1	0	1	2
- Female	Case	0	0	0	8
Contractors	Case	4	0	0	0
- Male	Case	4	0	0	0
- Female	Case	0	0	0	0
Fatalities (all Employees and Contractors)	Person	0	0	1	0
Employees	Person	0	0	0	0
- Male	Person	0	0	0	0
- Female	Person	0	0	0	0
Contractors	Person	0	0	1	0
- Male	Person	0	0	1	0
- Female	Person	0	0	0	0
Lost Day Rate (LDR)	Days/Million man-hours	51	66	104	114
Employees	Days/Million man-hours	51	77	124	147
- Male	Days/Million man-hours	58	87	106	153
- Female	Days/Million man-hours	28	37	198	119
Contractors	Days/Million man-hours	47	17	34	22
- Male	Days/Million man-hours	57	17	37	24
- Female	Days/Million man-hours	0	17	19	0
Total number of lost days (only including lost scheduled work days)	Man Days	1,754	2,452	5,649	6,525
Employees	Man Days	1,499	2,336	5,225	6,205
- Male	Man Days	1,322	2,106	3,590	5,242
- Female	Man Days	177	230	1,635	963
Contractors	Man Days	255	116	424	320
- Male	Man Days	255	95	398	320
- Female	Man Days	-	21	26	0
Absentee Rate (AR)	%	2.05	2.01	1.99	1.90
Employees	%	2.37	2.40	2.38	2.39
- Male	%	2.37	2.34	2.02	2.08
- Female	%	2.38	2.65	3.87	3.70
Contractors	%	0.37	0.32	0.65	0.48
- Male	%	0.29	0.29	0.66	0.47
- Female	%	0.71	0.46	0.54	0.56
Absentee days	Days	88,825	93,668	135,091	135,547
Employees	Days	86,318	90,871	125,176	126,668
- Male	Days	67,179	70,527	85,194	89,085
- Female	Days	19,139	20,344	39,982	37,583
Contractors	Days	2,507	2,797	9,915	8,879
- Male	Days	1,609	2,098	8,966	7,891
- Female	Days	898	699	949	988
Near Miss	Case	959	1,870	3,015	1,977
Employees	Case	861	1,750	2,531	1,878
- Male	Case	726	1,611	2,357	1,704
- Female	Case	135	139	174	174
Contractors	Case	98	120	484	99
- Male	Case	90	118	474	91
- Female	Case	8	2	10	8
403-3	Workers with high incidence or high risk of diseases related to their occupation	Person	402	744	652
					838
	Employees	Person	307	703	584
	- Male	Person	307	587	470
	- Female	Person	0	116	114
	Contractors	Person	95	41	68
	- Male	Person	91	37	58
	- Female	Person	4	4	10
					6

## Water Withdrawal by Source

GRI Standards	Unit	2020
<b>Total water withdrawal by source</b>		
303-3	m³	82,504,769
Total water withdrawal by source (with + without stress)	m³	51,035,459
Surface water/rain water (with + without water stress)	m³	47,395,317
Freshwater (<=1,000 mg/L Total Dissolved Solids)	m³	3,640,142
Other water (>1,000 mg/L Total Dissolved Solids)	m³	12,660,117
Ground water (with + without water Stress)	m³	1,339
Freshwater (<1,000 mg/L Total Dissolved Solids)	m³	0
Other water (>1,000 mg/L Total Dissolved Solids)	m³	0
Seawater (total) (with + without water stress)	m³	684,830
Freshwater (<1,000 mg/L Total Dissolved Solids)	m³	627,250
Other water (>1,000 mg/L Total Dissolved Solids)	m³	57,580
Produced water (total) (with + without water stress)	m³	18,123,024
Freshwater (<1,000 mg/L Total Dissolved Solids)	m³	18,057,981
Other water (>1,000 mg/L Total Dissolved Solids)	m³	65,043
Total water withdrawal by source (with water stress)	m³	34,673,306
Surface water/rain water (with water stress)	m³	19,608,256
Freshwater (<1,000 mg/L Total Dissolved Solids)	m³	19,608,256
Other water (>1,000 mg/L Total Dissolved Solids)	m³	0
Ground water (with water stress)	m³	3,747,740
Freshwater (<1,000 mg/L Total Dissolved Solids)	m³	3,747,740
Other water (>1,000 mg/L Total Dissolved Solids)	m³	0
Seawater (total) (with water stress)	m³	0
Freshwater (<1,000 mg/L Total Dissolved Solids)	m³	0
Other water (>1,000 mg/L Total Dissolved Solids)	m³	0
Produced water (total) (with water stress)	m³	81,039
Freshwater (<1,000 mg/L Total Dissolved Solids)	m³	34,370
Other water (>1,000 mg/L Total Dissolved Solids)	m³	46,669
Third-party water (with water stress)	m³	11,236,272
Freshwater (<1,000 mg/L Total Dissolved Solids)	m³	11,171,229
Other water (>1,000 mg/L Total Dissolved Solids)	m³	65,043
Total water withdrawal by source (without water stress)	m³	47,831,463
Surface water (without water stress)	m³	31,427,203
Freshwater (<1,000 mg/L Total Dissolved Solids)	m³	27,787,062
Other water (>1,000 mg/L Total Dissolved Solids)	m³	3,640,142
Ground water (without water stress)	m³	8,913,717
Freshwater (<1,000 mg/L Total Dissolved Solids)	m³	8,912,377
Other water (>1,000 mg/L Total Dissolved Solids)	m³	1,339
Seawater (total) (without water stress)	m³	0
Freshwater (<1,000 mg/L Total Dissolved Solids)	m³	0
Other water (>1,000 mg/L Total Dissolved Solids)	m³	0
Produced water (total) (without water stress)	m³	603,791
Freshwater (<1,000 mg/L Total Dissolved Solids)	m³	592,880
Other water (>1,000 mg/L Total Dissolved Solids)	m³	10,911
Third-party water (without water stress)	m³	6,886,752
Freshwater (<1,000 mg/L Total Dissolved Solids)	m³	6,886,752
Other water (>1,000 mg/L Total Dissolved Solids)	m³	0

## Waste Water Discharge

GRI Standards		Unit	2020
<b>Waste water discharge</b>			
303-4	Total waste water discharge (with + without stress) (source wise)	m³	48,753,355
	Total surface water	m³	26,649,830
	Total ground water	m³	65,486
	Total sea water	m³	3,220,926
	Total third party water / municipality / common waste water treatment plant	m³	18,722,602
	Total third party water sent for used for other organization	m³	94,511
	Waste water Discharge (with water stress)	m³	25,906,869
	Surface water	m³	14,429,383
	Ground water	m³	47,719
	Sea water	m³	1,663,141
	Third party water / municipality / common waste water treatment plant	m³	9,763,971
	Third party water sent for used for other organization	m³	2,654
	Waste water discharge (without water stress)	m³	22,846,486
	Surface water	m³	12,220,446
	Ground water	m³	17,767
	Sea water	m³	1,557,785
	Third party water / municipality / common waste water treatment plant	m³	8,958,631
	Third party water sent for used for other organization	m³	91,857
	Total waste water discharge quality wise by fresh water and other water (with + without stress)	m³	48,753,355
	Freshwater (<=1,000 mg/L Total Dissolved Solids)	m³	39,684,310
	Other water (>1,000 mg/L Total Dissolved Solids)	m³	9,069,045
	Waste water discharge with water stress	m³	25,906,869
	Freshwater (<=1,000 mg/L Total Dissolved Solids)	m³	24,694,216
	Other water (>1,000 mg/L Total Dissolved Solids)	m³	1,212,652
	Waste water discharge without water stress	m³	22,846,487
	Freshwater (<=1,000 mg/L Total Dissolved Solids)	m³	14,990,094
	Other water (>1,000 mg/L Total Dissolved Solids)	m³	7,856,393

## Global Human Resources Data

GRI Standards		Unit	2017	2018	2019	2020
<b>Employees</b>						
405-1	Total employees by gender	Person	15,195	15,922	22,696	25,207
	- Male	Person	11,844	12,524	17,749	19,790
	- Female	Person	3,351	3,398	4,947	5,417
	Total Permanent employees	Person	14,525	15,221	22,027	23,134
	- Male	Person	11,299	11,944	17,225	18,158
	- Female	Person	3,226	3,277	4,802	4,976
	Total Temporary employees	Person	670	701	669	2,073
	- Male	Person	545	580	524	1,632
	- Female	Person	125	121	145	441
	Total employees by Level*	Person	14,525	15,221	22,027	23,134
	Executive Management	Person	94	101	109	115
	- Male	Person	83	88	95	100
	- Female	Person	11	13	14	15
	Senior Management	Person	388	414	577	606
	- Male	Person	301	320	468	492
	- Female	Person	87	94	109	114
	Middle Management	Person	1,485	1,619	2,341	2,458
	- Male	Person	1,185	1,281	1,820	1,911
	- Female	Person	300	338	521	547
	Junior Management	Person	6,106	5,831	8,495	8,922
	- Male	Person	4,246	3,521	5,097	5,353
	- Female	Person	1,860	2,310	3,398	3,569
	Non Management*	Person	6,452	7,256	10,505	11,033
	Male	Person	5,484	6,734	9,745	10,235
	Female	Person	968	522	760	798
	Total employees by Age*	Person	14,525	15,221	22,027	23,134
	Over 50 years old	Person	2,488	3,328	5,033	6,267
	- Male	Person	2,118	2,742	4,027	5,132
	- Female	Person	370	586	1,006	1,135
	30-50 years old	Person	8,542	9,024	13,199	13,265
	- Male	Person	6,412	6,896	10,191	10,194
	- Female	Person	2,130	2,128	3,008	3,071
	Below 30 years old	Person	3,495	2,869	3,795	3,602
	- Male	Person	2,769	2,306	3,007	2,832
	- Female	Person	726	563	788	770
<b>New employee hires*</b>						
401-1	Total new employees	Person	1,732	1,758	2,042	1,822
	- Male	Person	1,274	1,216	1,464	1,259
	- Female	Person	458	542	578	563
<b>Employee Turnover*</b>						
401-1	Total employee turnover	Person	1,556	1,363	2,093	1,964
	- Male	Person	1,203	1,021	1,502	1,413
	- Female	Person	353	342	591	551
	Total employee turnover rate	Turnover rate (%)	10.71	8.95	9.50	8.49
	Voluntary employees turnover	Person	1,039	1,137	1,695	1,461
	Voluntary employees turnover rate	Turnover rate (%)	7.15	7.47	7.70	6.32
	Number of employees laid off	Person	113	81	0	93
	Number of negotiations	Person	35	36	0	58
<b>Parental Leave*</b>						
401-3	Number of employees who took parental leave	Person	368	768	863	615
	- Male	Person	264	543	601	328
	- Female	Person	104	225	262	287
	Number of employees who returned to work after taking parental leave	Person	345	639	726	554
	- Male	Person	257	494	559	321
	- Female	Person	88	145	167	233
	Retention to work (after parental leave and still employed for the next 12 months)	Person	325	603	693	468
	- Male	Person	239	465	532	242
	- Female	Person	86	138	161	226

