



REIMAGINING CHEMISTRY TOGETHER  
**TO CREATE A BETTER  
WORLD**

# SPECIAL REPORT

## COP26 Highlights and IVL's Role in Decarbonization




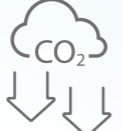

The United Nations has hosted yearly climate conferences since 1995, bringing together representatives from all around the world to address growing concerns over climate change. Six years ago in Paris, world leaders settled on a global pathway for climate action, committing to keep global warming to 1.5 °C above pre-industrial levels.

In 2021, an important outcome at COP26 in Glasgow was the Global Stocktake that is set to take place every five years. There was a significant step-up in ambitions and critically detailed action plans on emissions reductions from many countries, a display of strengthened solidarity towards safeguarding the planet for future generations.

### KEY COMMITMENTS FROM COP26

<p><b>1</b></p> <p>Rapidly scale technologies and policies to transition away from unabated coal power generation by 2030 for major economies and 2040 globally.</p>	<p><b>2</b></p> <p>More than 100 countries agreed to reduce methane, a greenhouse gas 80 times more potent than CO<sub>2</sub>, by 30% by 2030.</p>	<p><b>3</b></p> <p>137 countries committed to halt and reverse forest loss and land degradation by 2030.</p>	<p><b>4</b></p> <p>Reaffirmed pledges by developed countries to deliver the US\$ 100 billion yearly in climate financing.</p>
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### GLOBAL DECARBONIZATION AMBITIONS

 <p>Thailand intends to reduce its Greenhouse Gas (GHG) emissions by 20% by 2030.</p>	 <p>Europe, through the EU's 'Fit for 55' package, aims to cut emissions by 55% by 2030.</p>	 <p>The United States aims to cut its GHG emissions in half from 2005 levels by 2030.</p>
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### IMPACTS ON IVL

#### RISKS

IVL is mindful about potential increases in our OPEX to deal with a rise in future environment-based taxes being introduced globally. Similarly, we predict a rise in CAPEX by investing in green technologies to meet potential changes in environmental legislation and regulations.

#### HOW WE ARE MITIGATING RISKS

- **CARBON PRICING**
  - We have adopted an internal carbon price that we factor into investment decisions and business plans. Five countries where we operate already have carbon pricing regulations and we expect to see more coverage in the future.
- **CLEAN ENERGY AND GREEN PROJECTS**
  - We are transitioning towards cleaner sources of energy and decarbonizing our production to reduce emissions from our sites.
- **DECARBONIZING VALUE CHAIN**
  - We are making progress through a sustainable supply chain program that prioritizes supplier climate maturity.
- **EARLY ADOPTION OF NEW DECARBONIZATION TECHNOLOGIES AND SOLUTIONS**
  - We have made inroads towards implementing Carbon Capture Utilization and Storage (CCUS) at our site in addition to advanced recycling to drive our circularity efforts.

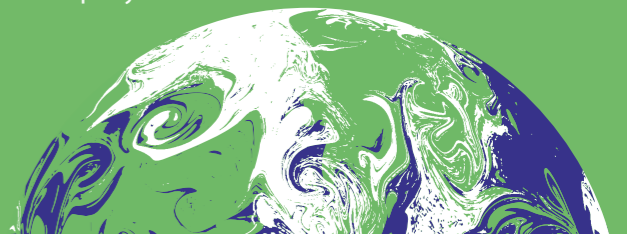
#### OPPORTUNITIES

Climate financing commitments made at COP26 allow us to leverage opportunities in securing financial capital to better fund our decarbonization efforts globally and achieve our sustainability goals.

#### HOW WE ARE UTILIZING OPPORTUNITIES

- We secured US\$ 1.3 billion in sustainable financing as of the end of 2021 through:
- Thailand's first green loan from Japan's Mizuho Bank for both US\$ 200 million and EUR 200 million
  - A syndicated ESG loan for US\$ 255 million arranged by Mizuho Bank.
  - A blue loan for US\$ 300 million arranged by the International Finance Corporation (IFC).
  - Thailand's largest Sustainability-Linked Bond worth THB 10 billion (~US\$ 300 million)

These investments will be used to decarbonize our operations and produce low carbon intensive products while also being mindful of customer requirements. Through these proactive measures, we will be able to retain our position and improve our competitiveness as a leading chemical company.



As the world moves towards these ambitious targets in mitigating climate change, there are areas of improvement that need to be addressed. Public-private partnerships are key in reaching these targets, which is why it is crucial for corporations to step up and declare their commitments to decarbonization.

To play our part towards in mitigating climate impacts, we joined more than 90 CEOs of large multinational organizations in signing a recent open letter published by the CEOs Climate Alliance. All signatories are committed to reducing emissions by more than 1Gt annually by 2030 and believe that businesses can do more if world leaders reach an agreement at COP26 that put us on a 1.5 °C pathway.

We recognize that undertaking collective efforts will accelerate the decarbonization process. We must continue to apply a carbon lens to everything we do, challenge ourselves and push this agenda forward, including at COP27.

# SUSTAINABILITY ACHIEVEMENTS 2021



## SECURING SUSTAINABLE FINANCING



Secured **US\$ 1.3 billion** in sustainable financing as of the end of 2021



Issued a **THB 10 billion Sustainability-Linked bond** driving climate action and sustainable production



The first company in Thailand to invest in **HSBC's Green Deposit** to support Environmental, Social and Governance (ESG) projects



## DECARBONIZATION



Pledged **Net Zero Carbon** by 2050-2070



Announced **US\$ 4.7 billion investment** to increase biomass feedstock to **2.4 million tons** by 2030



Established a **Decarbonization Committee** and introduced **decarbonization SOPs** to guide future projects and investments



## ENVIRONMENT



New solar energy investments in China and Indonesia provide a combined **emissions savings of over 3,300 tCO<sub>2</sub>e** per year



New CarbonLite recycling facility in the US and an upcoming facility in Indonesia will **recycle 5 billion PET bottles** annually by 2023



Manufacturing site in Rayong, Thailand recorded **waste diversion rate of 99%**, obtaining **Zero Waste to Landfill certification**



## CORPORATE GOVERNANCE AND COMPLIANCE



**100% independent directors** on the **Nomination, Compensation and Corporate Governance (NCCG) Committee**



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



**Renewed certification** with the **Private Sector Coalition Against Corruption (CAC), Thailand**



## SUSTAINABILITY GOVERNANCE



Established an **ESG Council and Decarbonization Committee**



Declaration on **Human Rights** **90% signed by Business Heads** **92% signed by Site Heads**



Strengthened **Gender Diversity in the Workplace** by forming a **Diversity, Equity, and Inclusion (DEI) Committee**



## SUSTAINABILITY REPORTING



Published **the industry's first SDGs Report** in 2020



Published **inaugural TCFD report** since 2020



Launched an **online ESG Profile dashboard** to provide easily accessible ESG information



## HEALTH AND SAFETY



Implemented a **global Environment, Health and Safety (EHS) and Sustainability Software Management System**



Launched an **Injury and Illness Prevention Program (I2P2)** which systematically analyzes incident trends and implement controls



**45 of our sites (41% of our operations)** achieved our goal of **"zero-accidents"**



## SOCIAL



Average **29.92 training hours** per employee, a **61% increase** from 2020



Expanded **recycling education** to **three new countries: Poland, Indonesia, and Ghana**



**Educated 53,585 people** on recycling and waste separation as of the end of 2021

# KEY ACHIEVEMENTS 2021

FOR MORE INFORMATION

Member of  
**Dow Jones Sustainability Indices**  
Powered by the S&P Global CSA  
**Sustainability Yearbook Member 2022**  
**S&P Global**

- Indorama Ventures was **recognized as a member in the S&P Global Sustainability Yearbook 2022** and was listed in the Dow Jones Sustainability Indices (DJSI)-**World and Emerging Markets for the third and fifth consecutive year respectively in the Chemicals sector.**
- IVL was ranked in the 97<sup>th</sup> percentile** among the top 139 global chemical companies.

**chemsec CHEMSCORE**  
ChemScore Report **2021**

- IVL ranked **1<sup>st</sup> among 50 global chemical companies** assessed.

**PLATINUM**   
**2021 ecovadis**  
Sustainability Rating

- Platinum Medal**, the highest award for sustainability performance.
- IVL **ranked in the top 1%** of all companies assessed worldwide, with above industry-average performances.

**CDP**  
DISCLOSURE INSIGHT ACTION

- Indorama Ventures **achieved a B Rating** in the CDP's **Climate Change Assessment** in 2021.

**MSCI**

- Indorama Ventures **was graded BBB for the ESG rating in 2021.**

**FTSE4Good**

- Indorama Ventures **remained a constituent of the FTSE4Good Index Series.**
- IVL achieving an ESG score of **4.1 out of 5 ranked in the 95<sup>th</sup> percentile.**

**SUSTAINALYTICS**

- Indorama Ventures **achieved an overall ESG at 7<sup>th</sup> out of 228 companies.** IVL was given a strong management rating in managing its medium risk of experiencing material financial impacts from ESG factors.

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# CHIEF EXECUTIVE OFFICER MESSAGE



“OUR CHEMISTRY TOUCHES EVERYDAY LIFE, AND WE ARE CONFIDENT IN OUR CAPACITY TO MEET OUR CUSTOMERS’ GROWING NEEDS WHILE DELIVERING ON OUR SUSTAINABILITY AMBITION AND CONTRIBUTING TO THE NEW WORLD OF CIRCULARITY.”

This report outlines IVL’s success in addressing the sustainability and climate issues that matter most to our customers, employees, shareholders, and communities in 2021. IVL is moving quickly on several fronts, and we are driving our actions in line with being responsible, one of our core values.

In 2021, we created our purpose statement, ‘Reimagining chemistry together to create a better world,’ which defines our role and the positive impact that we have on our world.

## ACHIEVING NET ZERO CARBON

Last year’s COP26 in Glasgow ended with a global agreement to accelerate actions on climate change this decade. All countries agreed to strengthen their 2030 emissions targets, known as Nationally Determined Contributions (NDCs), in 2022 to limit global warming to 1.5 °C. So, there is much important work ahead.

Our Chief Technology Officers, as part of the Decarbonization Committee, are heading IVL’s decarbonization strategy. The strategy consists of six prongs to reduce the company’s carbon footprint and support countries where we have operations. The committee provides technical guidance to each of our business segments and ensures plant-level decarbonization efforts to achieve Net Zero Carbon.

We are on track to achieve our 2025 goals, and we have set more ambitious 2030 targets. The 2030 targets include a 30% reduction in Scope 1 and 2 combined greenhouse gas (GHG) intensity, 15% reduction in energy intensity, 25% use of renewable electricity, 20% reduction in water intensity, 90% diversion of waste from landfills, recycling 1.5 million tons in PET bale input annually and sustainability capital expenditures of US\$ 7 billion.

## SUSTAINABILITY AT THE FOREFRONT

In pursuit of business growth and profitability, we do things the right way – economically, socially, and environmentally. Health and safety are non-negotiable as we implement these three approaches in our global operations.

Our vision statement, ‘To be a world-class sustainable chemical company making great products for society,’ is backed by decarbonization and broader sustainability strategies as key differentiators going forward. This sharper focus will enable us to respond to any future uncertainties and improve our position in the post-pandemic era.

## FOCUS ON SUSTAINABLE AND GREEN FINANCE

IVL drives leadership in sustainable finance through our Sustainability Performance Targets (SPTs), allowing us to issue innovative investment instruments that are linked to sustainability performance. The SPTs are part of our Sustainability-Linked Finance Framework which is independently assessed.

IVL's pioneering approach to green finance in Thailand is reflected in our first issuance of THB 10 billion in Sustainability Linked Bonds (SLBs), which drew considerable interest from institutional investors. The SLB is linked to our environmental performance and serves as an important step in optimizing our capital structure, as well as incentivizing our company and stakeholders towards environmental goals. It marks an important development in the Thai capital market as investors focus more on environmental metrics, specifically relating to climate change. Additionally, in 2021, we were the first Thailand-based company to invest in HSBC's Green Deposit to support a wide range of environmental, social and governance projects.

## STRONGER PERFORMANCE, GREATER INNOVATION

IVL is effectively integrating our operations, both downstream in packaging and upstream in feedstocks and Integrated Oxides and Derivatives (IOD), while diversifying our product range, notably in surfactants, through strategic acquisitions and operational enhancements.

Our naphthaletes unit, which was established last year at our integrated production facility in the U.S., makes us the world's largest PNDA producer, with the greatest level of purity to serve high-end polyester markets. Our strategic acquisition of Brazil-based Oxiteno is part of our strategy to make value-accreting investments. The acquisition adds a unique portfolio of high-value surfactants and significantly extends our existing IOD business. It will also strengthen our position in Mexico and Latin America, and in green chemical innovation.

We are strengthening our position as a global recycling leader. In 2021, we completed our acquisition of PET recycling assets from CarbonLite Holdings and its subsidiaries in Texas. We also announced a new greenfield recycling facility in Karawang, Indonesia which will recycle almost two billion plastic bottles annually in support of our commitment to clean oceans and closed-loop solutions.

We acquired the state-of-the-art assets of Ngoc Nghia, a market leader in PET, preforms and closures in Vietnam. The deal will increase our presence in a high-growth market offering a full range of PET packaging solutions with enhanced operational excellence.

At the end of last year, we inaugurated our Global Business Service Center in Kolkata, India, which plays an important role for our operating sites worldwide by consolidating large-scale processes and deploying cutting-edge technology to drive operating efficiencies and promote our sustainability and transformation journey.

## ADDRESSING SAFETY INCIDENTS AND IMPROVING EMPLOYEE SAFETY

While we strive to achieve a strong operational performance within safe work environments, unfortunately incidents do occur. In 2021, we suffered two work-related fatalities in Texas in the U.S. and in Egypt (a contractor) while another employee was permanently disabled. Mitigation and enforcement actions were undertaken immediately at both facilities to improve employee safety together with additional training. Two of our facilities experienced fires, and proper reporting and response procedures were immediately followed in both instances. We carried out a detailed investigation of each incident and undertook mitigation actions, while lessons were shared across IVL. Regretfully, there were a total of 16 pandemic-related employee deaths last year, up from seven in 2020.

## CULTURE OF LEADERSHIP AND SUCCESS

As a signatory of the UN Global Compact, we support its 10 principles and promote its core values to showcase our collective work as part of the international business community and to demonstrate our leadership in taking effective action. We are also playing a constructive role in achieving the U.N.'s Sustainable Development Goals (SDGs).

Last year, we achieved sustainability recognitions from DJSI, CDP, MSCI, EcoVadis, Sustainalytics, Stock Exchange of Thailand and FTSE4Good, among others.

## A FUTURE OF NEW VALUE CREATION

We are building sustainability across all our businesses while our colleagues work diligently towards making IVL a future-ready organization. The past year has demonstrated IVL's efforts in sustainability and promoting a more circular economy by increasing our presence in recycling and working more closely with stakeholders to invest in our people and the planet through innovation and product development.

As we go forward, developing our people is a top priority. Succession planning is critical to long-term success, and we must recruit, train, and promote outstanding leaders with the correct 'growth mindset'. We will include more bio-based feedstock into our goods, with an aim of investing US\$ 4.7 billion for bio-based feedstock consumption and a target to achieve our target of 16% bio-based feedstock consumption against the whole IVL feedstock target by 2030. We will also focus on our segment strategy to allow each of our three segments to reach their full potential. Finally, digitalization of our business is a vital component of change.

We would like to acknowledge our employees, stakeholders, business partners and associates for their continued support in making 2021 a year of accomplishment.



**DILIP KUMAR AGARWAL**

Chief Executive Officer and Chief Financial Officer  
Member of Sustainability and Risk Management Committee

# CHIEF STRATEGY OFFICER MESSAGE



"WE REALIZED THE NEED TO UNLOCK CROSS-FUNCTIONAL INTERDEPENDENCIES TO ACHIEVE OUR FULL POTENTIAL AS 'ONE IVL' AND BECOME A SUSTAINABLE COMPANY IN THE NEW ECOSYSTEM."

IVL successfully managed through the pandemic in 2021 achieving a strong financial performance amid record production volumes. Our region-centric business model of integrated and regional supply across a diversified geographic and product base is proving its value. More broadly, we will continue to build-up our portfolio of sustainable products that plays to our strengths in offering innovative solutions that meet social needs in an uncertain environment.

Our response to the pandemic in the last two years has reflected our values as we pulled together to identify and prepare for risk as well as respond to prolonged disruption. We also showed how highly relevant businesses can contribute to helping the communities around us. Our global teams communicated constantly through risk alerts and newsletters to monitor key threats and craft interventions and responses.

## BUILDING AGILITY AND RESILIENCE

Strengthening our IOD business' value chain has greatly improved our overall sustainability strategy. Our acquisition of Brazil-based Oxiteno has given us a unique portfolio of high-value surfactants and will broaden our expertise in green chemistry innovation, boost our ESG credentials, give us access to substantial growth potential in attractive home & personal care, agrochemicals, coatings and oil & gas markets. This builds on our earlier acquisition of Huntsman Corporation's integrated EO and PO assets, ensuring IOD's continued growth, development and innovation.

Our new PNDA production unit in the U.S. extends our specialty chemical portfolio and will meet demand over the next decade to make us the world's largest PNDA producer.

## DRIVING PROGRESS TOGETHER

All our businesses are being combined under our 'ONE IVL' project to generate synergies across the group, strengthen our risk management, and facilitate agile decision-making. We are transforming our business under an integrated digital platform that will simplify and standardize our data, processes and practices globally. Lastly, our Global Business Solutions finance function will drive efficiencies and improve controls through consolidation and automation.

To help our company achieve its sustainability ambitions, we created six enabling functions, including business continuity, communications, digital, environmental health and safety, Indorama Ventures Excellence (IVEX) and sustainability, which are steered by experienced professionals identified within the organization and recruited from the industry. These enabling functions will perform their roles and execute their strategic and operational plans in line with IVL's vision and mission.

The digital enabling function will lead our journey to create a well-informed and timely decision-making process while ensuring a robust digital culture to improve business performance.

IVL's leadership development and IVEX programs, two important elements within this structure, nurture individuals with leadership potential and implement projects that sharpen our focus on sustainability while providing management development opportunities. Last year, 1,633 leaders globally completed IVL's leadership program while 996 employees joined the IVEX program.

We are on track to fulfil our three-year business plan to 2024. We are proud that IVL's digital transformation project won the 2021 CIO/CDO of the Year for Thailand by Thailand's IDC Future Enterprise Awards. The implementation of our global ERP S4HANA system is progressing well, and we successfully rolled out Phase 1 in the fourth quarter of 2021. Project Olympus, our company-wide business and cost transformation initiative, achieved US\$ 291 million in efficiency gains in 2021.

### ACCELERATING CLIMATE SOLUTIONS

Having reaffirmed our commitment to reduce emissions towards our goal of Net Zero Carbon, we formed a Decarbonization Committee to provide technical guidance to business segments and plants. Our decarbonization strategy has been implemented throughout the company, and additional aggressive 2030 targets were set: 30% GHG intensity reduction, 15% energy intensity reduction, 20% water reduction, and 25% renewable electricity consumption in line with the COP26 targets. We invested over US\$ 44 million in CAPEX supporting green projects including energy and GHG reduction projects.

Our use of renewable electricity is increasing with a 2025 target of 10%. We installed solar panels at 10 sites. In 2021, six sites consumed 100% renewable electricity, totaling 7.5% of our total electricity consumed. We are exploring technology related to carbon capture utilization and storage (CCUS), green hydrogen, and have committed to using circular feedstocks amounting to one-quarter of our overall consumption by 2030.

### STRONGER RELATIONSHIPS AND PARTNERSHIPS

We are cooperating with our value chain partners to achieve a positive impact on sustainability, including suppliers, technology developers, customers, government agencies and consumers. We are incorporating ESG principles with suppliers, including GHG Scope 3 accounting and reduction targets. We are exploring CCUS and green hydrogen technologies and leading the way in advanced recycling. We are helping our customers reach their goals through carbon neutral products, packaging materials and business models. With government agencies, we are advocating rPET regulation and bottle collection programs. Finally, we are improving plastic waste separation and collection, recycling education, and promoting a circular economy among consumers.

### OUR PATH TO A SUSTAINABLE FUTURE

Our COVID-19 Strategic Preparedness and Response Plan served us well during the pandemic, keeping our workers safe, maintaining our operations, and our commitment to our customers. Our agility when faced with challenges underscores our strength as an organization. We understand our responsibility. Implementing digital solutions, understanding the implications of climate change, adapting to supply chain disruption, and addressing millennial consumers' needs are crucial for our long-term success.

I would like to thank all IVL employees for their contributions in making our company a success. I would also like to thank to our stakeholders for their collaboration and partnership along the road.



**UDEY PAUL SINGH GILL**  
Chief Strategy Officer

Member of the Sustainability and Risk Management Committee



# CHAIRMAN OF ESG COUNCIL MESSAGE



**"THE CIRCULAR ECONOMY IS AN INDUSTRIAL EVOLUTION, SUPPORTED BY OUR PRODUCTS AND BUSINESS OPERATIONS WHICH ARE ALSO MEETING CONSUMERS' EXPECTATIONS THROUGH A 'MAKE-USE-RECYCLE' MODEL."**

We took important steps over the past year to make more sustainable solutions at IVL. The ESG Council, one of five cross-segment councils formed in 2021, was established to explore synergies and align efforts. It aims to support value creation for all our stakeholders by better integrating ESG responsibilities into our daily activities and long-term sustainable performance. We declared our 'Vision 2030' ambition to steer us in becoming a global industry standard in sustainability, which is built on three pillars: decarbonizing operations, driving innovative and sustainable products and shaping a future-ready organization. We are focusing on weaving IVL's corporate values "Diversity is our Strength" into the DNA of the organization; as such, we are proud to have supported International Women's Day 2022 with the theme of BreaktheBias, led by the newly-formed Diversity, Equity, and Inclusion Committee, as part of the ESG Council.

## TOWARDS NET ZERO CARBON

Net zero carbon is a key component of IVL's future. We continue to implement initiatives to achieve our goal of Net Zero Carbon, not only in our operations but in our supply chain through our decarbonization strategy of: 1) improving operational efficiency; 2) consuming more renewable electricity; 3) increasing and expanding recycling facilities for mechanical and advanced recycling; 4) adopting future technology; 5) increasing bio-based and recycled feedstocks; and 6) offsetting residual emissions through natural capital solutions. IVL will invest US\$ 4.7 billion to increase the use of biomass feedstock in our products. By 2030, a quarter of our feedstock range will be derived from sustainable sources, supporting a reduction in our GreenHouse Gas (GHG) emissions.

We are also focusing on green projects to improve our operational efficiency and help mitigate against carbon taxes, like the Emissions Trading Scheme (ETS) and the Carbon Border Adjustment Mechanism (CBAM), which will go into effect in the next few years. We have invested US\$ 44 million in 2021 and plan to invest US\$ 640 million by 2030 towards green projects to improve our reductions in energy, GHGs, water use, and waste generation.

We are on track to achieve our 2025 GHG emissions goals, and we have set even more ambitious 2030 targets. Ten of our sites in four countries have installed solar rooftop panels. Further, we are working on procuring more renewable electricity through Virtual Power Purchase Agreements (VPPAs).

Our decarbonizing innovations not only reflect our vision and values, but they are also the smart approach towards an improved environment and marketplace, driven by mutually beneficial relationships with our employees, customers, suppliers, and wider communities.

To help our external stakeholders better understand our GHG Scope 3 emissions, and how we can lower environmental impacts, we will increase transparency in our supply chain, align procurement decisions to a 1.5°C reduction, and continue to pursue our ESG standards. We are actively engaging with our suppliers and procurement teams on GHG Scope 3 accounting and sharing our knowledge and best practices to drive reductions. We are also supporting our customers in achieving their GHG targets through our improved range of DeJa™ carbon-neutral products, as demand increases for certified and sustainable products that guarantee high-grade quality with a lower carbon footprint.

## INNOVATING FOR THE GREATER GOOD

IVL's focus on new innovations and developing products for a better world took an important step forward with the creation of our Innovation Council, whose mandate is to ensure that our product strategy and innovation processes meet our business goals. We are aligning our business with increasing demand for more innovative products that are eco-friendly and offer improved performance and better value for a more sustainable future.

We are making next-generation products with a lower environmental impact and a life cycle assessment to continually evaluate the use of higher proportions of bio-based feedstocks or recycled PET materials to meet economic, performance and compliance requirements.

Our fibers segment is on track to benefit from the next megatrends growth cycle. At our Textilcord plant in Luxembourg, we relocated manufacturing to produce 20 million face masks annually that have neutralized viruses. In global mobility markets, we are the leading supplier of safety, comfort, and performance fibers used in the tire and automotive safety sectors. We have become a dependable local supplier of high-quality necessity and value-added fibers and yarns across major lifestyle markets, combining fashion and function to meet rapid urbanization.

In our IOD segment, we are developing a new technology center in the Woodlands, Texas. The facility will be our U.S. research and development hub for new products used for home; personal and industrial cleaning; and agrochemicals, energy, lubricants, mining, and coatings markets. It has links to sister facilities in Australia, India, and China. The research center is expected to be completed in 2022.

We are accelerating our transition towards downstream specialty surfactants and look forward to greeting our new Oxiteno employees in the first half of 2022. This strategic acquisition will provide our IOD sector with complementing High Value-Added (HVA) goods, world-class credentials in green energy innovations, sustainable feedstock integration, and geographic diversity.

## BRINGING DEJA™ TO LIFE

Launched in 2020, our Deja™ brand, is quickly becoming an important platform offering an increasing portfolio of products that provide sustainable closed-loop solutions, and has been expanding commercialization in the U.S.

We were also pleased to launch Deja™ carbon-neutral PET on 22 April 2021 (Earth Day). By incorporating the benefits of carbon reduction in the value chain, notably Scope 3 emissions, the product will help our customers reduce their carbon footprint and comply with today's consumer demand for better value, improved performance, and most of all, environmentally friendly solutions. In response, we are preparing to launch more carbon-neutral products in 2022 and thereafter.

Through Deja™, we are developing a new "Ocean-Bound Plastic" that is out of regulated waste streams and prevents it from ending up in rivers and oceans. We are focusing on quality, traceability, certification, and compliance to offer a product that will have circularity as a key element. For end-of-life management, apart from mechanical recycling technology currently deployed in our facilities, we are looking at the potential for advanced recycling to complete the loop with our PET bottles, fibers and textiles which can further enhance our recycling leadership.

## DRIVING SUSTAINABLE VALUES AND SOLUTIONS

We aim to be a sustainable chemical company that tackles global challenges by reimagining chemistry in ways that offer practical solutions to the planet and to people's health and well-being. Our sustainability goals and business strategy converge to create better outcomes, while our expertise in PET and recycling, and our integration across the petrochemical value chain, reflect our leading position in the industry.

We continued to invest in infrastructure to recycle as many PET bottles as possible and promote circularity. We acquired recycling plants, one in Texas and are constructing a green field recycling plant in Karawang, Indonesia. These plants support our 2025 commitment to recycle 750,000 tons of post-consumed PET bale input. Last year, 14.3 billion bottles were recycled, and more than 317,064 tons of PET were kept in the loop to reduce leakage to land and below water. This target is one of our KPIs connected to our US\$ 300 million sustainability-linked bond, issued last year.

We also have a new 2030 target to recycle 1.5 million tons of post-consumer PET bale input. In March 2022, we reached an important milestone, having recycled 75 billion PET bottles since 2011 - and counting. With our respective 2025/2030 targets in mind, we are aiming for a goal of "90% of waste diverted from landfills," which encourages our employees to reuse and avoid waste at our facilities. Five of our sites have already achieved zero discharged wastewater in line with our sustainable water management objectives.

At IVL, we are strengthening our sustainability culture by providing our employees with a range of activities to drive sustainability awareness, including webinars and our own SustainWire communications tool.

## RESPONSIBLE FOR A BETTER FUTURE

The health and safety of our employees are non-negotiable, and our EHS team is implementing enhanced governance in standardization, assurance, capacity building, and communications, as part of our culture. Our Corporate EHS Team announced the launch of our "Golden Rules" to prevent injuries and fatalities in our manufacturing operations. This was followed by the introduction of our Injury and Illness Prevention Program (I2P2) as a more integrated approach to communicate relevant information globally.

The key to our success will be responding to consumer needs for sustainable products that prioritize health, safety and well-being, and promote economic growth. We are working with partners to collect more post-consumer PET bottles and improve awareness about recycling and PET's value. For example, we teamed up with Coca-Cola (Thailand), private companies, and environmental start-up Trash Lucky to encourage consumers to separate their recyclables at home. Our recycling education program has expanded to Mexico, the Philippines and Indonesia, and we are working towards reaching one million consumers by 2030.

## BECOMING A MORE SUSTAINABLE COMPANY

In the year ahead, we will continue to collaborate with partners to solve the issue of plastic waste. I am excited about our product innovations, the new technologies we are exploring, including CCUS, our ongoing focus on GHG reductions, and improving the conservation of natural resources and biodiversity.

I am pleased to note that IVL was the first company in Thailand to publish a report linked to the UN SDGs. We are integrating the SDGs into our strategy to operate responsibly and with a sustainability mindset.

Last year, we achieved sustainability recognitions from DJSI, CDP, MSCI, EcoVadis, Sustainalytics and FTSE4Good, among others. We ranked first in ChemScore among the world's top 50 chemical producers assessed by ChemSec based on our environmental impact and management of hazardous chemicals. Moreover, we received the highest recognition level, a platinum medal, among the top 1% of companies assessed by EcoVadis on sustainable supply chain management.

My passion for sustainability continues as we expand and improve our position in recycling globally and find the right solutions to reduce our emissions. We are already leading the way in PET sustainability and will improve further by achieving Net Zero Carbon. In doing so, we will safeguard the trust of our stakeholders as a world-class sustainable chemical company.

I appreciate the time and effort put in by the IVL team and all of our partners as we demonstrate our capacity for change and continue to pursue our ambitious goals to place sustainability at the core of all that we do.



**YASH LOHIA**

Chairman of ESG Council  
Member of the Sustainability and Risk Management Committee

# IVL'S SUSTAINABLE VALUE CREATION FOR STAKEHOLDERS



IVL was established in 1994. From our early days as Thailand's first worsted wool yarn producer, we have grown significantly becoming the world's largest PET producer. We represent a significant share of the global PTA market and remain Thailand's largest polyester fiber producer with operations in 33 countries across six continents.

## IVL'S BUSINESS AND VALUE CHAIN OVERVIEW

Our leadership's strong acumen enables our continuous delivery of robust business performance, product efficiency and steadfast commitments to our workforce, the communities around us, and the environment. Our strong supply chains and diverse end-use markets boost our resilience and versatility to help us navigate any challenges.

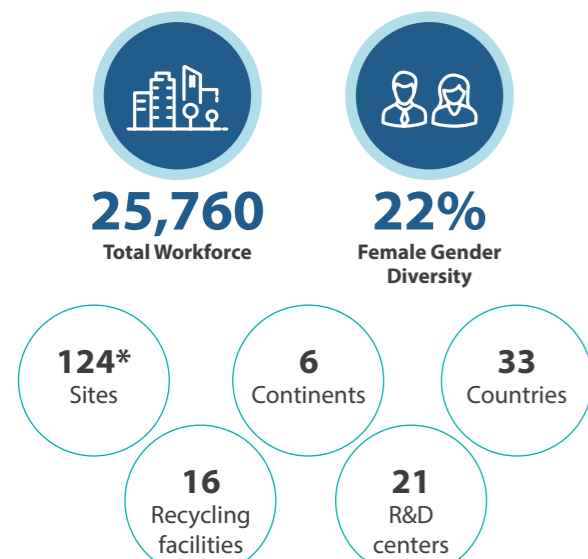
In addition to our leading management, and the delivery and sustainability of our operations – we continue to promote and support sustainability initiatives across our value chain. These efforts include increasing renewable energy use, minimizing environmental impacts, adhering to world-class manufacturing principles, and achieving our PET recycling targets.

At the end of 2021, we had 124\* 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 16 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.



## OVERVIEW OF IVL'S OPERATIONS

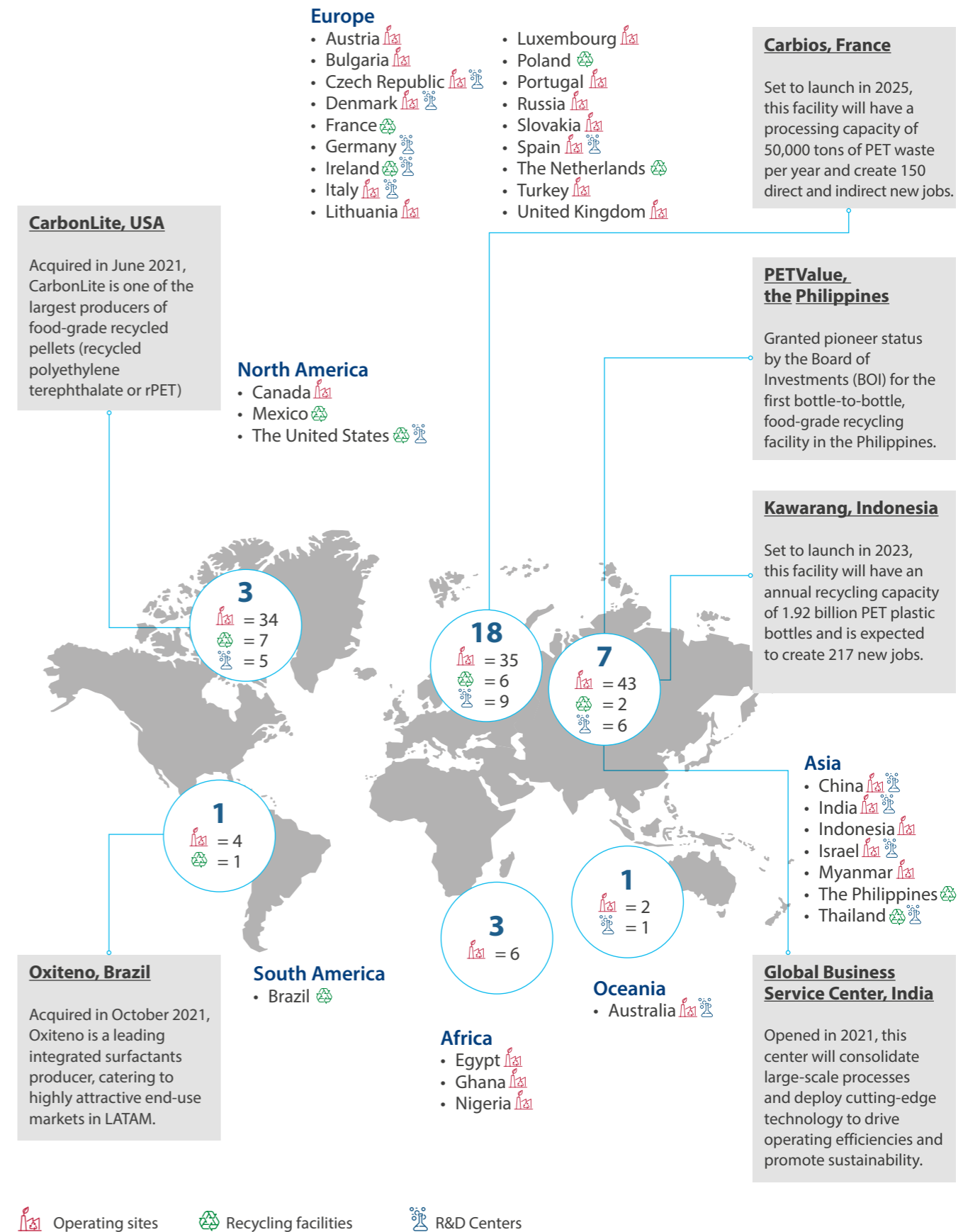
as of 31<sup>st</sup> December 2021



\* The Sustainability Report 2021 consists of data from 112 sites. Further details are provided under 'About This Report' in the full Sustainability Report 2021.

### BUSINESS SEGMENTS

- COMBINED PET**
  - #1 PET globally recycling leadership.
  - The only integrated player in Europe and fully integrated in North America
  - Packaging leadership in emerging markets
  - Global leader in PIA
- FIBERS**
  - #1 Staple fiber producer in ASEAN
  - #2 in Bicomponent fiber
  - #2 in Automotive safety & tires
- INTEGRATED OXIDES AND DERIVATIVES (IOD)**
  - #1 Non-ionic surfactants producer in the Americas
  - #1 EO producer in the Americas
  - #1 Fabric & home care ingredients provider in the Americas
  - #2 Ethoxylation company globally



IVL delivered record results in 2021, with full year Core EBITDA of US\$ 1,743 million as well as record production volumes of 14.72 million tons. Growth was seen across all three business segments of Combined PET (CPET), Fibers, and Integrated Oxides and Derivatives (IOD) as well as across the three major regions of North America, Europe and Asia. This year has further highlighted the competitive advantage of IVL's regionally integrated model, serving demand inelastic end markets that provide safety and well-being for the consumer. The resiliency of our platform today sets a strong foundation for further growth in, around, and beyond our current businesses.

The year has been marked by some unexpected and unforeseen crises starting with the Polar Vortex in the US Gulf Coast leading to supply disruptions of petrochemicals, the unprecedented escalation in container tariffs increasing costs and causing delays, and the energy surge especially in Europe and China further complicating supply chains and resulting in cost hikes that could impact profitability. IVL was able to leverage its leadership position to levy surcharges in Q4 in order to recuperate some of the increased energy costs. Management responded with agility, working closely with customers to fulfill their needs and growing our sales amidst these disruptions. Despite the challenges, there were a number of tailwinds supporting IVL in 2021 which contributed to the record performance achieved. IVL's presence in premium western markets led to margin improvement coming from higher import parity pricing as a result of high freight rates. Our performance in the last quarter of 2021 specifically benefited from the introduction of China's dual control policy that caused production disruptions, resulting in higher polyester value chain margins.

IVL's global footprint draws integrated premiums over Asian benchmarks and protection against geopolitical risks, while strong integration levels allow IVL to capture value from the entire chain. For the Integrated PET vertical, this unique model has resulted in IVL spreads consistently outperforming industry reference spreads, with premium Western markets making up 71% of EBITDA share of the total business in 2021. Supply chain disruptions and related uncertainties are driving trade preferences for locally sourced goods. IVL's balanced footprint across Americas, Europe and Asia makes us a supplier of choice.



Glanzstoff Bohemia, Czech Republic

## FINANCIAL HIGHLIGHTS 2021

Total Sales Volume  
**14.8** million tons

**+5%**

Total Revenue  
US\$ **14,629** million

**+38%**

Core EBITDA  
US\$ **1,743** million

**+55%**

Core Net Profit after Tax and NCI  
US\$ **684** million

**+234%**

Operating Cash Flow  
US\$ **1,055** million

**-24%**

Core Earnings per Share  
THB **3.76**

**+2.48 THB**

**TRIS**  
Rating

**AA-**

# KEY HIGHLIGHTS 2021

FOR MORE INFORMATION



## ENVIRONMENTAL



Total energy consumption  
**109.5** million GJ

+5%

Total energy intensity  
**6.63** GJ / ton of production

-1.5%

Total renewable energy consumption  
**2.8** million GJ

+59%

Total renewable electricity consumption  
**7.5%**

+4.58%



GHG emissions (scope 1) intensity  
**0.439** tCO<sub>2</sub>e / ton of production

-3%

GHG emissions (scope 2) intensity  
**0.150** tCO<sub>2</sub>e / ton of production

-3%

GHG emissions (scope 1&2) intensity  
**0.589** tCO<sub>2</sub>e / ton of production

-3%



Total water withdrawal intensity  
**5.33** m<sup>3</sup> / ton of production

+0.4%

Total recycled / reused water  
**5.93%**

-0.62%



Hazardous waste intensity  
**0.0085** tons / ton of production

+16%

Waste diverted from landfill  
**78%**

+8%



## RECYCLING



Recycling of post-consumer PET bale input  
**317,064** tons

+43%

**1,591,292** tons  
(Since 2011 - Dec 2021)



Recycled  
**14.3** billion PET bottles

+43%

**72** billion PET bottles  
(Since 2011 - Dec 2021)



Reduced carbon footprint in their life cycle  
**0.5** million tons

+43%

**2.4** million tons  
(Since 2011 - Dec 2021)

**CELEBRATE WITH US**  
Since 2011, we have achieved

**75** billion PET bottles RECYCLED ON 24 MARCH 2022 AND COUNTING

with a total reduced GHG emission of **2.50 million tons**



## SOCIAL

### HUMAN RESOURCES

Total Workforce  
**25,760**

+2.19%

Gender Diversity  
**22%**

Employee Engagement  
**76.20%** (NPS)

Average Training  
**29.92** hours

+61%

Overall Employee Attrition  
**11.42%**

+35%

### OCCUPATIONAL HEALTH AND SAFETY

Total Recordable Injury Rate: TRIR  
**0.98** cases per 200,000 man-hours

+11%

Lost Time Injury Frequency Rate: LTIFR  
**0.66** cases per 200,000 man-hours

+38%

### CORPORATE SOCIAL RESPONSIBILITY

Total CSR contribution  
US\$ **1.65** million

+51%

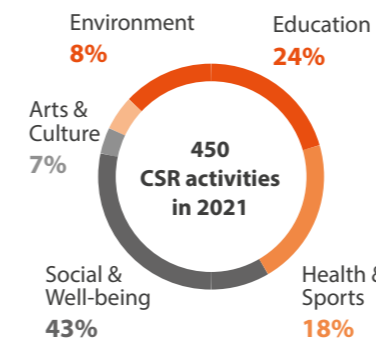
Total in-kind giving  
US\$ **200,981**

-20%

**9,493**  
Volunteer hours

Recycling education  
**2,751** people educated

Educated  
**53,585** individuals since 2018



## ECONOMIC & GOVERNANCE

### CORPORATE GOVERNANCE POLICY AWARENESS CAMPAIGN (CGPAC) IMPLEMENTATION REPORT 2021

**87%** Employee attendance

### HUMAN RIGHTS DECLARATION

**90%** signed by Business Heads

**92%** signed by Site Heads

### SUSTAINABILITY CAPEX

**US\$ 44.7** million

### INNOVATION VITALITY INDEX

Fibers Business  
**23%**

Combined PET Business  
**31%**

IOD Business  
**22%**

### CUSTOMER SATISFACTION STUDY\*

**86.16%**  
Customer Satisfaction Index

**92%**  
Customer Retention Rate (CRR)

**57**  
Net Promoter Score (NPS)

\* A formal customer satisfaction study was conducted every other year as part of our group sustainability strategy. This study was conducted in 2020.

# OUR APPROACH TO SUSTAINABILITY

IVL is committed to embedding sustainability at the core of our decision-making processes and ensuring its strategic integration across our value chain by leveraging risks, obligations, and opportunities across economic, environmental and social areas.

Mindful of the sustainability needs our stakeholders, we utilize the insights of both their pressing and emerging interests or concerns by engaging them in stakeholder dialogues, which helps us in prioritizing topics that are material to our business. We respond by developing new products and improving our value chain in our pursuit of a circular economy and greener planet.



## SUSTAINABILITY FRAMEWORK

The motivation behind our sustainability efforts transcends financial profitability, as we view sustainability as a critical element in making sound business decisions that have a positive impact on social, economic and environmental factors globally. Sustainability is, therefore, just as important as all of the other business components.

IVL aims to “be a world-class sustainable chemical company making great products for society,” and our comprehensive sustainability framework is helping in achieving this objective. Our sustainability aspirations are to:

- Achieve Net Zero Carbon to sustain our world and business.
- Improve lives through sustainable and affordable products.
- Be a trusted partner to the global community.

For more information on our strategic priorities, metrics and overall framework, please refer to our website.



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

## VISION 2030

'Vision 2030' outlines our ambition to grow organically with a focus on sustainability, guided by our new purpose statement: Reimagining Chemistry Together to Create a Better World.

Going forward, we plan to invest in carbon capture technologies, increase renewable energy consumption, and phase out coal. Additionally, we aim to invest more in PET recycling and introduce bio-based feedstock in about a third of our polyester-based value chain. To future-proof the Company, efforts are currently being taken to develop leaders with a growth mindset and empower them with the right tools to lead.



# VISION 2030



# IVL PURPOSE STATEMENT

**“Reimagining Chemistry Together to Create A Better World”**

- 1 Our 3 segments are strong and well-positioned for future growth
- 2 Preparing ourselves for the new world of sustainability and circularity
- 3 Strong financial performance with ample headroom to deliver our vision



# CHEMISTRY CONNECTED

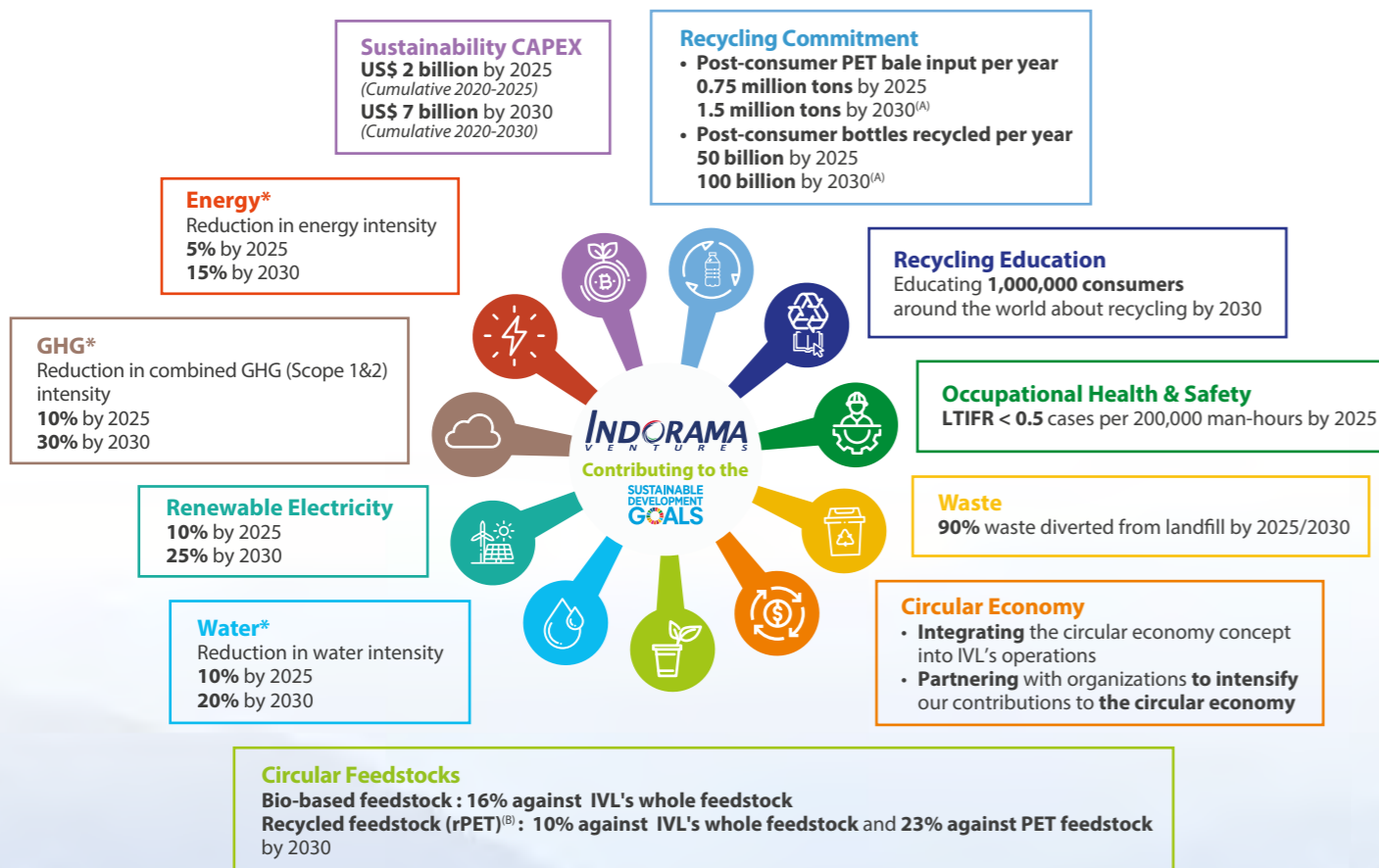


# OUR SUSTAINABILITY AMBITIONS TOWARDS NET ZERO CARBON

## FOCUSING ON SHORT AND MEDIUM-TERM TARGETS

Our 2025 and 2030 targets include agendas and initiatives that directly correspond to the world's most critical sustainability concerns. Our goals are designed to challenge us in addressing society's most pressing issues with a sense of urgency. Please refer to the "Key Highlights of 2021" on pg. 24-25 for more information on our progress mapped against our targets.

On 31 May 2022, we officially committed to science-based targets agreeing to align our decarbonization plan with the latest climate science limiting temperature rise to below 1.5 °C. We will continue to refine our targets and have them validated by the Science-Based Targets Initiative within the 24-month deadline.



Remark: IVL Vision 2030 recycling ambition,  
(A) 3.13 million tons and 200 billion bottles per year  
(B) 21% against whole IVL feedstock and 48% against PET feedstock

\* Base year 2020

## OUR DECARBONIZATION STRATEGIES

Our new Decarbonization Strategy, an enhancement of our 2025 Climate Ambitions, was developed to provide a more focused approach to our ambitious climate targets.

OUR DECARBONIZATION STRATEGIES	TARGETS
 <b>Improving Operational Efficiency</b> Investing in operational and energy efficiency projects to reduce direct and indirect emissions	Increase in output production but with a decrease in GHG intensity 10% by 2025 and 30% by 2030.
 <b>Renewable Electricity</b> Decarbonizing IVL's energy consumption by onsite and offsite renewable electricity projects	Reduction in energy consumption and 5% energy intensity reduction by 2025 and 15% by 2030.
 <b>Recycling</b> Investing in and expanding recycling facilities to address plastic pollution and reducing lifecycle carbon emissions	Increase PET bale input to 0.75 million tons by 2025 and 1.5 million tons by 2030, while the bottles recycled per year and increase to 50 billion by 2025 and 100 billion by 2030.
 <b>Circular Feedstocks</b> Replacing fossil fuel-based feedstocks with bio-based and recycled feedstocks	Achieve 16% biomass usage and 10% rPET usage in manufacturing by 2030, through reduced non-renewable raw material input.
 <b>Future Technologies</b> Exploring opportunities for CCUS, green hydrogen, bio/renewable feedstocks, and Renewable Natural Gas (RNG)	Reduction in energy intensity and combined GHG Scope 1 & 2 intensity.
 <b>Natural Capital Solutions</b> Exploring partial/full ownership of carbon offsetting projects	Reduction in GHG Scope 1 & 2 intensity.

We take climate science seriously through measurable actions to reduce the rising of global temperatures. We are a signatory to the Task Force on Climate-related Financial Disclosures (TCFD), continually monitor and adapt our business activities and decisions to ensure that sustainability governance is a key foundation for our business success and are finalizing our commitments towards the Science - Based Targets initiative (SBTi).



# SUSTAINABLE VALUE CREATION



## VALUE CREATION MODEL

As we continue to further embed the principles of the International Integrated Reporting Council's (IIRC) International Integrated Reporting <IR> Framework in our disclosures, we have advanced our Sustainable Value Creation Model. This year, we included information on the availability, quality and affordability of capital to further articulate how these inputs affect our long-term viability and highlight our capacity to adapt to changes. We have also included an indicator to track the capitals linked to our outputs, which provide an important context to the information provided.

INPUT	FOCUS	OUTPUT	OUTCOME	IMPACT					
<b>Six Capitals</b> <b>Financial Capital</b> US\$ 5,117 million in total equity US\$ 5,292 million in current assets	<b>Availability, Quality and Affordability</b> Operating in an environment with new acquisitions and upcoming plants to strengthen position as a leading sustainable chemical company.  Constantly on the lookout for new mergers and acquisitions to strengthen our supply chain. This highly integrated global footprint strategy ensures operations can weather unforeseen disruptions satisfactorily.  Adopting more efficient and sustainable practices reduces capital needed to sustain business operations. Moving towards the Net Zero Carbon through our decarbonization strategies and responsible operation.  To avoid a shortage of talent, we actively invest in developing necessary talent and skills for our employees to take on bigger responsibilities and become a future ready organization.  Trust is important for a corporation to thrive; therefore, we readily invest in education programs that promote recycling, encourage safety & wellness throughout our operations and ensure we always have a positive impact on people and the environment.  We invest in developing new innovations to not only remain a market leader but also develop new techniques and processes to reduce our impact on the environment and create new sustainable products.	<b>Our Vision</b> To be a world-class sustainable chemical company making great products for society.  <b>Our Mission</b> We commit to be a responsible industry leader leveraging on the excellence of our people, processes, and technologies to create values for our stakeholders.  <b>Purpose Statement</b> Reimagining Chemistry Together to Create A Better World		<b>Total Production Volume</b> 14.72* million tons 16.51# million tons	<b>Financial Capital</b> Total Revenue = US\$ 14.6 billion Core EBITDA = US\$ 1,743 million Core Earning per Share (EPS) = THB 3.76	<b>Better Growth</b> Future-proofing our organization, leveraging on new ways of working  Great Products for Society Circular Economy  Contributing to the SDGs			
<b>Manufactured Capital</b> 124 sites in 33 countries in 6 continents including 16 recycling facilities				<b>IOD Business</b> Production volume 2.24* million tons Core EBITDA US\$ 377 million	<b>Manufactured Capital</b> 14.3 billion PET bottles recycled, 317,064 tons of PET bale input 222,205 tons of flake production 0.0234 tons / ton of production waste intensity 78% waste diverted from landfill		<b>Better Environment</b> Working together with partners to decarbonize our operations  Net Zero Carbon Recycling to End Plastic Waste  Contributing to the SDGs		
<b>Natural Capital</b> Total material consumption = 15.97 million tons Energy consumption = 109.5 million GJ Water consumption = 88.1 million m <sup>3</sup> Renewable energy = 2.8 million GJ				<b>Combined PET Business</b> Production volume 10.73* million tons Core EBITDA US\$ 1,103 million	<b>Natural Capital</b> 1.5% reduction in total energy intensity 3% reduction in combined GHG (Scope 1&2) intensity 5.33 m <sup>3</sup> / ton of production water intensity 0.0085 tons / ton of production hazardous waste intensity 5.93% water reused and recycled 143,175 tons GHG reduction from renewable energy consumption (Biogas, biomass, renewable electricity)			<b>Better Life</b> Reimagining our products for value, performance and the environment  Health & Safety Well-being & Empowerment  Contributing to the SDGs	
<b>Human Capital</b> A highly qualified, experienced and diverse board 25,760 total workforce US\$ 2,400,000 total training cost				<b>Fibers Business</b> Production volume 1.75* million tons Core EBITDA US\$ 268 million	<b>Human Capital</b> 22% female 29.92 average training hours 11.42% overall attrition rate 0.98 cases per 200,000 man-hours in TRIR 0.66 cases per 200,000 man-hours in LTIFR				
<b>Social and Relationship Capital</b> US\$ 1.65 million in CSR contributions				* Excluding inter-company sales # Including inter-company sales					<b>Social and Relationship Capital</b> 86.16% overall Customer Satisfaction Index (CSI) 92% overall Customer Retention Rate (CRR), NPS = 57 450 CSR activities, 2,751 people received recycling education
<b>Intellectual Capital</b> US\$ 22.7 million in R&D spending 214 R&D employees 21 R&D centers				<b>Intellectual Capital</b> Vitality Index: 31% in Combined PET Business, 23% in Fibers Business, 22% in IOD Business 696 new products, 121 collaborative projects 74 Patents (applied and granted out of overall 958 patents) R&D spend aligned with green products: 65% in Combined PET Business 50% in Fibers Business					

Trade-Offs	Impacted Capital	IVL's Strategy
Increased production volume versus environmental footprint	Manufactured Capital • Production +7%  Natural Capital • Energy intensity -1.5%	We invest heavily in minimizing environmental impacts as we increase production quantities and drive economic growth.  Our focus in enhancing the operations of existing and newly acquired facilities and an emphasis on renewable energy sources successfully resulted in 7% organic growth with a lower consumption intensity.  Please refer to our Environmental Performance on pg. 161-166 for more information.

