

Indorama Ventures Sustainability Report 2017



TO BE A WORLD-CLASS CHEMICAL COMPANY
MAKING GREAT PRODUCTS FOR SOCIETY

INDORAMA
VENTURES
www.indoramaventures.com



KEY ACHIEVEMENTS 2017

MEMBER OF

**Dow Jones
Sustainability Indices**

In Collaboration with RobecoSAM

- A member of 2017 DJSI Emerging Markets Chemicals Industry
- Ranked Among Top Five of All Global Chemical Companies



ROBECOSAM
Sustainability Award
Silver Class 2018



FTSE4Good



The Stock Exchange of Thailand



ROBECOSAM
Sustainability Award
Industry Mover 2018

RobecoSAM's Sustainability Yearbook 2018

- Silver Class
- Industry Mover

A constituent of:

- The 2017 FTSE4Good ASEAN5 Index
- The 2017 FTSE4Good Emerging Index
- SET Sustainability Awards 2017 – Rising Star
- Thailand Sustainability Investment 2017

Bloomberg

Leading in SET Index:
2017 Bloomberg ESG Disclosure Scores



2017 Climate Change Rating: B



Gold Recognition:
Top 3% of suppliers in all categories



CONTENTS

02

Group CEO
Message

06

Business
Overview

12

Key Highlights
2017

16

Sustainability at
Indorama Ventures

20

Our
Stakeholders

24

Materiality
Assessment

34

Our
Material Topics

70

Global
Performance Data

86

About
This Report

90

GRI
Index

94

Independent
Assurance Statement

100

Key Contacts
and Feedback



Group CEO Message

This past year was a success on multiple fronts for IVL, in terms of our tremendous growth, some important acquisitions, confidence in the equity markets – but most importantly, recognition of our work on sustainability.

I wish to thank each and every employee at IVL for their enormous efforts. There was a huge amount of work but we really came through and the cumulative result has made this the best year yet.



Growing Towards Greater Success

The challenge we faced over the past year was managing our rapid growth in line with our corporate values and principles of sustainability. That we were able to do so is a testament to who we are, what we represent as a business, and that we remained focused on our mission of being a world-class chemical company making great products for society. By embedding sustainability into our corporate DNA and having a focused corporate social responsibility framework, we were able to manage our growth with a strong environmental focus.

We will remain more dedicated than ever to sustainability. While we achieved a strong financial performance in the past year and recognize that this will be an important measure of our success, we realize that our success over the next several decades will depend on how we care for the planet and for the communities where we operate – through a reduced carbon footprint. This will become ever more important as IVL continues to grow in terms of our operations, business units and number of employees. We are determined to have a positive impact on the environment and operate with integrity and transparency, all of which will be a net benefit to IVL's operations and long-term success.

Sustainable Development Goals

IVL has also been proactively supporting international initiatives, not only to contribute to greater sustainability through our business operations, but also to limit the rise in global temperatures to below two degrees Celsius.

Considering the nature of business and growth platforms, IVL is committed to play its role by contributing to the achievement of nine of the 17 United Nations Sustainable Development Goals (SDGs). We support, strongly align with, and integrate our corporate strategy for a sustainable future for all.

A milestone achieved

Our continued and committed efforts resulted in achieving several global recognitions. In 2017, IVL was included in the Dow Jones Sustainability Indices (DJSI) for the first time. The inclusion, as one of the top two chemical companies in emerging markets index, ranked among the top five global chemical companies, in addition to achieving the Silver Class and recognized as an Industry Mover in the RobecoSAM Sustainability YearBook 2018, confirmed IVL's exceptional performance among the world's leading companies in the chemicals sector and our commitment to leadership in sustainability.

In addition to the above, we achieved a 'B' rating in the CDP Climate Change assessment, Gold recognition based on CSR ratings, ranked in the top 3% of suppliers assessed in all categories by EcoVadis, and inclusion in the FTSE4Good ASEAN5 Index and Emerging Index, leading in SET50 Index Companies in Thailand.

Focused on what matters

Increasing high expectations from stakeholders and global emerging trends matters to IVL business operation and sustainability. Critical situations of natural resources scarcity and climate change, more stringent regulations for new business expansion and investment, innovation development, and digitalization are all factors resulting in business momentum. In 2017, we integrated digital technologies in our sustainability platform and used data to help us strengthen our long-term sustainability performance and improve our internal process in various aspects.

While inclusion in the DJSI along with other sustainability ratings is a significant recognition, our intention is to build on success and continue our efforts by focusing on the following set of core components that will strengthen the confidence of our customers, stakeholders, and our sense of purpose.

Climate Strategy and Environmental Stewardship

IVL fully supports the United Nations Sustainable Development Goals (SDGs) recognizing that climate change is a global risk. Two years ago, we introduced our Climate Strategy 2020 to track and reduce our greenhouse gas emissions and to conserve and promote biodiversity and the protection of natural habitats. We play a key role in developing the circular economy-relying on the recycling of materials to result in less water, energy and material consumption.

In 2017, we performed a systematic GHG Scope 3 accounting globally and completed our Life Cycle Assessment in Asia to identify and understand the risks and opportunities associated with value chain emissions.

Recycling and Renewable Energy

We aim to improve energy efficiency throughout our operations as less energy consumed means less carbon emissions. IVL has actively ramped up its recycling operations, which are becoming an important and growing part of our business, along with investments in renewable energy, energy efficient equipment, and additional investments in solar panels to further boost our use of green – and clean – energy.

We are committed and consistently exploring opportunities to increase our recycling business.

Diversity

IVL is an inclusive company and strongly believe that greater diversity in the workplace and gender equality makes us stronger. IVL is committed to continuing to recruit, develop and retain women in our workforce and maintaining a discrimination-free workplace.

Low-Carbon Products and Innovation

As we continue to grow, we are diversifying our product portfolio with a focus on new generations of products that are highly sustainable, biodegradable and have a low carbon footprint. In 2017, all products in Asia completed a 100% life cycle assessment in accordance with the ISO 14040/44:2006 standard.

We firmly believe in being innovators providing sustainable products and technology through our advanced and innovative practices, which can be both beneficial for the environment and create superior value for customers. This is in line with our Climate Strategy 2020 and will move the market by providing pioneering solutions.

Employee Health and Safety

The health and safety of our employees remains our utmost priority. IVL believes that all workplace injuries and related illnesses can and must be prevented through effective communication, proactive involvement and advanced training for all employees at our operational sites. This in turn translates into first-rate business results and an improved environment. As such, we have integrated health and safety into all business management processes so that all of our activities are assessed from the perspective of accident prevention.

Safety is one of our focus areas, though sometimes even the strictest measures cannot be foolproof, as seen by an accident in 2017 where we had one fatality in India. A post-incident investigation led to new initiatives to further tighten safety issues and we remain even more committed to the safety of all our employees and contractors.

Human Capital

Our employees are IVL's most valuable resource, and the reason we have continued to achieve sustained success. To support our growth ambitions, we want to ensure that IVL is a great place to work, where our employees are motivated to succeed, as this is an important competitive advantage. We will continue to attract the best and most qualified staff, but also provide an environment that offers recognition and empowers those who have ideas that will improve the company. Learning and training programs and employee development will remain cornerstones at IVL to ensure that our employees achieve their full potential.

Over the past three years, we have been focusing on leadership development for the future through intensive leadership development programs. We introduced IVLDP, a global leadership development program, in 2015, and another two programs in 2017.

The first, called i-Lead, is a global project to provide mentoring and training to individuals identified as future business leaders. The second is a shadow development initiative to support and develop local talent by exposing them through structured education program at premier institutions. Each of these development programs will continue in 2018 and beyond.

Human Rights

IVL strongly believes in respecting all human rights. We have adopted a human rights policy that undergoes periodic revision by the Board of Directors and we are further committed to continuously improving our human rights policy to meet the highest standards. This policy is reflected in the company's employee and supplier Code of Conduct. We strive to maintain the highest ethical standards and align our policies and operations with universally accepted covenants, declarations and principles.


The road ahead, 2018 and beyond

One thing is certain, change is inevitable. Our goal is to do better year after year, and we are working towards ever ambitious targets by adapting ourselves to the changing environment and market demands. As we continue on our growth trajectory, our focus will always remain on sustainability as it remains a core value of IVL. We remain committed to protecting the environment, being a responsible corporate citizen and supporting the communities where we operate. And as we evolve as a global chemical company, we will continue to remain true to our roots and committed to building a better society through our sustainable business operations.

I hope these pages convey our deep pride in the success which IVL is achieving, through the active engagement of our employees in supporting their communities, a healthy environment and economic growth.

On behalf of the Board and management team, I would like to express my sincerest gratitude to the entire IVL family for their hard work and dedication in fulfilling the sustainability needs of our customers and the communities in which we live and work.

I would also like to thank all of our stakeholders, business partners and associates who wholeheartedly support us to achieve success and to reach higher altitudes.



Alope Lohia
Group Chief Executive Officer

Business Overview





IVL is one of the world's leading petrochemicals producers. In 2017, we have 75 operating sites in 25 countries on four continents – Asia, Europe, North America and Africa. The Company's portfolio is comprised of necessities (commodity products that are a necessary part of daily life) and high value-added (HVA) categories of Polymers, Fibers and Packaging. Our products serve major players in consumer products, i.e. beverages, hygiene, industrial and automotive verticals. We have over 15,000 employees worldwide and had consolidated revenue of USD 8.4 billion in 2017.

Further information about IVL group's organizational structure and sustainability and risk management structure can be found on our website: www.indoramaventures.com.

Location of Operating Sites

AMERICA

Mexico

- Indorama Ventures Polymers Mexico^{1,3}
- Indorama Ventures EcoMex¹
- Performance Fibers Mexico Operations

USA

- StarPet
- AlphaPet¹
- Auriga Polymers^{1,6}
- Indorama Ventures (Oxide & Glycols)
- FiberVisions Manufacturing⁶
- FiberVisions Products
- PHP Fibers
- Indorama Ventures Olefins*
- Indorama Ventures Xylenes & PTA⁶

Canada

- Indorama Ventures PTA Montreal

EUROPE

Denmark

- FiberVisions⁶

France

- Wellman France Recyclage
- Glanzstoff Longlaville

Germany

- Trevira^{4,6}
- PHP Fibers⁶

Ireland

- Wellman International^{2,6}

Lithuania

- Orion Global Pet

Poland

- Indorama Ventures Poland

The Netherlands

- Indorama Ventures Europe³
- Indorama Ventures Recycling Netherlands

Turkey

- Indorama Ventures Corlu PET

UK

- Beverage Plastics

Spain

- Indorama Ventures Quimica⁶

Italy

- Glanzstoff Industries - Sicrem

Czech Republic

- Glanzstoff Bohemia

Luxembourg

- Glanzstoff Industries - Textilcord Steinfort

Portugal

- Indorama Ventures Portugal PTA

AFRICA

Ghana

- Indorama Ventures Packaging (Ghana)

Nigeria

- Indorama PET Nigeria
- Indorama Ventures Packaging (Nigeria)

75 operating sites, 25 countries, 4 continents

ASIA

China

- Guangdong IVL PET Polymer³ ■
- FiberVisions (China) Textile Products ■
- ES FiberVisions (Suzhou)⁵ ■
- ShenMa-PHP (Pingdingshan) Air Bag Yarn Manufacturing ■
- Performance Fibers⁶ ■ ■

India

- IVL Dhunseri Petrochem Industries ■ ■

Thailand

- IPI Rayong^{2,6} ■ ■
- Indorama Petrochem ■
- TPT Petrochemicals ■
- IPI Nakhon Pathom^{2,6} ■ ♻️
- AsiaPet / Indorama Polymers ■
- Petform ■ ■ ■
- Indorama Holdings ■
- Indorama Petrochem Limited (2nd Branch) ■
- ES FiberVisions (Thailand)⁵ ■

Myanmar

- Indorama Ventures Packaging (Myanmar) ■

Philippines

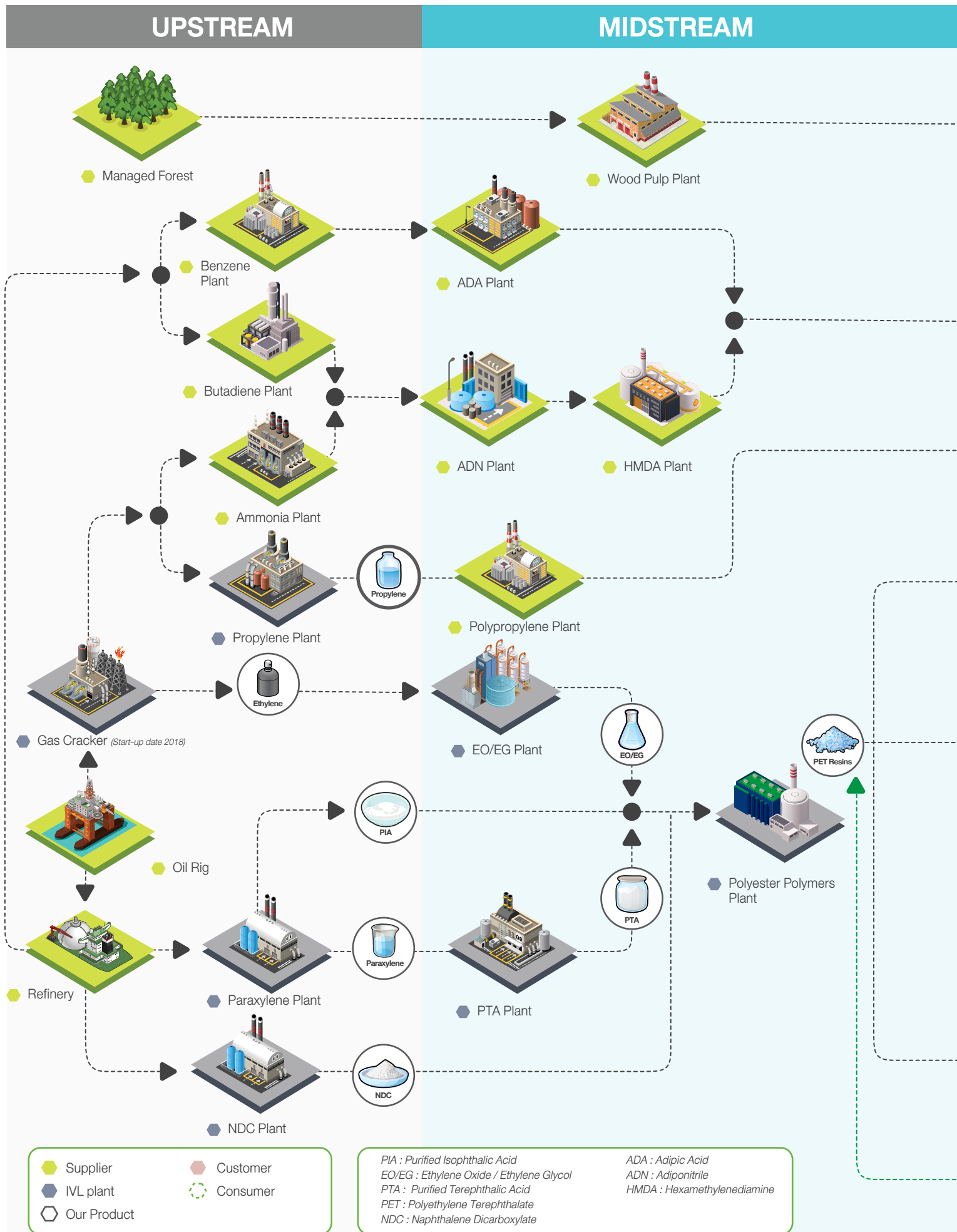
- Indorama Ventures Packaging (Philippines) ■ ■ ■ ■

Indonesia

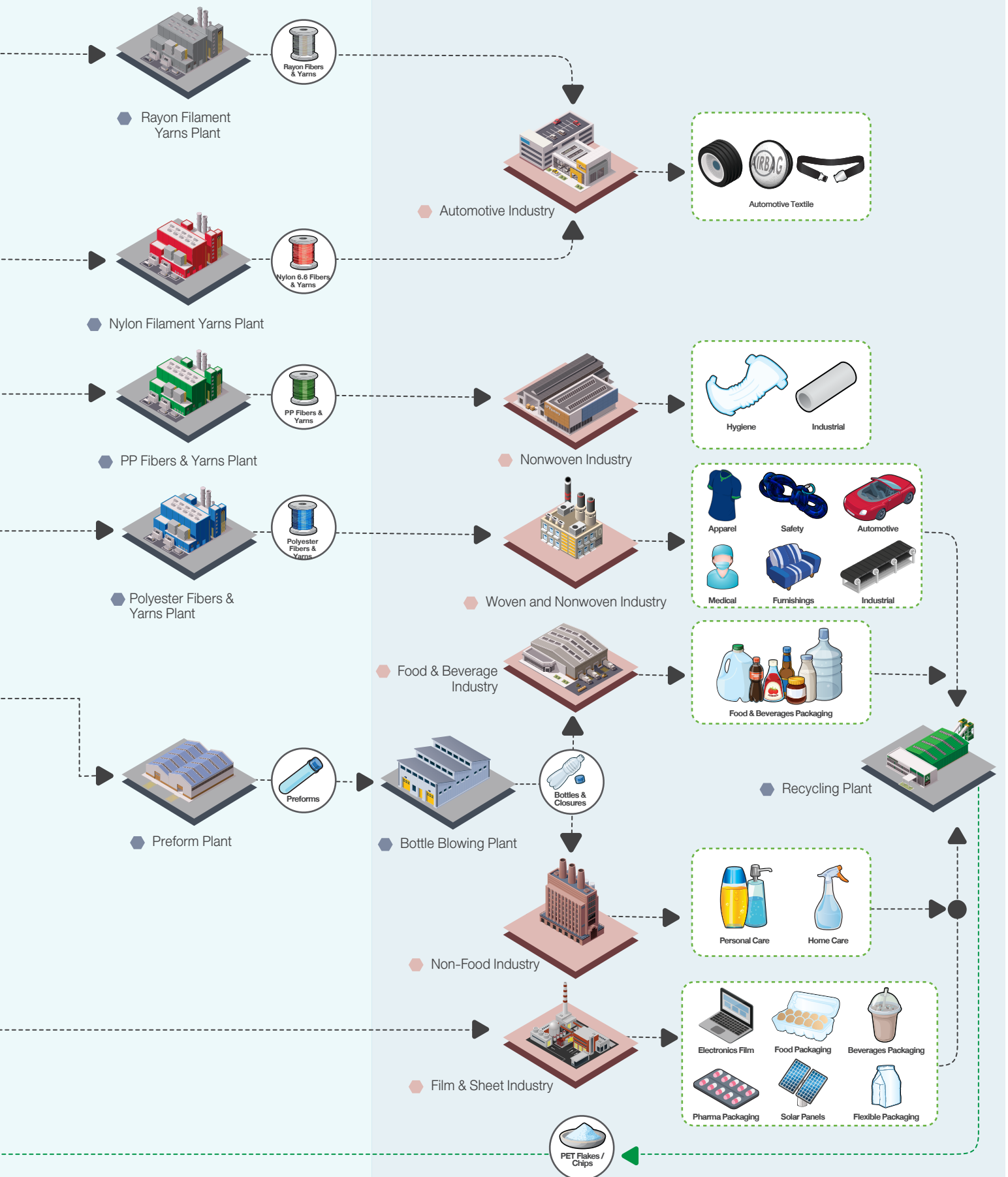
- PT Indorama Polypet Indonesia ■
- PT Indorama Petrochemicals ■
- PT Indorama Ventures Indonesia ■ ■
- PT Indorama Polyester Industries Indonesia ■
- PT Indorama Polychem Indonesia ■



Business Value Chain



DOWNSTREAM

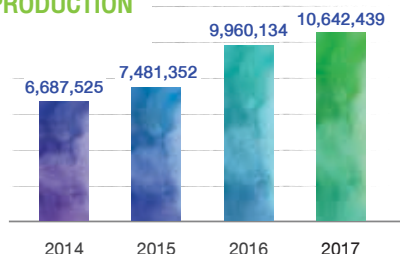


Key Highlights 2017

ECONOMIC PERFORMANCE

TOTAL PRODUCTION

(Tons)



REMARK: INCLUDE INTRA-COMPANY TRANSACTIONS

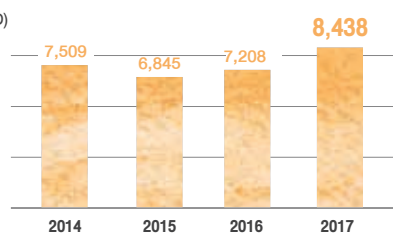
VITALITY INDEX

20.2%
FIBER BUSINESS

31.0%
PET HVA BUSINESS

NET SALES

(Million USD)

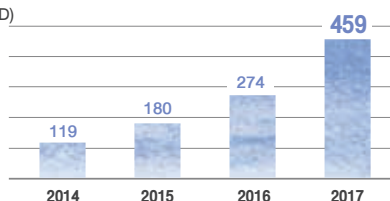


85.5%
CUSTOMER SATISFACTION INDEX

90%
CUSTOMER RETENTION RATE

CORE NET PROFIT

(Million USD)



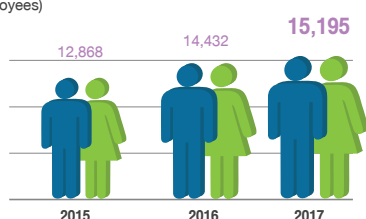
EMPLOYEE ENGAGEMENT SCORE **3.83**

100%
HUMAN RIGHTS ASSESSMENT
IN WORKPLACE

SOCIAL PERFORMANCE

TOTAL EMPLOYEES

(Employees)

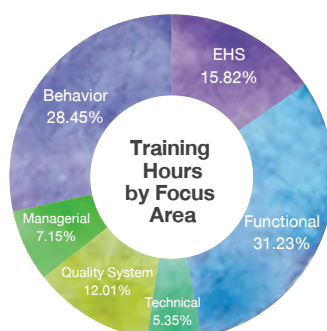
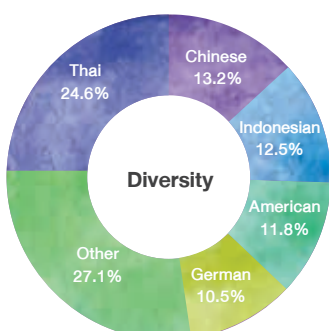


TOTAL RECORDABLE INJURY RATE (TRIR)
(per 200,000 man-hours) **1.19**

LOST TIME INJURY FREQUENCY RATE (LTIFR)
(per million man-hours) **3.82**



5.92%
TURNOVER RATE

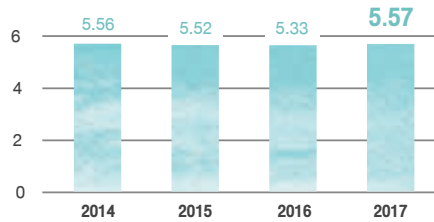


THE AVERAGE TRAINING HOURS
22.71
(Hours/Employee)

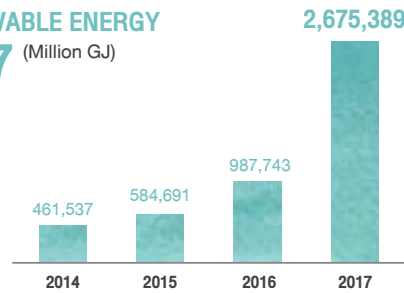
ENVIRONMENTAL PERFORMANCE

ENERGY

ENERGY EFFICIENCY (GJ/Ton of Production)



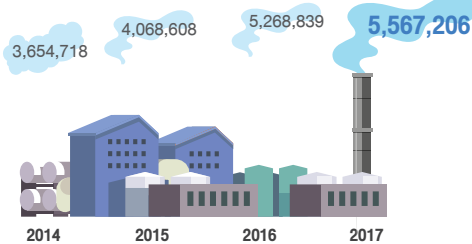
RENEWABLE ENERGY 2.67 (Million GJ)



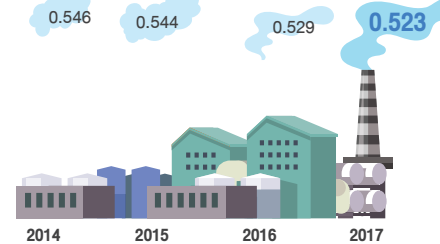
GHG EMISSIONS

TARGET FOR 2020
6%
REDUCTION OF COMBINED
SCOPE 1 & 2 GHG
INTENSITY
FROM THE 2013
BASE YEAR

TOTAL GHG EMISSIONS (SCOPE 1+ SCOPE 2) 5.57M (tCO₂e)

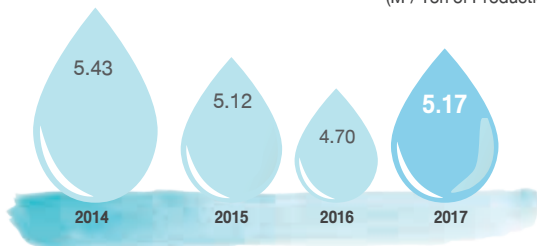


GHG EMISSIONS INTENSITY 0.523 (tCO₂e/Ton of Production)



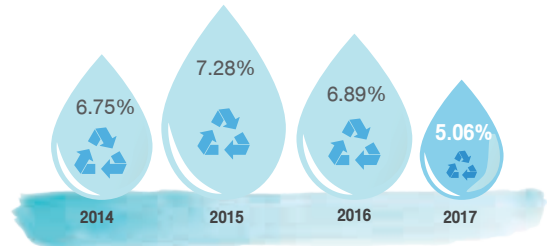
WATER INTENSITY

5.17 (M³/Ton of Production)



WATER RECYCLED AND REUSED

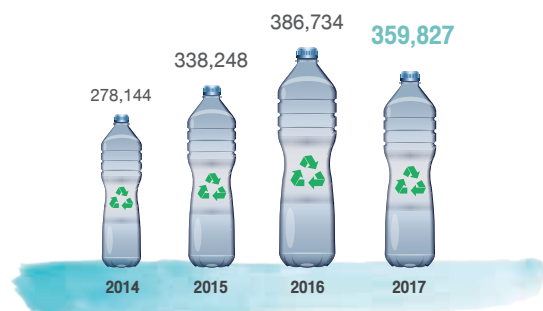
5.06%



RECYCLING BUSINESS

359,827 (Tons)

rPET resin that contains up to 25% recycled content.