GRI Standards		Unit	2017	2018	2019	2020
<b>Employees training*</b>						
404-1	Total training hours provided to employee	Hours	329,779	463,175	728,206	429,886
- Male	Hours	247,584	352,338	552,725	335,311	
- Female	Hours	82,195	110,837	175,481	94,575	
- Mandatory course	Hours	-	-	-	214,305	
- Non-mandatory course	Hours	-	-	-	215,582	
Total average training hours	Hours/Employee	22.70	30.43	33.06	18.58	
- Male	Hours/Employee	21.91	29.50	32.09	18.47	
- Female	Hours/Employee	25.48	33.82	36.54	19.01	
Total amount spent	USD	-	-	-	2,070,050	
- Mandatory course	USD	-	-	-	625,605	
- Non-mandatory course	USD	-	-	-	1,444,445	
- Region - Asia	USD	-	-	-	870,159	
- Region - EMEA	USD	-	-	-	757,347	
- Region - Americas	USD	-	-	-	442,544	
<b>Performance Review*</b>						
404-3	Total employees receiving regular performance reviews	Person	14,525	15,221	22,027	15,648
	Total employees receiving career development reviews	Person	14,242	14,237	21,281	6,505
<b>Remuneration ratio of women to men</b>						
405-2	Strategic (base salary only)	Ratio	0.960	0.960	0.962	0.964
	Managerial (base salary only)	Ratio	0.944	0.945	0.947	0.949
	Managerial (base salary + other cash incentives)	Ratio	0.940	0.949	0.950	0.953
	Supervisory and Operational	Ratio	0.929	0.930	0.931	0.934
<b>Employee Engagement Score**</b>						
	Employee satisfaction score	%	73.60	74.91	74.91	73.89
- Male	%	73.59	74.98	74.98	74.54	
- Female	%	79.80	80.84	80.84	77.40	
Data coverage of employee satisfaction survey	%	93.75	93.43	93.43	82.87	
<b>Collective Bargaining</b>						
102-41	Total employees covered by collective bargaining agreements	Person	7,748	7,810	11,337	9,578
	Percentage of total employees covered by collective bargaining agreements	%	50.99	51.31	51.47	41.40
	Number of consultations/negotiations with trade unions over organizational changes [unit]	Number	94	334	262	103
<b>Human Rights Integration</b>						
412-2	"Total number of hours of employees training on human rights policies or procedures concerning aspects of human rights that are relevant to operations"	Hours	14,256	17,210	20,799	11,044
	"Total number of employees trained in human rights policies or procedures concerning aspects of human rights that are relevant to operations"	Person	11,403	12,819	19,362	9,366
	"Percentage of employees trained in human rights policies or procedures concerning aspects of human rights that are relevant to operations"	% of total employees	75.0	80.5	85.3	37.2
<b>Non-discrimination</b>						
406-1	Total number of incidents of discrimination and corrective actions taken	Case	4	0	0	8
	Number of incidents of discrimination and corrective actions taken regarding employees	Case	3	0	0	5
	Number of incidents of discrimination and corrective actions taken to all excluding employee	Case	1	0	0	3

GRI Standards		Unit	2017	2018	2019	2020
<b>Rights of Indigenous People</b>						
411-1	Incidents of violations involving rights of indigenous people	Case	0	0	0	0
<b>Human Rights Assessment</b>						
412-1	Total number of operations	Number	83	91	108	123
	Total number of operations that have been subject to human rights reviews or impact assessments	Number	83	91	108	123
	Percentage of operations that have been subject to human rights reviews or impact assessments [unit]	%	100	100	100	100
<b>Human Rights Grievances</b>						
103-2	Total number of grievances concerning human rights through formal grievance process	Case	0	0	0	8
	Number of grievances about human rights (related to employees) through formal grievance process	Case	0	0	0	7
	Number of grievance about human rights (not related to employees) through formal grievance process	Case	0	0	0	0
	Total number of human rights grievances addressed in this reporting period	Case	0	0	0	8
	Number of human rights grievances (related to employees) addressed during the reporting period	Case	0	0	0	7
	Number of human rights grievances (not related to employees) addressed during the reporting period	Case	0	0	0	0
	Total number of human rights grievances filed in the previous reporting period that resolved during the reporting period	Case	0	0	0	0
	Number of human rights grievances (related to employees) filed in previous reporting period that were resolved during the reporting period	Case	0	0	0	1
	Number of human rights grievances (not related to employees) filed in previous reporting period resolved during the reporting period	Case	0	0	0	0
<b>Labor Practice Grievance</b>						
103-2	Total number of grievances about for labor practices filed through formal the grievance mechanism	Case	26	27	24	63
	Total number of grievances about labor practices addressed during the reporting period	Case	16	25	18	80
	Total number of grievances about labor practices resolved during the reporting period	Case	19	18	18	75
	Total number of grievances about labor practices filed prior to reporting period that were resolved during the reporting period	Case	15	21	22	43

\* Does not include temporary manpower. Temporary manpower is contingent manpower hired through an agency. Appropriate compliance training on Human Rights, Health & Safety has always been given to temporary manpower

\*\* 2017 - 2020 Restatement: Change to favourability score (Actively Engaged) is in line with best practices as it facilitates interpretability, targeted analysis leading to actionable insights and improvement actions

## Global CSR Data

GRI Standards	Unit	2017	2018	2019	2020
<b>Local Community Engagement</b>					
Percentage of operations with implemented local community engagement, impact assessments, and development programs					
Number	%	89	67	88	91
Total number of operations with any of the below local community engagement, impact assessments and developed programs (e.g. if site A has SIA and EIA, and site B has EIA the total number of sites with programs is 2)	Number	15	29	32	46
Number of operation with implemented social impact assessment including gender assessment	Number	11	10	9	14
Number of operation with implemented environmental impact assessment	Number	20	21	21	42
Number of operation with implemented public disclosure of results of environmental and social impact assessment	Number	13	12	13	27
Number of operation with implemented local community development programs	Number	17	18	18	25
Number of operation with implemented stakeholder engagement plans	Number	14	13	12	21
Number of operation with implemented broad base local community consultation committees and processes	Number	9	10	7	15
Number of operation with implemented work councils, occupational health and safety committees and other employee representation bodies to deal with impacts	Number	20	21	23	42
Number of operation with implemented formal local community grievance process	Number	12	3	7	18
<b>Social Grievances</b>					
Number of grievances regarding society received through formal grievance process	Number	1	1	1	1
Total number of societal grievances addressed during this reporting period	Number	0	0	0	1
Total number of societal grievances resolved during this reporting period	Number	0	0	0	1
Total number of societal grievances resolved in the previous reporting period	Number	4	2	1	0
<b>Total Philanthropic Activities</b>					
Total philanthropic activities	%	100	100	100	100
Charitable donations	USD	888,367	970,856	350,980	449,703
Community investments	USD	645,634	971,420	715,351	451,890
Commercial Initiatives in the community	USD	325,003	406,629	730,397	188,583
<b>Philanthropic Contributions</b>					
Total cash contributions	USD	1,749,830	1,771,435	1,796,730	1,090,176
Time: Estimate employee costs	USD	1,918,393	1,007,502	1,142,800	696,748
Time: Employee volunteering during paid working hours	Hour	103,681	58,640	60,960	33,607
Total in-kind giving	USD	93,160	122,914	153,140	250,528
Total management overheads	USD	16,012	454,556	82,360	73,118



**INDORAMA VENTURES**

Indorama Ventures is **THE FIRST AND ONLY COMPANY IN THAILAND** to produce **100% recycled PET yarns** for **PPE coveralls**.

# About this Report

## Management Responsibility Statement

The Chief Sustainability Officer (CSO) is responsible for the preparation of the Sustainability Report 2020 in accordance with the GRI Sustainability Reporting Standards, including the stakeholder identification and the definition of material matters, together with the Integrated Reporting <IR> Framework.

Our Sustainability Report 2020 provides a detailed overview of IVL's holistic approach to value creation, covering both tangible and intangible, and financial and nonfinancial aspects of the business.

## Our Approach

We have been producing stand-alone annual sustainability reports since 2010 and continue to update our online sustainability-related disclosures throughout the year as appropriate. Both proactive and responsive, sustainability reporting represents one of many engagement channels with our stakeholders, allowing us to proactively summarize sustainability-related performance, outline key initiatives and highlight future plans, as well as respond to issues raised and faced globally. By adhering to recognized and consistent frameworks, sustainability reporting offers readers information that is comparable across years and sectors and in relation to other global organizations similar to IVL. We also ensure that our information is assured by independent auditors.

This report has been prepared in accordance with the GRI Standards: Core option. It has also been prepared with close reference to other international criterion such as the International Integrated Reporting <IR> Framework, UN SDGs, UNGC principles and AA1000 Assurance

## Scope of Reporting

The Sustainability Report 2020 contains information deemed of material value to our business and stakeholders, i.e., issues that have the potential to affect our ability to create value in the short, medium and long term. These issues are discussed and tested with our diverse stakeholder groups and are disclosed within our reporting boundary. The <IR> Framework requires that we explain our organizational overview, our approach to governance, our business model, the risks and opportunities that we face, our performance and our future outlook.

The Report combines the major financial and sustainability-related information necessary to thoroughly evaluate our performance; we selected the report's topics based on the GRI Reporting Principles for defining report content and quality. In addition to our report, we publish further information online. Links to this supplementary information are provided in the relevant sections.

Standard. The information in this report also serves as a Communication on Progress report on IVL's implementation of the 10 principles of the UNGC which comprises into 4 themes: Human Rights, Labours, Environment and Anti-Corruption.

As we mark the tenth year of sustainability reporting in 2020, we decided to enhance our sustainability reporting and further strengthen our internal ESG-related communications by structuring our report around key content elements of the International Integrated Reporting Council (IIRC)'s International Integrated Reporting <IR> Framework. This Report combines the necessary environmental, social, governance and financial information from across IVL and our subsidiaries to enable stakeholders to build a clear sense of the value that we create or transfer over time. The <IR> approach organizes this value creation disclosure into broad 'capitals' (Financial, Manufactured, Intellectual, Human, Social and Relationship and Natural).

For this report we have consolidated information from across 107 operating sites in 33 countries in which we are present, for our global operations, subsidiaries and factories (see 'Exceptions' below for any entities not included). Information relates to activities occurring between January 1 2020 and December 31 2020, unless otherwise stated, for example newly acquired entities are reported upon from acquisition date. In some cases, we also refer to organization and global events that took place after December 31 2020 if deemed as important context.

For those entities in which IVL represents more than 50% ownership and for joint ventures in which we have management control, we report consolidated data. We exclude data from entities in which we participate via minority ownership, and those in which we have no management control. Our quantitative environmental data is gathered from meter readings, production system outputs, detailed accounting models, and where necessary via estimations with ground rules.

Further details of our reporting boundaries can be found within the GRI Content Index on pg. 142-148.

Previous Sustainability Reports can be accessed via the link below:  
<https://sustainability.indoramaventures.com/en/downloads/sustainability-reports>

Due to a number of energy-intensity acquisitions in 2020, our global business grew and our environmental footprint changed. In order to ensure clear progress and communication towards our 2025 targets we reset the baseline to 2020. For further information on this baseline, refer to our Sustainability Ambitions section on pg. 24.

## Greenhouse Gas (GHG) Accounting

We follow the Greenhouse Gas Protocol on Corporate Accounting and Reporting as outlined by the World Resources Institute (WRI) and the World Business Council for Sustainable Development (WBCSD).

## Reporting Principles

### Value Creation

As a world-class global and integrated business, we exist to create value. Our business model - underpinned by robust governance, clear purpose and a defined strategy, represents the core through which we transform our resources (capitals) into valuable outcomes and outputs for our diverse stakeholder groups. Articulating IVL's value creation process means linking decision-making at the highest levels to performance and future targets, providing insights into our operations and supply chains and making commitments to ensure our long-term success.

### Report Content

Sustainability reporting is not a mere annual data-gathering exercises designed to fulfil external demand or tick boxes. Rather, the reports represent the output from ongoing and integrated information flows within and across IVL and its stakeholders that are critical to the long-term success of the organization. By actively engaging with our stakeholders on issues of most interest to them means we are able to:

- Allocate expertise, resources and time to those sustainability issues deemed most critical in enabling our ability to create long term value for our stakeholders.
- Test our strategic intentions against important social, environmental and economic issues and scenarios and adapt our approach where necessary as a result.
- Identify opportunities for innovation, growth and new business initiatives and maintain a competitive advantage by integrating sustainability in our day-to-day operations.
- Ensure early sight of potential risks or threats to our license to operate.

Deciding which issues are of most interest to readers of the Sustainability Report 2020 means ensuring that throughout the year, processes, feedback channels and communications platforms consolidate within a structured 'materiality' process in which issues are assessed, measured, rated and mapped according to formal principles and frameworks.

## Report Quality

Designed to be concise and complete, Integrated Reporting is the future of corporate reporting. Prepared with close reference to guiding principles rather than specific indicators, our Sustainability Report 2020 combines qualitative and quantitative information that aligns to current measurement and performance frameworks required and valued by our stakeholders. Using the <IR> approach enables us to clearly highlight interdependencies within our businesses and the external environment, show how we allocate resources across the capitals, and demonstrate how we build long-term sustainability.