Trade-Offs	Capitals Impacted	IVL's Strategy
Vertical integration versus dependency on suppliers	Financial Capital • Financial Equity +13%	Vertical integration is significant in reducing supply chain risks and boosting business growth. Thus, we acquired Oxiteno, a renowned integrated surfactants producer and CarbonLite, a leading PET recycling capacity in 2021.  We ensure that our vertical integration does not impact the close relationships with our current suppliers, especially local ones, whom we regard as vital stakeholders in our value chain.  We closely adhere to sustainability policies and safeguard human rights by practicing supplier assessments as our way to implement sustainable practices within our supply chain.  Please refer to the Supply Chain Management section on pg. 92-95 for more information.

# EXTERNAL ENVIRONMENT AND OUTLOOK

We understand and respond to micro and macro influences in local, national, regional and global environments to grow our business and sustainability. This is supported by robust governance, planning and implementation systems. Leveraging these internal mechanisms gives us the foresight and confidence to continuously improve across all business spheres by responding to opportunities and managing the short, medium and long-term risks.

## GLOBAL ECONOMIC FACTORS

Our business operations in 33 countries navigate diverse legal and regulatory frameworks and are influenced by local, national and global operational contexts. We apply an integrated risk-based approach to remain compliant and keep abreast of these influential factors.

### Challenges

- Continuing US-China trade war tariffs
- Inconsistent or unexpected changes in foreign laws, currency controls and tax regulations
- Changes in international tax treaties
- Plastics tax in Europe
- Introductions of carbon taxes in countries where IVL operates (e.g. in the Netherlands, Canada, US)
- Increased political polarization leading to restrictive legislation

### Opportunities

- Vertical integration of the business to prevent supply chain disruptions
- Developing cost-optimization strategies for improved revenue margins
- Establishing a presence in more countries and build trust with local communities by investing regularly in local initiatives

## INCREASED MARKET COMPETITION

We recognize the growing production capacities and competitive advantages of global emerging markets and maintain our competitive edge by prioritizing innovation throughout our business and closely monitoring market competition in the development, production and distribution of comparable products.

### Challenges

- Competition among 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 rapidly influencing regulations, access to capital and consumer expectations. We believe that businesses must be responsible, ethical and efficient in their long-term responses to evolving regulatory requirements while meeting stakeholder expectations, protecting the environment and practicing sustainability. This presents a value creation opportunity to shift to a circular economy and continue significant investments in new technologies to drive operational efficiency and circular product stewardship.

### Challenges

- Increase in carbon pricing
- Increase in consumer 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 their business models

## HUMAN CAPITAL

A skilled, thriving workforce is the foundation of successful businesses. As COVID-19 forces businesses to transcend traditional human resources frameworks, it is crucial for IVL, as a leading chemicals company, to develop a future-proof workforce. We are, therefore, increasing our focus on boosting employee resilience and well-being to close the gap in global skills.

### Challenges

- Shortage of global talent
- COVID-19 impact on employee development
- Attrition and retention 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 for senior and middle management positions
- Developing the talent pipeline via collaborations with external institutions, such as schools and universities

## GLOBAL HEALTH CRISIS

IVL prioritizes our people, customers and suppliers while navigating the financial and operational challenges imposed by COVID-19. The right actions by supply chain leaders have the potential to transform massive complexity and supply chain disruptions into positive impacts.

### Challenges

- Disruption to international supply chains
- Unexpected workforce shortages due to illness

### Opportunities

- Empowering communities through strategic contributions
- Exploring more efficient modes of work
- Incentives to innovate and future proof work processes to increase business resilience
- Promoting employee hygiene to stop the spread of illnesses in a production site or office



# OUR OUTLOOK TOWARDS 2024

At the annual Capital Markets Day, we announced our three-year business plan to leverage our global footprint, ongoing transformation initiatives, and high levels of integration across the company's three business segments to drive earnings growth, extract efficiencies, and lift productivity.

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.

## FIVE STRATEGIC PILLARS OF IVL'S 2024 BUSINESS PLAN


Cost Transformation	Full Asset Potential	Adjacency Growth	Recycling Leadership	Leadership Development
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We achieved a ROCE of 12.2% in 2021 (compared to 5.6% in 2020) and are well-positioned to continue our growth trajectory to achieve 15+% ROCE by 2024 with disciplined capital allocation resulting in US\$ 5-6 billion in free cash flow, creating headroom for future growth.

## THREE PRIORITY AREAS

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

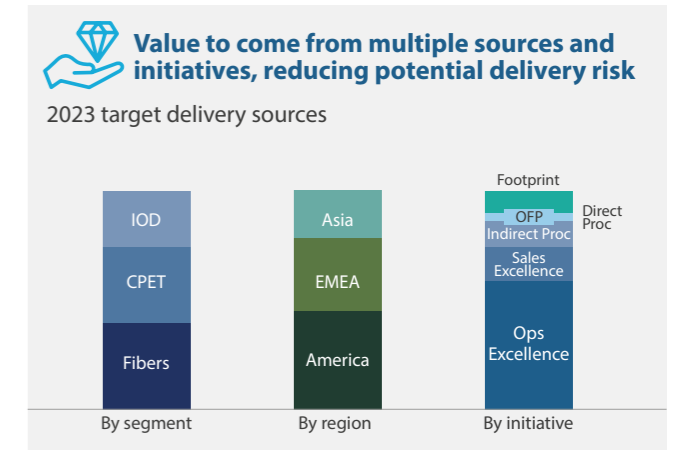
## BUSINESS SEGMENTS

 <p><b>Combined PET</b></p> <p>Focus on manufacturing, functional excellence and procurement efficiency.</p>	 <p><b>Integrated Oxides and Derivatives (IOD)</b></p> <p>Focus on the integration of existing facilities to streamline costs and future digitization initiatives for procurement, supply chain and commercial excellence.</p>	 <p><b>Fibers</b></p> <p>Focus on margin expansion, cost innovation, asset efficiency and preparing for the next cycle of growth.</p>
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## PROJECT OLYMPUS

Initiated in 2020, Project Olympus is our overarching cost transformation program. Currently, we are ahead of schedule for this project's second year **by +2%** in terms of cost-savings and **on track to meet our 2023 target of US\$ 610 million**. Encouraged by an internal assessment and outstanding performance over the past two years, whereby we over delivered in the past two years, we identified further initiatives in multiple areas so that we can achieve cost excellence and increased our Project Olympus ambition to **deliver US\$ 670+ million in EBITDA on an annual basis** by 2024 comprising over 100 cost transformation and full business potential initiatives.



## DRIVING IVL'S BUSINESS GROWTH

To support our growth and achieve our sustainability ambitions, we developed six enabling functions which are steered by experienced professionals identified within the organization and recruited from the industry. These enabling functions will help us execute our strategic and operational plans in line with our vision and mission.

<p><b>Business Continuity</b></p> <p>Value protection and creation through consistency, compliance and effective risk and BCM practices</p>	<p><b>Communications</b></p> <p>Strategic communications that promote our global business value</p>	<p><b>Digital</b></p> <p>Offering world-class digital capabilities that drive business value and create a competitive advantage</p>	<p><b>Environment, Health and Safety (EHS)</b></p> <p>Supporting our prosperity by ensuring that people and our planet are safe</p>	<p><b>Indorama Ventures Excellence (IVEX)</b></p> <p>Overseeing Lean Six Sigma implementation throughout IVL to enhance our operational capacity and efficiency</p>	<p><b>Sustainability</b></p> <p>Driving the creation of ESG and circular value and becoming a world-class sustainable chemical company</p>
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# STAKEHOLDER ENGAGEMENT

IVL is dedicated to building strong relationships with key stakeholder groups and committed to regular and proactive engagements with stakeholders, essential for our strategic management of sustainability. We leverage the insights of their pressing and emerging interests or concerns to increase our knowledge base, strengthen relationships, develop effective solutions and improve our business outputs. This helps us further nurture trust among stakeholder groups with diverse needs.

EMPLOYEES	
Topics of interest:	How we respond:
- Occupational health and safety	- A Safe and Healthy Workplace, pg. 127-134
- Human rights - Human capital development and recognition	- Workplace Human Rights, pg. 136-137 - Investing in Our People, pg. 138-149
How we engage and maintain our relationships:	The value we create:
- Our Global Employee Engagement Survey (GEE) seeks feedback from every employee regarding working at IVL. - Our Employee Health and Safety Policy, training programs and our ISO 45001/OHSAS 18001 certification. - Our Human Rights Policy, training is provided, and we implement a Workplace Human Rights Assessment Framework across our businesses.	<b>Better Growth</b> - Talent attraction and retention - Responsible operations - Business potential <b>Better Lives</b> - Human capital development - Safe and conducive workplace - Health and safety culture - Fair compensation - Zero human rights violations
CUSTOMERS	
Topics of interest:	How we respond:
- Good business ethics, supply chain management and compliance	- Responsible Business and Effective Governance, pg. 50-67 - Creating Strong Customer Relationships, pg. 90-91 - Supply Chain Management, pg. 92-95
- Recycling plastic waste, including a waste reduction target	- Continuous Improvements In Recycling, pg. 109-112
- Product stewardship	- Safe and Sustainable Products, pg. 83-87
- Net Zero Carbon target	- Decarbonization in Our Value Chain, pg. 102-108 - Special Report: IVL's Road to Net Zero Carbon, pg. 114-115
How we engage and maintain our relationships:	The value we create:
- 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. - 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.	<b>Better Environment</b> • Accelerating PET circularity • Circular economy thought leader • Reduce and end PET plastic waste <b>Better Growth</b> • Sustainable products • Cost-effective offerings • New and innovative alternatives • Strong brand value • Strong relationships • Business potential <b>Better Lives</b> • Safe and sustainable products • Health, safety and well-being

COMMUNITIES	
Topics of interest:	How we respond:
- Plastic waste and recycling	- Driving Circularity Through Stakeholder Partnerships, pg. 74-75
- Environmental preservation surrounding our areas of operation	- Towards Net Zero Carbon, pg. 98-121 - Special Report: Biodiversity, pg. 122-123
- Community engagement and human rights	- Empowering Our People and Communities, pg. 124-157
How we engage and maintain our relationships:	The value we create:
- As a PET manufacturer, we educate our communities to properly separate plastic waste for recycling. - We comply with environmental laws and regulations and are ISO 14001 certified. - We engage with our communities on an ongoing basis and work collaboratively to seek multi-beneficial solutions. - We maintain a strong license to operate via proactive and vibrant community engagement, which is of fundamental importance to IVL.	<b>Better Environment</b> - Safe and environmentally friendly products - Improved circularity - Cleaner and safer surrounding environment through green projects <b>Better Growth</b> - License to operate - Responsible operations - Strong relationships - Business potential <b>Better Lives</b> - CSR programs for communities - Recycling education - Health and well-being

SUPPLIERS AND PARTNERS	
Topics of interest:	How we respond:
- Good business ethics, supply chain management and corporate governance	- Responsible Business and Effective Governance, pg. 50-67 - Supply Chain Management, pg. 92-95
- Recycling and plastic waste	- Circularity Across Our Value Chain, pg. 72-73
- Occupational health and safety	- A Safe and Healthy Workplace, pg. 127-134
How we engage and maintain our relationships:	The value we create:
- Many of our supplier relationships have endured for many years and we are proud of our partnerships. - We seek formal assurances upon signing contracts and conduct regular supplier ESG assessments. - Engaging with our suppliers and partners in developing new circular products, e.g. PPE suits. - Ensuring a safe working environment for our suppliers and contractors.	<b>Better Environment</b> - Improved circularity - Reduce and end PET plastic waste <b>Better Growth</b> - Fair and transparent partnership opportunities - Fair and timely compensation - Promote sustainability via our Supplier Code of Conduct - Responsible operations <b>Better Lives</b> - Health, safety and well-being - Recycling education

GOVERNMENT AND REGULATORS	
Topics of interest:	How we respond:
- Regulatory compliance, risk management, corporate governance	- Emerging Risks and Opportunities, pg. 45 - Major Industry Associations and Memberships, pg. 47 - Responsible Business and Effective Governance, pg. 50-57
- Legislation and policy advocacy	- Driving Sustainable Value Creation and Growth, pg. 68-97
- Circular economy	- Towards Net Zero Carbon, pg. 98-123
- Energy intensity and emissions - Net Zero Carbon	- Empowering Our People and Communities, pg. 124-157
- Health & Safety - Community engagement	
How we engage and maintain our relationships:	The value we create:
- Maintaining strong relations with regulators is essential as we operate in multiple regions with various types of legislation. - We regularly participate in global forums and summits to support new policies towards a sustainable future.	<b>Better Environment</b> - Input for policy development - Partnerships and collaborations to support sustainable regulatory policies <b>Better Growth</b> - Thought leadership

**BANKERS, INVESTORS AND FUND PROVIDERS**

Topics of interest:	How we respond:
- Regulatory compliance, risk management, good business ethics, customer relationship management and corporate governance	- Emerging Risks and Opportunities, pg. 45 - Responsible Business and Effective Governance, pg. 50-67 - Special Report: Securing Sustainable Financing, pg. 96-97
- Recycling and plastic waste	- Driving Sustainable Value Creation and Growth, pg. 68-97 - Continuous Improvements in Recycling, pg. 109-112
How we engage and maintain our relationships:	The value we create:
- Ongoing engagement through face-to-face and 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.	<b>Better Growth</b> - Return on investment - Strong business performance - Sustained and long-term profitability - Transparency via regular and timely reporting

**CONSULTANTS**  
(In the areas of business, finance, sustainability, the environment, and IT)

Topics of interest:	How we respond:
- Corporate governance and good business ethics	- Responsible Business and Effective Governance, pg. 50-67
- Recycling and plastic waste	- Driving Sustainable Value Creation and Growth, pg. 68-97
- Climate change	- Towards Net Zero Carbon, pg. 98-123
- Occupational health and safety	- Empowering Our People and Communities, pg. 124-157
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.	<b>Better Growth</b> - Shared growth in industry specific sustainability knowledge through engagements - Agile and resilient business <b>Better Lives</b> - Strong communications and collaborations

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



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

# COMMITTED TO A SUSTAINABLE FUTURE

Indorama Ventures PCL (IVL), a global sustainable chemical company, is honored to be listed on

**the Dow Jones Sustainability World Index** for the third consecutive year and  
**the Dow Jones Sustainability Emerging Markets Index** for the fifth consecutive year.

**IVL thanks our staff, customers, and partners** for continuously contributing to our sustainability commitment.



The Dow Jones Sustainability Indices (DJSI) are global benchmarks, looking at sustainability-driven companies. Companies are only listed if they are best-in-class within their industry for sustainability.

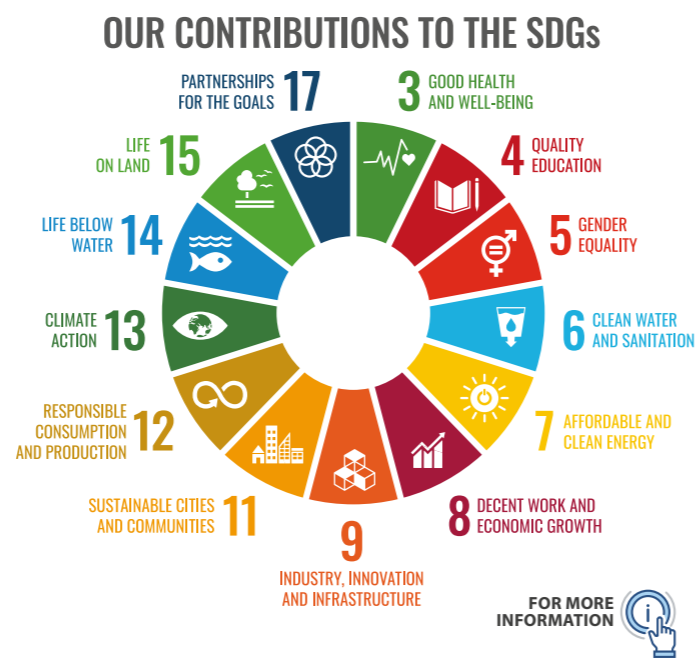
[www.indoramaventures.com](http://www.indoramaventures.com)



# OUR CONTRIBUTIONS TO THE UN SDGs

The United Nations Sustainable Development Goals (UN SDGs) call on corporations worldwide to advance sustainable development through the investments they make, the business practices they adopt and the solutions they develop. In doing so, the goals encourage companies to reduce their negative impacts while enhancing their positive contribution to the sustainable development agenda.

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 2021, IVL SDGs Reports and in the SDGs section on our website.



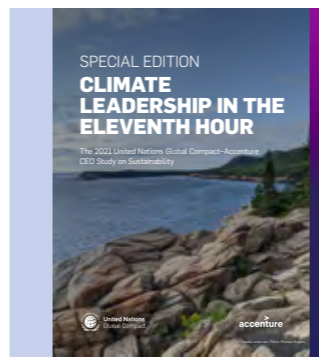
## TARGETS

<p><b>3 GOOD HEALTH AND WELL-BEING</b></p> <p><b>LTIFR</b> per 200,000 man-hours <b>&lt; 0.5 cases</b> by 2025 <b>&lt; 0.1 cases</b> by 2050 2021 result: 0.66 cases</p>	<p><b>4 QUALITY EDUCATION</b></p> <p><b>Educating 1 million consumers</b> around the world about recycling education by 2030 2021 result: 53,585 consumers (cumulative 2018-2021)</p>	<p><b>5 GENDER EQUALITY</b></p> <p><b>No human rights violations</b> 2021 result: No Human Rights Violations</p>
<p><b>6 CLEAN WATER AND SANITATION</b></p> <p><b>Reduction in water intensity</b> <b>10%</b> by 2025 <b>20%</b> by 2030 2021 result: +0.48%</p>	<p><b>7 AFFORDABLE AND CLEAN ENERGY</b></p> <p><b>Renewable electricity consumption</b> <b>10%</b> by 2025 <b>25%</b> by 2030 2021 result: 7.5%</p>	<p><b>8 DECENT WORK AND ECONOMIC GROWTH</b></p> <p><b>LTIFR</b> per 200,000 man-hours <b>&lt; 0.5 cases</b> by 2025 <b>&lt; 0.1 cases</b> by 2050 2021 result: 0.66 cases</p>
<p><b>9 INDUSTRY, INNOVATION AND INFRASTRUCTURE</b></p> <p><b>Sustainability CAPEX</b> <b>US\$ 2 billion</b> by 2025 <b>US\$ 7 billion</b> by 2030</p> <p><b>Vitality Index in 2022</b> Fibers Business = <b>23%</b> Combined PET = <b>31%</b> IOD = <b>22%</b> 2021 result: Fibers Business = 23% Combined PET = 31% IOD = 22%</p>	<p><b>11 SUSTAINABLE CITIES AND COMMUNITIES</b></p> <p><b>90% waste diverted from landfill</b> by 2025/2030 2021 result: 78% waste diverted from landfill</p>	<p><b>12 RESPONSIBLE CONSUMPTION AND PRODUCTION</b></p> <p><b>Bottles recycled per year</b> <b>50 billion</b> by 2025 <b>100 billion</b> by 2030 <b>PET bale input per year</b> <b>0.75 million tons</b> by 2025 <b>1.5 million tons</b> by 2030 2021 results: 14.3 billion bottles 0.317 million tons</p>
<p><b>13 CLIMATE ACTION</b></p> <p><b>Reduction in combined GHG (Scope 1&amp;2) intensity</b> <b>10%</b> by 2025 <b>30%</b> by 2030 2021 result: 3%</p>	<p><b>14 LIFE BELOW WATER</b></p> <p><b>PET bale input per year</b> <b>0.75 million tons</b> by 2025 <b>1.5 million tons</b> by 2030 diverted from ocean 2021 result: 0.317 million tons</p>	<p><b>15 LIFE ON LAND</b></p> <p><b>PET bale input per year</b> <b>0.75 million tons</b> by 2025 <b>1.5 million tons</b> by 2030 diverted from landfill 2021 result: 0.317 million tons</p>



# ENGAGEMENT WITH THE UNGC

We publish our **Communication on Progress (COP) annually** which is available in our 2021 Sustainability Report and on the UN Global Compact (UNGC) website. In recognizing the important work being done by the UNGC on climate change, we moved to actively support and contribute to the UNGC as a signatory since 2019. Its core values resonate with us, contributing to our implementation of a robust strategy that supports its 10 principles.



In the 2021 **United Nations Global Compact-Accenture CEO Study special edition on sustainability, entitled 'Climate Leadership in the Eleventh Hour'**, our GCEO shared his perspective on the affordability and knowledge constraints, particularly with countries from the Global South where 65% of CEOs believe they are restricted by the price of sustainability-enhancing technology.

"Few plastic industry players are confident in recycling investments because the technology is not fully developed, and it is unclear who will own the cost".

**GCNT FORUM 2021**  
Thailand's Climate Leadership Summit

**A NEW ERA OF ACCELERATED ACTIONS**

Click here to watch VDO

Rightly themed "A New Era of Accelerated Actions," our annual participation in the Global Compact Network Thailand (GCNT) Forum 2021: Thailand's Climate Leadership Summit saw us strengthen our commitment towards sustainability. **We signed a joint declaration to achieve Net Zero by 2050**, or no later than 2070, alongside other leading companies and the private sector in Thailand.



**Mr. Yash Lohia, Chairman of the ESG Council, revealed IVL's perspective on CO<sub>2</sub> emissions reductions and the Circular Economy of PET in the GCNT publication "SDGs Mega Trends 2022: New trends for private sectors to transform business and tackle climate change"**

"IVL believes that the circular economy is the next industrial revolution. When consumers choose PET and use their collection system, the recycling infrastructure must be in place to close the loop and keep the material in the economy. PET can help meet our climate goals. Especially when we are making it in a sustainable way. IVL is shifting from conventional to renewable energy sources. This allows us enormous possibilities to reduce our carbon footprint and achieve our Net Zero Carbon."

In addition, we participated in the **GCNT's "We Shift... World Change" television program**, demonstrating how our Recycling Education program contributes towards a circular economy for future generations. In advocating sustainable development, the program captured the ideas, initiatives, business directions and experiences of leading private sector companies putting the SDGs into action.

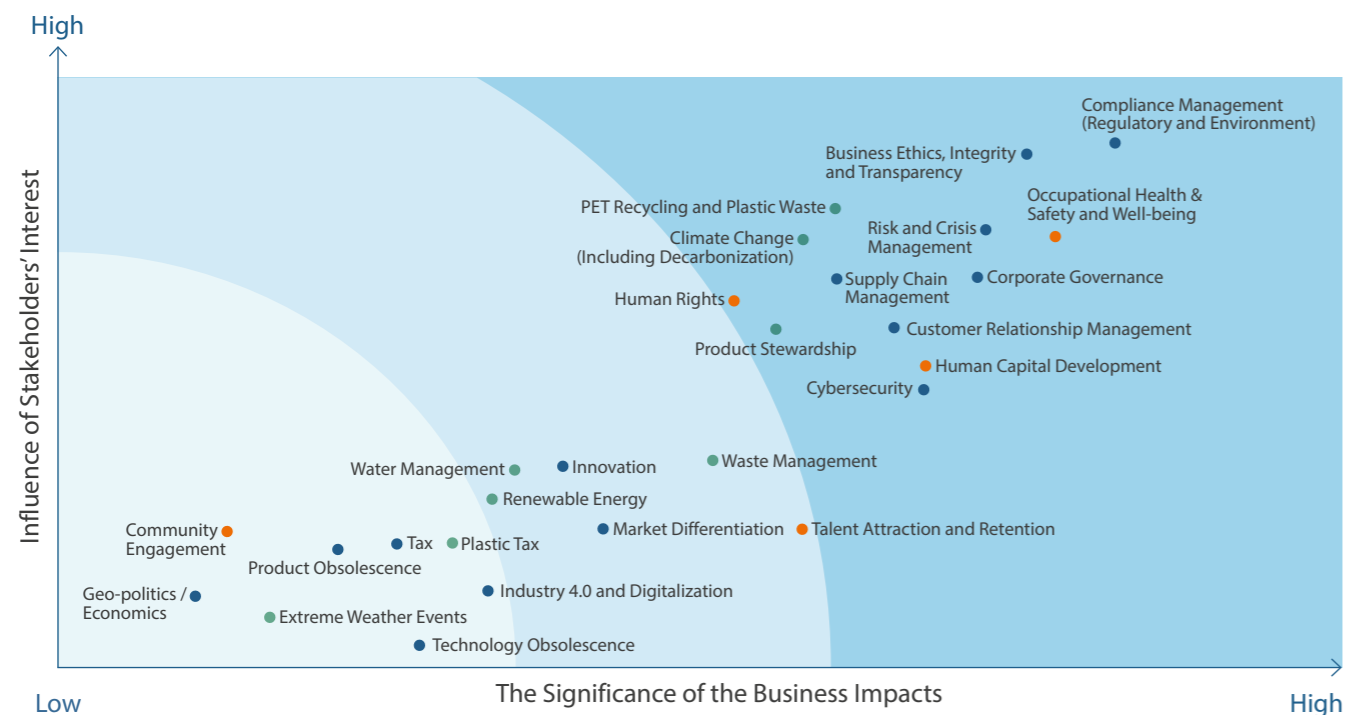
We reaffirmed our commitment to climate change and are well-positioned to achieve positive impacts going forward. We are extremely grateful for the unwavering support of our stakeholders who continue to help us navigate mounting challenges while enabling us to work towards achieving Net Zero Carbon.

# IVL'S MATERIALITY ASSESSMENT FOR MORE INFORMATION

IVL's materiality assessment is conducted biennially and is in alignment with the Global Reporting Initiative (GRI) standards to identify and assess key environmental, social, governance and economic topics that significantly impact our business and stakeholders. An in-depth understanding of our material matters allows us to implement meaningful actions and address sustainability challenges.

Our latest materiality assessment was conducted in 2020, where we deepened our understanding of the interests, expectations and concerns of our global stakeholders. We derived our materiality matrix by analyzing, prioritizing and validating 28 topics, where 13 key material topics were identified. This enabled us to offer meaningful and transparent disclosures to stakeholders on our sustainability priorities and management, as well as informing our business strategy moving forward. For more information, please refer to our 2021 Materiality Assessment Summary.

The next materiality assessment for IVL is scheduled for 2022 to ensure that the initiatives and impacts we create continue to be relevant to our internal and external stakeholders.



### 13 Key Material Topics

#### ENVIRONMENT

- PET Recycling and Plastic Waste
- Climate Change (including Decarbonization)
- Product Stewardship

#### SOCIAL

- Occupational Health & Safety and Well-being
- Human Rights
- Human Capital Development

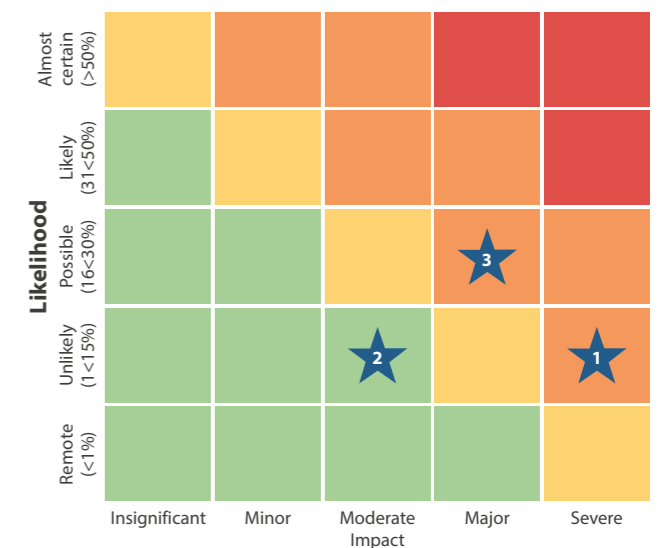
#### GOVERNANCE

- Compliance Management (Regulatory and Environment)
- Business Ethics, Integrity and Transparency
- Risk and Crisis Management
- Corporate Governance
- Customer Relationship Management
- Supply Chain Management
- Cybersecurity

# EMERGING RISKS AND OPPORTUNITIES

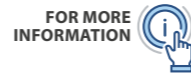
With our operations across different continents, we are especially focused on identifying various risk factors that could potentially have a short, medium, or long-term impacts on our business. Our internal risk management mechanisms and robust governance practices empower us to develop business strategies to effectively manage and mitigate these risks.

We have disclosed how we align our sustainability-linked material topics with **our top three emerging risks in this report**. For more information about other risks and our risk monitoring and control mechanisms, please refer to pg. 94 in our 2021 Annual Report and pg. 45 in this Sustainability Report.



Emerging Risks	Impacts and Opportunities	Risk Rating	Link to Material Topics	IVL's Response
1. Risk of increasing polarization in the world and protectionist sentiment in many countries may lead to new legislation and tighter restrictions impacting the movement of goods, services, capital, labour, technology, data, and information, thereby adversely affecting our business and operations.	<ul style="list-style-type: none"> <li>Opportunity to proactively invest in additional legal resources in key regions and specialty disciplines to support our business and better inform our Business Continuity Management strategies.</li> <li>Impact can be severe if there is a breach on compliance on regulation pertaining to changes in foreign laws; currency controls, tax regulations, and changes in international tax treaties; sanctions, the imposition of duties on imports; anti-dumping duties; data privacy, anti-corruption, environmental and regulatory requirements which could lead significant prosecution and fines, litigation including class actions, etc.</li> </ul>	Likelihood Unlikely  Impact Severe	Compliance Management (Regulatory and Environment)	Risks and Crisis Management, pg. 62-65
2. Accelerated global digital transformations and the interconnectedness and convergence of digital tools may lead to market disruptions, new business models, unconventional competitors and/or industry consolidation.	<ul style="list-style-type: none"> <li>Implement robust cybersecurity measures to be a trusted partner and leader in data privacy.</li> <li>Educate users of the risks of cyber threats and train them on safe usage of the system.</li> <li>Opportunity for continuous cybersecurity improvements.</li> <li>Expose to cyberattacks, data privacy infringements and critical systemic information infrastructure breakdowns</li> <li>Could not meet customer demands, secure the businesses, sustain growth and remain competitiveness</li> </ul>	Likelihood Unlikely  Impact Moderate	Cybersecurity	Cybersecurity Management, pg. 66-67
3. With the rise of a contactless economy and exchange, companies are expected to reinvent rules as employees seek new ways of working (such as remote work, flexible hours, or a synchronous work schedules) and life beyond work. The inability to adapt to a new work culture and redefine the workplace may weaken our Employee Value Proposition (EVP) and affect talent attraction and retention.	<ul style="list-style-type: none"> <li>Grow the Company's talent pool without geographic boundaries.</li> <li>Introduce a hybrid and flexible work culture.</li> <li>Provide developmental support to leaders to adjust to new remote leadership requirements.</li> <li>Fall short of attracting new talents, high turnover, more human capital investments</li> <li>Affect businesses, operations and company reputation</li> </ul>	Likelihood Possible  Impact Major	Human Capital Development  Occupational Health & Safety and Well-being	Retaining Talent pg. 143

# MAJOR SUSTAINABILITY AWARDS AND RECOGNITIONS



Our achievements and recognitions speak to the focused efforts of management, together with the outstanding commitment and efforts of our employees. It is important that we build on these successes and continue to aspire be “a world-class sustainable chemical company making great products for society.” The following are some of our key sustainability achievements:

Member of **Dow Jones Sustainability Indices**  
Powered by the S&P Global CSA  
**Sustainability Yearbook Member 2022**  
**S&P Global**

- Indorama Ventures was **recognized as a member in the S&P Global Sustainability Yearbook 2022** and was listed in the **Dow Jones Sustainability Indices (DJSI)-World and Emerging Markets for the third and fifth consecutive year respectively in the Chemicals sector.**
- IVL was ranked in the 97<sup>th</sup> percentile** among the top 139 global chemical companies.

**MSCI**

- Indorama Ventures was **graded BBB for the ESG rating in 2021.**

**SUSTAINALYTICS**

- Indorama Ventures achieved an **overall ESG at 7<sup>th</sup> out of 228.**

The company was given a strong management rating in managing its medium risk of experiencing material financial impacts from ESG factors.

**chemsec CHEMSCORE**  
ChemScore Report 2021

- IVL ranked **1<sup>st</sup> among 50 global chemical companies** accessed.

**CDP**  
DISCLOSURE INSIGHT ACTION

- Indorama Ventures **achieved a B Rating** in the CDP's Climate Change Assessment in 2021.

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**ecovadis**  
2021 Sustainability Rating

- Platinum Medal**, the highest award for sustainability performance.
- IVL **ranked in the top 1%** of all companies assessed worldwide, with above industry-average performances.

**THSI**  
THAILAND SUSTAINABILITY INVESTMENT 2021

- Indorama Ventures received the **2021 Thailand Sustainability Investment (THSI) Award for the seventh consecutive year.**

**GLOBAL CHILD FORUM**

- Indorama Ventures has been in **7<sup>th</sup> position with an overall score of 7.4/10 among 28 chemical companies** in the category of basic materials.

**FTSE4Good**

- Indorama Ventures **remained a constituent of the FTSE4Good Index Series.**
- IVL achieving an ESG score of **4.1 out of 5 ranked in the 95<sup>th</sup> percentile.**

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**Bloomberg**

- We achieved Rank #1 in the **Leading SET Index Bloomberg ESG Disclosure Scores** in 2020.

**BEST**  
Sustainability Excellence 2021

- IVL also received the **Best Sustainability Award at the SET Awards 2021.**

**Alpha**  
Southeast Asia  
**15<sup>th</sup> ANNUAL BEST DEAL & SOLUTION AWARDS 2021**

- Indorama Ventures was awarded **"Best Sustainability-Linked Transaction & Best ESG-Linked Financing Deal of the Year"** for its THB 10 billion Sustainability-Linked Bond (SLB).

# MAJOR INDUSTRY ASSOCIATIONS AND MEMBERSHIPS



As a leading chemical company, Indorama Ventures Pcl. demonstrates leadership in regards to driving sustainability development, innovation, product stewardship, creating positive impact on climate. Throughout 2021, we played an active role in various industry associations.

## WE ARE A MEMBER OF SEVERAL INDUSTRY ASSOCIATIONS INCLUDING:



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

- Europe**
- The Committee of PET Manufactures 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

- 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)

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

## AMERICAN CHEMISTRY COUNCIL (ACC)



IVL is an active member of the American Chemistry Council (ACC) and our GCEO, Mr. Alope Lohia, is on the ACC board, which focuses on setting organizational policies, approving the budget, determining advocacy priorities, and providing overall strategic direction for ACC.

This forum focuses on sustainability, energy, process safety, product stewardship, and security and provides a platform from which to collaboratively address environmental and social concerns. We continue to provide insights 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.

## 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.

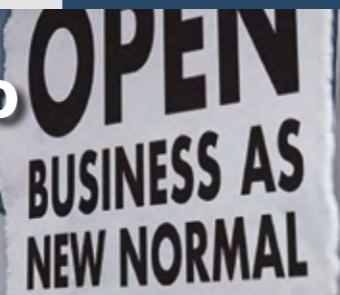
IVL's subsidiaries adhere to the 'Responsible Care' program, a voluntary commitment by the global chemical industry which asks that members and partners pledge to improve environmental, health, safety and security performance throughout their entire operating systems. In 2021, the Indorama Integrated Oxides and Derivatives segment and Indorama Ventures Oxides & Glycols LLC implemented and obtained external approval for an enterprise level RC 14001 certification for its headquarters and business support functions.

Other 2021 Responsible Care involvement included IVL's participation in revisions to the Process Safety Code, Product Safety Code, and Security Code, as well as collaboration on a committee to leverage best practices for Community Advisory Panels.



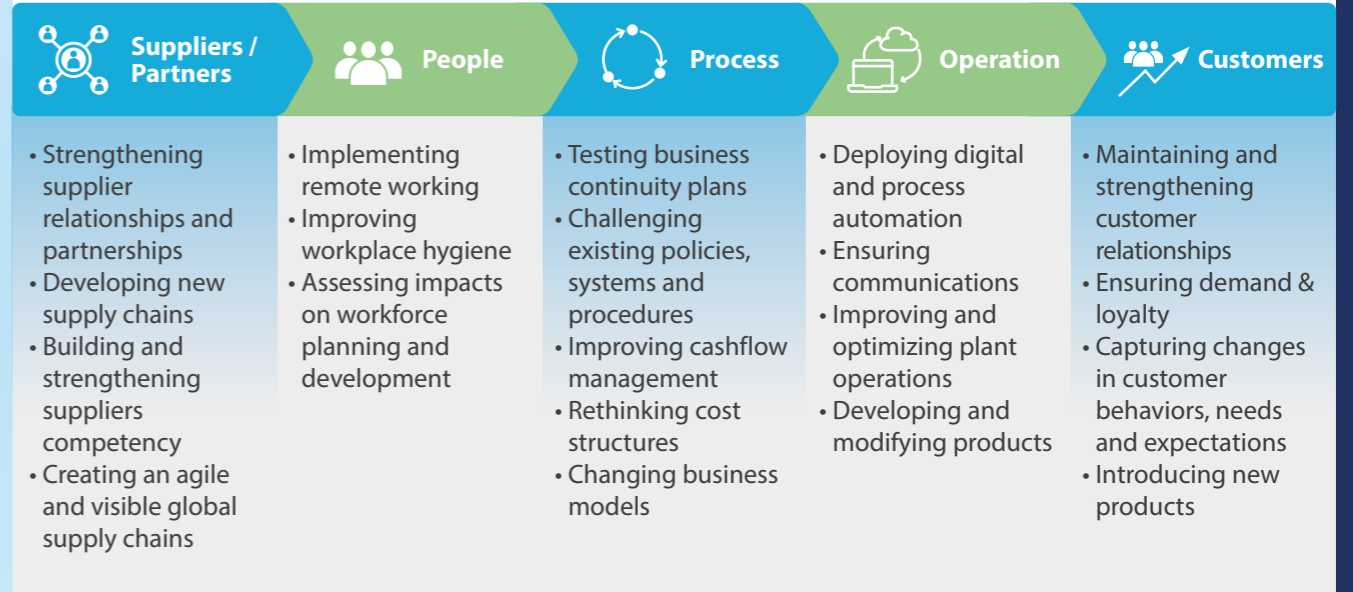
# SPECIAL REPORT

## Transformation to a New Normal for Business



In 2020, we witnessed a major disruption to supply chains in the wake of lockdowns triggered by COVID-19. The unfolding crisis caused a major global economic slowdown, with impacts acutely felt across all sectors by large and small businesses alike.

At the onset of the pandemic, the Indorama Management Council (IMC), composed of IVL leaders across functions and businesses, began closely monitoring IVL's response to COVID-19. The Business Continuity-enabling function monitors risks and works closely with local plant management to tactically address operational issues. They deployed our Business Continuity Management Plan to balance livelihood, the safety of our workforce and the endurance of our businesses.



### EMPLOYEE SAFETY AND WELL-BEING AMIDST COVID-19

As COVID-19 continued to unfold, taking care of our people was more important than ever. In 2020 and 2021, we implemented new health and safety SOPs in the workplace to protect our most valuable asset: our employees and their families, including safeguarding sites and ensuring compliance with local authorities. In living with COVID-19, we carried out certain key initiatives to protect our workforce while they performed their activities.

#### KEY COVID-19 EMPLOYEE SAFETY AND WELL-BEING INITIATIVES

Facilitated the vaccination of 8,900 employees at IVL's operations in Asia.	Global Employee Assistance Program that supports physical and mental well-being.	COVID-19 related corporate guidelines	Work from Home (WFH) policy with supply of key office equipment.
Routine cleaning and disinfection.	Improved ventilation systems.	Promoting personal hygiene and mask wearing.	Weekly COVID-19 newsletters.

### ADAPTING TO THE NEW NORMAL

In 2020 and 2021, the world made significant breakthroughs in the fight against COVID-19, yet the after effects still persist on many levels. With the ready availability of vaccines, the many COVID-19 variants are still a huge concern. Globally, people have adapted to the 'new normal', and behaviors and expectations continue to shift. Thus, to ensure our continued business resilience in the future amidst these uncertainties, we adopted strategic practices into our business plans as outlined below.



Global demand for medical face masks and critical filter materials quickly exceeded supply when confronted with the peak of the pandemic. This shortage endangered healthcare workers, the continuity of healthcare systems, and the overall response to the COVID-19 crisis. We closely studied this highly volatile situation for effective adaptation and prompt responses, while restrategizing to increase effectiveness in identifying opportunities to meet new demands due to changing consumer behaviors.



In 2021, we announced the EASY MASK - a strategic collaboration between IVL, DyeCoo and Stoll which was a fresh take on the traditional medical facemask. The reusable mask is made from 100% post-consumer recycled PET bottles. Similarly, in another effort to proactively contribute towards curbing the effects of COVID-19, our subsidiary Textilcord has invested in a production line for surgical masks which will produce 20 million pieces per year of innovative masks which can directly neutralize viruses on them.

Leveraging our expertise in PET plastics and recycling, IVL initiated a collaboration to collect and recycle post-consumer PET bottles into PPE for frontline healthcare workers. We supplied 28,000 reusable PPEs and 1,000 bedding sets to over 200 hospitals and medical institutions in Thailand, India and Brazil.

### COVID-19 CONTRIBUTIONS

Throughout 2020 and 2021, we actively embedded positive impacts into our COVID-19 relief efforts for our global communities through the IVL Foundation and group CSR activities. In 2020, the IVL COVID-19 Fund was established with US\$ 2.5 million in funds to provide the necessary in-kind supplies for communities and hospitals.

### MOVING FORWARD TO THE NEW NORMAL

The resilience of our employees and our robust crisis management plans contributed to our organic volume growth of 5% in 2020 and 7% in 2021, despite the COVID-19 related disruptions.

Our sincere gratitude goes to everyone who helped safeguard the well-being of our employees and we look forward to working alongside our partners, suppliers, customers and other stakeholders in delivering outstanding products that benefit society in 2022 and beyond.



# RESPONSIBLE BUSINESS AND EFFECTIVE GOVERNANCE



**Mr. Russell Leighton Kekuewa**  
Independent Director  
Member of the Sustainability and Risk Management Committee

**“We strive to do well by doing things the right way.”**

### VALUE CREATED

Our strong and robust governance mechanisms are designed to generate sustainable growth throughout our value chain to benefit IVL and key stakeholders, including our customers and suppliers.

**CAPITAL LINKED IN THIS CHAPTER**

		
Intellectual Capital (Organizational)	Social and Relationship Capital	Financial Capital

## HIGHLIGHTED CORPORATE GOVERNANCE PRACTICES AND AWARDS IN 2021



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



**A score of 100% for the 2021 Annual General Meeting of shareholders**, judged by the Thai Investors Association. This was our tenth consecutive year with a 100% score.



Successfully renewed our certification for Thailand's Private Sector Collective Action Coalition Against Corruption (CAC) in March 2021



**Formation of an ESG Council and a Decarbonization Committee.**

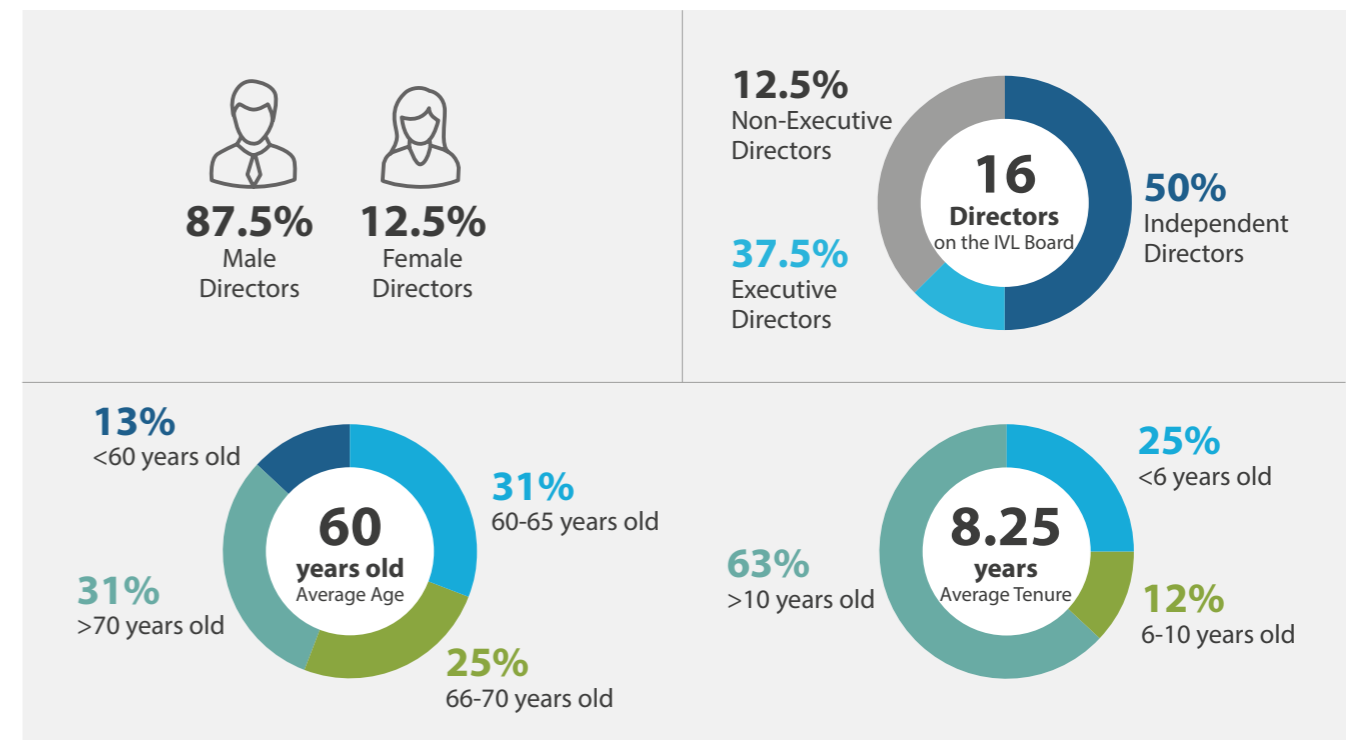
## CORPORATE GOVERNANCE AND COMPLIANCE MANAGEMENT



### Board of Directors

IVL relies upon an experienced and high-caliber Board of Directors to drive the organization forward with a strong focus on business growth. Our Board oversees IVL's business portfolio and ensures effective governance of our company's direction.

The Audit Committee, Nomination, Compensation and Corporate Governance (NCCG) Committee and Sustainability & Risk Management Committee (SRMC) directly assist the Board in ensuring that our day-to-day operations adhere to our principles, policies, procedures, responsibilities and accountabilities.



Maintaining effective communications serves as the collaborative foundation between senior management, the executive teams and the Board. By balancing conformance with performance – we are able to meet our business aspirations and leverage risks and opportunities.

As performance evaluation is crucial to effective corporate governance, upon the recommendation of the NCCG Committee, the Board sets the Key Performance Indicators (KPIs) for the Group CEO and other executive directors for the annual performance appraisal.

**100%** Independent Directors on the NCCG Committee. Directors on the Nomination, Compensation and Corporate Governance (NCCG) Committee are **100% independent.**

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



Our internal policies influence the relationships we have with our stakeholders. These interactions are supported by feedback surveys, our robust grievance mechanisms, and by the outcomes of employee training. Outputs from these interactions are valuable for our continued improvements, therefore, they are consolidated and presented to the relevant leaders within the company for action and follow-up.

As the breadth of our multinational operations imposes higher risks of non-compliance, the Audit Committee, NCCG Committee, SRMC and senior management continue to be vigilant on emerging risks and compliance requirements through a top-down approach.

Please see pg. 151 and 155 of our 2021 Annual Report for further information on key issues, deliberations and attendance at Board meetings.

## BUSINESS ETHICS, INTEGRITY AND TRANSPARENCY

### IVL's Tools and Mechanisms for Ethical Business

The Audit Committee	Nomination, Compensation and Corporate Governance (NCCG) Committee	The Whistleblower Committee	Corporate Governance Policy Awareness Campaign (CGPAC) Team	Site / Human Resource Heads	Employees
<ul style="list-style-type: none"> <li>Assists the Board of Directors to review financial reporting</li> <li>Monitors internal controls and audits, compliance with laws and regulations and the CG Manual</li> </ul>	<ul style="list-style-type: none"> <li>Ensures business principles are compliant with the Code of Conduct</li> <li>Arranges introductory training on policies</li> </ul>	<ul style="list-style-type: none"> <li>Examines issues raised by whistleblowers and processes cases believed appropriate</li> <li>Provides a summary of the cases received to the NCCG Committee and Board</li> </ul>	<ul style="list-style-type: none"> <li>Facilitates and monitors progress of the CGPAC and provides status reports of the project to the NCCG Committee, which reports to the Board</li> </ul>	<ul style="list-style-type: none"> <li>Implements and communicates the CG manual to all employees</li> </ul>	<ul style="list-style-type: none"> <li>Attend the CG Manual and related trainings</li> <li>Comply with CG in daily operations</li> </ul>

The Corporate Governance Policy Awareness Campaign (CGPAC) is conducted by IVL using the Corporate Governance Manual (CG Manual) to embed responsible corporate governance principles among all directors, employees and stakeholders and providing a clear focus on how IVL's values are being implemented.

### Corporate Governance Manual (CG Manual)

#### Purpose

Facilitates the implementation of rules, practices and processes in accordance with IVL's values to meet the company's long-term objectives in the interest of all stakeholders.

### Corporate Governance Policy Awareness Campaign (CGPAC)

#### Key Objectives



#### 1. Trainings

Using the CG Manual and communicating updates on new or enhanced policies, procedures and protocols, and assistance packages



#### 2. Evaluations

Organizing staff evaluations on awareness and understanding on policies and mechanisms through quizzes



#### 3. Monitoring implementation of the CG Manual

Keeping track of the campaign's development and implementation

### CGPAC Process



As part of their induction, new employees are provided a copy of the CG Manual.



They are then introduced to best practice principles of corporate governance and how these fit into IVL's own governance structure. The introduction session includes:

- A discussion of IVL's Code of Conduct along with case studies of employees encountering ethical dilemmas and the recommended ways to deal with them.
- Information on the various whistleblower reporting channels and the importance of reporting any wrongdoing they encounter.
- Guidance on how they can assist in the Company's efforts to promote good governance through their actions.



At the end of the session, new employees are asked to acknowledge that they have read the CG Manual and understood its contents.



Employees are then tested on their understanding of the CG Manual through a quiz.



This information is reported by sites to the CGPAC Team at IVL's head office, which then reports to the NCCG Committee and the Board on the annual basis.



The CG Manual and related policies are reviewed annually for necessary changes. If no updates are warranted, it will be revised every three years. The CGPAC team makes recommendations to the Board to amend the policies as needed.

Employees are informed of any updates to the CG Manual.



To continue our momentum in 2021, the CGPAC team continued to support the implementation of the CG Manual at all IVL units by further enhancing it through the following initiatives:

### Enhancements to the CG Manual

The CG Manual now includes a broader definition of "Diversity" in an effort to be more inclusive. Additionally, there was an expansion of the Human Rights Policy to include "Discrimination, Bullying and Harassment, Report of Violation and Disciplinary Action" sections. Also in 2021, the CG Manual was adjusted to comply with Thailand's Postponement of Personal Data Protection Act (PDPA) requirements.

### Enhanced Video Accessibility

To continuously make videos more accessible, the CGPAC team in 2021 developed training videos in Arabic and Danish, and provided subtitles to existing videos in Dutch, Polish, Portuguese, Spanish and Turkish.

Additionally, the CGPAC team tested the feasibility of a training video embedded with computer-generated narration and subtitles. These videos received positive feedback from all participating units and the CGPAC team aims to make more videos with local language narration options available in 2022.

### Multilingual e-Book

The CGPAC team introduced new training materials in the previous year. The new e-Book version of the Manual, which is already offered in English, Thai, Chinese and Spanish, will be offered in other languages after the revision of the Manual is finalized.

### New Training Quizzes and Toolkits

A new set of quiz questions was circulated in June 2021 to further support the units in evaluating their employees' understanding of the CG Manual. Additionally, the CGPAC team is developing a new set of toolkits for units to provide training locally, which will focus on case studies relating to policies in the CG Manual.



## CGPAC Implementation Report 2021



**87%**

of Employees Attended the Corporate Governance Manual Training

**82**

sessions were conducted in 2021 with 1,019 attendees

The CGPAC Implementation Report 2021 revealed that 87% of all employees attended corporate governance training in the past three years, a 1% increase from last year.

To maintain this momentum into 2022, the CGPAC team is officially launching the CG Database, a knowledge sharing platform for local units providing access to information on internal CG practices. The CGPAC team is also developing a new set of training toolkits for units to conduct training locally, which focuses on relevant case studies related to policies in the CG Manual.

## 2021 Compliance Highlights



**No** material litigation pending against IVL or our subsidiaries that negatively impacted our assets exceeding 5% of shareholder equity and no litigation that had a significant effect on our business.



**No** case of material non-compliance.



**No** penalties were imposed on IVL for material non-compliance with respect to corporate governance regulations.

The same outcomes are targeted for 2022.

## ANTI-CORRUPTION

### Highlights



**No** material cases or incidents of corruption or bribery; no employee, contractor or supplier was dismissed; and no contract with any business partner was terminated due to allegations of corruption.



**No** legal case involving corruption or anti-competitive practices was brought against IVL or our employees.

At IVL, we practice zero tolerance towards bribery and corruption and adhere to strict policies along with all local, national, and international laws. A comprehensive Anti-Corruption Policy is included in our CG Manual, where we define corruption and explain important practices to avoid any types of engagement or corrupt practices.

In 2020, we developed an Anti-Corruption Assistance Package which was shared with all units. This package, based on anti-corruption frameworks that are widely accepted, both in Thailand and internationally, was warmly received by the units and will help further reinforce the anti-corruption culture across IVL.

With our ongoing efforts to strengthen existing procedures and protocols, the CGPAC Team introduced a Conflict-of-Interest Assistance Package in June 2021, which provides suggestions, examples, and a detailed flowchart on how to manage a conflict of interest.

To ensure the new initiatives are effectively communicated, the CGPAC Team conducted three online sessions for local teams responsible for its implementation and shared video recordings of the sessions to all units for their future reference and to ensure a proper understanding by all participants.