Major Sustainability Awards and Recognitions

Indorama Ventures entered the Dow Jones Sustainability Index (DJSI) Emerging Markets Chemicals Industry for the first time as published by RobecoSAM, ranking among the top five global chemical companies. We were acknowledged with Silver Class recognition. In addition, we were selected as RobecoSAM's Industry Mover, a distinction given to companies that have achieved the largest proportional improvement in their sustainability performance compared to the previous year. This classification reflects our efforts to consistently improve our sustainability performance and shows once again that IVL is one of the most sustainable companies in the world.



In 2017, we participated in CDP's Climate Change Assessment for the second consecutive year and their Supply Chain Assessment for the first time, achieving 'B' Rating and 'B-' Rating, respectively.



FTSE4Good

IVL was independently assessed according to the FTSE Russell criteria and become a constituent of the FTSE4Good ASEAN 5 Index and FTSE4Good Emerging Index.



The Stock Exchange of Thailand

In 2017, IVL received the Thailand Sustainability Investment (THSI) award for the third consecutive year and the Sustainability Award, Rising Star from Stock Exchange of Thailand. This award is granted to recognize listed companies with outstanding performance in sustainable development and honor them as the exemplary models for other companies.



MEMBER OF

Dow Jones Sustainability Indices

In Collaboration with RobecoSAM



ROBECOSAM
Sustainability Award
Industry Mover 2018



ROBECOSAM
Sustainability Award
Silver Class 2018



In 2017, IVL participated in the EcoVadis evaluation/accreditation platform and achieved Gold Recognition, ranking in the top 4% of suppliers in the category of manufacture of basic chemicals and top 3% of suppliers in all categories assessed by EcoVadis.

Bloomberg

Based on the ESG information collected from the public domain, Bloomberg analysis have evaluated and ranked among SET50 Index Companies in Thailand.



Major Industry Associations and Memberships

As a leading chemical company, IVL demonstrates leadership in regards to driving innovation, product stewardship, and having a positive impact on the climate. Through 2017, we played an active role in various industry associations and memberships.



The Federation of Thai Industries promotes and supports industries focused on developing sustainable growth in their industrial operations



The Thailand Environment Institute formulates environmental directives to encourage meaningful environmental progress in Thailand



The Ministry of Industry's Green Industry Project is a proactive conservation initiative that encourages Thai industries to be more environmentally responsible



Plastics Recyclers Europe (PRE) promotes plastic recycling and creates conditions that enable profitable and sustainable business for its members in the EU.



European Man-Made Fibres Association (CIRFS) represents the European man-made fibres industry, and offers a wide range of industry information



The Committee of PET Manufacturers in Europe (CPME) represents both European PET resin producers and producers of Terephthalic Acid (PTA)



Verband Der Chemischen Industrie e.V. represents the interests of chemical and pharmaceutical companies to secure the "License to operate" of its members



The Lithuanian Confederation of Industrialists represents the rights of members to defend their interests to stakeholders



The Confederation of Danish Industry (DI) provides the best conditions for businesses in order to improve their opportunities for growth and overall competitiveness



American Fuel & Petrochemical Manufacturers (AFPM) represents petroleum refiners and petrochemical manufacturers throughout the US and helps them grow to become reliable and proven manufacturers



Quebec Business Council on the Environment (CPeQ) – represents the business sector in Quebec on environmental and sustainable development issues, by coordinating the objectives of its member companies



The National Agency For Food and Drug Administration and Control (NAFDAC) safeguards public health by ensuring that only the right regulated products are manufactured, exported, imported, advertised, and sold

More details are given on our website, <http://www.indoramaventures.com>

Sustainability

At Indorama Ventures





Sustainability at IVL means 'business growth with positive environmental and societal continuity; and managing the Triple Bottom Line of Profits, Planet and People. This includes Economic, Environmental and Social risks, obligations and opportunities. Additional information on our sustainability related strategies and commitments are available on our website www.Indoramaventures.com under Sustainability. The Codes of Conduct for employees and directors also provides the basis for professional work in all our operations.

The Company's Sustainability Initiatives fully support the new vision of becoming a world-class chemical company making great products for society. An increased focus on sustainable operations in environmental and social dimensions, especially in innovation management, product stewardship, occupational health and safety, will help in achieving this vision.

We measure our success not just by economic gains but by our achievements in preserving the environment, thereby benefiting society. We endeavor to maintain a culture of corporate citizenship with strict adherence to environmental, health and safety standards, corporate governance, and anti-corruption regulations. Our goal is to ensure economic prosperity and sustainability to all our stakeholders. IVL management has adopted an aggressive focus on sustainability and is committed to several long-term sustainability targets and commitments including environmental protection.

In order to achieve environmental efficiencies, our management provides the structures and processes that help embed environmental efficiency into our organization's culture and mitigate risks. Furthermore, management encourages all of our plants to obtain and achieve strong environmental and energy management standards as exemplified under ISO 14001, ISO 50001 and other industry or country specific standards. Through these processes, we are committed to surpassing environmental laws and regulations pertaining to each business and region, with periodic analysis and third-party inspections conducted at each plant.

Our Approach and Sustainability Programs

We have a deep commitment to sustainability that serves as the foundation of our overall business strategy.

Approach to Managing Sustainability

IVL strongly believes in the importance of Sustainability and Risk Management functions, which enables the Company to anticipate and manage current and future economic, environmental and social risk and opportunities arising from the Company's business activities.

Sustainability Governance

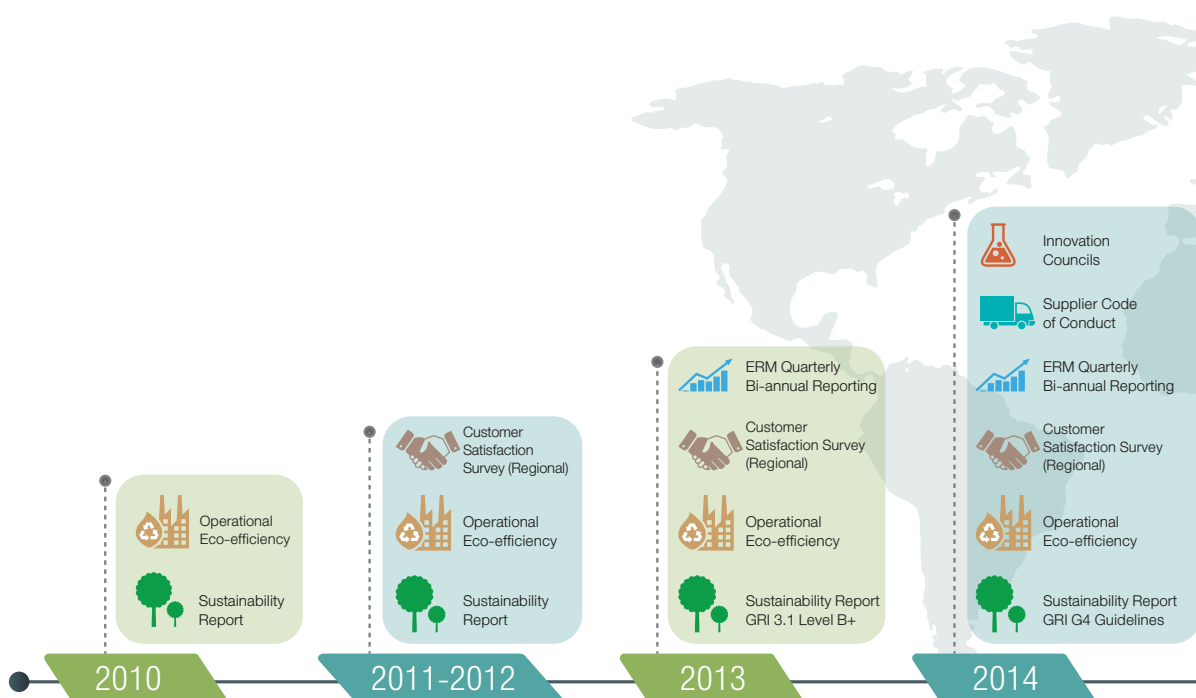
The Board of Directors (the 'Board') is the highest governing body at IVL and is responsible for the strategic direction of the organization and the effective monitoring of performance. The Board meets regularly to discuss business performance and other significant issues that have strong impacts on the Company, its operations and future.

The Board has been embedding sustainability into the Company's overall long-term business strategy, corporate culture and day-to-day operations through its subcommittee, the Sustainability and Risk Management Committee (the 'SRM Committee').

Sustainability and Risk Management Committee

The Board has appointed members of the SRM Committee, each of whom possess in-depth knowledge and vast expertise in sustainability and risk management. The SRM Committee is the second highest authority in the Company pertaining to sustainability. Group CEO and two CEOs are responsible for economic, environmental and social topics of the company.

Currently, the SRM Committee comprises six members of the Board, including three Independent Directors.



Sustainability and Risk Management Committee



More details on the composition of SRM Committee as described below are available on our website.

Since its inception, the SRM Committee has been driving IVL's efforts driving IVL's efforts to integrate sustainability into its current activities, long-term strategic planning process and risk management framework. The SRM Committee, headed by Mr. Alope Lohia, Group CEO has been actively overseeing the development and implementation of IVL's strategy and policies on sustainability and risk management. The SRM Committee meets semi-annually to monitor sustainability performance, assess the risks associated with aspects on sustainable development and review sustainability trends and issues, the sustainability reporting framework, and feedback from stakeholders.

The Report of the SRM Committee for 2017 for shareholders of the Company is published in our Annual Report which is available on our website.

Sustainability Steering Committee

The SRM Committee is supported by the Sustainability Steering Committee with members having diverse experiences across different functions and businesses. The Sustainability Steering Committee advances the objectives of sustainability and implements the sustainability practices across all IVL entities under the guidance of the SRM Committee and the Group CEO.



Our Stakeholders





Stakeholder engagement: As part of our business ethics and commitment to best business practices, we regularly engage with both internal and external stakeholders to maintain excellent working relationships and to understand, prioritize and incorporate their expectations, interests and concerns into our business operations.

Stakeholders and Engagement Channels:

Stakeholders	Engagement Mechanisms	Frequency
Internal Stakeholders <ul style="list-style-type: none"> • Employees 	• Employee Engagement Survey	Annually
	• Annual Performance Review	Annually
	• New Employee Orientation and Training	Ongoing
	• Corporate Grievance Mechanism	Ongoing
	• Town Hall Meetings	Ongoing
	• Staff and Team Meetings, Trainings and Workshops	Ongoing
	• Annual Report	Annually
	• Sustainability Report	Annually
	• Company Magazine	Ongoing
	• Company Website	Ongoing
	• Email Communications	Ongoing
	• Social Media	Ongoing
External Stakeholders <ul style="list-style-type: none"> • Shareholders • Customers • Suppliers including contractors • Investors • Bankers • Government and Industry Groups • Media • Communities 	• Annual General Meeting	Annually
	• Opportunity Day	Quarterly
	• Annual Report and Sustainability Report	Annually
	• Company Website	Ongoing
	• Analyst Meetings, Conference Calls	Quarterly
	• Briefings and Presentations	Ongoing
	• One-on-one Meetings	Quarterly
	• Shareholder and Community Visits to Plants	Bi-Triennially
	• Shareholder Survey	Annually
	• Company Magazine	Ongoing
	• Press Releases	Ongoing
	• Corporate Grievance Mechanism	Ongoing
	• Local and Overseas Road shows	Quarterly
	• Corporate Grievance Mechanism	Ongoing
	• Investor Fact Sheet	Quarterly
	• Email Subscription	Ongoing
	• Social Media	Ongoing
	• Customer Satisfaction Survey	Continuous
	• Customer Visits	Ongoing
	• Product and other relevant information on website	Ongoing
	• Marketing Materials	Ongoing
	• Tradeshows, Conferences, Seminars	Ongoing
	• Business Partners and Competitor Policy	Ongoing
	• Supplier Management System	Ongoing
	• Joint or Collaborative Events with Communities, Customers, Suppliers	As required
	• Membership with Industry Bodies	Ongoing
	• CSR activities	Ongoing
	• Community Visit Programs	Ongoing
	• Open House Programs with Communities and Local Authorities	Ongoing



IVL Annual General Meeting, 2017

Stakeholder Feedback

Stakeholder engagement provides a multi-faceted approach where we can drive innovation, mitigate risks, explore opportunities and build relationships based on trust with the communities where we live and work.

The aim of our engagement is to understand and develop leading sustainability strategies and solutions in collaboration with our stakeholders to effectively respond to their feedback.



Internal Stakeholder Feedback

As a global chemical company, our employees are critical to our success. Throughout 2017, we gathered important feedback from our employees through the following relevant channels:

- Annual Employee Engagement Survey
- Feedback during the Performance Appraisal
- Materiality Assessment Survey
- Business Strategy Meetings
- Whistleblower Mechanism

External Stakeholder Feedback

This year, IVL has engaged with an increasing number of external stakeholders including customers, suppliers, bankers, investors, governments, industry groups, communities, shareholders, and the media as part of our annual Materiality Assessment. These activities supplemented a range of other ongoing engagement mechanisms used to determine our sustainability topics.

Important highlights featured throughout the report provide further practical examples of how we addressed important issues to our stakeholders.

Materiality

Assessment

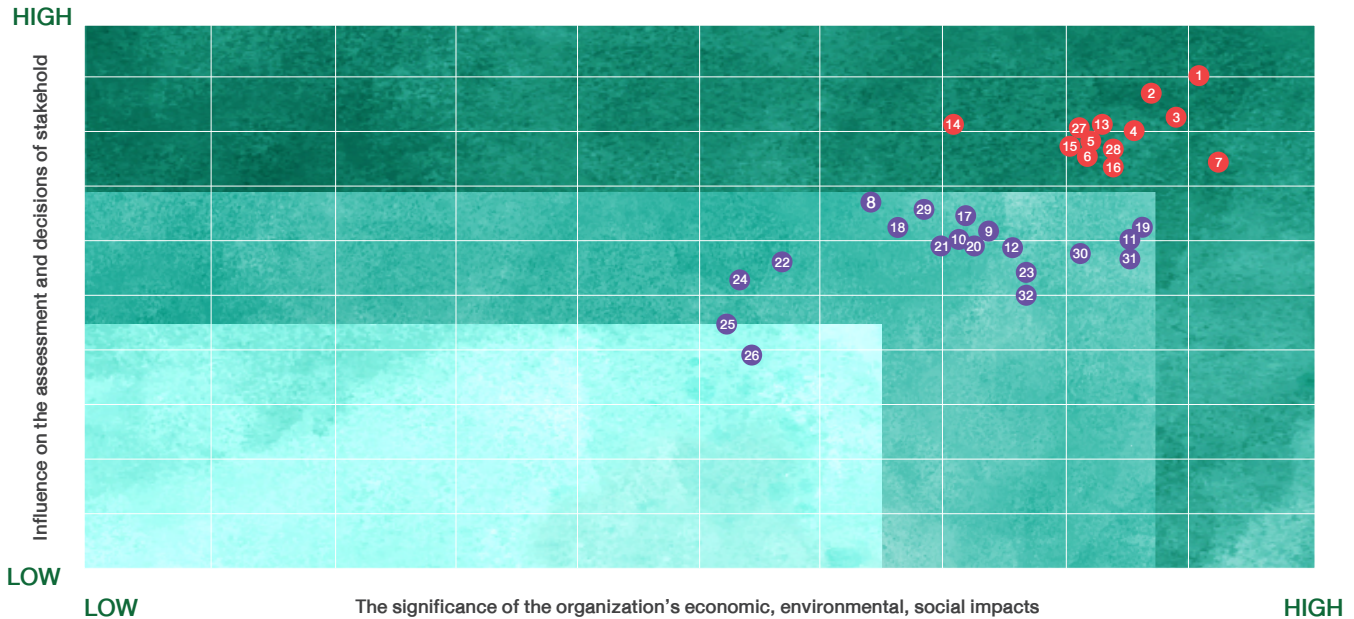




Each year, IVL conducts a formal materiality assessment in accordance with the GRI Sustainability Reporting standards to identify and prioritize primary sustainability issues, as well as associated key performance indicators (KPIs) and targets for improvements. Getting insights from stakeholders through ‘Materiality Assessment’ is one of the best means to support management in enhancing its focus on material topics that are important to IVL and its stakeholders. The Materiality Assessment helps identify and prioritize the topics that matter most to the business and stakeholders as well as guides the content of the 2017 Sustainability Report.

IVL considered many issues that were raised by internal and external stakeholders during the assessment process. Some of these topics overlapped with others, and their importance varied within stakeholder groups. After evaluating these topics, we identified those of the highest importance to IVL and our stakeholders, which formed our material topics. These topics are located in the top right quadrant of the matrix below. Based on our assessment, the most important material topics for IVL and our stakeholders are consistent with previous years. However, a number of these have been refined to reflect our progress and plans for 2017 and going forward. We will measure our performance against these goals in next year’s report.

Materiality Matrix 2017



- 1 Business Ethics, Integrity and Transparency
- 2 Corporate Governance
- 3 Compliance Management
- 4 Customer Relationship Management
- 5 Supply Chain Management
- 6 Innovation Management
- 7 Risk and Crisis Management
- 8 Recycling
- 9 Tax
- 10 Market Differentiation
- 11 Reliability and Asset Integrity
- 12 Technology and Product Obsolescence
- 13 Environmental Management
- 14 Climate Strategy
- 15 Product Stewardship
- 16 Water Management
- 17 Emissions (GHG, SOx, NOx, VOCs)
- 18 Product Toxicity
- 19 Raw Materials
- 20 Waste Water Management
- 21 Waste Management
- 22 Low Carbon Products
- 23 Energy Consumption Management
- 24 Biodiversity
- 25 Renewable Energy
- 26 Non-raw Materials
- 27 Human Rights
- 28 Occupational Health and Safety
- 29 Corporate Social Responsibility
- 30 Human Capital Development
- 31 Talent Retention
- 32 Talent Attraction

Enhancing Risk Reduction and Maximizing Opportunity through Materiality Assessments

The Materiality Assessment process helps IVL to identify key material topics, to develop risk mitigating actions, and explore opportunities.

Ranking the material topics through materiality assessments in terms of risks and opportunities for both the business and broader stakeholders helps us think in a more integrated way about sustainability and to further expand our business strategy.

Materiality Assessments provide us with a tool for prioritizing and making sense of the sustainability landscape as well as a powerful mandate for focusing and acting on those issues that are the highest priority for the business and stakeholders. The Materiality Assessment process provides the following benefits:

- Focusing efforts to better allocate limited resources
- Integrating sustainability issues into the core business strategy
- Satisfying stakeholder and investor demands
- Anticipating emerging risks and opportunities
- Meeting sustainability reporting expectations
- Improving transparency and strengthening sustainability communications
- Providing a basis for development of performance measures
- Establishing a number of targets, key performance indicators focused on environmental and social performance, in addition to economic performance, in our operations
- Integrating material topics into our business strategy, sustainability management, risk impact reductions and opportunity optimization.

Material topics are found to be effective, address important business functions, and are critical to the company's viability. Integrating material topics into business strategy enables companies to effectively understand their needs and processes internally, and communicate externally how they create value and to better manage performance on critical topics.

In 2017, IVL carried out a materiality assessment after explaining the materiality assessment process and the relevance of the identification of material topics through workshops conducted covering all concerned globally. The materiality is done in line with our business strategy, strategic environmental and social priorities, and in alignment with the GRI Standards. The materiality assessment sets out the material topics for 2017 and the content of this report. We used key elements of the GRI Standards to identify and prioritize the topics that matter most to the business and stakeholders.

Stakeholders, including customers, suppliers, bankers, the media and employees, provided information on 32 topics with potential relevance to IVL, rating them in terms of their current and future relevance. The materiality matrix shows how these sustainability topics were ranked. All topics shown in the matrix are relevant both to our stakeholders and to IVL.

Additional details on the key material topics are provided in the subsequent chapters in this Sustainability Report.



IVL Capital Markets Day 2017

Materiality Assessment Process in IVL



1. Material topics Identification

- Identifying what materiality means to IVL and the objectives of the materiality assessment.
- Identifying major economic, environmental and social sustainability indicators across the value chain having an impact on the business operations of the Company, its stakeholders, environment and societies around the world.
- Identifying and prioritizing our stakeholders. Stakeholders include both internal stakeholders such as employees at all levels globally, and external stakeholders such as customers, suppliers, investors, analysts, bankers, government and regulatory bodies, community and industry groups, the media and others.

2. Engagement with Stakeholders on Economic, Environmental and Social topics

- Engaging with all stakeholders, both internal and external, through the materiality survey and collecting their feedback.
- Creating awareness of the materiality assessment through workshops.
- Engagement annually, quarterly or on a regular/periodic basis.
- Annual engagement:
 - Materiality survey
 - Customer satisfaction survey
 - Employee engagement survey
 - Business strategy meeting
- Quarterly Engagement:
 - Investors meets
 - Analysts meets
 - Capital Markets Day
 - Opportunity Day in Stock Exchange of Thailand
 - Investor Road shows
- Regular or periodic engagement: ongoing meetings with:
 - Customers
 - Suppliers
 - Regulatory bodies

3. Prioritization

- Collecting and aggregating the feedbacks from all stakeholders.
- Analyzing material topics feedback in detail to understand the significance, probability of occurrence, and impact to the business, company and stakeholders. Developing scoring methodology to weigh the inputs from various sources and stakeholders.
- Ranking the material topics in terms of risk and opportunity for both the business and the broader stakeholders.
- Prioritizing and clustering material topics based on scores into economic, environmental and social dimensions.
- Preparing the materiality matrix based on the scores from the ratings of the stakeholders
- For each of the material topics, IVL defined the boundary of the impact, whether inside or outside our Company and where the impact ends.

4. Validation

- Senior management validates the material topics and their respective boundaries based on the ratings, impact to business success, and stakeholders.
- Grouping the key material topics into the three dimensions: economic, environmental and social.

5. Assurance and Reporting

- Integrating key material topics in the company's strategy, governance and operations.
- Developing the strategy, both long term and short term, for all key material topics identified through assessment of:
 - Likelihood and probability
 - Risks and Opportunities
- Assurance by an external assurance auditor by verifying materiality assessment process, stakeholder engagement process, data collection and evaluation, especially environmental, health and safety performance indicators to ensure the completeness, accuracy, reliability and transparency.

Material Topics

Thirteen key materiality topics were identified based on the materiality assessment process.



This year, the materiality assessment process was extended to more external stakeholders, such as customers, suppliers, bankers, investors and the media. Their feedback was incorporated in defining our key material topics.

Topics and Their Impacts

Planning, Enhancing Risk Reduction and Maximizing Opportunity through the Materiality Assessment

IVL engages in activities which produce various products and incidental services that interact with the physical environment which affects or impacts the environment locally, regionally, or even globally in a positive, neutral or negative way.

We use the materiality assessment process and the identification of material topics for planning, enhancing risk reduction and

maximizing opportunities in ways that can benefit IVL, the environment and society.

IVL also determines the topics of the business that significantly affect the environment, and prioritizes them as mentioned in detail under respective material topics.

As a precautionary approach, we have identified the potential risk related to economic climate change and social opportunities and risks arising from our business activities.