The GRI standards provide organizations with principles for producing comprehensive, quality communications focused on being balanced, comparable, accurate, timely, clear and reliable. In the preparation of this report we consolidated opinions from our varied stakeholder groups to build a robust set of material issues. To apply the GRI standards on defining report content in our Sustainability Report 2020, we adhere to the following three steps:

### 1. Sustainability Context:

This Sustainability Report 2020 provides readers with detailed insight into how IVL and our subsidiaries create and deliver short, medium and long-term value. It outlines how we identify our sustainability-linked material topics, identify external trends, formulate our strategy, how we govern the implementation of that strategy, and our considered approach to managing risk and seeking new opportunities. We strongly believe that being a responsible operator and going beyond minimum requirements in the environmental, social and governance spheres makes good business sense. A business can only be sustainable and deliver benefits if it is to work actively in relation to and with respect for such factors.

### 2. Materiality Assessment:

In 2020, we undertook our materiality assessment analysis by including feedback from engagements with internal stakeholders across all our operations, businesses and core functions, as well as key external stakeholder groups, including customers, suppliers, bankers, fund providers/managers, investors and consultants. We also focused on topics of significance that relate to economic, governance, environmental and social areas of the business and ensured that discussions were framed in terms of the potential impact that these issues may have on IVL's ability to create long term value.

We mapped the issues raised within a materiality matrix. This matrix was assessed by business leaders, individual operations leadership representatives, a cross section of individuals from across IVL, external stakeholders and analyzed in detail by the Sustainability Team and reviewed by the SRMC. We also cross referenced against GRI topics and where relevant, assigned indicators. For more information, please refer to our GRI Content Index on pg. 142-151 of this report.

In 2020, 13 key material topics were identified, for which we created enhanced performance indicators and targets to drive internal performance improvements. Details of the materiality matrix are given in the Materiality Assessment section of this report on pg. 32-33 as well as on our website via the link below: <https://sustainability.indoramaventures.com/en/our-sustainability/materiality-assessment>

### 3. Sustainability Report Assurance and GHG Verification:

We believe that external assurance provides credibility and enhances transparency and completeness of our reporting. We ask independent external auditors TUV India Private Limited to verify and assure the information provided in our Sustainability Report 2020 is in accordance with the GRI Standards, <IR> Framework and the AA1000 Assurance Standard. An Assurance Statement issued by TUV India Private Limited is available in the Independent Assurance Statement section on pg. 134-137 of this report.

The information on GHG Scope 1, 2 and 3 [for just 1 category] emissions has been verified by an independent external assurance auditor, TUV Nord CERT GmbH, in accordance with the GHG Protocol, ISO 14064-1, and ISO 14064-3.

Non-financial information in this report is subject to some uncertainties due to limitations inherent in the nature of measuring such data. For example, measurement techniques and data selection criterion can vary between IVL and our subsidiaries. We remain committed to reporting the most comprehensive and accurate metrics possible within these confines for our stakeholders and the public.

## Data Methodology

### Data Coverage

In 2020, we expanded data verification coverage to 107 operating sites compared to 94 sites in 2019. Unless otherwise stated, we report data for our operations on 100% ownership basis (e.g. for an 80% owned operation we report 100% of the data).

### Changes in size, structure, ownership and developments

The list of entities acquired, incorporated and other developments is available in the [2020 Annual Report](#) on pg. 87-97 and on our website under investor-relations newsroom at:

<https://www.indoramaventures.com/en/investor-relations/newsroom/press-releases>

### Exceptions

The Sustainability Report 2020 includes environmental, safety, governance and human resources data from all entities, including joint ventures in which we hold a shareholding of 50% or more and have management control. However, environmental and safety information excludes the following:

- The information of the entities acquired, or operations commenced on or after 1 July 2020<sup>A</sup>
- Joint ventures with a 50% or less shareholding and no management control<sup>B</sup>
- Sales and corporate offices
- Human resources information other than human rights and employee engagement excludes the joint ventures with a 50% or less shareholding and no management control.

#### A: Entities acquired, or operations commenced on or after 1 July 2020:

- Indorama Ventures Recycling Poland sp. Z o.o. (Bielsko-Biała)
- Indorama Ventures Recycling Poland sp. Z o.o. (Łęczyca)

#### B: Joint ventures with a 50% or less shareholding and/or no management control

- ES FiberVisions (Thailand) Co., Ltd., Thailand
- Shenma-PHP (Pingdingshan) Air Bag Yarn Manufacturing Co., Ltd., China
- Indorama Ventures EcoMex S. de R.L. de C.V., Mexico
- Corpus Christi Polymers LLC, the United States
- Huvis Global Corporation, the United States
- PETValue Philippines Corporation

Information provided covers the company as a whole. Data is reported using the metric system and in US\$ (dollars) unless otherwise stated.

## Forward-Looking Statements

This Sustainability Report contains 'forward-looking statements' - i.e. statements relating to our projected future performance. These statements can be identified through the use of language such as 'aim', 'believe', 'estimate', 'expect', 'goal', 'intend', 'may', 'plan', 'target', 'will' and other similar terms. Forward-looking statements offer investors and other stakeholders important insight into our vision and how we believe our strategy sets us up for long term success.

In their nature they also include making some assumptions in the future business environment or wider which may affect our ability to deliver on our targets. For example, shifts in legal and regulatory frameworks, national fiscal complexities which can affect our ability to compete effectively, unforeseen economic and social challenges in the countries in which we operate etc. There is therefore a degree of uncertainty inherent within forward-looking statements which readers are asked to accept when assessing the information provided therein. Investors are cautioned not to place undue reliance on any such forward-looking statements, which speak only as of the date they are made. IVL undertakes no obligation to update any forward-looking statements, whether as a result of new information, future events or otherwise.

## Feedback

We welcome your comments, thoughts and remarks. Please direct them to: [Sustainability@indorama.net](mailto:Sustainability@indorama.net)

# Independent Assurance Statement



## Assurance Statement

To the Directors and Management  
Indorama Ventures Public Company Limited,  
Bangkok, Thailand

Indorama Ventures Public Company Limited (hereafter 'IVL') commissioned TUV India Private Limited (TUVI) to conduct independent external assurance of non-financial information disclosed in IVL's Sustainability Report (hereafter 'the Report') for the January 1, 2020 to December 31, 2020 period. This engagement was comprised of a "limited assurance" of IVL's sustainability information and a "reasonable assurance" of IVL's direct and indirect (Scope 1 and 2) GHG emissions as a whole for the applied reporting period. The Report is based on the principles of IIRC Integrated Reporting (<IR>), GRI Standards, AA1000AS Version 3 (Type 1, Moderate Level) for verification of the Report along with AA1000 AP (2018).

### Management's Responsibility

IVL developed the Report's content. IVL's management is responsible for identifying material topics and carrying out the collection, analysis, and disclosure of the information presented in the Report (web-based and print), including website maintenance and integrity, and for ensuring its quality and accuracy in accordance with the applied criteria stated in the <IR> framework and GRI standards: Core option, such that it is free of intended or unintended material misstatements.

### Scope and Boundary

The scope of work includes limited assurance of the following non-financial performance/KPI disclosures disclosed in the Report. In particular, the assurance engagement included the following:

- Review of the disclosures submitted by IVL;
- Review of the quality of information;
- Review of evidence (on a sample basis) for identified non-financial indicators.

TUVI has verified the below-mentioned disclosures given in the report.

Topic	Indicator	GRI Disclosure
Energy	Energy consumption within the organization	302-1
	Energy intensity	302-3
Water and effluents	Water withdrawal	303-3
	Water discharge	303-4
	Water consumption	303-5
Emissions	Direct (Scope 1) GHG emissions	305-1
	Energy indirect (Scope 2) GHG emissions	305-2
	Nitrogen oxides (NO <sub>x</sub> )/sulfide oxides (SO <sub>x</sub> ) and other significant air emissions	305-7
Waste	Waste generated	306-3
	Waste diverted from disposal	306-4
	Waste directed to disposal	306-5
Occupational health and safety	Work-related injuries	403-9
Training and education	Average hours of training per year per employee	404-1
Process Safety Events (Tier 1 and 2): As per the American Petroleum Industry's recommended Practice API RP 754		

## Sustainability Assurance Service



The reporting boundaries for the above topics include 107 operating sites across 33 countries. Since COVID-19 prevented onsite verification, remote verification (via web-based conference and telephone calls) was conducted in November 2020, February - March 2021. The assurance encompassed Indorama Ventures Oxides and Indorama Ventures Xylenes & PTA at United States; Indorama Ventures PTA at Canada; and Indorama Ventures Quimica lat Spain. The assurance activities were carried out together with a desk review for all other IVL sites within the reporting boundary. Applicable boundaries for disclosures are explained in the Report.

### Limitations

TUVI did not perform any assurance procedures on the prospective information, such as targets, expectations, and ambitions, disclosed in the Report. Consequently, TUVI draws no conclusion on the prospective information. During the assurance process, TUVI did not come across any limitation to the agreed scope of the assurance engagement. TUVI expressly disclaims any liability or co-responsibility for any decision a person or entity would make based on this Assurance Statement.

### Our Responsibility

TUVI's responsibility in relation to this engagement was to perform a limited level of assurance and to express a conclusion based on the work performed. This engagement did not include an assessment of the adequacy or the effectiveness of IVL's strategy, management of sustainability-related issues or the sufficiency of the Report against principles of IIRC Integrated Reporting (<IR>), GRI Standards: Core option, AA1000AS Version 3, and AA1000 AP (2018), other than those mentioned in the scope of the assurance. TUVI's responsibility regarding this verification is in accordance with the agreed scope of work which includes non-financial quantitative and qualitative information disclosed by IVL. This assurance engagement assumes that the data and information provided to us by IVL are complete and true.

### Verification Methodology

During the assurance engagement, TUVI adopted a risk-based approach, focusing on verification efforts with respect to disclosures. TUVI has verified the disclosures and assessed the robustness of the underlying data management system, information flows, and controls. In doing so:

- TUVI examined and reviewed the documents, data, and other information made available by IVL for non-financial disclosures;
- TUVI conducted interviews with key representatives, including data owners and decision-makers from different functions of IVL;
- TUVI reviewed the level of adherence to principles of "The <IR> Framework" and GRI standards: Core option.

### Opportunities for Improvement

The following are the opportunities for improvement reported to IVL. However, they are generally consistent with IVL management's objectives and programs.

- IVL may perform the supplier assessment as per ISO 20400;
- The SBTi Target evaluation following sectoral de-carbonization approach or absolute-based targets or economic approach may be performed, and current targets can be calibrated accordingly;
- IVL can start verifying water and carbon intensity reduction projects. As IVL has a well-defined wastewater treatment system at most of its sites, the projects can apply for Zero Liquid Discharge certification;
- IVL may opt for USGBC LEED guideline for all administrative buildings and factories to reduce the GHG emission

### Our Conclusion

In our opinion, based on the scope of this assurance engagement, the disclosures on sustainability performance disclosed in the Report along with the referenced information provides a fair representation of the material topics and related strategies, and meets the general content and quality requirements of the GRI Standards: Core option.



**Disclosures:** TUVI is of the opinion that the reported disclosures generally meet the GRI Standards reporting requirements in accordance with the "Core" option. IVL refers to 'general disclosure' to report contextual information about IVL, while the 'management approach' is discussed to report IVL management's approach for each material topic.

**Universal Standard:** IVL followed GRI 101: Reporting Principles to define report content and quality, GRI 102: General Disclosures were followed when reporting information about an organization's profile, strategy, ethics and integrity, governance, stakeholder engagement practices, and reporting process. Furthermore, GRI 103 was selected for management's approach on reporting information about how an organization manages a material topic. TUVI is of the opinion that the reported specific disclosures for each material topic generally meet the GRI Standards reporting requirements in accordance with the "Core" option.