### Development of a Conflict of Interest Assistance Package

To support the implementation of the Conflict of Interest Policy at IVL's subsidiaries, the Conflict of Interest Assistance Package was developed and circulated at all units in June 2021, which provides a detail on how to manage a conflict of interest. The CGPAC team conducted three online communication sessions for local teams responsible for implementing the assistance package. To ensure they had a good understanding, the team also shared video recordings of the sessions with all units for their future reference.

## CAC CERTIFICATION

In 2013, in line with our strict policies on corruption, we expressed our interest in joining the Thailand Private Sector Collective Action Coalition Against Corruption (CAC) underscoring our commitment to preventing bribery and corruption.

The CAC Certification was first received by the Company in 2014 and we are pleased to announce that it was successfully renewed in March 2021 for another three years.

## POLITICAL ACTIVITIES AND CONTRIBUTIONS

We are committed to high standards of transparency in our advocacy and public policy work, and political contributions. As a leading global chemical company, we participate in trade associations, lobbying for tax-exempt groups for multiple reasons, including networking, building industry skills, creating awareness in society, enforcing public policies, legislation or regulations, and taking collective actions to catalyze change.

Our participation in various associations allows us to stay connected with stakeholders and address public authorities' requests regarding the development of relevant industries. We maintain memberships with multiple trade associations exclusively for this purpose. In 2021, we did not make any political contributions.

## 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 channels for anonymous communications with the Whistleblower Committee, initiates investigations and takes corrective actions. The Whistleblower Policy and the reporting website are compliant with the EU's General Data Protection Regulation (GDPR).

Access to whistleblowing information is governed with the strictest confidentiality. Concerns can be raised using the following channels:

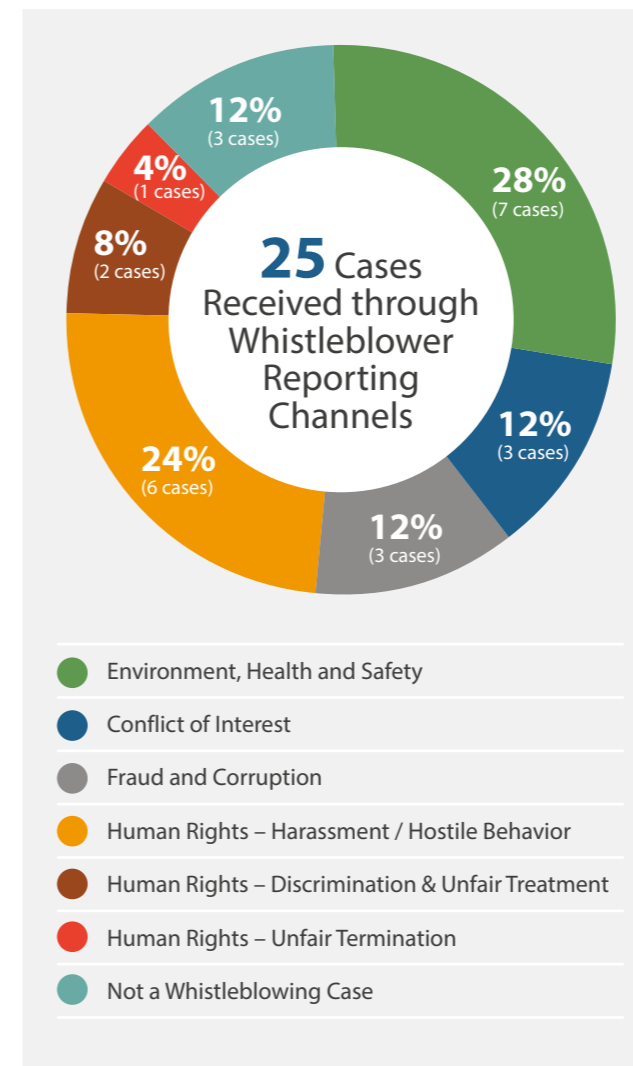
**E-mail:** [ethics@indorama.net](mailto:ethics@indorama.net)

**Mail:** Whistleblower Committee,  
75/102 Ocean Tower 2,  
37<sup>th</sup> Floor, Sukhumvit Soi 19,  
Bangkok 10110 Thailand.

**Whistleblowing Website:**  
<http://whistleblower.indoramaventures.com/>

The Whistleblower Committee hold monthly meetings and as required, invited senior executives from HR, Internal Audit, businesses and third parties to assist them in their investigation process. Timely replies on the status of the complaints were made to the whistleblowers.

In 2021, the Whistleblower Committee received 25 complaints. Seventeen cases were resolved, five remain under investigation, while three were classified as not being whistleblower cases. All cases carried over from 2020 have been resolved. A summary of the investigations and the actions taken were reported to the NCCG Committee and the Board.



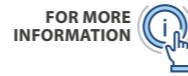
The higher number of cases in 2021 as compared to 2020 can be attributed to the more accessible mechanisms and increased awareness of whistleblowing, which has been reinforced through numerous training sessions.





## SUSTAINABILITY GOVERNANCE

Sustainability is central to the way we conduct business and run our organization. The four key elements under the sustainability enabling function encompass environmental sustainability, reporting and disclosures, communications and advocacy, and global product innovation and stewardship. These are in line with our 2024 Business Strategy.

The SRMC, which oversees sustainability governance, guides IVL's journey to further embed sustainability considerations in our business. As the organization's second highest authority on sustainability, the SRMC reports directly to the Board ensuring that this priority is integral in the day-to-day business decisions across our operations and the SRMC Charter is being observed.



### SUSTAINABILITY AND RISK MANAGEMENT COMMITTEE (SRMC)

 <p><b>Members</b></p>	<p>Members of the SRMC are chosen for their extensive experience in sustainability and risk management.</p>	<p>The SRMC consists of four independent and four executive directors.</p>
 <p><b>Actions</b></p>	<p>Provides advice, and implements and monitors initiatives through multidisciplinary departments, such as strategy, risk, cybersecurity and corporate governance.</p> <p>Acknowledges and examines recommendations from a variety of sustainability indices and evaluations, as well as the opportunity to share best practices.</p>	

In 2021, the SRMC met four times, discussing a range of topics linked to sustainability-related issues. During these meetings, the SRMC reviewed and advised on IVL's sustainability goals and strategies which are in parallel with the organization's business focus. This allows the Company to flexibly adapt to external changes and achieve sustainable and resilient operations.

The committee also reviewed IVL's sustainability related performance during the year and suggested improvements – particularly related to health and safety, operational eco-efficiency, and decarbonization. The SRMC emphasized that sustainability projects must be prioritized to achieve our short, medium and long-term targets. The impact of not achieving them can be potentially significant and pose a reputational risk. The committee further offered recommendations relating to future sustainability initiatives and performed a sustainability assessment review. The full Sustainability and Risk Management Committee Report to Shareholders is available in the Annual Report 2021 from pg. 311-313.



### SUSTAINABILITY AND RISK MANAGEMENT COMMITTEE (SRMC)



**Mr. Alope 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. Udey Paul Singh Gill**  
Member



**Mr. Yashovardhan Lohia**  
Member

### Formation of the ESG Council

In 2021, the Indorama Management Council (IMC) established the ESG Council, a new sustainability advisory committee whose purview covers sustainability-related environmental, social and governance aspects. The ESG Council is a valuable addition to our efforts to strengthen our sustainability capabilities and performance. The Council is also required to provide guidance, utilizing the expertise of its members, in performing its assigned duties and is composed of designated multi-functional senior executives who are experienced in sustainability issues and meet on a quarterly basis.

The ESG Council reviewed several significant sustainability topics in 2021, including sustainability benchmarking, product stewardship, and diversity and inclusion policies. The outcome and proposed next steps were reported to the IMC.

### Decarbonization Committee

The Decarbonization Committee is building a strong internal foundation of decarbonization business practices at IVL with an objective of integrating this into our strategies and operations to achieve our target of Net Zero Carbon by 2050-70. The committee, comprised of experienced representatives from across our segments, works closely with the respective Chief Technical Officer (CTO) of each business to drive efficiency, cost avoidance and carbon emission reductions.

## RISK AND CRISIS MANAGEMENT

To be a leading sustainable chemical company, we are doing what is needed to both manage and minimize risks and enhance our business performance. Our proactive risk and crisis management framework provides assurance and supports our efforts in meeting our sustainability goals. We successfully manage potential risks supported by our group governance structure, ethics programs and codes of conduct.

### Robust Internal Risk Management

#### IVL's INTERNAL RISK MANAGEMENT

##### ENTERPRISE RISK MANAGEMENT FRAMEWORK

- Foundation for identifying and managing business risk across the Company and its subsidiaries.
- Utilizing the Committee of Sponsoring Organizations of the Treadway Commission (COSO) framework and applying a top-down and bottom-up approach to identify and manage business risks at both the corporate and subsidiary levels around the world.

#### COMMITTEES AND COUNCILS

<p><b>Sustainability and Risk Management Committee (SRMC)</b></p>	<ul style="list-style-type: none"> <li>• A sub-board committee that oversees overall risk management effectiveness in relation to the company's strategies.</li> <li>• Implemented IVL's Risk Policy Statement and introduced risk capability &amp; culture programs.</li> </ul>
<p><b>Indorama Management Council (IMC)</b></p>	<ul style="list-style-type: none"> <li>• The highest operational management committee which oversees and acts on advice from other councils.</li> </ul>
<p><b>Risk Management Council (RMC)</b></p>	<ul style="list-style-type: none"> <li>• Acts as a central platform to assist the IMC, SRMC and the Board in identifying and addressing major risks and driving risk governance issues.</li> </ul>

#### RISK CULTURE

In guiding the daily activities and decision-making of our employees, effective risk management gives us the confidence to move forward in the industry and withstand any challenge. Throughout the business the management, the committees and our assigned "risk champions" are responsible for assessing risks and identifying associated controls to mitigate and/or reduce risk.



To further provide assurance and the ability to quickly address changes in the business environment, the Risk Capability and Culture Leadership Program was developed and implemented to elevate risk thinking and capabilities. This program strengthens the risk leadership mindset in our leaders and galvanizes their abilities to assess future risks. The program targets the top 100 leaders at IVL across the globe.



Additional activities from 2021 to early 2022 to enhance the risk mindset and culture in our organization included:

- Risk Townhall
- Risk Capability and Culture Leadership Program
- Board Risk Program
- Emerging Risk Webinar

### Risk Townhall 2021

The online 'Risk Townhall 2021' event was organized by the Global Risk Management & BCM team to communicate risk management and other enabling functions among IVL's leadership, hosting over 200 global participants.





## Indorama's Inaugural Board Risk Program

Six independent board members attended the Board Risk Program which improved awareness of the role of the Board in risk management, including discussions of the emerging risk landscape, and in-depth talks on the state of risk management at IVL.



## Risk Leadership Program 2022

The Risk Leadership Program, Cohort 2, was organized and joined by nine leaders. Throughout the day, there were thoughtful discussions on emerging risks and their potential impacts on IVL, together with risk tools and practices at IVL and to their respective roles.






## Emerging Risk Webinar

We partnered with renowned specialists from IHS, ICIS, and Marsh and were joined by over 200 participants sharing some key emerging risks in 2022 and beyond in our IVL Emerging Risk Webinar.



## SENSITIVITY ANALYSIS

A sensitivity analysis plays a pivotal role in eliminating uncertainties concerning the future of our business by modeling risk potential and decisions.

 <b>Purpose</b>	<p>Focused on long-term sustainability and exploring the environmental, social, and governance consequences of our operations.</p> <p>Conducted a scenario analysis while referring to TCFD recommendations as climate change guidelines which covers the impacts on our production, revenue, and EBITDA.</p>
 <b>Scope</b>	<p>Covers the analysis of sustainability strategies, operations and the environment including water stress analysis, shadow carbon pricing analysis, financial sensitivity, and reputation.</p>
 <b>Frequency</b>	<p>Conducted on a semi-annual or annual basis at the corporate level.</p>

We consider a range of risks in our overall enterprise risk management and have included disclosures on key emerging risks in this report to demonstrate their alignment with our sustainability-linked material topics. Please refer to pg. 45 in this report for a breakdown of key emerging risks.

For more comprehensive information about our risk categories and mitigation action plans, please refer to pg. 94-106 in our 2021 Annual Report.

## Business Continuity Planning (BCP)

In this current volatile, uncertain, complex, and ambiguous business environment, our Business Continuity Management (BCM) framework safeguards the interests of our business and key stakeholders, including our reputation and value-creating activities. We embedded an ISO 22301-compliant BCM framework within IVL to reinforce preparedness, effectively adapt to different scenarios, and ensure business continuity with regular testing, thereby, strengthening our strategies and planning in the process.

Effective BCM ensures we can still operate in the event of a disaster while preserving our corporate reputation and revenue. Rapid and significant changes in the business environment and rising expectations from stakeholders were the push factors in adopting a risk operating model approach by integrating Enterprise Risk Management (ERM) and BCM to accelerate risk maturity across an increasingly integrated business value chain.

## North America and Mexico iPET Business Continuity Plan Highlights

We developed a BCP for our North America and Mexico integrated PET (iPET) business which is one of our largest portfolios and a key point in our supply chain. The aim is to put in place recovery strategies which will improve agility in our operations as well as effectively manage supply chain disruptions.

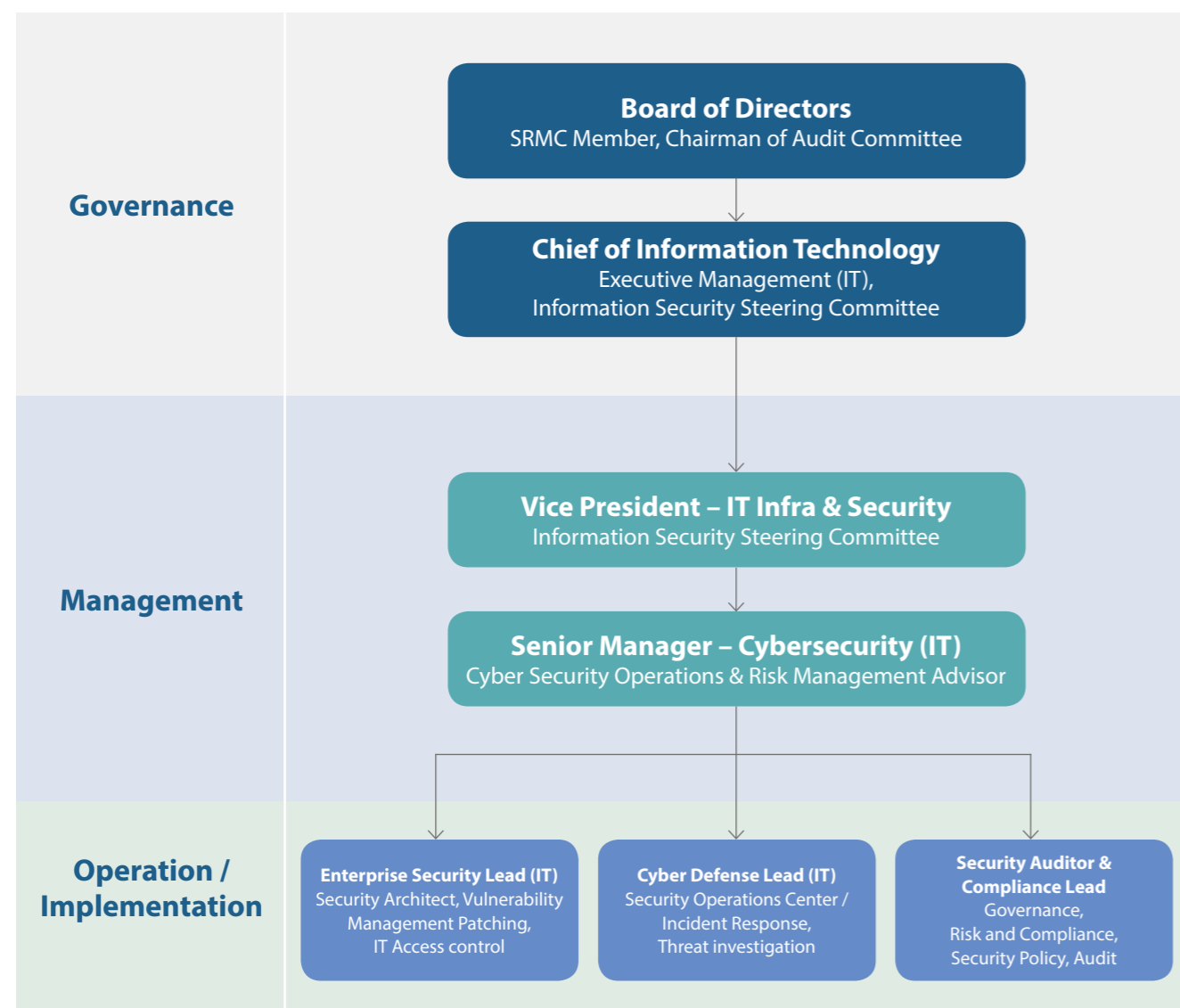
The BCP for some of IVL's key support functions, such as Global Business Services, was also completed with an established 'disaster recovery' plan identifying key systems and applications.

## CYBERSECURITY MANAGEMENT

Technology plays an increasingly important role in global business and as our reliance on it continues to grow, so do the risks of complex cyberattacks. Without adequate protection, key flows of information can be at risk. We work hard to ensure that we have the most advanced cybersecurity measures in place to protect our operations, systems and processes from any malicious intent.

The SRMC and Audit Committee are in charge of IVL's cybersecurity resilience and oversee and monitor the cybersecurity framework. The SRMC is updated on cybersecurity-related agendas on a quarterly basis through the Risks and BCMs framework and is responsible for developing robust policies and processes that are aligned with our risk appetite.

### IVL Cybersecurity Governing Structure



The BCM team collaborates closely with our Group-wide Information Technology (IT) team along with the newly established digital enabling function to improve our cybersecurity risk mitigation and work towards developing short and long-term cyber risk mitigation plans.

## IVL's Cyber Risk Mitigation Measures

### INVESTING IN ROBUST CYBERSECURITY PROTECTIONS



Network segmentation is planned to keep users, servers, and applications on different network segments and passing inter-segment traffic through firewalls.



Adopting emerging and modern Artificial Intelligence (AI) and Machine Learning (ML) based protection & detection technologies such as Endpoint Detection and Response (EDR) and Next-Generation Firewalls (NGFW)



Implementation of advanced firewalls, anti-virus, anti-malware, the latest system patch applications, and advanced threat protections.



### Cybersecurity: Module 16 Ways of Working

We need to ensure that Indorama Ventures is adequately equipped to journey into the digital era in a safe and secure manner.

IVL Group BCM, Group Digital and Group Information Technology

### BEST PRACTICE PROCEDURES AND AWARENESS

Comprehensive three-fold backup strategy for data recovery	Strict control over user IT activities to keep sensitive information secure and prevent insider breaches
Ongoing assessment of security threats to test the adequacy existing security controls	Monthly bite-size information to raise employee security awareness by e-mail
Adoption of a Multi-Factor Authentication (MFA) mechanism to protect the data security of corporate account(s) and safeguard critical infrastructure	

In 2021, we continued to understand the techniques used in cyberattacks, and how to further improve existing security controls and measures. To improve our security, we introduced an Open-Source Intelligence (OSINT)-based threat-intel gathering process to proactively defend against threats. We also adopted multi-layer e-mail security filtering, an emerging and modern technology to advance e-mail security with phishing and malware protection.

We conducted a Cybersecurity Behavioral Assessment (CyBA) and improved our cybersecurity frameworks, processes, and conducted training & awareness campaigns. Additionally, short-term cybersecurity controls have been implemented across all IVL entities and we also conduct internal auditing to certify our compliance.

With the deployment of our rigorous cybersecurity governance structures and best practice procedures, we have experienced no material impact on our operations from cybersecurity assaults and data breaches in 2021.

# DRIVING SUSTAINABLE VALUE CREATION AND GROWTH



**Mr. Rathian Srimongkol**  
Independent Director  
Member of the Sustainability and  
Risk Management Committee

**“Sustainable and innovative solutions will be required in all of our product portfolios – and we are rising to this challenge.”**

## VALUE CREATED

Our significant investments in recycling have increased our market share and lowered GHG emissions, allowing us to gradually realize our carbon neutral ambitions. Meanwhile, IVL’s creative and sustainable portfolio comprise best-in-class products, resulting in increased customer satisfaction. Furthermore, our flagship recycling education program is increasing community awareness and responsible consumer behavior.

## CAPITAL LINKED IN THIS CHAPTER



Financial  
Capital



Intellectual  
Capital



Social and  
Relationship Capital

# TOWARDS BETTER SUSTAINABLE GROWTH



## PERFORMANCE AGAINST OUR AMBITIONS FOR IMPROVED SUSTAINABLE GROWTH

### SHORT-TERM (2021-2024)



In 2021, we achieved a Vitality Index of **31% for Specialty PET, 23% for Fibers and 22% for IOD in 2021** and aim for the same targets in 2022.



In 2021, we achieved a **satisfaction index of 86.16%** and aim for a Customer Satisfaction Index (CSI)  $\geq$  86% by 2022-2023.



In 2021, we **expanded the LCA analysis to products in the Fibers - Mobility segment and combined PET segment.**

### MEDIUM-TERM (2025)



In 2021, we **recycled 317,064 tons of PET post-consumer bottles.** We target to get 750,000 tons of total post-consumer PET as feedstock into our polyester production per year by 2025.



In 2021, we **recorded 14.3 billion bottles recycled in 2021.** We plan to recycle 50 billion bottles per year by 2025.



In 2021, we **invested US\$ 44.7 million in 2021.** We plan to invest US\$ 2 billion for sustainability CAPEX objectives by 2025 and US\$ 7 billion by 2030.

### 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

## 2021 Highlights



1 new recycling facility in the US and an upcoming facility in Indonesia **capable of recycling up to 5 billion tons** of plastic.



**65% and 50% of the combined PET and the Fibers segments R&D spending aligned with green products.**



**Global Life Cycle Assessment (LCA) coverage was recorded at 45% by production volume.**



**CSI of 86.16%, Customer Retention Rate (CRR) 92% and Net Promoter Score (NPS) of 57.**



**Zero instances** where suppliers did not meet regulations.



**No key raw materials and critical non-raw materials suppliers were identified as being in violation** during human rights risks assessments.



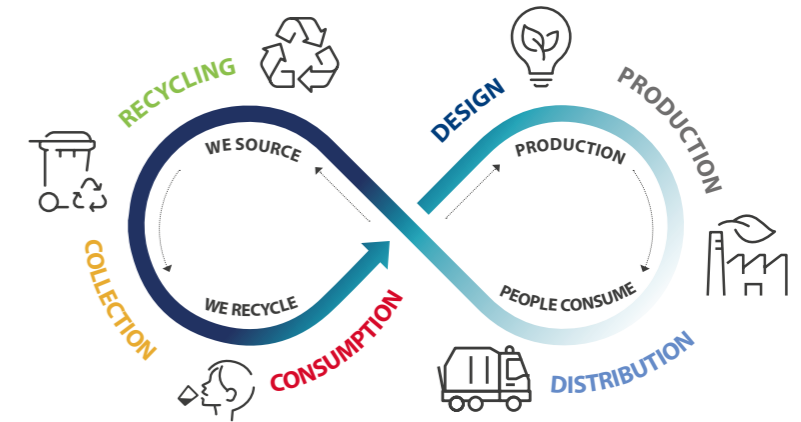
Indorama Ventures is ready to unlock the environmental and economic benefits of PET, which is made to be remade. The new PET Recycling Coalition in the United States, led by The Recycling Partnership, looks to drive advancements through enhanced infrastructure and messaging around PET recycling.

**WE ARE THRILLED TO BE JOINING THIS EFFORT TO UNLOCK CIRCULARITY.**



## CIRCULAR ECONOMY THOUGHT LEADERSHIP

IVL embraces the circular value chain for the positive impacts it has on society, the environment and our business. We are working hard to create long-term value for our stakeholders through innovative designs, efficient and greener production, streamlined logistics, advocacy for responsible consumption, proactive waste collection and extensive recycling.



Our Processes	Sourcing	Design	Production
Stakeholders	Suppliers Our Operations	Our Operations Business Partners	Our Operations
Steps Taken	Integrating ESG performance assessments as part of our supplier procurement process.  Procurement of sustainable raw materials from renewable sources and recycled products as well as renewable electricity in our operations.	Develop lightweight and high-performance products with a higher usage of sustainable and recycled raw materials to enable easier end-of-life management and sustainable product selection.  Designs that support composting and recycling with properties and functions which can be tailored for customers and applications.	Embrace circularity in our production by progressively increasing our mix of renewable energy and circular bio-based and recycled feedstocks.  Reduce critical resource usage, replace potentially harmful resources, and divert waste from going to landfills.
2021 Highlights	<ul style="list-style-type: none"> <li>0.2% bio raw materials consumption (which we plan to increase in the upcoming years), pg. 161</li> <li>Completed over 10 MWp offsite renewable electricity procurement with over 31 MWp to be finalized, pg. 104</li> <li>7.5% renewable electricity consumption, pg. 100</li> <li>Reduced more than 143,000 tCO<sub>2</sub>e in GHG emissions from utilizing renewable energy, pg. 104</li> </ul>	<ul style="list-style-type: none"> <li>Deja™ products, pg. 79</li> <li>Easy Mask, pg. 81</li> <li>Oxiflow F1700, pg. 86</li> <li>Circular Innovation Challenge, pg. 75</li> </ul>	<ul style="list-style-type: none"> <li>6 sites use 100% renewable electricity, pg. 104</li> <li>55% total reused, recycled and recovered waste, pg. 119</li> <li>78% waste diverted from landfill, pg. 119</li> </ul>

Distribution	Consumption	Collection	Recycling
Suppliers	Consumers Governments	Consumers Communities	Our Operations Business Partners
Encourage value chain partners to adopt circularity and a decarbonizing approach to lower carbon footprint.	Work with our customers to drive rPET demand in their packaging while influencing behavioral changes among consumers.  Collaborate with the government, beverage and plastic industry groups to advocate for changes to current legislation that prevents the use of rPET content in food packaging in order to advance the collection and recycling of plastic waste.	To enhance environmental awareness and increase the collection rate of post-consumer PET, we run our flagship "Recycling Education" program.  We also partnered with external parties to drive plastic collection.	Leverage our expertise in mechanical and chemical recycling, adding more recycling facilities into operations and running our flagship educational campaigns on recycling.
<ul style="list-style-type: none"> <li>100% coverage of GHG Scope 3 data collection in five categories, pg. 107</li> <li>100% external audit GHG scope 3 emissions for 5 categories, pg. 107</li> <li>Committed the Science Based Target, pg. 30, 114</li> <li>Establish a decarbonizing approach in the supply chain - prioritize Scope 3, pg. 94-95</li> </ul>	<ul style="list-style-type: none"> <li>Endorsed the Ellen MacArthur Foundation's call for Extended Producer Responsibility, pg. 112</li> <li>Collaborating with GPAP and WEF on investor toolkits about plastic waste, pg. 112</li> </ul>	<ul style="list-style-type: none"> <li>Educated 2,751 people on recycling in 2021 with more than 53,585 people since 2018, pg. 157</li> <li>Collected 846,045 PET bottles globally for recycling, pg. 157</li> <li>Reduced 28.2 tCO<sub>2</sub>e from post-consumer bottle recycling, pg. 157</li> <li>Collaboration between Coca Cola, Trash Lucky and Indorama Ventures, pg. 152</li> </ul>	<ul style="list-style-type: none"> <li>Acquired 1 new recycling facility in Texas, USA along with an upcoming facility in Indonesia will increase recycling capacity by 5 billion bottles per year, pg. 109</li> <li>14.3 billion bottles recycled in 2021 with up approximately 75 billion bottles since 2011, pg. 109</li> <li>317,064 tons of post-consumer PET bale input in 2021, pg. 109</li> <li>Member of the New Plastics Economy Global Commitment whereby we provide from mid-year to mid-year progress reporting on our progress, pg. 112</li> </ul>

## DRIVING CIRCULARITY THROUGH STAKEHOLDER PARTNERSHIPS

In 2021, we increased our active participation in industry associations and memberships and extended our contributions in existing stakeholder partnerships. We also identified several collaborative opportunities to support our mid-term ambitions. These efforts drive circularity locally, nationally and globally as IVL develops and distributes products that exceed customer expectations while contributing to business growth and financial sustainability. For more information on our industry associations and memberships, please see pg. 47.

### 2021 GPAP Partnership Pledges Update

IVL participated in the World Economic Forum's Global Plastic Action Partnership (GPAP) in 2020 and pledged to increase recycled PET content volumes by at least 750,000 tons by 2025 and US\$ 1.5 billion towards achieving this goal.

We actively promote sustainability through our trade associations, such as our participation with the European Commission to ban the use of plastic for extra virgin olive oil packaging in Spain and supporting the EU's non-recycled plastic packaging waste policy. We proactively share significant value and insights working with regulators and peers based on our extensive experience, size and capabilities.

In 2021, we made great strides in growing our post-consumer recycling production capacity from 46,000 metric tons in 2020 to 346,000. We also grew our recycling capacity by 15% and increased our post-consumer recycled content by 9% to meet the 2020 pledge.

### IVL Endorses the Ellen MacArthur Foundation's call for EPR Packaging

Non-biodegradable and non-reusable packaging must be kept in circulation within the economy, and out of the environment. We require dedicated, ongoing, and sufficient funding for collection, sorting and recycling to achieve this. Extended Producer Responsibility (EPR) is the most feasible way to prevent tens of millions of tons of packaging



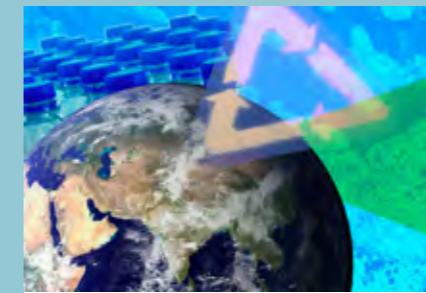
from ending up in the environment every year and is the only proven and likely way to provide funding that is dedicated, ongoing, and sufficient. Through EPR schemes, companies putting packaging on the market are required to pay for its collection, sorting, and recycling after use.

We are ready to step up and be part of the solution. In 2021, IVL supported the Ellen MacArthur Foundation's call for the implementation of EPR for packaging, together with more than 150 leading businesses and organizations. By signing the statement, IVL recognizes this need and agreed to three firm commitments:

1. Ensure their entire organization is aligned on, and their actions are in line with this statement;
2. Be constructive in their engagement with governments and other stakeholders: advocating for the establishment of well-designed PR policies and being supportive in working out how to implement and continuously improve EPR schemes in the local context;
3. Engage with their peers and the relevant associations and collaborations we are part of to work towards aligning their positions and actions accordingly.

While IVL and the other endorsers of EPR may not have all the answers yet in implementing packaging solutions in across parts of the world, failure is not an option for any of us – we will be constantly seeking solutions to address this issue.

### Sustainability Leaders Council: A Collaboration for a Sustainable World



The "Sustainability Leaders Council" by the Eurasia Group and Suntory Holdings is jointly sponsored by IVL and the Japan Bank for International Cooperation. The Council is creating a sustainability action plan for Asian governments and the private sector to help foster more resilient societies, reduce plastic waste, create economic value and build a more sustainable world.

The Council's mission is to illuminate Asia as a leading force for change within the climate and sustainability discussion. The theme for the summit was "Unlocking Sustainable Plastics in Asia", based on a new research report which highlights the dynamic capabilities the Asian public and private sectors have to counter the mismanagement of plastic waste.

The Council's virtual summit held in October 2021 included the participation of IVL's GCEO, Mr. Alope Lohia, and saw global leaders from various institutions, governments, and the private sector jointly identifying urgent priorities and blueprints for an environmental sustainability action plan.

### Partnerships in Recycling Education

As an advocate of recycling, IVL began our Recycling Education project in Thailand in 2018. In a joint effort with our institutional partners, we continue to educate people on PET's circular and recyclable qualities, and the importance of recycling to prevent PET waste mismanagement. We conducted the following engagements with key stakeholders in 2021 to advance Recycling Education forward. For more information, please refer to pg. 155-157 of this report.

Partner	Overview
<b>Valaya Alongkorn Rajabhat University</b>	Engaged with residents in the Baan Pang and Baan Klueng communities to discuss the benefits of managing plastic and how it plays a valuable role in the circular economy.
<b>Bangkok Metropolitan Administration</b>	Supported the city's approach towards improved plastic waste management and to increase efforts to engage more municipalities in Thailand to recycle.
<b>Trash Lucky</b>	Joined the Trash Lucky roadshow at the Asian Institute of Technology and organized a talk for students and residents in the community about recycling PET, waste-separation activities and a lucky draw.
<b>Yunus Thailand</b>	Designed recycling education materials for different educational levels with a variety of interesting topics.



**The Circular Innovation Challenge program,** developed by international organizations in collaboration with IVL, is raising public awareness about the need to reduce waste in Thailand.

## INNOVATION-DRIVEN GROWTH

Innovation is our competitive advantage, and our continued investments are driving us forward and facilitating our climate ambitions. We are consistently improving our solutions to reduce our impacts on the environment while exceeding customer expectations.



### 2021 R&D Highlights

- US\$ 22.7million** in R&D spending
- 21** R&D centers
- 696** new products introduced in 2021
- 214** R&D employees
- 121** collaborative projects
- 74** patents in 2021 (applied and granted) out of an overall **958** patents

### IVL's GLOBAL R&D FACILITIES FOOTPRINT



### NEW R&D FACILITIES OPENED IN 2021



IOD Research Center in The Woodlands, Texas

This facility will be the U.S. research and development hub for new products and has links to sister facilities in Australia, India, and China.



IOD Research Center in Mumbai, India

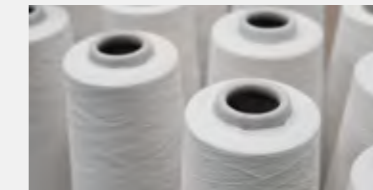
This facility provides a high-quality environment for employees with convenient transport options and modern facilities.

As leaders in integrating sustainability throughout our value chain, we deploy innovation as the common thread that links our workforce, products and processes to become the foundation upon which we make quality products. We leverage consumer insights, customer partnerships and our culture of continuous improvements to enhance value for customers.

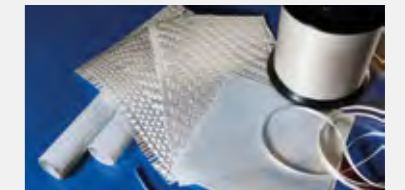
### IVL's 2021 INNOVATION HIGHLIGHTS



Development of biotransformation technology for polyolefin fibers and nonwoven fabrics.



New diverse range of recycled and biodegradable solutions which include biodegradable PET and rPET fibers.



Tape-like hybrid roving for glass-PP woven composite for lightweight honeycomb panels.

Launched PolyClear® 2224, a PET-Naphthalate copolymer for maple syrup containers at Citadelle in Canada.

World-class credentials in green energy innovation, sustainable feedstock integration, and geographic diversification for the IOD segment through the Oxiteno acquisition.

Implementation of innovative and transformative bio-recycled PET at IVL Longlaville site.

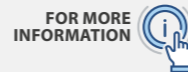
## OUR APPROACH TO INNOVATION

Our approach to innovation is distinctive: incorporating six elements:

- Product innovation**, which is linked to our vitality index
- Process innovation** that increase yields and quality through process improvements
- Environmental innovation** which promotes sustainability through our value chain
- External collaborations** that create new revenue streams and increases differentiation
- Open innovation** which drives us to find better, safer, more cost-effective ways to solve problems
- Research and Development** that promote internal creativity



More information on these six categories as well as the systems we employ, such as the Stage-Gate system and our Innovation Governing structures, please visit our website.



In line with our approach to innovation, we have a robust Innovation Management system and acknowledge its importance in strategies for continued success. It includes the evaluation of existing systems, practices, and incremental improvements to existing products and processes. In addition to this, we also firmly believe in the importance of innovation in improving process efficiencies that translate directly to sustainability impacts by incorporating it into our decarbonization strategy.

Innovation is at the heart of a sustainable business. At IVL, we measure our innovation-linked performance in part through a Vitality Index which demonstrates the revenue generated from the sale of products developed during the last five years.

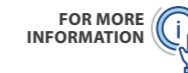
VITALITY INDEX		
<p><b>Combined PET Business</b></p> <p>2021 Target <b>34%</b> Actual <b>31%</b></p> <p>2022 Target <b>31%</b></p>	<p><b>Fibers Business</b></p> <p>2021 Target <b>22%</b> Actual <b>23%</b></p> <p>2022 Target <b>23%</b></p>	<p><b>IOD Business</b></p> <p>2021 Target <b>18%</b> Actual <b>22%</b></p> <p>2022 Target <b>22%</b></p>

In 2021, we met our vitality index targets in for the IOD and Fibers business segments – this demonstrates how well we are meeting customer needs and also shows that we are successfully selling products that are more sustainable, as our newer products have been designed taking into account environmental considerations and other key sustainability related considerations. While our new product revenues were close to target for Specialty PET, the Vitality index was impacted by increased demand for products greater than five years old in existing and new applications.

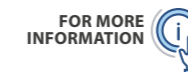
## INNOVATIVE PRODUCT PORTFOLIO

We meet the increasing demands for more sustainable products by investing in cutting-edge innovations for our customers who need to cater to the shifting needs of consumers. Our portfolio reflects our strategic support for the circular economy, our focus on innovation and our vision of making great products for society. Our climate change strategy supports our participation in Project Mainstream - a cross-industry, global World Economic Forum initiative that seeks to leverage the circular economy to function at scale.

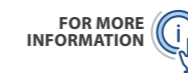
Our leadership in sustainability is fueled by our ability to develop innovative products including sustainable virgin and recycled PET solutions that fulfill our customers' circularity needs while making collecting and recycling materials more commercially viable.



We have established centers of excellence in the Hygiene and Mobility verticals in our Fibers segment. Our target for new product performance is the Vitality Index score of 25% by 2023.



In our IOD segment, High Value-Added (HVA) specialty surfactants used in agrochemicals, oil fields, and personal and home care products are under development to complement the over 700 products and chemical solutions we already deliver in these markets.



## Deja™ – Sustainable for Life

A global sustainable ingredient brand with a wide range of applications across the Packaging, Hygiene, Lifestyle, and Automotive sectors. DEJA™ products deliver additional value by ensuring:

- Traceability of their products
- A closed loop system by post-consumer raw materials
- Regionally sourced raw materials
- High performance and versatile material characteristics



## MADE TO BE REMADE AGAIN

By asking more of PET and less of the planet, we recognize PET as a valuable resource that is helping close the loop in a circular economy.

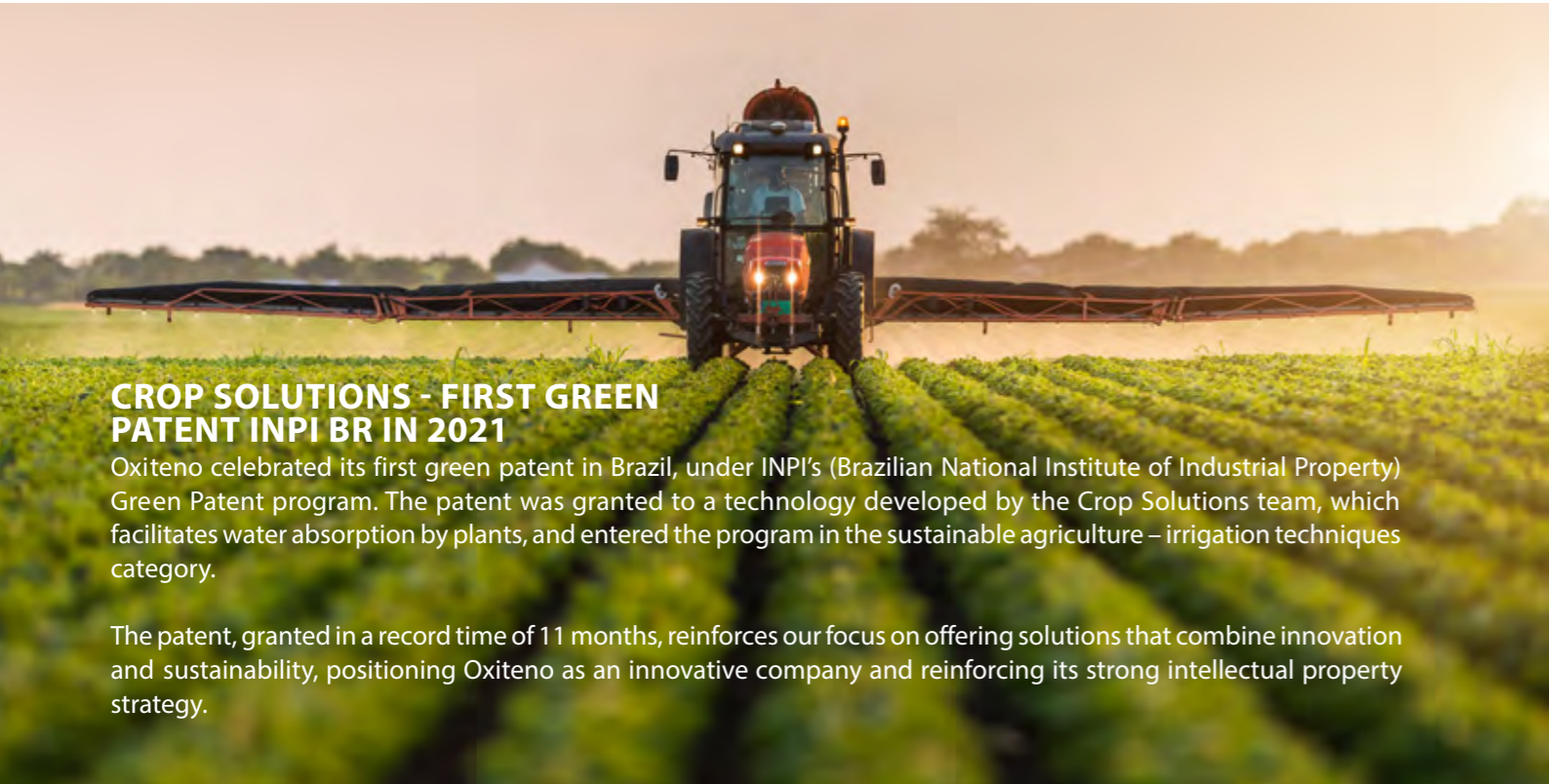


## Deja™ Carbon Neutral Pellet

Our Carbon Neutral pellet is designed to perform as it protects, meeting sustainability targets with a high grade pellet that has a neutral carbon footprint.







### CROP SOLUTIONS - FIRST GREEN PATENT INPI BR IN 2021

Oxiteno celebrated its first green patent in Brazil, under INPI's (Brazilian National Institute of Industrial Property) Green Patent program. The patent was granted to a technology developed by the Crop Solutions team, which facilitates water absorption by plants, and entered the program in the sustainable agriculture – irrigation techniques category.

The patent, granted in a record time of 11 months, reinforces our focus on offering solutions that combine innovation and sustainability, positioning Oxiteno as an innovative company and reinforcing its strong intellectual property strategy.

### Oxyclear® Barrier PET and Polyclear® EBM PET resins

Oxyclear® provides increased shelf-life protection while Polyclear® EBM PET resins are designed to produce clear, high-gloss containers with and without handles.



### Breathair® – Sustainable Comfort

Breathair® is a custom-fit solution made by recycled materials for mattresses, chairs and other furniture where you sit, sleep and rest on.

This 3D cushion material combines well-being and comfort with the requirements of sustainability and recyclability in a circular economy.



### INNOVATION-DRIVEN COLLABORATIONS

An integral part of IVL's strategy is to collaborate for success internally and externally in our commitment to sustainability. We nurture creativity and encourage our employees to take measured risks and develop ideas in the form of prototypes for further evaluation. Our Innovation Councils then review any new proposals and technologies which were developed to meet our customers needs.

Our global management prioritizes innovation, research and development as key agendas where we can leverage global input from industry innovation specialists. The outcomes from external collaborations including our efforts involving advanced resins and fibers allow us to stay ahead of the game through our wide-scale product innovations and production.

In 2021, we had 121 collaborative projects to produce innovations. Our Fibers division participated in over 30 university and research institute collaborations, with many of the collaborations being the basis of academic research and thesis. We also have engaged with raw materials suppliers on lowering their carbon footprint through using bio-based solutions and ISCC certified polymers. These engagements have led to the development of new products that have entered IVL's catalogue.

### Easy Mask: Fashionable Mask, Sustainable Mindset

As much as face masks help protect the wearer in mitigating the spread of the COVID-19, they unfortunately also contribute to environmental waste and pollution.

In 2021, IVL collaborated with DyeCoo and Stoll to produce the EASY MASK, a fashionable mask with sustainability embedded in its end-to-end production process by eliminating waste and reducing water and energy consumption. The EASY MASK is not only a knitted mask which is comfortable to use, it also reduces production waste to be below 1% due to its customization and on-demand production. We utilize our signature DEJA™ in the production of these masks.



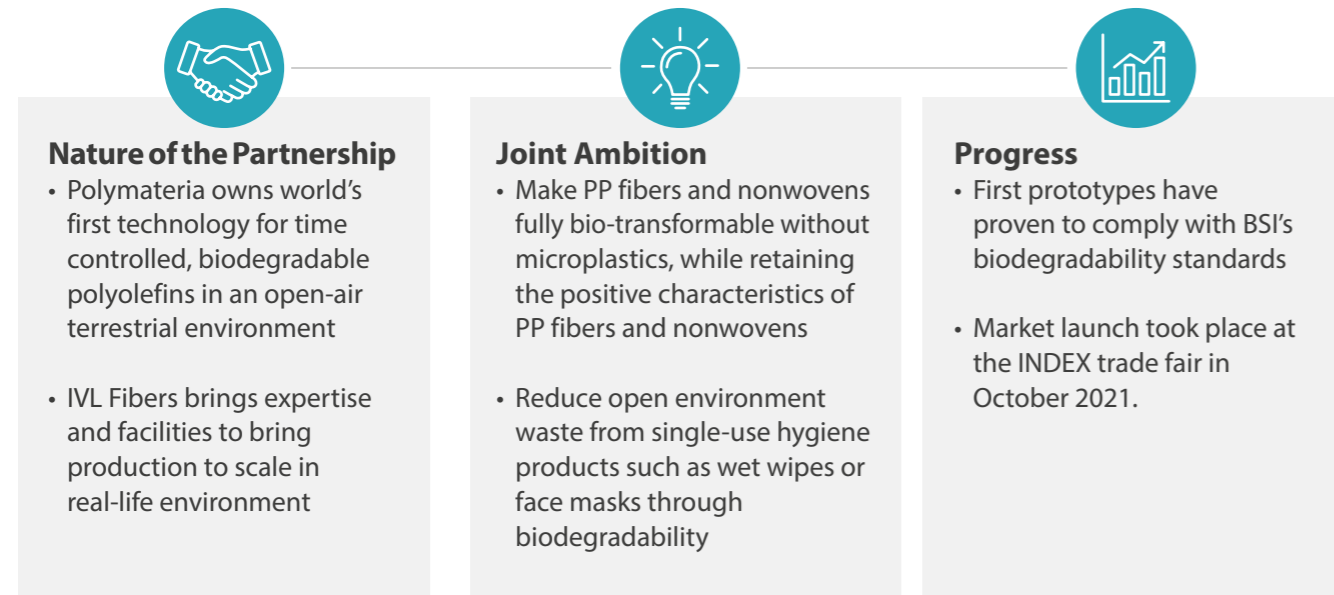
DEJA™ produces polyester performance yarn that is made from 100% post-consumer recycled PET bottles which DyeCoo's supercritical Carbon Dioxide (sc-CO<sub>2</sub>) textile dyeing technology dyes in a closed-loop process without using water and process chemicals therefore mitigating wastewater.

The production and the design methods incorporate key environmental and sustainable aspects. They eliminate the "cut and sew" process while offering customized on-demand production to lower material and product waste. Additionally, washing at 60°C makes repetitive use of the mask possible while all mask components are recycled for the production of other masks. It should also be noted that while the mask is knitted on a Stoll flat knitting machine, it can also be knitted on other types of machines, which allows for production flexibility.

## A Partnership for Biotransformation Technology

FiberVisions, a fibers producer, and Avgol, a spunlaid nonwoven manufacturer, (both part of Indorama Ventures) worked closely with scientists at Polymateria to commercially harness the innovative 'biotransformation' technology pioneered by them. The patented technology alters the polyolefins properties to become naturally biodegradable and improves the lifecycle of disposable products while also expanding the extensive fiber/spunlaid offerings.

The fiber and nonwoven prototype products developed through the partnership are compliant with the stringent biodegradability testing (as defined in British Standards Institute's (BSI) new standard for Biodegradation, PAS9017). In meeting this standard, this technology ensure that the fibers and fabrics do not form any harmful microplastics as part of the biodegradation process.



## IVL's Partnership Helps Customers Develop an Award-Winning Innovation

In creating pure white Celliant rPET fiber, Hologenix developed a strategic partnership with our Ireland-based Wellman International Limited.

Pure white Celliant rPET fiber is sustainably manufactured in low-impact supply chain. It is achieved by embedding bioceramic materials, that are naturally derived and ethically sourced, into fibers, yarns and fabrics. Wellman International has converted 100% of pure white Celliant Polyester production into rPET. This conversion to rPET has been implemented across all Celliant product categories, replacing traditional polyester and dramatically enhancing Celliant's sustainability credentials.



Celliant rPET fiber Hologenix

Pure white Celliant is recognized as a Class 1 medical device in the European Union and is able to carry the CE mark. Like Celliant, pure white Celliant captures and converts body heat into infrared energy, powering bio-responsive textiles. This energy is reflected back to the body, resulting in increased local circulation and cellular oxygenation. These advantages have a variety of wellness benefits, including stronger performance, faster recovery and better sleep, as well as many functional properties such as thermoregulation, quick-dry properties and odor inhibition.

FOR MORE INFORMATION

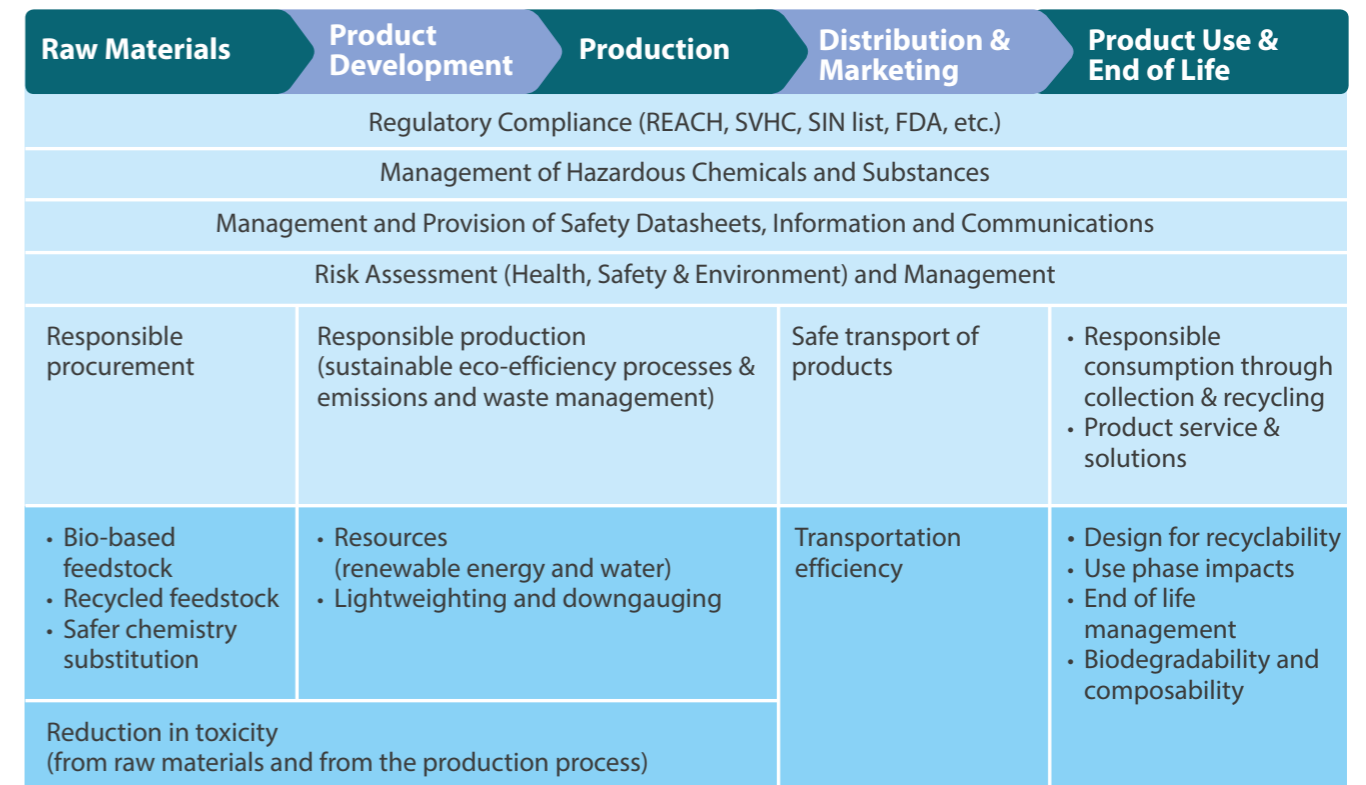
## SAFE AND SUSTAINABLE PRODUCTS



Our commitment to product stewardship is consistent with our dedication to sustainability, which begins with our raw materials and is evident throughout the stages of our supply chain. We improve the efficiency of our systems, develop increasingly innovative solutions, and minimize the full life cycle environmental impacts of our products where possible.

### OUR APPROACH TO PRODUCT STEWARDSHIP

Our product stewardship efforts minimize the full life cycle environmental impacts of our products through safer chemistry and efficiency along with eco-impact improvement of our production systems. This is done by developing innovative product solutions and benchmarking our products against those by our industry peers.



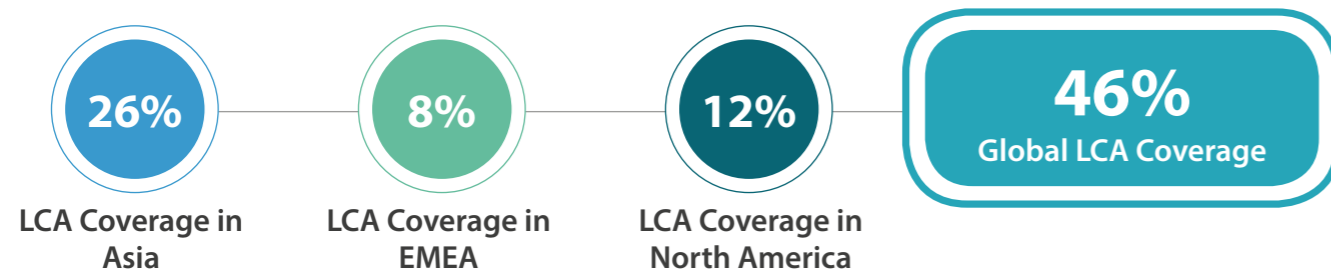
Remark: ■ Process Control and Management ■ Product Design

In 2021, we achieved 46% global Life Cycle Assessments (LCA) coverage by production volume. The ongoing LCA helps us evaluate the environmental impacts of our products in compliance with ISO 14040/44:2006. Furthermore, we started a number of initiatives to offer lower GHG products through carbon offsets. Additionally in 2021, we launched the first Deja® Carbon Neutral PET for beverage bottles and completed LCA assessments for carbon neutral offerings of PET tire cord yarn and PP staplefibers for nonwovens.