Material Sustainability Topics

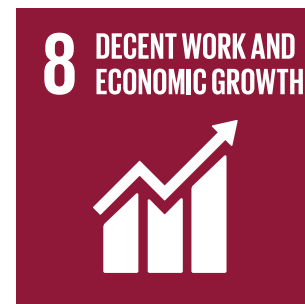
IVL Material Topics	Corresponding GRI Topics	Key Stakeholder and Impact Boundary		Ongoing IVL Commitments and Targets (2017-2020)
		Within the Organization	Outside the Organization	
Business Ethics, Integrity and Transparency	<ul style="list-style-type: none"> Governance Code of Conduct Anti-corruption 	<ul style="list-style-type: none"> All Managerial Control Employees 	<ul style="list-style-type: none"> Business Partners Contractors Regulators, Government 	<ul style="list-style-type: none"> Business conduct and ethics training and creating awareness to all employees by 2020 Zero corruption Publically reporting any material non-compliance
Corporate Governance	<ul style="list-style-type: none"> Governance Code of Conduct Anti-corruption 	<ul style="list-style-type: none"> All Managerial Control Employees 	<ul style="list-style-type: none"> Business Partners Regulators, Government 	<ul style="list-style-type: none"> To be globally recognized for good corporate governance standards and practices To embed an organizational culture of zero corruption, transparent business ethics and conduct, compliance with laws and regulations Zero corruption Excellent CG Scoring from the Thai IOD
Compliance Management	<ul style="list-style-type: none"> Compliance Anti-corruption 	<ul style="list-style-type: none"> Manufacturing Operations License to Operate Environmental Compliance 	<ul style="list-style-type: none"> Business Partners Community Regulators, Government 	<ul style="list-style-type: none"> Zero non-compliance Beyond all applicable environmental compliances
Customer Relationship Management	<ul style="list-style-type: none"> Customer Relationship Management 	<ul style="list-style-type: none"> Management Sales and Marketing personnel 	<ul style="list-style-type: none"> Business Partners 	<ul style="list-style-type: none"> Customer Satisfaction Index (CSI) and Customer Retention Rate (CRR) are equal to or an improvement from the previous year
Supply Chain Management	<ul style="list-style-type: none"> Supplier Environmental Assessment Supplier Self- Assessment for Labor Practices Supplier Human Rights Self-Assessment Supplier Self-Assessment for Impacts on Society 	<ul style="list-style-type: none"> Manufacturing Operations Employees 	<ul style="list-style-type: none"> Business Partners Regulators, Government 	<ul style="list-style-type: none"> 100% of new raw-material suppliers and critical non-raw material suppliers assessed
Innovation Management	<ul style="list-style-type: none"> Emissions Products and Services Economic Performance 	<ul style="list-style-type: none"> Manufacturing Operations Employees 	<ul style="list-style-type: none"> Business Partners Community 	<ul style="list-style-type: none"> Retain or improve position from the previous year on the Vitality Index Integration of ESG aspects in innovation processes
Risk and Crisis Management	<ul style="list-style-type: none"> Role in Risk Management Risks and Opportunities due to Climate Change 	<ul style="list-style-type: none"> Employees Manufacturing Operations 	<ul style="list-style-type: none"> Business Partners Contractors Community Regulators, Government 	<ul style="list-style-type: none"> Identification and continuous monitoring of emerging risks

IVL Material Topics	Corresponding GRI Topics	Key Stakeholder and Impact Boundary		Ongoing IVL Commitments and Targets (2017-2020)
		Within the Organization	Outside the Organization	
Environmental Management	<ul style="list-style-type: none"> Materials Energy (Emissions) 	<ul style="list-style-type: none"> Employees Manufacturing Operations 	<ul style="list-style-type: none"> Business Partners Contractors Community Regulators, Government 	<ul style="list-style-type: none"> 6% GHG Intensity Reduction of Scope 1 and Scope 2 by 2020 over base year 2013
Climate Strategy	<ul style="list-style-type: none"> Materials Energy (Emissions) 	<ul style="list-style-type: none"> Manufacturing Operations Employees 	<ul style="list-style-type: none"> Business Partners Contractors Regulators, Government 	<ul style="list-style-type: none"> 6% GHG Intensity Reduction of Scope 1 and Scope 2 by 2020 over base year 2013 GHG Scope 3 calculation for five categories
Product Stewardship	<ul style="list-style-type: none"> Customer Health and Safety Emissions Product and Services Economic Performance 	<ul style="list-style-type: none"> Manufacturing Operations Employees 	<ul style="list-style-type: none"> Business Partners Contractors Regulators, Government 	<ul style="list-style-type: none"> 7% revenue from Low-carbon products Product toxicity reductions Eco-Product classification
Water Management	<ul style="list-style-type: none"> Water 	<ul style="list-style-type: none"> Manufacturing Operations Employees 	<ul style="list-style-type: none"> Business Partners Contractors Regulators, Government Community 	<ul style="list-style-type: none"> Increase in water recycled and reused
Occupational Health and Safety	<ul style="list-style-type: none"> Occupational Health and Safety (Training and Education) Supplier Self- Assessment for Labor Practices Grievance Mechanisms, Asset Integrity and Process Safety 	<ul style="list-style-type: none"> Manufacturing Operations Employees 	<ul style="list-style-type: none"> Business Partners Contractors Community 	<ul style="list-style-type: none"> Zero fatalities 2% reduction of TRIR and LTIFR over previous year
Human Rights	<ul style="list-style-type: none"> Non-discrimination Freedom of association and collective bargaining Supplier Human Rights Assessment Child Labor (Forced or Compulsory Labor) Security Practices Human Rights Grievance Mechanisms 	<ul style="list-style-type: none"> Employees 	<ul style="list-style-type: none"> Suppliers Contractors Community 	<ul style="list-style-type: none"> Ensuring compliance with the fundamental rights of the workforce, as per UN Guiding Principles and ILO standards Zero human rights violations Embedding human rights in our mergers and acquisitions

Sustainability Development Goals

At the United Nations Sustainable Development Summit in September 2015, world leaders adopted the 2030 Agenda for Sustainable Development, which included a set of 17 action-oriented Sustainable Development Goals (SDGs) accepted by all countries and applicable to all. Countries are now mobilizing their efforts to promote prosperity while protecting the world over the next 13 years. The 17 SDGs and 169 targets seek to eradicate poverty, strengthen human rights, and promote gender equality and the empowerment of women and girls. They are integrated and indivisible and balance the three dimensions of sustainable development: the economic, social and environmental. The goals and targets will stimulate action in areas of critical importance for humanity and the planet.

Achieving the SDGs by 2030 is highly ambitious. The private sector has an important role to play along with governments, institutions, and communities in delivering these goals. It is in the interest of businesses to engage in creating a more sustainable future. We responded by aligning our group-wide strategy with the SDGs in 2016 to ensure that our activities in the communities where we have operations support the plan of action for people, the planet and prosperity to achieve sustainable development. We also aligned our material topics with the SDGs, and will use any relevant corporate information to prioritize our contributions to sustainable development through the SDGs in 2017.



We are committed to playing a constructive role by contributing to the achievement of the following Sustainable Development Goals:

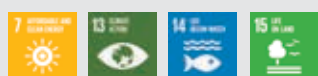
Recycling Business and Circular Economy:

Bringing customers of recycled products into the product value chain cycle and developing ways to include recyclability into all products



Climate Change:

Being fully aligned with the global initiatives agreed at the Paris Climate Conference (COP21) towards developing strong low-carbon strategies



Product Stewardship:

Reducing the risk of the potentially adverse environmental, health and safety impacts of our products in the use phase and disposal



Environmental Stewardship:

Improving resource efficiencies and ensuring our production is environmentally-friendly

Health and Safety:

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



Employees:

Focusing on woman equality, we are hiring women and providing development opportunities that support gender diversity



Corporate Citizenship:

Making Recycling Education a part of our global CSR Flagship Program



Our Material Topics





IVL believes in shared sustainable growth for all our stakeholders in addition to the economic and environmental prosperity of the countries in which we operate. We assess our financial performance not only based on our profits and returns to shareholders, but also in terms of transparency, which encompasses the economic contributions we make through tax payments, domestic procurement, sales, and employment opportunities for local communities.

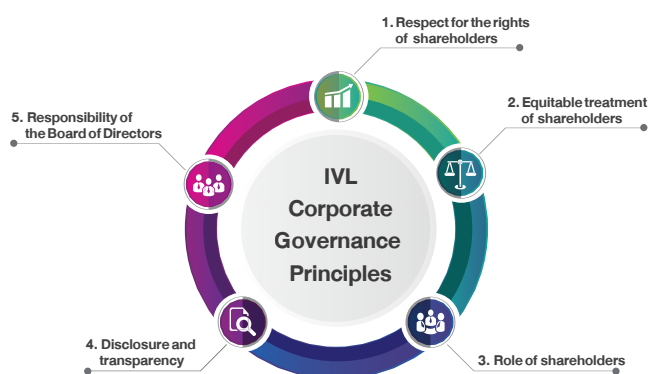
Our Material Topics

Corporate Governance

Indorama Ventures aspires to the highest corporate standards, striking a balance between economic, environmental and social goals. Good corporate governance enables us to measure our integrity and achieve sustainable business growth and long-term value for our stakeholders. Both the board and management are committed to its implementation and practice globally and in the most transparent and ethical manner possible.

With a rapidly growing business, expansion into new regions and with new products being added to the portfolio every year, we are continuously entering into different regulatory environments, and dealing with new challenges and compliance requirements. To ensure that we can adapt quickly, we have established corporate governance policies and a broad range of governance, risk and compliance initiatives across the organization.

To drive good governance, processes include the preparation and communication of corporate controls, key policies, enterprise risk management, regulatory, and compliance management, continuous monitoring is achieved through the risk management and audit committee. An effective and transparent corporate governance and enterprise risk management structure ensures ethical conduct and regulatory compliance. The Thai Institute of Directors (IOD), together with the Stock Exchange of Thailand, where IVL is listed, ranked us once again at a “Five Star” level, the highest level that can be attained by a locally listed company.



We believe that good corporate governance starts at the top. Our most senior executives serve as essential role models of good corporate governance ensuring that policies are being strictly followed, and in carefully considering and managing the risks. Environmental, social and governance indicators are therefore commonly identified in our senior management's variable pay metrics along with economic performance (including EBITDA, and ROCE, among others).

IVL's Corporate Governance Policy Principles are explained in our Corporate Governance Policy. As per the policy, we are committed to conducting our operations in accordance with the principles of good corporate governance and consider it a major factor in enhancing our overall success as a responsible member of society.

In 2017:

- IVL did not have any material topics or pay penalties for material non-compliance with respect to corporate governance regulations. We maintain strict processes to manage corporate governance and have not been involved in any regulatory infringement since listing in Thailand in 2010.
- IVL did not pay any fines, penalties or settlements due to antitrust or anti-corruption concerns or activities throughout the year and is not involved in any ongoing antitrust allegations.
- No legal actions were brought against the Company or our employees for anti-competitive behavior, anti-trust, anti-corruption and monopoly practices and their outcomes.
- No staff member has been disciplined or dismissed due to non-compliance with anti-corruption policies or the laws of the respective countries where we have operations.

2017-2020 Targets

- To implement continuous improvements in serving as a role model in corporate governance.
- To be recognized globally for good corporate governance standards and practices.
- Every IVL employee is aware of their duties and the need to comply with the laws, regulations, principles of corporate governance, and the company's Code of Conduct.
- To embed zero corruption, transparent business ethics and conduct, and compliance with the laws, regulations, and corporate governance principles in our organizational culture.
- To make IVL employees aware of their

IVL recognizes the importance of a variety of perspectives, backgrounds, and experiences of the board for the success of the company.

Board and subcommittee Performance Evaluation

The Board and subcommittee members carried out a self-evaluation of their performance in 2017. The results were summarized and discussed at the Board meeting held in February 2018 where members were evaluated with a very satisfactory rating of their performance in 2017.

Performance evaluation of the Board by third party has commenced.

At the meeting, the Board approved having a third-party carry out an evaluation of their performance. Corporate Governance department is currently working with Thai Institute of Directors in carrying out the assessment.

Further details of the evaluation of the Board's performance are available in our Annual Report 2017 which is available on our website, www.indoramaventures.com

Anti-Corruption

As part of the regular risk management process, all of our plants periodically evaluate any risks pertaining to the potential for corruption. To date, no plant has identified any significant risk. Furthermore, as a preventive measure and as part of good corporate governance, all new and existing employees have received training on anti-corruption rules, regulations and policies in 2017.

Business Ethics, Integrity and Transparency

We value business growth and profitability in the right way and are committed to conducting our operations with the highest standards of business ethics, principles, and in many cases, by going above and beyond compliance of applicable laws, rules and regulations. Our Code of Business Conduct and Policies, available on our site under "Corporate Governance", is an integral part of our guiding principles and ethical standards and drives the way we conduct business around the world – with a strong focus on integrity.

When joining IVL, all new employees around the world are required to undergo mandatory and other supplementary training programs depending on the nature of their work. This includes corporate policies and principles, business ethics, our code of conduct, human rights, anti-corruption and anti-bribery regulations, insider trading and other required regulatory compliance requirements.



Code of Conduct Training at FiberVisions (China)

All new contractors and sub-contractors, including outsourced security personnel are required to undergo mandatory training covering various aspects including, but not limited to, health and safety, our supplier code of conduct, applicable company policies, and labor and regulatory compliance requirements.

Training of IVL's Code of Conduct

In 2017, over 11,000 employees took our training courses, both of which were performed by our Corporate Governance Section and local Human Resources teams.

We also developed Policy Handbook and Anti-Corruption Guidelines to prevent potentially corrupt behavior. Although the majority of our business deals are not directly related to government, we strongly recommend that our employees exercise caution when engaging with government personnel and political activities. Donations by IVL and our subsidiaries strictly follow a policy outlined by the CSR Committee and must be able to demonstrate a positive impact. Additional information is available in our CSR Activities in 2017 Section.

While we respect the right of employees to participate in political activities, IVL does not take any particular political position. No direct political donation or contribution was made by IVL or its subsidiaries in 2017.

We strongly believe in respecting all human rights. We are committed to protecting our employees and other stakeholders from all forms of discrimination and harassment based on their ideological views, ethnicity, religion, gender, sexual orientation, age, disability, or any other status regarded as a human right. We provide a friendly and supportive working environment for all employees. This includes protecting them from sexual harassment and providing career advancement opportunities for all. We are increasing our efforts to deeply ingrain diversity into our culture. Additional information is provided in the Human Rights section in this Sustainability Report.

We are committed to operating ethically, transparently, and against bribery and corruption throughout our global operations

Protection of Children's Rights

We strongly believe in the rights and dignity of human beings, particularly the rights of children. We declared our commitment to integrating the rights of children into our business practices and those of our subsidiaries, and accepted the Children's Rights and Business Principles (CRBP). We adhere to local child labor laws where our businesses operate and ensure that no person below the legal age is employed. In addition, we require that all of our suppliers, contractors, agents, service providers and commercial partners adhere to the same standard.

We have appropriate checks, internal controls and assessment processes to prevent the use of child labor within our operations and supply chain.

Our products are safe and do not cause any harm, including to children, and there are no incidents of non-compliance with regulations concerning the impacts of our products on children's health.

The board, Sub-Committees of the Board, business and plant level risk committees oversee children's rights in our operations and supply chain.



Indorama Ventures was included in a new global benchmarking study of 100 companies spanning over five regions, assessing to what extent the Company addresses children's rights. Global Child Forum, a Swedish non-profit foundation, in collaboration with

the Boston Consulting Group, conducted the benchmarking study of 100 companies on children's rights. With a score of 6.7, IVL beat the average benchmark score of 5.7 of all 100 companies.

As of 31 December 2017, there were no incidents of children's rights violations in our operations and key tier 1 suppliers (raw material and critical non-raw material suppliers).

Compliance Management

We recognize the importance of compliance management for our sustainability. Having operations in multiple countries and jurisdictions increases the risk of non-compliance which is an increasingly major concern. IVL and our entities (subsidiaries including joint venture partners) are obliged to adhere to the applicable laws, regulations, guidelines, and specifications relevant to our business, local or international, and which cover a vast array of compliance issues. Violations of regulatory compliance can very often result in severe legal penalties, including fines, product withdrawal from the market, or plant closures.

Further details on regulatory compliance management are provided on our website http://www.indoramaventures.com/EN/CSRResponsibility/CSR_SustainabilityReport.php.

Furthermore, there were no complaints concerning impacts on the public during the reporting period.

As of 31 December 2017, there was no material litigation against IVL or our subsidiaries which could have a negative effect on our assets exceeding 5% of shareholder's equity. In addition, there was no litigation which could have a significant effect on our business.

In 2017, there were no incidents of significant non-compliance with respect to regulations or voluntary codes concerning the health and safety impacts of our products. In addition, there were no complaints regarding any breach of customer privacy or loss of customer data.

- The Codes of Conduct, anti-corruption and bribery policy, and other policies, are available on our website, www.indoramaventures.com, and cover all employees, subsidiaries, associates, joint ventures, suppliers and contractors who are working directly or indirectly for the Company.
- There was no case of material non-compliance in 2017, and we are targeting the same outcome for 2018.
- In the 2017 reporting period, there were no 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 cases involving corruption have been brought against IVL or our employees during the reporting period.

Whistleblower Mechanism

In 2017, six issues were reported to the Whistleblower Committee. Each was investigated and reported to the Nomination, Compensation and Corporate Governance (NCCG) Committee and the Board of Directors. There were no pending cases at the end of the year. With technological advancements, we will continue to enhance the security of our whistleblower mechanism in order to increase trust in the system.

Further details about our whistleblower mechanism are available on our website.

To ensure that we achieve high standards in business ethics, the following four policies were updated in 2017: Environment Policy, Diversity Policy, Code of Conduct for Employees, and Supplier Code of Conduct.

The expectations of our stakeholders for transparency are growing every year and extend beyond just financial information. We embrace these expectations and their belief that we hold ourselves to a high standard. To increase trust both internally and externally, we are committed to being completely transparent in disclosing financial, environmental, social, governance and other information through various channels. This includes our Annual Report, Sustainability Report, press releases, investor meetings, strategy meetings, Stock Exchange announcements, opportunity day meetings, issues of The Beacon (published quarterly), and on our website.

FY 2017 Targets:

1. No material non-compliance of regulations
2. To publicly report any material non-compliance

2017 Result:

No material non-compliance



We were rated highest among Thai companies and ranked 20th out of 100 multinational corporations from 15 emerging markets that were evaluated. Transparency International assessed the reporting practices of the companies in three areas:

- Reporting on Anti-Corruption programs
- Organizational Transparency
- Country-by-Country Reporting

There are no incidents of non-compliance concerning:

- health and safety impacts of our products
- marketing communications
- breaches of customer privacy and losses of customer data

Customer Relationship Management

IVL is a market leader in the polyester value chain. In order to maintain this position and drive consistent, sustainable growth, we believe that good Customer Relationship Management (CRM) is an integral part of our long-term success.

Customer Engagement is our key strength and an important part of our sustainability strategy. There are various communication channels available to collaborate and listen to the advice of our customers as well as better understand their needs. The channels include regular interactions through meetings, tele-conferences by respective executives, senior management, including our CEOs and Group CEO, and our Annual Customer Satisfaction Survey.

Customer Satisfaction and Customer Retention

The Customer Satisfaction Survey enables us to understand our customers' needs and their satisfaction with our products. This in turn helps us to foresee our customers' future plans. In 2017, the Customer Satisfaction Index maintained a consistently high level at 85.46%, even though the number of responses from our global operations was higher than in 2016.

Overall average Customer Satisfaction Index (CSI) scores:

Business Segment	2016 CSI Result	2017 CSI Target	2017 CSI Result	2018 CSI Target
Fibers	82.55%		83.66%	
PET	84.73%		83.49%	
Feedstock	87.64%	Equal to or better than 2016 Satisfaction Index	87.72%	Equal to or better than 2017 Satisfaction Index
Wool	86.39%		85.29%	
Packaging	80.40%		82.68%	
IVL Overall	85.60%		85.46%	

Overall average scores of the Customer Retention Rate (CRR) by percentage of total revenues:

Business Segment	2016 CRR Result	2017 CRR Target	2017 CRR Result	2018 CRR Target
Fibers	72%	≥73%	91%*	≥90%*
PET	97%	≥94%	96%	≥94%
Feedstock	97%	≥80%	70%	≥80%
Wool	90%	≥85%	83%	≥85%
Packaging	95%	≥95%	95%	≥95%
IVL Overall	93%	≥85%	90%	≥91%

Note : CRR by Revenue

* In 2017, Fibers business CRR is calculated based on Key Customers in line with other businesses.

In addition, from the results, customers can anticipate our developments on innovation and products, as well as services. Therefore, our innovation teams take into account the needs of our customers in their R&D planning to achieve increasingly greater customer demand. This always drives our product and service

innovation approach, which converge to ensure that we move closer to one of our values: the customer is why we exist. The following is an example of product development in collaboration with customers to serve their requirements.

Recyclable Bottle Wins Design Award

Polyclear® EBM PET 5507, a new PET resin with the ability to be recycled in the clear PET stream commercialised by IVL received the Association of Plastic Recyclers (APR) recognition for meeting or exceeding all the requirements of their critical guidance for recycling protocol. In addition, the Coca-Cola Company's 89 oz. Simply package made with EBM PET 5507 was awarded the Best New Container in 2017 at the APR Plastics Recycling Showcase.

The Simply package was developed and commercialized in close collaboration with the Indorama Ventures, Coca-Cola Company and converting partner CKS Packaging Inc. to ensure all recyclability requirements were met while maintaining the Simply brand's high package performance standards.



Polyclear® EBM PET 5507

Supply Chain Management

Enhancing the Due Diligence Process

Disruptions in the supply chain carries an intrinsic risk that can have a significant impact on IVL and our stakeholders. We recognize the importance of efficient supply chain risk management relating to ESG factors. To minimize this, we have been focusing on positively influencing and collaborating with supply chain partners to promote best practices in the areas of human rights, health and safety, and compliance with environmental, labour and other applicable regulations.

Supplier Evaluation Process

The supplier evaluation process, initiated in 2014 and extended to 100% of raw material suppliers and critical non-raw material suppliers in 2015, was continued in 2017. This process is applicable to all new raw material and critical non-raw material

suppliers. The process involves a systematic and harmonized approach, requesting that suppliers respond to a self-assessment questionnaire that will assist in assessing opportunities and risks relating to human rights, child and forced labor, governance (regulatory compliance) and improving a sustainable supply chain.

In 2017, all new suppliers were assessed using ESG criteria and no supplier was identified as having negative environmental or social impacts.

IVL emphasizes the following elements in its assessment of suppliers through the Supplier Code of Conduct and Supplier's Self-Assessment:



Improving Operational Efficiency

IVL strongly believes in efficient eco-logistics management. In 2017, we continued to invest in supply chain initiatives to improve our operational efficiency. For example, we directly reduced raw material transportation costs and reduced greenhouse gases indirectly at several sites.

In 2017, IVL participated in Supply Chain Assessment and has been included in the CDP Platform.

The platform assesses under following criteria:

- Strategy and Management
- Risk and Opportunities
- GHG Emissions Accounting, Energy and Fuel Use and Trading



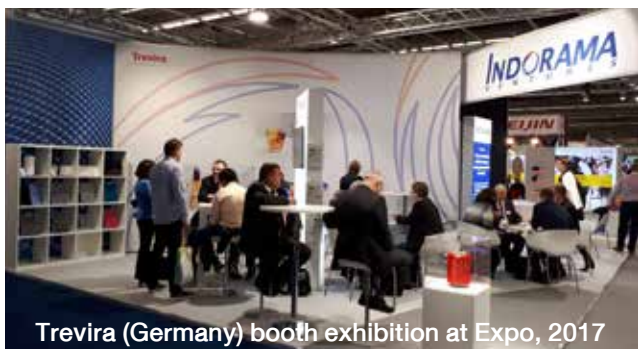
In 2017, IVL participated in the EcoVadis evaluation/accreditation platform and achieved Gold Recognition, ranking in the top 4% of suppliers in the category of manufacture of basic chemicals and in the top 3% of suppliers in all categories assessed by EcoVadis.

The platform assesses 21 CSR criteria under four main themes:

- Environment
- Labor Practices and Human Rights
- Fair Business Practices
- Sustainable Procurement



The assessment result has been used by IVL's customers. In 2017, six more companies joined the assessment compared to 2016 with a total of 29 companies to date.



Trevira (Germany) booth exhibition at Expo, 2017

Ethylene Exchange Solution

Indorama Ventures (Oxide & Glycols) LLC, or IVOG, is IVL's wholly-owned subsidiary in Clear Lake (Houston), Texas, producing Ethylene Oxide and Ethylene Glycols (EOEG). IVL is also establishing an olefins production site, Indorama Ventures Olefins LLC, or IVOL, in Lake Charles, Louisiana, the neighboring state. The two companies are located 275 miles apart. To ensure delivery of ethylene to IVOG, which it purchases as raw material, Indorama had three options: 1. Build a pipeline at an estimated cost of \$4.0 million/mile; 2. Enter into a long-term pipeline capacity reservation of existing pipelines, requiring two separate ethylene storage agreements; 3. Enter into an exchange agreement.

After reviewing and exploring all possibilities, IVOL chose to enter into a 10-year co-producer ethylene exchange, whereby Indorama has the option to provide up to 100% of IVOL's 420 KT annual ethylene production to a co-producer, for redelivery to mutually agreed upon destinations between the parties. This agreement benefits both IVOL and the co-producer who has excess capacity in Texas and is short of ethylene capacity in Louisiana, and also reduces pipeline transportation expenses for both parties.

The co-producer currently has three world-scale ethylene crackers located in Texas with a fourth cracker expected to start up in 2018, ensuring that IVOG's Clear Lake EOEG plant can be adequately supplied in the event of any operating issues at any single cracker without a disruption in supply to IVOG. An added benefit is that ethylene transportation will be less than 20 miles versus the 275 miles distance from IVOL's Lake Charles production site reducing potential risks associated with pipeline transportation.

PEO Exchange Benefits

In 2017, IVOG entered a geographic purified EO exchange with a Louisiana based co-producer which resulted in a reduction of 5,632 miles of Toxic Inhalation Hazard (TIH) shipment risk. Additional benefits include an annual reduction of 20,941 tCO₂ with the associated volume. Both parties benefit as the co-producer receives IVOG volume in Clear Lake for their Houston-based customers while IVOG supplies our customer base east of Louisiana. The program provided an estimated USD 75,000 freight reduction in 2017 to IVOG.

Improved MEG Shipments to IVL Mexico

IVOG has taken an initiation to change the means of supplying MEG in 2018 to IVL Mexico, a wholly owned subsidiary of the Company, from rail cars to ships. This initiation is expected to reduce the number of monthly shipments from 72 railcars per month to just two ships per month and estimated reduction of 1607 tCO₂ per annum, from 2128 tCO₂ by rail to 521 tCO₂ by ship, in addition to freight savings to IVL Mexico.

Innovation Management

Innovation Management plays an important role in the success of our High Value-Added (HVA) businesses, and has enabled world leadership in these businesses. By being creative, pioneering and imaginative, we can carve out a new niche and remain ahead of our competitors. At IVL, our focus is on product and process innovations that effectively integrate environmental and social demands.

Our HVA business is constantly evolving and continues to face many challenges, technical evaluation, competitive and societal. To keep pace with rapidly shifting market trends and global challenges, including SDGs, we choose to leverage our strength through innovation. Innovation in development focuses on new products that meet social and environmental needs; the improvement of existing products, processes and their efficiency; discovering opportunities that are likely to emerge in the future; reducing waste and increasing profits; and gaining new customers by diversifying the product range and their applicability.



Our Board of Directors places the highest importance on Innovation Management and Product Stewardship and advises the innovation councils accordingly. Innovation adds economic value but more importantly, in the case of IVL, also helps us to protect the environment by limiting or reducing emissions in our manufacturing processes and in helping to reduce product toxicity.

We aim to offer better value and great products to our customers by responding to their ongoing requirements, and anticipating their future needs by rapidly and effectively developing innovative products.

The key business process in Innovation Management is the Stage-Gate system. We have developed the principles of the Stage-Gate system on a global basis to better manage R&D programs. In addition to its discipline and other well-known benefits, there is its integration with Product Stewardship, through a formal assessment of a variety of environmental and social impacts.

Our work environment generates improved ideation resulting in better products.

Our R&D Vision:

We are committed to rapidly developing profitable and sustainable products, solving complex technical problems, and providing innovative solutions for our customers.