**Topic Specific Standard:** 200 series (Economic topics), 300 series (Environmental topics), and 400 series (Social topics); These Topic-Specific Standards were used to report information on the organization's impacts related to environmental and social topics. *TUVI is of the opinion that the reported material topics and Topic-Specific Standards that IVL used to prepare its Report are appropriately identified and addressed.*

**Limited Assurance Conclusion:** Based on the procedures we have performed, nothing has come to our attention that causes us to believe that the information subject to the limited assurance engagement was not prepared in all material respects. TUVI found the sustainability information to be reliable in all material respects, with regards to the reporting criteria ("Core") of the GRI Standards.

**Reasonable Assurance Conclusion:** TUV Nord Cert GmbH has verified the information on GHG Scope 1 and 2 emissions<sup>1</sup> in accordance with the GHG Protocol, ISO 14064-1, and ISO 14064-3. Based on the procedures we have performed, in our opinion, IVL reported the direct and indirect (Scope 1 and 2) GHG emissions as a whole.

TUVI confirms that IVL has transparently reported major material information pertaining to all its six capitals in line with the <IR> framework, as below

**Financial Capital:** Net worth, capex, investment spent, the economic value generated, gross revenue, etc.

**Manufactured Capital:** Manufacturing facilities, number of new products launched, business verticals, new and existing plants, buildings, infrastructure, etc.

**Intellectual Capital:** Knowledge-based intangibles, including intellectual property, R&D activities, patents, designs registered for new product development, etc.

**Human Capital:** IVL's engineers, technicians, skilling and re-skilling of employees to enhance their competencies, safety performance, capabilities, experience, motivations to innovate, etc.

**Social and Relationship Capital:** IVL's relationship with stakeholders such as customers, business partners, regulators, suppliers, business partners, communities, legislators, policymakers, and benefits associated with the brand and reputation, along with IVL's ability to share information to enhance well-being.

**Natural Capital:** Sourcing responsibilities for the majority of renewable and non-renewable environmental resources and processes that provide goods or services. Reporting on the circular economy, emissions, water consumption, waste disposal, etc.

#### Evaluation of adherence to AA1000 AccountAbility Principles

**Inclusivity:** Stakeholder identification and engagement is carried out by IVL on a periodic basis to bring out key stakeholder concerns as material topics of significant stakeholders. In our view, the Report meets the requirements.

**Materiality:** The materiality assessment process has been carried out based on the requirements of the GRI Standards, considering topics that are internal and external to IVL's range of businesses. The Report

<sup>1</sup> Scope 3 GHG emission is under verification process.

# GHG Scope 1, 2 and 3 Audit Certificate



## CERTIFICATE

### Carbon Footprint 2020

according to DIN EN ISO 14064-1:2019 - Specification with guidance at the organization level for quantification and reporting of greenhouse gas emissions and removals

The Carbon Footprint was verified by TÜV NORD CERT GmbH in accordance with DIN EN ISO 14064-3:2020 regarding its correctness and completeness for

**Indorama Ventures Public Company Ltd.**  
**75/102, Ocean Tower 2**  
**28th Floor, Sukhumvit Soi 19**  
**Bangkok 10110**  
**Thailand**



TÜV NORD CERT GmbH, acting as an independent Certification Body, can confirm, to a reasonable level of assurance, that the carbon footprint of Indorama Ventures Public Company Limited to be:

Emissions Source	Amount (tCO <sub>2</sub> e)
Scope 1	7,035,992
Scope 2 (Location Based)	2,409,061
Scope 3 (Raw Materials)	22,082,068
Scope 3 (Electricity)	307,549
Scope 3 (Fuel)	939,869
<b>Overall</b>	<b>32,774,538</b>
Scope 2 (Market Based)	2,412,779

for the reporting period 01/01/2020–31/12/2020 (inclusive).

The company boundary encompasses all 107 operating sites globally including the wholly owned operations and subsidiaries of Indorama Ventures Public Company Limited. The emissions sources included are stationary fuel combustion, stationary fuel combustion-boiler, mobile fuel combustion, process off gas-PET, PTA, Nitrogen Production, waste water treatment (anaerobic and aerobic), re-frigerant, fire suppression equipment, electrical equipment SF6, grid electricity, third party electricity, third party heat, steam, compressed air, chilled water, cooling water, biogas and biomass combustion, raw material consumption, well to tank and transmission and distribution for purchased electricity, well to tank for fuels.

The calculations have been carried out according to ISO14064-1.

Certificate Registration No. 44 776 180191  
 Audit Report No. 3529 7443

*[Signature]*  
 Certification Body  
 at TÜV NORD CERT GmbH

TÜV NORD CERT GmbH

Essen, 2021-05-20

Langemarckstraße 20

45141 Essen

[www.tuev-nord-cert.de](http://www.tuev-nord-cert.de)



# UNGC Communication on Progress (COP)

This report serves as our Communication on Progress, an annual disclosure to stakeholders on progress made in implementing the Ten Principles of the UN Global Compact in the areas of human rights, labor, environment and anti-corruption. We provide this index corresponding to our progress in implementing the Ten Principles.



HUMAN RIGHTS	<b>Principle 1</b> - Businesses should support and respect the protection of internationally proclaimed human rights
	<b>Principle 2</b> - Make sure that they are not complicit in human rights abuses
IVL's corresponding written commitment	Sustainability Report reference
<a href="#">Human Rights Policy</a>	GCEO message, pg. 6-9
<a href="#">Corporate Governance Manual</a>	Sustainability Strategy and Framework, pg. 22-23
<a href="#">Supplier code of conduct</a>	Stakeholder Engagement, pg. 30-31
<a href="#">Stakeholder Policy</a>	Our Contributions to the UN SDGs, pg. 36
<a href="#">Whistleblower Policy</a>	Whistleblower Policy, pg. 44 Business Ethics, Integrity and Transparency, pg. 45 Human Rights and Compliance in the Supply Chain, pg. 51-52 Workplace Human Rights, pg. 98-99 Global Performance Data, pg. 116-128 GRI Index 102-17, 103, 405, 406, 407, 408, 409, 410, 411, 412, 413, 415, 419

LABOUR	<b>Principle 3</b> - Businesses should uphold freedom of association & effective recognition of the right to collective bargaining
	<b>Principle 4</b> - The elimination of all forms of forced and compulsory labour
IVL's corresponding written commitment	Sustainability Report reference
<a href="#">Human Rights Policy</a>	Sustainability Strategy and Framework, pg. 22-23
<a href="#">Corporate Governance Manual</a>	Stakeholder Engagement, pg. 30-31
<a href="#">Supplier code of conduct</a>	Our Contributions to the UN SDGs, pg. 36
<a href="#">Stakeholder Policy</a>	Board of Directors, pg. 43
<a href="#">Diversity Policy</a>	Whistleblower Policy, pg. 44 Business Ethics, Integrity and Transparency, pg. 45 Human Rights and Compliance in the Supply Chain, pg. 51-52 Robust Health and Safety Management, pg. 91-93 Employee Well-being, pg. 96-97 Workplace Human Rights, pg. 98-99 Investing in Our People, pg. 100-106 Global Performance Data, pg. 116-128 GRI Index 102-17, 102-41, 103, 401, 403, 405, 406, 407, 408, 409, 410, 411, 412, 413, 415, 419

ENVIRONMENT	<b>Principle 7</b> - Businesses should support a precautionary approach to environmental challenges
	<b>Principle 8</b> - Undertake initiatives to promote greater environmental responsibility
IVL's corresponding written commitment	Sustainability Report reference
<a href="#">Environmental Policy</a>	GCEO message, pg. 6-9
<a href="#">Water Management Policy</a>	Chief Strategy Officer message, pg. 10-13
<a href="#">Health and Safety Policy</a>	Chief Sustainability Officer message, pg. 14-17
<a href="#">Corporate Governance Manual</a>	Sustainability Strategy and Framework, pg. 22-23
<a href="#">IVL GMO Statement</a>	Our Sustainability Ambitions Towards Carbon Neutrality, pg. 24
<a href="#">Whistleblower Policy</a>	Climate Change Strategy 2025, pg. 25 Our Contributions to the UN SDGs, pg. 36 Business Ethics, Integrity and Transparency, pg. 45 Decarbonization Targets and the Supply Chain, pg. 52 Circularity Across our Value Chain, pg. 58-59 Continuous Improvements in Recycling, pg. 62-65 Decarbonization in our Value Chain, pg. 75-81 Environmental Management, pg. 82-87 CSR Global Activity Highlights 2020, pg. 109-111 Global Performance Data, pg. 116-128 GRI Table 103, 301, 302, 303, 305, 306, 307, 308

ANTI-CORRUPTION	<b>Principle 10</b> - Businesses should work against all forms of corruption, including extortion and bribery
	IVL's corresponding written commitment
IVL's corresponding written commitment	Sustainability Report reference
<a href="#">Anti-Corruption Policy</a>	Sustainability Strategy and Framework, pg. 22-23
<a href="#">Corporate Governance Manual</a>	Whistleblower Policy, pg. 44
<a href="#">Connected Transaction Policy</a>	Business Ethics, Integrity and Transparency, pg. 45
<a href="#">Supplier code of conduct</a>	Anti-corruption, pg. 47
<a href="#">Whistleblower Policy</a>	Political activities and contributions, pg. 47 Tax Strategy, pg. 48 Giving Back to Our Communities, pg. 107-113 Global Performance Data, pg. 116-128 GRI Table 103, 205, 207, 415, 419



# IVL SR2020 GRI STANDARDS CONTENT INDEX

## For 'In Accordance' Option - Core

GRI Standard	Disclosure	Description	Page Number(s)	References SR 2020	External Assurance	Omissions
<b>GRI 101: Foundation 2016</b>						
<b>GRI 102: General Disclosures</b>						
<b>Organizational Profile</b>						
GRI 102: General Disclosures 2016	102-1	Name of the organization	AR: 38 SR: 18	AR: General Information and Other Information SR: Introduction - Overview of IVL	-	-
	102-2	Activities, brands, products, and services	AR: 39-59 SR: 18-19	AR: Investments of the Company SR: Introduction - Value Chain/Business Unit	-	-
	102-3	Location of headquarters	AR: 38	AR: General Information and Other Information	-	-
	102-4	Location of operations	AR: 39-59 SR: 19	AR: Investments of the Company SR: Introduction - IVL Operations	-	-
	102-5	Ownership and legal form	AR: 38 SR: 130-133	AR: General Information and Other Information SR: About This Report	-	-
	102-6	Markets served	AR: 39-59 SR: 18-19	AR: Investments of the Company SR: Introduction - IVL Operations	-	-
	102-7	Scale of the organization	SR: 19-20	SR: Introduction - IVL Operations - Financial Performance, Key Highlights 2020 - Economic Performance	-	-
	102-8	Information on employees and other workers	SR: 20, 125	SR: Key Highlights 2020 - Social Performance	-	-
	102-9	Supply chain	SR: 18-19 IVL Website	SR: Introduction - IVL Operations <a href="https://sustainability.indoramaventures.com/en/shorturl/business-overview-and-value-chain">https://sustainability.indoramaventures.com/en/shorturl/business-overview-and-value-chain</a>	-	-
	102-10	Significant changes to the organization and its supply chain	AR: 87-98 SR: 130-133	AR: Changes and Important Developments SR: About This Report	-	-
	102-11	Precautionary Principle or approach	SR: 130-133	SR: About This Report	-	-
	102-12	External initiatives	AR: 182-183 SR: 36; 38	AR: Sustainability Leadership; Sustainable Development Goals (SDGs) At IVL SR: Contributions to the UN SDGs; Major Sustainability Awards & Recognitions	-	-
	102-13	Membership of associations	SR: 39	SR: Major Industry Association & Memberships	-	-
<b>Strategy</b>						
GRI 102: General Disclosures 2016	102-14	Statement from senior decision-maker	AR: 15-16 SR: 6-9	AR: Message from the Chairman SR: Group CEO Message	-	-
	102-15	Key impacts, risks, and opportunities	AR: 127-139 SR: 34-35	AR: Indorama Ventures Potential Risk Factors SR: Risks and Opportunity	-	-
<b>Ethics and Integrity</b>						
GRI 102: General Disclosures 2016	102-16	Values, principles, standards, and norms of behavior	AR: B SR: 22; 26	AR: Vision, Mission, Value SR: Our Approach To Sustainability; Our Approach to Value Creation	-	-
	102-17	Mechanisms for advice and concerns about ethics	AR: 158-159 SR: 43-45	AR: Corporate Governance Report 2020 SR: Corporate Governance and Compliance Management	-	-
<b>Governance</b>						
GRI 102: General Disclosures 2016	102-18	Governance structure	AR: 77 SR: 43-45	AR: Management Structure SR: Corporate Governance and Compliance Management	-	-
	102-19	Delegating authority	AR: 77-79	AR: Management Structure	-	-
	102-20	Executive-level responsibility for economic, environmental, and social topics	AR: 77 SR: 48	AR: Management Structure SR: Responsible and Effective Governance - Sustainability Governance	-	-
	102-21	Consulting stakeholders on economic, environmental, and social topics	AR: 156-158 SR: 32-33	AR: Role of Stakeholders SR: Materiality Assessment	-	-
	102-22	Composition of the highest governance body and its committees	AR: 77 SR: 43-44	AR: Management Structure SR: Corporate Governance and Compliance Management	-	-
	102-23	Chair of the highest governance body	AR: 78 SR: 6-9	AR: Board of Directors SR: Group CEO Message	-	-
	102-24	Nominating and selecting the highest governance body	AR: 170-172; 196-197	AR: Corporate Governance Report 2020; Nomination Compensation and Corporate Governance (NCCG) Committee Report for the Year 2020	-	-