We will continue to work closely with our supply chain partners to develop products that meet stakeholder expectations, and we will continuously seek feedback to improve our products' lifecycles.

FOR MORE INFORMATION

## 2021 ACHIEVEMENT LCA COVERAGE BY PRODUCTION VOLUME



### ULTRAFILM® 5000: Developed from 100% Renewable Sources

This product includes a new molecule that allows for development of paint formulations with increased durability, reducing maintenance from repainting and resource consumption, offering the market a product with positive social and environmental impacts.

The principles of Design for the Environment, together with the LCA, were used in the product's development to quantify the environmental impacts generated by the new product in architectural paints (from production to disposal) and the results demonstrated that ULTRAFILM® 5000 has superior environmental performance compared to benchmarks in all impact categories studied, including climate change, human toxicity, water depletion, fossil fuel depletion and smog generation (which leads to VOC emissions).

## ENSURING PRODUCT SAFETY



Chemicals and other compounds utilized in our activities are monitored using strict processes and procedures. Our goal remains zero violations of local and international norms, as well as zero use of Substances with Very High Concern (SVHC). Any volatile material on the SVHC list or the Substitute it Now (SIN) list that could pose a health or environmental concern is closely monitored and managed through strict regulations.

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



### IVL topped the ChemScore rankings in 2021

ChemScore is a rating of the top-50 chemical companies in the world by ChemSec. The ratings assess companies reducing their chemical footprints by boosting investments in safer and greener alternatives. This ranking provides investors with the tools to assess chemical management strategies across four categories:

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

[FOR MORE INFORMATION](#)

### Roundtable on Sustainable Palm Oil (RSPO)

Our subsidiaries in the US, India and Australia, Indorama Ventures Ankleshwar Pty Limited, Indorama Ventures Oxides LLC Port Neches Operations and Indorama Ventures Oxides Australia Pty Limited, are members of the RSPO. They were found to be in compliance with the RSPO Supply Chain Certification Standard with excellent environmental and safety records. 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](#)

## A SAFE AND SUSTAINABLE PRODUCT PORTFOLIO

### OXIFLOW® F1700 - A PRODUCTIVE MODIFIER WITH ENERGY SAVINGS

A rheological modifier, developed for concentrated liquid laundry detergent, guarantees adequate viscosity for the best consumer experience even after dilution. This contributes to the dissemination of concentrated products in the Latin America's market.

OXIFLOW® F1700 can be easily handled and incorporated into formulations at any step of the production process while providing energy savings and process optimization.

The concentrated liquid laundry detergent containing Oxiflow® technology is sold in 500 ml packaging, which contains 75% less plastic compared to conventional size packaging. This solution contributes to lower volumes of packaging and waste generation.



IVL 360 Gallery

### INDORAMA VENTURES' ACHIEVES ISCC PLUS CERTIFICATION FOR ITS BIO-PET FOR SITES IN INDONESIA, DENMARK AND RUSSIA



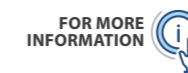
In 2021, three manufacturing sites (two Fibers and one PET) successfully achieved the International Sustainability Carbon Certification Plus (ISCC Plus) Certification.

PT. Indorama Polypet Indonesia (PTIPPI) was IVL's first PET entity to receive the ISCC Plus certification for its efforts in Bio-PET. Additionally, the FiberVisions' Varde site in Denmark, a polypropylene fiber producer, and AVGOL's Uzlovaya site in Russia, a spunlaid nonwovens producer, satisfied audits related to traceability and the reasonable use of biomaterials.

ISCC Plus certifies bio-based and circular (recycled) raw materials for all markets and sectors not regulated as transportation fuels under the European Renewable Energy Directive (EU RED) or Fuel Quality Directive (FQD), which are covered under the ISCC EU certification scheme. ISCC Plus ensures compliance with globally recognized sustainability requirements and voluntary greenhouse gas emission reductions throughout its supply chain.

### ANTIMONY-FREE FLAME RETARDANT STAPLE FIBERS

Trevira CS® ranks top in importance among IVL's functional fibers as it is the world's leading flame-retardant fiber made with Trevira's antimony-free technology. Another important element of our sustainability policy is the manufacture of staple fibers without using antimony. We began to produce our staple fibers from normal polyester on an antimony-free basis as long ago as January 2018, and antimony-free flame retardant staple fibers will be offered by Trevira as a standard from the second half of 2019.



### ICARE™ HEAVY METAL-FREE PET FIBERS

In response to customers' concerns over the possible inclusion of Substances of Interest (SOI) in fiber-based intimate hygiene products, IVL has developed a heavy metal-free PET fiber. iCare™ heavy metal free polymer complies with the food additive provisions of the U.S. Federal Food, Drug, and Cosmetic Act.



# SPECIAL REPORT

## A Solution in Circular Feedstocks



### CHANGE IS UPON US

In the 1800s, the population was one billion and we had abundant natural resources to use without considering the effects of our actions even though our natural resources are finite. By contrast, today, our population is roughly eight billion, and we are consuming at a much faster rate than before, accelerating resource depletion, waste generation and environmental pollution, leaving no time for natural regeneration cycles to take place. It is critical that we slow our use of resources and allow time for restoration.

The urgency of climate change has never been greater than now and in response to this, almost 200 countries had come together in Glasgow in 2021 for the 26<sup>th</sup> Conference of the Parties (COP) summit to discuss the climate crisis and set the global agenda to reduce the worst impacts of climate change. For more information on COP26, please refer to pg. 2-3.

We strongly support the many concepts and actions that are critical to combatting climate change. One key action is to move towards utilizing circular feedstocks. At IVL, we define a circular feedstock as being both bio-based and recycled.

### WHAT ARE BIO-BASED AND RECYCLED-FEEDSTOCKS?

At IVL, we define a circular feedstock as being both bio-based and recycled. A bio-based feedstock refers to any renewable, waste or organic matter that is used as or converted into either a fuel, energy or product. There are three generations of bio-feedstocks. The first-generation converts edible biomass like corn, wheat and rice (among others) into feedstock. The second-generation transforms cellulose-based, non-edible biomass and agricultural waste, such as (but not limited to) wood, straw, and corncobs, into clean and affordable high-value fuel or chemicals. The third-generation is derived from algae, which can be found in freshwater and marine waters.

A recycled feedstock converts post-consumer products, such as PET bottles, through mechanical or advanced recycling. Turning post-consumer PET bottles into feedstock dramatically improves recycling rates and diverts plastic waste from landfills, incineration or leakage into the environment. Recycled PET (rPET) can be used as a feedstock for both packaging and fiber applications. This is highly important for the direction in which we are moving, products that can 'close the loop'.

### THE VALUE OF CIRCULAR FEEDSTOCKS

Sustainable development refers to development that has environmental, social, and economic benefits. Both bio-based and recycled feedstocks are abundant and sustainable. IVL's focus lies on second and third-generation bio-feedstocks as they are not crops or plants that can be consumed by humans and animals, unlike first-generation bio-feedstocks.

#### The Advantages of Moving Towards Circular Feedstocks Include:

- Reducing our consumption and dependence on fossil fuels, which are scarce and depleting.
- Lowering our carbon footprint.
- Reducing plastic waste to landfill, oceans and incineration, which in turn, helps to mitigate climate change.
- Reducing biodiversity loss by specifically addressing overexploitation and pollution.
- Creating new local jobs, benefiting local communities and economies.
- Renewable biomass technology will become less expensive than fossil fuels, producing greater economic benefits, as adoption increases.
- Biodegradability of some feedstock and products.

Additionally, the utilization of circular feedstocks is a key component to achieving the Sustainable Development Goals (SDGs). The SDGs are a universal call to action among governments, businesses and civil society to end poverty, protect the planet, and ensure that all people prosper by 2030. SDG 7 speaks directly of increasing the use of renewable energy, under Target 7.2, whereas, SDGs 8, 9, 11, 12, 13, and 15 are all impacted by the use of renewable feedstocks.

Furthermore, consumer awareness and interest in environmentally sustainable and ecologically-sound products is increasing. Bio-based and recycled-feedstocks can address this need while moving us closer to a circular economy.

### OUR SHARED AND COLLECTIVE RESPONSIBILITY

Strong public and private partnerships is needed to accelerate the industry's urgent need to act. We echo other industry leaders in noting that government policies must play a key role in curbing and reversing climate change, and our impacts.

But companies must do their part, and IVL is leading by example. We are reimagining and improving our products to be more environmentally friendly while providing better value and performance. Our recently unveiled Vision 2030 includes a target of using 16% bio-based feedstocks against IVL's entire feedstock and 10% rPET feedstock against IVL's entire feedstock (23% against PET feedstock) by 2030. We are aggressively taking charge of our responsibilities for the environment, having also committed more than US\$ 4.6 billion to increase circular feedstocks to 2.4 million tons by 2030. This is a concrete goal towards our purpose of "Reimagining Chemistry Together to Create a Better World."

We also encourage our industry peers and other organizations to look at their business models and value chains, and find opportunities to incorporate the essential tools to fight climate change and move towards a circular economy. As there is no single right or wrong way to do so, sustained small changes can make an outsized difference to the environment. Therefore, every effort must be made to benefit our environment.

## CREATING STRONG CUSTOMER RELATIONSHIPS

As a global leader in the industry, IVL's value chain has significant scale, integration, and differentiation to meet complex product innovation and fulfillment requests while contributing to long-term investment returns. Creating strong relationships with customers allows us to gain important brand equity for the products that we manufacture – and by staying ahead of their expectations, we are able to build long-term customer trust and loyalty.

### OUR APPROACH TO CUSTOMER RELATIONSHIP MANAGEMENT

We are able to better grasp market trends and produce sustainable goods based on the needs of our clients, thanks to our regular two-way discussions, making us a strong competitor and industry leader.



We integrate business models in our Customer Relationship Management (CRM) framework to nurture strong relationships with customers and achieve sustainable growth in the markets we operate in. Continuous improvements and a strategic approach in CRM enhance our customer satisfaction and business success. At the same time, we focus on providing excellent customer service, reliable products and solutions to meet customer requirements relating to their product quality and sustainability, and consider CRM as a key competitive advantage ensuring our leadership in the industry.

Customer engagement is our key strength and an important part of our sustainability strategy. We engage with customers in our pursuit of excellence to satisfy their needs and align our business processes with best practices, and collaborate through various communication channels to find out about their requirements and advice on a regular basis.

- Engaging customers through face-to-face and online meetings.
- Developing technical, marketing and sustainability-related communication sessions.
- Gathering insights and managing customer satisfaction through systematic studies and surveys.
- Providing reliable products and market information.



Strong customer satisfaction is essential for a profitable and sustainable business. We constantly improve our understanding of our customers' needs and incorporate this in our business direction and decision-making. We conduct a customer satisfaction survey once every two years to assess customer expectations, needs, and level of satisfaction with our products. Systematic feedback is gained across all business interactions and customer levels in 22 focus areas set within six overarching groups. Responses are analyzed and reported through our Feedstock, PET, Fibers, Packaging, Wool, Recycling and IOD segments, with the recommendations combined into ongoing improvement efforts. We plan to conduct our next customer satisfaction study in 2022.

Performance Metrics	Purpose	Overall Score
Customer Satisfaction Index (CSI) <b>2021-2022 Target: CSI &gt; 86%</b>	Measures customer satisfaction with a product, service, or company.	<b>86.16%</b>
Customer Retention Rate (CRR)	Measures the number of customers we continued to do business with throughout the year.	<b>92%</b>
Net Promoter Score (NPS)	Measures customer loyalty and the likelihood of recommending our products and services to others.	<b>57</b>

**Customer Satisfaction Index (CSI) and Customer Retention Rate (CRR) for Business Segments**

CSI <b>86.51%</b> CRR <b>95%</b>	CSI <b>85.86%</b> CRR <b>93%</b>	CSI <b>87.13%</b> CRR <b>91%</b>	CSI <b>85.67%</b> CRR <b>93%</b>
CSI <b>84.81%</b> CRR <b>94%</b>	CSI <b>88.35%</b> CRR <b>93%</b>	CSI <b>84.76%</b> CRR <b>85%</b>	<b>Customer satisfaction measurement covered 100% of global operations</b>

The customer satisfaction study provides us with valuable insights and a direction which allows us to target relevant customer groups, develop specific products, and ensure that all relevant information is included to strengthen customer relationships.

In analyzing the results of the CSI and CRR, we can examine the root causes of any issues and identify areas for improvement in support of our core value to be the preferred supplier to our customers. In addition to these matters, we will also continue to include our customers' future needs and expectations in our plans.

The results of the annual NPS are closely analyzed, including in relation to our competitors, while trends over time are monitored. We consolidate and improve on issues raised through our customer relationship approach and by monitoring our business performance.

#### PIRELLI SUPPLIER AWARD

Glanzstoff Sicrem, part of Indorama Mobility Group, was awarded the Pirelli Supplier Award 2021 in the "Service Level" category for producing the first Forest Stewardship Council certified tire with FSC-certified Rayon. The Indorama Ventures company has been a consistent supplier of textile reinforcements and IVL is honored to be one of the nine companies selected by Pirelli among 14,000 suppliers annually.

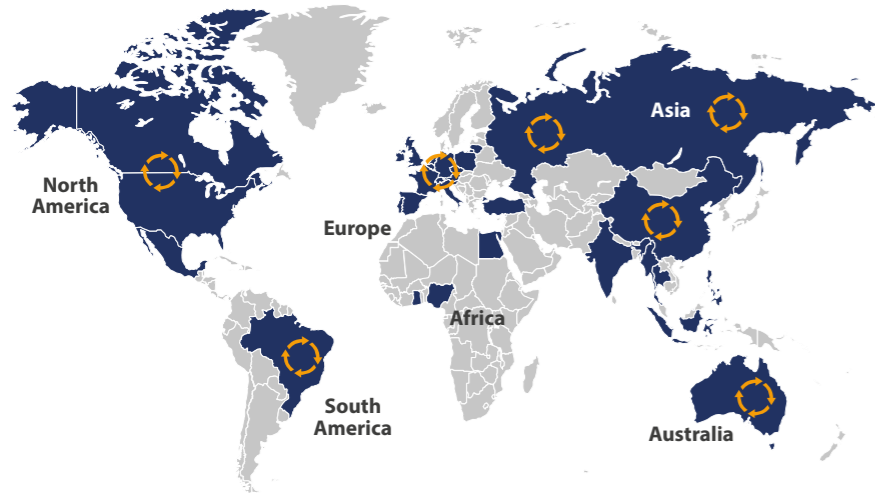
#### YOKOHAMA SUPPLIER EXCELLENCE AWARD

In April 2021, four Performance Fibers companies in China received the Supplier Excellence Award by Yokohama Rubber (China) Co., Ltd., a leading motor vehicle tire producer and one of the top three customers for Performance Fibers in China. These Indorama Ventures subsidiaries have been supplying high grade polyester tire cord fabrics to support the operations of Yokohama's six production plants with an annual PCR tire capacity of 10 million units.



## SUPPLY CHAIN MANAGEMENT

IVL's supply chain integrates sustainability as its core focus. We select and work with multinational industry leaders as our suppliers who believe in our strict ESG compliance and maintain their own effective policies, supported by robust mechanisms. In 2021, there were no instances of regulatory non-compliance by our suppliers.



### IMPACTS AND DISRUPTIONS FACED DURING COVID-19

- ▶ Increased travel restrictions/ additional border checks resulting in delays
- ▶ Congestion at seaports with busy sea routes
- ▶ Labour shortages impacting productivity and land transport
- ▶ Low availability of containers and trucks
- ▶ Reduced outbound capacity from impacted countries resulted in an increase in prices
- ▶ Suppliers relying on force majeure clauses to excuse or delay performance

### SUMMARY OF OUR COVID-19 SUPPLY CHAIN STRATEGIES

- Cost Efficiency**
  - Production available in each region
  - Group integration
  - Co-location (with suppliers and customers)
  - Local raw materials sourcing
- Purchasing / Procurement**
  - More suppliers
  - Spot purchase
- Inventory Management**
  - Cycle stock
  - Safety stock
  - Lead time
- Transportation and Logistics**
  - Direct shipment – reduce loading and unloading

As with most industries operating during the COVID-19 pandemic, we faced a number of obstacles within our supply chain. These included increased travel restrictions, congestion at seaports, labour shortages, and insufficient numbers of containers and vehicles for distribution. However, because our businesses span across continents, we could source local feedstocks from additional suppliers and make more spot purchases while continuing to meet consumer demand in each region. Furthermore, operating in the same location as our customers assisted in decreasing transportation constraints. Inventory management was strictly controlled to ensure that manufacturing could continue. Additionally, logistics was optimized through one shipment to prevent loading and unloading time during product distribution.

## 1<sup>st</sup> PLACE IGNITING NETWORKS AWARDS 2021 FOR BAYER SUPPLIER DAY

In acknowledgment of and gratitude for outstanding collaboration and team spirit, Bayer awarded IVL, the Igniting Networks Award 2021 which acknowledged our efforts in partnering together with suppliers to quickly secure essential supplies for Louisiana-based employees, their families and the surrounding communities in the aftermath of Hurricane Ida.



## SUSTAINABLE AND GREEN PROCUREMENT

IVL always strives to utilize environmentally and socially responsible materials, products and services which are high performance, safe and lasting in value. We understand every product's life cycle impact on the environment 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 sustainability through community and societal progress

We are achieving further reductions in emissions by consuming renewable energy (biogas, biomass and renewable electricity) in our operations and are considering increasing the use of renewable electricity, both onsite (rooftop and ground-mounted) and offsite (virtual power purchase agreements). These sustainable business decisions help us better manage our resources, improve efficiencies, achieve greater savings and accurately forecast future costs.

In 2021, we procured 23,978 tons of bio-based raw materials (Bio-MEG, PLA and cellulose) for our bio-PET, biopolymers PLA, and tire cord fabric production. We also sourced and recycled 317,064 tons of post-consumer PET bottles and materials.

## DECARBONIZATION TARGETS AND THE SUPPLY CHAIN

We conduct our operations in a way that respects sustainability with a focus on supply chain decarbonization and align our business strategy with several approaches to strengthen our existing initiatives and inspire new ones throughout our supply chain. These include incorporating sustainability in procurement contracts, supplier risk assessments and performance evaluations; strengthening reporting requirements on resource efficiency; reducing GHG emissions; and increasing capacity building for suppliers.

We understand that decarbonizing our business and supply chain can contribute towards the global fight against climate change. By successfully reducing our emissions, we can leverage all players in the value chain to help them achieve their respective decarbonization goals.

### ECOVADIS

We achieved above industry-average performance in four assessment areas, the environment, labour & human rights, ethics, and sustainable procurement, as a result of the ongoing improvements in our sustainability performance on supply chain management.

We were honored to take home the Platinum Medal from Ecovadis, the highest recognition awarded for sustainability performance. We went from a top 3% ranking in 2017 to top 1% in 2021 among companies assessed globally.

FOR MORE INFORMATION

FOR MORE INFORMATION

We are working to improve our supply chain network design, modes of transportation and product mix, have better inventory control and select better suppliers through carbon footprint planning. We will also continue to explore supply chain decarbonization projects and assess valuable lessons from industry leaders.

Our decarbonization strategy involves collaborating with our suppliers to obtain supplier-specific data and set emission reduction targets while strengthening our relationships to improve collaboration in the supply chain. Our fight against climate change is in line with the Paris Agreement, the SBTs and the UN SDGs.

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

## SUPPLIER CARBON FOOTPRINT MANAGEMENT PROGRAM

By improving our understanding of Scope 3 emissions, this program allows us to assist external stakeholders to lower their environmental impacts by methodically strengthening internal and external sustainable procurement structures.

### Sustainable Procurement Pathways



#### Upgrade Key Supplier Tools and Digital Data Systems

- Revise the Code of Conduct, Supplier Self-assessment and GHG questionnaire.
- Enhance and explore digital supplier engagement tools.



#### Capacity Building

- Provide training to global procurement teams.
- Productively engage with suppliers who may differ in decarbonization maturities.



#### Supplier Engagement Program

- Engage and incentivize suppliers to reduce their carbon footprints.
- Align our procurement decisions based on program outcomes.

### 2021 Highlights



**Establish a decarbonizing approach in the supply chain - prioritize Scope 3** by aligning procurement decisions to overall decarbonization efforts



**Reinforce strong ESG principles in procurement and complete supplier tools**

- Responsible sourcing policy
- Self-assessment
- GHG questionnaire



**1 workshop conducted**  
**2 workshops** by Q2/2022 for the global procurement team with plans to engage with key suppliers later in 2022.

## SUPPLIER ESG ASSESSMENTS & COMPLIANCE MANAGEMENT

We are committed to upholding human rights as part of our ESG standards when selecting our suppliers across all of our operating sites (in accordance with our Human Rights Policy and Supplier Code of Conduct).

We assess suppliers for their ability to comply with Labour standards, along with their capacity to provide a safe, discrimination-free workplace free of child or forced labour. All this is in addition to adhering to robust environmental standards that they would be subjected to within the supply chain.

We trust our suppliers to be vigilant in the compliance of their subcontractors and ensure that the Code of Conduct and Human Rights Policy are binding through our global procurement directive. The Code of Conduct covers legal compliance, ethics, human rights, the environment, health and safety, the handling of private information, mutual trust and respect, and the reporting of any misconduct.

It is mandatory for suppliers to perform self-certifications and regular evaluations of onsite subcontractor facilities in compliance with the Supplier Code of Conduct. These assessments are monitored until completion and remedial actions are taken based on the results. Suppliers who fail to address issues promptly and effectively jeopardize their relationship with IVL.

### Methodology

A self-assessment questionnaire is given to suppliers to identify the risks and opportunities in areas including regulatory compliance, child and forced labour, human rights, and long-term supply chain management, with special attention paid to identify possible child labour and forced or coercive work.

### 2021 Assessment Results

**100%**

**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 labour.



**No** complaints concerning human rights in the supply chain were submitted through the grievance reporting system.

## HUMAN RIGHTS AND COMPLIANCE IN THE SUPPLY CHAIN

Our Human Rights Policy is consistent with our dedication to enriching our workplace, partnering with our supply chain, preserving the environment and supporting the communities where we operate. Compliance with IVL's policies, Supplier Code of Conduct and a Supplier Self-Assessment along with adhering to proper business ethics and environmental regulations is mandatory for all suppliers. These include ethics, human rights, EHS and mutual trust and respect. We educate our suppliers by including quality control and traceability clauses in our supplier contracts and monitoring their compliance with relevant labour and health & safety laws, regulations, practices and protocols in the workplace.

Our due diligence also covers contract arrangements and negotiations, including adherence to quality standards such as the REACH certification. Suppliers are to acknowledge receipt and effectively communicate the policies and Code of Conduct. Terms and conditions are outlined in the self-assessment documents for suppliers.

The contracts for key suppliers include detailed ESG compliance requirements according to IVL's policy and Codes of Conduct, as well as references to comply with IVL's ESG requirements with appropriate sustainable development practices in addition to suppliers' own standards and Business Codes of Conduct. All suppliers met the stipulated regulations in 2021.

Our adherence to UNGC, ILO and ISO standards ensures that suppliers comply with regulations concerning labour conditions, human rights, anti-corruption and environmental and social responsibilities, as well as policies and performance verifications by assessing their websites. The SRMC reviews supply chain risks and actions to mitigate them to prevent potential human rights impacts.



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



## CHILD RIGHTS PROTECTION – IVL RANKED FIRST AMONG CHEMICAL COMPANIES IN SOUTHEAST ASIA

We take pride in achieving greater business accountability through our support for children's rights. IVL was recognized as an "Achiever" in the Global Children's Rights and Business 2021 report demonstrating our commitment to the rights of children and child-friendly business practices in the workplace, marketplace, community and environment. We placed seventh out of 28 global chemical companies doing so, and were the only company based in Southeast Asia to be selected for the Basic Materials category.



This report focuses on children's rights supervision and sustainability based on publicly available information and is produced by the Global Child Forum, a leading children's rights organization, and the Boston Consulting Group. They surveyed and assessed 832 large global companies in nine industries according to 27 metrics from their Code of Conduct.

Our children's rights initiatives are aligned with the UN SDGs on good health and well-being, quality education, gender equality, clean water and sanitation, and decent work and economic growth.



# SPECIAL REPORT

# Securing Sustainable Financing

Sustainable finance refers to the process of taking Environmental, Social and Governance (ESG) considerations into account when making investment decisions in the financial sector, leading to more long-term investments in sustainable economic activities and projects.

This represents a significant opportunity for IVL, with many multinational lenders and asset managers having become signatories to the United Nations Principles for Responsible Investment (UN PRI) and United Nations Principles for Responsible Banking (UNPRB). Moreover, financial institutions are integrating ESG into their investment processes. IVL is a global leader on ESG financing, having secured over US\$ 1.3 billion in sustainable financing as of the end of 2021, which includes:

## TOTAL US\$ 1.3 BILLION IN SUSTAINABLE FINANCE

Link to IVL's ESG Rating		Link to KPI & SPTs			
		<b>US\$ 300m</b>			<b>US\$ 300m</b> Sustainability-Linked Bond arranged by BBL, KBank, KTB, SCB, and HSBC
	<b>Ninja loan</b> arranged by a syndicated ESG loan				
<b>Green loan</b> arranged by Mizuho	<b>US\$ 255m</b>	<b>US\$ 150m</b> arranged by International Finance Corporation (IFC)	<b>US\$ 100m</b> arranged by Asian Development Bank (ADB)	<b>US\$ 50m</b> arranged by Deutsche Investitions-und Entwicklungsgesellschaft (DEG)	
<b>US\$ 200m</b> <b>EUR 200m</b>					
2018	2019	2020		2021	
<b>Thailand's First Green Loan</b>	<b>Arranged by the International Finance Corporation (IFC) to increase recycling in developing countries</b>			<b>Thailand's Largest Sustainability-Linked Bond</b>	

"The sustainable finance that we raised strengthens our financial profile and will help us grow our business in line with our strategic plan. Contributing to the issuance was the confidence of investors in our growth prospects. This will also position IVL as a world-class sustainable chemical company supplying valuable products for the manufacture of a range of consumer and industrial products. I express my heartfelt thanks to investors for placing their trust in IVL."

*Sanjay Ahuja*  
**Mr. Sanjay Ahuja**  
Group CFO\*



\* Mr. Sanjay Ahuja is serving as Interim Executive President Combined PET since March 2022.

The issuance of all loans and bonds reflects our long-standing commitment to sustainability, supports our sustainability commitments as a business and emphasizes our fiscal responsibility through sustainable finance.

IVL developed a Sustainability-Linked Finance Framework to be aligned with the Sustainability-Linked Bond Principles (SLBP) by the International Capital Markets Association (ICMA), and the Sustainability-Linked Loan Principles (SLLP) by the Loan Market Association (LMA). The five core pillars of the SLBP are:

- Pillar 1:** Selection of Key Performance Indicators (KPIs)
- Pillar 2:** Calibration of Sustainability Performance Targets (SPTs)
- Pillar 3:** Financial Characteristics
- Pillar 4:** Reporting
- Pillar 5:** Verification

Three Sustainability Performance Targets (SPTs) were selected which are core, relevant, and material to IVL's business and measure progress against IVL's sustainability commitments prior to the issuing of bonds, loans, or any other debt instruments.

**13 CLIMATE ACTION**

**SPT 1:** Reduce IVL's GHG emissions intensity by 10% by 2025 from a 2020 base year

In 2021, we achieved a **3% decrease.**

**12 RESPONSIBLE CONSUMPTION AND PRODUCTION**

**SPT 2:** 750,000 tons of post-consumer PET bale input in 2025

In 2021, we recorded **317,064 tons of post-consumer PET bale input** – up from 222,288 tons.

**13 CLIMATE ACTION**

**SPT 3:** 25% renewable electricity consumption by 2030

In 2021, we recorded **7.5% renewable electricity consumption** – up from 2.8% in 2020.

Note: The parameters of the KPI or calibration of the SPT may change if there is a material change to IVL's current business operations. Any such change will be communicated within its annual reporting and in line with IVL's related disclosure obligations. IVL's performance against the SPT will be reported on the company's website and in its annual Sustainability Report.

Over the past few years, we have made significant strides and achieved many milestones, inching closer towards our 2030 target. There is still much more work to do. To this end, guided by our strategic framework, we look forward to continuing our efforts to reduce emissions from the value chain, increase positive economic and social impacts and generate environmental well-being in collaboration with all our stakeholders.

# TOWARDS NET ZERO CARBON

CO<sub>2</sub>



**Mr. Tevin Vongvanich**  
Independent Director  
Member of the Sustainability and  
Risk Management Committee

**“Our Decarbonization Strategies define what we stand for and our aggressive aims to deal with climate change.”**

## VALUE CREATED

In support of the communities and environment where we operate, we are rapidly shifting gears to reduce our natural resource consumption, using more renewable energy and improving operational efficiencies at all our projects and sites.

## CAPITAL LINKED IN THIS CHAPTER



Natural  
Capital



Manufactured  
Capital



Social and  
Relationship Capital

*Note: Intensities of environmental performance such as energy, GHG, water, and waste are calculated based on overall production including captive consumption.*

## PERFORMANCE AGAINST OUR AMBITIONS FOR IMPROVED SUSTAINABLE GROWTH

### SHORT-TERM (2025)

#### 2021 PERFORMANCE

In 2021, we recorded a **3% reduction in combined GHG intensity** of Scope 1 and 2 emissions and are looking at a further reduction to 10% by 2025 and 30% by 2030.

We maintained our Scope 3 coverage to five categories and plan to expand reporting to all relevant categories in 2023.

We also aim to finalize our targets and have them validated by the SBTi in the near future.

#### Targets

- **10% reduction** in combined GHG (Scope 1 and 2) intensity
- Submission establishing our intent to set a science-based target
- Plan to expand GHG Scope 3 category auditing

In 2021, we obtained **7.5% usage of renewable electricity**, with goals of increasing this to 10% by 2025 and 25% by 2030.

**Target**  
10% renewable electricity consumption

We achieved a **1.5% reduction in energy intensity**, a good start towards reaching a 5% reduction by 2025.

**Target**  
5% reduction in energy intensity

In 2021, we recorded a **0.48% increase in water intensity** which we are working to reduce to 10% by 2025.

**Target**  
10% reduction in water intensity

In 2021, we diverted **78% waste from landfills**, which by 2025 will increase to 90%.

**Target**  
90% waste diverted from landfills

### MEDIUM-TERM (2030)

#### TARGET

**30% reduction** in combined GHG intensity for Scope 1 and 2 emission by 2030

**15% reduction** in energy intensity by 2030

**25% renewable electricity consumption** by 2030

**20% reduction** in water intensity by 2030

**90% waste diverted from landfill** by 2030

**Circular Feedstocks**  
**Bio-based feedstock: 16%** against IVL's whole feedstock by 2030  
**Recycled feedstock (rPET): 10%** against IVL's whole feedstock and **23%** against PET feedstock by 2030

### LONG-TERM (2050-2070)

#### Towards Net Zero Carbon Emissions

- Continuously reduce our carbon footprint
- Improving operational eco-efficiency
- Procuring renewable and low carbon intensive energy
- Optimizing natural resource consumption

## 2021 Highlights

**6 manufacturing sites** utilizing 100% renewable electricity

Used **2,803,265 GJ of renewable energy**, saving over **143,175 tCO<sub>2</sub>e** in GHG emissions

Introduced **"Decarbonization SOPs"** to accelerate the impact of sustainability projects on the environment

**67% of sites** are ISO 50001:2011 or ISO 50001:2018 certified

We are focused on reducing our environmental impact by continuously integrating best practice consumption and optimization initiatives in our newly acquired plants and facilities. In 2021, we acquired a new recycling facility in Texas. This site, along with four more sites, increased our reporting scope in 2021 from 107 to 112 sites.



## INNOVATE4CLIMATE

IVL was honored to be a part of Innovate4Climate (I4C), an annual global conference on climate finance, investments, and markets hosted by the World Bank Group that attracts leaders focused on transforming dialogue into action on climate change by linking climate innovations with investment opportunities.



The three-day event, hosted by the World Bank Group and the governments of Spain and Germany, combined high-level plenaries, workshops, and a virtual marketplace to exchange knowledge and demonstrate know-how in delivering low-carbon resilient solutions.

FOR MORE INFORMATION

## DECARBONIZATION IN OUR VALUE CHAIN

To further reinforce our ambitions to achieve Net Zero Carbon by 2050 - 2070, we developed a more focused Decarbonization Strategy which builds on our existing Climate Change Strategy.

We enhanced our diversified approach in managing our environmental impacts by remaining innovative and increasing efficiencies in our collaborations with suppliers, contractors, partners and customers in reducing our GHG emissions along our value chain.



### 1. Improving Operational Efficiencies

Investing in operational and energy efficiencies to reduce emissions in our operations



### 2. Renewable Electricity

Decarbonizing IVL's energy consumption via onsite and offsite renewable energy developments



### 3. Recycling

Investing in and expanding recycling facilities to address plastic pollution and reduce lifecycle carbon emissions

## 2021 PROGRESS

**Achieved a 1.5% reduction in energy consumption.**

We are currently implementing solar energy systems at selected production sites and are exploring Virtual Power Purchase Agreements (VPPAs) options. As of 2021, **we have over 10 MWp in capacity and have a further 31 MWp to be finalized.**

Acquired one new recycling facility in Texas, USA and upcoming facility in Karawang, Indonesia. **These new facilities are capable of recycling up to 5 billion PET bottles by 2023.**



### 4. Circular Feedstock (Bio-based and Recycled feedstocks)

Replacing fossil fuel-based feedstocks with bio-based and recycled feedstocks



### 5. Future Technologies

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



### 6. Natural Capital Solutions

Exploring partial and full ownership of carbon offsetting projects

## 2021 PROGRESS

Currently utilizing biomass in feedstock and through energy generation. We are exploring further options to increase consumption.

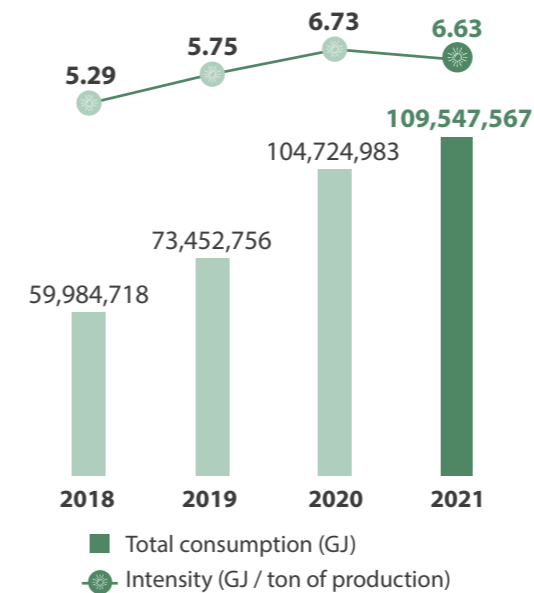
In the midst of a study to determine the feasibility of implementing these technologies in our manufacturing sites.

Critically evaluating Natural Capital Solutions for future applications.

## MANAGING OUR ENERGY CONSUMPTION

IVL continuously monitors, controls, and conserves energy throughout our value chain. We are steadfast in our commitment to our 2025 target of reducing our energy intensity by 5% compared to the 2020 baseline. Our Net Zero Carbon ambitions contribute to multiple energy saving initiatives throughout the business. Our intense focus on energy efficiency reduces our energy costs, minimizes our impacts, contributes to a lower-carbon economy and increases our competitiveness. Further information is available in our Global Performance Data section on pg. 161.

### Total Energy Consumption



Note: 6.64 GJ / ton of production for 2020 reporting scope and 6.63 GJ / ton of production for 2021 reporting scope



### Energy Targets and Performance

#### 2025 Target

**5%** energy intensity reduction

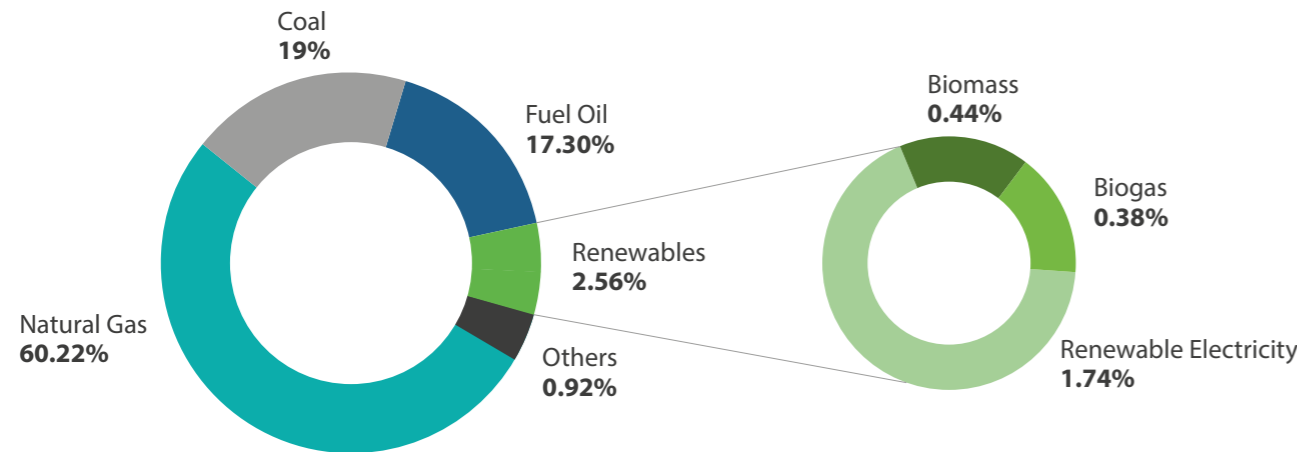
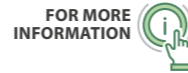
#### 2030 Target

**15%** energy intensity reduction

In 2021, IVL recorded an energy intensity of **6.63 GJ/ton of production, a 1.5% reduction against 2025 target.**

In 2021, although we recorded an increase in total energy consumption – energy intensity decreased by 1.50%. This was in line with our expectations of higher operational efficiencies due to our implementation of various production site-level initiatives. Furthermore, we are actively increasing our use of renewable energy such as solar and wind energy, biomass and biogas – in line with our Net Zero Carbon ambitions.

## OVERALL 2021 ENERGY BREAKDOWN



### RENEWABLES IN OUR OPERATIONS

#### Offsite Renewable Electricity

Renewable electricity procurement via global VPPAs can provide additional opportunities to reduce GHG emissions.

We have reached over 10 MWp in total capacity at various sites with over 31 MWp to be finalized.

We are actively looking into using VPPAs to acquire renewable electricity for other production sites where feasible.

#### Onsite Renewable Energy

Aside from biomass and biogas, we strive to generate an optimum amount of solar electricity at our sites.

In 2021, we completed the installation of solar rooftops at four sites while one additional site is due for completion in the near future.

We are actively increasing our consumption of solar energy through solar rooftop installations at other locations where feasible.

#### Plants Utilizing 100% Renewable Electricity

- UAB Orion Global Pet Lithuania
- Wellman International Ireland
- UTT Technische Textilien Germany
- Indorama Ventures Portugal PTA
- Indorama Ventures Quimica, Spain
- Kordarna Plus, Slovakia



#### Renewable Electricity Targets and Performance

##### 2025 Target

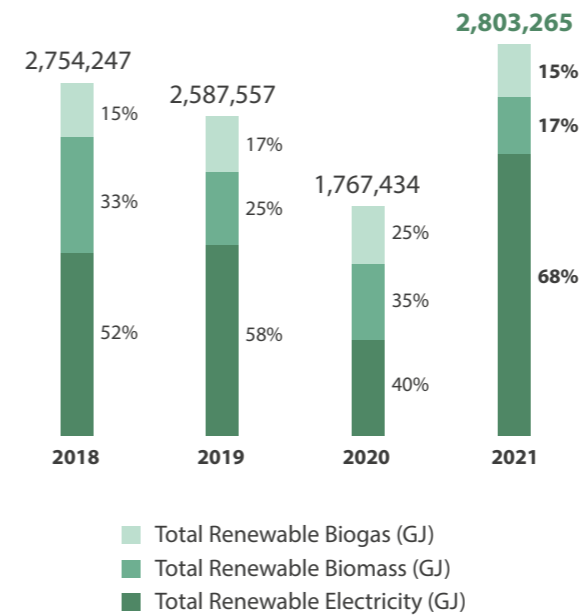
**10%** renewable electricity consumption

##### 2030 Target

**25%** renewable electricity consumption

In 2021, we utilized 2.56% in renewable energy resulting in 2,803,265 GJ and achieved 7.5% in renewable electricity consumption. This resulted in a 143,175 tCO<sub>2</sub>e reduction in GHG emissions.

## Total Renewable Energy Consumption (GJ)



### ENERGY EFFICIENT CRYSTALLIZATION UNIT

Glanzstoff Bohemia, an IVL company based in Lovosice, Czech Republic, collaborated with employees and students from Glanzstoff Bohemia University in designing a new crystallization unit by applying the latest in 3D modeling (headsets), design software, and precise engineering methods. The new crystallization unit diverts the dependence on water derived from steam and rivers, while successfully lowering CO<sub>2</sub> emissions.

### FLOATING SOLAR PANELS AT NAKHON PATHOM

Indorama Polyester Industries—Nakhon Pathom successfully installed solar photovoltaic (PV) modules on all available rooftops generating renewable electricity for onsite consumption. In 2021, they further increased capacity by installing floating solar panels in the effluent treatment plant (ETP) pond. By generating 5,250 KWp from the solar installations, the plant will be able to reduce 3,474 tCO<sub>2</sub>e carbon emissions.

### PT. INDORAMA POLYPET INDONESIA RECEIVES AN 'ENERGY REPORT CERTIFICATE'

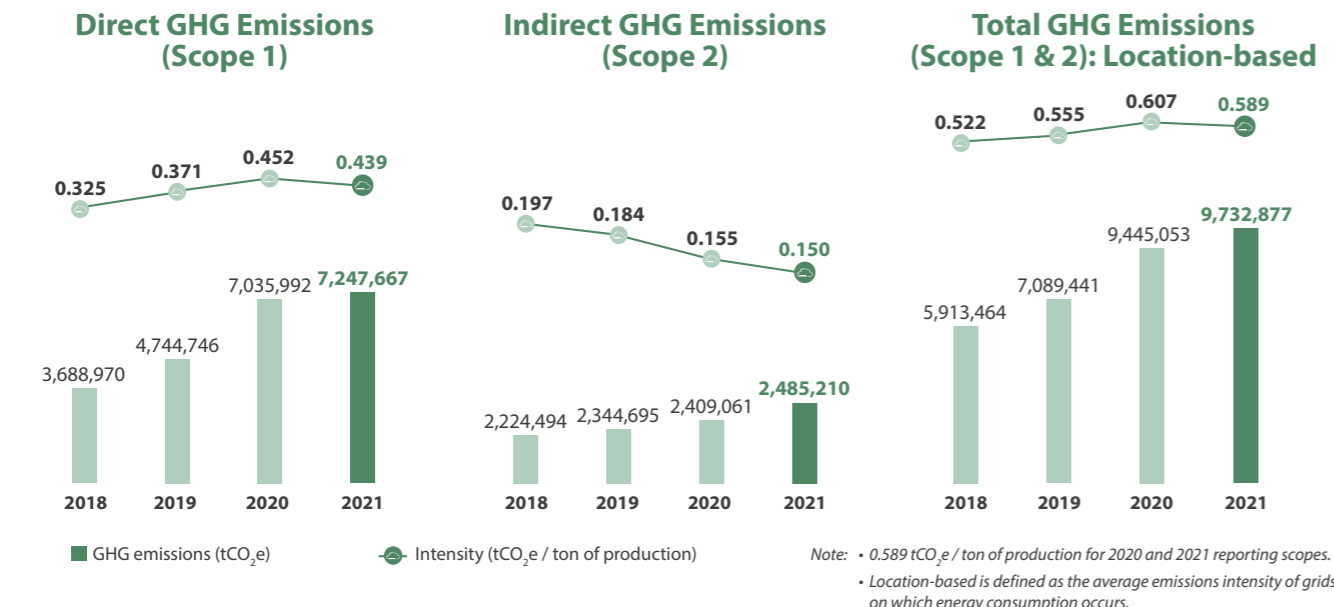
Indonesia's Ministry of Energy and Mineral Resources granted PT. Indorama Polypet Indonesia an "Energy Report Certificate" recognizing the company as a sustainability leader in 2021. This will further increase trust in the company's continued commitment towards making Net Zero Carbon a reality alongside recognition among stakeholders in the country of IVL's sustainability leadership.



## GHG STRATEGIES

We are committed to reducing our environmental footprint and developing low-carbon alternatives to improve resource productivity, in line with our Decarbonization Strategy and the UNGC Communication on Progress (COP).

In compliance with the World Resources Institute (WRI), World Business Council for Sustainable Development and ISO 14064-1/ISO 14064-3, the international standards in line with the GHG Protocol on Corporate Accounting and Reporting – we keep close track of our direct and indirect Greenhouse Gas Emissions (GHG Scope 1, 2 and 3) to identify reduction measures and implementation. These, and other key environmental data are collected quarterly through an electronic management system.



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

- 2025 Target**  
**10%** combined GHG (Scope 1 & 2) intensity reduction (baseline 2020)
- 2030 Target**  
**30%** combined GHG (Scope 1 & 2) intensity reduction (baseline 2020)

In 2021, IVL recorded **0.589 tCO<sub>2</sub>e/ton of production in GHG (Scope 1 & 2) intensity, a 3% reduction in combined intensity against our 2025 target.**

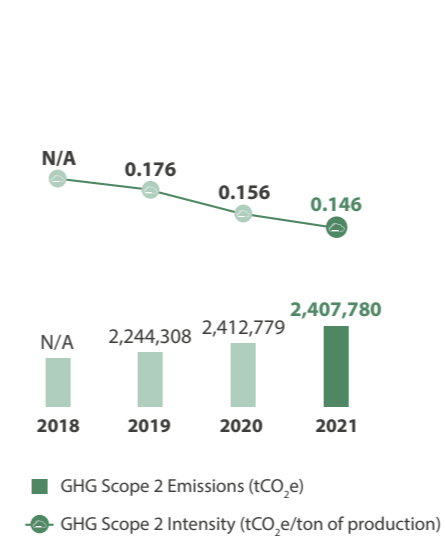
The reduction in GHG (Scope 1 & 2) intensity can be attributed to increased operational efficiencies and our US\$ 28.5 million investments in GHG reduction projects. These investments resulted in a reduction of GHG emissions of 185,132 tons of CO<sub>2</sub>e. We are currently developing Scope 3 GHG data collection templates to enhance the tracking of our Scope 3 GHG emissions which will allow suppliers to efficiently track emissions across our value chain.



## GHG EMISSIONS ACROSS OUR VALUE CHAIN

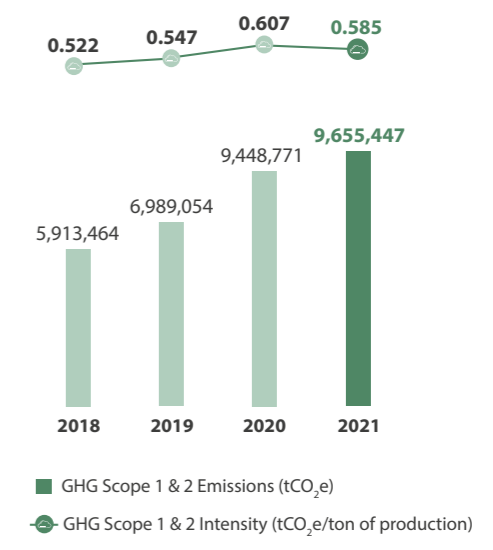
Scope 1	Scope 2	Scope 3
<ul style="list-style-type: none"> <li>Production Plants</li> <li>Company Vehicles</li> <li>Company Facilities</li> <li>GHG Scope 1 intensity = 0.439 tCO<sub>2</sub>e/ton of production</li> </ul>	<ul style="list-style-type: none"> <li>Purchased electricity, steam, heating &amp; cooling for own use</li> <li>GHG Scope 2 intensity                             <ul style="list-style-type: none"> <li>Location-based = 0.150 tCO<sub>2</sub>e/ton of production</li> <li>Market-based = 0.146 tCO<sub>2</sub>e/ton of production</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Purchased goods, services and capital goods = 23,787,293 tCO<sub>2</sub>e</li> <li>Fuel and energy-related activities = 1,664,002 tCO<sub>2</sub>e</li> <li>Upstream and downstream transportation and distribution = 1,544,772 tCO<sub>2</sub>e</li> <li>Waste generated in operations = 60,259 tCO<sub>2</sub>e</li> <li>Business travel and employee commuting = 35,879 tCO<sub>2</sub>e</li> </ul>

### Indirect GHG Emissions (Scope 2) (Market-based)



Note: Market-based is defined as emissions from electricity that companies have purposefully chosen.

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





## PROPYLENE PURIFICATION TOWER STEAM REDUCTION

The IVOX Port Neches Team carried out studies to determine the impacts of bypassing the Propylene Recycle tower, by sending a portion of the propylene stream to the olefins unit tower for processing, with the remainder sent for recycling to Epoxidation.

This project is expected to yield an energy reduction of 324,090 GJ/year along with an emissions reduction of 478 metric tons of CO<sub>2</sub>.

The process efficiencies achieved from this project would lead for a total operational savings of US\$ 2.6 million.

## CARBON REDUCTION LABEL FROM THE THAI ENVIRONMENT INSTITUTE (TEI)

To encourage consumers to consider climate their impacts when making purchases, the Thai Environment Institute (TEI) jointly launched the Carbon Reduction Label with the Thailand Greenhouse Gas Management Organization and the Thailand Business Council for Sustainable Development (TBCSD).

TPT Petrochemicals, an IVL business unit in Rayong, Thailand, was awarded the Carbon Reduction Label for its PTA products. This label indicates the reduction in greenhouse gas emissions per unit of the product or service to help consumers make an informed purchase, simultaneously reducing the contributing factors of global warming along the supply chain.

As part of our Decarbonization Strategy, we adopted an internal carbon pricing scheme in our current investment planning. This increases the visibility and encourages greater accountability of the carbon impacts on our businesses. In developing the carbon pricing, we considered a number of scenarios through an Emissions Trading Scheme (ETS), by countries, regions and status of regulatory implications which could influence the increase in price assumptions. The statistical carbon price of US\$ 20/tCO<sub>2</sub>e was used to calculate carbon sensitivity. Further information on the considerations and climate scenarios analyzed can be found in our 2022 TCFD Report.



### TCFD REPORTING

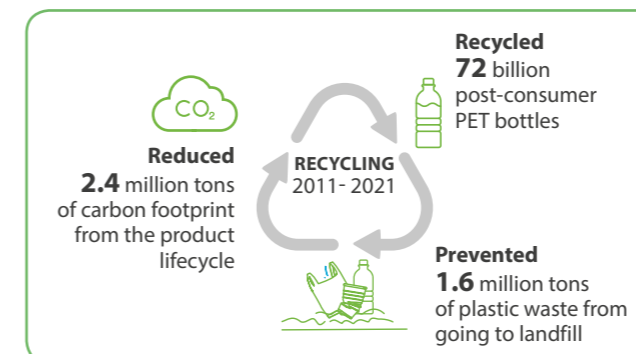
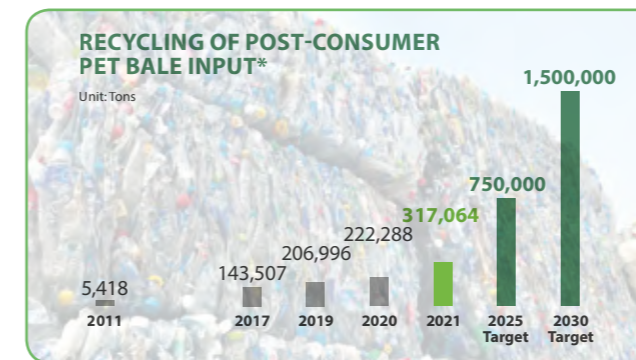
The Task Force on Climate-related Financial Disclosures (TCFD)'s recommendations enable stakeholders to understand carbon-related assets and their exposures to climate-related risks. In 2020, we were the first chemical company in Thailand and the second in Southeast Asia to adopt TCFD in providing our climate-related financial disclosures. For more information, please refer to our 2022 TCFD Report.



## CONTINUOUS IMPROVEMENTS IN RECYCLING

Here at IVL, we are the world's largest manufacturer of virgin PET. While we intend to grow our PET production and remain industry leaders, we are also one of the biggest PET recyclers and are proud of our commitment to rPET production, a material that is well-suited to the circular economy and which also allows consumers to contribute to a closed-loop system.

<b>OUR RECYCLING MISSION</b>	To serve the recycling needs of IVL's customers by building a leading, differentiated, and economically attractive recycling business.		
<b>OUR RECYCLING STRATEGY</b>	<b>Strengthening our Global Recycling Capability</b>	<b>Ensuring a Fully Closed Loop</b>	<b>Contributing to a Circular Economy</b>
<b>2021 PROGRESS</b>	<p>Acquired <b>1 new recycling facility</b> in Texas, USA and <b>announced a greenfield recycling facility</b> in Karawang, Indonesia</p> <p>These two facilities can recycle up to 5 billion PET bottles by 2023.</p>	<p><b>317,064 tons</b> (a 43% increase from 2020) of post-consumer PET bottles recycled into flakes as feedstock in polyester feedstock.</p>	<p><b>14.3 billion</b> (a 43% increase from 2020) of post-consumer PET bottles recycled.</p>
<b>RECYCLING COMMITMENTS</b>	Sustainability CAPEX of US\$ 2 billion by 2025 and US\$ 7 billion by 2030.	Bottle recycling capacity of 50 billion by 2025 and 100 billion by 2030.	Post-consumer PET bale input of 750,000 tons by 2025 and 1,500,000 tons by 2030.



**CELEBRATE WITH US**  
Since 2011, we have achieved

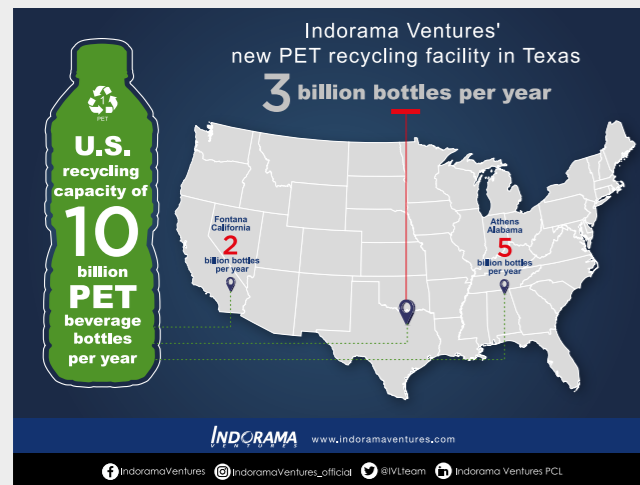
**75 billion** PET bottles RECYCLED ON 24 MARCH 2022 AND COUNTING

with a total reduced **GHG emission of 2.50 million tons**



Note: \* IVL Vision 2030 recycling ambition: 3.13 million tons and 200 billion bottles per year.