Our higher customer and employee retention rates mentioned in respective chapters of this report demonstrate our strength in innovation and improving our business practices.

Vitality Index*

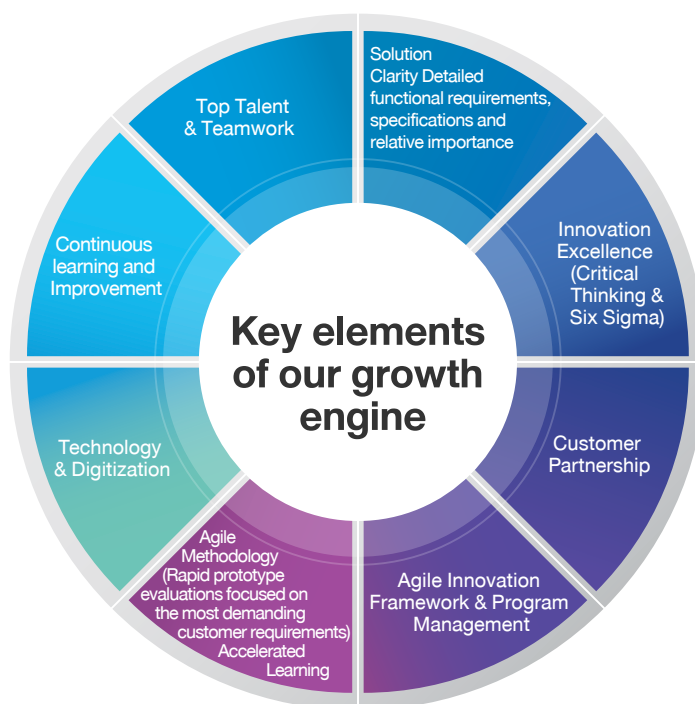
Fibers Business

Our Fibers business achieved a vitality index of 20.2% in 2017 (without new acquisitions) against a target of 20%. With new acquisitions, our vitality index stood at 19.6%. For 2018, we aim to achieve vitality index of 20% or higher including new acquisitions.

PET HVA Business

Our PET HVA business achieved a vitality index of 31% for specialty products in 2017 against a target of 35%. The vitality gap was tied to two major programs where the anticipated scale-up of the first was cancelled due to a change in the regulatory landscape which negated our core value proposition while in the second, the scale-up was delayed and will now occur in 2018. Our vitality target for 2018 is 33%.

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



a. Product Innovation

Sustainable and differentiated products can emerge through the development of technology platforms. We have set up process to ensure that new product ideas are examined for their relevance and commercial and market potential by the respective business Innovation Councils before being given final approval for development project initiation.

The success of our product innovation can be determined by the number of innovative products we have in our pipeline, patents registered and/or applied for registration, in addition to our vitality index. We also continually evaluate the use of more sustainable raw materials to meet the range of performance, economic and compliance requirements.

Environmentally-friendly Product Development

As a result of our programs that build on our ideas to make next-generation products with reduced environmental impacts, tea bags from organic-based biodegradable polylactic acid (PLA) fibers were developed for hot liquid filtration, replacing polyolefin fibers.

Product Advantages

PLA production consumes 25–55% less fossil fuels than petroleum-based polymers which results in reduced emissions of air and water pollutants. Products made with PLA are compatible with existing recycling systems, can be cleanly incinerated or industrially composted, and are stable in landfill. By design, using PLA results in 75% less greenhouse gases than the oil-based PET plastic that it replaces.

b. Process Innovation

In addition to changes in raw materials and new products, we also actively pursue projects directed at improvements through process innovation to achieve the following goals:

- Reduce energy consumption and improve operational eco-efficiency (reducing emissions and energy costs)
- Increase quality yield (reducing waste and off-grading)
- Increase product consistency (reducing costs in the value chain)
- Reduce effluents (both air or water)
- Meet compliance requirements (be a responsible corporate citizen)
- Improve healthy and safe working conditions in the workplace (health and safety)
- Reduce production costs (reducing energy costs)

c. Environmental Innovation

Sustainability is now front and center in response to an increased global understanding of the impacts of climate change, and that economic development, environmental health and the well-being of the planet are all interconnected. Our achievements in sustainable development demonstrate our leadership in understanding and promoting sustainability throughout the entire value chain. Our guiding principles and policies for environmental stewardship and sustainability, focus on compliance, conservation, responsibility, and in promoting the three R's: reduce-reuse-recycle, ensuring environmental stewardship for present and future generations as a fundamental cornerstone of a safe, modern, and sustainable business.

Our Innovation Management is aligned to meet our customers' goal of progressing towards 100% recyclable and reusable packaging.

d. Open Innovation

Open innovation provides significant business opportunities as it can reduce costs, accelerate time to market, increase differentiation, boost efficiencies, enhance innovation processes, and create new revenue streams for the company. We recognize the importance of open innovation and engage with technology providers, customers, and suppliers to develop new products and processes to create customer value. IVL participates in several consortia and university-led research programs, providing its development capabilities to test ideas developed in research laboratories. Through these efforts IVL also helps train new scientists and engineers in bridging innovation between laboratory scale and industrial scale.

e. The Circular Economy

We have the opportunity to play a leading role in bringing customers of recycled products into the product value chain and developing ways to include recyclability into all products. This is a very important priority for us and is included in our climate change strategy.

f. Research and Development

We have eleven Research & Development (R&D) centers worldwide as part of our innovation plan. To retain an edge and competitive advantage in our business, we leverage innovation to drive efficiencies and effectiveness through improvements in systems and processes.

For the PET segment, R&D is focused on specialty polymer developments in the United States. For the Fibers and Yarns segments, research is conducted in Asia, Europe and the United States, using a Centers of Excellence model. R&D is coordinated at the vertical segment level focus groups – automotive and industrial, hygiene and medical, and apparel and home.

COLLABORATION FOR A FULLY CIRCULAR ECONOMY

Polyethylene Terephthalate (PET) is widely used in producing plastic packaging, however, only around 20% of this material is recycled worldwide while the rest is either incinerated, disposed of in landfills, or poorly disposed of and allowed to leak into the environment. As the global industry leader in PET production and one of the largest recyclers, we are breaking new ground by partnering with Unilever, the transnational consumer goods company, and Dutch start-up Ioniqa, to tackle this mounting challenge.

Ioniqa, a clean-tech spinoff from the University of Eindhoven, has developed a cost-effective proprietary technology that is able to “close the loop” for plastics, taking any non-recycled PET waste, such as colored bottles, and breaking them down to the base molecular level, while separating the color and other contaminants. The molecules are converted back into transparent virgin grade quality PET at our facilities.

With 75 production sites in 25 countries worldwide, we are playing a key role in the implementation of this pioneering technology. There is confidence among the three partners that the technology will pass the development stage and can be replicated on an industrial scale. Chemical recycling will allow the conversion of all post-consumer PET waste back into monomers and subsequently into high-quality food grade PET. It is estimated that circular PET can be ready by the end of 2019.

This partnership has resulted in the creation of an “after-use PET plastics economy” that will help drive increased collection and reduce leakage of waste into the environment.

Each partner is committed to contributing to having packaging that contributes to the circular economy and tackling the issue of global waste: Ioniqa, through the development of its innovative technology; Unilever which has committed to having all of its plastic packaging as either reusable, recyclable or compostable by 2025; and IVL, which is moving beyond the role of a polymer manufacturer to one whose recycling operations make up a growing portion of its portfolio.

WELLMAN INTERNATIONAL TEAMS UP WITH THE ROYAL COLLEGE OF SURGEONS IN IRELAND (RCSI) IN RESEARCH PARTNERSHIP TO PREVENT BEDSORES

- Wellman International, a wholly-owned subsidiary of IVL, is one of the largest European producers of polyester staple fibers with a strong heritage in servicing the hygiene and healthcare, domestic bedding and home furnishings, and industrial and automotive sectors, for both the European and global markets. Wellman commissioned a strategic R&D program to deliver high-value added products to the market, responding to an increasingly competitive and demanding market environment.
- One initiative within this R&D program was the development of specialty fiber products to help prevent pressure ulcers (otherwise known as bedsores). Bedsores significantly impact healthcare budgets and are often the trigger for admission to hospitals or long-stay facilities, with recent data from the Agency for Healthcare Research and Quality (AHRQ) in the US estimating annual spending of between USD 9.1 – USD 11.6 billion.
- Building on extensive experience acquired through fiber developments in the domestic bedding and hygiene sectors, Wellman applied this knowledge to develop innovative fiber products with targeted functionality. The top layer of the “PU Pro Mattress” is a unique fiber blend with moisture vapor transmission properties, drawing moisture away from the skin and inhibiting bacterial build-up thereby preventing skin damage. The base layer of the mattress is developed from “Breathair” fibers, an innovative fiber technology which facilitates weight distribution and allows for optimum resilience and durability.
- The research collaboration comprises Wellman International and the Royal College of Surgeons in Ireland (RCSI), a world-class university and an international non-profit health sciences institution in Dublin which focuses on education and research to drive improvements in human health worldwide. The pioneering partnership brings together RCSI’s clinical research and expertise in patient care, together with Wellman’s deep experience in materials development to generate new knowledge and innovations, which led to the development of the PU Pro mattress, made of highly specialized fibers with proven Moisture Vapor Transmission (MVT) and weight distribution functionality.
- This novel bedding material is an important example of the continued innovations being promoted together with partners.



(L) Professor Zena Moore, Head of the RCSI School of Nursing & Midwifery and (R) Celene Dolan, Marketing & Product Manager at Wellman International



Laboratory at Orion Global, Klaipeda, Republic of Lithuania



IVL Strategy Meeting, 2018

Risk and Crisis Management

IVL has an Enterprise Risk Management framework that uses top-down and bottom-up approaches to identify and manage current and future economic, environmental and social risks and opportunities arising from the company's business activities. This is led by the Board, the Sub Committee of the Board and senior management. This covers the assessment and review of internal and external risks, including global risks and factors that may affect the Company's operations due to increasing business and international operations. Respective business heads, who are also members of the Sustainability and Risk Management Committee, as well as Members of Business Risk Management Committees, closely monitor key business risks and ensure adequate preventive measures and controls for mitigation. All significant risks identified are analyzed, recorded, reported and appropriate mitigation measures are initiated. The risk management report together with the risk mitigation plan is reviewed quarterly by the various committees at the business segment and plant level. In addition, the Sustainability and Risk Management Committee reviews business risks, internal and external, sensitivity analysis of the business plan, green field, merger and acquisition projects to ensure sustainability, especially the environmental and social impacts to business operations.

Risk Assessment

IVL has a Sustainability and Risk Management Committee ("SRMC"), a subcommittee of the Board. The Company's SRMC reviews the Company's performance on sustainability, assesses the risks associated with aspects on sustainable development and appraises the Board of risks with potentially significant impacts to ensure the institutionalization of robust business processes, procedures and policies. In addition, there is an effective process to evaluate and advise the Board on significant risks and uncertainties that could adversely impact sustainable and profitable growth. The Committee reports to the Board periodically

on its activities and evaluates its performance on an annual basis by reference to its charter and current best practices. Respective business heads who are members of the SRMC also closely monitor key business risks.

The risks pertaining to human rights risks at our work place, in supply chain are also part of the risk management. More details on human rights risks are given in other chapter of this report.

IVL management and businesses place significant importance to risks relating to climate change as the same is inevitable and is going to have potentially serious implications for businesses. Post-COP21, IVL anticipates more environmental, social, political, and economic repercussions. The Company has carried out Climate Change Risk and Opportunity analyses including risks relating to water, shadow pricing analysis and its implications on business profitability. More details on climate change risks are given in Annual Report of the Company available on our website, www.indoramaventures.com.

Encouraging a Positive Risk Culture

We advocate a positive risk culture at our corporate office and in all our operations which helps to:

- Strengthen effective risk management;
- Promote sound risk-taking;
- Address immediate behavioral and other relevant issues ensuring a safer and healthier environment for our workforce;
- Ensure that emerging risks and excessive risk-taking, including M&A activities are assessed, escalated and addressed.

In continuously promoting a positive risk culture, some of our programs include:

- Employee Suggestions, Incentives
- Near-Miss Reporting
- Training and Awareness Creation



LEADERSHIP

We lead the industry by
providing the better.
We measure our success
from the response to
your needs.

To protect and conserve the environment where we conduct business
To take an active role in social responsibilities as a good corporate citizen
To ensure economic prosperity and sustainability to all our stakeholders

Environmental Management

For IVL, the Environmental Management System (EMS) is an important tool to manage the impacts of our activities on the environment. It provides a structured approach to planning and implementing environmental protection measures and enables us to achieve the following benefits:

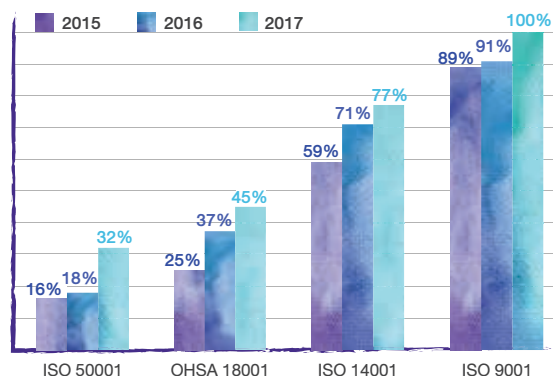
- Setting up and reviewing environmental goals and targets
- Environmental stewardship through operational eco-efficiency and resource conservation
- Establishing programs and processes to meet the set goals and targets
- Identifying opportunities for improvement
- Ensuring environmental compliance and reducing the risk of non-compliance
- Enhancing employee morale, and our image with external stakeholders
- Increasing employee awareness of environmental issues and responsibilities
- Enhancing compliance and preventing pollution
- Increasing efficiency/reducing costs

77% of our operations have ISO 14001 Environmental Management certification and 32% of our operations have ISO 50001 Energy Management certification. IVL's ISO Certification status is available on our website.

Carbon Footprint

In 2017, IVL calculated direct (GHG Scope 1) and indirect (GHG Scope 2) and selected criteria of Scope 3 emissions for all of its operations globally in accordance with GHG Accounting Protocols - Greenhouse Gas Protocol on Corporate Accounting and Reporting by the World Resource Institute (WRI)/World Business Council for Sustainable Development (WBCSD) and ISO 14064-1:2006.

IVL Certification Status



IMPROVING OPERATIONAL EFFICIENCY AND REDUCING ENVIRONMENTAL IMPACTS:

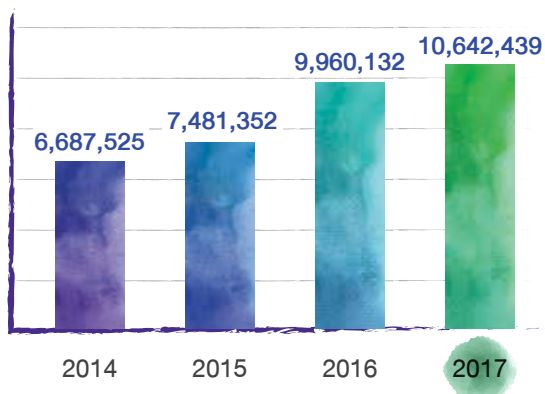
Indorama Petrochem Limited (IRPL), a wholly-owned subsidiary of IVL in Rayong, Thailand, has closely monitored and optimized the performance of dehydration column profile controls, reducing the consumption of entrainers by over 18% from 0.43 kg/MT of production to 0.35 kg/MT. This has resulted in reduced emissions and USD 62,721 in cost savings to the Company. By optimizing oxo-mother liquor purge and on-stream factors, IRPL has reduced consumption of its main raw material, paraxylene, by 414 MT in 2017, resulting in cost savings of USD 348,000.

In 2017, overall GHG intensity was reduced slightly as compared to last year which is in-line with our 2020 target of a 6% reduction from 2013 levels.

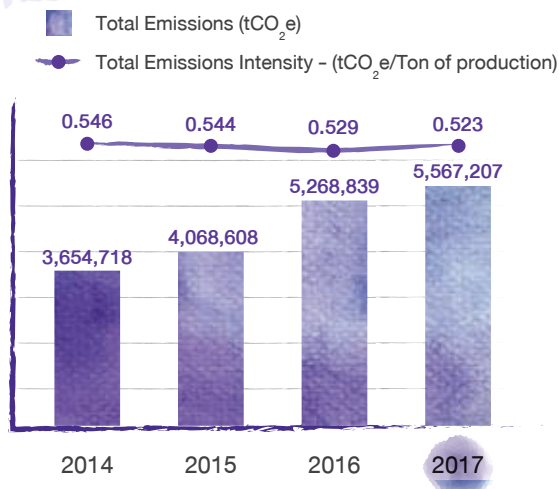


Indorama Ventures Europe B.V., The Netherlands

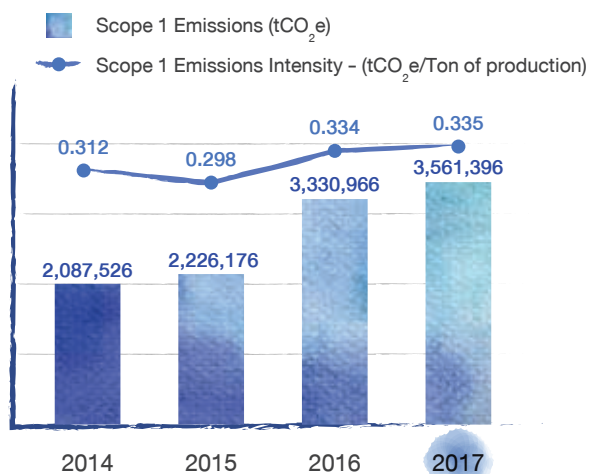
Total Production (Tons)



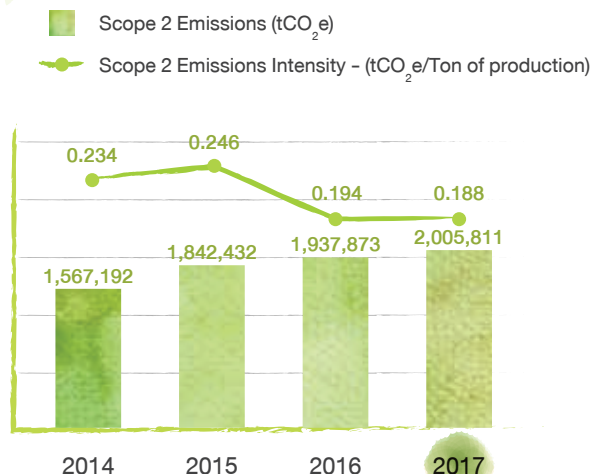
Total GHG Emissions - Scope 1 & 2



Direct GHG Emissions - Scope 1



Indirect GHG Emissions - Scope 2



RECORD LOW ENERGY AND GHG INTENSITY

IRPL achieved its lowest historical energy and emissions intensity in 2017 through improved operational efficiencies, effective plant monitoring, improved reliability, and by maintaining a higher on-stream factor. This resulted in reduced energy intensity of 2.76 GJ/MT from a design value of 4.13 GJ/MT and a 7.4% reduction in GHG Scope 1 and 2 combined emissions intensity from 0.2843 tCO₂e/MT of production in 2013 to 0.2632 tCO₂e/MT of production in 2017 in-line with IVL's overall GHG reduction target.



Indorama Petrochem Limited (IRPL)

IVL's Targets relating to the Company's Carbon Footprint

2020 Targets

1. IVL has a corporate target of a 6% carbon intensity reduction from 2013 levels
2. Disclosure of 100% of Scope 1 emissions, 90% of Scope 2 emissions, and 10% of Scope 3 emissions
3. 100% reporting assurance on plant coverage
4. ISO 9001 Certification for 100% of operations and ISO 14001, ISO 50001, OHSAS 18001 (or its equivalent) for 98% of operations

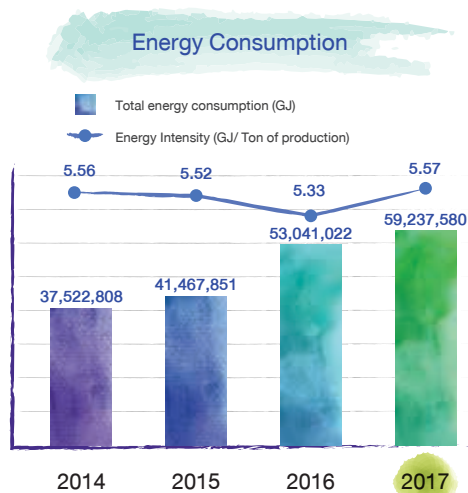
(*applicable to IVL Group sites which have been in operation in IVL Group for at least two-years)

2017 Achievements:

1. 1.13% reductions of combined Scope 1 and 2 emissions over 2016
2. Achieved 100% Scope 1&2 emissions disclosure in 2016
3. Achieved 100% reporting assurance
4. Achieved ISO 9001 Certification for 100% of operations, ISO 14001 for 77% of operations, ISO 50001 for 32% of operations, and OHSAS 18001 (or its equivalent) for 45% of operations

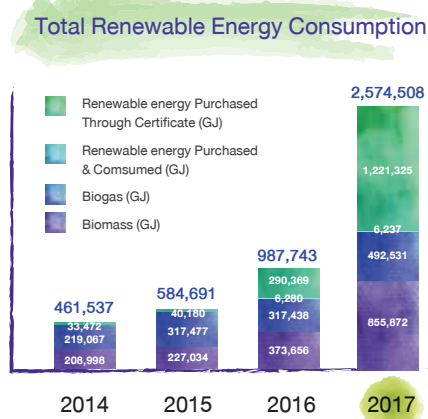
Energy

IVL's focus on energy efficiency has been continuously increasing as this further helps the Company's competitiveness by reducing energy costs and dealing with climate change. The Company has been undertaking several energy saving initiatives concurrently.



Renewable Energy

Two of our plants, namely, Orion Global Pet in Lithuania, Indorama Ventures Quimica in Spain are using 100% renewable electricity. Indorama Holdings in Lopburi, Thailand, has installed solar power plant to generate green renewable energy for captive consumption. In 2017 OGP reduces its GHG emissions by 65% as compared to year 2016 by replacing fossil fuels with biomass.



Remark : Excluding 100,811 GJ renewable energy generated and sold

IVL is committed to continuously improving its operational efficiency, exploring opportunities for increasing renewable energy year on year in our operations.

ENERGIA AWARD

Indorama Ventures PTA Montreal LP, or IVPTA, a wholly-owned subsidiary of IVL, had large amounts of low-pressure saturated steam (25 psig) from its p-X oxidation process. IVPTA was looking for a solution to value it, and subsequently installed a turbine capable of collecting all excess steam from the plant and converting it into electricity. This was fed back into the plant's network and reduced its overall consumption by 20% or 1.8 MN USD/year.

IVPTA presented this project in the Energia contest in Quebec, sponsored by the Quebec Association for Energy Management (AQME), aimed at rewarding excellent achievements in energy efficiency and management in the province. IVPTA presented this project under the industrial or manufacturing process category (energy cost of CDN 5MN/year and more) demonstrating its commitment to energy efficiency in the Energia contest – and won the award.



Environmental Compliance

We have a consistent and organized environmental compliance management system in place and are proactive throughout the year in ensuring that our operations are in accordance with all applicable environmental laws, regulations, standards and other requirements. In the last few years, environmental reporting has gone beyond simply demonstrating compliance with environmental and other applicable regulations.

Environmental compliance benefits IVL by saving on costs but also creates value by offering numerous protections – to our employees, contractors, corporate assets, communities surrounding our plants, and most importantly, our reputation.

It also keeps hazardous air emissions, spills, and waste from our operations within regulated limits. In adopting stringent environmental compliance management, we ensure that there are no cases of non-compliance while improving public health, economic productivity, and the environment. In alignment with our sustainability objectives and to support our commitment of having no major environmental non-compliance, we have performance-based incentive programs for senior management, heads of plants and concerned EHS managers.

FY 2017

Target:

- No major cases of environmental non-compliance

Achievement:

- No major cases of non-compliance across all of our operations

We recognize that both the environment and economy are closely-linked and that environmental sustainability is the key to our future success.

Committed to protecting the environment

- We are embedding environmental performance and sustainability principles within all of our operations, management systems and practices.
- We are efficiently utilizing our resources, and have adopted the practice of reducing, reusing, and recycling in addition to promoting workplace health and safety at all of our operations.
- We have a rolling target of having no significant cases of non-compliance with regards to environmental regulations, which we will achieve through effective environmental compliance management.
- We have a system of informing and updating the board level committee on the status of the Company's overall compliance on a quarterly basis.

We continuously monitor the impacts of all our products on the health and safety of our customers and analyze the results for improvements. This is a continuous and ongoing process and there have been no adverse impacts currently from any of our products.

In 2017, there were no incidents of significant regulatory non-compliance during the reporting period except in the following two cases:

- One of our companies in the United States was served with a notice of an environmental violation in 2016. The same had been finalized in 2017 and the entity paid a fine of USD 32,464.
- One of our companies in China paid a fine of USD 14,769 for non-compliance of an environmental regulation.

Corrective actions were taken in both cases and the lessons learned were shared with all concerned in the group as part of our knowledge sharing efforts. Management has issued additional guidelines to ensure full compliance given our stated commitment to protect environment.

Beyond Compliance

Guangdong IVL PET Polymer Kaiping Limited, our wholly-owned subsidiary in China, has undertaken environmentally-friendly initiatives installing a Nitrogen Oxides (NOx) reduction system valued at over USD 230,000 to reduce NOx values beyond limits permitted by the government.

The initiative has resulted in environmental, social and economic benefits which include:

- Less NOx emissions into the air, much lower than permitted levels
- No solid or liquid contaminant is being generated or secondary pollution during operations
- Low running costs due to usage of less expensive catalysts
- Easy to handle, transport and store as the new reducing agent is unflammable and non-explosive

In 2017, with the exception of the two examples mentioned, no other significant fines were paid for non-compliance of environmental laws or regulations concerning the provision and use of our products, and there were no monetary or non-monetary sanctions against IVL.