GRI Standard	Disclosure	Description	Page Number(s)	References SR 2020	External Assurance	Omissions
<b>Governance</b>						
GRI 102: General Disclosures 2016	102-26	Role of highest governance body in setting purpose, values, and strategy	AR: 149; 162-165 SR: 43-44	AR: Corporate Governance Report 2020; Responsibility of The Board SR: Corporate Governance and Compliance Management	-	-
	102-27	Collective knowledge of highest governance body	AR: 61-76 SR: 43-44	AR: Board of Directors SR: Corporate Governance and Compliance Management	-	-
	102-28	Evaluating the highest governance body's performance	AR: 164-165 SR: 43-44	AR: Corporate Governance Report 2020 SR: Corporate Governance and Compliance Management	-	-
	102-29	Identifying and managing economic, environmental, and social impacts	AR: 140-147 SR: 32-33	AR: Risk Management SR: Materiality Assesment	-	-
	102-30	Effectiveness of risk management processes	AR: 140-147 SR: 34-35	AR: Risk Management SR: Risks and Opportunity	-	-
	102-31	Review of economic, environmental, and social topics	AR: 149-140 SR: 48-49	AR: Corporate Governance Report 2020 - Corporate Governance Principles SR: Responsible and Effective Governance - Sustainability Governance	-	-
GRI 102: General Disclosures 2016	102-32	Highest governance body's role in sustainability reporting	SR: 43-44	SR: Corporate Governance and Compliance Management	-	-
	<b>Stakeholder Engagement</b>					
	102-40	List of stakeholder groups	AR: 156-158 SR: 30-31	AR: Corporate Governance Report 2020 SR: Stakeholder Engagement	-	-
	102-41	Collective bargaining agreements	SR: 126	SR: Global Human Resources Data	-	-
	102-42	Identifying and selecting stakeholders	SR: 30-31	SR: Stakeholder Engagement	-	-
GRI 102: General Disclosures 2016	102-43	Approach to stakeholder engagement	AR: 156-158 SR: 30-31	AR: Corporate Governance Report 2020 SR: Stakeholder Engagement	-	-
	102-44	Key topics and concerns raised	AR: 184-186 SR: 32-33	AR: Materiality Assessment SR: Materiality Assesment	-	-
	<b>Reporting Practice</b>					
	102-45	Entities included in the consolidated financial statements	AR: 39-59; 205-207	AR: Investments of the Company; Statement of Financial Position	-	-
GRI 102: General Disclosures 2016	102-46	Defining report content and topic Boundaries	SR: 130-133	SR: About This Report	-	-
	102-47	List of material topics	AR: 184 SR: 33	AR: Materiality Assessment SR: Materiality Assesment	-	-
	102-48	Restatements of information	SR: 130-133	SR: About This Report	-	-
	102-49	Changes in reporting	SR: 130-133	SR: About This Report	-	-
	102-50	Reporting period	SR: 130-133	SR: About This Report	-	-
	102-51	Date of most recent report	SR: 130-133	SR: About This Report	-	-
	102-52	Reporting cycle	SR: 130-133	SR: About This Report	-	-
	102-53	Contact point for questions regarding the report	SR: 153	SR: Contacts and Feedback	-	-
	102-54	Claims of reporting in accordance with the GRI Standards	SR: 142-151	SR: About This Report; IVL SR2020 GRI Standards Content Index; Data Reporting, Verification and Report Assurance	-	-
	102-55	GRI content index	SR: 142-151	SR: IVL SR2020 GRI Standards Content Index	-	-
GRI 102: General Disclosures 2016	102-56	External assurance	SR: 134-137; 138	Independent Assurance Statement GHG Scope 1,2 and 3 Audit Certificate	-	-
	<b>SPECIFIC STANDARD DISCLOSURES</b>					
	<b>GRI 200: ECONOMIC</b>					
	<b>Economic Performance</b>					
	103-1	Explanation of the material topic and its Boundary	SR: 18-19 IVL Website	SR: Introduction <a href="https://sustainability.indoramaventures.com/en/our-sustainability/materiality-assessment">https://sustainability.indoramaventures.com/en/our-sustainability/materiality-assessment</a>	-	-
GRI 103: Management Approach 2016	103-2	The management approach and its components	SR: 18-19 IVL Website	SR: Introduction <a href="https://sustainability.indoramaventures.com/en/our-sustainability/materiality-assessment">https://sustainability.indoramaventures.com/en/our-sustainability/materiality-assessment</a>	-	-
	103-3	Evaluation of the management approach	SR: 18-19	SR: Introduction	-	-
	201-1	Direct economic value generated and distributed	AR: 5-12; 100-101; 205-207 SR: 20	AR: Performance Highlights; Revenue Structure; Statements of Financial Position SR: Key Highlights 2020 - Economic Performance	-	-
GRI 201: Economic Performance 2016	201-2	Financial implications and other risks and opportunities due to climate change	AR: 132-134 SR: 24-25	AR: Indorama Ventures Potential Risk Factors - Climate Change Risks SR: Climate Change Strategy 2025	-	-



GRI Standard	Disclosure	Description	Page Number(s)	References SR 2020	External Assurance	Omissions
<b>Market Presence</b>						
GRI 103: Management Approach 2016	103-1	Explanation of the material topic and its Boundary	IVL Website	https://sustainability.indoramaventures.com/en/social/human-resources/talent-attraction-and-retention	-	-
	103-2	The management approach and its components	IVL Website	https://sustainability.indoramaventures.com/en/social/human-resources/talent-attraction-and-retention	-	-
	103-3	Evaluation of the management approach	IVL Website	https://sustainability.indoramaventures.com/en/social/human-resources/talent-attraction-and-retention	-	-
GRI 202: Market Presence 2016	202-1	Ratios of standard entry level wage by gender compared to local minimum wage	IVL Website	https://sustainability.indoramaventures.com/en/social/human-resources/talent-attraction-and-retention	-	-
<b>Anti-Corruption</b>						
GRI 103: Management Approach 2016	103-1	Explanation of the material topic and its Boundary	AR: 158-159 SR: 45-47	AR: Corporate Governance Report 2020 SR: Business Ethics, Integrity and Transparency	-	-
	103-2	The management approach and its components	AR: 158-159 SR: 45-47	AR: Corporate Governance Report 2020 SR: Business Ethics, Integrity and Transparency	-	-
	103-3	Evaluation of the management approach	AR: 158-159 SR: 45-47	AR: Corporate Governance Report 2020 SR: Business Ethics, Integrity and Transparency	-	-
GRI 205: Anti-Corruption 2016	205-1	Operations assessed for risks related to corruption	AR: 158-159 SR: 45-47	AR: Corporate Governance Report 2020 SR: Business Ethics, Integrity and Transparency	-	-
	205-2	Communication and training about anti-corruption policies and procedures	AR: 158-159 SR: 45-47	AR: Corporate Governance Report 2020 SR: Business Ethics, Integrity and Transparency	-	-
	205-3	Confirmed incidents of corruption and actions taken	SR: 44	SR: Corporate Governance and Compliance Management - 2020 Highlights	-	-
<b>Anti-Competitive Behavior</b>						
GRI 103: Management Approach 2016	103-1	Explanation of the material topic and its Boundary	AR: 158-159 SR: 45-47	AR: Corporate Governance Report 2020 SR: Business Ethics, Integrity and Transparency	-	-
GRI 206: Anti-Competitive Behavior 2016	103-2	The management approach and its components	AR: 158-159 SR: 45-47	AR: Corporate Governance Report 2020 SR: Business Ethics, Integrity and Transparency	-	-
	103-3	Evaluation of the management approach	AR: 158-159 SR: 45-47	AR: Corporate Governance Report 2020 SR: Business Ethics, Integrity and Transparency	-	-
	206-1	Legal actions for anti-competitive behavior, anti-trust and monopoly practices	AR: 158-159 SR: 45-47	AR: Corporate Governance Report 2020 SR: Business Ethics, Integrity and Transparency	-	-
<b>Tax</b>						
GRI 103: Management Approach 2016	103-1	Explanation of the material topic and its Boundary	SR: 48 IVL Website	SR: Tax Strategy https://www.indoramaventures.com/en/our-company/governance/taxation	-	-
	103-2	The management approach and its components	SR: 48 IVL Website	SR: Tax Strategy https://www.indoramaventures.com/en/our-company/governance/taxation	-	-
	103-3	Evaluation of the management approach	SR: 48 IVL Website	SR: Tax Strategy https://www.indoramaventures.com/en/our-company/governance/taxation	-	-
GRI 201: Economic Performance 2016	207-1	Approach to tax	SR: 48 IVL Website	SR: Tax Strategy https://www.indoramaventures.com/en/our-company/governance/taxation	-	-
	207-2	Tax governance, control, and risk management	SR: 48 IVL Website	SR: Tax Strategy https://www.indoramaventures.com/en/our-company/governance/taxation	-	-
	207-3	Stakeholder engagement and management of concerns related to tax	SR: 48 IVL Website	SR: Tax Strategy https://www.indoramaventures.com/en/our-company/governance/taxation	-	-
	Country-by-country reporting	Legal actions for anti-competitive behavior, anti-trust and monopoly practices	IVL Website	https://www.indoramaventures.com/en/our-company/governance/taxation http://sustainability.indoramaventures.com/en/shorturl/2020/tax-reporting	-	-