PET's versatility makes it 100% recyclable, resulting in a lower carbon impact than other packaging options. As leaders in PET production and recycling, it is our advantage to leverage such opportunities from a closed-loop system. We expanded our mechanical recycling reach by investing in two facilities in 2021, a newly acquired facility from CarbonLite in the United States and a newly commenced facility in Indonesia due to begin operations in 2023. These facilities can collectively recycle roughly five billion bottles which will expedite our ambition of utilizing 750,000 tons per year of total post-consumer PET in polyester feedstock.



## IVL AND CARBIOS TO BUILD IN FRANCE ITS FIRST-OF-A-KIND MANUFACTURING PLANT FOR FULLY BIO-RECYCLED PET

Advanced recycling is also a promising recycling avenue where we leverage our partnership with technology developers. Recently, IVL and Carbios jointly announced a collaboration to build and operate the world's first industrial-scale enzymatic PET bio-recycling plant, with a processing capacity estimated 50,000 tons of post-consumer PET waste per year, equivalent to 2 billion PET bottles or 2.5 billion PET trays, at Indorama Ventures' PET production site in Longlaville, France which is expected to be operational by 2025\* with the creation of 150 direct and indirect new jobs.

Carbios is a pioneer in the development of enzymatic solutions dedicated to the end-of-life of plastic and textile polymers, and has developed a disruptive technology and process that enables efficient transformation of plastic waste into novel valuable products. Combining biotechnology and a renewed industrial ambition will be the key to achieving a more circular economy. This strategic project is strongly supported by the French Government and the Grand-Est Region\*\*, with significant non-dilutive financing. This breakthrough project showcases the government's ambition as part of the France 2030 plan, in preparing for the challenges in the next decade.

\* Estimated date, depending on the grant of the authorizations to build and operate and on the terms and conditions remaining to be defined for this collaboration between both parties.

\*\* Conditioned to aid notification to the European Commission and in-additional assessments by French authorities.



## Deja™ CARBON NEUTRAL PET

We proudly launched our first carbon neutral PET pellets which is the world's first certified carbon neutral PET pellet through our DEJA™ sustainable brand platform. The pellets are made with renewable energy, locally sourced materials, and low-impact water transport, to achieve a neutral carbon footprint for our customers. This is designed to support customers meeting new regulations that require increased recyclability and a reduced carbon footprint.



FOR MORE INFORMATION

## OUR RECYCLING THOUGHT LEADERSHIP AND COLLABORATIONS

We are mindful of our responsibility to address the challenges faced by our industry as a whole. This sense of urgency stems from our belief that the need for concerted action through collaboration is critical – particularly at this present moment. As a result, we have a history of working in partnership with stakeholders to help drive positive change in the sustainability arena, especially in recycling.

We actively participate in legislative engagements with industry associations to support positive change and sustainable practices. One of our key ambitions is our intention to work with the Committee of PET Manufacturers in Europe (CPME) on the EU's non-recycled plastic packaging waste contribution.

In addition, we work with various associations that represent the plastic sector to develop a protocol on policy advocacy. We intend to define the policy areas, and build and improve public perceptions of PET, which is a fully circular, recyclable plastic with a lower carbon footprint than other packaging materials such as glass and aluminium. We actively communicate with political actors and consumers about the recyclability and sustainability of PET through strategic partners including Ellen MacArthur Foundation, Global Plastic Action Partnership (GPAP), REcycling of Used Plastics Limited UK (RECOUP), European Organization for Packaging and the Environment (EUROPEN), and PET Resin Association (PETRA) in the US and American Chemistry Council (ACC), PET Container Recycling Europe (PETCORE), National Association for PET Container Resources (NAPCOR), and Recycling Partnership.

FOR MORE INFORMATION





### IVL COLLABORATES WITH GPAP AND WEF ON INVESTOR TOOLKITS FOR PLASTIC WASTE

In collaboration with Global Plastic Action Partnership (GPAP) and World Economic Forum (WEF), IVL contributed to the newly released investment toolkit by writing on seizing today's economic opportunities while addressing the plastic waste crisis and demonstrating how capital from a variety of sources is enabling plastic waste recovery and recycling for the circular economy.

### OPERATIONAL EXCELLENCE AWARDS

Underway since 2017, this award is based on stellar performance across 10 criteria covering: Financial Performance, Operational Performance, and Sustainability Performance (environment, health and safety) and Customer and Employee Satisfaction. The best Business Units are identified by benchmarking their performance across these criteria and are presented awards at the annual Group Management Conference (GMC).



### The Global Commitment 2021

IVL is proud to be part of the New Plastics Economy Global Commitment, reporting from mid-year to mid-year. Led by the Ellen MacArthur Foundation, in collaboration with the UN Environment Program, the third Global Commitment report notes our "significant progress" on recycling.



### Sustainability Leaders Council: A Collaboration for a Sustainable World

IVL and the Japan Bank for International Cooperation jointly sponsored the "Sustainability Leaders Council" organized by the Eurasia Group and Suntory Holdings. The Council is driven to create a sustainability action plan for Asian governments and the private sector, and help foster more resilient societies, reduce plastic waste, create economic value and build a more sustainable world.

The Council's virtual summit held in October 2021 included the participation of IVL's GCEO, Mr. Alope Lohia, and saw global leaders from various institutions, governments, and the private sector jointly identifying urgent priorities and blueprints for an environmental sustainability action plan.



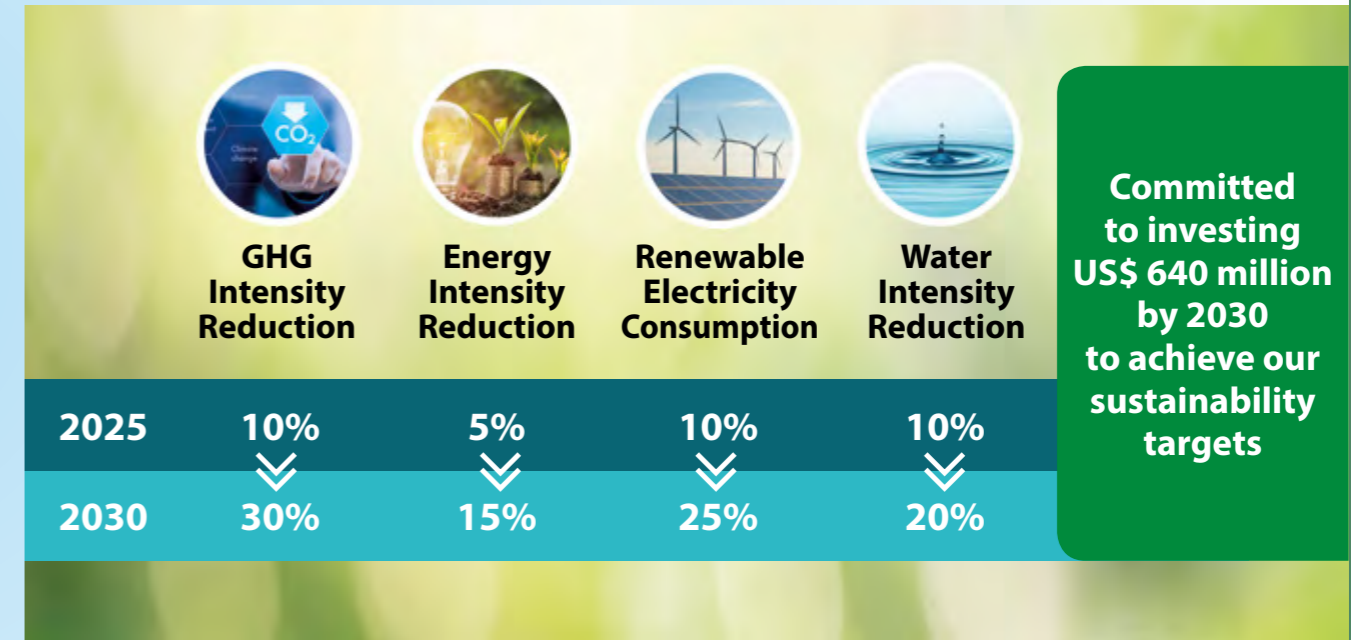
<h4>PET Division Winners</h4> <p>Asia Pet (Thailand) Limited/Indorama Polymers Public Company Limited, Lopburi - Thailand</p>	<h4>IOD Segment Winner</h4> <p>Indorama Ventures Oxides Anklshwar Private Limited - India</p>
<p>Indorama Petrochem Limited (PET), Rayong - Thailand</p>	<h4>Aromatics Division Winner</h4> <p>Indorama Ventures Química S.L.U, San Roque - Spain</p>
<h4>Packaging Vertical Winners</h4> <p>Petform (Thailand) Limited, Lopburi (Closure) - Thailand</p>	<h4>Fibers Segment Winner</h4> <p>Performance Fibers (Kaiping) Company Limited - China</p>
<p>Petform (Thailand) Limited, Rayong - Thailand</p>	<h4>Recycling Business Winner</h4> <p>Indorama Ventures Sustainable Solutions Fontana, Inc. - US</p>

# SPECIAL REPORT

## IVL's Road to Net Zero Carbon

We are in a race against time in slowing down climate change, but we are reassured in not being alone in our Net Zero Carbon ambition. Through the concerted efforts of governments, businesses and the general public, we are both encouraged and confident that this mission can be achieved.

### ACCELERATING SUSTAINABILITY TARGETS



We are constantly looking to improve long-term sustainability through natural climate solutions that can remove carbon from the atmosphere. Forest preservation, restoration, and anti-deforestation projects are in the pipeline, along with Carbon Capture Utilization and Storage (CCUS) and green hydrogen. Additionally, we have invested in roof and ground mounted solar panels for our sites and are seeking Virtual Power Purchase Agreements (VPPAs) wherever feasible. These are in line with our plans to decarbonize IVL's energy consumption by increasing usage of onsite and offsite renewable electricity reaching 10% by 2025 and 25% by 2030, and through the progressive phase-out of coal.

In our ongoing effort to decouple our business growth from our emissions, we anticipate investing US\$ 7 billion in green projects by 2030 to improve operational efficiencies and reduce energy consumption, GHG emissions, water consumption and waste generation. Going further down a greener path, we aim to invest in making fundamental changes to our products and businesses around the world.

While doing all we can to stay ahead of evolving regulations and legislation, our decarbonization strategy also involves the indirect approach of helping other industries and individuals reduce their impacts on the climate through our products. Essential to modern life, our products are amongst the best based on their performance, affordability, and environmental footprint.



While traditionally companies and their emissions grow over time, we are changing this narrative through our concerted efforts and strategies in achieving Net Zero Carbon. Even as we are reducing our emissions, we will continue to put the needs of stakeholders at the heart of our efforts while connecting our sustainable goals, actions and outcomes with globally desired social and economic results.



We jointly declared our commitment to achieving Net Zero Carbon with other leading private sector companies in Thailand. This declaration is in line with our multi-pronged and ongoing decarbonizing strategy which reflects our unwavering will to achieve 30% emission reduction by 2030 and Net Zero Carbon by 2050-2070. Despite just declaring our Net Zero ambitions, we have already started our efforts in emissions reduction – over the last ten years, we have recorded a 10% reduction while in 2021 alone, we recorded a reduction of 3% emission – a modest yet positive start of our pledge to deliver Net Zero Carbon.

On 31 May 2022, we officially committed to science-based targets agreeing to align our decarbonization plan with the latest climate science limiting temperature rise to below 1.5 °C. We will continue to refine our targets and have them validated by the Science-Based Targets Initiative within the 24-month deadline.



## MANAGING OUR ENVIRONMENTAL IMPACTS

Recognizing the impacts that we may have on the environment, we are proactively managing our energy consumption and continuously improving our internal processes, given the scale of our global operations as well as the nature of our business. These efforts are helping us achieve our ambitious climate targets.

Despite the increased reporting scope and an increase in production output of 7% compared to 2020, we achieved overall reductions in GHG, energy and waste – demonstrating greater operating efficiencies and signaling that we are on track to deliver on our 2025 medium-term targets in line with our long-term 2050 ambitions.



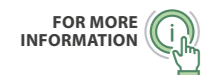
## WATER MANAGEMENT

In exercising our responsibility to minimize impacts on surrounding communities and the environment, we carefully implement effective water management to prevent aggravating water-stressed environments where some of our sites operate.

Our Water Management compliance is reinforced by our Global Corporate Water Management Policy and Strategy, which is part of IVL Group's EHS policy and outlines our sustainable water management, including water withdrawal and discharge.

We comply with all environmental laws, international standards and regulations in the countries where we operate. Nevertheless, backed by our values, such as embracing change and growing responsibly, this Policy and Strategy enables us to explore new ways to go beyond compliance.

We started reporting our water usage and discharge metrics using the new GRI reporting requirements in 2020, and continued to do so in 2021. Internally, the 3Rs define our approach, while externally, we work with local authorities and communities by constructing wastewater treatment plants and lowering the use of freshwater in our operations.



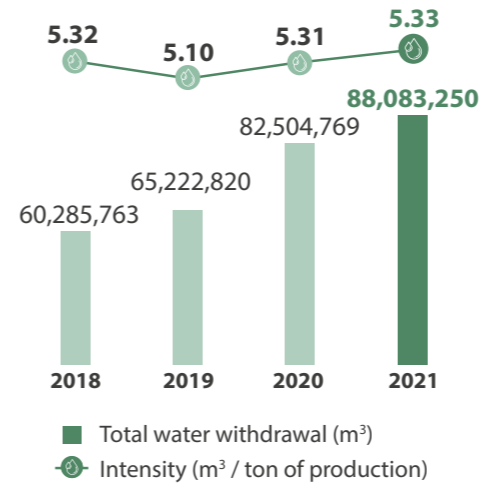
### Water Intensity Targets and Performance

**2025 Target**  
**10%**  
water intensity reduction

**2030 Target**  
**20%**  
water intensity reduction

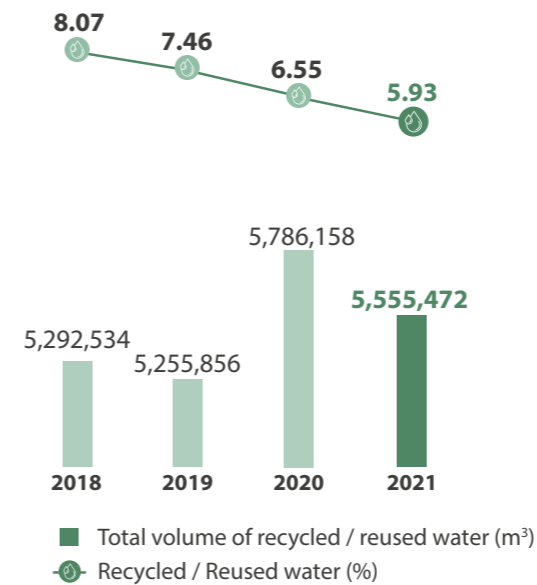
In 2021, we recorded a water use intensity of **5.33 m<sup>3</sup>/ton of production**. This is a 0.48% increase against 2025 target. Nevertheless, **we did achieve a utilization of 5.93% in volume of recycled/reused water**.

## Total Water Withdrawal



Note: 5.33 m<sup>3</sup> / ton of production for 2020 and 2021 reporting scopes

## Total Recycled / Reused Water



In 2021, we recorded an increase in water intensity and a reduction in total recycled water despite improvements in our water management through process efficiencies and technology enhancements. These improvements are integral to our water management compliance and in line with realizing our water-related targets. In 2021, we invested US\$1.8 million in water consumption reduction projects and will continue to do so in the years ahead. Please refer to the Global Performance Data section on pg. 165 for further performance data.



## GLANZSTOFF SICREM'S NEW COGENERATOR

In an effort to reduce the total energy cost, a 3.2 MWe Cogenerator was installed in 2021 at Glanzstoff Sicrem to heat the plant buildings during the winter season and partially heat the diathermal oil and water for increased efficiency of production.

This project achieved a reduction in water consumption of 401,650 m<sup>3</sup>, contributing to a roughly 20% overall operational cost savings for the plant.

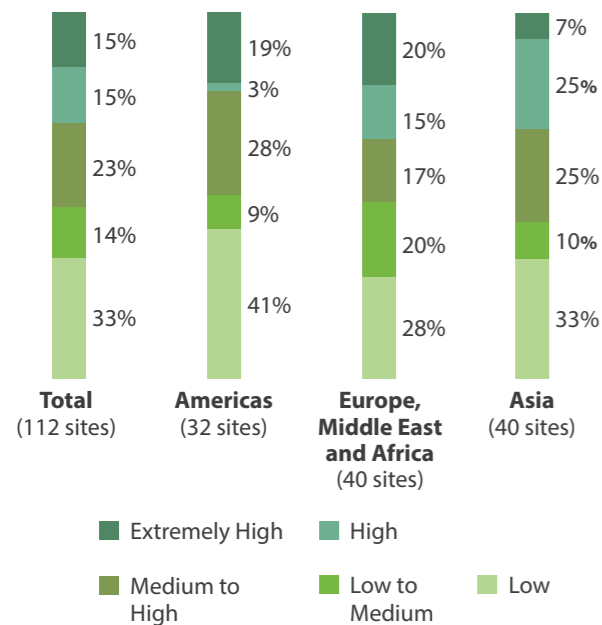
## WATER RISK MANAGEMENT WATER SENSITIVITY ANALYSIS

Effective water management means managing the optimum use of water resources, a critical risk that applies across our operations. As each site works within a unique operating context, we use the AQUEDUCT Water Risk tool, which combines 12 indicators to report relative water risks, total water available and total withdrawal. Through this tool, we regularly assess local water risks, limitations and opportunities.

The AQUEDUCT Water Risk Tool is able to evaluate changes in water demand and supply, stakeholder risk, and regulations based on current and future conditions. Its predictive feature can foresee changes to water risk forecasting by up to two decades. The results from the evaluation are discussed during annual risk assessment committee meetings to identify mitigation measures and initiatives for plants in extreme water-stressed areas or those having to deal with significant risks to water usage.

### 2021 Water Stress Assessment

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



Our integrated water risk analysis considers EBITDA and the financial impact on revenue and the cost of goods sold, to develop action plans and remedial activities that result from annual discussions. IVL has designated individuals as water champions at each of our operating plants to coordinate an integrated approach and ensure regular reporting to management. Further information is available in our 2021 Water Risk Analysis Summary Report.



## OPERATION ADAPTATION TACKLES A WATER SHORTAGE (FROM GLOBAL WARMING) AND WATER SALINITY

Indorama Ventures Portugal explored various ways to optimize raw water and chemical utilization while recycling plant effluents (saline and wastewater). The plant's reverse osmosis technology was chosen, with the primary goal of recovering the cooling tower blowdown and re-routing to demineralize the water lines feed tank, reducing the use of strong acid and alkali for membrane regeneration.

This initiative is anticipated to result in an annual raw water consumption reduction of 740,000 m<sup>3</sup> (about 12% of overall plant usage). Similarly, this would result in a 15% reduction in caustic soda usage and 47% reduction in hydrochloric acid consumption.

## WASTE MANAGEMENT

Our waste management strategy involves waste reduction from our operations to divert waste from landfill in compliance with regulatory requirements, which we exceed wherever feasible.

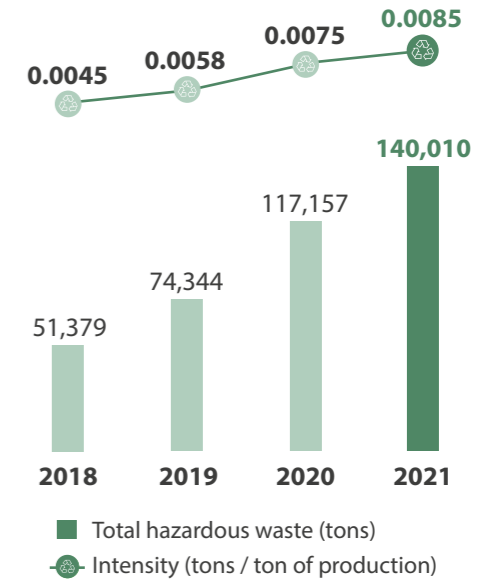
### Waste Target and Performance

#### 2025 Target

**90%**  
Waste diverted from landfill by 2025

In 2021, 78% of our waste was diverted from landfill against 2025 target, and an 8% increase from 2020.

## Total Hazardous Waste



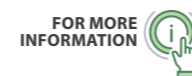
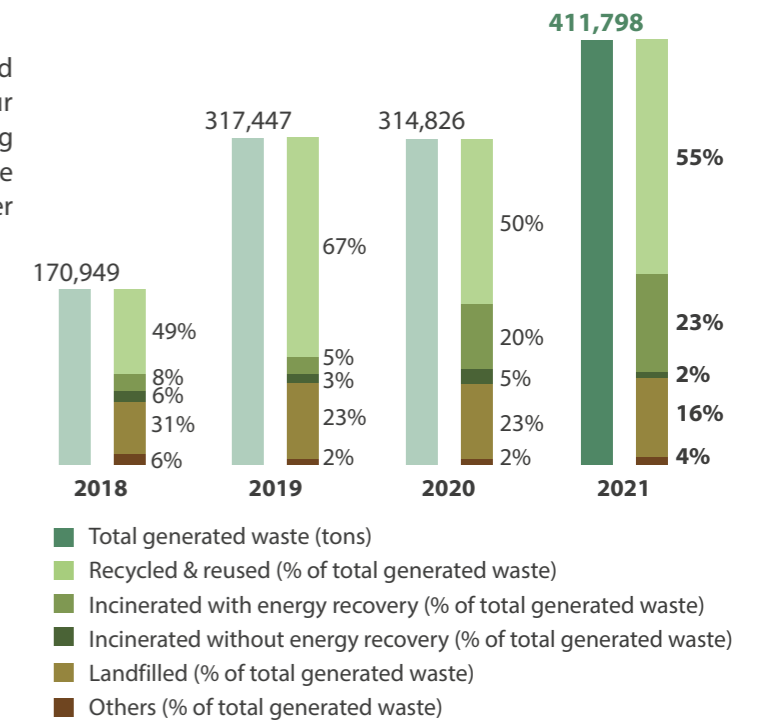
Note: 0.0085 tons/ton of production for 2020 and 2021 reporting scopes

In 2021, we recorded an 8% increase in waste diverted despite our robust circularity measures. Nevertheless, we are committed to reducing waste and applying responsible principles throughout the value chain by actively seeking sustainable waste disposal-related vendors that reuse, recover or recycle.

Additionally, to increase the amount of waste diverted from landfills, we will work hard to guarantee that our hazardous waste is properly managed, by conducting site visits to major vendors to check against compliance with local regulations. On pg. 162, you will find further information in our Global Performance Data section.

## Total Waste

Generated, recycled & reused, incinerated (with and without energy recovery), landfilled, and others



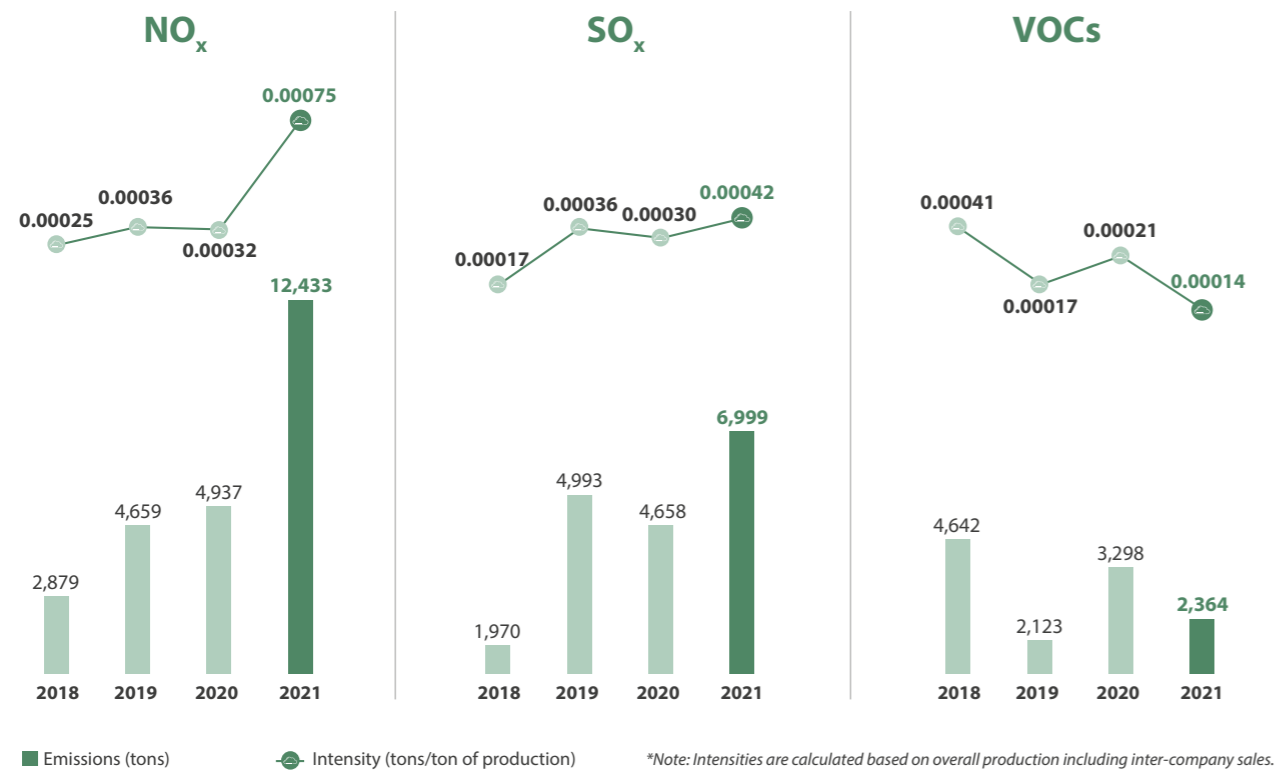
## ZERO WASTE TO LANDFILL CERTIFICATION

Among the many efforts towards achieving our environmental ambitions, landfill diversions are an effective way of demonstrating stewardship. Therefore, we are proud that our Rayong manufacturing site recorded diversion rates of at least 99% of waste to landfill and obtained Intertek's Zero Waste to Landfill certification. This improves the credibility and visibility of IVL's efforts in minimizing its environmental impacts.



## AIR EMISSIONS MANAGEMENT

We constantly monitor and minimize our air emissions to ensure compliance with laws and regulations, as well as to raise our emissions standards. Further information is available in our Global Performance Data section on pg.161.



## ROBUST ENVIRONMENTAL GOVERNANCE

Our environmental best practices are embedded across our value chain and guided by effective, equitable, responsive and robust internal mechanisms to protect the environment within the communities where we operate. We remain up-to-date on and abide by legislation that safeguards environmental sustainability and take non-compliance cases seriously. Should any occur, we take immediate corrective actions, and draw on the lessons learned which are shared with all concerned parties as part of our transparency and knowledge-sharing efforts.

## ENVIRONMENTAL MANAGEMENT SYSTEM

Our corporate values mandate the responsible pursuit of business growth and profitability. This is done in consideration of economic, environmental and social factors, and in compliance with applicable environmental laws, regulations and standards in the countries where we operate.

The Environmental Management System (EMS) is IVL's comprehensive framework based on the ISO 14001 standard which seeks to improve environmental performance, build a marketing advantage, demonstrate environmental leadership and lower operating costs. It assists in procuring renewable energy to reduce GHG emissions and informs employees on environmental issues and responsibilities, empowering them to mitigate and respond with environmental protection measures. It also leverages internal environmental knowledge, boosts morale and builds credibility with our stakeholders. The EMS applies to our Board of Directors, management, employees, trainees and those authorized to act on behalf of or represent the Company. It also guides us in conducting due diligence prior to mergers, acquisitions and when planning greenfield projects and expansions.

Our environmental compliance requirements guarantee that our activities conform with all applicable environmental laws, regulations, and standards in the countries where we have operations. We are proud to declare that 79% of our operations are ISO 14001 certified. For more information on ISO related certifications, please refer to our website.



## MONITORING LOCAL LEGAL COMPLIANCE REQUIREMENTS

Indorama Ventures will implement a new digital solution from an emerging global leader in EHS compliance, that is to be used for notifying local manufacturing sites of new and changing regulations.

This solution will work with each IVL manufacturing location to provide a legal register of applicable regulations in local languages. The legal registers will generate detailed checklists and notifications of legal requirements, specific to each location, that can be used for self-assessments and audits.

In 2021, there were seven incidents of regulatory non-compliance (greater than US\$ 10,000), including cases of oil, grease, ammonia, and nitrogen exceeding limits in wastewater which were all dealt with accordingly.

Corrective actions were taken, and the lessons learned were shared with all concerned parties as part of our transparency and knowledge-sharing efforts.



# SPECIAL REPORT

## Biodiversity







According to WEF's Global Risk Report, biodiversity loss is one of the three most severe risks for the next decade. This not only has environmental impacts, but also far-reaching economic and social impacts. Biodiversity loss endangers all sectors of the economy at varying levels, with short-term and long-term implications. A total of US\$ 44 trillion in economic value generated each year is dependent on ecosystem services, this is more than half of global GDP. For these and many more reasons, we believe that IVL has an important role to play in the conservation of nature. It is always our intention to preserve biodiversity in the communities where we have influence and operate.

### OUR RESPONSIBILITY

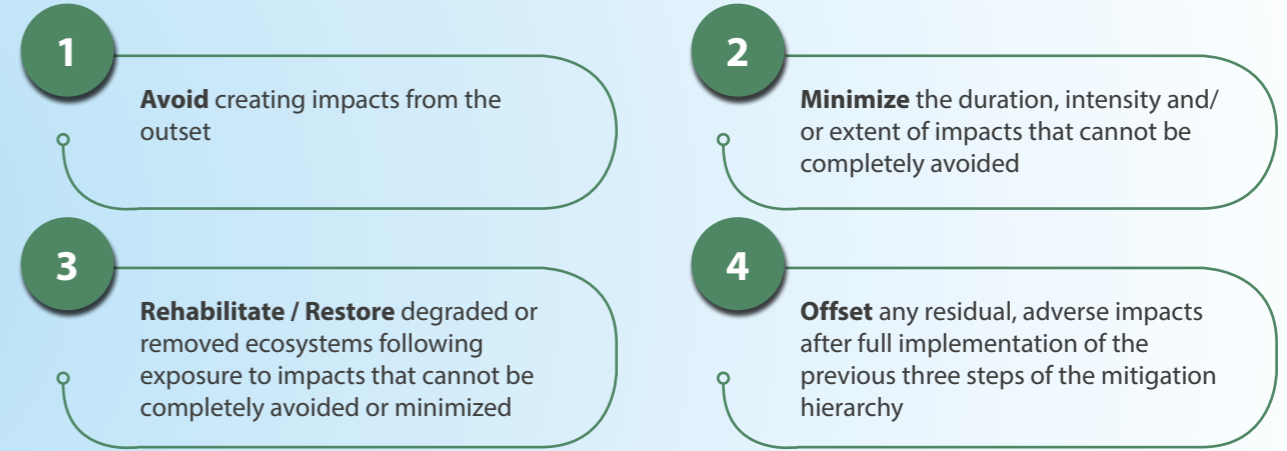
IVL is committed to sustainability and is aware of the importance of championing biodiversity. In line with supporting UN SDG #14: Life Below Water and UN SDG #15: Life On Land, we understand the importance of biodiversity loss and the need to urgently take action to minimize its impacts on the ecosystem. We are aware of the potential biodiversity loss-related risks and have made it an important element in decision-making and have incorporated it into the Group's business strategy.

### BIODIVERSITY LOSS RELATED RISKS

 <h4>REGULATORY RISK</h4> <ul style="list-style-type: none"> <li>Increased regulatory policies</li> <li>Increased disclosure requirements associated to biodiversity risks</li> <li>Potential introduction of biodiversity-relevant taxes and fees</li> </ul>	 <h4>FINANCIAL RISK</h4> <ul style="list-style-type: none"> <li>Potential introduction of new regulatory disclosures specific to biodiversity (Taskforce on Nature-related Financial Disclosures (TNFD))</li> <li>May face difficulty getting investments and loans, or have higher payouts</li> </ul>
 <h4>OPERATIONAL RISK</h4> <ul style="list-style-type: none"> <li>Reduced operational efficiencies due to increased natural disasters and disturbances</li> <li>Associated with resource dependency, scarcity and quality</li> <li>Reduced availability of natural resources and raw materials leading to operational and supply chain disruption and increased costs</li> </ul>	 <h4>REPUTATIONAL RISK</h4> <ul style="list-style-type: none"> <li>Increased pressure from stakeholders to assess, report and manage Environmental, Social and Governance (ESG) risks</li> <li>Risk of eroding the goodwill of their customers and other stakeholders and, as a result, having a diminished social license to operate</li> </ul>

### MITIGATION STRATEGY

When there are any operations in close proximity to a critical biodiversity area, we will follow the Mitigation Hierarchy as outlined in the four steps below:



In an attempt to preemptively avoid any significant impact on biodiversity due to our business activities, we have committed to ensuring that future production sites are not to be located in the vicinity of a protected area or those protecting species and habitats - including those under threat and those that represent a high value for biodiversity. We proactively take precautions during our preliminary assessments to ensure that we minimize any potential negative impacts on biodiversity and have pledged to no deforestation in future business expansion or operations at IVL.

### HOW WE CONTRIBUTE TO BIODIVERSITY PRESERVATION

VIA OUR ENGAGEMENTS	VIA OUR PRODUCTS
<p><b>Our Approach</b> We support and promote knowledge and awareness in the area of biodiversity, with the aim of conserving and protecting biodiversity.</p> <p><b>Our Action</b> We support unique programs spearheaded by Wetlands Edge Environmental Center (WEEC), Asheboro Zoo and The Wadden Sea National Park through sponsorships and initiatives that raise biodiversity related awareness through targeted educational programs.</p>	<p><b>Our Approach</b> We are able to contribute to a reduction of marine plastic debris by incorporating them into our efforts in PET recycling.</p> <p><b>Our Action</b> Our new facility in Indonesia is geared towards this challenge with an expected capacity to recycle almost two billion plastic bottles a year in support of the government's plan to reduce ocean debris.</p>

### IVL'S WAY FORWARD

The protection and restoration of biodiversity is critical if we are to collectively achieve our global sustainability goals. Success will require multi-stakeholder collaborations between regulators, corporations and consumers.

A thriving biodiversity plays an integral part in promoting stability and resilience to ecosystems and is vital for a stable supply chain. As a key player in the global chemicals supply chain, IVL firmly believes that we can play a part in transforming the biodiversity crisis – the push for more eco-friendly solutions will drive innovation forward and open up new business opportunities. This strengthens and confirms IVL's mission to be a world-class sustainable chemical company making great products for society.

The decisions we take today as a society will have implications on our tomorrow. Here at IVL, we understand the importance of biodiversity, its impact and strive to continue our research and take a lead in implementing good practices and call upon everyone to join us to act responsibly.

# EMPOWERING OUR PEOPLE AND COMMUNITIES



**Mr. Kanit Si**  
Independent Director  
Member of the Sustainability and  
Risk Management Committee

**“Our overriding priorities are employee safety and achieving ESG goals that reflect our support for education, well-being and the environment.”**

## 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.

## CAPITAL LINKED IN THIS CHAPTER



Human  
Capital



Intellectual  
Capital



Social and  
Relationship Capital



As our sustainability journey continues to empower our people and the societies surrounding our operations, we will continue to prioritize the growth and safety of our greatest asset – our employees. Our global team is our strength, and our commitment towards a responsible future is driven by our corporate social outreach and anchored by our flagship Recycling Education program.

## PERFORMANCE AGAINST OUR AMBITIONS FOR IMPROVING LIVES

### SHORT-TERM (2021-2024)

In 2021, we implemented an EHS Management and compliance systems to operationalize EHS standards and strengthen EHS talent by 2024.

In 2021, we had 516 leaders involved in succession planning. This is to be increased to approximately 1,000 leaders by 2023.

In 2021, we trained and developed 1,633 leaders worldwide. By 2024, we expect to have approximately 3,500 leaders involved in the leadership development curriculum.

### MEDIUM-TERM (2025)

In 2021, we recorded an overall LTIFR of 0.66. The goal is to achieve an LTIFR of less than 0.5 cases per 200,000 man-hours by 2025

As of 2021, we have educated 53,585 consumers on recycling since 2018. The target is to educate one million global consumers on recycling by 2030.

### LONG-TERM (2050)

Our target is an LTIFR of less than 0.1 cases per 200,000 man-hours.

Our mission is to protect our people and planet and enable further prosperity.

We want to positively impact society by delivering social, economic and environmental value.

## 2021 Results



67% sites certified in OHSAS 18001/ISO 45001\*



29.92 average training hours per employee



US\$ 1,652,554 contributions in global CSR activities

## A SAFE AND HEALTHY WORKPLACE

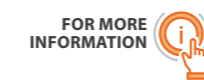
Creating and maintaining a safe, enjoyable, and healthy work environment is of the utmost importance at IVL, as this is integral to our success in attracting and retaining the best employees and reinforcing our position as a world-class sustainable chemical company. As actively promoting a strong safety culture is part of our DNA, our stakeholders benefit greatly from the programs and initiatives we have implemented.

We therefore operate with great care keeping in mind our employees and the communities we engage with. Our Health and Safety Policy ascertains that we incorporate health, safety and hygiene practices into our business management processes. Regular communications and trainings, controls at the individual plant level, periodic site risk assessments, and monitoring and evaluation activities are among the other measures which ensure product safety.

## ROBUST HEALTH AND SAFETY MANAGEMENT

The expansion of IVL's global reach places increased importance on our robust EHS system, which is designed to meet the Company's continually evolving and dynamic business and operating model.

Our EHS system comprises Corporate EHS, Regional EHS, Segment/Vertical EHS and Site EHS, which work together in executing the corporate EHS strategic priorities of governance, standardization, assurance, building capacity and driving a culture of sharing of best practices and capacity-building at the site, regional and global levels. This resilient model supports our businesses across regions and delivers improved worker productivity, reduced downtime, and lower costs, further strengthening our strong EHS culture.



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 Chief Strategy Officer, defines the Company's EHS strategy and direction, drives the agenda and monitors adherence to the EHS vision across the organization.
- The EHS Center of Excellence experts define EHS standards and policies and establishes governance mechanisms that are clearly understood and incorporated throughout the Company.
- The Regional EHS experts manages the audit process, serves as a regional POC for EHS emergency response and builds capabilities at the regional level.
- Segment and Vertical EHS Heads manage and work with Site EHS Heads in implementing EHS standards and practices at the site level.

The scope and maturity of our EHS function, as the core of our business, drives continuity, improves efficiencies, and catalyzes synergies with other enabling functions such as Sustainability and Business Continuity. The EHS function also allows for stronger central guidance, increased expertise and is integral to achieving our sustainability vision.

The review of our EHS policy resulted in more comprehensive updates to ensure compliance. In 2021, we refined our KPIs, constructed corporate EHS audit protocols, better understood our EHS capabilities and talent pipeline, and strengthened our network of subject matter experts. Our efforts continue in developing and operationalizing standards, while improving assurance processes, risk visibility/reduction and EHS proficiency. Our approach is managed through the four "accountabilities" described below.



## EHS'S FOUR CORE ACCOUNTABILITIES



### Governance and Standardization

Standardize practices across process safety, environmental compliance, industrial health & hygiene, general safety, and software.

Define systems, a common methodology, and new tools to facilitate the execution and monitoring of standards via audit protocols.



### Assurance

Develop and deploy EHS KPIs for use across the Company.

Design an audit system and analysis of EHS maturity across programs.

Evaluate regulatory compliance, adherence to EHS standards at sites, and transparent reporting to management through monitoring.



### Building EHS Capabilities

Investments in EHS capabilities.

Strive for high standards in EHS performance from all employees.

New activities, such as audit member participation, networking, and serving on Communities of Practice (COP).



### EHS Culture

Systematic approach to communications via the Global EHS repository, monthly reports, quarterly discussions with C-Suite, networking meetings and Group Share events.

Focus on a communications strategy for external stakeholders.

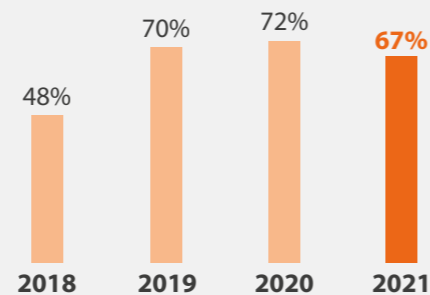
Our global team of EHS professionals oversees the implementation of health and safety initiatives and ensures that safety directives are implemented and audited on a regular basis across IVL's operations – including coverage of our employees and contractors.

New employees joining the Company are given extensive occupational health and safety training. Our training is customized and suited to their unique and respective purposes according to the project type, job, and aspects of risks and responsibilities, with a focus on maintaining a high level of awareness around potential risks in the workplace.

Additionally, our risk management strategy is implemented through regular team and management meetings, and employees are reminded of their responsibilities to stay safe at work and at home. At all our sites, instilling an awareness of and respect for health and safety practices is a crucial component of how we do business on a daily basis. Visitors and contractors who receive safety training prior to entering our facilities are mindful of these expectations. We want these expectations to foster a culture of caring and respect – and not just risk minimization.

## Certifications OHSAS 18001 / ISO 45001

We routinely go beyond the minimum local and national requirements in enhancing the safety and well-being of our employees; and as of December 2021, 67% of our operations around the world were OHSAS 18001/ISO 45001 certified.



In 2021, through our effective management approach – there were no serious non-compliance issues with respect to regulations or voluntary codes concerning the health and safety of our operations, as well as the impacts of our products. However, there was one minor violation issued to a plant in North Carolina, USA for not executing a lock out tag out audit. This item was promptly corrected when escalated.

## EMPLOYEE PARTICIPATION IN EHS

Employee participation is highly valued and they are actively involved in reviewing plant procedures, serving on various safety and health committees, participating in risk assessments and conducting safety observations and audits. This involvement provides some assurance that IVL's safety and health efforts are well-connected and relevant to the respective operation.



## EHS MANAGEMENT AND COMPLIANCE SYSTEMS

### HOW WE DETERMINE WORK-RELATED HAZARDS

Some of our tools that identify and mitigate work-related hazards are Safe Work Permitting Systems, Job Safety Analysis, Job Hazard Analysis, Management of Change, Process Hazard Analysis, Incident Investigations, and the Root Cause Analysis form.

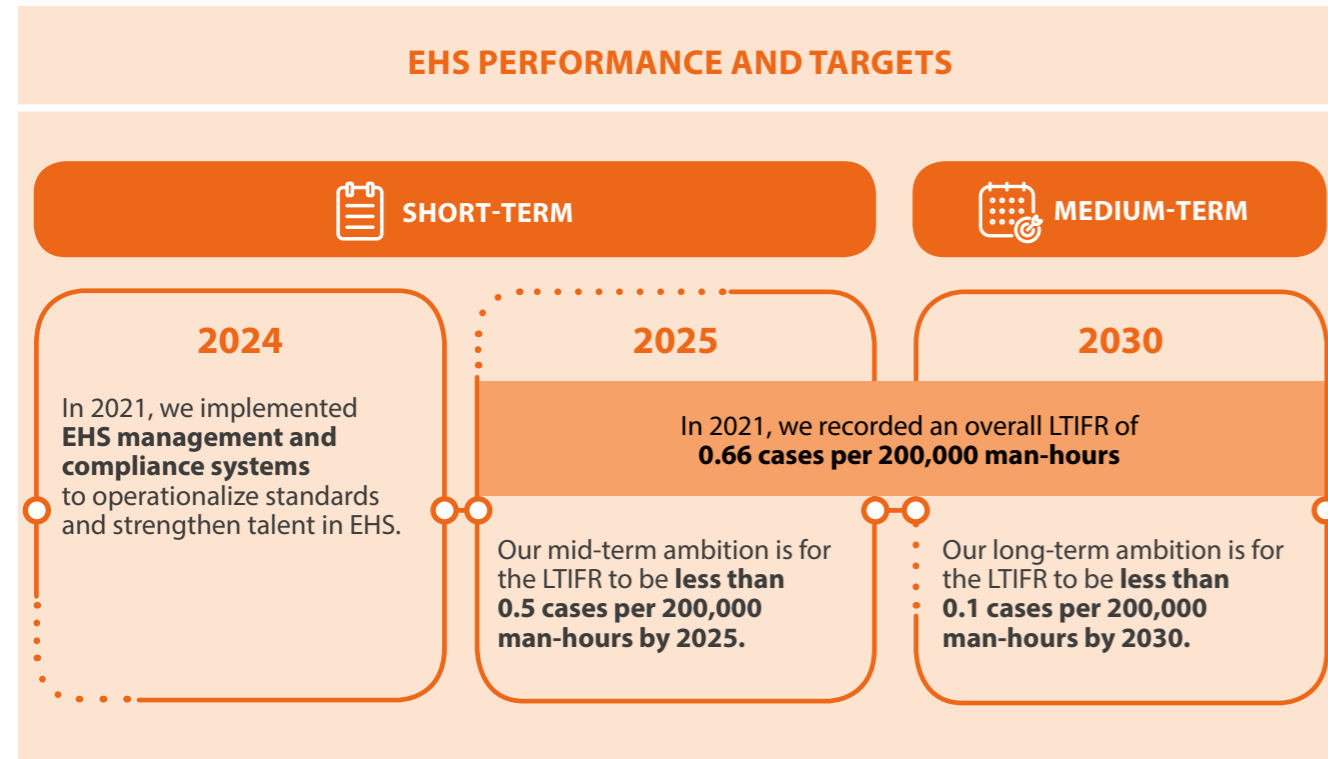
With an aim of building a paperless workplace, connecting teams digitally, and increasing efficiency and cost-effectiveness in our supply chain – IVL is proud to announce that in 2021, we began utilizing new software as the singular source for all of our data.

This software comprises Incident Management, Action Tracking, and sustainability-related issues. Our Corporate EHS and Sustainability teams worked together to design a system that would set a baseline, and this project was successfully implemented in the first quarter of 2022.

The software uses a dashboard to understand our risk with customized views available according to the site, segment and corporate levels to assist in decision-making, contingency planning, business continuity, risk reduction, optimizing expenditures, reductions in administrative loads, and more. As such, comprehensive training was given to the teams involved with its deployment.

An additional Red-on-Line software is being used to ensure comprehensive EHS compliance by notifying local manufacturing sites of new and changing regulations. This software maintains a register of all legal requirements in local language and generates detailed checklists and notifications of location-specific legal requirements that are useful for self-assessments and audits.

## OCCUPATIONAL HEALTH, SAFETY AND WELL-BEING

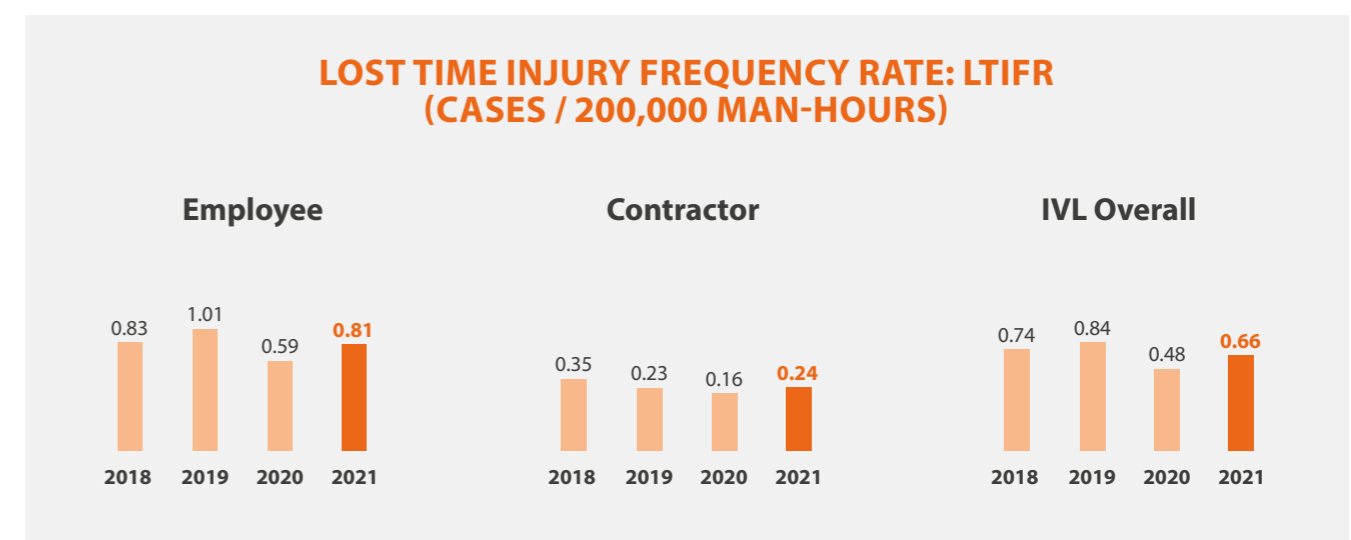


### OCCUPATIONAL HEALTH AND SAFETY (OHS) PERFORMANCE

We gain insights into our OHS performance through two indicators – The Total Recordable Injury Rate (TRIR) and Lost Time Injury Frequency Rate (LTIFR). These metrics allow us to gauge our workplace safety, track the effectiveness of our safety programs and drive improvements. We also collect accompanying OHS data through our corporate and business operations, enabling us to analyze performance and adapt accordingly.

In 2020, we revised our safety targets. While the 2025 target of LTIFR less than 0.5 cases per 200,000 man-hours 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. In 2021, however, we recorded an LTIFR of 0.66 cases per 200,000 man-hours, which is lower than our pre-COVID-19 value of 0.84 cases per 200,000 man-hours. Maintaining the target at below 0.5 cases per 200,000 man-hours will require ongoing and sustained programmatic improvements and focus.

We reported a total of 2,558 near-miss incidents compared to 1,977 in 2020 while over 41% of our operations (45 of 112 sites) achieved zero accidents in 2021.



While we cannot predict fatality occurrences or fully control the uncertainties in some of our manufacturing practices, we do believe in the need for resilience when experiencing unpredictable and uncertain events, all to ensure they do not lead to another regrettable LIFE event.

A LIFE event is defined as occupational incidents involving fatalities, injuries and permanent or partial disabilities. Regrettably in 2021, there were a total of six LIFE events: two fatalities, one permanent disability and three partial disabilities. More information on these events can be found in our 2021 Annual Report.

In a bid to improve our practices by learning from these LIFE events, we launched IVL's Injury and Illness Prevention Program (I2P2), which requires plants to systematically analyze incident trends and implement controls to reduce the most common occurrences.

### How we go Beyond Compliance

In prioritizing the health and safety of our employees, selected IVL sites are equipped with 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.



### EHS Excellence Awards 2021

The EHS Excellence Awards recognize an individual or team (EHS or non-EHS) that has demonstrated a conscious effort to reduce risk, drive improvements in safety or environmental programs, lead others to do the same, or otherwise champion a strong safety or environmental compliance culture.



IVL's "Golden Safety Rules" were also launched as an additional safety handbook to prevent serious and LIFE incidents. This guide for key life-critical activities is meant for all personnel (employees or contractors) working at IVL operated sites who carry out, or are responsible for, activities with particular potential to cause serious injuries or incidents, especially fatalities.

### A Decade Free of Accidents

Health and safety are non-negotiable at IVL. In upholding our "We are responsible" core value, we ensure that our best business practices are carried out collectively across our operations worldwide.

In this regard, we are happy to provide an update on Trevira, an IVL company based in Guben, Germany, which is maintaining its zero-incident culture, where continuous improvements in risk management and accident prevention **have resulted in zero accidents for 10 years.**



### PROCESS SAFETY

We commit and respond to the international operational safety and health guidelines by regularly maintaining equipment, machinery and physical infrastructure. One of the ways we remain a partner and employer of choice is by heavily investing in our value chain's processes to minimize safety risks and increase efficiencies.

The safety processes we have in place help mitigate major adverse social and environmental implications. Among the benefits of our compliance to the OHSAS 18001/ISO45001 standards and the Process Safety Management (PSM) principles is the flexibility to adapt our responses when appropriate.

Standard Operating Procedures (SOPs) support safe and well-maintained working environments in IVL. The risk assessment and implementation of effective protection measures is crucial for us to achieve a sound OSH performance, and IVL often complies beyond local legal requirements.

The slightly higher Tier 2 rate in 2021, compared to that of 2020, reflects the events that were not previously reported, as IVL has since acquired more knowledge on API reporting through professional training and the set-up of the Corporate EHS team.

In 2021, we recorded major process safety fire incidents in Texas, USA, and in Suape, Brazil, and an exhaust duct fire in Obernburg, Germany. Further information be found on pg. 125 of our 2021 Annual Report.

Process Safety						
Indicator	Tier 1			Tier 2		
	2020	2021	Change	2020	2021	Change
No. of Events	18	15	↓17%	13	21	↑61.5%
Rate (Cases / 200,000 man-hours)	0.064	0.047	↓27%	0.046	0.066	↑43.5%

To enhance and standardize our process safety, we have adopted the US OSHA standards to guide our Process Safety Conformance. Program elements include employee involvement, process safety information, operating procedures, Process Hazard Analyses (PHAs), employee training, contractor management, mechanical integrity, management of change, work permits, incident investigation, emergency response and compliance audits.

These are to be deployed starting in 2022 and across a multi-year implementation process. In countries that have process safety statutes, the more rigorous standard will apply.

### Safe and Secure Transportation

Safety is a constant throughout the different stages of our value chain, and this includes product safety. We prioritize the safe handling and transportation of our raw materials, including hazardous chemicals. Our selection of trusted logistics partners in the US, for example, involves those with a proven track record who apply rigorous inspection procedures throughout the different loading processes of the trucks transporting our raw materials. In adherence to the US Department of Transportation's (DOT) training requirements, our employees undergo multiple sessions on the transportation of hazardous materials through online training modules developed by the DOT's Office of Hazardous Materials Safety.

### Union Pacific Honors IVL for Dedication to Safety with the Pinnacle Award 2021

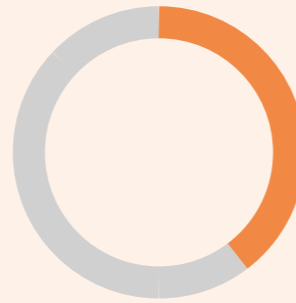
IVL was pleased to receive the Pinnacle Award, in recognition of our commitment to safely transporting chemicals by rail. This annual award highlights companies engaged in the implementation of release prevention protocols, corrective action plans and who have zero Non-Accident Releases (NARs) of regulated hazardous materials shipments.

### EMPLOYEE WELL-BEING

We believe a healthy work-life balance ensures a more fulfilling life for employees. This enables them to fully realize their individual abilities to sustain a thriving and motivated workforce. We care for our employees by investing in them and encouraging them to voice their concerns regarding mental and physical well-being or any other health and safety matters through relevant committees.

We emphasize the physical and mental well-being of our employees by encouraging their engagement in beneficial physical activities. We also offer access to fitness centers, organize charity fitness challenges as well as various other community engagement activities. Team building events are core to our employee engagement initiatives. In caring for our employees beyond occupational health requirements, we ensure they receive regular medical check-ups, flu shots and extended Employee Assistance Programs. Our commitment to investing in our employees' well-being also includes maintaining air quality through proper ventilation and reducing noise pollution ensuring these are within the applicable regulations throughout both our offices and manufacturing facilities.