Furthermore, there were no grievances filed concerning environmental impacts.

Climate Strategy

The evidence of rapid climate change is compelling - the planet's average surface temperature has risen about 2.0 degrees Fahrenheit (1.1 degrees Celsius) since the late 19th century, a change driven largely by increased carbon dioxide and other human-made emissions into the atmosphere. Most of the warming occurred in the past 35 years, (Source: <https://climate.nasa.gov/evidence/>) and 17 of the 18 warmest years on record have occurred since 2001. Our planet has already experienced the impacts including frequent wildfires, longer periods of drought and an increase in the frequency, duration and intensity of tropical storms. Growing populations have increased demands for food, materials and energy which in turn, cause a depletion of natural resources and generate pollution from production processes.

We are fully committed to finding pathways towards developing effective low-carbon strategies to alleviate the activities that cause climate change. We see the circular economy as an important instrument in combatting climate change and an opportunity to strengthen our recycling business globally. Through innovation, we aim to create products that can be used at their maximum value for as long as possible. We have proactively established our targets as indicated in our Climate Strategy 2020 focusing on six key areas.

We have been acknowledged through important achievements in addition to being recognized by external organizations such as RobecoSAM and CDP. Looking ahead, we remain committed to achieving our targets and will continuously raise the bar to create a sustainable strategy that leads to greater value for our stakeholders, bringing us closer to achieving our vision of making great products for society.

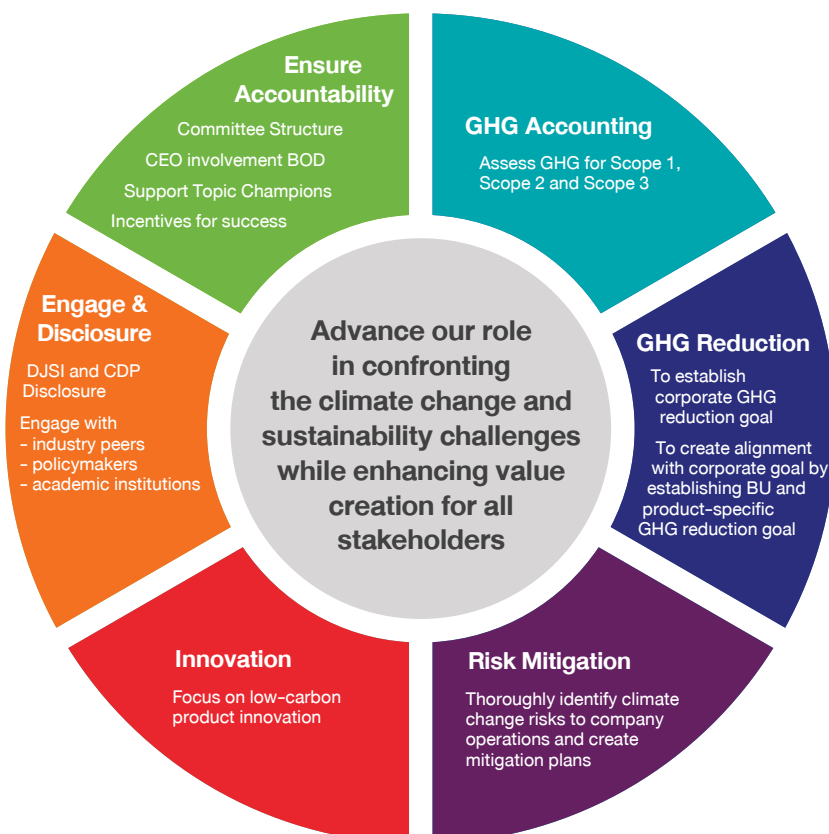
Climate change is a major risk

It is important to recognize that climate change is one of the most compelling risks that we are facing today, with impacts on the environment, which in turn, affect businesses, our economies and our livelihoods. Extreme weather conditions such as the recent Hurricane Harvey in Texas left large areas flooded, forcing tens of thousands to evacuate their homes and many businesses, including oil and gas companies, to suspend their operations.

Despite the overwhelming scientific consensus and widespread recognition of the threat, the actions required are substantial and require actions from the individual, organizational, national and transnational levels. Therefore, dealing with climate change should be a serious priority and should not be ignored.

At IVL, we recognize these risks and are committed to taking action. In addition to our Climate Strategy 2020, we developed a Climate Strategy Corporate Standard that guides our global operations in terms of best practices for the climate, including GHG management, with key actions and KPIs. More details on this are available in our 2017 Annual Report, available on our website www.indoramaventures.com.

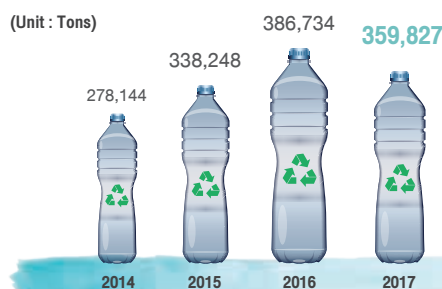
The amount and type of fuels consumed in the production process are major sources of greenhouse gas (GHG) emissions. In response, we initiated many projects in 2017 to improve energy efficiency.



- **Indorama Ventures – Quimica, Spain**
The optimization of running standby furnaces and boilers can help minimize natural gas consumption and reduce GHG emissions. A total of 200 NM³/hour of natural gas consumption was saved from this concept to in-process implementation.
- **Indorama Ventures PTA – Montreal, Canada**
We made use of an opportunity to use biogas recovery from a wastewater treatment plant onsite as co-feed with natural gas for a hot oil furnace. The reduction in natural gas consumption together with portions of clean biogas resulted in reducing GHG emissions by 2,340 tCO₂ eq/year.
- **Indorama Petrochem – PET entity, Thailand**
To support our corporate long-term GHG emissions targets and to improve both our environmental and economic operations, we decided to switch from furnace oil and natural gas to biomass for its heaters. The newly-designed heater can be fed with many kinds of biomass materials including wood chips, wood pellets, and palm kernel shells. With cleaner fuel consumption, Scope 1 GHG emissions were reduced by more than 50% in 2017 from 2016.

RECYCLING

Expanding and improving recycling are important ways to help address climate change. Manufacturing goods from recycled materials typically requires less energy than producing goods from virgin materials. Recycling saves natural resources, reduces greenhouse gas emissions, avoids waste to land fill and water pollution. We have strong focus on recycling and as such our recycling business has grown from just four tons in 2011 to over 350,000 tons. We are continuously exploring opportunities for expanding recycling business. Our most recent collaboration with Unilever and Ioniqa to recycle colored PET bottles into virgin PET is an innovative and important example of our continuous efforts. Further details of this initiative are provided in the Innovation Management section of this report.



Confederation of Danish Industry



FiberVisions[®]
An Indorama Ventures Company

FiberVisions A/S, our subsidiary in Denmark, voluntarily entered into a joint-agreement with the Danish Energy Agency to support a reduction in total energy consumed in Denmark by 7 percent by 2020, and becoming independent from fossil fuels by 2050, under the 2012 Energy Efficiency Directive.

Through many energy saving projects implemented and special studies conducted of energy consumption to identify potential areas of actions, FiberVisions A/S received increasing energy saving over the years. In 2017, energy saving was 775 MWh, which was 10% increasing compared to the starting year of this agreement in 2015. The shift in the Public Service Obligation (PSO) tariff for renewables away from electricity bills and energy taxes in 2016 has also played a part.

LCA/Carbon Footprint

In 2017, we completed Life-cycle assessments (LCAs) at all of our operating sites in Asia and some sites in the US and Mexico. The LCA data and results of our US and Mexican entities were verified externally to ensure its quality and accuracy. During this process, training was provided at all sites on LCAs in-line with ISO14040/44:2006 standards. We plan on expanding LCAs to 100% of our operating sites by 2020, and have also implemented GHG Scope 3 accounting globally.

Scientific-Based Target Study

We review relevant climate issues and develop targeted scientific studies in regards to Scope 1 and Scope 2 emissions reduction opportunities. This high-level analysis is meant to identify potential location-based opportunities to lower our carbon footprint through renewable energy, and other ways to improve operational efficiencies.

Shadow pricing progress/internal carbon pricing

We conducted an assessment in order to understand the sensitivity of the price of carbon on our business, and are taking further taking steps to study and implement a policy to embed the internal cost of carbon in our operations including M&A decisions.

Task Force on Climate-Related Financial Disclosures (TCFD)

We have a plan to use 2-degree scenarios to map out potential financial implications and to be aligned with guidance from TCFD after further research. A set of comparable and consistent disclosures following this guidance can be used to efficiently demonstrate our climate change practice and resilience to stakeholders.

Product Stewardship

While our products are not harmful, we are always seeking ways to lower the environmental impact and toxicity in our raw materials and other chemicals. As such, product stewardship plays an important role in our operations in reducing any adverse environmental, health and safety impacts of our products.

Innovation Management and Product Stewardship include an inter-related set of business activities, policies & procedures, and organizational design. While Innovation Management is sharply focused on product development, it is necessary to include a range of Product Stewardship goals in the processes.

Our Company Product Stewardship encompasses three sets of procedures – product safety, process toxicity, and eco-impact including end-of-life disposal. The Product Stewardship function focuses on the environmental impact of the products in their entire life cycle from cradle to grave. It enables us to identify the product stages to further improve their design, manufacture, raw materials, transportation, and value chain to lower their ultimate impact on the environment. This also applies to our operations and our value chain, both upstream and downstream.

Product Toxicity

We continue to lower product toxicity by:

- Ensuring compliance of products as used by customers or end consumers
- Lowering toxicity impacts during the manufacturing process
- Avoiding emissions in manufacturing at customer sites

Though toxicity is not a concern for any of our products, we stringently monitor our raw materials. We have evaluated chemicals for exposure to our employees and the environment, and eliminated volatile products that may present a risk. We take a proactive approach, actively engaging in assessments and ensuring that we meet the European Union's REACH regulations and other compliance requirements. Any potential issue that is discovered is actively replaced with known, registered materials or with alternatives that are safe based on their chemistry.

Life Cycle Assessment

Life Cycle Assessments (LCAs) provide an important framework and method for identifying and evaluating environmental impacts associated with the complete life cycle of our products, for example, from raw material extraction to product disposal. LCAs also help us in differentiating our products from those of our competitors. In 2017, we completed LCAs at our plants in Asia and some plants in the United States in accordance with ISO14040/44:2006. We plan to extend LCAs to the rest of our operations in 2018 with completion expected in 2019.

LCA coverage

Over 70% of our existing total production is covered and we are targeting over 95% production coverage by 2020.



Beyond Compliance

We aim to stay ahead of the curve by going beyond conventional compliance requirements. Our commitment to lowering our overall environmental impact includes a target of 100% Energy and Environmental Management Systems in all our operations by 2020, and achieving 100% compliance of the European Union's REACH regulation by 2018.

Renewable Resources

Increased production of biofuels depends on sufficient food security and attaining the right balance between food production and industrial needs. The sustainability imperative also applies to concepts of renewable resources for IVL.

We have been increasing the use of renewable resources year-on-year, including solar, wind, biomass, bio-based raw materials (which include cellulose from sustainably cultivated plantations), polylactic acid (PLA), and bio-MEG.

Glanzstoff, one of our subsidiaries, is a major manufacturer of technical yarns, cords and fabrics for the rubber and composite industries, and a leader in the production and processing of high-tenacity viscose filament yarns for technical applications.

Multiple research projects at Glanzstoff are dedicated to meeting essential future needs, such as formaldehyde-free dipping systems, bio-based fiber-recycling as well as new applications for bio-based man-made fibers.

Use of bio-based raw materials

As a rayon producer, Glanzstoff provides a high-tech product derived from renewable sources. The initial product for rayon production is derived from pulp and cellulose from sustainably cultivated plantations.

Reuse of in-process products:

- Gases containing sulfur that occur during production are converted to sulfuric acid in the world's most modern air purification system by means of a catalytic oxidation process allowing us to undershoot strict emission limits. Sulfuric acid produced during air purification is fed directly back into the spinning process.
- Process water is treated in a multi-stage procedure in which sodium sulfate is isolated as a valuable by-product.

Product Design Criteria

Our product design criteria includes environmental impacts connected with the procurement of raw materials, product manufacturing, product use and product maintenance as well as a reduction in hazardous materials, use of recycled components and support for our customers initiatives in weight reduction.

Light weighting of end products and products which lower emissions at the customer's end (avoided emissions) have become a strategic lever that provides multiple benefits including cost and life cycle impacts. For example, there is a clear relationship between the fuel economy of a vehicle and its weight.

We set up a Product Stewardship Working Group with subject matter experts to share practices and assist one another in improving the product safety assessment of our products. We are also engaging in comprehensive LCAs of our products and will develop processes using the results to define future development programs.

Reducing our cost to purchase energy

Efficiency and cost reductions are important components of our energy strategy, which includes increased use of green power wherever available. Green power provides both an economic and an environmental return and supports our mission in lowering the carbon intensity of our operations. Two of our plants, Orion Global PET in Lithuania and Indorama Ventures Quimica in Spain, are using 100% green energy. Several other entities are using green energy such as solar, wind power, and biomass.

Globally, the average Global warming Potential (GWP) of one ton of dipped rayon fabric is significantly lower than one ton of dipped PET-HMLS fabric. Even a conservative comparison of best-in-class technologies (conversion and dipping) gives comparable GWP values, since PET dipping is more energy intensive.



Sustainable Water Management

Water is the world's most crucial resource. Increasing water stress, droughts, floods, and a rise in sea levels are growing concerns in both the developed and developing world. The Global Risks Report 2017 of World Economic Forum lists the water crises among the top ranked global risks. The world's water is increasingly becoming degraded in terms of quality, threatening the health of people and ecosystems. There is pressure for collective action, including the private sector, for improved and efficient water management.

We are conscious of our responsibility and our vision is to produce great products for society through the effective use of natural resources through top-class industry best practices. For these reasons, and given the importance of this resource in our operations, water was identified as one of the material topics in our 2017 materiality assessment, and we adopted a global water management policy and strategy.

We are committed to conserving all natural resources, including water consumption and discharge.

IVL is committed to sustainable water management (including water withdrawal and discharge) by complying with all applicable environmental laws, international standards, and regulations in the countries where we have operations, and will be proactive in demonstrating leadership and responsibility in-line with our values.

Zero Liquid Discharge

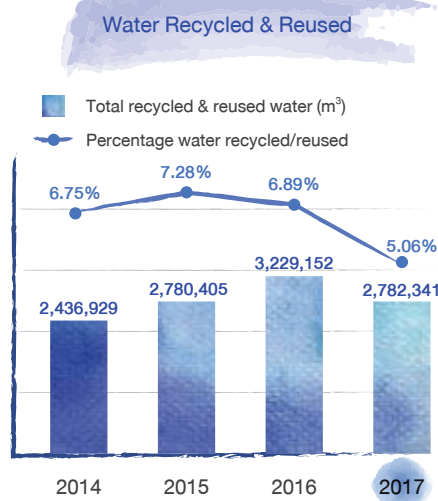
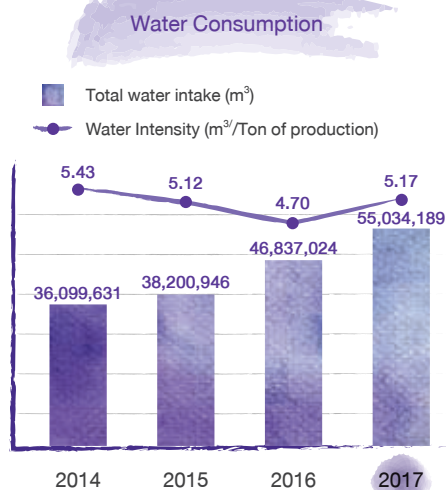
We remain committed to reducing water consumption based on the 3Rs (Reduce, Reuse, Recycle) to ensure the most efficient water consumption.

To reduce fresh water withdrawal, we are working to build wastewater treatment plants to recycle and reuse water in most of our operations.

2018 Water Intensity Target: To maintain or reduce the intensity of over last year.

Efficiency in water consumption and wastewater generation

IRPL operates a water treatment facility and recycles treated effluent through a reverse osmosis (RO) membrane unit to produce demineralized (DM) water. Increased recycling is achieved through better monitoring and improved reliability of the RO membrane unit. Savings amounting to over USD 67,000 was achieved as a result of low-effluent discharge and reduced raw water consumption.



In 2017, water consumption increased over the previous year due to the acquisition of water intensive plants in fiber business.

Rain Water Harvesting:

IVL Dhunseri Petrochem Industries Private Limited, an IVL subsidiary in Panipat, Haryana, India, established a rainwater harvesting system at its plant in 2017 to supply surface water to subsurface aquifers (before it's lost as surface runoff). The amount of rainwater estimated to percolate into the ground is over 41,500 m³/year, which amounts to approximately over 30% of 2017 annual fresh water withdrawn by the plant. This water will be free of pollutants as well as salts, minerals and other man made contaminants, and will help in reducing soil erosion and contamination of surface water with pesticides and fertilizers by replenishing groundwater. We have plans to extend this system to additional sites in future.

Water Risk Management

Water is one of the most important resources for our business continuity and long-term sustainability. The risk management committees of plants and business segments regularly evaluate water risks and opportunities. We communicate on an ongoing basis with local authorities to check ground water levels and levels in reservoirs. The business continuity plans of our entities include water as one of the elements in their plans.

With the help of the World Business Council for Sustainable Development (WBCSD)'s Global Water Tool, we conducted a water sensitivity analysis to identify water stress locations at all our operations globally. This tool allowed us to identify:

- The number of sites in extremely water-scarce areas
- The sites that face the greatest risk and the initiatives must be undertaken in the future
- The local impact on water availability and pollution
- The projected change in water stress by 2020
- Baseline water stress, water scarcity index
- Water Risk Assessment – current and future conditions

In 2018, we will work with all of our plants to evaluate the possibilities and options to reduce water consumption, increase the recycling and reuse of wastewater, make use of wastewater treatment plants to achieve our goal of zero liquid discharge, and establish targets at the entity and group level.

Our water risk assessment includes:

- Volume and intensity of water intake
- Portions of recycled and reused water
- Quality of water discharged
- Total and percentage of withdrawals located in water-stressed or water-scarce areas
- Average water intensity in water-stressed areas
- Percent of facilities with water-related compliance violations
- Regulatory changes and pricing implications
- Business impacts of water related incidents
- Regulatory, reputational and physical risk assessments

We also carry out environmental impact assessments for new operations in compliance with local regulations. Environmental due diligence during acquisitions also includes a water risk assessment. Such assessments include the potential damage to the environment or impact to natural resources and necessary preventive and remediation measures that need to be undertaken.

Based on the assessment using the WBCSD Tool in 2017

- 8.1% of plants are in areas with extreme water scarcity
- 27.4% of plants are in areas with water scarcity
- 17 plants are in areas facing water stress



Petform (Thailand) Limited, Lopburi, Thailand

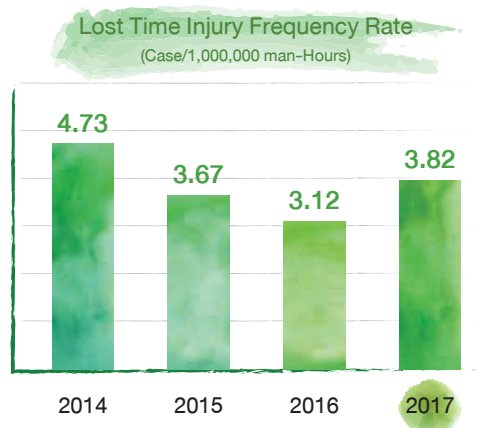
Health and Safety

At Indorama Ventures, we place health and safety (H&S) at the forefront of our activities. We believe that the ongoing health and safety of everyone involved in and impacted by our work, including our employees, contractors, communities and the public, is essential to our license to operate. Providing a safe and healthy workplace not only boosts the morale of employees and contractors, it also reduces lost work hours and costs, and minimizes illness and potential injuries.

Health and Safety Management System and Risk Assessments

Health and Safety Management Systems are in place at each of our operations around the world. Each facility is mandated to implement a safety program to provide and maintain a safe and healthy work environment and to provide adequate controls of health and safety risks in the workplace.

In 2017, we continued to invest in occupational health and safety training for all our employees. This investment has resulted in the improved health and safety of our employees through increased awareness and a higher near-miss incident reporting rate of 1,007 in 2017 from 732 in 2016. However, total recordable injuries and lost time due to injuries increased in 2017 from 2016 due to more accidents at our plants acquired in 2017, which are more labor intensive, in addition to year-on-year improvements in record-keeping. We will pay more attention to and improve health and safety practices at these entities.



2018 target:
2% reduction of TRIR and LTIFR over previous year

As of 31 December 2017, 45% of total operations have OHSAS 18001 occupational health and safety management system certifications in place compared with 37% of operations in 2016. We have set a target of achieving certification for 98% of operations by 2020 for all entities which are two years old in our group of companies.

Workplace Programs for a Healthy Work-Life Balance

Healthy employees contribute to a stronger company. Companies with a reputation for encouraging work-life balance are attractive to employees and draw a valuable pool of candidates to new job openings. These companies also tend to enjoy higher employee retention rates, which results in less time devoted to training, more loyalty, and a higher degree of in-house expertise.

We care about our employees and make every effort to create a healthy work-life balance without compromising on productivity or efficiency. We are also promoting fitness in the workplace for the improved health and well-being of our employee globally. Some of our programs include access to fitness centers, participation in charity fitness challenges, company outings, community engagement opportunities, and team-building exercises such as badminton, basketball, yoga, and running clubs.

Process Safety

Process safety is a disciplined framework for managing a plant's operations in the best possible manner in compliance with all applicable regulations, ensuring the right systems and processes are in-place from the very beginning of the design, building, and execution, through to implementation and maintenance. The objective is to ensure the prevention and control of incidents that have the potential to cause fatal accidents, fires, exposure to toxic effects, and explosions that could ultimately result in serious injuries, fatalities, property damage, lost production, and environmental impacts.

We are committed to ensuring the safety of our employee, including process safety, for efficient operations. We ensure high safety standards in the design and construction of new plants, equipment, and operations of all our plants around the world. We have rigorous process safety standards and standard operation procedures (SOPs), some of which go beyond local legal requirements, to protect our employees and contractors. We assess all of the risks in our operations and ensure that appropriate safeguards are in place.

In 2017, we began collecting data related to process safety as per the American Petroleum Industry's Recommended Practice.

Worker represented in joint management-worker health and safety committee

90.3% of our employees are involved in joint management-worker health and safety management committees at our plants. Guidelines are in place for the security of personnel and properties.

Zero Recordable Injuries

Twenty-two of our sites attained the goal of "zero accidents" in 2017. This was possible because of the strong commitment from our Group CEO through to senior management at both our corporate offices and plants.

Fatal Accident

One fatal accident occurred in 2017 in India. The contractor, conducting work at one of our plants, died due to the sudden collapse of formwork while he was checking leakage coming from the roof. He was instructed not to enter the area. However, the instructions were ignored resulting in a fatality.

An in-depth investigation took place and appropriate interventions were implemented at the site. Furthermore, what was learned about the incident, including post-incident safety measures that were undertaken, were shared with all entities in our group companies, including improving risk management practices, strengthening behavioral safety initiatives as well as the initiation of disciplinary action against supervisory staff, where applicable.

Human Rights

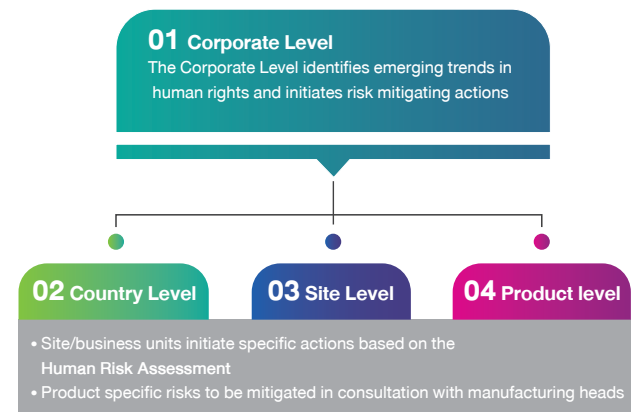
Since 2016, respect and support for human rights have been central imperatives for IVL across our value chain. We strongly believe in respecting all human rights and in abiding by the United Nations Universal Declaration of Human Rights and the International Labor Organization (ILO)'s Declaration on Fundamental Principles and Rights at Work. Our Human Rights Policy reflects the rights of all stakeholders.

A. Human Rights protections in our business value chain

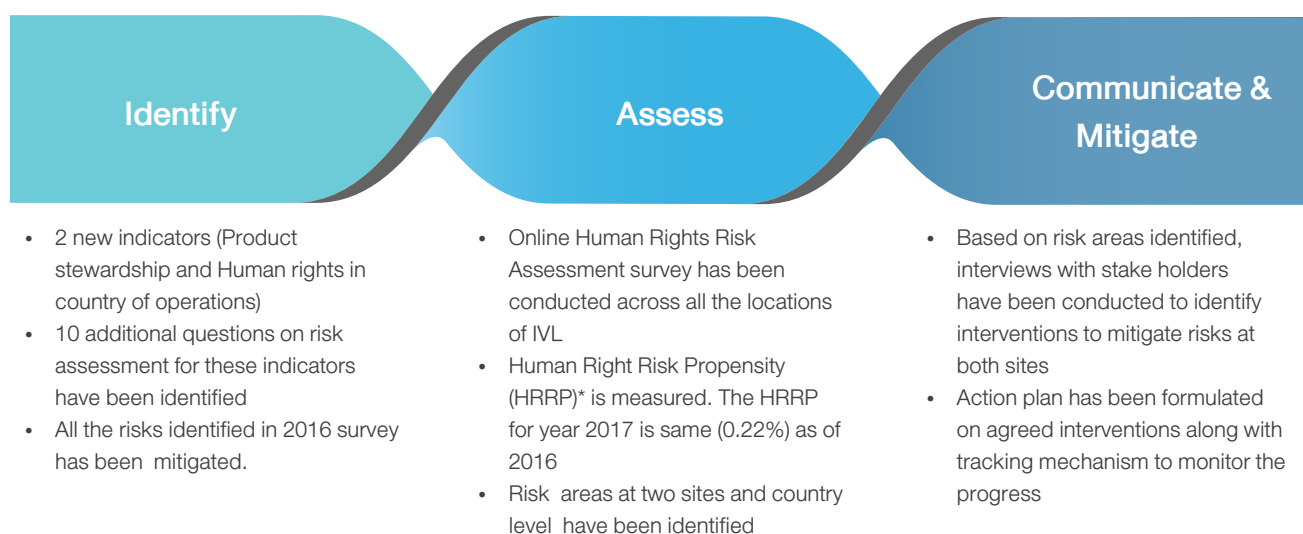
We respect the human rights of all our employees, subsidiaries, joint ventures and associates. We also ensure compliance with all applicable national laws where we have our operations. Our commitment can be seen in our Human Rights Policy, Board Non-Discrimination Policy, Diversity Policy, and HIV-AIDS Policy, among others. To ensure the remediation of potential abuses, we have a whistleblower mechanism which is applicable company-wide. Any employee with concerns regarding the human rights impacts of our activities may communicate with the whistleblower committee or through other means as mentioned in this report.