GRI Standard	Disclosure	Description	Page Number(s)	References SR 2020	External Assurance	Omissions
<b>SPECIFIC STANDARD DISCLOSURES</b>						
<b>GRI 300: ENVIRONMENTAL Materials</b>						
GRI 103: Management Approach 2016	103-1	Explanation of the material topic and its Boundary	SR: 22-25; 82	SR: Our Approach to Sustainability; Towards Carbon Neutrality - Environmental Management	-	-
	103-2	The management approach and its components	SR: 22-25; 85-86	SR: Our Approach to Sustainability; Towards Carbon Neutrality - Environmental Management - Waste Management	-	-
	103-3	Evaluation of the management approach	SR: 22-25; 85-86	SR: Our Approach to Sustainability; Towards Carbon Neutrality - Environmental Management - Waste Management	-	-
GRI 301: Materials 2016	301-1	Materials used by weight or volume	SR: 119	SR: Global Performance Data - Materials	-	-
	301-2	Recycled input materials used	SR: 86; 119	SR: Towards Carbon Neutrality - Environmental Management - Waste Management; Global Performance Data	-	-
<b>Energy</b>						
GRI 103: Management Approach 2016	103-1	Explanation of the material topic and its Boundary	SR: 22-25; 82	SR: Our Approach to Sustainability; Towards Carbon Neutrality - Environmental Management	-	-
	103-2	The management approach and its components	SR: 22-25; 82-83	SR: Our Approach to Sustainability; Towards Carbon Neutrality - Environmental Management - Energy Management	-	-
	103-3	Evaluation of the management approach	SR: 22-25; 82-83	SR: Our Approach to Sustainability; Towards Carbon Neutrality - Environmental Management - Energy Management	-	-
GRI 302: Energy 2016	302-1	Energy consumption within the organization	SR: 21; 82; 119	SR: Key Highlights 2020 - Environmental Performance; Towards Carbon Neutrality - Environmental Management - Energy Management; Global Performance Data - Energy	SR: 134-138	-
	302-3	Energy intensity	SR: 21; 82; 119	SR: Key Highlights 2020 - Environmental Performance; Towards Carbon Neutrality - Environmental Management - Energy Management; Global Performance Data - Energy	SR: 134-138	-
	302-4	Reduction of energy consumption	SR: 82-83	SR: Towards Carbon Neutrality - Environmental Management - Energy Management	SR: 134-138	-
<b>Water and Effluents</b>						
GRI 103: Management Approach 2016	103-1	Explanation of the material topic and its Boundary	SR: 22-25; 82	SR: Our Approach to Sustainability; Towards Carbon Neutrality - Environmental Management	-	-
	103-2	The management approach and its components	SR: 22-25; 83	SR: Our Approach to Sustainability; Towards Carbon Neutrality - Environmental Management - Water Management	-	-
	103-3	Evaluation of the management approach	SR: 22-25; 83	SR: Our Approach to Sustainability; Towards Carbon Neutrality - Environmental Management - Water Management	-	-
GRI 303: Water and Effluents 2018	303-1	Interactions with water as a shared resource	SR: 22-25; 83; 85; 85	SR: Our Approach to Sustainability; Towards Carbon Neutrality - Environmental Management - Water Management; Water Risk Management; Water Sensitivity Analysis	-	-
	303-2	Management of water discharge-related impacts	SR: 22-25; 83; 85; 85	SR: Our Approach to Sustainability; Towards Carbon Neutrality - Environmental Management - Water Management; Water Risk Management; Water Sensitivity Analysis	-	-
	303-3	Water withdrawal	SR: 21; 84; 120	SR: Key Highlights 2020 - Environmental Performance; Towards Carbon Neutrality - Environmental Management - Water Management; Global Performance Data - Water Withdrawal and Consumption	-	-



GRI Standard	Disclosure	Description	Page Number(s)	References SR 2020	External Assurance	Omissions
<b>Emissions</b>						
GRI 103: Management Approach 2016	103-1	Explanation of the material topic and its Boundary	SR: 22-25; 82	SR: Our Approach to Sustainability; Towards Carbon Neutrality - Environmental Management	-	-
	103-2	The management approach and its components	SR: 22-25; 87	SR: Our Approach to Sustainability; Towards Carbon Neutrality - Environmental Management - Air Emissions Management	-	-
	103-3	Evaluation of the management approach	SR: 22-25; 87	SR: Our Approach to Sustainability; Towards Carbon Neutrality - Environmental Management - Air Emissions Management	-	-
GRI 305: Emissions 2016	305-1	Direct (Scope 1) GHG emissions	SR: 21; 87; 120	SR: Key Highlights 2020 - Environmental Performance - GHG Management; Towards Carbon Neutrality - Environmental Management - Air Emissions Management; Global Performance Data - Emissions	SR: 134-138	-
	305-2	Energy indirect (Scope 2) GHG emissions	SR: 21; 87; 120	SR: Key Highlights 2020 - Environmental Performance - GHG Management; Towards Carbon Neutrality - Environmental Management - Air Emissions Management; Global Performance Data - Emissions	SR: 134-138	-
	305-4	GHG emissions intensity	SR: 21; 87; 120	SR: Key Highlights 2020 - Environmental Performance - GHG Management; Towards Carbon Neutrality - Environmental Management - Air Emissions Management; Global Performance Data - Emissions	-	-
	305-7	Nitrogen oxides (NO <sub>x</sub> ), sulfur oxides (SO <sub>x</sub> ), and other significant emissions	SR: 87; 120	SR: Towards Carbon Neutrality - Environmental Performance - Air Emissions Management; Global Performance Data - Emissions	SR: 134-138	-
<b>Waste</b>						
GRI 103: Management Approach 2016	103-1	Explanation of the material topic and its Boundary	SR: 22-25; 82	SR: Our Approach to Sustainability; Towards Carbon Neutrality - Environmental Management	-	-
	103-2	The management approach and its components	SR: 22-25; 85-86	SR: Our Approach to Sustainability; Towards Carbon Neutrality - Environmental Management - Waste Management	-	-
	103-3	Evaluation of the management approach	SR: 22-25; 85-86	SR: Our Approach to Sustainability; Towards Carbon Neutrality - Environmental Management - Waste Management	-	-
GRI 306: Waste 2020	306-1	Waste generation and significant waste-related impacts	SR: 22-25; 85-86	SR: Our Approach to Sustainability; Towards Carbon Neutrality - Environmental Management - Waste Management	-	-
	306-2	Management of significant waste-related impacts	SR: 22-25; 85-86	SR: Our Approach to Sustainability; Towards Carbon Neutrality - Environmental Management - Waste Management	-	-
	306-3	Waste generated	SR: 86; 120	SR: Towards Carbon Neutrality - Environmental Management - Waste Management; Global Performance Data - Solid Waste	-	-
	306-4	Waste diverted from disposal	SR: 86; 120	SR: Towards Carbon Neutrality - Environmental Management - Waste Management; Global Performance Data - Solid Waste	-	-
	306-5	Waste directed to disposal	SR: 86; 120	SR: Towards Carbon Neutrality - Environmental Management - Waste Management; Global Performance Data - Solid Waste	-	-
<b>Environmental Compliance</b>						
GRI 103: Management Approach 2016	103-1	Explanation of the material topic and its Boundary	SR: 32-33 IVL Website	SR: Materiality Assessment <a href="https://sustainability.indoramaventures.com/en/our-sustainability/materiality-assessment">https://sustainability.indoramaventures.com/en/our-sustainability/materiality-assessment</a>	-	-
	103-2	The management approach and its components	SR: 32-33 IVL Website	SR: Materiality Assessment <a href="https://sustainability.indoramaventures.com/en/our-sustainability/materiality-assessment">https://sustainability.indoramaventures.com/en/our-sustainability/materiality-assessment</a>	-	-
	103-3	Evaluation of the management approach	SR: 32-33 IVL Website	SR: Materiality Assessment <a href="https://sustainability.indoramaventures.com/en/our-sustainability/materiality-assessment">https://sustainability.indoramaventures.com/en/our-sustainability/materiality-assessment</a>	-	-
GRI 307: Environmental Compliance 2016	307-1	Non-compliance with environmental laws and regulations	SR: 88; 121	SR: Towards Carbon Neutrality - Strong Environmental Governance; Global Performance Data - Environmental Compliance	-	-

GRI Standard	Disclosure	Description	Page Number(s)	References SR 2020	External Assurance	Omissions						
<b>Supplier Environmental Assessment</b>												
GRI 103: Management Approach 2016	103-1	Explanation of the material topic and its Boundary	IVL Website	https://sustainability.indoramaventures.com/en/social/human-rights/human-rights-protections-in-our-supply-chain	-	-						
	103-2	The management approach and its components	IVL Website	https://sustainability.indoramaventures.com/en/social/human-rights/human-rights-protections-in-our-supply-chain	-	-						
	103-3	Evaluation of the management approach	IVL Website	https://sustainability.indoramaventures.com/en/social/human-rights/human-rights-protections-in-our-supply-chain	-	-						
GRI 308: Supplier Environmental Assessment 2016	308-1	New suppliers that were screened using environmental criteria	SR: 51-52	SR: Responsible and Effective Governance - Supply Chain Management - Human Rights and Compliance in the Supply Chain - Supplier ESG Assessments	-	-						
	<b>SPECIFIC STANDARD DISCLOSURES</b>											
<b>GRI 400: SOCIAL</b>												
<b>Employment</b>												
GRI 103: Management Approach 2016	103-1	Explanation of the material topic and its Boundary	AR: 174-178 SR: 90-91	AR: Corporate Governance Report 2020 SR: Empowering Our People and Communities	-	-						
	103-2	The management approach and its components	AR: 174-178 SR: 90-91	AR: Corporate Governance Report 2020 SR: Empowering Our People and Communities	-	-						
	103-3	Evaluation of the management approach	AR: 174-178 SR: 90-91	AR: Corporate Governance Report 2020 SR: Empowering Our People and Communities	-	-						
GRI 401: Employment 2016	401-1	New employee hires and employee turnover	AR: 175 SR: 20; 104-105; 125	AR: Corporate Governance Report 2020 - 1. Our Global Workforce is Making a Difference SR: Key Highlights 2020 - Social Performance; Empowering Our People and Communities - Investing in Our People - Attract, Develop and Engage; Global Human Resource Data - New Employee Hires; Global Human Resources Data - Employee Turnover	-	-						
	401-3	Parental leave	SR: 125	SR: Global Human Resources Data - Parental Leave	-	-						
<b>Occupational Health and Safety</b>												
<b>GRI 103: Management Approach 2016</b>												
GRI 103: Management Approach 2016	103-1	Explanation of the material topic and its Boundary	SR: 91-92	SR: Empowering Our People and Communities - Ensuring a Safe and Conductive Workplace	-	-						
	103-2	The management approach and its components	SR: 91-92	SR: Empowering Our People and Communities - Ensuring a Safe and Conductive Workplace	-	-						
	103-3	Evaluation of the management approach	SR: 91-92	SR: Empowering Our People and Communities - Ensuring a Safe and Conductive Workplace	-	-						
GRI 403: Occupational Health and Safety 2018	403-1	Occupational health and safety management system	SR: 91-93	SR: Empowering Our People and Communities - Ensuring a Safe and Conductive Workplace - Robust Health and Safety Management	-	-						
	403-2	Hazard identification, risk assessment, and incident investigation	SR: 94	SR: Empowering Our People and Communities - Ensuring a Safe and Conductive Workplace - Occupational Health and Safety Performance	-	-						
	403-3	Occupational health and services	SR: 91-93	SR: Empowering Our People and Communities - Ensuring a Safe and Conductive Workplace - Robust Health and Safety Management	-	-						
	403-4	Worker participation, consultation, and communication on occupational health and safety	SR: 91-93	SR: Empowering Our People and Communities - Ensuring a Safe and Conductive Workplace - Robust Health and Safety Management	-	-						
	403-5	Worker training on occupational health and safety	SR: 93	SR: Empowering Our People and Communities - Ensuring a Safe and Conductive Workplace - Robust Health and Safety Management	-	-						
GRI 403: Occupational Health and Safety 2018	403-6	Promotion of worker health	SR: 95; 96-97	SR: Empowering Our People and Communities - Ensuring a Safe and Conductive Workplace - Occupational Health and Safety Performance; Employee Well-being	-	-						
	403-7	Prevention and mitigation of occupational health and safety impacts directly linked by business relationships	SR: 91-93	SR: Empowering Our People and Communities - Ensuring a Safe and Conductive Workplace - Robust Health and Safety Management	-	-						
	403-9	Work-related injuries	SR: 94; 121-122	SR: Empowering Our People and Communities - Ensuring a Safe and Conductive Workplace - Occupational Health and Safety Performance; Global Performance Data - Occupational Health and Safety	-	-						