We recognize the different requirements of our workforce in working hours, routines, and approaches, and pay attention to maintaining a balance between work and rest periods. For example, production processes require shift and rotation work that offer less flexibility; in response, we utilize the discretion of our site managers to appropriately respond to an individual employee's needs. Employees in desk-based roles who may accrue more work hours over a period than is legally permitted are compensated with flexible working hours and the option of working from home.



**41.89%** of our employees are covered by collective bargaining agreements

### IVL GROUP EMPLOYEE ASSISTANCE PROGRAM (EAP)

On October 10, IVL celebrated World Mental Health Day by acknowledging and addressing the importance of mental health, especially in living with the challenges of the new normal imposed by COVID-19.

In June 2021, we extended our group-wide global support to all employees and their dependents through the IVL Group Employee Assistance Program (EAP), which offers a counselor or coach to develop a personal well-being strategy for beneficiaries who can also access a variety of support services. The program provides free, confidential information, referrals, and in-the-moment support.

### OFFICE ERGONOMICS

Based on the results of a successful pilot program for employees who work from home, we invested in new office equipment for them. The equipment included (but is not limited to) external monitors, wireless computer mouse and keyboards, and ergonomic office chairs. Employees also attended the "Ergonomic Safety Education and Awareness" training session.



### IVL's VALUES



- **The customer is why we exist.**  
We measure ourselves by our customers' success. Through unparalleled innovation and attention to quality we aim to exceed their expectations.
- **Our people make the difference.**  
A company is its people and people provide the competitive advantage. We respect every voice and rely on one another to grow.
- **We see change as an opportunity.**  
The business landscape is constantly evolving. We embrace the challenges of change to be world-class and maintain our differentiation.
- **Diversity is our strength.**  
As a global company, we value the variety of knowledge, perspectives and experiences in our organization, and draw strength from these to fuel our competitiveness.
- **We are responsible.**  
In our pursuit of business growth and profitability we do things the right way – economically, socially, and environmentally. Furthermore, health and safety are non-negotiable.

## WORKPLACE HUMAN RIGHTS

IVL strongly respects all human rights as embodied in the Universal Declaration of Human Rights and its two companion covenants, the International Covenant on Civil and Political Rights and the International Covenant on Economic, Social, and Cultural Rights. We avoid any human rights violations and follow the legislation of the countries where we operate.

We have a zero-tolerance policy for human rights breaches and encourage all of our workers and stakeholders to report any violations through the appropriate channels. Any employee who violates this policy, including but not limited to, illegal child labour, slave labour, acts of prejudice, discrimination, bullying, or harassment, faces internal disciplinary action in accordance with local laws and regulations.

In 2021, IVL introduced a Declaration on Human Rights to be signed by all Business Heads and Site Heads. These are the individuals who are key in implementing systems and processes that prevent and address any violation (or potential violation) of the Human Rights Policy. They are also key in the continuous improvement of its implementation. The declaration provides evidence of the level of compliance at all of IVL's operations and highlights areas where improvement is needed. If a non-compliance issue is brought to light at the site or business, the Business Heads and Site Heads must disclose specific details of the issue and the actions taken for its resolution. The Internal Audit Department will examine the human rights practices based on the information provided in this yearly declaration. The results of this audit are then reported to the NCCG Committee and the Board. The Company will then take all necessary and reasonable remediation steps to assist an employee if their human rights are violated by a third-party or an outsider.

We are signatories to the UN Global Compact and our Workplace Human Rights Assessment (WHRA) system is closely aligned with its standards and principles. This tool was introduced in 2016 to recognize, assess, communicate, and mitigate potential human rights-related issues. It encompasses vulnerable groups such as senior citizens, people with HIV, the LGBT community, disabled persons, and national minorities.

### IVL'S WHRA STRUCTURE

With four levels, the WHRA addresses the following stakeholders in our operations, including joint ventures:

1. Employees
2. Children
3. Indigenous people
4. Migrant labour
5. Third-party contracted labour
6. Local communities



### 2021 Results

**NO** significant issue or violation of human rights was recorded in 2021

#### Human Rights Declaration

**100%** coverage of all IVL operations

**90%** signed by Business Heads

**92%** signed by Site Heads

We will continue to use our three-stage assessment methods and manage issues in line with our risk-based approach and unique operating environment. All issues that are submitted will be evaluated and forwarded to senior decision-makers, while any actions taken will be tracked to ensure ongoing improvements.

### MODERN SLAVERY STATEMENT

We are committed to the long-term change we can all make if we act to prevent modern slavery and welcome the global leadership role taken by the Government of Australia in combating modern slavery through the establishment of the Modern Slavery Act 2018.

Indorama Ventures Oxides Australia Pty Limited is proud to provide a report on our efforts to understand, recognize, and address the risk of modern slavery in our operations and supply networks.

While we have not uncovered any specific instances of modern slavery – we continue to proactively analyze, through our robust methodologies, the areas in our business and supply chain where risk factors for modern slavery may exist and cluster.





## INVESTING IN OUR PEOPLE

Our workforce is the backbone of our organization. While the strengths of our internal leadership team further complement IVL's vision of becoming a world-class sustainable chemical company. Our staff are valued, supported and nurtured in their career development by our HR strategy which promotes an inclusive corporate culture that values growth and innovation. Our focus on global integration and digitalization is driving our success, supported by processes and tools that enrich the key touchpoints of our employees' journeys - Talent Acquisition and Management, Leadership and Competence Development, Performance Management and Rewards, and Employee Engagement.

### KEY LABOUR-MANAGEMENT DIALOGUES IN 2021

IVL respects the rights of employees, including freedom of association and the right to collective bargaining, and strives to build strong relations with employees through close dialogue. We build relations with employees based on mutual trust by maintaining regular close and ongoing dialogues and other sessions to exchange opinions.

Name	Frequency	Participants	Main Topics
Organizational Announcements	Regularly	<ul style="list-style-type: none"> <li>Direct e-mail to IVL senior and middle management (IMC, GMC, Site Heads, HR Heads)</li> <li>Posted on the Intranet</li> </ul>	<ul style="list-style-type: none"> <li>Management Appointments</li> <li>Global Level Reorganizations</li> </ul>
HR-related announcements and important messages	Occasionally	<ul style="list-style-type: none"> <li>Direct e-mail to COOs, Business Heads</li> <li>Copy to IMC, HR BPs, CoE Reward, Local HR Managers</li> </ul>	In 2021, we released: <ul style="list-style-type: none"> <li>Revocation of temporary guidelines on Hiring and Compensation</li> </ul>
Compensation-related messages	Occasionally	<ul style="list-style-type: none"> <li>Direct e-mail to current EJIP participants and eligible employees</li> </ul>	In 2021, we released: <ul style="list-style-type: none"> <li>Employee Joint Investment Plan (EJIP)</li> </ul>
Updates on HR Projects	Yearly (by project plan)	<ul style="list-style-type: none"> <li>Depends on each project but mostly direct e-mail to local HR Heads requesting they circulate to their employees</li> <li>Posted on the Intranet (InVolve-Employee center) which all employees can access</li> </ul>	In 2021, we released: <ul style="list-style-type: none"> <li>Results of the 2021 IVL Group Employee Engagement survey</li> <li>IVL Culture Awards 2021</li> <li>IVL Group Employee Assistance Program (EAP)</li> </ul>
COVID-19 Corporate Guidelines	Occasionally (by request or information update)	<ul style="list-style-type: none"> <li>Direct e-mail to IVL senior and middle management (IMC, GMC, Site Heads, HR Heads) requesting that local HR Heads circulate the announcement in their respective Business Unit(s) as appropriate.</li> </ul>	<ul style="list-style-type: none"> <li>IVL's COVID-19 global/corporate guidelines</li> <li>Corporate Bulletins: Ergonomic Considerations to Support Work from Home Policies</li> </ul>
HR Policies	Occasionally	<ul style="list-style-type: none"> <li>Direct e-mail to local HR Heads requesting they circulate to their employees</li> <li>Posted on the Intranet (InVolve-Employee center) which all employees can access</li> </ul>	In 2021, we released: <ul style="list-style-type: none"> <li>IVL HR Policy Goals and Performance Management</li> <li>IVL HR Policy Learnings and Development</li> <li>IVL HR Policy Education and Training</li> </ul>
HR Quarterly connect	Quarterly	<ul style="list-style-type: none"> <li>HRBPs organize the meeting on MS teams with the Local HR Head</li> </ul>	<ul style="list-style-type: none"> <li>Opportunities to update HR projects, strategies, and sharing within the HR Community</li> </ul>

## ATTRACTING TALENT

We continue to attract intelligent and passionate employees and support them in playing to their own strengths. With a healthy work culture, competitive pay and advancement opportunities in place, we aim to close the existing gaps in talent integration and maintain our reputation as an employer of choice. In 2021, we welcomed 3,295 new employees representing a 12.79% increase in our global workforce.

### ENGAGEMENT WITH STUDENTS AND UNIVERSITIES

#### Student Internship Program

We are paving the way for a new generation of leaders and innovators through our talent development program, which started in 2020. Concurrent with our global expansion, we are enhancing the employability of highly-driven new graduates to obtain long-term employment and believe that investing in human capital can enable a strong and sustainable pipeline of talent.



### PROJECT HIGHLIGHT IN 2021

#### Virtual Certainty...The Pandemic Couldn't Stop Us from Expanding



Estimated Audience Size Has Reached Students Over

1000



7 Head Offices + 2 Thai Sites Interns

3 Collaboration Sessions

5 Virtual Job Fairs

939 Participants from all sessions and public posts

3 Classroom Plug-in Sessions

Roadshow Satisfaction Score of 4.32 out of 5

Remark: Due to COVID-19, all events were arranged virtually, and some universities assigned projects instead of an internship. A few IVL managers were open to virtual internships, while others stopped taking on interns and preferred until they could work onsite physically.



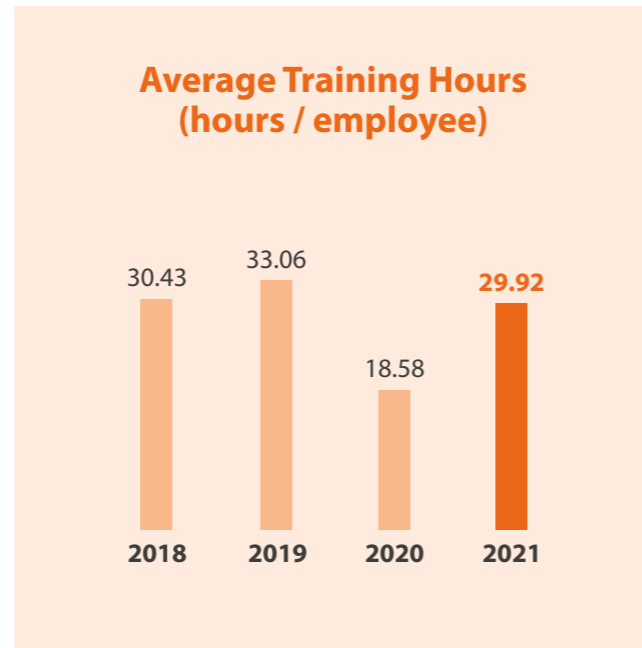
## DEVELOPING TALENT

We support professional development to build capabilities company-wide and adapt our corporate training strategies to ensure they become a key enabler in our continuous transformation.

Our leaders and employees are encouraged to adopt a growth mindset while we create pathways for them to achieve their highest potential in areas where they excel. We apply the 70-20-10 ratio for e-Learning, virtual live training and in-person training to equip our employees with functional and technical competencies, covering key impact areas including leadership, environment health and safety, robust induction activities, and language training.



- 20% Developmental relationships**  
 Learn and develop from others, social and collaborative interactions, constructive feedback, e.g. communities, networks, peer, coaches and mentors.
- 10% Training**  
 Learn and develop through structured programs and courses, e.g. training courses, online courses, and reading.
- 70% Job assignments and experiences**  
 Learn and develop by doing, e.g. on the job practice, taking on new challenges or stretched assignments.



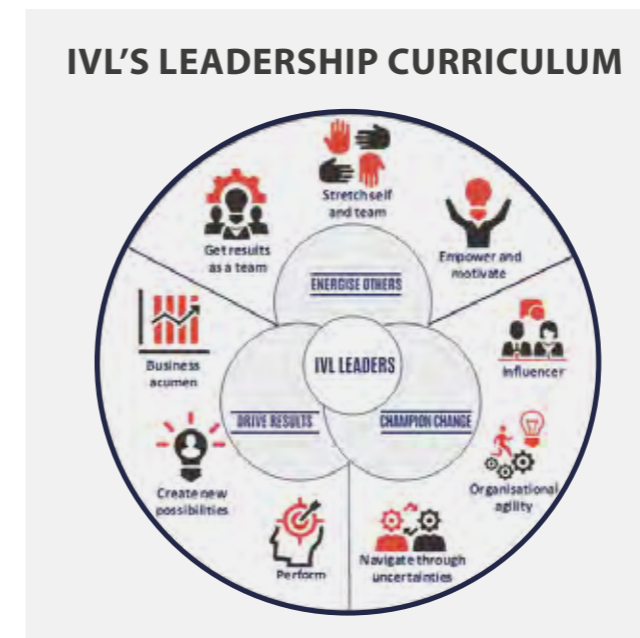
In 2021, we recorded a total of 708,106 training hours or 29.92 average training hours per employee – a significant increase from 2020, reverting to pre-pandemic levels of employee training and development. We invested US\$ 2.4 million in training in 2021, and will continue to focus on developing the competency levels of our employees while seeking ways to continuously improve our delivery methods to drive us forward in the corporate training landscape.

## LEADERSHIP DEVELOPMENT AS A STRATEGIC ENABLER

Our leadership capacity is one of our five strategic priorities to remain at the forefront of innovation while adapting to radical change in global consumer demands. We focus on developing effective leaders who can bring out the best in their teams and contribute to our strengths and long-term performance.

In preparation for an increasingly dynamic world and to rise to the challenges that come our way, we established a Leadership Curriculum in 2020 to ensure effective and targeted development at different leadership levels. It consists of approaches and programs including training, coaching, mentoring and experience/assignment-based development with digital intelligence as the foundation.

In 2021, 1,633 leaders participated in various leadership programs including training, coaching, mentoring and internal mobility and other assignment/experience-based programs. By 2024, our goal is to develop 3,500 leaders.



**Leadership Targets**

**3,500** leaders involved in the leadership development curriculum by 2024

In 2021, we trained and developed roughly **1,633** leaders worldwide.



## INDORAMA VENTURES EXCELLENCE (IVEX) PROGRAM

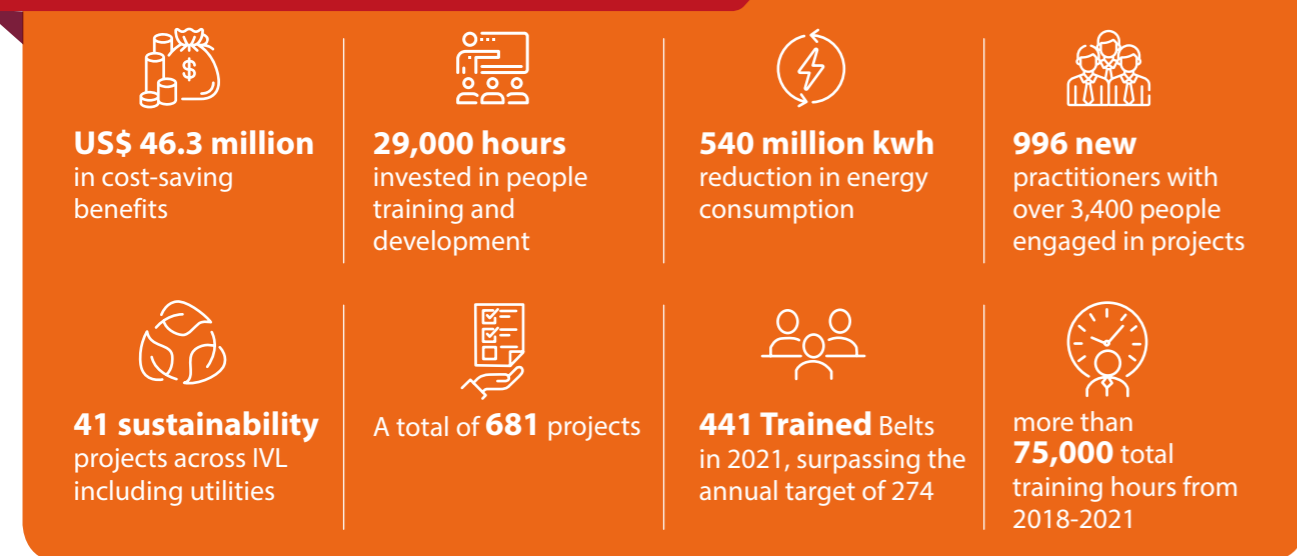
In accordance with the Company's development strategy, the Indorama Ventures Excellence (IVEX) program has extended its coverage to a diverse range of development initiatives across IVL.

IVEX reflects and advances our values through world-class tools, sharing engagements, and the leadership development of employees through relevant projects. Significantly, the team takes part in building an innovation culture that activates the success of our Company through our people.

"IVEX World-Class" training programs in 2021 included our Learn Six Sigma (LSS) Belt training series to incorporate first-rate tools that build a foundation to align IVL's business goals. In addition to the training, IVEX focuses on excellence development projects, which engage in different elements that advance the Company's values. Categories include increasing output, sustainability, energy, air and water, waste management as well as quality and cost control.

At IVL, diversity is our strength. We benefit from invaluable experiences through internal cross-sharing activities. All IVEX practitioners regularly collaborate in best practice sharing sessions on different key topics. Seeing the implementation of this positive change is the key to continuous improvements, and IVEX actively explores additional possibilities that have a strategic impact on the Company.

### 2021 IVEX Performance Achievements



VIRTUAL CONFERENCE 2021 PROJECT COMPETITION

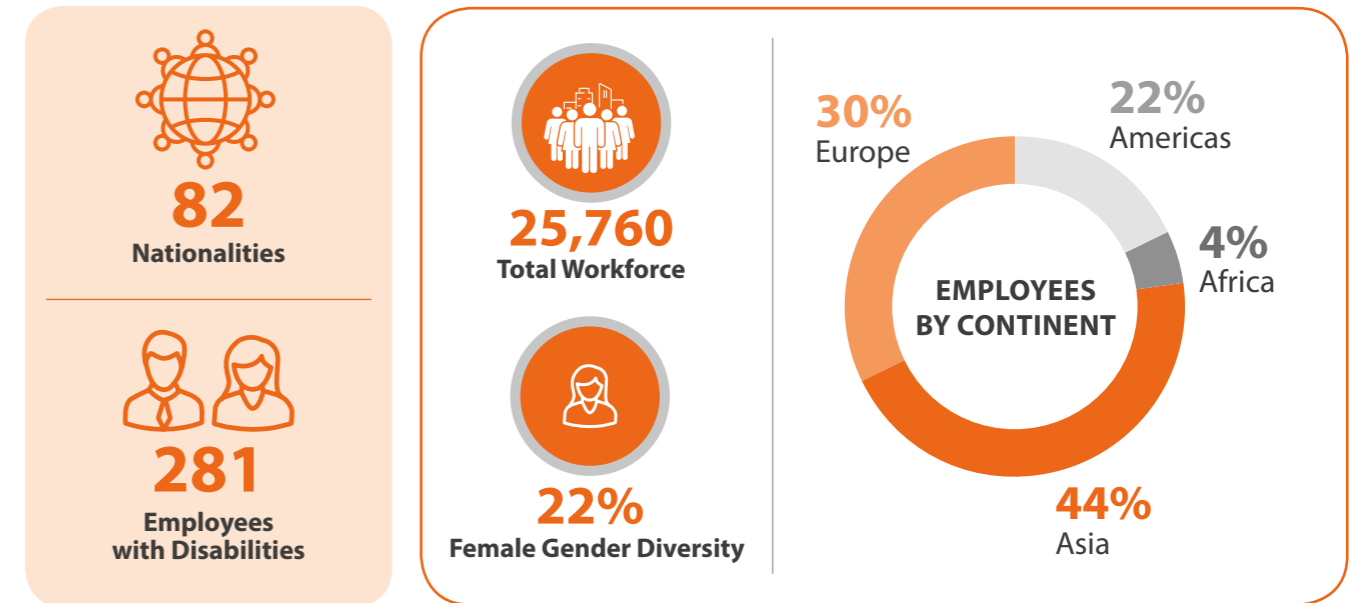
### IVEX PROJECT COMPETITION 2021

The IVEX Project Competition is arranged annually with a focus on Learn Six Sigma (LSS) projects completed in each business. The scoring is calculated by averaging three criteria: Define, Measure, Analyze, Improve and Control (DMAIC) methodology, LSS tool usage, and project impact.

In 2021, the team from Indorama PET Nigeria Limited won the global winning award for their "Compressed Air System Energy Efficiency Improvement" project, which can potentially generate substantial savings from the reduction of energy consumption by maintaining a compressed air system. This project not only promotes sustainable consumption of energy but also has a high potential for replication across other IVL sites.

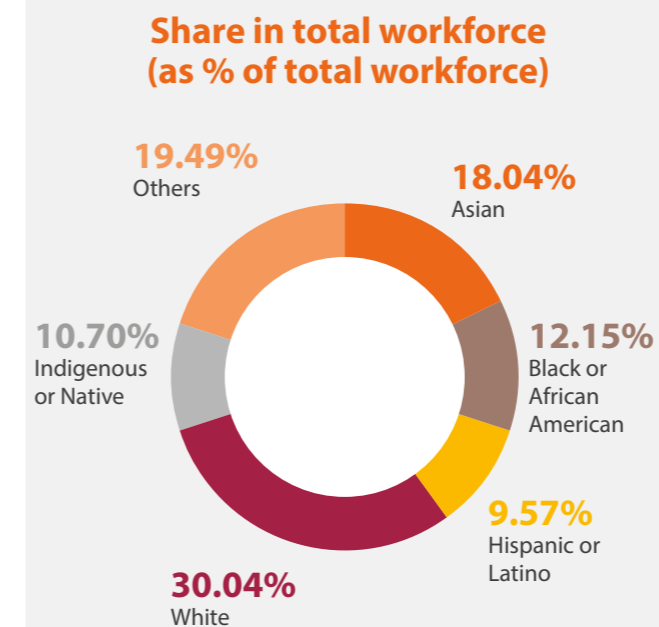
## RETAINING TALENT

Our employees are the lifeblood of the work we do every day. We strive to be a workplace of choice through competitive pay packages, attractive benefits and by providing a diverse and inclusive working environment.

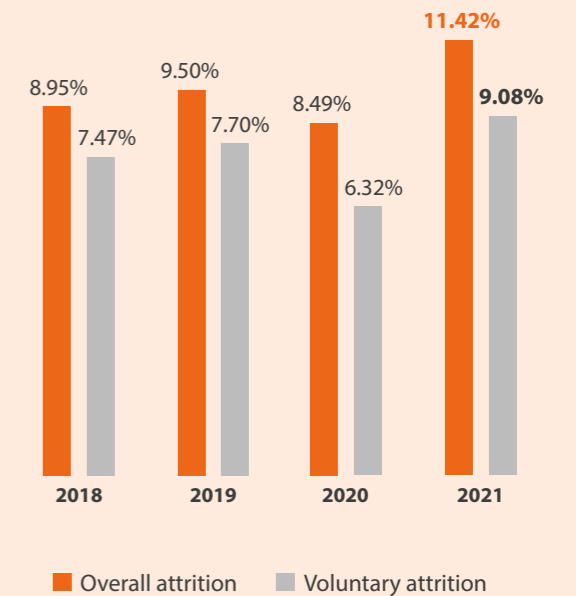


### Workforce Breakdown: Race / Ethnicity

At least 20% of our workforce is based in the US and we monitor the breakdown of our workforce according to ethnic and racial indicators.



### Employee Attrition





## EMPLOYEE ENGAGEMENT

Employee engagement is critical to our success and helps us achieve and sustain our vision. We performed a Global Employee Engagement (GEE) survey in 2021 to better understand how we can engage our staff and build a culture that people want to work in. Our approach considers the various touchpoints throughout the journeys of employees and focuses on finding and enabling the appropriate actions. The next GEE is scheduled to take place in 2023.

### GEE 2021 ENGAGEMENT HIGHLIGHTS



### GEE 2021 KEY ENGAGEMENT DRIVERS

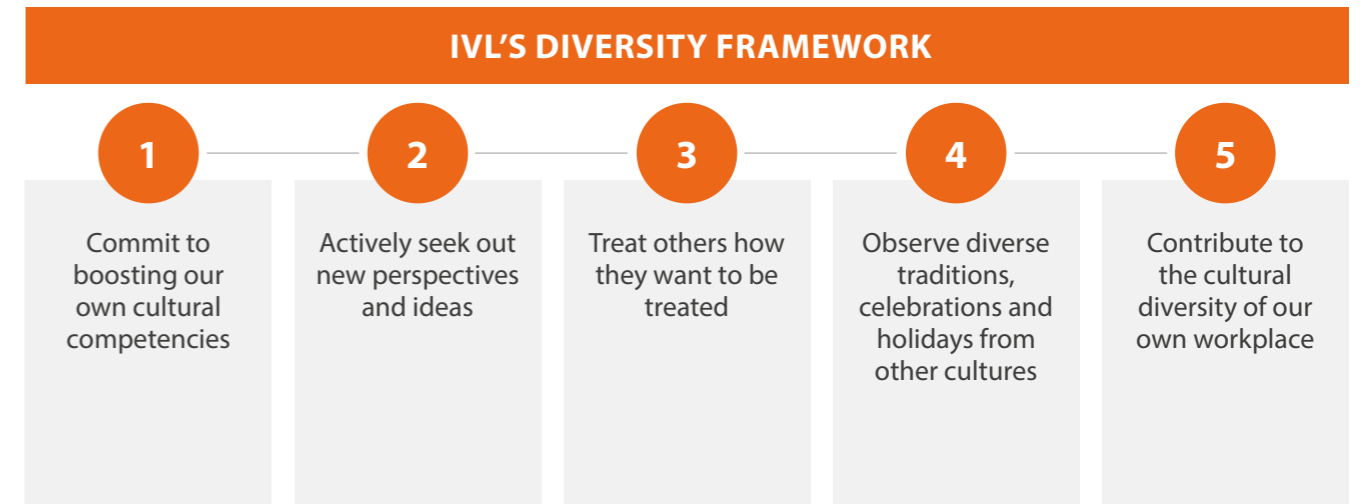


Following the completion of the survey, the focus is on identifying improvement areas and executing actions at all IVL sites through collaborations involving site management, employees and the local HR teams.



## CREATING A DIVERSE AND INCLUSIVE WORKPLACE

Maintaining a sustainable workplace at IVL requires a focus on diversity and inclusivity. We embrace employees from various ethnicities, cultures, nationalities and educational backgrounds. Inclusion is practiced throughout our organization thanks to our framework, which consists of five fundamental strategies.



We demonstrate our commitment to diversity and inclusion from the outset through our recruitment activities by looking for a diverse pool of candidates based on individual qualities when we hire, both internally and externally. Additionally, diversity is also a key consideration in succession planning.

2021 Diversity Highlights		2021 Diversity-Related Initiatives	
Women in the workforce	<b>22%</b> Out of 3,295 new recruits from 2021, 29% were women.	<b>More Inclusive Work Arrangements</b> We are aiming for more units to be able to Work from Home (WFH), wherever feasible through our WFH Policy. This new flexible practice will allow employees and management to discuss the most productive way forward for both themselves and IVL. This initiative will benefit a wide range of people including (but not limited to), mothers, caregivers, and others who have non-traditional schedules.	
Women in leadership roles	<b>36%</b>	<b>Recruitment Policy</b> We are committed to always choosing from a diverse pool of candidates when hiring. Additionally, we ensure that our internal succession plans have a range of candidates for potential openings. We measure these trends when conducting succession plans and the percentage has increased over the last two years.	
Women in top management	<b>25.9%</b>		
Women in junior management	<b>40%</b>		
Women in management positions in revenue-generating functions	<b>25.3%</b>		
Disabled employees	<b>1.19%</b>		

# SPECIAL REPORT

## Gender Diversity, Equity and Inclusion

### INDORAMA VENTURES IN THAILAND CELEBRATES INTERNATIONAL WOMEN'S DAY 2022

On March 8, 2022, Indorama Ventures in Thailand celebrated International Women's Day 2022 with the theme of #BreakTheBias by hosting an inspirational talk with IVL's female leaders: Mrs. Suchitra Lohia, IVL Deputy Group CEO, and Mrs. Aradhana Lohia Sharma, Vice President, on the topic "Gender Equality for a Sustainable Tomorrow."

The inspirational talk explored their stance on how equality is a core part of IVL's values, how their careers have been shaped by their gender, and how IVL can unite to #BreakTheBias and embrace gender equality.

The session was also streamed through the MS Teams platform for employees working from home, with 527 participants from sites in Thailand that covered 1,526 female target audiences from 15 IVL entities in 10 locations.

The event was organized by the Human Resources Department at IVL's head office with the support of the Serviced and Facilities Management team and Corporate Communications team. The purpose of the session was to inspire IVL employees to achieve a world free of biases, stereotypes, and discrimination through the voices of our female leaders.

Indorama Ventures is proud to continue the support of International Women's Day annually which encourages individuals and institutions to be mindful of the biases which may be preventing a more diverse, equitable, and inclusive world.

Together we can forge women's equality and collectively we can #BreaktheBias. This effort was led by the new formed Diversity, Equity and Inclusion (DEI) committee, as part of the ESG Council.

#### ABOUT DIVERSITY, EQUITY, AND INCLUSION (DEI) COMMITTEE

The DEI Committee was established as a spin-off from Indorama ESG Council to focus on developing a framework and process to drive diversity, equitability and inclusivity across the organization to embed the "Diversity is our Strength" corporate values into the DNA of our organization.



## EMPLOYEE PERFORMANCE REVIEW

All eligible IVL employees meet formally with their supervisors to review their performance and development opportunities. Performance reviews and development plans are a part of a global talent management system, which is designed to effectively utilize and advance employees across all regions. In 2021, 66.7% of our employees received performance reviews.

### SUCCESSION PLANNING

To ensure sustained quality leadership and organizational performance, a solid pipeline of talent is essential. We have a well-structured and consistent procedure in place that generates qualified applicants with specific growth plans who are ready to fill openings.

#### Succession Planning Objectives

- 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

#### Succession Planning Methodology

- 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

#### Succession Planning Ambition

Expand the scope of succession planning to cover about 1,000 leadership positions by 2023.

#### Succession Planning Progress

In 2021, we had already created a leadership pipeline of 516 successors for about 266 senior and middle management positions.

## ENSURING SUSTAINABLE IMPROVEMENTS IN PEOPLE PRACTICES

In keeping with our vision, we continuously improve our people practices delivering value through business positive employee experiences and by being integrated and digitally-enabled.



### IVL CULTURE AWARDS

Initiated in 2021, the IVL Culture Awards recognize employees and teams that exemplify IVL's core principles. The awards focus on two categories: Change Enabler and Leadership with plans to expand to additional categories. Change enablers are people who influence, coach and communicate with others to improve processes at IVL while Leaders help to drive results, energize others, champion change, and focus on customers.





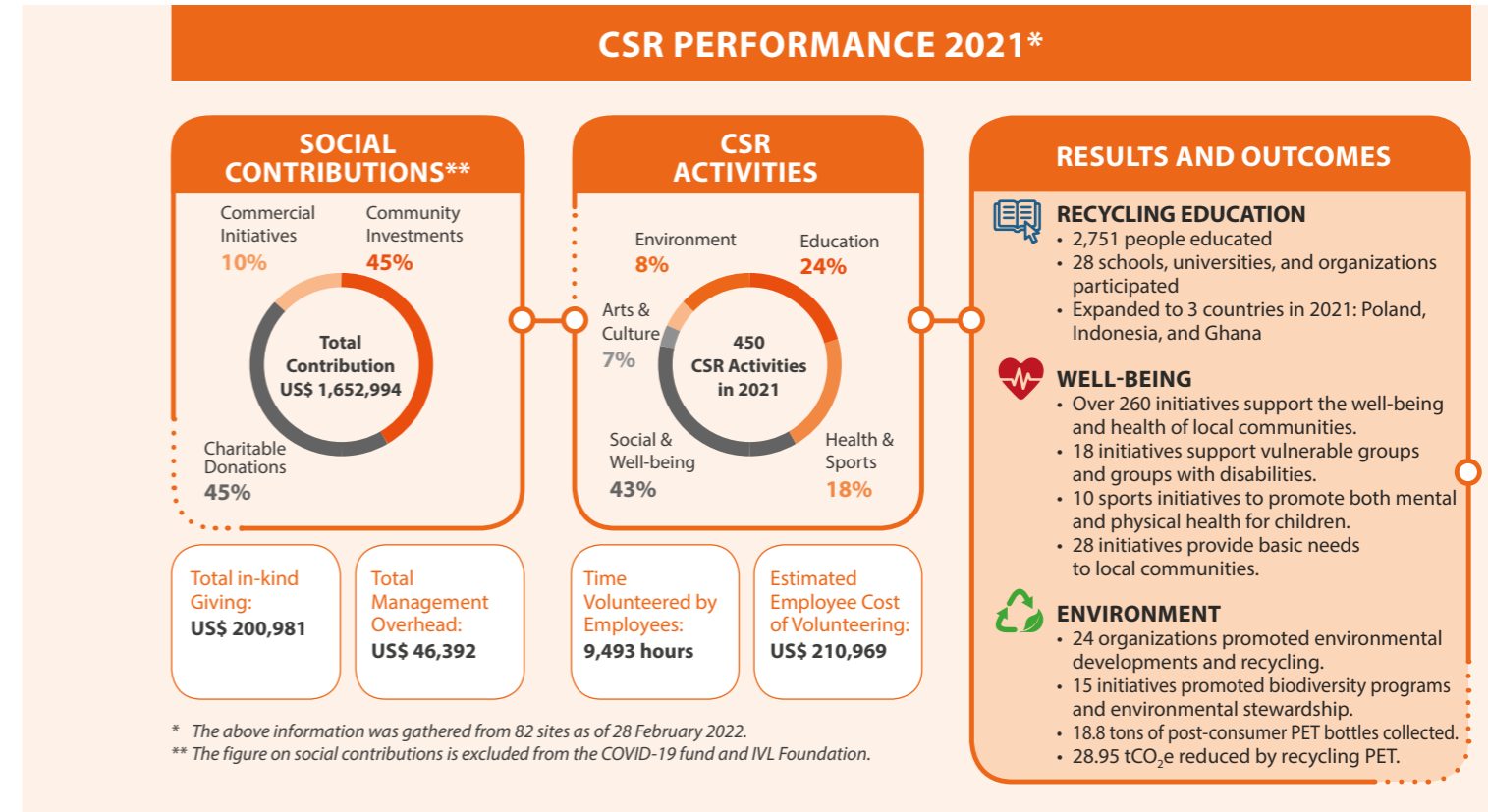
## GIVING BACK TO OUR COMMUNITIES

Corporate Social Responsibility (CSR) is a process by which companies integrate social and environmental considerations in both their operations and interactions with stakeholders. Our CSR objective is to positively contribute to society by providing social, environmental, or economic value.

This is achieved by facilitating and engaging with the global community, utilizing our skills in collaborations, generating awareness, and strengthening the value chain. Our process is divided into three focus areas: knowledge, well-being, and the environment, each of which span a wide range of concepts.

<b>Value Proposition</b>	<b>Creating Shared Value for Society</b>		
<b>Strategic Priorities</b>	Facilitating and engaging the global community by leveraging IVL's strengths in: i) Collaborations; ii) Raising Social Awareness; and iii) Developing our Value Chain		
<b>CSR Areas</b>	<b>Knowledge</b> <ul style="list-style-type: none"> <li>Education</li> <li>Innovation</li> </ul> <p>We aim to continually create awareness of recycling and waste separation to prevent the mismanagement of post-consumer PET. Content developed will be aligned with national contexts and will include translations into local languages.</p> <p>We provide scholarships fund, training and support innovative initiative including STEM-related fields wherein the students learn through experiments and more of an enquiry-based approach.</p>	<b>Well-being</b> <ul style="list-style-type: none"> <li>Quality of life</li> <li>Healthier</li> <li>Better lives</li> </ul> <p>We focus on quality of life by facilitating access to health awareness and community care services.</p> <p>The long-term value in improving quality of life helps strengthen our relationships with local communities while creating a social acceptance to the company by creating a community-based CSR initiative to ensure having mutually benefit the business, community, and the environment.</p>	<b>Environment</b> <ul style="list-style-type: none"> <li>Recycling</li> <li>Ecological development</li> </ul> <p>We encourage children, communities, and consumers to separate waste and recycle PET (collection and drop-off points) and collaborate with several sectors to reduce PET waste from going to landfills and oceans to achieve a circular economy, protect and conserve the natural resources, and ensure environmental sustainability.</p>
<b>Core Principles</b>	Embracing Change   Diversity   Individuality   Leadership		
<b>Our Targets</b>	By 2030, our recycling awareness projects will have educated one million people globally.	By 2030, we will have reached at least 100,000 beneficiaries/people in communities with direct or indirect benefits from our well-being initiatives.	By 2030, we will enable the cumulative sorting of at least 100 tons of post-consumer PET bottles for recycling.
<b>Our Actions</b>	<ul style="list-style-type: none"> <li>Encourage recycling awareness projects in different communities and countries.</li> <li>Make our recycling educational materials accessible to people worldwide.</li> </ul>	<ul style="list-style-type: none"> <li>Develop our engagement with local communities around our operating sites to improve their quality of life, providing better living conditions and health for vulnerable people, people with disabilities, orphans, and the elderly.</li> </ul>	<ul style="list-style-type: none"> <li>Ensure a clean environment, improve awareness of plastic waste separation, minimize impacts from business operations.</li> <li>Support the circular economy through PET recycling.</li> <li>Conserve natural resources.</li> </ul>
<b>Our Cumulative Performance</b>	53,585 people educated globally since 2018	31,900 beneficiaries since 2020	28.3 tons of PET bottles collected since 2020
<b>Stakeholder Needs: Communities, Educational Institutions, Governments</b>			
We collaborate with educational institutions, associations, and clubs to promote recycling awareness in tandem with our works in partnering with the private sector, organizations, and startups to raise the importance of a circular economy and increase the recycling rate. This all comes together in our work with governmental agencies where we monitor and align our work with new policies. However, community involvement and needs evaluation are the key to establishing meaningful success of business operation.			

Our CSR efforts reflect how we live by our values. We established the "IVL Shared Value Award" to promote the global contributions of our sites, motivate our employees and encourage their participation in CSR activities through the Creating Shared Value (CSV) concept. This award allows us to address societal challenges through our corporate expertise and accelerate initiatives that benefit businesses and communities.











### Highlights of Global CSR Activities for 2021

#### Public-Private collaboration to collect and recycle post-consumer PET bottles into Personal Protective Equipment (PPE) for Healthcare Workers

With an abundance of plastic waste but a scarcity of PPE, we used our expertise in PET plastic by turning trash into treasure. IVL collaborated with more than 10 partners to collect post-consumer PET bottles which were recycled into PPE for healthcare workers.

The high-quality PPE coveralls produced offer better protection, are reusable and washable up to 20 times, suitable for use while treating low and medium risk patients, and were certified by Thailand's Food and Drug Administration and the Thailand Textile Institute. This initiative improved public awareness about PET recycling and enhanced IVL's standing as a leading PET recycler. It also secured our supply chain ensuring long-term strategic involvement and partnerships with our stakeholders creating mutual business benefits.

In determining the effectiveness of this program and lessons learned from relevant stakeholders, we evaluated the overall Social Return On Investment (SROI), including the environmental and social impacts achieved.

 <p><b>8,000 PPE Distributed</b> <i>(Made from rPET yarns and washable 20 times)</i></p>	 <p><b>1,000 bedding sets</b> Pillow cover and bed sheet <i>(Made from rPET yarn and 100% anti-bacterial)</i></p>	 <p><b>32 hospitals</b> and medical facilities <i>(Globally)</i></p>	 <p><b>3 countries</b> <i>(Thailand, India, Brazil)</i></p>
 <p><b>14 organizations involved</b> in the collection of post-consumer PET bottles</p>	 <p><b>420,000 tons of PET bottles</b> collected</p>	 <p><b>Equivalent to a reduction of 14.4 tCO<sub>2</sub>e</b></p>	 <p><b>Social Return on Investment (SROI) value of 1:7</b> times in Thai baht <i>(The SROI has been evaluated and clarified by Shared Value Thailand)</i></p>

### “Recycle Me” campaign with Coca-Cola Thailand and Trash Lucky

Our CSR efforts focus on PET recycling, and waste reduction and separation. IVL collaborated with Coca-Cola Thailand and Trash Lucky on a recycling campaign, where the ‘Recycle Me’ message was included on Coca-Cola’s packaging labels to make consumers aware of separating recyclable packaging in Thailand. We are making the circular economy a reality by turning post-consumer PET bottles into fibers and recycled products, including the production of reusable PPE suits for frontline healthcare workers and hospitals still battling COVID-19. This highly successful program recycled more than 700 kg of PET bottles to produce 1,500 PPE suits, which were distributed to the three Provincial Public Health centers in the southern border of Thailand.



#### 01 COCA-COLA “RECYCLE ME”

Recycling packaging is an important part of Coca-Cola’s global vision to create a World Without Waste, as the company works to reach its zero-waste goal by 2030.



#### 02 LUCKY DRAW WITH TRASH LUCKY 02

Launched the ‘Coke Recycle Me with Trash Lucky’ campaign for consumers to return the empty bottles and other recyclables in exchange for a change at winning prizes.



#### 03 PPE DISTRIBUTION

1,500 PPE units were distributed to Provincial Public Health Centers in the southern provinces of Thailand.



## Highlights of Global CSR Activities for 2021

Our global CSR activities continue to focus on creating value while achieving positive impacts. This not only fulfills our goal to grow as a Company but to also contribute to society. We, therefore, remain deeply committed to actively engaging in meaningful CSR initiatives going forward.



### KNOWLEDGE

IVL’s Integrated Oxides and Derivatives business in Port Neches awarded the 2021 STEM Innovation Grant grand prize recipients with surprise in-class visits, with middle and high school teachers receiving US\$13,000 for promoting STEM education in and out of the classroom.

IVL Xylenes & PTA supports STEM educational programs by funding the Decatur City Schools Foundation and Calhoun College Foundation to engage, educate and upskill local students in the community, leading to opportunities as potential employees post-graduation. This fund enhances STEM skills for approximately 500 students in the sixth to eighth grades at two local middle schools and supports one university education scholarship.



### WELL-BEING

StarPet Inc, an IVL company in the US, partnered with the Second Harvest Food Bank of Northwest North Carolina to provide around 3,500 meals for children, seniors, and disabled adults, and in-school and hospital/clinic pantries to address the sharp rise in food insecurity. This program brings a brighter future for all by promoting a healthy diet and ending hunger in the community.



### INDORAMA VENTURES’ COMPANIES IN MEXICO SUPPORT VULNERABLE CHILDREN AT TWO ORPHANAGES

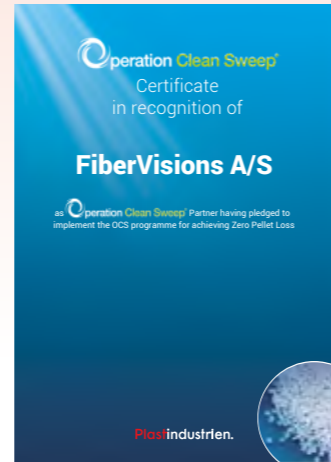
IVL’s EcoMex supports the “Hogar Cabañas” orphanage by supplying groceries to meet the basic needs of 350 children. Similarly, IVL Polymers México supports the basic needs of 24 children and Sisters at the “Casa Hogar Rosario de Guzmán,” in line with the UN SDGs.



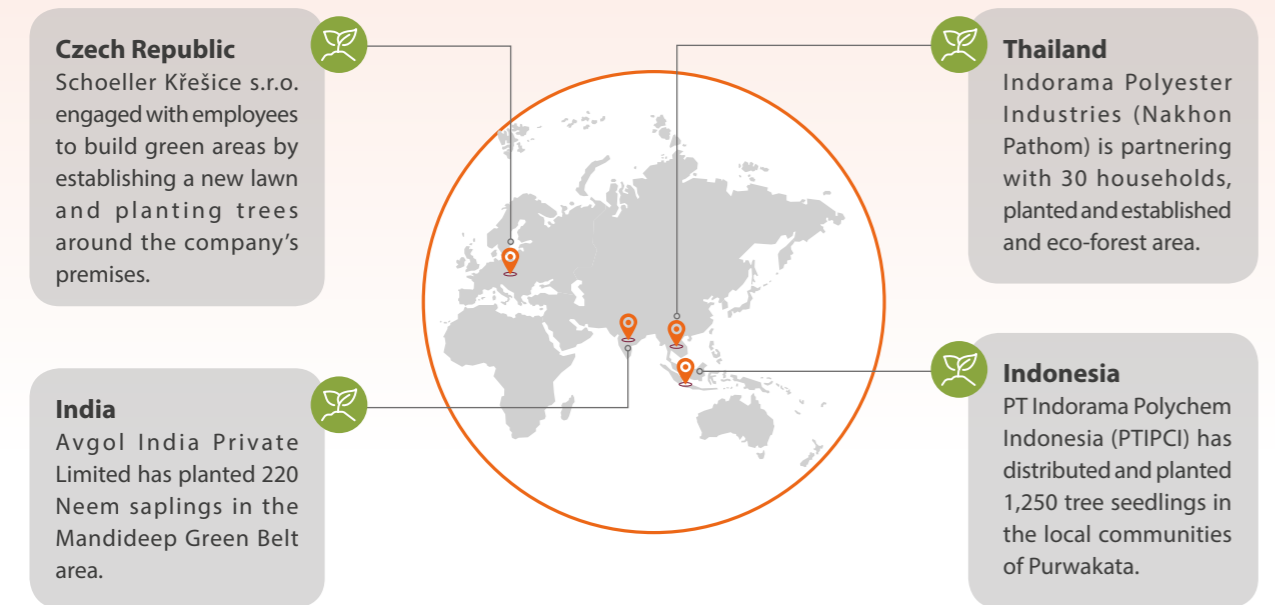
## ENVIRONMENT

PT Indorama Polychem Indonesia (PTIPCI) provided a new refuse truck for the local government of Purwakarta, serving 4,396 households in three local communities and collecting 1,990 metric tons of waste (during 199 operational working days) since its donation helping improve waste management systems and services, and resulting in healthier communities.

FiberVisions A/S, an IVL company in Denmark, signed up for Operation Clean Sweep (OCS), placing this initiative at the forefront of their sustainability program. The company adopted procedures to fulfill the requirements, giving suggestions on how to control and minimize plastic pellet spills. The FiberVisions A/S team is working on placing signage and organizing OCS training for all employees supporting zero plastic waste efforts that prevent plastic granules from entering the ecosystem.



IVL is building eco-friendly areas to enhance the environment, protect endangered biodiversity, and provide livable and pleasant green areas that improve the quality of life of communities.



FOR MORE INFORMATION

## RECYCLING EDUCATION Recycling Education Activities in Thailand

IVL has been actively promoting the importance of recycling with our partner institutions through our Recycling Education project in Thailand since 2018. Our mission continues to educate people on the circular and recyclable qualities of PET, and the crucial role they can play by recycling and preventing the mismanagement of PET waste.

Due to the challenges posed by COVID-19, the school closures made it difficult to arrange onsite education programs. This led us to work with teachers to develop more engaging content for school children on recycling. Together, we created a worksheet covering waste separation and the types of plastics that are relevant to kids. We also sent our recycling materials to high school and college teachers to increase awareness on plastic recycling and reusability, including their environmental and economic benefits.

Additionally, we released educational video content for children and the public to encourage them to recycle. This can serve as valuable instructional tools for teachers to educate their students, and we plan to have this translated into other languages to increase viewership.

For university students in Thailand, we provided both onsite (adhering to COVID-19 health and safety guidelines) and virtual learning sessions. Our collaboration with

Valaya Alongkorn Rajabhat University led us to engage with residents in the Baan Pang and Baan Klueng communities sharing the benefits of managing plastic and how it affects the circular economy.

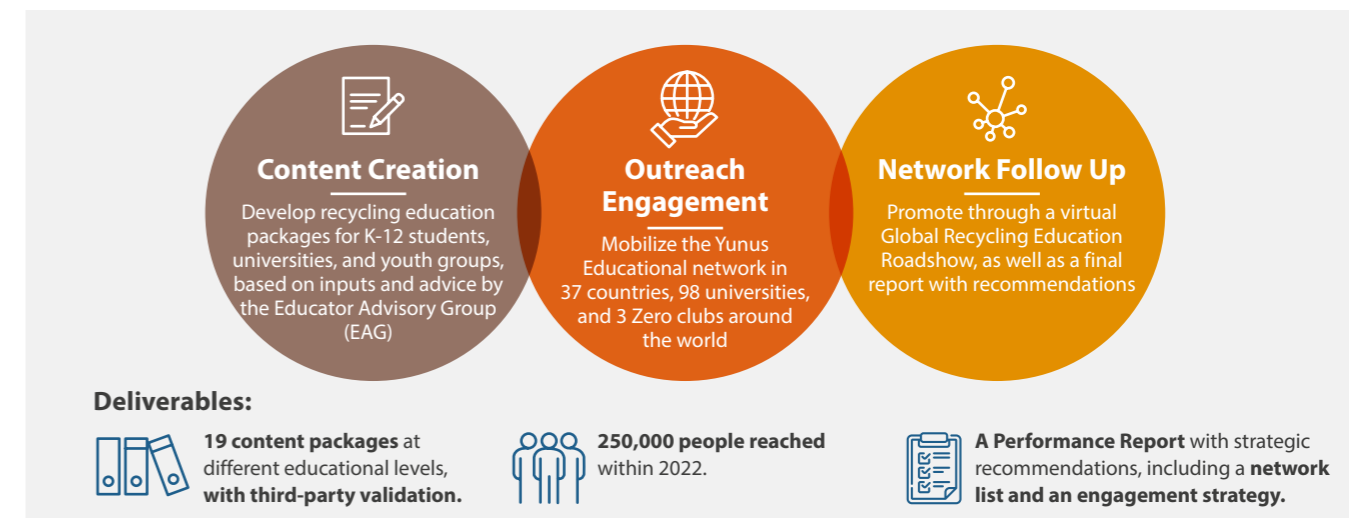
We arranged virtual training sessions for public and private companies to help them achieve their sustainability goals of reducing waste and increasing environmental awareness among their employees. Our productive collaborations saw PET bottles collected and upcycled into PPE suits and donated to frontline medical staff to protect them from COVID-19.

We shared our expertise and experience on recycling and circularity with officers of the Bangkok Metropolitan Administration in support of improving the city's plastic waste management and to encourage other municipalities in Thailand to recycle.

We also worked with Trash Lucky – an innovative start-up that incentivizes waste separation using lucky raffle draws. As we share their vision of plastic-free oceans and diverting waste from landfills, our recycling team joined them on a roadshow at the Asian Institute of Technology, where we spoke about PET recycling with 175 students and residents in the community and held waste separation and lucky draw activities.

## Scaling Recycling Education Globally

To accelerate our efforts in meeting the 2030 target, we are engaging with Yunus Thailand and other educational networks to scale-up our "Global Recycling Education" project. We are developing our recycling education materials for a global audience to increase recycling awareness worldwide. A variety of topics will be developed to suit different educational levels. The program is being overseen by the Educator Advisory Group (EAG) and validated by an independent third party to ensure quality content and international recognition.



Apart from the above program, we also facilitate and engage locally with IVL's site-based Corporate Social Responsibility (CSR) representatives across the globe to promote recycling education. In 2021, we expanded to Brazil, Ghana, Indonesia, and Poland and worked with teams who want to positively impact local communities. The local CSR representatives have aligned materials with the respective local context, including translation into local languages. Finally, we developed a new handbook titled, 'Solid Waste and Plastic Management for Municipalities,' to complement our existing Recycling Education materials for universities, cities, communities and the general public.

## GLOBAL RECYCLING EDUCATION ACTIVITIES

In the scenic city of Gaibu, Brazil, 10 IVL staff organized recreational activities and educational games on how to manage plastic waste, to help children and adolescents better understand why we need to protect the environment. This led to cleaning the city's beach and the collection of 60 tons of PET for recycling. Meanwhile in Ghana, we teamed up with the IVL Foundation to train teachers across the country on the importance of recycling and proper waste management, which they shared in their classrooms as part of their curricula to broaden awareness among students.



We conducted a competition called the "New Life of a PET Bottle" for students in grades 1-3 at Wloclawek elementary school in Poland. They created imaginative objects using PET bottles to show that recycling matters and that every bottle can be given a second life.



In the US, we continued our recycling partnership with the Rocket City Trash Pandas Baseball Team in Huntsville, Alabama. We joined their annual "Sprocket Sprint" 5k race, fun run and Easter Egg Hunt, and distributed 600 sets of education materials to promote recycling waste and separation.

Our site in Decatur, Alabama, kicked-off the successful 5<sup>th</sup> Annual Recycle Education Program, "Think Outside the Trash," with Austin Middle School. We discussed the foundations of recycling and its importance, how to recycle, and how students can become "Recycling Ambassadors" in their homes, schools and communities.

The program also included several engagement activities for the students including creating a "Recycle Ambassador Club," consisting of a team of teachers and students who help promote recycling at school events as well as collect, weigh, and log weekly recyclable materials collected at the school. Three friendly competitions saw a collection of over 331 pounds of PET. Their "End of the Year" goal reached close to 4,000 pounds of recyclable materials.

IVL believes in the importance of recycling as part of the circular economy – and our combined efforts can achieve this. We are on a mission to educate the difference of PET from other types of plastic and the importance of recycling. This is why we believe the Recycling Education Program is crucial in instilling a sense of responsibility and recycling culture among children, our future leaders.