Workplace Human Rights Assessment

The United Nations Global Compact's Ten Principles provides an important framework for workplace human rights assessments. We agree that there is both a moral justification for respecting human rights in the workplace and that it also makes sound business sense. In response, we have initiated human rights assessments through a structured annual survey and acted firmly to bridge any gaps. Our survey incorporates four levels - corporate, country, site and products.



Our Workplace Human Rights Assessment (WHRA) involves a three-stage process called IACM – Identify, Assess, Communicate and Mitigate. We adopted this process in 2016 with our Online Self-Assessment WHRA survey. Based on the aggregate risk impact, the Human Rights Risk Propensity (HRRP*) was analyzed and areas of improvement were identified. In 2017, we rolled out remedial actions, ensured the closure of risks and as a continual process, carried out the three-stage assessment process for a second time. The outcome of this assessment process for 2017 is as follows:



*HRRP=Number of potential human rights risk identified / (Responses from total units*total questions)

Major areas requiring improvement and mitigating actions:

Based on the aggregate risk impact assessment and analysis of the assessment interviews, the following areas of improvement and remedial actions were identified:

Main Issues		Remedial Actions	
		Corporate Level	Country/Site Level
Safety & Security	Standard operating process for selection of private security firms	<ul style="list-style-type: none">- Guidelines developed and disseminated to our sites- Regular monitoring- Feedback and advice	Selection of private security firms should be based on their professional abilities, level of staff training, quality of equipment, any past involvement in human rights abuses, and links with political groups.
Workplace Environment	Harassment in the workplace	<ul style="list-style-type: none">- Standard training modules on defining, identifying and dealing with harassment in the workplace.- Review by the Whistleblower Committee	<ul style="list-style-type: none">- The HR Council at the site level to educate and support all employees on appropriate conduct by reinforcing the training modules to eliminate harassment.- Counselling and awareness sessions

We will continue employing our three-stage assessment to ensure that any needs are evaluated on a recurring basis to our unique risk profile and operating context.

In 2017, there were no operations and key raw material and non-raw material suppliers at significant risk for incidents of child, forced and compulsory labor.

B. Human Rights protections in our supply chain

We work with suppliers, customers and business partners to include human rights protections in our supply chain by assessing and identifying any potential and actual human rights issues and concerns. Our engagement is demonstrated through our Sustainability Commitment and managed through our Supplier Code of Conduct, Supplier Self-Assessment, Human Rights Policy and applicable national laws. Actions to manage and address any human rights risks and impacts in the supply chain are overseen and carried out through dialogue and collaboration with relevant suppliers, including contractors.

Suppliers

The supplier evaluation process, initiated in 2014 and extended to all raw material suppliers, critical non-raw material suppliers and contractors in 2015, is ongoing. Suppliers include contractors, and the process involves a systematic and harmonized approach requesting that they:

- Acknowledge the Supplier Code of Conduct
- Respond to a self-assessment questionnaire

This process enables us to:

- Assess Environment, Social and Governance (ESG) risks and identify opportunities
- Assess risks relating to human rights including child and forced labor
- Classify suppliers into high, medium and low risk groups and collaborate with them to address the findings of assessments, thereby improving efficiency and reliability in the supply chain
- Ensure that suppliers adhere to our Human Rights Policy

The risk management committees of respective businesses review supply chain risks on a quarterly basis and appropriate risk mitigation actions are initiated as needed. We aim to have a systematic supplier audit by 2020.

Customers, business partners and competitors

We respect the human rights of our customers, business partners, shareholders, competitors, and creditors in all of the countries where we have operations and largely control outcomes. This also extends to human rights impacts connected to products and services.

We respect the privacy of our customers and other business partners as mentioned in our Stakeholders Policies (Policy on Treatment of Shareholders, Policy on Treatment of Customers, Business Partners and Competitors Policy, and Trading Partners and Creditor Policy).

Any customer, business partner or other party with concerns regarding the human rights impacts of our activities may utilize the channels established in accordance with our Whistleblower Policy.



Talent Sustainability

In recent years, the petrochemical industry has seen many turbulent waters but we at Indorama Ventures have navigated successfully by focusing and delivering on our promise of prudent growth. Our extraordinary global talent pool comprised of 15,195 individuals around the world, has ensured that this growth is attainable. Our employees are our most valuable assets and are always ready to embrace the challenges of our industry environment.

The passionate global employees with multi-culture background and different mindsets and languages provide us with a unique which helps in converting challenges into opportunities for exponential growth. To ensure the sustainability of these talents, we focus on meaningful investment on our employees for developing their skills, knowledge and exposures.

A Global Employee

Our talent pool of 15,195 employees is spread across 25 countries in four continents. Some key highlights of our global workforce, as of 31st December 2017 are highlighted below:

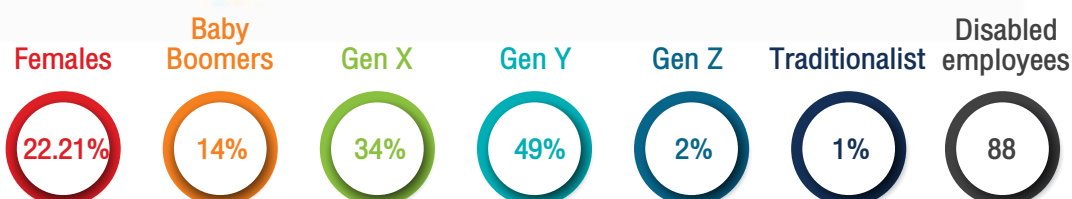
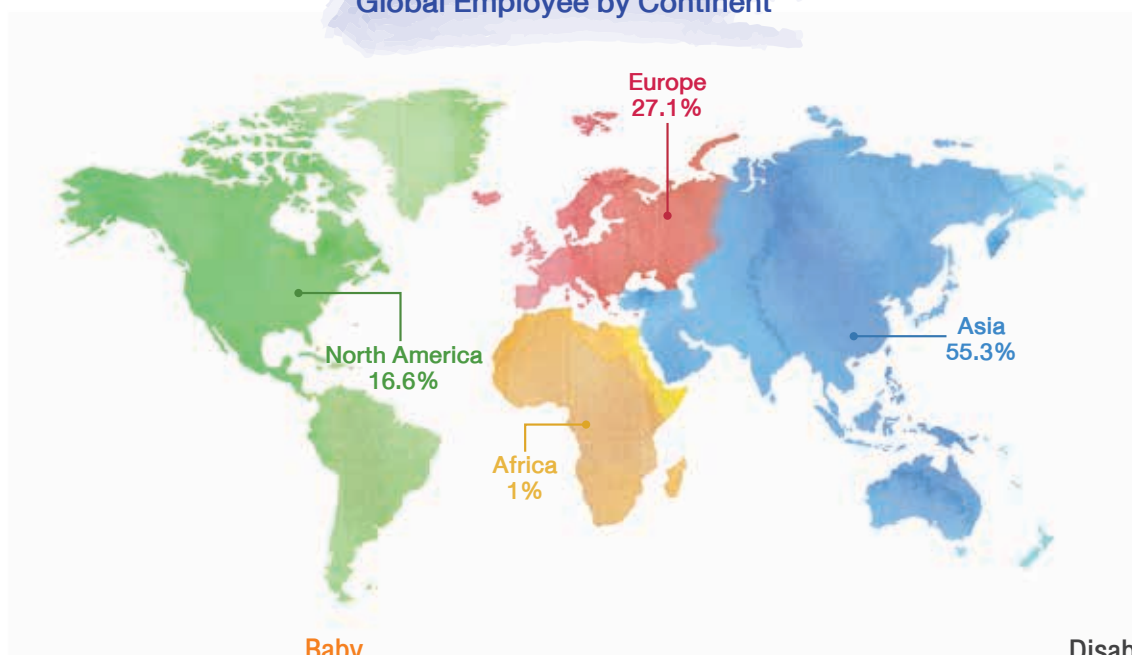
Diversity Landscape

Our diversity and inclusion efforts are focused on leading and managing inclusions by embracing different cultures, ethnicities, genders and sexual orientations. We believe that this creates a positive work environment that fosters growth, advancement, and engagement with our stakeholders. Diversity can also be defined in terms of age distribution. We are proud to have a balanced mix among different age brackets across IVL. The average age of our employees is 39.2 years.

Our approach to creating sustainable diversity at IVL involves the following:

1. Diversity Blueprint: Our Diversity Blueprint for the next five years has been prepared and rolled out. The blueprint focuses on three key pillars: Talent in the Workplace, Marketplace, and Community. We support and encourage the employment of women, minorities, the disabled and youth. We have also developed a report based on initiatives taken in 2016 including developing a blueprint for our future endeavors.
2. Communication: We formalized our Diversity Policy which was approved by the IVL Board and translated into 16 languages. The policy was further explained to employees across all our locations. We also promote our diversity statement which is mentioned in the careers section of our website and clearly stated in our vacancies posted on job sites and in the print media.

Global Employee by Continent



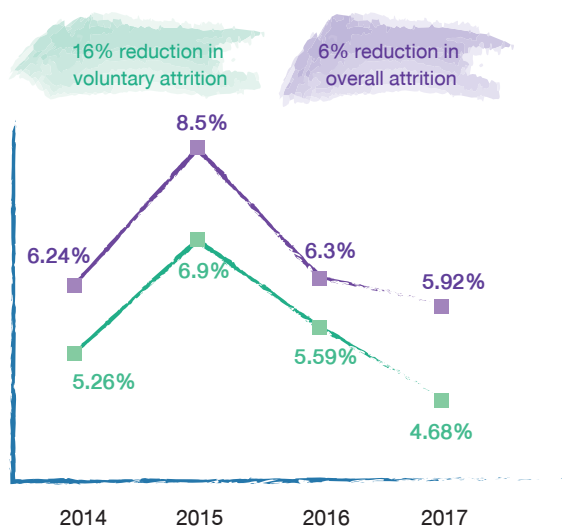
Remark

- Gen Z, iGen, or Centennials: Born in 1996 and later
- Gen Y or Millennials: Born between 1977 and 1995
- Gen X: Born between 1965 and 1976
- Baby Boomers: Born between 1946 and 1964
- Traditionalists or the Silent Generation: Born in 1945 or before

Talent Attraction and retention

Hallmark for carving the employee retention are:

- Systematic succession planning for positions resulting from retirement and business expansion
- Pre-emptive retention interventions based on analysis of attrition data
- Employee engagement survey



Asia's Best Employer Brand Award 2017

We put our values at centre stage throughout the employee lifecycle. We improve employee engagement and retention with insights gathered from the IVL Global Strategy Meet, Global Employee Engagement Survey, and focus group discussions. This approach has been successful not only in reducing voluntary employee turnover by 19% but also in reducing average recruitment costs by 12% compared with 2016. The overall retention rate in 2017 increased by 0.81%: At IVL, employees are our brand ambassadors, both at the campuses and out of campus which helps in attracting desired talents. The resulting employee value proposition has helped us to win "Asia Best Employer Brand Awards 2017" granted by the Employer Branding Institute of India.

New employee hired 2017

In 2017, we hired 1,732 employees across 25 countries, out of which 26.44% were females. 14% of female candidates were hired at managerial positions. Details are as follows:

Continent	Male		Female		Total	
	Number	%	Number	%	Number	%
Asia	908	52.4	372	21.5	1,280	73.9
North America	202	11.7	55	3.1	257	14.8
Europe	147	8.5	31	1.8	178	10.3
Africa	17	1.0	-	-	17	1.0
Total	1,274	73.6	458	26.4	1,732	100.0

By focusing on referrals and social media to hire new employees, we were able to reduce our recruitment costs by 2.7%.

By focusing on referrals and social media to hire new employees, we were able to reduce our recruitment costs by 2.7%.

1. A state-of-the-art digital platform was launched on our website to mobilize career opportunities across IVL's units worldwide allowing us to more effectively access and engage with a qualified pool of candidates.
2. Catch them young: Campus connects programs is a focused attempt to infuse fresh talent from premier engineering and management institutes by offering internships to the bright students for a defined period. This not only provides them with

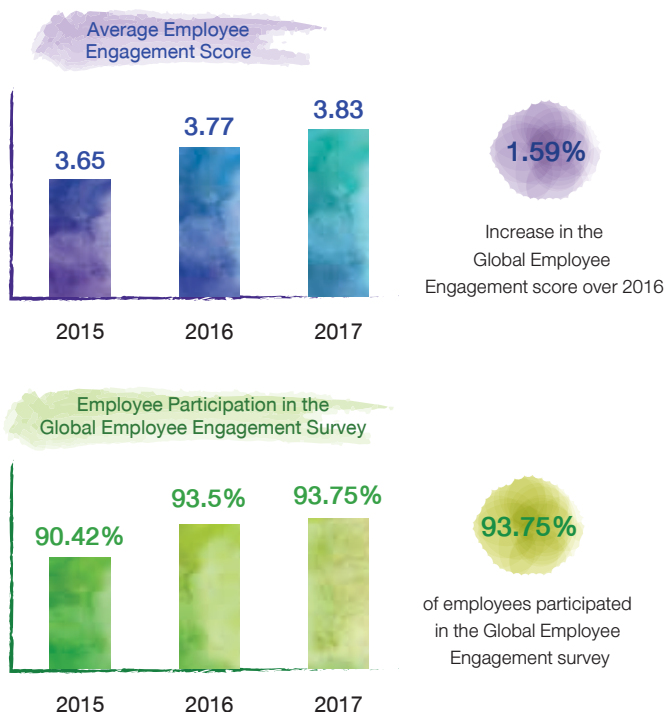
special training but also helps them to apply their learning to practical and relevant experiences with a special emphasis on teamwork, project management, cross-functional networking and effective communications. More than 150 students benefited from this program in 2017.

We are complying with local minimum wages and the ratios of standard entry level wage compared to local minimum wage of both male and female employees is greater than one.

This year, operations at one of our units were mothballed resulting in the termination of 107 employees. All of the terminated employees were notified of the decision three months in advance of the formal notice issuance and were paid-in-full inclusive of their severance, notice and holiday pay.

All of our teams work with a “can-do” and “must-do” spirit to meet economic and market challenges. To truly harness this passion, we roll-out a wide range of engagement initiatives for employees such as team games, sports and CSR activities, role enhancements, shadowing senior staff, and job rotations. To measure the impact of these initiatives and to also hear directly from employees, we conduct an online Global Employee Engagement (GEE) Survey. This is an important tool which provides useful insights for reviewing and renewing our approach towards employee engagement initiatives.

New age engagement models



In 2017, the Global Employee Engagement survey was made available to all employees in 15 languages. We witnessed a significant improvement in the average engagement score at 3.82 compared with 3.77 in 2016. This increase can be attributed to engagement interventions which are designed and rolled-out based on data analytics that combine multiple parameters such as tenure, gender, and age, among other factors. Some of the initiatives that drive our engagement interventions are:

- 1. Influencer groups:** Influencer groups within the organization whose networks could leverage and adapt model behaviors were identified. The Business Unit leadership team worked with department heads to address the needs and engagement options identified in the above-mentioned data analytics approach.
- 2. Enhancing communication:** We updated multiple channels based on survey outcomes to better engage and communicate with our employees across all levels. Frequent interactive sessions

with the top leaders across units were initiated throughout town halls. In addition, employee communication channels such as company-wide mailers, newsletters within units, and our corporate Beacon magazine helped us deliver valuable content and begin a company-wide dialogue on topics that are critical and relevant to our business.

- 3. Operation Excellence Awards:** Operational Excellence Awards, were introduced in 2017 to recognize the efforts of a unit team within a business segment. There are 12 common criteria for the awards which focus on finance, operations and sustainability. The four best business units in their respective business segments were awarded and facilitated by our Chairman and Vice Chairman in the presence of IVL's global leaders at the Annual Global Strategy Meet held in Bangkok.



Indorama Ventures Xylenes & PTA LLC, USA - Feedstock Business



UAB Orion Global Pet, Lithuania - PET Business



Wellman International Ltd., Ireland - Fibers Business



Indorama Ventures Packaging (Philippines) Corporation, Batino, Philippines - Packaging Business

Creating a culture of experiential learning

We continued to invest in our people by providing access to a modern workplace, development opportunities and inspirational culture. In 2017, the Company invested USD 314.12 in training and development. The average training hours per employee in 2017 was 22.71 hours as compared to 19.7 hours in 2016. We are in the process of creating a learning organization which will have more opportunities for experiential learning through stretched assignments/roles, self-paced learning from best of the universities and cohort-based cross-functional exposure. The experiential learning framework is based on 3E framework of Experience, Education and Exposure embedded with 70:20:10 rule (70% learning on the job, 20% from coaching, mentoring and observing others and 10% from formal training interventions).

Learning requirements are assessed on the basis of an individual's roles, responsibilities and competencies together with future business needs. The learning interventions cover the entire competency spectrum including technical, managerial, industry knowledge and leadership skills. The learning avenues available for our employees are as follows:



Self-Learning Modules

This unique online self-learning module enhances the technical know-how of PET production and maintenance processes. It is a self-paced modular program specially developed for supervisors, operators and technicians in PET manufacturing, of which over 1,000 have already benefitted. We also intend to use an online advanced learning platform for the general management and leadership module.

Collaborative Learning

Collaboration through knowledge sharing is an important component of practical learning. The primary goal is to create an ecosystem that fosters learning on a continuous basis. Through formal collaborative channels like the Toast Masters Club, employees develop higher-level thinking, and effective oral communications, self-management, and leadership skills.

Continuous Education

The continuous education program covers technology, industry knowledge, and behavior. Business Excellence through Six Sigma remains a key training theme for continuous education. More than 500 employees across the Company were trained through this theme, and more than 70 new improvement projects were taken up in 2017. Many of these programs are designed to provide opportunities for employees to internalize and implement what they have learned in the workplace.

Higher Education

We encourage our employees with extraordinary potential to pursue higher education from leading institutions through modular courses. These education programs support them in improving their business management skills. Peer networking also helps them gain further insights in real life applications in their professional careers.

Shadow Development

Since 2016, job shadowing has proven to be an instrumental tool for practical learning and developing talent. This has heled the employees to become familiar with higher-level jobs by observing their superior. in meetings, customer visits and to become more familiar with the functions of the job. Some of the shadow employees has also been given an opportunity to take on higher-level assignments in the future.

Performance Management and Leadership Development

We have comprehensive performance appraisal systems interwoven with leadership development ecosystem. Management Discussion and Analysis (MD&A) continues to remain a catalyst for holistic, data-driven, and solution focused business review. This covers past performance, reasons for unmet targets, opportunities, threats and prioritization of items for next cycle. While the overall tone and expectations for business performance is set in quarterly reviews of MD&A, it offers a window for the individual to calibrate his own goals in line with the expectations. 360 degree feedback also continues to be gaining insight on the calibration required for leadership capabilities.

The outcome of these tools is used by Talent Review Committees (TRCs). In consultation with the Nomination, Compensation & Corporate Governance (NCCG) Committee, the Board reviews both the adequacy of the succession planning process and the succession plan for the Group CEO and Executive Board positions. For other key positions, the TRC ensures successful leadership transitions through constant reviews and planning for development of the next generation of leaders. We will ensure that employees explore the facets of experiential learning and will continue to invest in learning and on-the-job training.

Global Leadership Development Program

Three years ago, we launched IVLDP as our global leadership development program. The objective of the program is to build a pipeline of talent for senior roles through their exposures across the businesses and functions within a region. After exposing 60 executives to different facets of business leadership, the next cohort was taken in 2016. Under this program, 130 executives were exposed to learning tools to assess themselves and their business.

Global Leadership Development Program

As a fast growing, expanding and evolving organization, we need to, on an ongoing basis, develop a talent pool of high-performing individuals who are capable of taking on leadership roles and are able to follow in the footsteps of the current leadership team.

Leaders of tomorrow must be capable of developing in-depth and insightful knowledge about our businesses, operating ecosystems, risks, competitive framework and opportunities both in the context of what these are today but also have the vision of foreseeing and preparing for what might come over a period of time. This was the genesis of the i-Lead program, which is designed to develop the next-generation of leaders who can work with world-class teams and inspire them to be the best in what they do.

Shadow Development and Management Development Programs

Shadow Development

We believe in nurturing local leadership in line with our core value of focusing on people. With this objective, we instituted an initiative that allows new generation employees to play an important role in the company's future.

The first cohort of the Shadow Program is comprised of five males and six females from diverse backgrounds. They are being exposed to higher level management concepts at a leading institute through modular programs. They also accompany their superiors by attending key meetings and by receiving mentorship.

Management Development

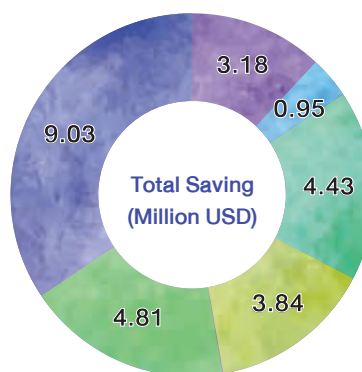
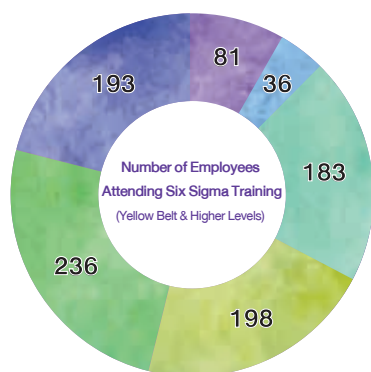
Another talented group which has been put on the fast-track for learning consists of 18 high potential employees who are being groomed as the next generation managers. They are undergoing a specially-designed Management Development Program (MDP). All the programs aim to teach practical subjects with relevant hands-on experience that promotes learning as a way of life in management.



Class of MDP Program

Lean Six Sigma Training

IVL uses the Lean Six Sigma (LSS) training module to improve operational efficiency. In 2017, 145 projects were undertaken by 17 plants in the Fibers business resulting in over USD 9 million in savings. Over 850 personnel received various Lean Six Sigma certificates out of 927 employees attending over 30,500 Six Sigma training hours from 2012 to 2017, yielding an over USD 26 million savings for the Company.

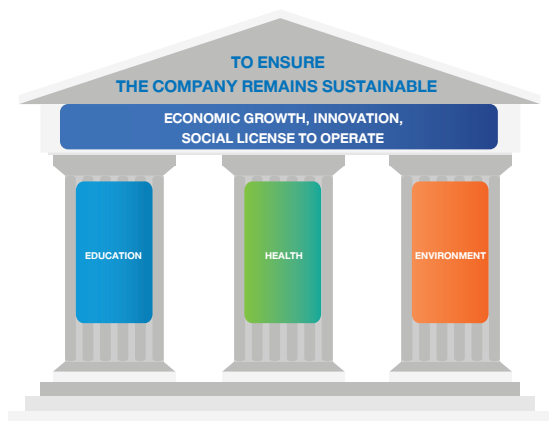


2012 2013 2014 2015 2016 2017

Corporate Social Responsibility

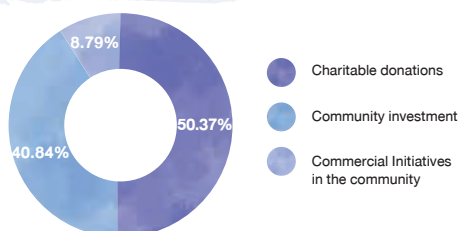
We continue to support communities in the spirit of good corporate citizenship. We believe that our three key CSR themes are fundamental in creating and nurturing a clean environment, improving the quality of life in communities and contributing to sustainable living.

Three priorities of Group CSR Strategy

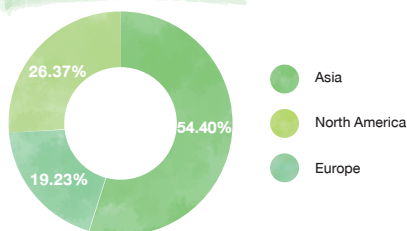


Our CSR activities are aligned with the UN's Sustainable Development Goals (SDGs) covering education, health and the environment, and we look to sponsor activities which reflect the needs of individual communities such as social development and the arts.

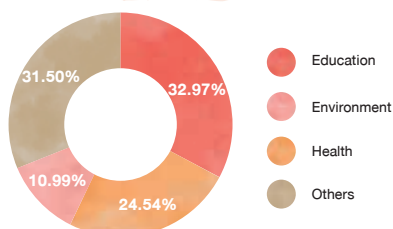
Total Philanthropic Activities in 2017



CSR Percentages by Region in 2017



546 CSR Activities by Category in 2017



In September 2017, many areas in the southeast of the United States and the Caribbean were hit hard by Hurricane Harvey resulting in catastrophic effects. We donated to many organizations, including All Hands Volunteers, Lighthouse Christian Ministries, Samaritan's Purse, and the Friendswood ISD Education Foundation to rebuild schools and assist families following the hurricane. In Mexico, we donated funds to the Carlos Slim Foundation to support victims of Mexico City, and the states of Morelos, Puebla, Oaxaca and Chiapas and the floods in the state of Querétaro.