GRI Standard	Disclosure	Description	Page Number(s)	References SR 2020	External Assurance	Omissions
<b>Training and Education</b>						
GRI 103: Management Approach 2016	103-1	Explanation of the material topic and its Boundary	AR: 174-178 SR: 90-91	AR: Corporate Governance Report 2020 SR: Empowering Our People and Communities	-	-
	103-2	The management approach and its components	AR: 174-178 SR: 90-91	AR: Corporate Governance Report 2020 SR: Empowering Our People and Communities	-	-
	103-3	Evaluation of the management approach	AR: 174-178 SR: 90-91	AR: Corporate Governance Report 2020 SR: Empowering Our People and Communities	-	-
GRI 404: Training and Education 2016	404-1	Average hours of training per year per employee	AR: 178 SR: 20; 100; 103; 126	AR: Corporate Governance Report 2020 - 4. People Development Opportunities SR: Key Performance Highlights 2020 - Social Performance; Empowering Our People and Communities - Investing in Our People - Leadership Development as a Strategic Enabler; Global Human Resources Data - Employees Training	SR: 134-138	-
	404-2	Programs for upgrading employee skills and transition assistance programs	AR: 176-177 SR: 104	AR: Corporate Governance Report 2020 - 4. People Development Opportunities SR: Empowering Our People and Communities - Investing in Our People - Attract, Develop and Engage		
	404-3	Percentage of employees receiving regular performance and career development reviews	SR: 126	SR: Global Human Resources Data - Performance Review		
<b>Diversity and Equal Opportunity</b>						
GRI 103: Management Approach 2016	103-1	Explanation of the material topic and its Boundary	SR: 90-91 IVL Website	SR: Empowering Our People and Communities <a href="https://sustainability.indoramaventures.com/en/social/human-resources/workforce-diversity">https://sustainability.indoramaventures.com/en/social/human-resources/workforce-diversity</a>	-	-
	103-2	The management approach and its components	SR: 90-91 IVL Website	SR: Empowering Our People and Communities <a href="https://sustainability.indoramaventures.com/en/social/human-resources/workforce-diversity">https://sustainability.indoramaventures.com/en/social/human-resources/workforce-diversity</a>	-	-
	103-3	Evaluation of the management approach	SR: 90-91 IVL Website	SR: Empowering Our People and Communities <a href="https://sustainability.indoramaventures.com/en/social/human-resources/workforce-diversity">https://sustainability.indoramaventures.com/en/social/human-resources/workforce-diversity</a>	-	-
GRI 405: Diversity and Equal Opportunity 2016	405-1	Diversity of governance bodies and employees	AR: 161; 163; 175-176  SR: 106; 125  IVL Website	AR: Corporate Governance Report 2020 - 1.3 Disclosures and Transparency; AR: Corporate Governance Report 2020 - 1.4 Responsibility of the Board - b. Board Structure; Corporate Governance Report 2020 - 2. Diversity is our Strength SR: Empowering Our People and Communities - Investing in Our People - Creating a Diverse and Inclusive Workplace; Global Human Resources Data - Employees <a href="https://sustainability.indoramaventures.com/en/social/human-resources/workforce-diversity">https://sustainability.indoramaventures.com/en/social/human-resources/workforce-diversity</a>	-	-
	405-2	Ratio of basic salary and remuneration of women to men	SR: 126	SR: Global Human Resources Data - Remuneration ratio of women to men		
<b>Non-Discrimination</b>						
GRI 103: Management Approach 2016	103-1	Explanation of the material topic and its Boundary	SR: 90-91 IVL Website	SR: Empowering Our People and Communities <a href="https://sustainability.indoramaventures.com/en/social/human-resources/workforce-diversity">https://sustainability.indoramaventures.com/en/social/human-resources/workforce-diversity</a>	-	-
	103-2	The management approach and its components	SR: 90-91 IVL Website	SR: Empowering Our People and Communities <a href="https://sustainability.indoramaventures.com/en/social/human-resources/workforce-diversity">https://sustainability.indoramaventures.com/en/social/human-resources/workforce-diversity</a>	-	-
	103-3	Evaluation of the management approach	SR: 90-91 IVL Website	SR: Empowering Our People and Communities <a href="https://sustainability.indoramaventures.com/en/social/human-resources/workforce-diversity">https://sustainability.indoramaventures.com/en/social/human-resources/workforce-diversity</a>	-	-
GRI 406: Non-Discrimination 2016	406-1	Incidents of discrimination and corrective actions taken	SR: 126	SR: Global Human Resources Data - Non-discrimination	-	-
<b>Freedom of Association and Collective Bargaining</b>						
GRI 103: Management Approach 2016	103-1	Explanation of the material topic and its boundary	SR: 90	SR: Empowering Our People and Communities	-	-
	103-2	The management approach and its components	SR: 96	SR: Empowering Our People and Communities - Employee Well-being	-	-
	103-3	Evaluation of the management approach	SR: 96	SR: Empowering Our People and Communities - Employee Well-being	-	-
GRI 407: Freedom of Association and Collective Bargaining 2016	407-1	Operations and suppliers in which the right to freedom of association and collective bargaining may be at risk	SR: 96; 116; 126	SR: Empowering Our People and Communities - Employee Well-being; Global Performance Data; Global Human Resources Data - Collective Bargaining	-	-

GRI Standard	Disclosure	Description	Page Number(s)	References SR 2020	External Assurance	Omissions
<b>Child Labor</b>						
GRI 103: Management Approach 2016	103-1	Explanation of the material topic and its Boundary	SR: 51 IVL Website	SR: Human Rights and Compliance in the Supply Chain <a href="https://sustainability.indoramaventures.com/en/social/human-rights/human-rights">https://sustainability.indoramaventures.com/en/social/human-rights/human-rights</a>	-	-
	103-2	The management approach and its components	SR: 51-52 IVL Website	SR: Supplier ESG Assessments <a href="https://sustainability.indoramaventures.com/en/social/human-rights/human-rights">https://sustainability.indoramaventures.com/en/social/human-rights/human-rights</a>	-	-
	103-3	Evaluation of the management approach	SR: 51-52 IVL Website	SR: Supplier ESG Assessments <a href="https://sustainability.indoramaventures.com/en/social/human-rights/human-rights">https://sustainability.indoramaventures.com/en/social/human-rights/human-rights</a>	-	-
GRI 408: Child Labor 2016	408-1	Operations and suppliers at significant risk for incidents of child labor	SR: 51-52; 116; 127	SR: Supplier ESG Assessments; Global Performance Data; Global Human Resources Data - Human Rights Assessment	-	-
<b>Forced or Compulsory Labor</b>						
GRI 103: Management Approach 2016	103-1	Explanation of the material topic and its Boundary	SR: 51	SR: Human Rights and Compliance in the Supply Chain	-	-
	103-2	The management approach and its components	SR: 51-52 IVL Website	SR: Supplier ESG Assessments <a href="https://sustainability.indoramaventures.com/en/social/human-rights/human-rights">https://sustainability.indoramaventures.com/en/social/human-rights/human-rights</a>	-	-
	103-3	Evaluation of the management approach	SR: 51-52 IVL Website	SR: Supplier ESG Assessments <a href="https://sustainability.indoramaventures.com/en/social/human-rights/human-rights">https://sustainability.indoramaventures.com/en/social/human-rights/human-rights</a>	-	-
GRI 409: Forced or Compulsory Labor 2016	409-1	Operations and suppliers at significant risk for incidents of forced or compulsory labor	SR: 51-52; 116; 127	SR: Supplier ESG Assessments; Global Performance Data; Global Human Resources Data - Human Rights Assessment	-	-
<b>Security Practices</b>						
GRI 103: Management Approach 2016	103-1	Explanation of the material topic and its Boundary	SR: 51	SR: Human Rights and Compliance in the Supply Chain;	-	-
	103-2	The management approach and its components	SR: 51-52 IVL Website	SR: Supplier ESG Assessments <a href="https://sustainability.indoramaventures.com/en/social/human-rights/human-rights">https://sustainability.indoramaventures.com/en/social/human-rights/human-rights</a>	-	-
	103-3	Evaluation of the management approach	SR: 51-52 IVL Website	SR: Supplier ESG Assessments <a href="https://sustainability.indoramaventures.com/en/social/human-rights/human-rights">https://sustainability.indoramaventures.com/en/social/human-rights/human-rights</a>	-	-
GRI 410: Security Practices 2016	410-1	Security personnel trained in human rights policies or procedures	SR: 51-52; 127	SR: Supplier ESG Assessments; Global Human Resources Data - Human Rights Assessment	-	-
<b>Rights of Indigenous Peoples</b>						
GRI 103: Management Approach 2016	103-1	Explanation of the material topic and its Boundary	SR: 51; 98	SR: Human Rights and Compliance in the Supply Chain; Workplace Human Rights Assessment	-	-
	103-2	The management approach and its components	SR: 51-52; 98-99 IVL Website	SR: Supplier ESG Assessments; Workplace Human Rights Assessment <a href="https://sustainability.indoramaventures.com/en/social/human-rights/human-rights">https://sustainability.indoramaventures.com/en/social/human-rights/human-rights</a>	-	-
	103-3	Evaluation of the management approach	SR: 51-52; 98-99 IVL Website	SR: Supplier ESG Assessments; Workplace Human Rights Assessment <a href="https://sustainability.indoramaventures.com/en/social/human-rights/human-rights">https://sustainability.indoramaventures.com/en/social/human-rights/human-rights</a>	-	-
GRI 411: Rights of Indigenous Peoples 2016	411-1	Incidents of violations involving rights of indigenous peoples	SR: 51-52; 98-99; 127	SR: Supplier ESG Assessments; Workplace Human Rights Assessment; Global Human Resources Data - Human Rights Assessment	-	-
<b>Human Rights Assessment</b>						
GRI 103: Management Approach 2016	103-1	Explanation of the material topic and its boundary	SR: 51; 98	SR: Human Rights and Compliance in the Supply Chain	-	-
	103-2	The management approach and its components	SR: 51-52; 98-99 IVL Website	SR: Supplier ESG Assessments; Workplace Human Rights Assessment <a href="https://sustainability.indoramaventures.com/en/social/human-rights/human-rights">https://sustainability.indoramaventures.com/en/social/human-rights/human-rights</a>	-	-
	103-3	Evaluation of the management approach	SR: 51-52; 98-99 IVL Website	SR: Supplier ESG Assessments; Workplace Human Rights Assessment <a href="https://sustainability.indoramaventures.com/en/social/human-rights/human-rights">https://sustainability.indoramaventures.com/en/social/human-rights/human-rights</a>	-	-
GRI 412: Human Rights Assessment 2016	412-1	Operations that have been subject to human rights reviews or impact assessments	SR: 51-52; 98-99; 127	SR: Supplier ESG Assessments; Workplace Human Rights Assessment; Global Human Resources Data - Human Rights Assessment	-	-
	412-2	Employee training on human rights policies or procedures	SR: 51-52; 98-99; 127	SR: Supplier ESG Assessments; Workplace Human Rights Assessment; Global Human Resources Data - Human Rights Assessment	-	-