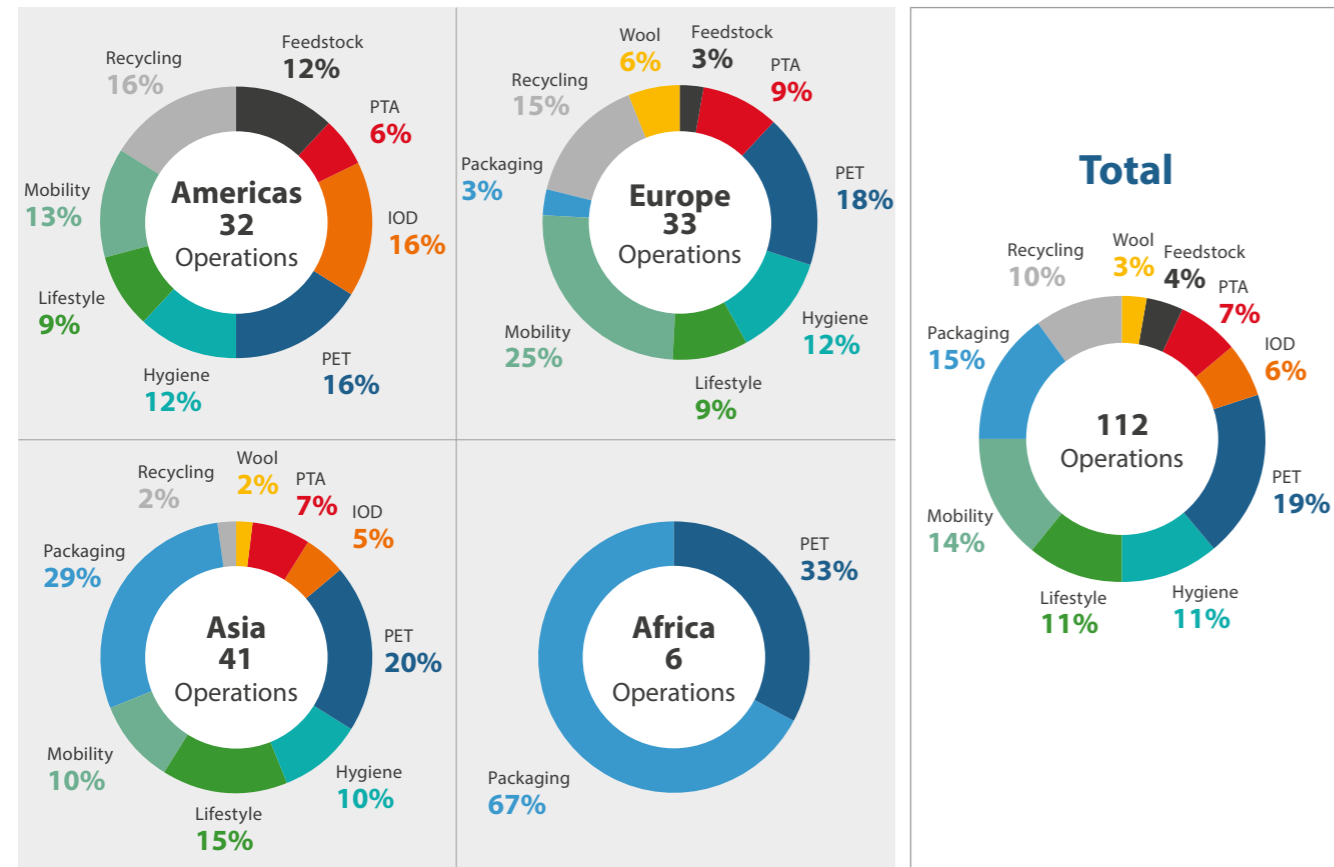


\* Only bottles returned to Indorama Polyester Industries Public Company Limited (Nakhon Pathom), Thailand  
 \*\* COVID-19 affected the number of people receiving training in the last two years.



# GLOBAL PERFORMANCE DATA

Our 2021 Sustainability Report covers all IVL sites across the globe in all business units including PET, Feedstock (PTA, PIA, EO/EG, PX, NDC, PNDA), IOD, Fibers, Packaging, Recycling and Wool as listed below.



## OPERATIONS INFORMATION INCLUDED IN THE 2021 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, Inc.	USA	•
Indorama Ventures (Oxide & Glycols) LLC	USA	•
Indorama Ventures EcoMex S. de R.L. de C.V.	Mexico	•
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 Recycling LLC	USA	•
Indorama Ventures Sustainable Solutions LLC	USA	•
Indorama Ventures Sustainable Solutions Fontana Inc.	USA	•
Indorama Ventures Xylenes and PTA LLC	USA	•••••
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	•••
Indorama Ventures Recycling Poland Sp. Z.o.o. (Bielsko-Biala)	Poland	•
Indorama Ventures Recycling Poland Sp. Z.o.o. (Łęczyca)	Poland	•
Kordárna Plus a.s.	Czech Republic	•
Kordárna 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	•

## COVERAGE OF DATA COLLECTION (% OF TOTAL IVL GLOBAL PRODUCTION)

Material Indicators	2018	2019	2020	2021
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 NO <sub>x</sub> Emissions	100	100	100	100
Total SO <sub>x</sub> 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	50	100	100	100
Spills	100	100	100	100
CSR	94	88.3	91	91
HR	100	100	100	100



Region / Operation	Country	Business
<b>Asia</b>		
Asia Pet (Thailand) Limited	Thailand	●
Avgol India Private Limited	India	●
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, Nakhon Pathom	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	●

Remarks:  
 ● 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  
 PNDA Purified 2, 6 - Naphthalene Dicarboxylic 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 four Avgol sites, the other three are Avgol America Inc., Avgol India Private Limited, Avgol Limited Liability Company and Avgol Limited (Dimona)

## GLOBAL PERFORMANCE DATA

GRI Standards		Unit	2018	2019	2020	2021
<b>Production</b>						
General	Total production (captive consumption)	Ton of production	11,338,992	12,780,005	15,551,483	16,518,697
	PET	Ton	4,211,040	5,167,714	5,356,444	5,468,057
	PTA	Ton	4,192,671	4,191,627	4,243,812	4,566,010
	Packaging	Ton	155,319	226,184	223,333	241,470
	Fibers	Ton	1,438,564	1,850,305	1,757,260	1,992,924
	Feedstock (eg. IPA/PX/NDC/PNDA)	Ton	1,236,703	880,183	793,167	831,811
	Wool	Ton	2,712	6,622	4,600	6,164
	Recycling plants production (flakes + in process reuse)	Ton	101,983	149,734	155,586	222,205
	Olefins	Ton	-	307,634	3,017,281	3,190,055
<b>Revenue</b>						
General	Total revenues (including inter-company sales)	USD (million)	12,933	14,089	13,769	17,533
<b>Materials</b>						
301-1	Total material used	Ton	11,418,542	13,058,127	15,019,567	15,973,040
	Non-renewable raw material					
	- PTA	Ton	4,281,652	5,195,207	5,260,904	5,567,369
	- MEG	Ton	1,647,427	2,034,280	2,071,956	2,184,696
	- Paraxylene	Ton	2,755,828	2,751,180	2,785,304	2,996,541
	- IOD raw materials	Ton	-	-	1,532,558	1,783,223
	- Acetic acid	Ton	162,234	168,183	154,037	163,937
	- Purified isophthalic acid	Ton	70,510	88,511	96,462	93,539
	- PET	Ton	302,396	405,181	398,514	426,209
	- PP	Ton	118,622	274,540	274,328	270,314
	- PE	Ton	67,172	55,494	56,757	58,436
	- HDPE	Ton	7,134	9,140	8,211	10,639
	- Cardboard packaging	Ton	3,516	57,745	5,006	10,993
	- Partially oriented yarn (POY) + Textile grade chips	Ton	0	4,009	13,693	15,715
	- Others	Ton	1,830,309	1,781,332	2,106,641	2,045,529
	Bio-based raw materials					
	- Bio-MEG	Ton	15,808	9,130	10,031	9,615
	- Cellulose	Ton	11,004	10,079	7,212	10,298
	- PLA	Ton	1,088	2,023	3,641	4,065
	- Wool	Ton	2,600	5,096	3,400	4,855
301-2	Total recycled materials	Ton	141,242	206,996	230,912	317,064
<b>Energy</b>						
302-1	Total energy consumption (non-renewable and renewable energy)	GJ	59,984,718	73,452,756	104,724,983	109,547,567
	Total energy consumption (non-renewable and renewable energy)	MWh	16,662,422	20,403,543	29,090,273	30,429,880
	Total non-renewable energy consumption	MWh	15,896,162	19,684,777	28,606,319	29,651,195
	Total renewable energy consumption	MWh	766,260	718,766	483,954	778,685
	• Fuel oil	GJ	109,772	308,901	431,744	1,895,027
	• Natural gas	GJ	28,089,267	31,777,505	64,265,634	65,970,265
	• LPG	GJ	60,629	69,024	57,672	98,096
	• Diesel	GJ	150,835	188,489	252,356	190,526
	• Gasoline	GJ	30,422	28,782	41,100	35,004
	• Fuel gas	GJ	7,709	-	-	-
	• Coal	GJ	14,143,189	23,190,958	20,796,788	20,816,598
	• Others	GJ	101,404	66,495	80,444	66,199
	• Renewable energy consumption	GJ	1,324,546	1,086,515	1,051,628	895,723
	Biomass	GJ	901,065	658,703	618,312	485,804
	Biogas	GJ	423,481	427,812	433,316	409,919
	• Direct energy sold	GJ	(1,961,330)	(2,422,922)	(3,077,614)	(3,310,190)
	Total Indirect energy consumption (electricity, purchased cooling, purchased steam from outside of IVL group)	GJ	17,928,274	19,159,008	20,825,231	22,890,318
	- Electricity purchased from conventional sources (e.g. natural gas, coal, nuclear, heating oil)	GJ	12,684,116	14,060,847	15,353,390	15,508,237
	- Purchased steam	GJ	3,723,250	3,492,387	4,803,741	5,662,494
	- Purchased heating	GJ	428,143	489,516	461,978	422,077
	- Purchased cooling	GJ	300,998	292,655	222,781	357,141
	- Renewable electricity generated and consumed	GJ	6,072	11,964	23,326	24,933
	- Renewable electricity purchased through certificate	GJ	1,423,629	1,489,077	667,280	1,882,609
	Total direct electricity sold	GJ	417,225	396,190	428,058	353,256
	Total steam sold	GJ	165,745	221,703	215,102	597,468
	Total indirect electricity sold	GJ	54,964	59,547	64,105	16,448
302-3	Energy intensity	GJ/Ton of production	5.29	5.75	6.73	6.63
302-4	Energy saved due to conservation and efficiency improvement	GJ	416,617	756,216	435,645	1,575,159

GRI Standards		Unit	2018	2019	2020	2021
<b>Water Withdrawal and Consumption</b>						
303-1	Total water withdrawal by sources	m³	60,285,763	65,222,820	82,504,769	88,083,250
	- Surface water	m³	34,920,909	35,480,047	51,035,459	61,522,902
	- Once through cooling water	m³	1,681,646	263,010	-	0
	- Municipal water and water utilities	m³	18,229,684	21,826,915	18,123,024	19,078,549
	- Groundwater	m³	5,341,836	7,630,654	12,661,456	7,481,799
	- Rainwater	m³	111,689	22,194	-	-
	Water intensity	m³/Ton of production	5.32	5.10	5.31	5.33
<b>Reused / Recycled Water</b>						
303-3	Total volume of recycled/reused water	m³	5,292,534	5,255,856	5,786,158	5,555,472
	% of recycled/reused water	%	8.07	7.46	6.55	5.93
<b>Emissions</b>						
305-1	Direct GHG emissions of all sources owned or controlled by company (Scope 1 emissions)	tCO <sub>2</sub> e	3,688,970	4,744,746	7,035,992	7,247,667
305-2	Indirect GHG emissions resulting from the generation of electricity, heat, or steam (Scope 2 emissions)	tCO <sub>2</sub> e	2,224,494	2,344,695	2,409,061	2,485,210
	Total GHG emissions (Scope 1 + Scope 2)	tCO <sub>2</sub> e	5,913,464	7,089,441	9,445,053	9,732,877
305-4	Scope 1 GHG intensity	tCO <sub>2</sub> e/Ton of production	0.325	0.371	0.452	0.439
	Scope 2 GHG intensity	tCO <sub>2</sub> e/Ton of production	0.197	0.184	0.156	0.150
	Scope 1 + Scope 2 GHG intensity	tCO <sub>2</sub> e/Ton of production	0.522	0.555	0.607	0.589
	GHG intensity in tons of CO <sub>2</sub> e per currency total revenue	tCO <sub>2</sub> e/USD (million)	457.24	503.19	685.97	555.12
	GHG intensity in tons of CO <sub>2</sub> e per full time equivalent (FTE) employees	tCO <sub>2</sub> e/FTE	371.40	312.37	374.70	377.83
305-7	Total NO <sub>x</sub> emissions	Ton	2,879	4,659	4,937	12,433
	Total SO <sub>x</sub> emissions	Ton	1,970	4,993	4,658	6,999
	Total VOC emissions	Ton	4,642	2,123	3,298	2,364
	Total PM emissions	Ton	639	1,136	872	915
<b>Wastewater Discharge</b>						
306-1	Total water discharge volume	m³	33,659,202	28,812,422	48,753,356	49,662,741
	COD in treated wastewater discharge	Ton	2,357	1,693	12,560	24,808
	BOD in treated wastewater discharge	Ton	357	328	1,347	2,751
	TSS in treated wastewater discharge	Ton	478	532	1,540	1,875
	Oil and grease in treated wastewater discharge	Ton	16.70	20.45	124	245
	COD in untreated wastewater discharged to third party	Ton	4,374	2,578	2,861	2,954
	BOD in untreated wastewater discharged to third party	Ton	793	420	538	456
	TSS in untreated wastewater discharged to third party	Ton	302	146	139	222
	Oil and grease in treated wastewater discharged to third party	Ton	5.41	5.79	7.28	5.39
<b>Solid Waste</b>						
306-2	Total hazardous waste	Ton	51,379	74,344	117,157	140,010
	- Reuse	Ton	28,959	43,574	39,840	47,897
	- Recycling	Ton	2,960	4,796	2,511	2,931
	- Incineration (with energy recovery)	Ton	2,188	2,542	52,439	71,709
	- Incineration (without energy recovery)	Ton	9,616	9,996	12,900	7,435
	- Composting	Ton	-	0	77	0
	- Landfill	Ton	7,349	12,260	6,416	6,557
	- Unknown disposal methods	Ton	306	1,175	2,973	3,482
	Total non-hazardous waste	Ton	119,570	243,104	197,669	271,788
	- Reuse	Ton	7,960	120,151	65,318	82,289
	- Recycling	Ton	43,990	43,423	50,505	92,227
	- Incineration (with energy recovery)	Ton	11,959	12,835	10,245	20,895
	- Incineration (without energy recovery)	Ton	1,080	1,080	2,425	1,135
	- Composting	Ton	6,850	11,235	12,829	0
	- Landfill	Ton	38,609	49,596	53,603	61,155
	- Deepwell injection	Ton	-	-	53	0
	- Unknown disposal methods	Ton	9,122	4,784	2,692	14,087
	Total waste reused, recycled and incinerated with energy recovery	Ton	98,017	227,321	220,857	317,948
	Total waste disposed (not reused, recycled) and incinerated without energy recovery	Ton	72,932	90,127	93,969	93,851

GRI Standards		Unit	2018	2019	2020	2021
<b>Spills</b>						
306-3	Total significant spills	Case	18	20	25	52
	- Hydrocarbon spills	Case	5	6	18	7
	- Chemical spills	Case	13	14	7	29
	- Other spills	Case	0	0	0	16
		Ton	0	0	0	20
<b>Process Safety Events</b>						
	Tier 1					
	- No. of events	Case	8	24	18	15
	- Rate	Case/Million man-hours	0.43	0.44	0.32	0.24
	Tier 2					
	- No. of events	Case	4	14	13	21
	- Rate	Case/Million man-hours	0.21	0.26	0.23	0.33
<b>Environmental Compliance</b>						
307-1	ALL FINES: Monetary value of ALL fines for non-compliance with environmental laws and regulations	USD	36,607	0	22,947	196,896
	FINES OVER USD 10,000: Monetary value of significant fines over USD 10,000 for non-compliance with environmental laws and regulations	USD	36,607	0	22,357	156,878
	Total number of non-monetary sanctions for non-compliance with environmental laws and regulations	Case	0	0	0	21
	Total number of non-monetary sanctions for non-compliance with environmental laws and regulations were incurred	Case	0	0	0	21
<b>Employees</b>						
102-8	Total employees	Person	15,922	22,696	25,207	25,760
	- Male	Person	12,524	17,749	19,790	20,261
	- Female	Person	3,398	4,947	5,417	5,499
	Total contractors	Person	3,234	6,904	6,475	6,122
	- Male	Person	2,730	6,137	5,661	5,462
	- Female	Person	504	767	814	660
<b>Occupational Health and Safety</b>						
403-2	Total Recordable Injury Rate (TRIR)	No/200,000 man-hours	1.29	1.45	0.91	0.98
	Employees	No/200,000 man-hours	1.41	1.59	0.99	1.19
	- Male	No/200,000 man-hours	1.52	1.60	1.02	1.15
	- Female	No/200,000 man-hours	0.98	1.57	0.86	1.40
	Contractors	No/200,000 man-hours	0.78	0.96	0.68	0.37
	- Male	No/200,000 man-hours	0.87	0.96	0.66	0.38
	- Female	No/200,000 man-hours	0.33	0.99	0.85	0.27
	Total Recordable Injuries (not including first aid incidents)	Case	241	394	259	299
	Employees	Case	214	335	209	267
	- Male	Case	184	270	174	207
	- Female	Case	30	65	35	60
	Contractors	Case	27	59	50	32
	- Male	Case	25	52	44	30
	- Female	Case	2	7	6	2
	Lost Time Injury Frequency Rate (LTIFR)	No/Million man-hours	3.71	4.18	2.38	3.30
	Employees	No/Million man-hours	4.16	5.07	2.93	4.05
	- Male	No/Million man-hours	4.47	4.77	2.81	3.79
	- Female	No/Million man-hours	2.93	6.30	3.45	5.12
	Contractors	No/Million man-hours	1.73	1.14	0.81	1.22
	- Male	No/Million man-hours	1.92	1.10	0.90	1.27
	- Female	No/Million man-hours	0.82	1.43	0	0.68
	Total Lost Time Injuries	Case	138	227	136	202
	Employees	Case	126	213	124	181
	- Male	Case	108	161	96	137
	- Female	Case	18	52	28	44
	Contractors	Case	12	14	12	21
	- Male	Case	11	12	12	20
	- Female	Case	1	2	0	1

GRI Standards	Unit	2018	2019	2020	2021
Occupational Illness Frequency Rate (OIFR)	No/Million man-hours	0	0.02	0.18	0.06
Employees	No/Million man-hours	0	0.02	0.24	0.09
- Male	No/Million man-hours	0	0.03	0.06	0.03
- Female	No/Million man-hours	0	0	0.98	0.35
Contractors	No/Million man-hours	0	0	0	0
- Male	No/Million man-hours	0	0	0	0
- Female	No/Million man-hours	0	0	0	0
Total number of occupational disease cases	Case	0	1	10	4
Employees	Case	0	1	10	4
- Male	Case	0	1	2	1
- Female	Case	0	0	8	3
Contractors	Case	0	0	0	0
- Male	Case	0	0	0	0
- Female	Case	0	0	0	0
Fatalities (all Employees and Contractors)	Person	0	1	0	2
Employees	Person	0	0	0	1
- Male	Person	0	0	0	1
- Female	Person	0	0	0	0
Contractors	Person	0	1	0	1
- Male	Person	0	1	0	1
- Female	Person	0	0	0	0
Lost Day Rate (LDR)	Days/Million man-hours	66	104	114	144
Employees	Days/Million man-hours	77	124	147	172
- Male	Days/Million man-hours	87	106	153	173
- Female	Days/Million man-hours	37	198	119	170
Contractors	Days/Million man-hours	17	34	22	68
- Male	Days/Million man-hours	17	37	24	74
- Female	Days/Million man-hours	17	19	0	7
Total number of lost days (only including lost scheduled work days)	Man days	2,452	5,649	6,525	8,894
Employees	Man days	2,336	5,225	6,205	7,717
- Male	Man days	2,106	3,590	5,242	6,254
- Female	Man days	230	1,635	963	1,463
Contractors	Man days	116	424	320	1,177
- Male	Man days	95	398	320	1,166
- Female	Man days	21	26	0	11
Absentee Rate (AR)	%	2.01	1.99	1.90	1.98
Employees	%	2.40	2.38	2.39	2.49
- Male	%	2.34	2.02	2.08	2.16
- Female	%	2.65	3.87	3.70	3.89
Contractors	%	0.32	0.65	0.48	0.64
- Male	%	0.29	0.66	0.47	0.65
- Female	%	0.46	0.54	0.56	0.52
Absentee days	Days	93,668	135,091	135,547	152,951
Employees	Days	90,871	125,176	126,668	139,240
- Male	Days	70,527	85,194	89,085	97,424
- Female	Days	20,344	39,982	37,583	41,815
Contractors	Days	2,797	9,915	8,879	13,711
- Male	Days	2,098	8,966	7,891	12,745
- Female	Days	699	949	988	966
Near Miss	Case	1,870	3,015	1,977	2,558
Employees	Case	1,750	2,531	1,878	2,238
- Male	Case	1,611	2,357	1,704	2,115
- Female	Case	139	174	174	123
Contractors	Case	120	484	99	320
- Male	Case	118	474	91	302
- Female	Case	2	10	8	18
403-3 Workers with high incidence or high risk of diseases related to their occupation	Person	744	652	838	926
Employees	Person	703	584	693	692
- Male	Person	587	470	580	592
- Female	Person	116	114	113	100
Contractors	Person	41	68	145	234
- Male	Person	37	58	139	231
- Female	Person	4	10	6	3

## WATER WITHDRAWAL BY SOURCE

GRI Standards	Unit	2020	2021
<b>Total Water Withdrawal by Source</b>			
303-3 Total water withdrawal by source (with + without stress)	m <sup>3</sup>	82,504,769	88,083,250
Surface water/rain water (with + without water stress)	m <sup>3</sup>	51,035,459	61,522,902
Freshwater (≤1,000 mg/L Total Dissolved Solids)	m <sup>3</sup>	47,395,317	58,361,273
Other water (>1,000 mg/L Total Dissolved Solids)	m <sup>3</sup>	3,640,142	3,161,629
Ground water (with + without water stress)	m <sup>3</sup>	12,661,456	7,481,799
Freshwater (≤1,000 mg/L Total Dissolved Solids)	m <sup>3</sup>	12,660,117	7,480,821
Other water (>1,000 mg/L Total Dissolved Solids)	m <sup>3</sup>	1,339	979
Seawater (total) (with + without water stress)	m <sup>3</sup>	0	0
Freshwater (≤1,000 mg/L Total Dissolved Solids)	m <sup>3</sup>	0	0
Other water (>1,000 mg/L Total Dissolved Solids)	m <sup>3</sup>	0	0
Produced water (total) (with + without water stress)	m <sup>3</sup>	684,830	193,615
Freshwater (≤1,000 mg/L Total Dissolved Solids)	m <sup>3</sup>	627,250	64,141
Other water (>1,000 mg/L Total Dissolved Solids)	m <sup>3</sup>	57,580	129,474
Third-party water (with + without water stress)	m <sup>3</sup>	18,123,024	18,884,933
Freshwater (≤1,000 mg/L Total Dissolved Solids)	m <sup>3</sup>	18,057,981	18,726,571
Other water (>1,000 mg/L Total Dissolved Solids)	m <sup>3</sup>	65,043	158,362
<b>Total water withdrawal by source (with water stress)</b>	<b>m<sup>3</sup></b>	<b>34,673,306</b>	<b>39,501,965</b>
Surface water/rain water (with water stress)	m <sup>3</sup>	19,608,256	23,446,101
Freshwater (≤1,000 mg/L Total Dissolved Solids)	m <sup>3</sup>	19,608,256	23,446,101
Other water (>1,000 mg/L Total Dissolved Solids)	m <sup>3</sup>	0	0
Ground water (with water stress)	m <sup>3</sup>	3,747,740	3,961,213
Freshwater (≤1,000 mg/L Total Dissolved Solids)	m <sup>3</sup>	3,747,740	3,961,213
Other water (>1,000 mg/L Total Dissolved Solids)	m <sup>3</sup>	0	0
Seawater (total) (with water stress)	m <sup>3</sup>	0	0
Freshwater (≤1,000 mg/L Total Dissolved Solids)	m <sup>3</sup>	0	0
Other water (>1,000 mg/L Total Dissolved Solids)	m <sup>3</sup>	0	0
Produced water (total) (with water stress)	m <sup>3</sup>	81,039	153,254
Freshwater (≤1,000 mg/L Total Dissolved Solids)	m <sup>3</sup>	34,370	34,585
Other water (>1,000 mg/L Total Dissolved Solids)	m <sup>3</sup>	46,669	118,669
Third-party water (with water stress)	m <sup>3</sup>	11,236,272	11,941,396
Freshwater (≤1,000 mg/L Total Dissolved Solids)	m <sup>3</sup>	11,171,229	11,783,034
Other water (>1,000 mg/L Total Dissolved Solids)	m <sup>3</sup>	65,043	158,362
<b>Total water withdrawal by source (without water stress)</b>	<b>m<sup>3</sup></b>	<b>47,831,463</b>	<b>48,581,285</b>
Surface water (without water stress)	m <sup>3</sup>	31,427,203	38,076,801
Freshwater (≤1,000 mg/L Total Dissolved Solids)	m <sup>3</sup>	27,787,062	34,915,172
Other water (>1,000 mg/L Total Dissolved Solids)	m <sup>3</sup>	3,640,142	3,161,629
Ground water (without water stress)	m <sup>3</sup>	8,913,717	3,520,586
Freshwater (≤1,000 mg/L Total Dissolved Solids)	m <sup>3</sup>	8,912,377	3,519,607
Other water (>1,000 mg/L Total Dissolved Solids)	m <sup>3</sup>	1,339	979
Seawater (total) (without water stress)	m <sup>3</sup>	0	0
Freshwater (≤1,000 mg/L Total Dissolved Solids)	m <sup>3</sup>	0	0
Other water (>1,000 mg/L Total Dissolved Solids)	m <sup>3</sup>	0	0
Produced water (total) (without water stress)	m <sup>3</sup>	603,791	40,361
Freshwater (≤1,000 mg/L Total Dissolved Solids)	m <sup>3</sup>	592,880	29,556
Other water (>1,000 mg/L Total Dissolved Solids)	m <sup>3</sup>	10,911	10,805
Third-party water (without water stress)	m <sup>3</sup>	6,886,752	6,943,537
Freshwater (≤1,000 mg/L Total Dissolved Solids)	m <sup>3</sup>	6,886,752	6,943,537
Other water (>1,000 mg/L Total Dissolved Solids)	m <sup>3</sup>	0	0

## WASTE WATER DISCHARGE

GRI Standards		Unit	2020	2021
<b>Waste Water Discharge</b>				
303-4	Total waste water discharge (with + without stress) (source wise)	m <sup>3</sup>	48,753,355	49,662,741
	Total surface water	m <sup>3</sup>	26,649,830	26,147,436
	Total ground water	m <sup>3</sup>	65,486	92,209
	Total sea water	m <sup>3</sup>	3,220,926	3,132,273
	Total third party water / municipality / common waste water treatment plant	m <sup>3</sup>	18,722,602	20,184,823
	Total third party water sent for used for other organization	m <sup>3</sup>	94,511	106,001
	<b>Waste water discharge (with water stress)</b>	<b>m<sup>3</sup></b>	<b>25,906,869</b>	<b>25,674,905</b>
	Surface water	m <sup>3</sup>	14,429,383	14,164,176
	Ground water	m <sup>3</sup>	47,719	52,544
	Sea water	m <sup>3</sup>	1,663,141	1,771,417
	Third party water / municipality / common waste water treatment plant	m <sup>3</sup>	9,763,971	9,676,833
	Third party water sent for used for other organization	m <sup>3</sup>	2,654	9,935
	<b>Waste water discharge (without water stress)</b>	<b>m<sup>3</sup></b>	<b>22,846,486</b>	<b>23,987,836</b>
	Surface water	m <sup>3</sup>	12,220,446	11,983,260
	Ground water	m <sup>3</sup>	17,767	39,665
	Sea water	m <sup>3</sup>	1,557,785	1,360,856
	Third party water / municipality / common waste water treatment plant	m <sup>3</sup>	8,958,631	10,507,990
	Third party water sent for used for other organization	m <sup>3</sup>	91,857	96,066
	<b>Total waste water discharge quality wise by fresh water and other water (with + without stress)</b>	<b>m<sup>3</sup></b>	<b>48,753,355</b>	<b>49,662,741</b>
	Freshwater (≤1,000 mg/L Total Dissolved Solids)	m <sup>3</sup>	39,684,310	40,515,778
	Other water (>1,000 mg/L Total Dissolved Solids)	m <sup>3</sup>	9,069,045	9,146,963
	<b>Waste water discharge with water stress</b>	<b>m<sup>3</sup></b>	<b>25,906,869</b>	<b>25,674,905</b>
	Freshwater (≤1,000 mg/L Total Dissolved Solids)	m <sup>3</sup>	24,694,216	25,218,923
	Other water (>1,000 mg/L Total Dissolved Solids)	m <sup>3</sup>	1,212,652	455,982
	<b>Waste water discharge without water stress</b>	<b>m<sup>3</sup></b>	<b>22,846,487</b>	<b>23,987,836</b>
	Freshwater (≤1,000 mg/L Total Dissolved Solids)	m <sup>3</sup>	14,990,094	15,296,855
	Other water (>1,000 mg/L Total Dissolved Solids)	m <sup>3</sup>	7,856,393	8,690,981
<b>Total water returned to the same source at a similar or better level of quality (with + without water stress)</b>		<b>m<sup>3</sup></b>	<b>4,350,993</b>	<b>3,607,591</b>

## GLOBAL HUMAN RESOURCES DATA

GRI Standards		Unit	2018	2019	2020	2021
<b>Employees</b>						
405-1	Total employees by gender	Person	15,922	22,696	25,207	25,760
	- Male	Person	12,524	17,749	19,790	20,261
	- Female	Person	3,398	4,947	5,417	5,499
	Total Permanent employees	Person	15,221	22,027	23,134	23,666
	- Male	Person	11,944	17,225	18,158	18,425
	- Female	Person	3,277	4,802	4,976	5,241
	Total Temporary employees	Person	701	669	2,073	2,094
	- Male	Person	580	524	1,632	1,836
	- Female	Person	121	145	441	258
	Total employees by Level*	Person	15,221	22,027	23,134	23,666
	Executive Management	Person	101	109	115	117
	- Male	Person	88	95	100	102
	- Female	Person	13	14	15	15
	Senior Management	Person	414	577	606	620
	- Male	Person	320	468	492	503
	- Female	Person	94	109	114	117
	Middle Management	Person	1,619	2,341	2,458	2,515
	- Male	Person	1,281	1,820	1,911	1,955
	- Female	Person	338	521	547	560
	Junior Management	Person	5,831	8,495	8,922	9,127
	- Male	Person	3,521	5,097	5,353	5,476
	- Female	Person	2,310	3,398	3,569	3,651
	Non Management*	Person	7,256	10,505	11,033	11,287
	Male	Person	6,734	9,745	10,235	10,470
	Female	Person	522	760	798	817
	Total employees by Age*	Person	15,221	22,027	23,134	23,666
	Over 50 years old	Person	3,328	5,033	6,267	6,118
	- Male	Person	2,742	4,027	5,132	4,927
	- Female	Person	586	1,006	1,135	1,191
	30-50 years old	Person	9,024	13,199	13,265	13,962
	- Male	Person	6,896	10,191	10,194	10,683
	- Female	Person	2,128	3,008	3,071	3,279
	Below 30 years old	Person	2,869	3,795	3,602	3,586
	- Male	Person	2,306	3,007	2,832	2,815
	- Female	Person	563	788	770	771
<b>New Employee Hires*</b>						
401-1	Total new employees	Person	1,758	2,042	1,822	3,295
	- Male	Person	1,216	1,464	1,259	2,334
	- Female	Person	542	578	563	961
<b>Employee Turnover*</b>						
401-1	Total employee turnover	Person	1,363	2,093	1,964	2,703
	- Male	Person	1,021	1,502	1,413	1,951
	- Female	Person	342	591	551	752
	Total employee turnover rate	Turnover rate (%)	8.95	9.50	8.49	11.42
	Voluntary employees turnover	Person	1,137	1,695	1,461	2,149
	Voluntary employees turnover rate	Turnover rate (%)	7.47	7.70	6.32	9.08
	Number of employees laid off	Person	81	0	93	148
	Number of negotiations	Person	36	0	58	37
<b>Parental Leave*</b>						
401-3	Number of employees who took parental leave	Person	768	863	615	899
	- Male	Person	543	601	328	584
	- Female	Person	225	262	287	315
	Number of employees who returned to work after taking parental leave	Person	639	726	554	821
	- Male	Person	494	559	321	534
	- Female	Person	145	167	233	287
	Retention to work (after parental leave and still employed for the next 12 months)	Person	603	693	468	720
	- Male	Person	465	532	242	497
	- Female	Person	138	161	226	223

GRI Standards		Unit	2018	2019	2020	2021
<b>Employees Training*</b>						
404-1	Total training hours provided to employee	Hours	463,175	728,206	429,886	708,106
	- Male	Hours	352,338	552,725	335,311	552,323
	- Female	Hours	110,837	175,481	94,575	155,783
	- Mandatory course	Hours	-	-	214,305	301,340
	- Non-mandatory course	Hours	-	-	215,582	406,766
	Total average training hours	Hours/Employee	30.43	33.06	18.58	29.92
	- Male	Hours/Employee	29.50	32.09	18.47	29.98
	- Female	Hours/Employee	33.82	36.54	19.01	29.72
	Total amount spent	USD	-	-	2,070,050	2,400,752
	- Mandatory course	USD	-	-	625,605	708,545
	- Non-mandatory course	USD	-	-	1,444,445	1,692,207
	- Region - Asia	USD	-	-	870,159	1,024,422
	- Region - EMEA	USD	-	-	757,347	611,035
	- Region - Americas	USD	-	-	442,544	765,295
<b>Performance Review*</b>						
404-3	Total employees receiving regular performance reviews	Person	15,221	22,027	15,648	15,959
	Total employees receiving career development reviews	Person	14,237	21,281	6,505	7,641
<b>Remuneration Ratio of Women to Men</b>						
405-2	Strategic (base salary only)	Ratio	0.960	0.962	0.964	0.965
	Strategic (base salary + other cash incentives)	Ratio	-	-	0.957	0.958
	Managerial (base salary only)	Ratio	0.945	0.947	0.949	0.951
	Managerial (base salary + other cash incentives)	Ratio	0.949	0.950	0.953	0.955
	Supervisory and Operational	Ratio	0.930	0.931	0.934	0.937
<b>Employee Engagement Score</b>						
	Employee satisfaction score	%	74.91	74.91	73.89	73.89
	- Male	%	74.98	74.98	74.54	74.54
	- Female	%	80.84	80.84	77.40	77.40
	Data coverage of employee satisfaction survey	%	93.43	93.43	82.87	82.87
<b>Collective Bargaining</b>						
102-41	Total employees covered by collective bargaining agreements	Person	7,810	11,337	9,578	9,914
	Percentage of total employees covered by collective bargaining agreements	%	51.31	51.47	41.40	41.89
	Number of consultations/negotiations with trade unions over organizational changes [unit]	Number	334	262	103	903
<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	17,210	20,799	11,044	22,622
	Total number of employees trained in human rights policies or procedures concerning aspects of human rights that are relevant to operations	Person	12,819	19,362	9,366	16,673
	Percentage of employees trained in human rights policies or procedures concerning aspects of human rights that are relevant to operations	% of total employees	80.5	85.3	37.2	64.7
<b>Non-discrimination</b>						
406-1	Total number of incidents of discrimination and corrective actions taken	Case	0	0	8	12
	Number of incidents of discrimination and corrective actions taken regarding employees	Case	0	0	5	10
	Number of incidents of discrimination and corrective actions taken to all excluding employees	Case	0	0	3	2

GRI Standards		Unit	2018	2019	2020	2021
<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	91	108	123	124
	Total number of operations that have been subject to human rights reviews or impact assessments	Number	91	108	123	124
	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 the formal grievance process	Case	0	0	8	22
	Number of grievances about human rights (related to employees) through the formal grievance process	Case	0	0	7	12
	Number of grievance about human rights (not related to employees) through the formal grievance process	Case	0	0	0	0
	Total number of human rights grievances addressed in this reporting period	Case	0	0	8	7
	Number of human rights grievances (related to employees) addressed during the reporting period	Case	0	0	7	7
	Number of human rights grievances (not related to employees) addressed during the reporting period	Case	0	0	0	1
	Total number of human rights grievances filed in the previous reporting period that were resolved during the reporting period	Case	0	0	0	1
	Number of human rights grievances (related to employees) filed in the previous reporting period that were resolved during the reporting period	Case	0	0	1	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>Labour Practice Grievances</b>						
103-2	Total number of grievances about Labour practices filed through the formal grievance mechanism	Case	27	24	63	65
	Total number of grievances about Labour practices addressed during the reporting period	Case	25	18	80	58
	Total number of grievances about Labour practices resolved during the reporting period	Case	18	18	75	60
	Total number of grievances about Labour practices filed prior to the reporting period that were resolved during the reporting period	Case	21	22	43	7

\* 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.

## GLOBAL CSR DATA

GRI Standards	Unit	2018	2019	2020	2021
<b>Local Community Engagement</b>					
Percentage of operations with implemented local community engagement, impact assessments, and development programs	%	67	88	91	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	29	32	46	47
Number of operation with implemented social impact assessment including gender assessment	Number	10	9	14	12
Number of operation with implemented environmental impact assessment	Number	21	21	42	38
Number of operation with implemented public disclosure of results of environmental and social impact assessment	Number	12	13	27	24
Number of operation with implemented local community development programs	Number	18	18	25	23
Number of operation with implemented stakeholder engagement plans	Number	13	12	21	24
Number of operation with implemented broad base local community consultation committees and processes	Number	10	7	15	22
Number of operation with implemented work councils, occupational health and safety committees and other employee representation bodies to deal with impacts	Number	21	23	42	39
Number of operation with implemented formal local community grievance process	Number	3	7	18	25
<b>Social Grievances</b>					
Number of grievances regarding society received through formal grievance process	Number	1	1	1	0
Total number of societal grievances addressed during this reporting period	Number	0	0	1	0
Total number of societal grievances resolved during this reporting period	Number	0	0	1	0
Total number of societal grievances resolved in the previous reporting period	Number	2	1	0	1
<b>Total Philanthropic Activities</b>					
Total philanthropic activities	%	100	100	100	100
Charitable donations	USD	970,856	350,980	449,703	743,123
Community investments	USD	971,420	715,351	451,890	751,889
Commercial Initiatives in the community	USD	406,629	730,397	188,583	157,982
<b>Philanthropic Contributions</b>					
Total cash contributions	USD	1,771,435	1,796,730	1,090,176	1,405,621
Time: Estimate employee costs	USD	1,007,502	1,142,800	696,748	210,969
Time: Employee volunteering during paid working hours	Hour	58,640	60,960	33,607	9,493
Total in-kind giving	USD	122,914	153,140	250,528	200,981
Total management overheads	USD	454,556	82,360	73,118	46,392



# CERTIFICATE

## Carbon Footprint 2021

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**



Acting as an independent Certification Body TÜV NORD CERT GmbH has verified the carbon footprint, Scope 1, Scope 2 (Location based) and Scope 3 of the organisation for the reporting period 01.01.2021 - 31.12.2021 (inclusive) to be 35,184,172 t CO<sub>2</sub>e.

Summary	t CO <sub>2</sub> e
Scope 1	7,247,667
Scope 2 (Location based)	2,485,210
<b>Scope 1 and 2 (Location based)</b>	<b>9,732,877</b>
Scope 2 (Market based)	2,407,780
Scope 3 Emissions from raw material	23,787,293
Scope 3 Emissions from electricity	533,386
Scope 3 Emissions from fuels	1,130,616
<b>Scope 1, Scope 2 (Location based), Scope 3</b>	<b>35,184,172</b>

for the reporting period 01.01.2021 - 31.12.2021 (inclusive).

The level of assurance is Reasonable. The carbon footprint covers direct and indirect emissions. The calculation of the carbon footprint comprises of emissions arising from:

Scope 1: Stationary and mobile combustion, fugitive emissions, process off gas (PET and PTA), nitrogen production, waste water treatment (anaerobic and aerobic), fire suppression equipment, SF6 in electrical equipment, compressed air, chilled water, cooling water, biogas and biomass combustion.

Scope 2: Electricity purchased (location and market based), third party electricity and heat, steam purchased.

Scope 3: Raw material, transmission and distribution, well to tank related to electricity purchased and fuels.

On the basis of the verification, the greenhouse gas statement is materially correct and a fair representation of greenhouse data and information. Furthermore, it can be confirmed that the greenhouse gas statement has been prepared in accordance with the ISO 14064-1 standard.

Certificate Registration No. 44 776 180191

Audit Report No. 3532 6747

Certification Body  
 at TÜV NORD CERT GmbH

Essen, 2022-07-08

TÜV NORD CERT GmbH

Am TÜV 1

45307 Essen

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# 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 (hereinafter 'the Report') for the period January 1, 2021 to December 31, 2021 period. This engagement comprises 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 has developed the Report content. Its Management is responsible for identifying material topics and carrying out the collection, analysis, and disclosure of the information presented in web-based and printed Reports, including website maintenance and integrity. IVL's Management is also responsible for ensuring the quality and accuracy of the Report in accordance with the applied criteria stated in the <IR> framework and GRI standards in such a way 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 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 <sup>1</sup>	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*

<sup>1</sup> "Out of total 112 reported sites, COD was monitored at 38 sites, 28 sites sent discharge wastewater to the third party for treatment, 41 sites reported negligible COD, and no liquid discharge reported by 5 sites."



The reporting boundaries for the above topics include 112 operating sites across 33 countries. Since COVID-19 prevented onsite verification, remote verification (via web-based video conference calls, and telephone calls) was conducted in November 2021, February, and March 2022. The assurance encompassed IVL Dhunseri Petrochem Industries – Haldia (PET) located in India; Indorama Petrochem (PTA) located in Thailand; Indorama Ventures Polymers Mexico (PET & Fibers) located in Mexico, Indorama Ventures Oxides Australia (IOD) located in Australia and Auriga Polymers (PET & Fibers) located in USA. The assurance activities were done together with a desk review carried out 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 or Management of sustainability-related issues or the sufficiency of the report against principles of IIRC Integrated Reporting (<IR>), GRI Standards, AA1000AS Version 3, and AA1000 AP (2018), other than those mentioned in the scope of 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 is based on the assumption 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 the Management's objectives and programs.

- IVL can interlink the SAP data and define the material categories as stated under the disclosure GRI 301-1 for 'raw materials', 'associated process materials' and 'material for packaging' to increase the accuracy of the disclosure;
- In line with "Climate Change Strategy", IVL can list the green projects which were appraised by considering the ICP (Internal Carbon Price);
- A corporate level training on the data management and definitions of significant parameters can be planned to further improve the data disclosure mechanism;
- IVL can further update waste management data capturing to improve disclosure in line with the latest requirements of GRI 306 (2020)



### Our Conclusion

In our opinion, based on the scope of this assurance engagement, the disclosures on Sustainability performance reported in the Report along with the referenced information provides a fair representation of the material topics, related strategies, and performance disclosures 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 for 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 the management approach for each material topic.

**Universal Standard:** IVL followed GRI 101: Reporting Principles for defining 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 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, R & D centers, number of new products launched, new plants, buildings, infrastructure, etc.

**Intellectual Capital:** Knowledge-based intangibles, including intellectual property, R & D activities, patents, designs registered 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, policy-makers, and benefits associated with brand and reputation, along with IVL's ability to share information to enhance wellbeing.

**Natural Capital:** Sourcing responsibilities for the majority of renewable and non-renewable environmental resources and processes that provide goods or services. Reporting of circular economy, emissions, water consumption, waste disposal, etc.

#### Evaluation of the 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 the IVL range of businesses. The Report fairly brings out the aspects and topics and their respective boundaries of the diverse operations of IVL. In our view, the Report meets the requirements.

**Responsiveness:** TUVI believes that the responses to the material aspects are fairly articulated in the report, i.e., disclosures on IVL policies and management systems, including governance. In our view, the Report meets the requirements.

**Impact:** IVL communicates its sustainability performance through regular, transparent internal and external reporting throughout the year, aligned with GRI, and CDP as part of its policy framework encompassing the Environmental, Social, Ethical and other policies. IVL reports on sustainability performance to the Board of Directors and the Sustainability and Risk Management Committee (SRMC), who oversee and monitor the implementation and performance of objectives, as well as progress against goals and targets for addressing sustainability-related issues. IVL completed the process of establishing contemporary goals and targets against which performance will be monitored and disclosed periodically.

TUVI expressly disclaims any liability or co-responsibility for any decision a person or entity would make based on this Assurance Statement. The intended users of this assurance statement are the Management of IVL. The Management of the IVL is responsible for the information provided in the Report as well as the process of collecting, analyzing, and reporting the information presented in web-based and printed Reports, including website maintenance and its integrity. TUVI's responsibility regarding this verification is in accordance with the agreed scope of work which includes non-financial quantitative and qualitative information (Sustainability Performance) disclosed by IVL in the Report. This assurance engagement is based on the assumption that the data and the information provided to TUVI by IVL are complete and true.

### Our Assurance Team and Independence

TUVI is an independent, neutral third party providing sustainability services with qualified environmental and social specialists. TUVI states its independence and impartiality and confirms that there is "No Conflict of Interest" with regard to this assurance engagement. In the reporting year, TUVI did not work with IVL on any engagement that could compromise the independence or impartiality of our findings, conclusions, and recommendations. TUVI was not involved in the preparation of any content or data included in the Report, with the exception of this Assurance Statement. TUVI maintains complete impartiality towards any individuals interviewed during the assurance engagement.

#### For and on behalf of TUV India Private Limited

Manojkumar Borekar  
Project Manager and Reviewer  
Head – Sustainability Assurance Service



Date: 13-07-2022  
Place: Mumbai, India  
Project Reference No: 8120210379  
[www.tuv-nord.com/in](http://www.tuv-nord.com/in)





# ABOUT THIS REPORT

## MANAGEMENT RESPONSIBILITY STATEMENT

The Sustainability Report 2021 is part of IVL's ongoing practice to adhere to Environmental, Social and Governance (ESG) criteria, detailing IVL's all-inclusive approach to value creation, covering both tangible and intangible, and financial and non-financial aspects of the business, including stakeholder identification, the definition of material matters, and the International Integrated Reporting <IR> Framework.

We aggregated our efforts on sustainability and financial-related information into this report in accordance with the Global Reporting Initiative (GRI) Sustainability Reporting Standards. This is to measure our performance as a sustainable chemical company over the reporting scope.

The Chief Sustainability Officer (CSO) is responsible for the preparation of our annual Sustainability Report. The GRI Reporting Principles are used as our guide in defining this Sustainability Report's topics, content and quality. Links to this supplementary information are provided in the relevant sections.

For the purposes of this report, references to "us," "our," "the Company," or "IVL" refer to Indorama Ventures.

## OUR APPROACH

We have published our Sustainability Report for over a decade, which continues to be one of our many engagement channels to proactively summarize our sustainability-related initiatives, outcomes, and future plans.

The Sustainability Report 2021 is produced in compliance with the GRI Standards: Core option and with close reference to other international criteria such as the International Integrated Reporting <IR> Framework, UN SDGs, UNGC principles and AA1000 Assurance Standard. This report also serves as a Communication on Progress report on IVL's application of the ten principles in the UNGC's main pillars of human rights, Labour, the environment, and anti-corruption.

Our commitment to report on our sustainability performance annually, in accordance with these frameworks, gives readers the opportunity to access our sustainability performance across years, sectors and in relation to similar global organizations. We ensure that the data and statements disclosed in this report are verified by independent auditors.

## SCOPE AND BOUNDARY OF REPORTING

The <IR> Framework requires that we explain our organizational overview, approach to governance, business model, performance, the risks and opportunities that we face, performance and our future outlook, information of material value to our business and stakeholders. Additionally, this report also includes issues that can potentially affect our value creation in the short, medium, and long-term, which are discussed and tested with IVL's diverse stakeholder groups and disclosed within our reporting boundary.

We report consolidated data for entities in which IVL represents more than 50% ownership and for joint ventures in which we have management control. 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.

This report contains the consolidated information from 112 operational sites including global operations, subsidiaries and factories across our presence in 33 countries (see 'Exceptions' below for any entities not included). These were collated from activities between January 1, 2021 to December 31, 2021, with exceptions including newly acquired entities which are then reported upon their acquisition dates. In certain cases, we take into account important global events that occurred after December 31, 2021.

Further details of our reporting boundaries can be found within the GRI Content Index on pg. 182-193. Previous IVL Sustainability Reports can be accessed here.

## REPORTING PRINCIPLES

### Value Creation

It is incumbent on us as a globally integrated business to create value. Our combined emphasis on robust governance, a clear purpose and a defined strategy is how we transform our resources (capital) into valuable outcomes and outputs for our various stakeholder groups. The value creation process at IVL connects decision-making at the top management level to performance targets and outcomes, and ensures our success in the long run through insights into our operations and supply chains and making strategic commitments.

### Report Content

Our compliance towards sustainability reporting is not a compliance act to merely fulfil external demands. These sustainability reports corroborate our efforts and quantify their outcomes. Ongoing and integrated information flows within and across IVL and our stakeholders that are critical to the long-term success of the organization. Our active engagement with our stakeholders on the issues of most interest to them means we are able to:

- Address the most critical sustainability issues and enable long-term value creation for our stakeholders by allocating the expertise, resources and time required to do so.
- Benchmark our strategic intentions against crucial social, environmental, and economic issues and scenarios and adapt our efforts accordingly.
- Identify new innovations, growth and business opportunities while integrating sustainability in our daily operations to maintain our competitive edge.
- Identify and mitigate potential risks or threats to our operational licenses.

We consider the issues that most resonate with our stakeholders through their feedback on various communications platforms, which we then assess, measure, rate and consolidate into a structured 'materiality' process according to formal principles and frameworks.

## Report Quality

IVL's position as a leading chemicals company drives us to closely adhere to our sustainability framework where environmental, social and economic growth are of equal importance. Integrated Reporting is part of this framework and is the future of corporate reporting. Our Sustainability Report 2021 collates qualitative and quantitative information in close reference to the <IR> guiding principles rather than specific indicators. This enables us to highlight the interdependencies within the organization and the external environment, apply transparency in resource allocation, and show how we champion long-term sustainability.

Additionally, abiding by the GRI standards in reporting allows us to produce communication materials that are balanced, comparable, accurate, timely, clear and reliable. As an important part of this report's preparation, we consolidated the valued opinions from our varied stakeholder groups into a robust set of material issues. We adhere to the following three steps as outlined in the GRI standards on defining report content for our Sustainability Report 2021:

### 1. Sustainability Context

We embed sustainability into the core of our business by identifying our sustainability-linked material topics and external trends to formulate our strategy, then lead the strategy's implementation, managing risks and seeking new opportunities. This Sustainability Report 2021 details the insights of how IVL delivers short, medium and long-term value. Delivering above the minimum requirement in exercising our responsibilities in environmental, social and governance scopes contributes to good business sense. We believe a business' sustainability is as good as its ability to positively impact these factors.

### 2. Materiality Assessment

We engaged our internal stakeholders across our business operations and core functions, as well as key external stakeholder groups including customers, suppliers, bankers, fund providers/managers, investors and consultants to perform our materiality assessment analysis. We concentrated on topics that have the capacity to impact IVL's ability to create long-term value in economic, governance, environmental and social areas.

The issues raised were cross-referenced against GRI topics and assigned indicators where relevant. They were then mapped within a materiality matrix and scrutinized by our business leaders, individual operations leadership representatives, a wide range of individuals from across IVL, external stakeholders, the Sustainability Team and reviewed by the SRMC. For more information, please refer to our GRI Content Index on pg. 182-193 of this report.

We identified 13 key material topics as part of the materiality assessment in 2020, for which we created enhanced performance indicators and targets to drive internal performance improvements. We aim to conduct another materiality assessment in 2022. These are detailed in the Materiality Assessment section of this report on pg. 44 as well as on our website.

### 3. Sustainability Report Assurance and GHG Verification

External verification gives us credibility and enhances our report's transparency and integrity. We engaged independent external auditors TUV India Private Limited to verify and assure that the information provided in our Sustainability Report 2021 is in accordance with the GRI Standards, <IR> Framework and the AA1000 Assurance Standard. TUV India Private Limited issued an Assurance Statement which is part of the Independent Assurance Statement on pg. 171-175 of this report.

TUV Nord CERT GmbH is the independent external assurance auditor that verified the information on GHG Scope 1, 2 and 3 [for five categories] emissions in compliance with the GHG Protocol, ISO 14064-1, and ISO 14064-3. Our senior leadership, including our Chief Technology Officer, Chief Sustainability Officer and Chief Executive Officer, review the final report prior to publication.

### GREENHOUSE GAS (GHG) ACCOUNTING

We adhere to 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). Our GHG accounting was implemented systematically and consolidated throughout all of our global operations in accordance with these requirements.

## DATA METHODOLOGY

### Data Coverage

We expanded our coverage of data verification from 94 sites in 2019 to 112 operational sites in 2021. We report data for our operations on a 100% ownership basis unless stated otherwise (e.g. for an 80% owned operation, we report 100% of the data).

The information presented in this report refers to the Company, while the metric system and US\$ (dollars) are used to report data.

The inherent limitations present in the measuring and reporting of non-financial information subject this information to an undetermined number of uncertainties. Measurement techniques and data selection criteria can vary between IVL and our subsidiaries. However, we remain steadfast in reporting the most comprehensive and accurate metrics possible within our capacity.

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

The list of entities acquired, incorporated and other developments is available in the 2021 Annual Report on pg. 66 and on our website under "investor-relations newsroom."

### Exceptions

We curated the content for the 2021 Sustainability Report using environmental, safety, governance and human resources data derived from all entities including joint ventures in which we hold a minimum share of 50% and have management control. There is an exception where the environmental and safety information excludes the following:

- Joint ventures with a 50% or less shareholding and no management control:
  - ES FiberVisions (Thailand) Co., Ltd., Thailand
  - Shenma-PHP (Pingdingshan) Air Bag Yarn Manufacturing Co., Ltd., China
  - Corpus Christi Polymers LLC, the United States
  - Huvis Global Corporation, the United States
  - PETValue Philippines Corporation
- 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
- The information of the entities acquired, or operations commenced on or after July 1, 2021

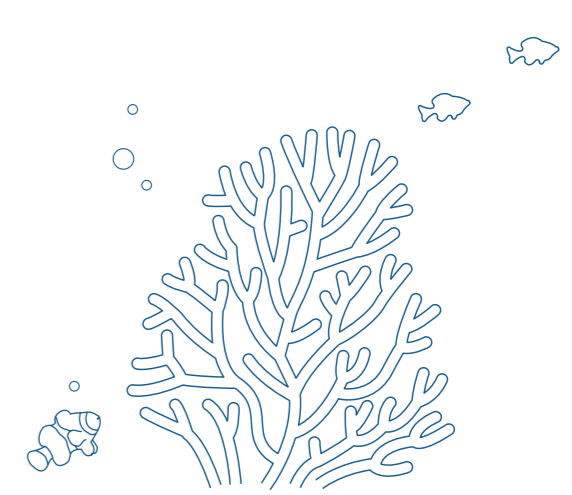
## FORWARD-LOOKING STATEMENTS

The Sustainability Report 2021 incorporates 'forward-looking statements' relating to IVL that are based on the projection of our future performance. They reflect the Company's views at the time such statements were made with respect to future events and offer investors and other stakeholders important insights into our vision in attaining long-term success. These forward-looking statements relay anticipated future outcomes through the usage of words such as 'aim,' 'believe,' 'estimate,' 'expect,' 'goal,' 'intend,' 'may,' 'plan,' 'target,' 'will' and other similar expressions.