A good education is one of the keys to future success, and we want to provide learning opportunities and academic support. Being in the chemical industry, we are naturally focused on the Science, Technology, Engineering, and Mathematics (STEM) subjects. We provide scholarships, sponsor award competitions, and collaborate with schools, colleges and universities. We also arrange factory visits and our staff provides training courses on a voluntary basis, sharing their knowledge to stimulate ideas and generate interest in STEM careers. Students have the opportunity to learn from IVL staff and the chance to take training courses that improve their skills and provide support in a variety of careers that are self-sustaining and benefit their local communities. We also donated to the Coca-Cola Scholars Foundation helping to change the paths of young people around the world.

Many people are unaware that PET plastics can be recycled into a variety of useful articles including plastics for food packaging. Recycled PET also conserves raw materials, and saves energy and water further benefiting the environment. Our new Recycling Education Initiative is in line with our sustainability commitment and is a part of our global CSR Flagship Program. We developed this initiative to increase awareness among children to separate waste, encouraging them to recycle and to be actively involved in protecting the environment. In the US, we sponsor Keep America Beautiful (KAB), a national non-profit organization that helps communities end littering, improve recycling, and beautify America's communities through education and programs. Our team also arranged a recycling education program in schools, with over 750 students in attendance, and held a competition to improve awareness about recycling PET plastics and becoming more environmentally-friendly.

Healthy living allows communities to become strong and self-sustaining and we want to do our part. One of our initiatives helps students have access to clean water by setting up and maintaining reverse osmosis (RO) water systems at schools in India. In addition, we also improved ambulance services for a community hospital, transporting patients 38 times in rural India. In Ireland, we raised funds for a child-centered professional ambulance service, and we helped addition to helping over 100 people in Rayong, Thailand obtain free medical check-ups. We have consistently supported Operation Smile Thailand. This past year alone, 372 patients benefited from their free surgical care. We further encourage and support a healthy lifestyle by sponsoring sports events, football and basketball competitions and cross-fit sessions which are popular with our employees.



We collaborate with international organizations such as the United Way and Habitat for Humanity, and our employees are active in their participation, raising funds for a variety of good causes including equipment purchases for hospitals, help for developmentally disabled children, provision of free counseling services for children in need, assistance for women with breast cancer, and donation of food and clothing to the homeless.

In the US, we also sponsor the Asheboro Zoo, contribute to the Zoological Society, and sponsor the North Carolina Zoo's "Zoo To Do" fundraiser. In Thailand, we purchased water aeration equipment to increase oxygen saturation in water, and our employees helped communities remove hyacinths in the Bang Kham canal to improve water flows. Our employees in Mexico initiated a PET bottle collection program in schools and churches for recycling at our plant.



To create a sustainable lifestyle, we must protect and conserve the environment. We support the Wetlands Edge Environmental Center, or WEEC, which provides hands-on, environmental "place-based" educational opportunities to create an understanding of the natural environment and the interrelationships among living things. WEEC has been recognized for environmental excellence by achieving Gold Wildlife Habitat Council (WHC) Conservation Certification, signifying leadership among the over 700 WHC Conservation Certification programs.





Education



United States

Indorama Ventures Xylenes & PTA's learning team, with backgrounds in engineering, chemistry, and administration, hosted their first class of 15 chemistry students from Bob Jones High School, allowing them to get a first-hand look at the inner workings of a chemical company.



Thailand

TPT Petrochemicals sponsored a cash prize for the six best teams participating in a film-making workshop for students which encouraged the value of waste separation.



Mexico

Indorama Ventures Polymers Mexico organized a factory visit for students from the University of Guanajuato. These visits are important in demonstrating potential career options for students who are interested in pursuing work in the chemical industry.



The Netherlands

Indorama Ventures Europe's senior technical team shared their knowledge and taught students in the internship program which runs from 4-6 months.



Thailand

Indorama Holdings staff volunteered to teach English classes to Grade 6 students at Samnorkhon Withayakan School over six weekends during the summer.



Thailand

A representative from our head office participated at the National Science and Technology Fair 2017 to educate students on how to recycle PET and showed samples of recycled PET materials. The students also enjoyed playing the "How to separate your waste" game.



United States

Indorama Ventures Xylenes & PTA, AlphaPet and Auriga Polymers have a long partnership with the Keep America Beautiful Organization to raise recycling awareness among students by organizing several activities in local high schools.

Recycling Education



Poland

Employees at Indorama Ventures Poland gave a two hour lesson on "Friends of Nature" to kindergarten students in Wloclawek teaching them about the importance of waste separation and recycling.

Decent work and economic growth



Thailand

Our CSR team in Lopburi donated unused materials from our plant, and our employees helped in building a goat farm for the community in Ban Prankogtalay Moo 5, in addition to providing training on how to run and manage a business. The farm will create jobs in the local community, generate income and act as a learning center for local residents and schools.



Thailand

Our subsidiaries in Rayong collaborated with the Community Partnership Association and students from the Faculty of Commerce and Accountancy, Thammasat University, to support, coach, and arrange training on community business enterprises for the Saphanhin Community to help improve their businesses, earn more revenue and support local jobs.

Health



United States

Indorama Ventures Xylenes & PTA and AlphaPet donated to the United Way Foundation to support hurricane victims.



Thailand

Our employees volunteered with Operation Smile Thailand in Mae Hong Son helping provide access to surgery and post-operative care to patients who were born with cleft lips or palates, a birth defect which can be repaired through surgery.



India

To ensure access to clean drinking water for children, our employees at IVL Dhunseri Petrochem Industries provided reverse osmosis (RO) machines to purify water and installed a water storage tank for a school together with maintenance service.



India

IVL Dhunseri Petrochem Industries' ambulance service to the community was both important and timely, transporting people to the hospital on 38 occasions in 2017.



United States

FiberVisions employees donated diapers (this product made from fiber of our company) at a local collection site for hurricane victims.



Thailand

TPT Petrochemicals, Indorama Polyester Industries Rayong, and Indorama Petrochem joined the Community Partnership Association (CPA) in organizing a mobile medical clinic at Nong Fab temple in Maptaphut.

Environment



Poland

Indorama Ventures Poland's employees gave a lecture on "Twenty-First Century Plastics" to secondary school students and held an Ecological Contest on the topic, "My environment is close to me."



Thailand

Staff at our subsidiaries in Rayong and our head office in Bangkok responded to a call for action and cleaned a beach in support of International Coastal Cleanup Day.



Poland

Employees at Indorama Ventures Poland gave a lesson on "water as a precious resource" to students in the first to third grades at Wloclawek Primary School.

Lending a helping hand



Thailand

Our employees showed their volunteer spirit by making cute animal towels and a total of 120 children's pillows containing fibers made from our recycled yarns. The two gifts were provided to children who underwent surgery from Operation Smile Thailand.



Global

Performance Data





This summary covers all IVL sites across all business units including PET, Feedstock (PTA, PIA, EO/EG, PX, NDC), Fibers, Packaging, Recycling and wool.

Operations Information Included in 2017 Sustainability Report

Region	Country	Business		
North America				
AlphaPet, Inc.	USA	<div></div>		
Auriga Polymers Inc.	USA	<div></div>	<div></div>	
FiberVisions Manufacturing Company	USA	<div></div>		
FiberVisions Products Products, Inc.	USA	<div></div>		
Indorama Ventures (Oxide & Glycols) LLC	USA	<div></div>		
Indorama Ventures EcoMex, S. de R.L. de C.V.	Mexico	<div></div>		
Indorama Ventures Polymers Mexico, S. de R.L. de C.V.	Mexico	<div></div>	<div></div>	
Indorama Ventures PTA Montreal LP	Canada	<div></div>		
Indorama Ventures Xylenes and PTA LLC	USA	<div></div>	<div></div>	NDC
PHP Fibers Inc.	USA	<div></div>		
StarPet Inc.	USA	<div></div>		
Europe				
Beverage Plastics Limited	Northern Ireland	<div></div>		
FiberVisions A/S	Denmark	<div></div>		
Glanzstoff Bohemia s.r.o.	Czech Republic	<div></div>		
Glanzstoff Industries S.R.L.	Italy	<div></div>		
Indorama Ventures Corlu PET Sanayi Anonim Sirketi	Turkey	<div></div>		
Indorama Ventures Europe B.V.	The Netherlands	<div></div>	<div></div>	
Indorama Ventures Poland Sp. z.o.o.	Poland	<div></div>		
Indorama Ventures Quimica S.L.U.	Spain	<div></div>	<div></div>	PIA
PHP Fibers GmbH	Germany	<div></div>		
Textilcord Steinfurt S.A.*	Luxembourg	<div></div>		
Trevira GmbH, Bobingen	Germany	<div></div>		
Trevira GmbH, Guben	Germany	<div></div>		
UAB Orion Global Pet	Lithuania	<div></div>		
Wellman France Recyclage S.A.S	France	<div></div>		
Wellman International Limited, Ireland	Ireland	<div></div>		
Wellman International Limited, The Netherlands	The Netherlands	<div></div>		
Asia				
Asia Pet (Thailand) Limited	Thailand	<div></div>		
ES FiberVisions (China) Limited	China	<div></div>		
ES FiberVisions (Thailand) Company Limited	Thailand	<div></div>		
FiberVisions (China) Textiles Products Limited	China	<div></div>		
Guangdong IVL PET Polymer Company Limited	China	<div></div>		
Indorama Holdings Limited	Thailand	<div></div>		
Indorama Petrochem Limited	Thailand	<div></div>		
Indorama Petrochem Limited (2nd Branch)	Thailand	<div></div>		
Indorama Polyester Industries Public Company Limited, Nakhon Pathom	Thailand	<div></div>	<div></div>	
Indorama Polyester Industries Public Company Limited, Rayong	Thailand	<div></div>	<div></div>	
Indorama Ventures Packaging (Myanmar) Limited	Myanmar	<div></div>		
Indorama Ventures Packaging (Philippines) Corporation, Bacolod	The Philippines	<div></div>		
Indorama Ventures Packaging (Philippines) Corporation, Batino	The Philippines	<div></div>		
Indorama Ventures Packaging (Philippines) Corporation, Davao	The Philippines	<div></div>		
Indorama Ventures Packaging (Philippines) Corporation, MOP	The Philippines	<div></div>		

Region	Country	Business
Asia		
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	●
Petform (Thailand) Limited, Korat	Thailand	●
Petform (Thailand) Limited, Lopburi	Thailand	●
Petform (Thailand) Limited, Pathumthani	Thailand	●
Petform (Thailand) Limited, Rayong	Thailand	●
PT Indorama Petrochemicals	Indonesia	●
PT Indorama Polychem Indonesia	Indonesia	●
PT Indorama Polypet Indonesia	Indonesia	●
PT Indorama Ventures Indonesia	Indonesia	● ●
TPT Petrochemicals Public Company Limited	Thailand	●
Africa		
Indorama PET (Nigeria) Limited	Nigeria	●
Indorama Ventures Packaging (Ghana) Limited	Ghana	●
Indorama Ventures Packaging (Nigeria) Limited	Nigeria	●
Remark:		
● Feedstock	● PTA	● PET
● Fibers	● Packaging	● Recycling
● Wool		
NDC = Naphthalene Dicarboxylate		
PIA = Purified Isophthalic Acid		

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

Material Indicators	2014	2015	2016	2017
Total energy consumption	100%	100%	100%	100%
Direct GHG Emissions Scope 1	100%	99.6%	100%	100%
Indirect GHG Emissions Scope 2	99.3%	99.7%	100%	100%
Total NOx Emissions	82.3%	84.1%	95.2%	100%
Total SOx Emissions	75.0%	77.3%	83.9%	100%
Total VOC Emissions	61.4%	63.6%	77.4%	100%
Total waste (excluding reuse and recycle)	99.8%	99.6%	100%	100%
COD in treated wastewater discharged	83.4%	77.3%	93.5%	100%
BOD in treated wastewater discharged	NA	NA	83.9%	100%
Total Water Withdrawn by Sources	100%	100%	100%	100%
Waste Water Discharge	NA	NA	98.4%	100%
Health & Safety	98%	100%	100%	100%
Process safety events	NA	NA	10%	30%
Spills	42%	65%	88%	100%
CSR	56%	60%	79%	91%
HR	66.7%	75.8%	100%	100%

* Do not include new acquisition made after June 2017

When comparing absolute figures there is a year on year increase in resource consumption and absentee days, however these can be attributed to the growth of IVL in terms of both production output as well as number of employees.

Global EHS Data

GRI Standards		Unit	2014	2015	2016	2017
Production						
General	Total production	Tons of production	6,687,525	7,481,352	9,960,134	10,642,439
	- PET	Tons	3,197,330	3,544,468	4,101,870	4,262,555
	- PTA	Tons	1,805,713	2,153,836	3,425,608	3,735,362
	- Packaging	Tons	65,659	82,596	113,202	134,838
	- Fibers	Tons	1,047,044	1,134,341	1,325,179	1,327,278
	- Feedstock (e.g. EG/EO)	Tons	422,831	361,709	872,173	1,057,123
	- Wool	Tons	3,140	3,077	2,673	2,188
	- Recycling Plants Production (flakes+In process reuse)	Tons	83,762	108,958	119,429	123,095
	- Others	Tons	62,045	92,366	-	-
Revenue						
General	Revenue of Business (Converted)	MillionUSD	9,007	7,192	9,086	11,125
Materials						
301-1	Total material use	Tons	7,078,276	7,881,517	10,234,842 ⁽¹⁾	11,182,196
	Raw materials	Tons				
	- PTA	Tons	3,161,880	3,482,025	4,197,946	4,567,981
	- MEG	Tons	1,456,676	1,603,761	1,610,735 ⁽²⁾	1,692,695
	- Paraxylene	Tons	-	-	2,271,643	2,452,829
	- Acetic Acid	Tons	-	-	124,232	139,606
	- Purified isophthalic acid	Tons	-	-	52,929	73,761
	- PET	Tons	-	-	302,352	272,977
	- PP	Tons	-	-	128,239	123,183
	- PE	Tons	-	-	32,504	48,689
	- HDPE	Tons	-	-	4,538	5,481
	- Wool	Tons	-	-	2,938	2,521
	- Cardboard packaging	Tons	-	-	11,096	39,637
	- Partially oriented yarn (POY)	Tons	-	-	5,374	942
	Bio Raw materials	Tons				
	- Bio-MEG	Tons	18,062	15,694	10,736	7,447
	- Cellulose	Tons	-	-	-	33,411
	- PLA	Tons	-	-	-	2,383
	Others	Tons	2,441,658	2,780,037	1,479,580	1,718,654
301-2	Total recycled materials	Tons	111,415	144,007	169,854	183,693
Energy						
302-1	Total energy consumption	GJ	37,522,808	41,467,851	53,041,022	59,237,580
	• Fuel Oil	GJ	125,305	219,851	444,337	398,481
	• Natural Gas	GJ	15,303,426	16,392,113	22,050,985 ⁽³⁾	25,636,212
	• LPG	GJ	44,817	58,300	54,600	282,014
	• Diesel	GJ	16,688	23,005	68,687	116,426
	• Gasoline	GJ	27,587	2,802	30,485	33,095
	• Fuel Gas	GJ	0	0	40,483	4,239
	• Coke	GJ	0	0	354,894	371,981
	• Coal	GJ	11,791,536	12,376,449	15,883,530	16,313,779
	• Other	GJ	42,147	24,376	56,987	37,871
	• Renewable Energy Consumption	GJ	428,065	544,511	691,094	1,427,492
	Biomass	GJ	208,998	227,034	373,656	934,961
	Biogas	GJ	219,067	317,477	317,438	492,531

GRI Standards		Unit	2014	2015	2016	2017
302-1	Total Indirect energy consumption (electricity, cooling, steam purchased from outside of IVL group)	GJ	11,762,833	13,510,681	14,915,688	16,112,027
		MWh	3,267,454	3,752,967	4,081,347	4,475,563
	- Electricity purchased from conventional sources (e.g. natural gas, coal, nuclear, heating oil)	GJ	7,466,557	9,408,898	11,487,654	12,017,219
		MWh	2,074,044	2,613,583	3,191,015	3,338,116
	- Purchased steam	GJ	2,261,891	2,151,325	2,048,701	2,699,489
		MWh	628,303	597,590	569,084	749,858
	- Purchased heating	GJ	-	-	1,028,410	538,931
		MWh	-	-	285,669	149,703
	- Purchased cooling	GJ	-	-	54,275	371,063
		MWh	-	-	15,076	103,073
	- Renewable electricity generated and consumed	GJ	-	-	6,280	6,237
		MWh	-	-	1,744	1,733
	- Renewable electricity purchased through certificate	GJ	-	-	290,369	1,221,325
		MWh	-	-	80,658	339,257
	Total direct electricity sold	GJ	990,603	698,158	700,432	668,729
		MWh	275,168	193,933	194,565	185,758
	Total steam sold	GJ	1,062,464	1,026,259	850,334	827,308
		MWh	295,129	285,072	236,204	229,808
	Total indirect electricity sold	GJ	-	-	-	742,237
		MWh	-	-	-	206,177
302-3	Energy Intensity	GJ/Ton of production	5.56	5.52	5.33	5.57
302-4	Energy saved due to conservation and efficiency improvement	GJ	228,812	413,342	786,520	614,892
Water Withdrawal and Consumption						
303-1	Total water withdrawn by sources	m ³	36,099,631	38,200,946	46,837,026	55,034,189
	- Surface water	m ³	16,960,419	18,472,443	28,612,964	32,065,253
	- Sea water (excluding once through cooling water)	m ³	-	-	-	-
	- Once through cooling water	m ³	952,172	2,736,178	1,245,728	3,213,299
	- Municipal water and water utilities	m ³	12,003,015	10,602,732	10,626,737	13,774,178
	- Ground water	m ³	6,146,267	6,351,455	6,299,896	5,887,591
	- Rain water	m ³	37,758	38,140	51,701	93,868
	Water Intensity	m ³ /Ton of Production	5.43	5.12	4.70	5.17
Reused / Recycled Water						
303-3	Total volume of recycled/reused water	m ³	2,436,929	2,780,405	3,229,152	2,782,341
	% of recycled/reused water	%	6.75	7.28	6.89	5.06
Emissions						
305-1	Direct GHG emissions from all sources owned or controlled by company (Scope 1 emissions)	tCO ₂ e	2,087,526	2,226,176	3,330,966 ⁽⁴⁾	3,561,396
305-2	Indirect GHG emissions resulting from the generation of electricity, heat, or steam (Scope 2 emissions)	tCO ₂ e	1,567,192	1,842,432	1,937,873 ⁽⁵⁾	2,005,810
	Total GHG emission (Scope 1 + Scope 2)	tCO ₂ e	3,654,718	4,068,608	5,268,839 ⁽⁶⁾	5,567,207
305-4	Scope 1 GHG Intensity	tCO ₂ e/Ton of Production	0.312	0.298	0.334 ⁽⁷⁾	0.335
	Scope 2 GHG Intensity	tCO ₂ e/Ton of Production	0.234	0.246	0.194 ⁽⁸⁾	0.189
	Scope 1 + Scope 2 GHG Intensity	tCO ₂ e/Ton of Production	0.546	0.544	0.529 ⁽⁹⁾	0.523
	GHG Intensity per total revenue	tCO ₂ e/Million USD	231.77	309.54	572.89	500.42

GRI Standards		Unit	2014	2015	2016	2017
305-4	GHG Intensity per full time equivalent (FTE) Employees	tCO ₂ e/FTE	198.74	179.26	399.39 ⁽¹⁰⁾	385.40
305-7	Total NOx emissions	Tons	1,977	2,430	1,779	2,376
	Total SOx emissions	Tons	752	1,075	1,126	1,532
	Total VOC emissions	Tons	854	1,149	2,033	2,278
Wastewater Discharge						
306-1	Total wastewater discharge	m ³	12,269,886	12,940,673	21,251,430	32,435,994
	COD in treated wastewater discharged	Tons	525	446	1,155	2,111
	BOD in treated wastewater discharged	Tons	77	58	111	103
	TSS in treated wastewater discharged	Tons	1,325	1,577	1,661	1,250
	Oil and grease in treated wastewater discharged	Tons	14	17	-	16
	COD in untreated wastewater discharged to third party	Tons	-	-	3,566	3,941
	BOD in untreated wastewater discharged to third party	Tons	-	-	1,606	885
	TSS in untreated wastewater discharged to third party	Tons	-	-	1,034	325
	Oil and grease in treated wastewater discharged	Tons	-	-	4.04	8.07
Solid Waste						
306-2	Total hazardous waste	Tons	37,171	34,229	47,466	54,101
	- Reuse	Tons	4,397	819	726	30,248
	- Recycling	Tons	7,596	12,545	12,038	4,725
	- Recovery (including energy recovery)	Tons	483	782	2,153	1,748
	- Composting	Tons	0	13	43	0
	- Incineration	Tons	4,624	4,151	4,860	11,270
	- Landfill	Tons	17,784	1,684	2,348	5,377
	- Others	Tons	2,286	14,234	25,298	733
	Total non-hazardous waste	Tons	73,297	83,730	99,150	116,873
	- Reuse	Tons	595	1,829	3,604	2,304
	- Recycling	Tons	36,146	39,728	28,189	37,183
	- Recovery (including energy recovery)	Tons	6,259	11,460	6,143	5,911
	- Composting	Tons	384	720	5,642	7,119
	- Incineration	Tons	1,412	819	779	1,432
	- Landfill (General waste)	Tons	18,699	16,681	28,293	36,280
	- Others	Tons	9,802	12,494	26,499	26,643
	Total Reused, Recycled and Recovered Waste	Tons	55,478	67,162	52,854	82,118
	Total Waste Disposed (not Reused, Recycled or Recovered)	Tons	54,991	50,797	93,762	88,854
306-4	Total weight of hazardous waste transported	Tons	19,043	32,873	43,882	55,463
	Total weight of hazardous waste treated	Tons	6,323	6,594	6,726	5,652
	The total weight of hazardous waste shipped internationally	Tons	39	8	25 ⁽¹¹⁾	183
Spills						
306-3	Total significant spills	Cases	17	41	38	53
		Tons	107	94	90	514
	- Hydrocarbon spills	Cases	-	-	2	15
		Tons	-	-	-	8
	- Chemical spills	Cases	13	30	31	26
		Tons	1	89	50	30
	- Other spills	Cases	5	11	5	12
		Tons	107	4	39	476

GRI Standards		Unit	2014	2015	2016	2017
Process Safety Events						
	Tier 1					
	- No. of events	Cases	-	-	0	5
	- Cases per million man hours	Cases / million man hours	-	-	0	0.44
	Tier 2					
	- No. of events	Cases	-	-	1	3
	- Cases per million man hours	Cases / million man hours	-	-	0.31	0.26
Environmental Compliance						
307-1	ALL FINES: Monetary value of ALL fines for non-compliance with environmental laws and regulations	USD	0	205	260	54,618
	FINES OVER USD 10,000: Monetary value of significant fines over USD 10,000 for non-compliance with environmental laws and regulations	USD	0	0	0	47,233
	Total number of non-monetary sanctions for non-compliance with environmental laws and regulations	Cases	9	4	2	0
	Total number of non-monetary sanctions for non-compliance with environmental laws and regulations were incurred	Cases	8	4	2	0
Occupational Health and Safety						
403-1	Total workforce represented in formal joint management—worker health and safety committees	Persons	2,689	2,772	3,773	13,046
	Percentage of workforce represented in formal joint management—worker health and safety committees	%	25.6 ^{""}	22.3 ^{""}	28.6 ^{""}	90.3
403-2	Total Recordable Injury rate (TRIR) (per 200,000 man-hours)	Cases/200,000Man-Hours	1.48	1.57	0.97	1.19
	Employees	Cases/200,000Man-Hours	1.55	1.57	1.08	1.25
	- Male	Cases/200,000Man-Hours	1.66	1.65	1.11	1.46
	- Female	Cases/200,000Man-Hours	1.05	1.21	0.91	0.48
	Contractors	Cases/200,000Man-Hours	1.13	1.55	0.64	0.94
	- Male	Cases/200,000Man-Hours	1.18	1.79	0.73	1.12
	- Female	Cases/200,000Man-Hours	0.89	0.34	0.00	0.00
	Total Recordable Injury (not including first aid incidents)	Cases	184	214	159 ⁽¹²⁾	225
	Employees	Cases	163	186	134	193
	- Male	Cases	142	161	113	177
	- Female	Cases	21	25	21	16
	Contractors	Cases	21	28	25	32
	- Male	Cases	18	27	25	32
	- Female	Cases	3	1	0	0
	Lost Time Injury Frequency Rate (LTIFR) (per million man-hours)	Cases/MillionMan-Hours	4.7	3.67	3.12	3.82
	Employees	Cases/MillionMan-Hours	5.2	3.6	3.5 ⁽¹⁶⁾	4.3
	- Male	Cases/MillionMan-Hours	5.4	3.5	3.4	4.8
	- Female	Cases/MillionMan-Hours	4.1	3.8	4.1	2.4
	Contractors	Cases/MillionMan-Hours	2.1	4.1	1.8	1.6
	- Male	Cases/MillionMan-Hours	1.6	5.0	2.0	1.9
	- Female	Cases/MillionMan-Hours	4.5	0.0	0.0	0.0
	Total Lost-Time Injuries (Employees+ Contractors)	Cases	118	100	102 ⁽¹³⁾	144
	Employees	Cases	110	85	88	133
	- Male	Cases	93	68	69	117
	- Female	Cases	17	17	19	16