GRI Standard	Disclosure	Description	Page Number(s)	References SR 2020	External Assurance	Omissions
<b>Local Communities</b>						
GRI 103: Management Approach 2016	103-1	Explanation of the material topic and its boundary	SR: 107 IVL Website	SR: Empowering Our People and Communities - Giving Back to Our Communities <a href="https://www.indoramaventures.com/en/sustainability/social/csr">https://www.indoramaventures.com/en/sustainability/social/csr</a>	-	-
	103-2	The management approach and its components	SR: 107-113 IVL Website	SR: Empowering Our People and Communities - Giving Back to Our Communities <a href="https://www.indoramaventures.com/en/sustainability/social/csr">https://www.indoramaventures.com/en/sustainability/social/csr</a>	-	-
GRI 413: Local Communities 2016	413-1	Evaluation of the management approach	SR: 107-113 IVL Website	SR: Empowering Our People and Communities - Giving Back to Our Communities <a href="https://www.indoramaventures.com/en/sustainability/social/csr">https://www.indoramaventures.com/en/sustainability/social/csr</a>	-	-
	<b>Supplier Social Assessment</b>					
GRI 103: Management Approach 2016	103-1	Explanation of the material topic and its boundary	SR: 51-52 IVL Website	SR: Responsible and Effective Governance - Supplier ESG Assessments <a href="https://sustainability.indoramaventures.com/en/social/human-rights/human-rights-protections-in-our-supply-chain">https://sustainability.indoramaventures.com/en/social/human-rights/human-rights-protections-in-our-supply-chain</a>	-	-
	103-2	The management approach and its components	SR: 51-52 IVL Website	SR: Responsible and Effective Governance - Supplier ESG Assessments <a href="https://sustainability.indoramaventures.com/en/social/human-rights/human-rights-protections-in-our-supply-chain">https://sustainability.indoramaventures.com/en/social/human-rights/human-rights-protections-in-our-supply-chain</a>	-	-
	103-3	Evaluation of the management approach	SR: 51-52 IVL Website	SR: Responsible and Effective Governance - Supplier ESG Assessments <a href="https://sustainability.indoramaventures.com/en/social/human-rights/human-rights-protections-in-our-supply-chain">https://sustainability.indoramaventures.com/en/social/human-rights/human-rights-protections-in-our-supply-chain</a>	-	-
GRI 414: Supplier Social Assessment 2016	414-2	Negative social impacts in the supply chain and actions taken	SR: 52	SR: Responsible and Effective Governance - Supplier ESG Assessments	-	-
<b>Public Policy</b>						
GRI 103: Management Approach 2016	103-1	Explanation of the material topic and its boundary	SR: 45-47 IVL Website	SR: Responsible and Effective Governance - Business Ethics, Integrity and Transparency <a href="https://www.indoramaventures.com/en/our-company/governance/industry-associations-and-memberships">https://www.indoramaventures.com/en/our-company/governance/industry-associations-and-memberships</a>	-	-
	103-2	The management approach and its components	SR: 47 IVL Website	SR: Responsible and Effective Governance - Business Ethics, Integrity and Transparency - Political activities and contributions <a href="https://www.indoramaventures.com/en/our-company/governance/industry-associations-and-memberships">https://www.indoramaventures.com/en/our-company/governance/industry-associations-and-memberships</a>	-	-
	103-3	Evaluation of the management approach	SR: 47 IVL Website	SR: Responsible and Effective Governance - Business Ethics, Integrity and Transparency - Political activities and contributions <a href="https://www.indoramaventures.com/en/our-company/governance/industry-associations-and-memberships">https://www.indoramaventures.com/en/our-company/governance/industry-associations-and-memberships</a>	-	-
GRI 415: Public Policy 2016	415-1	Political Contributions	SR: 47 IVL Website	SR: Responsible and Effective Governance - Business Ethics, Integrity and Transparency - Political activities and contributions <a href="https://www.indoramaventures.com/en/our-company/governance/industry-associations-and-memberships">https://www.indoramaventures.com/en/our-company/governance/industry-associations-and-memberships</a>	-	-
<b>Customer Health and Safety</b>						
GRI 103: Management Approach 2016	103-1	Explanation of the material topic and its boundary	SR: 69-72	SR: Driving Sustainable Growth - Safe and Sustainable Products	-	-
	103-2	The management approach and its components	SR: 69-72	SR: Driving Sustainable Growth - Safe and Sustainable Products	-	-
	103-3	Evaluation of the management approach	SR: 69-72	SR: Driving Sustainable Growth - Safe and Sustainable Products	-	-
GRI 416: Customer Health and Safety 2016	416-2	Incidents of non-compliance concerning the health and safety impacts of products and services	SR: 69; 73	SR: Driving Sustainable Growth - Safe and Sustainable Products; Creating Strong Customer Relationships	-	-

GRI Standard	Disclosure	Description	Page Number(s)	References SR 2020	External Assurance	Omissions
<b>Marketing and Labelling 2016</b>						
GRI 103: Management Approach 2016	103-1	Explanation of the material topic and its boundary	SR: 56-57	SR: Driving Sustainable Growth	-	-
	103-2	The management approach and its components	SR: 72-73	SR: Driving Sustainable Growth - Creating Strong Customer Relationships	-	-
	103-3	Evaluation of the management approach	SR: 72-73	SR: Driving Sustainable Growth - Creating Strong Customer Relationships	-	-
GRI 417: Marketing and Labelling 2016	417-3	Incidents of non-compliance concerning marketing communications	SR: 73	SR: Driving Sustainable Growth - Creating Strong Customer Relationships	-	-
<b>Customer Privacy</b>						
GRI 103: Management Approach 2016	103-1	Explanation of the material topic and its boundary	SR: 55	SR: Responsible and Effective Governance - Cyber Security Management	-	-
	103-2	The management approach and its components	SR: 55	SR: Responsible and Effective Governance - Cyber Security Management	-	-
	103-3	Evaluation of the management approach	SR: 55	SR: Responsible and Effective Governance - Cyber Security Management	-	-
GRI 418: Customer Privacy 2016	418-1	Substantiated complaints concerning breaches of customer privacy and losses of customer data	SR: 55; 73	SR: Responsible and Effective Governance - Cyber Security Management SR: Driving Sustainable Growth - Creating Strong Customer Relationships	-	-
<b>Socioeconomic Compliance</b>						
GRI 103: Management Approach 2016	103-1	Explanation of the material topic and its boundary	SR: 43	SR: Responsible and Effective Governance - Corporate Governance and Compliance Management	-	-
	103-2	The management approach and its components	SR: 43-45	SR: Responsible and Effective Governance - Corporate Governance and Compliance Management	-	-
	103-3	Evaluation of the management approach	SR: 43-45	SR: Responsible and Effective Governance - Corporate Governance and Compliance Management	-	-
GRI 419: Social Compliance 2016	419-1	Non-compliance with laws and regulations in the social and economic area	SR: 43-45; 72-73; 88	SR: Responsible and Effective Governance - Corporate Governance and Compliance Management; Driving Sustainable Growth - Creating Strong Customer Relationships; Towards Carbon Neutrality - Strong Environmental Governance	-	-



# Glossary

°C	Celsius
ACC	American Chemistry Council
ADB	Asian Development Bank
AGM	Annual General Meeting
AMIC	Autologous Matrix-Induced Chondrogenesis
APR	Association of Plastics Recyclers
AR	Annual Report
BBS	Behavior-Based Safety
BDF	Baan Dek Foundation
BMA	Bangkok Metropolitan Administration
BMP	Bitmap
BOD	Biochemical Oxygen Demand
CAC	Coalition Against Corruption
CCBPI	Coca-Cola Beverages Philippines, Inc
CCUS	Carbon Capture Utilization and Storage
CDP	Carbon Disclosure Project
CDR	CorelDRAW
CEO	Chief Executive Officer
CG	Corporate Governance
CGPAC	Corporate Governance Policy Awareness Campaign
CIRFS	European Man-Made Fibres Association
CLIPC	Climate Information Portal
CO <sub>2</sub>	Carbon Dioxide
CO <sub>2</sub> e	Carbon Dioxide Equivalent
CO <sub>2</sub> eq	Carbon Dioxide Equivalent
COD	Chemical Oxygen Demand
CoMa	Contribution Margin
COP	Communication on Progress
COP	Communities of Practice
COSO	Committee of Sponsoring Organizations of the Treadway Commission
COVID-19	Coronavirus Disease of 2019
CPME	The Committee of PET Manufacturers in Europe
CREAT	Climate Resilience Evaluation & Awareness Tool
CRM	Customer Relationship Management
CRR	Customer Retention Rate
CSA	Corporate Sustainability Assessment
CSI	Customer Satisfaction Index
CSO	Chief Strategy Officer
CSO	Chief Sustainability Officer
CSR	Corporate Social Responsibility
CSV	Creating Shared Value
CXO	C-Suit Executives (CHRO, CFO, CSOs, COOs)
DEG	Deutsche Investitions-und Entwicklungsgesellschaft
DJSI	Dow Jones Sustainability Indices
DOT	Department of Transportation
DPF	Duang Prateep Foundation
DSM	Dutch State Mines
DX	Digital Transformation
EBITDA	Earnings Before Interest, Taxes, Depreciation, and Amortization
EBM PET	Extrusion Blow Moulding Polyethylene Terephthalate
ECHA	European Chemicals Agency
EDANA	European Disposables and Nonwovens Association
EDR	Endpoint Detection and Response
EEC	Eastern Economic Corridor
EG	Ethylene Glycol
EHS	Environment, Health, and Safety
EIA	Environmental Impact Assessment
EMEA	Europe, Middle East, and Africa
EMENA	Europe, Middle East, and North Africa
EMS	Environmental Management System
EO	Ethylene Oxide
EPS	Core Earnings Per Share
ERM	Enterprise Risk Management
ERP	Enterprise Resource Planning
ESG	Environmental, Social and Governance
ESP	Electrostatic Precipitators
ETS	Emissions Trading Schemes
EU	European Union
F&B	Food and Beverage
FDA	Food and Drug Administration
FIT	Forward Innovative Thinking
FMCG	Fast Moving Consumer Goods
FTSE4Good	Financial Times Stock Exchange-Russell Group
m <sup>3</sup>	Cubic Metre
mg/L	Milligrams Per Litre
MJ	Megajoule
MEG	Mono-Ethylene Glycol
Min	Minute
ML	Machine Learning
MRSA	Methicillin-Resistant Staphylococcus Aureus
MSCI	Morgan Stanley Capital International
MT	Metric Tonne
MWh	Megawatt Hour
NAPCOR	National Association for PET Container Resources
NCCG	Nomination, Compensation and Corporate Governance Committee
NCI	Non-Controlling Interest
NCV	Natural Capital Valuation
NDC	Naphthalene Dicarboxylate
NDCs	Nationally Determined Contributions
NGFW	Next-Gen Firewalls
NOx	Nitrogen Oxide
NPS	Net Promoter Score
OHS	Occupational Health and Safety
OHSAS	Occupational Health and Safety Assessment Series
PA	Polyamide
PCL	Public Company Limited
PCRC	Product Compliance Risk Characterization
PE	Polyethylene
PEO	Polyethylene Oxide
PET	Polyethylene Terephthalate
PETRA	PET Resin Association
PIA	Purified Isophthalic Acid
PLA	Polylactic Acid
PMOs	Project Management Offices
PO	Propylene Oxide (Lifestyle Fibers, PO, PEO)
VOCs	Volatile Organic Compounds
VPPAs	Virtual Power Purchase Agreements
POC	Point of Contact
POY	Partially Oriented Yarn
PP	Polypropylene
PPE	Personal Protective Equipment
PPP	Public-Private Partnership
PRE	Plastics Recyclers Europe
PSM	Process Safety Management
PTA	Purified Terephthalic Acid
PX	Paraxylene
R&D	Research and Development
RCS-NL	Recycled Claim Standard
RDO	Result Delivery Office
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals
RMC	Risk Management Council
RNG	Renewable Natural Gas
ROCE	Return on Capital Employed
rPET	Recycled Polyethylene Terephthalate
RSPO	Roundtable on Sustainable Palm Oil
S&P	Standard and Poor's
SA8000	Social Accountability 8000 Standard
LGBT	Lesbian, Gay, Bisexual, and Transgender
LPG	Liquefied Petroleum Gas
LSS	Lean Six Sigma
Lt	Litre
LTI	Lost Time Injury
LTIFR	Lost Time Injury Frequency Rate
SAM	RobecoSAM (SAM's Sustainability Yearbook)
SAP	System Applications and Products in Data Processing
SARS-CoV-2	Severe Acute Respiratory Syndrome Coronavirus 2
SBTi	Science-Based Targets Initiative
SBTs	Science-Based Targets
SDGs	Sustainable Development Goals
SET50	Stock Exchange of Thailand
SIA	Social Impact Assessments
SIN	Substitute It Now
SOIs	Substances of Interest
SOPs	Standard Operating Procedures
SOx	Sulfur Oxides
SR	Sustainability Report
SRMC	Sustainability and Risk Management Committee
STEM	Science, Technology, Engineering and Mathematics
SVHC	Substance of Very High Concern
TCFD	Task Force on Climate-Related Financial Disclosures
tCO <sub>2</sub> e	Tonnes of Carbon Dioxide Equivalent
TMO	Transformation Management Office
TR	Ton of Refrigeration
TRIR	Total Recordable Injury Rate
TRIS	Thai Rating and Information Services
TUVI	TUV India Private Limited
USGBC LEED	U.S. Green Building Council - Leadership in Energy and Environmental Design
UNGC	United Nations Global Compact
UNGC COP	UNGC Communication on Progress
UN SDGs	United Nations Sustainable Development Goals
US	United States
USD	United States Dollar
WBCSD	World Business Council for Sustainable Development
WEEC	Wetlands Edge Environment Center
WHRA	Workplace Human Rights Assessment
WRI	World Resources Institute

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