These forward-looking statements are, by their nature, subject to risks and uncertainties due to their presumptive nature, 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, trends and conditions in the industry, and geographical markets in which IVL operates. IVL undertakes no obligation to update any forward-looking statements, whether as a result of new information, future events or otherwise. Therefore, readers are asked to accept a degree of ambiguity inherent within forward-looking statements 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. All forward-looking statements herein are qualified by reference to the cautionary statements set forth in this section.

## FEEDBACK

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



# UNGC COMMUNICATION ON PROGRESS (CoP)



As a signatory of the UN Global Compact, "Participant" members, we strive to embrace its core values and promote these values within our sphere of influence. 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, labour, environment and anti-corruption.

<b>Principle 1 - Businesses should support and respect the protection of internationally proclaimed human rights</b> <b>Principle 2 - Make sure that they are not complicit in human rights abuses</b>	
IVL's Corresponding written commitment	Sustainability Report 2021 reference
<b>Human Rights Policy</b> <b>Corporate Governance Manual</b> <b>Responsible Sourcing Policy</b> <b>Stakeholder Policy</b> <b>Whistleblower Policy</b>	CEO Message, pg. 8-11 Sustainability Strategy and Sustainability Framework, pg. 26-27 Stakeholder Engagement, pg. 38-40 Our Contributions to the UN SDGs, pg. 42 Whistleblower Policy, pg. 58-59 Business Ethics, Integrity and Transparency, pg. 54-59 Sustainability Governance, pg. 60-61 Human Rights and Compliance in the Supply Chain, pg. 94-95 Workplace Human Rights, pg. 136-137 Special Report: Gender Diversity, Equity, and Inclusion, pg. 146-147 Global Performance Data, pg. 158-170 GRI Index 102-17, 103, 407, 408, 409, 410, 411, 412, 415, 419, pg. 182-193

<b>Principle 3 - Businesses should uphold freedom of association &amp; effective recognition of the right to collective bargaining</b> <b>Principle 4 - The elimination of all forms of forced and compulsory labour</b> <b>Principle 5 - The effective abolition of child labour</b> <b>Principle 6 - Eliminate discrimination in respect of employment and occupation</b>	
IVL's corresponding written commitment	Sustainability Report 2021 reference
<b>Human Rights Policy</b> <b>Corporate Governance Manual</b> <b>Responsible Sourcing Policy</b> <b>Stakeholder Policy</b> <b>Diversity Policy</b> <b>Whistleblower Policy</b>	Sustainability Strategy and Sustainability Framework, pg. 26-27 Stakeholder Engagement, pg. 38-40 Our Contributions to the UN SDGs, pg. 42 Whistleblower Policy, pg. 58-59 Business Ethics, Integrity and Transparency, pg. 54-59 Sustainability Governance, pg. 60-61 Human Rights and Compliance in the Supply Chain, pg. 94-95 Robust Health and Safety Management, pg. 127-133 Employee Well-being, pg. 134 Workplace Human Rights, pg. 136-137 Investing in Our People, pg. 138-149 Special Report: Gender Diversity, Equity, and Inclusion, pg. 146-147 Global Performance Data, pg. 158-170 GRI Index 102-17, 102-41, 103, 401, 403, 404, 405, 406, 412, 419, pg. 182-193

<b>Principle 7 - Businesses should support a precautionary approach to environmental challenges</b> <b>Principle 8 - Undertake initiatives to promote greater environmental responsibility</b> <b>Principle 9 - Encourage the development and diffusion of environmentally friendly technologies</b>	
IVL's corresponding written commitment	Sustainability Report 2021 reference
<b>Environmental Policy</b> <b>Water Management Policy</b> <b>Health and Safety Policy</b> <b>Corporate Governance Manual</b> <b>IVL GMO Statement</b> <b>IVL Biodiversity Statement</b> <b>Whistleblower Policy</b>	CEO Message, pg. 8-11 Chief Strategy Officer Message, pg. 12-15 Chairman of ESG Council Message, pg. 16-19 Sustainability Strategy and Sustainability Framework, pg. 26-27 Our Sustainability Ambitions Towards Net Zero Carbon, pg. 30 Decarbonization Strategies, pg. 31 Our Contributions to the UN SDGs, pg. 42 Business Ethics, Integrity and Transparency, pg. 54-59 Sustainability Governance, pg. 60-61 Circularity Across Our Value Chain, pg. 72-75 Safe and Sustainable Products, pg. 83-87 Special Report: A Solution in Circular Feedstocks, pg. 88-89 Special Report: Securing Sustainable Financing, pg. 96-97 Towards Net Zero Carbon, pg. 98-123 Decarbonization in Our Value Chain, pg. 102-108 Continuous Improvements in Recycling, pg. 109-112 Special Report: IVL's Road to Net Zero Carbon, pg. 114-115 Managing Our Environmental Impacts, pg. 116-121 Special Report: Biodiversity, pg. 122-123 Giving Back To Our Communities, pg. 150-157 Global Performance Data, pg. 158-170 GRI Table 103, 301, 302, 303, 305, 306, 307, 308, pg. 182-193

<b>Principle 10- Businesses should work against all forms of corruption, including extortion and bribery</b>	
IVL's corresponding written commitment	Sustainability Report 2021 reference
<b>Anti-corruption Policy</b> <b>Corporate Governance Manual</b> <b>Connected Transaction Policy</b> <b>Responsible Sourcing Policy</b> <b>Whistleblower Policy</b>	Sustainability Strategy and Sustainability Framework, pg. 26-27 Whistleblower Policy, pg. 58-59 Business Ethics, Integrity and Transparency, pg. 54-59 Anti-Corruption, pg. 57-59 Political Activities and Contributions, pg. 58 Giving Back To Our Communities, pg. 150-157 Global Performance Data, pg. 158-170 GRI Table 103, 205, 207, 415, 419, pg. 182-193

## IVL SR 2021 GRI STANDARDS CONTENT INDEX FOR 'IN ACCORDANCE' OPTION - CORE

GRI Standard	Disclosure	Description	Page Number (s)	References SR 2021	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: 128 SR: 20	AR: General Information and Other Information SR: Introduction - Overview of IVL		
	102-2	Activities, brands, products, and services	AR: 56-66 SR: 20	AR: Changes and Important Developments SR: Introduction - Value Chain/Business Unit		
	102-3	Location of headquarters	AR: 128	AR: General Information and Other Information		
	102-4	Location of operations	AR: 56-66 SR: 21	AR: Changes and Important Developments SR: Introduction - IVL Operations		
	102-5	Ownership and legal form	AR: 128 SR: 176-179	AR: General Information and Other Information SR: About This Report		
	102-6	Markets served	AR: 56-66 SR: 20	AR: Changes and Important Developments SR: Introduction - IVL Operations		
	102-7	Scale of the organization	SR: 23-25	SR: Introduction - IVL Operations - Financial Performance, Key Highlights 2021 - Economic Performance		
	102-8	Information on employees and other workers	SR: 25	SR: Key Highlights 2021 - Social Performance		
	102-9	Supply chain	SR: 20-21	SR: Introduction - IVL Operations		
	102-10	Significant changes to the organization and its supply chain	AR: 56-66 SR: 176-179	AR: Changes and Important Developments SR: About This Report		
	102-11	Precautionary Principle or approach	SR: 176-179	SR: About This Report		
	102-12	External initiatives	AR: 109-110 SR: 42, 46	AR: Sustainability Leadership; Sustainable Development Goals (SDGs) SR: Our Contributions to the UN SDGs; Major Sustainability Awards and Recognitions		
	102-13	Membership of associations	SR: 46	SR: Major Industry Association and Memberships		
<b>Strategy</b>						
GRI 102: General Disclosures 2016	102-14	Statement from senior decision-maker	AR: 13-14 SR: 8-11	AR: Message from the Chairman SR: CEO Message		
	102-15	Key impacts, risks, and opportunities	AR: 94-106 SR: 45	AR: Potential Risk Factors SR: Emerging Risks and Opportunities		
<b>Ethics and Integrity</b>						
GRI 102: General Disclosures 2016	102-16	Values, principles, standards, and norms of behavior	AR: B SR: 32-33	AR: Vision, Mission, Value SR: Our Approach To Sustainability; Sustainable Value Creation		
	102-17	Mechanisms for advice and concerns about ethics	AR: 137-163 SR: 53-54	AR: Corporate Governance Report 2021 SR: Corporate Governance and Compliance Management		
<b>Governance</b>						
GRI 102: General Disclosures 2016	102-18	Governance structure	AR: 164 SR: 53-54	AR: Management Structure SR: Corporate Governance and Compliance Management		
	102-19	Delegating authority	AR: 164	AR: Management Structure		
	102-20	Executive-level responsibility for economic, environmental, and social topics	AR: 164 SR: 54-59	AR: Management Structure SR: Business Ethics, Integrity and Transparency - Sustainability Governance		
	102-21	Consulting stakeholders on economic, environmental, and social topics	AR: 144-145 SR: 44	AR: Role of Stakeholders SR: Materiality Assessment		

GRI Standard	Disclosure	Description	Page Number (s)	References SR 2021	External Assurance	Omissions	
<b>Governance</b>							
GRI 102: General Disclosures 2016	102-22	Composition of the highest governance body and its committees	AR: 164 SR: 53-54	AR: Management Structure SR: Corporate Governance and Compliance Management			
	102-23	Chair of the highest governance body	AR: 34 SR: 8-11	AR: Board of Directors SR: CEO Message			
	102-24	Nominating and selecting the highest governance body	AR: 159-160, 314-316	AR: Corporate Governance Report 2021; Nomination Compensation and Corporate Governance (NCCG) Committee Report for the Year 2021			
	102-26	Role of highest governance body in setting purpose, values, and strategy	AR: 151-159 SR: 53-54	AR: Corporate Governance Report 2021; Responsibility of The Board SR: Corporate Governance and Compliance Management			
	102-27	Collective knowledge of highest governance body	AR: 34 SR: 53-54	AR: Board of Directors SR: Corporate Governance and Compliance Management			
	102-28	Evaluating the highest governance body's performance	AR: 137-163 SR: 53-54	AR: Corporate Governance Report 2021 SR: Corporate Governance and Compliance Management			
	102-29	Identifying and managing economic, environmental, and social impacts	AR: 94-106 SR: 44	AR: Potential Risk Factors SR: Materiality Assessment			
	102-30	Effectiveness of risk management processes	AR: 94-106 SR: 45	AR: Potential Risk Factors SR: Emerging Risks and Opportunities			
	102-31	Review of economic, environmental, and social topics	AR: 137-144 SR: 54-59	AR: Corporate Governance Report 2021 - Corporate Governance Principles SR: Business Ethics, Integrity and Transparency - Sustainability Governance			
	102-32	Highest governance body's role in sustainability reporting	SR: 53-54	SR: Corporate Governance and Compliance Management			
	<b>Stakeholder Engagement</b>						
	GRI 102: General Disclosures 2016	102-40	List of stakeholder groups	AR: 137-163 SR: 38-40	AR: Corporate Governance Report 2021 SR: Stakeholder Engagement		
102-41		Collective bargaining agreements	SR: 167-169	SR: Global Human Resources Data			
102-42		Identifying and selecting stakeholders	SR: 38-40	SR: Stakeholder Engagement			
102-43		Approach to stakeholder engagement	AR: 137-163 SR: 38-40	AR: Corporate Governance Report 2021 SR: Stakeholder Engagement			
102-44		Key topics and concerns raised	AR: 116-117 SR: 44	AR: Materiality Assessment SR: Materiality Assessment			
<b>Reporting Practice</b>							
GRI 102: General Disclosures 2016	102-45	Entities included in the consolidated financial statements	AR: 56-66, 187-189	AR: Changes and Important Developments; Statement of Financial Position			
	102-46	Defining report content and topic boundaries	SR: 167-169	SR: About This Report			
	102-47	List of material topics	AR: 116-117 SR: 44	AR: Materiality Assessment SR: Materiality Assessment			
	102-48	Restatements of information	SR: 167-169	SR: About This Report			
	102-49	Changes in reporting	SR: 167-169	SR: About This Report			
	102-50	Reporting period	SR: 167-169	SR: About This Report			
	102-51	Date of most recent report	SR: 167-169	SR: About This Report			
	102-52	Reporting cycle	SR: 167-169	SR: About This Report			
	102-53	Contact point for questions regarding the report	SR: 169	SR: About This Report - Feedback			
	102-54	Claims of reporting in accordance with the GRI Standards	SR: 167-169, 182-193	SR: About This Report; GRI Standards Content Index			
	102-55	GRI content index	SR: 182-193	GRI Content Index			
102-56	External assurance	SR: 172-175	Assurance Statement				

GRI Standard	Disclosure	Description	Page Number (s)	References SR 2021	External Assurance	Omissions
<b>SPECIFIC STANDARD DISCLOSURES</b>						
<b>GRI 200: ECONOMIC</b>						
<b>Economic Performance</b>						
GRI 103: Management Approach 2016	103-1	Explanation of the material topic and its boundary	SR: 32-33	Sustainable Value Creation		
	103-2	The management approach and its components	SR: 32-33	Sustainable Value Creation		
	103-3	Evaluation of the management approach	SR: 32-33	Sustainable Value Creation		
GRI 201: Economic Performance 2016	201-1	Direct economic value generated and distributed	AR: 68 SR: 22-25	AR: Performance Highlights; Revenue Structure SR: Key Highlights 2021 - Economic Performance		
	201-2	Financial implications and other risks and opportunities due to climate change	AR: 103-106 SR: 31, 102-108	AR: Potential Risk Factors - Climate Change Risks SR: Decarbonization Strategies, Decarbonization on Our Supply Chain and in Our Operations		
<b>Market Presence</b>						
GRI 103: Management Approach 2016	103-1	Explanation of the material topic and its boundary	IVL Website	<a href="https://sustainability.indoramaventures.com/en/social/human-resources/talent-attraction-and-retention">https://sustainability.indoramaventures.com/en/social/human-resources/talent-attraction-and-retention</a>		
	103-2	The management approach and its components	IVL Website	<a href="https://sustainability.indoramaventures.com/en/social/human-resources/talent-attraction-and-retention">https://sustainability.indoramaventures.com/en/social/human-resources/talent-attraction-and-retention</a>		
	103-3	Evaluation of the management approach	IVL Website	<a href="https://sustainability.indoramaventures.com/en/social/human-resources/talent-attraction-and-retention">https://sustainability.indoramaventures.com/en/social/human-resources/talent-attraction-and-retention</a>		
GRI 202: Market Presence 2016	202-1	Ratios of standard entry level wage by gender compared to local minimum wage	SR: 168	Remuneration Ratio of Women to Men		
<b>Indirect Economic Impacts</b>						
GRI 103: Management Approach 2016	103-1	Explanation of the material topic and its boundary	AR: 118-122 SR: 72-75, 76-82, 109-112, 150-157 Website	AR : IVL's Corporate Social Responsibility SR : Innovation Management, Circular Economy Through Leadership, Recycling, Giving Back To Our Societies <a href="https://sustainability.indoramaventures.com/en/home">https://sustainability.indoramaventures.com/en/home</a> <a href="https://www.indoramaventures.com/en/sustainability/social/csr/csr-framework">https://www.indoramaventures.com/en/sustainability/social/csr/csr-framework</a> <a href="https://sustainability.indoramaventures.com/en/economic/innovation-management/our-innovation">https://sustainability.indoramaventures.com/en/economic/innovation-management/our-innovation</a>		
	103-2	The management approach and its components	Website	<a href="https://sustainability.indoramaventures.com/en/home">https://sustainability.indoramaventures.com/en/home</a> <a href="https://www.indoramaventures.com/en/sustainability/social/csr/csr-framework">https://www.indoramaventures.com/en/sustainability/social/csr/csr-framework</a> <a href="https://sustainability.indoramaventures.com/en/economic/innovation-management/our-innovation">https://sustainability.indoramaventures.com/en/economic/innovation-management/our-innovation</a>		
	103-3	Evaluation of the management approach	Website	<a href="https://sustainability.indoramaventures.com/en/home">https://sustainability.indoramaventures.com/en/home</a> <a href="https://www.indoramaventures.com/en/sustainability/social/csr/csr-framework">https://www.indoramaventures.com/en/sustainability/social/csr/csr-framework</a> <a href="https://sustainability.indoramaventures.com/en/economic/innovation-management/our-innovation">https://sustainability.indoramaventures.com/en/economic/innovation-management/our-innovation</a>		
GRI 203: Indirect Economic Impacts 2016	203-1	Infrastructure investments and services supported	SR: 76-82, 109-112, 150-157 AR: 118-122 Website	SR: Innovation Management, Recycling, Giving Back To Our Societies AR: IVL's Corporate Social Responsibility <a href="https://sustainability.indoramaventures.com/en/home">https://sustainability.indoramaventures.com/en/home</a> <a href="https://www.indoramaventures.com/en/sustainability/social/csr/csr-framework">https://www.indoramaventures.com/en/sustainability/social/csr/csr-framework</a> <a href="https://sustainability.indoramaventures.com/en/economic/innovation-management/our-innovation">https://sustainability.indoramaventures.com/en/economic/innovation-management/our-innovation</a>		
	203-2	Significant indirect economic impacts	SR: 76-82, 83-89, 109-112, 150-157 AR: 118-122 Website	SR: Innovation Management, Product Stewardship, Recycling, Giving Back To Our Societies AR: IVL's Corporate Social Responsibility <a href="https://sustainability.indoramaventures.com/en/home">https://sustainability.indoramaventures.com/en/home</a> <a href="https://www.indoramaventures.com/en/sustainability/social/csr/csr-framework">https://www.indoramaventures.com/en/sustainability/social/csr/csr-framework</a> <a href="https://sustainability.indoramaventures.com/en/economic/innovation-management/our-innovation">https://sustainability.indoramaventures.com/en/economic/innovation-management/our-innovation</a> <a href="https://sustainability.indoramaventures.com/en/environmental/product-stewardship">https://sustainability.indoramaventures.com/en/environmental/product-stewardship</a>		

GRI Standard	Disclosure	Description	Page Number (s)	References SR 2021	External Assurance	Omissions
<b>Anti-Corruption</b>						
GRI 103: Management Approach 2016	103-1	Explanation of the material topic and its boundary	AR: 137-144 SR: 54-59 Website	AR: Corporate Governance Report 2021 SR: Business Ethics, Integrity and Transparency <a href="https://www.indoramaventures.com/storage/downloads/governance/cg-manual/ivl-cg-manual-english.pdf">https://www.indoramaventures.com/storage/downloads/governance/cg-manual/ivl-cg-manual-english.pdf</a>		
	103-2	The management approach and its components	AR: 137-144 SR: 54-59 Website	AR: Corporate Governance Report 2021 SR: Business Ethics, Integrity and Transparency <a href="https://www.indoramaventures.com/storage/downloads/governance/cg-manual/ivl-cg-manual-english.pdf">https://www.indoramaventures.com/storage/downloads/governance/cg-manual/ivl-cg-manual-english.pdf</a>		
	103-3	Evaluation of the management approach	AR: 137-144 SR: 54-59 Website	AR: Corporate Governance Report 2021 SR: Business Ethics, Integrity and Transparency <a href="https://www.indoramaventures.com/storage/downloads/governance/cg-manual/ivl-cg-manual-english.pdf">https://www.indoramaventures.com/storage/downloads/governance/cg-manual/ivl-cg-manual-english.pdf</a>		
GRI 205: Anti-Corruption 2016	205-1	Operations assessed for risks related to corruption	AR: 137-144 SR: 54-59 Website	AR: Corporate Governance Report 2021 SR: Business Ethics, Integrity and Transparency <a href="https://www.indoramaventures.com/storage/downloads/governance/cg-manual/ivl-cg-manual-english.pdf">https://www.indoramaventures.com/storage/downloads/governance/cg-manual/ivl-cg-manual-english.pdf</a>		
	205-2	Communication and training about anti-corruption policies and procedures	AR: 137-144 SR: 54-59 Website	AR: Corporate Governance Report 2021 SR: Business Ethics, Integrity and Transparency <a href="https://www.indoramaventures.com/storage/downloads/governance/cg-manual/ivl-cg-manual-english.pdf">https://www.indoramaventures.com/storage/downloads/governance/cg-manual/ivl-cg-manual-english.pdf</a>		
	205-3	Confirmed incidents of corruption and actions taken	SR: 53-54	SR: Corporate Governance and Compliance Management		
<b>Anti-Competitive Behavior</b>						
GRI 103: Management Approach 2016	103-1	Explanation of the material topic and its boundary	AR: 137-144 SR: 53-54 Website	AR: Corporate Governance Report 2021 SR: Business Ethics, Integrity and Transparency <a href="https://www.indoramaventures.com/storage/downloads/governance/cg-manual/ivl-cg-manual-english.pdf">https://www.indoramaventures.com/storage/downloads/governance/cg-manual/ivl-cg-manual-english.pdf</a>		
	103-2	The management approach and its components	AR: 137-144 SR: 53-54 Website	AR: Corporate Governance Report 2021 SR: Business Ethics, Integrity and Transparency <a href="https://www.indoramaventures.com/storage/downloads/governance/cg-manual/ivl-cg-manual-english.pdf">https://www.indoramaventures.com/storage/downloads/governance/cg-manual/ivl-cg-manual-english.pdf</a>		
	103-3	Evaluation of the management approach	AR: 137-144 SR: 53-54 Website	AR: Corporate Governance Report 2021 SR: Business Ethics, Integrity and Transparency <a href="https://www.indoramaventures.com/storage/downloads/governance/cg-manual/ivl-cg-manual-english.pdf">https://www.indoramaventures.com/storage/downloads/governance/cg-manual/ivl-cg-manual-english.pdf</a>		
GRI 206: Anti-Competitive Behavior 2016	206-1	Legal actions for anti-competitive behavior, anti-trust and monopoly practices	AR: 137-144 SR: 53-54 Website	AR: Corporate Governance Report 2021 SR: Business Ethics, Integrity and Transparency <a href="https://www.indoramaventures.com/storage/downloads/governance/cg-manual/ivl-cg-manual-english.pdf">https://www.indoramaventures.com/storage/downloads/governance/cg-manual/ivl-cg-manual-english.pdf</a>		
<b>Tax</b>						
GRI 103: Management Approach 2016	103-1	Explanation of the material topic and its boundary	IVL Website	<a href="https://www.indoramaventures.com/en/our-company/governance/taxation">https://www.indoramaventures.com/en/our-company/governance/taxation</a>		
	103-2	The management approach and its components	IVL Website	<a href="https://www.indoramaventures.com/en/our-company/governance/taxation">https://www.indoramaventures.com/en/our-company/governance/taxation</a>		
	103-3	Evaluation of the management approach	IVL Website	<a href="https://www.indoramaventures.com/en/our-company/governance/taxation">https://www.indoramaventures.com/en/our-company/governance/taxation</a>		
GRI 207: Tax 2019	207-1	Approach to tax	IVL Website	<a href="https://www.indoramaventures.com/en/our-company/governance/taxation">https://www.indoramaventures.com/en/our-company/governance/taxation</a>		
	207-2	Tax governance, control, and risk management	IVL Website	<a href="https://www.indoramaventures.com/en/our-company/governance/taxation">https://www.indoramaventures.com/en/our-company/governance/taxation</a>		
	207-3	Stakeholder engagement and management of concerns related to tax	IVL Website	<a href="https://www.indoramaventures.com/en/our-company/governance/taxation">https://www.indoramaventures.com/en/our-company/governance/taxation</a>		
	Country-by-country reporting	Legal actions for anti-competitive behavior, anti-trust and monopoly practices	IVL Website	<a href="https://www.indoramaventures.com/en/our-company/governance/taxation">https://www.indoramaventures.com/en/our-company/governance/taxation</a>		

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<b>SPECIFIC STANDARD DISCLOSURES</b>						
<b>GRI 300: ENVIRONMENTAL</b>						
<b>Materials</b>						
GRI 103: Management Approach 2016	103-1	Explanation of the material topic and its boundary	SR: 26-40, 98-123	SR: Our Approach to Sustainability; Towards Net Zero Carbon - Environmental Management		
	103-2	The management approach and its components	SR: 26-40, 98-123	SR: Our Approach to Sustainability; Towards Net Zero Carbon - Environmental Management - Waste Management		
	103-3	Evaluation of the management approach	SR: 26-40, 98-123	SR: Our Approach to Sustainability; Towards Net Zero Carbon - Environmental Management - Waste Management		
GRI 301: Materials 2016	301-1	Materials used by weight or volume	SR: 161	SR: Global Performance Data - Materials		
	301-2	Recycled input materials used	SR: 98-123, 162-163	SR: Towards Net Zero Carbon - Waste Generation; Global Performance Data		
<b>Energy</b>						
GRI 103: Management Approach 2016	103-1	Explanation of the material topic and its boundary	SR: 26-40, 98-123	SR: Our Approach to Sustainability; Towards Net Zero Carbon - Environmental Management		
	103-2	The management approach and its components	SR: 26-40, 98-123	SR: Our Approach to Sustainability; Towards Net Zero Carbon - Environmental Management - Energy Management		
	103-3	Evaluation of the management approach	SR: 26-40, 98-123	SR: Our Approach to Sustainability; Towards Net Zero Carbon - Environmental Management - Energy Management		
GRI 302: Energy 2016	302-1	Energy consumption within the organization	SR: 24-25, 98-123, 161	SR: Key Highlights 2021 - Environmental Performance - Energy Management; Towards Net Zero Carbon - Environmental Management - Energy Management; Global Performance Data - Energy	SR: 172-175	
	302-2	Energy consumption outside of the organization	SR: 24-25, 98-123, 161	SR: Key Highlights 2021 - Environmental Performance - Energy Management; Towards Net Zero Carbon - Environmental Management - Energy Management; Global Performance Data - Energy		
	302-3	Energy intensity	SR: 24-25, 98-123, 161	SR: Key Highlights 2021 - Environmental Performance - Energy Management; Towards Net Zero Carbon - Environmental Management - Energy Management; Global Performance Data - Energy	SR: 172-175	
	302-4	Reduction of energy consumption	SR: 98-123	SR: Towards Net Zero Carbon - Environmental Management - Energy Management		
<b>Water and Effluents</b>						
GRI 103: Management Approach 2016	103-1	Explanation of the material topic and its boundary	SR: 24-25, 98-123	SR: Our Approach to Sustainability; Towards Net Zero Carbon - Environmental Management		
	103-2	The management approach and its components	SR: 24-25, 98-123	SR: Our Approach to Sustainability; Towards Net Zero Carbon - Environmental Management - Water Consumption Management		
	103-3	Evaluation of the management approach	SR: 24-25, 98-123	SR: Our Approach to Sustainability; Towards Net Zero Carbon - Environmental Management - Water Consumption Management		
GRI 303: Water and Effluents 2018	303-1	Interactions with water as a shared resource	SR: 24-25, 98-123	SR: Our Approach to Sustainability; Towards Net Zero Carbon - Environmental Management - Water Consumption Management; Water Risk Management; Water Sensitivity Analysis		
	303-2	Management of water discharge-related impacts	SR: 24-25, 98-123	SR: Our Approach to Sustainability; Towards Net Zero Carbon - Environmental Management - Water Consumption Management; Water Risk Management; Water Sensitivity Analysis		
	303-3	Water withdrawal	SR: 24-25, 98-123, 165	SR: Key Highlights 2021 - Environmental Performance - Water Management; Towards Net Zero Carbon - Environmental Management - Water Consumption Management; Global Performance Data - Water Withdrawal and Consumption	SR: 172-175	
	303-4	Water discharge	SR: 24-25, 98-123, 166	SR: Key Highlights 2021 - Environmental Performance - Water Management; Towards Net Zero Carbon - Environmental Management - Water Consumption Management; Global Performance Data - Wastewater discharge	SR: 172-175	
	303-5	Water consumption	SR: 24-25, 98-123, 162, 165	SR: Key Highlights 2021 - Environmental Performance - Water Management; Towards Net Zero Carbon - Environmental Management - Water Consumption Management; Global Performance Data - Water Consumption	SR: 172-175	

GRI Standard	Disclosure	Description	Page Number (s)	References SR 2021	External Assurance	Omissions
<b>Emissions</b>						
GRI 103: Management Approach 2016	103-1	Explanation of the material topic and its boundary	SR: 24-25, 98-123	SR: Our Approach to Sustainability; Towards Net Zero Carbon - Environmental Management		
	103-2	The management approach and its components	SR: 24-25, 98-123	SR: Our Approach to Sustainability; Towards Net Zero Carbon - Environmental Management - Air Emissions Management		
	103-3	Evaluation of the management approach	SR: 24-25, 98-123	SR: Our Approach to Sustainability; Towards Net Zero Carbon - Environmental Management - Air Emissions Management		
GRI 305: Emissions 2016	305-1	Direct (Scope 1) GHG emissions	SR: 24-25, 98-123, 162	SR: Key Highlights 2021 - Environmental Performance - GHG Management; Towards Net Zero Carbon - Environmental Management - Air Emissions Management; Global Performance Data - Emissions	SR: 171, 172-175	
	305-2	Energy indirect (Scope 2) GHG emissions	SR: 24-25, 98-123, 162	SR: Key Highlights 2021 - Environmental Performance - GHG Management; Towards Net Zero Carbon - Environmental Management - Air Emissions Management; Global Performance Data - Emissions	SR: 171, 172-175	
	305-3	Other indirect (Scope 3) GHG emissions	SR: 24-25, 98-123, 162	SR: Key Highlights 2021 - Environmental Performance - GHG Management; Towards Net Zero Carbon - Environmental Management - Air Emissions Management; Global Performance Data - Emissions		
	305-4	GHG emissions intensity	SR: 24-25, 98-123, 162	SR: Key Highlights 2021 - Environmental Performance - GHG Management; Towards Net Zero Carbon - Environmental Management - Air Emissions Management; Global Performance Data - Emissions		
	305-5	Reduction of GHG emissions	SR: 24-25, 98-123, 162	SR: Key Highlights 2021 - Environmental Performance - GHG Management; Towards Net Zero Carbon - 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: 24-25, 98-123, 162	SR: Towards Net Zero Carbon - Our Environmental Performance - Air Emissions; Global Performance Data - Emissions	SR: 171, 172-175	
	305-6	Fluorinated gases (FCG) emissions	SR: 24-25, 98-123, 162	SR: Key Highlights 2021 - Environmental Performance - GHG Management; Towards Net Zero Carbon - Environmental Management - Air Emissions Management; Global Performance Data - Emissions		
<b>Waste</b>						
GRI 103: Management Approach 2016	103-1	Explanation of the material topic and its boundary	SR: 24-25, 98-123, 162	SR: Our Approach to Sustainability; Towards Net Zero Carbon - Environmental Management		
	103-2	The management approach and its components	SR: 24-25, 98-123, 162	SR: Our Approach to Sustainability; Towards Net Zero Carbon - Environmental Management - Waste Management		
	103-3	Evaluation of the management approach	SR: 24-25, 98-123, 162	SR: Our Approach to Sustainability; Towards Net Zero Carbon - Environmental Management - Waste Management		
GRI 306: Waste 2021	306-1	Waste generation and significant waste-related impacts	SR: 24-25, 98-123, 162	SR: Our Approach to Sustainability; Towards Net Zero Carbon - Environmental Management - Waste Management		
	306-2	Management of significant waste-related impacts	SR: 24-25, 98-123, 162	SR: Our Approach to Sustainability; Towards Net Zero Carbon - Environmental Management - Waste Management		
	306-3	Waste generated	SR: 24-25, 98-123, 162	SR: Towards Net Zero Carbon - Our Environmental Performance - Waste Generation; Global Performance Data - Solid Waste	SR: 171, 172-175	
	306-4	Waste diverted from disposal	SR: 24-25, 98-123, 162	SR: Towards Net Zero Carbon - Our Environmental Performance - Waste Generation; Global Performance Data - Solid Waste	SR: 171, 172-175	
	306-5	Waste directed to disposal	SR: 24-25, 98-123, 162	SR: Towards Net Zero Carbon - Our Environmental Performance - Waste Generation; Global Performance Data - Solid Waste	SR: 171, 172-175	

GRI Standard	Disclosure	Description	Page Number (s)	References SR 2021	External Assurance	Omissions
<b>Environmental Compliance</b>						
GRI 103: Management Approach 2016	103-1	Explanation of the material topic and its boundary	SR: 44 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: 44 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: 44 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: 98-123, 163	SR: Towards Net Zero Carbon - Robust Environmental Governance; Global Performance Data - Environmental Compliance		
<b>Supplier Environmental Assessment</b>						
GRI 103: Management Approach 2016	103-1	Explanation of the material topic and its boundary	IVL Website	<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	IVL Website	<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	IVL Website	<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 308: Supplier Environmental Assessment 2016	308-1	New suppliers that were screened using environmental criteria	SR: 92-95	SR: Responsible and Effective Governance - Supply Chain Management - Human Rights and Compliance in the Supply Chain - Supplier Social Assessments		
<b>GRI 400: SOCIAL</b>						
<b>Employment</b>						
GRI 103: Management Approach 2016	103-1	Explanation of the material topic and its boundary	AR: 137-144 SR: 124-157	AR: Corporate Governance Report 2021 SR: Empowering Our People and Communities		
	103-2	The management approach and its components	AR: 137-144 SR: 124-157	AR: Corporate Governance Report 2021 SR: Empowering Our People and Communities		
	103-3	Evaluation of the management approach	AR: 137-144 SR: 124-157	AR: Corporate Governance Report 2021 SR: Empowering Our People and Communities		
GRI 401: Employment 2016	401-1	New employee hires and employee turnover	AR: 137-144 SR: 25, 138-149	AR: Corporate Governance Report 2021 - 1. Our Global Workforce is Making a Difference SR: Key Highlights 2021 - Social Performance; Attracting, Empowering Our People and Communities - Empowering Our People - Engaging and Valuing the best Workforce - Talent Attraction and Engagement; Global Performance Data - New Employee Hires and Employee Turnovers		
	401-3	Parental leave	SR: 167	SR: Global Performance Data - Parental Leave		
<b>Occupational Health and Safety</b>						
GRI 103: Management Approach 2016	103-1	Explanation of the material topic and its boundary	SR: 127-134	SR: Empowering Our People and Communities - A Safe and Healthy Workplace		
	103-2	The management approach and its components	SR: 127-134	SR: Empowering Our People and Communities - A Safe and Healthy Workplace		
	103-3	Evaluation of the management approach	SR: 127-134	SR: Empowering Our People and Communities - A Safe and Healthy Workplace		
GRI 403: Occupational Health and Safety 2018	403-1	Occupational health and safety management system	SR: 127-134	SR: Empowering Our People and Communities - A Safe and Healthy Workplace - Robust Health and Safety Management		
	403-2	Hazard identification, risk assessment, and incident investigation	SR: 127-134, 163-164	SR: Empowering Our People and Communities - A Safe and Healthy Workplace - Occupational Health and Safety Performance		

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<b>Occupational Health and Safety</b>							
GRI 403: Occupational Health and Safety 2018	403-3	Occupational health and services	SR: 127-134	SR: Empowering Our People and Communities - A Safe and Healthy Workplace - Robust Health and Safety Management			
	403-4	Worker participation, consultation, and communication on occupational health and safety	SR: 127-134	SR: Empowering Our People and Communities - A Safe and Healthy Workplace - Robust Health and Safety Management			
	403-5	Worker training on occupational health and safety	SR: 127-134	SR: Empowering Our People and Communities - A Safe and Healthy Workplace - Robust Health and Safety Management			
	403-6	Promotion of worker health	SR: 127-134, 163	SR: Empowering Our People and Communities - A Safe and Healthy 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: 127-134	SR: Empowering Our People and Communities - A Safe and Healthy Workplace - Robust Health and Safety Management			
	403-9	Work-related injuries	SR: 127-134	SR: Empowering Our People and Communities - A Safe and Healthy Workplace - Robust Health and Safety Management	SR: 172-175		
	403-10	Work-related ill health	SR: 163-164	SR: Global Performance Data - Occupational Illness Frequency Rate (OIFR)			
	<b>Training and Education</b>						
	GRI 103: Management Approach 2016	103-1	Explanation of the material topic and its boundary	AR: 170-174 SR: 138-149	AR: Professional Development of Directors and Management, 4. People Development Opportunities SR: Investing in Our People		
		103-2	The management approach and its components	AR: 170-174 SR: 138-149	AR: Professional Development of Directors and Management, 4. People Development Opportunities SR: Investing in Our People		
103-3		Evaluation of the management approach	AR: 170-174 SR: 138-149	AR: Professional Development of Directors and Management, 4. People Development Opportunities SR: Investing in Our People			
GRI 404: Training and Education 2016	404-1	Average hours of training per year per employee	AR: 170-174 SR: 138-149	AR: 4. People Development Opportunities SR: Key Performance Highlights 2021 - Social Performance; Empowering Our People and Communities - Investing in Our People - Strong Leadership as an Enabler; Global Performance Data - Employees Training	SR: 172-175		
	404-2	Programs for upgrading employee skills and transition assistance programs	AR: 170-174 SR: 138-149	AR: 4. People Development Opportunities SR: Empowering Our People and Communities - Investing in Our People			
	404-3	Percentage of employees receiving regular performance and career development reviews	SR: 168	SR: Global Performance 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: 124-149 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: 124-149 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: 124-149 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 Standard	Disclosure	Description	Page Number (s)	References SR 2021	External Assurance	Omissions
<b>Diversity and Equal Opportunity</b>						
GRI 405: Diversity and Equal Opportunity 2016	405-1	Diversity of governance bodies and employees	AR: 151-152; 170-174 SR: 138-149 IVL Website	AR: 1.4 Responsibility of the Board - b. Board Structure; 2. Diversity is Our Strength SR: Empowering Our People and Communities - Investing in Our People - Attracting, Engaging and Valuing the best Workforce - Creating a Diverse & Inclusive Workplace; Global Performance 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: 168	SR: Global Performance 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: 124-157 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: 124-157 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: 124-157 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: 168	SR: Global Performance 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: 124-157	SR: Empowering Our People and Communities		
	103-2	The management approach and its components	SR: 134	SR: Empowering Our People and Communities - Employee Well-being		
	103-3	Evaluation of the management approach	SR: 134	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: 134, 168	SR: Empowering Our People and Communities - Employee Well-being; Global Performance Data; Global Human Resources Data - Collective Bargaining		
<b>Child Labour</b>						
GRI 103: Management Approach 2016	103-1	Explanation of the material topic and its boundary	SR: 92-95 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: 92-95 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: 92-95 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 Labour 2016	408-1	Operations and suppliers at significant risk for incidents of child Labour	SR: 92-95, 169 IVL Website	SR: Supplier ESG Assessments; Global Performance Data; Global Human Resources Data - Human Rights Assessment		

GRI Standard	Disclosure	Description	Page Number (s)	References SR 2021	External Assurance	Omissions
<b>Forced or Compulsory labour</b>						
GRI 103: Management Approach 2016	103-1	Explanation of the material topic and its Boundary	SR: 92-95	SR: Human Rights and Compliance in the Supply Chain		
	103-2	The management approach and its components	SR: 94 IVL Website	SR: Supplier ESG Assessments and Compliance Management <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: 94 IVL Website	SR: Supplier ESG Assessments and Compliance Management <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 Labour 2016	409-1	Operations and suppliers at significant risk for incidents of forced or compulsory Labour	SR: 94, 169	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: 94-95	SR: Human Rights and Compliance in the Supply Chain		
	103-2	The management approach and its components	SR: 94-95 IVL Website	SR: Supplier ESG Assessments and Compliance Management <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: 94-95 IVL Website	SR: Supplier ESG Assessments and Compliance Management <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: 94-95, 169	SR: Supplier ESG Assessments and Compliance Management; Global Human Resources Data - Human Rights Assessment		
<b>Human Rights of Indigenous People</b>						
GRI 103: Management Approach 2016	103-1	Explanation of the material topic and its boundary	SR: 94-95, 136-137	SR: Human Rights and Compliance in the Supply Chain Workplace Human Rights		
	103-2	The management approach and its components	SR: 136-137 IVL Website	SR: Workplace Human Rights <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: 136-137 IVL Website	SR: Workplace Human Rights <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: 136-137, 169	SR: Workplace Human Rights; 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: 94-95, 136-137	SR: Human Rights and Compliance in the Supply Chain, Workplace Human Rights		
	103-2	The management approach and its components	SR: 136-137 IVL Website	SR: Supplier ESG Assessments and Compliance Management, Workplace Human Rights <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: 136-137 IVL Website	SR: Supplier ESG Assessments and Compliance Management, Workplace Human Rights <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: 136-137, 169	SR: Supplier ESG Assessments and Compliance Management, Workplace Human Rights Global Human Resources Data - Human Rights Assessment		
	412-2	Employee training on human rights policies or procedures	SR: 136-137, 169	SR: Supplier ESG Assessments and Compliance Management, Workplace Human Rights Global Human Resources Data - Human Rights Assessment		



GRI Standard	Disclosure	Description	Page Number (s)	References SR 2021	External Assurance	Omissions
<b>Local Communities</b>						
GRI 103: Management Approach 2016	103-1	Explanation of the material topic and its boundary	SR: 150-157 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: 150-157 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>		
	103-3	Evaluation of the management approach	SR: 150-157 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	Operations with local community engagement, impact assessments, and development programs	SR: 150-157, 170	SR: Empowering Our People and Communities - Giving Back To Our Communities; Global Performance Data; Global CSR Data - Local Community Engagement		
<b>Supplier Social Assessment</b>						
GRI 103: Management Approach 2016	103-1	Explanation of the material topic and its boundary	SR: 94-95 IVL Website	SR: Supplier ESG Assessments and Compliance Management <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: 94-95 IVL Website	SR: Supplier ESG Assessments and Compliance Management <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: 94-95 IVL Website	SR: Supplier ESG Assessments and Compliance Management <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: 94-95	SR: Supplier ESG Assessments and Compliance Management		
<b>Public Policy</b>						
GRI 103: Management Approach 2016	103-1	Explanation of the material topic and its boundary	SR: 58 IVL Website	SR: Responsible Business 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> <a href="https://www.indoramaventures.com/en/our-company/governance/policies">https://www.indoramaventures.com/en/our-company/governance/policies</a>		
	103-2	The management approach and its components	SR: 58 IVL Website	SR: Responsible Business 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> <a href="https://www.indoramaventures.com/en/our-company/governance/policies">https://www.indoramaventures.com/en/our-company/governance/policies</a>		
	103-3	Evaluation of the management approach	SR: 58 IVL Website	SR: Responsible Business 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> <a href="https://www.indoramaventures.com/en/our-company/governance/policies">https://www.indoramaventures.com/en/our-company/governance/policies</a>		
GRI 415: Public Policy 2016	415-1	Political contributions	SR: 58 IVL Website	SR: Responsible Business and Effective Governance - Business Ethics, Integrity and Transparency - Political activities and contributions <a href="https://www.indoramaventures.com/en/our-company/governance/policies">https://www.indoramaventures.com/en/our-company/governance/policies</a> <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> <a href="https://www.indoramaventures.com/en/our-company/governance/policies">https://www.indoramaventures.com/en/our-company/governance/policies</a>		

GRI Standard	Disclosure	Description	Page Number (s)	References SR 2021	External Assurance	Omissions
<b>Customer Health and Safety</b>						
GRI 103: Management Approach 2016	103-1	Explanation of the material topic and its boundary	SR: 83-87	SR: Driving Sustainable Value Creation and Growth - Safe and Sustainable Products		
	103-2	The management approach and its components	SR: 83-87	SR: Driving Sustainable Value Creation and Growth - Safe and Sustainable Products		
	103-3	Evaluation of the management approach	SR: 83-87	SR: Driving Sustainable Value Creation and 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: 83-87	SR: Driving Sustainable Value Creation and Growth - Safe and Sustainable Products		
<b>Marketing and Labelling</b>						
GRI 103: Management Approach 2016	103-1	Explanation of the material topic and its boundary	SR: 90-91	SR: Driving Sustainable Value Creation and Growth - Creating Strong Customer Relations		
	103-2	The management approach and its components	SR: 90-91	SR: Driving Sustainable Value Creation and Growth - Creating Strong Customer Relations		
	103-3	Evaluation of the management approach	SR: 90-91	SR: Driving Sustainable Value Creation and Growth - Creating Strong Customer Relations		
GRI 417: Marketing and Labelling 2016	417-3	Incidents of non-compliance concerning marketing communications	SR: 90-91	In 2020, there were no cases of non-compliance concerning marketing communications.		
<b>Customer Privacy</b>						
GRI 103: Management Approach 2016	103-1	Explanation of the material topic and its boundary	SR: 66-67, 90-91	SR: Responsible Business and Effective Governance - Cyber Security Management; Creating Strong Customer Relations		
	103-2	The management approach and its components	SR: 66-67, 90-91	SR: Responsible Business and Effective Governance - Cyber Security Management; Creating Strong Customer Relations		
	103-3	Evaluation of the management approach	SR: 66-67, 90-91	SR: Responsible Business and Effective Governance - Cyber Security Management; Creating Strong Customer Relations		
GRI 418: Customer Privacy 2016	418-1	Substantiated complaints concerning breaches of customer privacy and losses of customer data	SR: 66-67, 90-91	SR: Responsible Business and Effective Governance - Cyber Security Management; Creating Strong Customer Relations		
<b>Socioeconomic Compliance</b>						
GRI 103: Management Approach 2016	103-1	Explanation of the material topic and its boundary	SR: 53-54, 90-91	SR: Responsible Business and Effective Governance - Corporate Governance and Compliance Management - Creating Strong Customer Relations		
	103-2	The management approach and its components	SR: 53-54, 90-91	SR: Responsible Business and Effective Governance - Corporate Governance and Compliance Management - Creating Strong Customer Relations		
	103-3	Evaluation of the management approach	SR: 53-54, 90-91	SR: Responsible Business and Effective Governance - Corporate Governance and Compliance Management - Creating Strong Customer Relations		
GRI 419: Social Compliance 2016	419-1	Non-compliance with laws and regulations in the social and economic area	SR: 53-54, 90-91, 121, 170	SR: Responsible Business and Effective Governance - Corporate Governance and Compliance Management; Driving Sustainable Value Creation and Growth - Creating Strong Customer Relations; Towards Net Zero Carbon - Strong Environmental Governance, Global Performance Data - Social Grievances		

# GLOSSARY

3D °C	Three Dimensional Celsius	EMEA	Europe, Middle East, and Africa	IVL	Indorama Ventures Public Company Limited	ROCE	Return on Capital Employed
ACC	American Chemistry Council	EMS	Environmental Management System	Kg	Kilogram	rPET	Recycled Polyethylene Terephthalate
ADB	Asian Development Bank	EO	Ethylene Oxide	KPI	Key Performance Indicator	RSPO	Roundtable on Sustainable Palm Oil
AI	Artificial Intelligence	EPOX	page 108	kt	thousand tonnes		
API	American Petroleum Institute	EPR	Extended Producer Responsibility	KWp	Kilowatt Peak	S&P	Standard and Poor's
APR	Association of Plastics Recyclers	EPS	Core Earnings Per Share	LCA	Life Cycle Assessment	SAP	System Applications and Products in Data Processing
AR	Annual Report	ERM	Enterprise Risk Management	LLC	Limited Liability Company	SBTi	Science Based Targets Initiative
ASEAN	The Association of Southeast Asian Nations	ERP	Enterprise Resource Planning	LPG	Liquefied Petroleum Gas	SBTs	Science Based Targets
		ESG	Environmental, Social and Governance	LSS	Lean Six Sigma	sc-CO <sub>2</sub>	Supercritical Carbon Dioxide
BCM	Business Continuity Management	ETP	Effluent Treatment Plant	LTIFR	Lost Time Injury Frequency Rate	SDGs	Sustainable Development Goals
BCP	Business Continuity Plan	ETS	Emissions Trading Schemes	m <sup>3</sup>	Cubic Metre	SET	Stock Exchange of Thailand
BOD	Biochemical Oxygen Demand	EU	European Union	MEG	Mono-Ethylene Glycol	SIN	Substitute It Now
BOI	Board of Investments	EU RED	European Renewable Energy Directive	MFA	Multi-factor Authentication	SLBs	Sustainability-linked Bonds
BSI	British Standard Institute	EUR	The Euro	mg/L	Milligrams Per Litre	SOI	Substances of Interest
CAC	Coalition Against Corruption	EUROPEAN	The European Organization for Packaging and the Environment	ML	Machine Learning	SOPs	Standard Operating Procedures
CAPEX	Capital Expenditures	EVP	Employee Value Proposition	MSCI	Morgan Stanley Capital International	SO <sub>x</sub>	Sulfur Oxide
CBAM	Carbon Border Adjustment Mechanism	FDA	Food and Drug Administration	Mw	Megawatt	SPTs	Sustainability Performance Targets
CCUS	Carbon Capture Utilization and Storage	FQD	Fuel Quality Directive	MWh	Megawatt Hour	SR	Sustainability Report
CDP	Carbon Disclosure Project	FSC	Forest Stewardship Council	MWp	Megawatt Peak	SRMC	Sustainability and Risk Management Committee
CDO	Chief Information Officers	FTE	Full Time Equivalent	MS	Microsoft	SROI	Social Return on Investment
CE	Conformité Européenne	FTSE4Good	Financial Times Stock Exchange-Russell Group	NAPCOR	National Association for PET Container Resources	STEM	Science, Technology, Engineering and Mathematics
CEO	Chief Executive Officer	GBS	Global Business Solution	NCCG	Nomination, Compensation and Corporate Governance Committee	SVHC	Substance of Very High Concern
CG	Corporate Governance	GCEO	Group Chief Executive Officer	NCI	Non-Controlling Interest	TBCSD	Thailand Business Council for Sustainable Development
CGPAC	Corporate Governance Policy Awareness Campaign	GCNT	Global Compact Network Thailand	NDC	Naphthalene Dicarboxylate	tCO <sub>2</sub>	Tonnes of Carbon Dioxide
CIO	Chief Information Officers	GDP	Gross Domestic Product	NDCs	Nationally Determined Contributions	tCO <sub>2</sub> e	Tonnes of Carbon Dioxide Equivalent
CIRFS	European Man-Made Fibres Association	GDPR	General Data Protection Regulation	NGFW	Next-generation Firewalls	TCFD	Task Force on Climate-Related Financial Disclosures
CO <sub>2</sub>	Carbon Dioxide	GEE	Global Employee Engagement	NO <sub>x</sub>	Nitrogen Oxide	TEI	Thai Environment Institute
COD	Chemical Oxygen Demand	GHG	Greenhouse Gas	NPS	Net Promoter Score	THB	Thai Baht
CoE	Center of Excellence	GJ	Gigajoule	OCS	Operation Clean Sweep	THIS	Thailand Sustainability Investment
COO	Chief Operating Officer	GMC	Global Management Conference	OHS	Occupational Health and Safety	TNFD	Task Force on Nature-Related Financial Disclosures
COP	Conference of the Parties	GMO	Genetically Modified Organism	OHSAS	Occupational Health and Safety Assessment Series	TRIR	Total Recordable Injury Rate
COSO	Committee of Sponsoring Organizations of the Treadway Commission	GPAP	Global Plastic Action Partnership	OPEX	Operating Expenditures	TRIS	Thai Rating and Information Services
		GRI	Global Reporting Initiative	OSINT	Open-source Intelligence		
COVID-19	Coronavirus Disease of 2019	HDPE	High-density polyethylene	PCL	Public Company Limited	UN	United Nations
CPET	Combined PET	HR	Human Resources	PCR	Post-consumer Recycled	UNGC	United Nations Global Compact
CPME	The Committee of PET Manufactures in Europe	HRBP	Human Resources Business Partners	PCRC	Product Compliance Risk Characterization	UNGC COP	UNGC Communication on Progress
CRM	Customer Relationship Management	HVA	High Value-Added	PDPA	Postponement of Personal Data Protection Act	UNPRB	United Nations Principles for Responsible Banking
CR	Customer Retention Rate	I2P2	Injury and Illness Prevention Program	PE	Polyethylene	UNPRI	United Nations Principles for Responsible Investment
CSI	Customer Satisfaction Index	I4C	Innovate4Climate	PET	Polyethylene Terephthalate	US	United States
CSO	Chief Sustainability Officer	ICIS	Independent Commodity Intelligence Services	PETCORE	PET Container Recycling Europe	USD	United States Dollar
CSR	Corporate Social Responsibility	IDC	International Data Corporation	PETRA	PET Resin Association	VOC	Volatile Organic Compound
CSV	Creating Shared Value	IFC	International Finance Corporation	PHAs	Process Hazard Analyses	VPPA	Virtual Power Purchase Agreement
CTO	Chief Technical Officer	IIRC	International Integrated Reporting Council	PIA	Purified Isophthalic Acid		
CyBA	Cybersecurity Behavioral Assessment	ILO	International Labour Organization	PLA	Polylactic Acid		
		IHS	Information Handling Services	PNDAs	Purified 2,6-Naphthalene Dicarboxylic acid		
		IMC	Indorama Management Council	PO	Propylene Oxide		
DEG	Deutsche Investitions-und Entwicklungsgesellschaft	INPI	National Institute of Industrial Property	POC	Point of Contact		
DEI	Diversity, Equity, and Inclusion	IOD	Integrated Oxides and Derivatives	POY	Partially Oriented Yarn		
DJSI	Dow Jones Sustainability Indices	IPET	Integrated PET	PP	Polypropylene		
DMAIC	Define, Measure, Analyze, Improve and Control	IR	Integrated Reporting	PPE	Personal Protective Equipment		
DOT	Department of Transportation	ISCC	International Sustainability & Carbon Certification	PR	Public Relations		
		ISO	International Organization for Standardization	PRE	Plastics Recyclers Europe		
EAG	Educator Advisory Group	IT	Information Technology	PSM	Process Safety Management		
EAP	Employee Assistance Program	IVEX	Indorama Ventures Excellence	PTA	Purified Terephthalic Acid		
EBITDA	Earnings Before Interest, Taxes, Depreciation, and Amortization			PX	Paraxylene		
EBM	Extrusion Blow Molding			R&D	Research and Development		
ECHA	European Chemicals Agency			REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals		
EDANA	European Disposables and Nonwovens Association			RECOUP	REcycling of Used Plastics Limited		
EDR	Endpoint Detection and Response			RMC	Risk Management Council		
EG	Ethylene Glycol			RNG	Renewable Natural Gas		
EHS	Environment, Health, and Safety						
EIA	Environmental Impact Assessment						
EJIP	Employee Joint Investment Plan						

## DATA REPORTING, VERIFICATION AND REPORT ASSURANCE

This report was prepared in adherence with the **Global Reporting Initiative (GRI) standards** core option and the International Integrated Reporting Council (IIRC)'s International **Integrated Reporting <IR> Framework 2021**.

**100%** Reporting Certification and Assurance in accordance with **the GRI Standards, <IR> Framework and AA1000AS** by an independent auditor.

**100%** GHG Accounting, Verification and Assurance in accordance with **ISO 14064-1 and ISO 14064-3** by an independent auditor.

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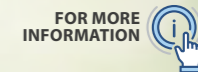
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Indorama Ventures - ESG Profile





## CELEBRATE WITH US

Since 2011, we have achieved

# 75 billion PET bottles

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Sustainability  
Report 2021



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