GRI Standards		Unit	2014	2015	2016	2017
403-2	Contractors	Cases	8	15	14	11
	- Male	Cases	5	15	14	11
	- Female	Cases	3	0	0	0
	Occupational Illness Frequency Rate (OIFR)	Cases/MillionMan-Hours	0.00	0.04	0.03	0.13
	Employees	Cases/MillionMan-Hours	0	0.04	0.08	0.03
	- Male	Cases/MillionMan-Hours	0	0	0.099	0.04
	- Female	Cases/MillionMan-Hours	0	0	0	0
	Contractors	Cases/MillionMan-Hours	0	0	0	0.59
	- Male	Cases/MillionMan-Hours	0	0	0	0.69
	- Female	Cases/MillionMan-Hours	0	0	0	0
	Total number of occupational diseases cases	Cases	0	1	1	5
	Employees	Cases	0	1	1	1
	- Male	Cases	0	1	1	1
	- Female	Cases	0	0	0	0
	Contractors	Cases	0	0	0	4
	- Male	Persons	0	0	0	4
	- Female	Persons	0	0	0	0
	Fatalities (all Employees and Contractors)	Persons	0	0	0	1
	Employees	Persons	0	0	0	0
	- Male	Persons	0	0	0	0
	- Female	Persons	0	0	0	0
	Contractors	Persons	0	0	0	1
	- Male	Persons	0	0	0	1
	- Female	Persons	0	0	0	0
	Lost day rate (LDR)	Days/MillionMan-Hours	52	83	46	51
	Employees	Days/MillionMan-Hours	59	87	54	53
	- Male	Days/MillionMan-Hours	62	99	48	61
	- Female	Days/MillionMan-Hours	44	27	80	27
	Contractors	Days/MillionMan-Hours	11	56	21	42
	- Male	Days/MillionMan-Hours	9	37	24	49
	- Female	Days/MillionMan-Hours	19	151	0	0
	Total number of lost day (only including lost scheduled work days)	Man Days	1,280	2,252	1,508	1,934
	Employees	Man Days	1,239	2,049	1,342	1,652
	- Male	Man Days	1,063	1,939	974	1,475
	- Female	Man Days	176	110	367	177
	Contractors	Man Days	41	203	167	282
	- Male	Man Days	28.0	113.0	167	282
	- Female	Man Days	13.0	90.0	0	0
	Absentee rate (AR)	%	1.80	1.79	2.00 ⁽¹⁴⁾	2.10
	Employees	%	2.06	2.03	2.46	2.26
	- Male	%	1.98	1.90	2.24	2.24
	- Female	%	2.39	2.61	3.43	2.34
	Contractors	%	0.34	0.22	0.53	1.36
	- Male	%	0.33	0.22	0.39	1.48
	- Female	%	0.40	0.19	0.16	0.68
	Absentee days	Days	54,330.1	62,869.6	81,815.9 ⁽¹⁵⁾	99,097
	Employees	Days	52,754.1	61,870.1	76,637.9	87,574
	- Male	Days	40,586.8	46,916.3	56,876.3	68,175
	- Female	Days	12,167.4	14,953.8	19,761.5	19,400

GRI Standards		Unit	2014	2015	2016	2017
403-2	Contractors	Days	1,576.0	999.5	5,178.0	10,523
	- Male	Days	1,235	860	3,328	10,625
	- Female	Days	342	140	1,850	898
	Near Miss	Cases	0	0	732	985
	Employees	Cases	0	0	650	885
	- Male	Cases	0	0	582	749
	- Female	Cases	0	0	68	136
	Contractors	Cases	0	0	82	100
	- Male	Cases	0	0	73	92
	- Female	Cases	0	0	9	8
403-3	Worker with high incidence or high risk of diseases related to their occupation	Persons	114	114	193	448
	Employees	Persons	61	81	136	344
	- Male	Persons	61	81	136	339
	- Female	Persons	0	0	0	5
	Contractors	Persons	53	33	57	104
	- Male	Persons	53	33	54	100
	- Female	Persons	0	0	3	4

Notes:

⁽¹⁾ 2016 reported number has been restated from 10,216,877

⁽²⁾ 2016 reported number has been restated from 1,751,855

⁽³⁾ 2016 reported number has been restated from 21,506,204

⁽⁴⁾ 2016 reported number has been restated from 3,236,692

⁽⁵⁾ 2016 reported number has been restated from 1,917,894

⁽⁶⁾ 2016 reported number has been restated from 5,154,586

⁽⁷⁾ 2016 reported number has been restated from 0.325

⁽⁸⁾ 2016 reported number has been restated from 0.192

⁽⁹⁾ 2016 reported number has been restated from 0.517

⁽¹⁰⁾ 2016 reported number has been restated from 390.74

⁽¹¹⁾ 2016 reported number has been restated from 45

⁽¹²⁾ 2016 reported number has been restated from 164

⁽¹³⁾ 2016 reported number has been restated from 99

⁽¹⁴⁾ 2016 reported number has been restated from 2.05

⁽¹⁵⁾ 2016 reported number has been restated from 81,830

⁽¹⁶⁾ 2016 reported number has been restated from 3.4

^{***} 2014, 2015, 2016 reported numbers have been restated due to misinterpretation

Global Human Resources Data

GRI Standards		Unit	2014	2015	2016	2017
Employees						
GRI 102-8	Total employees by gender	Persons	11,175	12,868	14,432	15,195
	- Male	Persons	8,605	10,080	11,257	11,844
	- Female	Persons	2,570	2,788	3,175	3,351
	Total Permanent employees	Persons	10,610	12,273	13,769	14,525
	- Male	Persons	8,120	9,583	10,718	11,299
	- Female	Persons	2,490	2,690	3,051	3,226
	Total Temporary employees	Persons	565	595	663	670
	- Male	Persons	485	497	539	545
	- Female	Persons	80	98	124	125
GRI 102-8	Total employees by Level*	Persons	10,610	12,273	13,769	14,525
GRI 405-1	Executive Management	Persons	69	79	88	94
	- Male	Persons	61	71	79	83
	- Female	Persons	8	8	9	11
	Senior Management	Persons	284	330	369	388
	- Male	Persons	216	256	286	301
	- Female	Persons	68	74	83	87
	Middle Management	Persons	1,083	1,257	1,409	1,485
	- Male	Persons	850	1,006	1,125	1,185
	- Female	Persons	233	251	284	300
	Junior Management	Persons	4,268	5,156	5,778	6,106
	- Male	Persons	2,860	3,602	4,028	4,246
	- Female	Persons	1,408	1,554	1,750	1,860
	Non Management*	Persons	4,906	5,451	6,125	6,452
	- Male	Persons	4,133	4,648	5,200	5,484
	- Female	Persons	773	803	925	968
GRI 405-1	Total employees by Age*	Persons	10,610	12,273	13,769	14,525
	Over 50 years old	Persons	1,661	1,709	2,153	2,488
	- Male	Persons	1,345	1,399	1,810	2,118
	- Female	Persons	316	310	343	370
	30-50 years old	Persons	6,372	7,480	8,222	8,542
	- Male	Persons	4,860	5,784	6,210	6,412
	- Female	Persons	1,512	1,696	2,012	2,130
	Below 30 years old	Persons	2,577	3,084	3,394	3,495
	- Male	Persons	1,915	2,400	2,698	2,769
	- Female	Persons	662	684	696	726
New employee hires*						
GRI 401-1	Total new employees	Persons	876	1,645	1,484	1,732
	- Male	Persons	534	1,292	1,054	1,274
	- Female	Persons	342	353	430	458
	Total new employee hire rate	New hire rate (%)	8.26	13.40	10.78	11.92
	- Male	New hire rate (%)	6.58	13.48	9.83	11.28
	- Female	New hire rate (%)	13.73	13.12	14.09	14.20
	Total new employees by age	Persons	876	1,645	1,484	1,732
	Over 50 years old	Persons	9	96	102	99
	- Male	Persons	2	90	93	80
	- Female	Persons	7	6	9	19
	30-50 years old	Persons	209	626	691	698
	- Male	Persons	107	501	500	485
	- Female	Persons	102	125	191	213
	Below 30 years old	Persons	658	923	691	935
	- Male	Persons	425	701	461	709
	- Female	Persons	233	222	230	226

GRI Standards		Unit	2014	2015	2016	2017
GRI 401-1	New hire rate by Age	New hire rate (%)	8.26	13.40	10.78	11.92
	Over 50 years old	New hire rate (%)	0.54	5.62	4.74	3.98
	- Male	New hire rate (%)	0.15	6.43	5.14	3.78
	- Female	New hire rate (%)	2.22	1.94	2.62	5.14
	30-50 years old	New hire rate (%)	3.28	8.37	8.40	8.17
	- Male	New hire rate (%)	2.20	8.66	8.05	7.56
	- Female	New hire rate (%)	6.75	7.37	9.49	10.00
	Below 30 years old	New hire rate (%)	25.53	29.93	20.36	26.75
	- Male	New hire rate (%)	22.19	29.21	17.09	25.60
	- Female	New hire rate (%)	35.20	32.46	33.05	31.13

Employee Turnover*

GRI 401-1	Total employee turnover	Persons	698	1,094	909	861
	- Male	Persons	500	884	676	665
	- Female	Persons	198	210	233	196
	Total employee turnover rate	Turnover rate (%)	6.58	8.91	6.60	5.93
	- Male	Turnover rate (%)	6.16	9.22	6.31	5.89
	- Female	Turnover rate (%)	7.95	7.81	7.64	6.08
	Total employee turnover by age	Persons	698	1,094	909	861
	Over 50 years old	Persons	120	160	172	195
	- Male	Persons	98	128	132	157
	- Female	Persons	22	32	40	38
	30-50 years old	Persons	297	511	438	414
	- Male	Persons	192	401	314	319
	- Female	Persons	105	110	124	95
	Below 30 years old	Persons	281	423	299	252
	- Male	Persons	210	355	230	189
	- Female	Persons	71	68	69	63
	Total employee turnover rate by age	Turnover rate (%)	6.58	8.91	6.60	5.93
	Over 50 years old	Turnover rate (%)	7.22	9.36	7.99	7.84
	- Male	Turnover rate (%)	7.29	9.15	7.29	7.41
	- Female	Turnover rate (%)	6.96	10.32	11.66	10.27
	30-50 years old	Turnover rate (%)	4.66	6.83	5.33	4.85
	- Male	Turnover rate (%)	3.95	6.93	5.06	4.98
	- Female	Turnover rate (%)	6.94	6.49	6.16	4.46
	Below 30 years old	Turnover rate (%)	10.90	13.72	8.81	7.21
	- Male	Turnover rate (%)	10.97	14.79	8.52	6.83
	- Female	Turnover rate (%)	10.73	9.94	9.91	8.68
	Voluntary employees turnover	Persons	617	888	807	680
	Voluntary employees turnover rate	Turnover rate (%)	5.82	7.24	5.86	4.68
	Number of employees laid off	Persons	68	0	89	113
	- Male	Persons	68	0	89.0	107
	- Female	Persons		0	0	6
	Number of negotiations	Persons	139	61	28	35

Parental leave*

GRI 401-3	Number of employees entitled for parental leave	Persons	1,946	4,334	5,448	8,382
	- Male	Persons	1,336	3,402	4,299	6,114
	- Female	Persons	610	932	1,149	2,268
	Number of employees taken parental leave	Persons	86	188	224	368
	- Male	Persons	34	116	149	264
	- Female	Persons	52	72	75	104

GRI Standards		Unit	2014	2015	2016	2017
GRI 401-3	Number of employees return to work after parental leave	Persons	75	172	194	345
	- Male	Persons	33	107	143	257
	- Female	Persons	42	65	51	88
	Return to work rate (after parental leave)	%	87.00	91.00	86.61	93.75
	- Male	%	97.00	92.00	95.97	97.35
	- Female	%	81.00	90.00	68.00	84.62
	Retention to work (after parental leave and still employed for the next 12 months)	Persons	50	167	171	325
	- Male	Persons	22	105	131	239
	- Female	Persons	28	62	40	86
	Retention (after parental leave and still employed for the next 12 months) rate	%	66.67	97.09	88.14	94.20
	- Male	%	66.67	98.13	91.61	93.00
	- Female	%	66.67	95.38	78.43	97.73
Employees training*						
GRI 404-1	Total training hours provided to employee	Hours	123,349	186,914	284,356	329,779
	- Male	Hours	89,146	141,557	211,450	247,584
	- Female	Hours	34,203	45,357	72,906	82,195
	Total Average training hours	Hours/Employee	11.6	15.2	20.7	23
	- Male	Hours/Employee	11.0	14.8	19.7	22
	- Female	Hours/Employee	13.7	16.9	23.9	25
	Total training hours by management category	Hours	123,349	186,914	284,356	329,779
	Executive Management	Hours	1,755	2,060	2,349	2,676
	- Male	Hours	1,548	1,835	2,077	2,324
	- Female	Hours	207	225	272	352
	Senior Management	Hours	6,119	7,381	8,537	9,489
	- Male	Hours	4,786	5,825	6,717	7,228
	- Female	Hours	1,333	1,556	1,820	2,261
	Middle Management	Hours	15,233	19,493	23,726	32,629
	- Male	Hours	11,392	14,775	17,979	26,023
	- Female	Hours	3,841	4,718	5,747	6,606
	Junior Management	Hours	55,653	86,993	115,958	144,175
	- Male	Hours	40,998	65,901	88,521	111,341
	- Female	Hours	14,655	21,092	27,437	32,834
	Non-management	Hours	44,589	70,987	133,786	140,810
	- Male	Hours	30,422	53,221	96,156	100,668
	- Female	Hours	14,167	17,766	37,630	40,142
Performance Review*						
GRI 404-3	Total employees receiving regular performance reviews	Persons	4,946	8,123	13,769	14,525
	Executive Management	Persons	69	79	88	94
	Senior Management	Persons	219	330	369	388
	Middle Management	Persons	949	1,257	1,409	1,485
	Junior Management	Persons	2,123	3,818	5,778	6,106
	Non - Management	Persons	1,428	2,449	6,125	6,452
	Percentage of employee receiving regular performance reviews	%	46.62	66.19	100.00	100.00
	Executive Management	%	100.00	100.00	100.00	100.00
	Senior Management	%	77.11	100.00	100.00	100.00
	Middle Management	%	87.63	100.00	100.00	100.00
	Junior Management	%	49.79	74.06	100.00	100.00
	Non - Management	%	29.11	44.93	100.00	100.00

GRI Standards		Unit	2014	2015	2016	2017
GRI 404-3	Total employees receiving career development reviews	Persons	2,536	7,806	13,249	14,283
	Executive Management	Persons	42	79	88	94
	Senior Management	Persons	174	330	369	388
	Middle Management	Persons	949	1,257	1,409	1,485
	Junior Management	Persons	424	3,815	5,778	6,106
	Non - Management	Persons	1,027	2,088	5,534	6,178
	Percentage of employees receiving career development reviews	%	24.66	61.67	95.71	98.11
	Executive Management	%	60.87	100.00	100.00	100.00
	Senior Management	%	61.27	100.00	100.00	100.00
	Middle Management	%	87.63	100.00	100.00	100.00
	Junior Management	%	9.96	74.06	100.00	100.00
	Non - Management	%	20.97	38.33	90.35	95.75
Remuneration ratio of women to men*						
GRI 405-2	Strategic	Ratio	0.850	0.860	0.950	0.960
	Managerial	Ratio	0.890	0.910	0.931	0.944
	Supervisory and Operational	Ratio	0.910	0.890	0.912	0.929
Employee Engagement Score						
	Employee engagement score	%	-	85.92	86.02	90.68
	- Male	%	-	82.98	82.62	93.20
	- Female	%	-	88.91	89.39	89.90
	Data coverage of employee engagement survey		-	90.42	93.50	93.75
	- Male	% of male employees	-	89.80	93.40	93.60
	- Female	% of female employees	-	91.10	93.31	93.98
Collective Bargaining*						
GRI 102-41	Total employees covered by collective bargaining agreements	Persons	3,266	4,391	6,948	7,748
	Percentage of total employees covered by collective bargaining agreement	%	29.23	34.12	48.14	50.99
	Number of consultations/negotiations with trade unions over organizational changes [unit]	Numbers	21	56	65	94
Human Rights Integration						
GRI 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	-	3,251	9,269	14,256
	Total number of employees trained in human rights policies or procedures concerning aspects of human rights that are relevant to operations	Persons	-	3,832	7,997	11,403
	Percentage of employees trained in human rights policies or procedures concerning aspects of human rights that are relevant to operations	% of total employees	-	29.78	55.41	75.04
Non-discrimination						
GRI 406-1	Total number of incidents of discrimination and corrective actions taken	Cases	-	1	2	4
	Number of incidents of discrimination and corrective actions taken regarding employees	Cases	-	1	1	3
	Number of incidents of discrimination and corrective actions taken to all excluding employee	Cases	-	0	1	1

GRI Standards		Unit	2014	2015	2016	2017
Security Practices						
GRI 410-1	Total number of security personnel trained in the organization's human rights policies or procedures that are relevant to operations	Persons	-	89	405	1,676
	Percentage of security personnel trained in the organization's human rights policies or procedures that are relevant to operations	%	-	41.98	87.85	88.35
	Total number of security personnel	Persons	-	212	461	1897
Rights of Indigenous Peoples						
GRI 411-1	Incidents of violations involving rights of indigenous people	Cases	-	0	0	0
Human Rights Assessment						
GRI 412-1	Total number of operations	Numbers	-	59	69	83
	Total number of operations that have been subject to human rights reviews or impact assessments	Numbers	-	59	69	83
	Percentage of operations that have been subject to human rights reviews or impact assessments	%	-	99.00	100.00	100.00
Human Rights Grievances						
GRI 103-2	Total number of grievances about human rights through formal grievance process	Cases	-	0	0	0
	Number of grievances about human rights (related to employees) through formal grievance process	Cases	-	0	0	0
	Number of grievance about human rights (not related to employees) through formal grievance process	Cases	-	0	0	0
	Total number of human rights grievances addressed in this reporting period	Cases	-	0	0	0
	Number of human rights grievances (related to employees) addressed during the reporting period	Cases	-	0	0	0
	Number of human rights grievances (not related to employees) addressed during the reporting period	Cases	-	0	0	0
	Total number of human rights grievances filed in previous reporting period resolved during the reporting period	Cases	-	0	0	0
	Number of human rights grievances (related to employees) filed in previous reporting period resolved during the reporting period	Cases	-	0	0	0
	Number of human rights grievances (not related to employees) filed in previous reporting period resolved during the reporting period	Cases	-	0	0	0
Labor Practice Grievance						
GRI 103-2	Total number of grievances about for labor practices filed through formal grievance mechanism	Cases	-	45	41	26
	Total number of grievances about labor practices addressed during the reporting period	Cases	-	48	44	16
	Total number of grievances about labor practices resolved during the reporting period	Cases	-	36	32	19
	Total number of grievances about labor practices filed prior to reporting period that were resolved during the reporting period	Cases	-	27	24	15

*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	2015	2016	2017
Local Community Engagement					
GRI 413-1	Percentage of operations with implemented local community engagement, impact assessments, and development programs	%	50.0	73.1	89.7
	Number of operation with implemented social impact assessment including gender assessment	Numbers	4	4	11
	Number of operation with implemented environmental impact assessment	Numbers	12	14	20
	Number of operation with implemented public disclosure of results of environmental and social impact assessment	Numbers	8	9	13
	Number of operation with implemented local community development programs	Numbers	6	10	17
	Number of operation with implemented stakeholder engagement plans	Numbers	4	9	14
	Number of operation with implemented broad base local community consultation committees and processes	Numbers	4	4	9
	Number of operation with implemented works councils, occupational health and safety committees and other employee representation bodies to deal with impacts	Numbers	14	12	20
	Number of operation with implemented formal local community grievance process	Numbers	8	6	12
Philanthropic Activities					
	Charitable donations	USD	221,921	131,135	888,367
	Community investment	USD	89,863	445,808	645,634
	Commercial Initiatives in the community	USD	203,214	77,239	325,003
Philanthropic Contributions					
	Total cash contributions	USD	486,298	546,010	1,749,830
	Time: Employee volunteering during paid working hours	Hours	2,516	53,102	103,681
	Estimated cost of employee volunteering during paid working hours	USD	38,961	866,390	1,918,393
	Total in kind giving	USD	15,937	79,924	93,160
	Total Management overheads	USD	12,588	32,688	16,013

Remark: 2015 data covers entities in Thailand only.

About This Report





This is Indorama Ventures PCL's Eighth Annual Sustainability Report based on the Global Reporting Initiative (GRI) Standards.

Indorama Ventures PCL ("IVL" or "Company") is a Public Limited Company with office at 75/102, Ocean Tower 2, 37th Floor, Soi Sukhumvit 19 (Wattana), Bangkok 10110 Thailand, Tel: +66 2 661 6661
www.indoramaventures.com

IVL is listed on the Stock Exchange of Thailand (Ticker Symbol: IVL).

Primary Brands, Products and Services

We are one of the world's leading petrochemical producers and a leading global manufacturer of wool yarns. Our global sales and manufacturing presence can be seen in all high-growth economies and industries. Our products serve major players in diversified end-use markets, including the food, beverages, personal and home care, healthcare, automotive, textiles and industrial sectors.

IVL is guided by a continued focus on building strong and lasting relationships with all its stakeholders, including customers, employees, investors, business partners, communities, and the environment, and in providing the best quality products and services. Additional information on our products is available on our website.

Our Approach

IVL publishes a sustainability report annually as part of our commitment to communicating effectively and transparently, and providing a better understanding of our sustainable development efforts. This includes our economic, environmental and social initiatives, which allows us to strengthen our engagement with stakeholders regarding how we are integrating sustainability into our operations. This report provides insights into our approach to sustainability, along with our objectives, strategy and performance.

Scope of the Report

Our 2017 Sustainability Report covers our operations across four continents in 25 countries around the world. The Report includes both our Sustainability Update and a comprehensive collection of sustainability disclosures and materials. All of the quantitative data included covers the period from January 1 to December 31, 2017, unless otherwise stated. We also provide some information about discussions and events that took place in early 2018 so that readers have more up-to-date information. As the company is undergoing significant growth, we recognize the importance of ensuring progress on sustainability. We declare this report to be based on the Global Reporting Initiative (GRI) Standards. The key elements of the GRI Standards for sustainability reporting that we have focused on, in keeping with the intent of the standards, are described below.

Our 2016 Sustainability Report was published in May 2017. Our previous Sustainability Reports from 2010-2016 are available on our website at: www.indoramaventures.com/sustainability.

Principles for Defining Report Content

We strongly believe that a broad and inclusive materiality process, including stakeholder engagement, can deliver valuable benefits to the entire organization. This includes:

- Prioritizing our resources for the sustainability issues that matter most to our business and stakeholders
- Ensuring the right business strategy by taking into account significant social, environmental, and economic initiatives thereby focusing our time and resources on the most important material topics
- Embedding sustainability issues into the day-to-day management and operations of our wider business processes
- Identifying trends on the horizon and potential emerging risks thereby enabling our business to be ready to quickly adapt and take advantage of opportunities to develop new products or services, and to stay ahead of our competitors

Principles for defining Reporting Quality

Our Sustainability Report is prepared based on GRI Standards, Core option. The standards set out principles for defining reporting quality – Balance, Comparability, Accuracy, Timeliness, Clarity, and Reliability. We have taken a number of actions to meet the above reporting quality principles.

- We continue to improve the quality of information and disclose it in a timely manner enabling our stakeholders to effectively integrate this into their decision-making.
- We value the opinion of our internal and external stakeholders, and incorporated the feedback received from in preparing this report.
- The information and feedback received from stakeholders through various channels has been compiled and analyzed, including key focus areas (i.e. material topics have been identified).

This year, we conducted a materiality assessment to screen the content significant to our business operations and our stakeholder decisions, with a focus on economic, environmental and social dimensions.

There are a number of actions we have taken this year to meet these principles. Through a robust assurance process leveraging external and internal expertise, we have taken steps to ensure increased coverage while maintaining the integrity of the information contained in this report. We have also developed targets and commitments to improve the way we perform, which have been adapted to the business segment, team, and individual targets in addition to key performance indicators (KPIs).

The GRI's standards on defining content are applied throughout the report. The process consists of the following three steps:

1. Sustainability Context:

This process involves the analysis and identification of sustainability-related materiality topics. Materiality topics of significance to our business strategy and operations occur in the economic, environmental and social areas of the business and are identified based on business opportunities, levels of risk and possible impacts to our long-term sustainable growth. This process also involves the evaluation of external trends relating to our business. Furthermore, stakeholders' points of view arising from our stakeholder engagement process are used as inputs to identify the issues they underlined as important.

2. Materiality Assessment:

By combining the significant topics that may affect us and our stakeholders, we are able to identify several materiality topics. As part of this year's materiality assessment, we have conducted a survey covering both external stakeholders (suppliers, customers, investors, media, analysts and bankers) and internal stakeholders (across all operations, businesses, and key functions). Details of the materiality assessment are provided in the Materiality Assessment chapter in this report.

We also created a matrix of key topics which were assessed by business leaders. Based on this assessment, senior management agreed on the material topics for our business going forward. We reviewed the GRI topics and where relevant, assigned indicators (please see the GRI content index).

Thirteen material topics were identified. Details of the materiality matrix are given in the Materiality Assessment chapter in this report. In order to drive performance improvements, we established key performance indicators and targets directly related to our material topics.

3 . Assurance:

External assurance of our sustainability disclosures is an integral part of our approach to providing accurate information and metrics for our stakeholders and the public. We have standardized data collection processes with relevant training globally including Environmental, Health and Safety (EHS), Greenhouse Gases (GHG), and Corporate Social Responsibility. The data measurement methodology provided remains the same as in our 2016 report though the consistency has improved for several parameters including safety statistics, GHG emissions, and human resources. We enlarged the scope of our reporting boundary as compared to previous years and will continue to expand this process further in the future.

Selected content and data disclosed in our Sustainability Report were verified and assured by an independent external assurance auditor, TÜV India Private Limited. An Assurance Statement issued by TÜV India is available in the Independent Assurance Statement section of this report. The assured data is indicated in the GRI Content Index.

The non-financial information included in the report is subject to certain uncertainties due to limitations inherent in the nature of measuring such data. For example, variances in measurements can result from the selection or measurement techniques used across the complete IVL system. However, we are committed to disclosing the most accurate information and metrics possible for our stakeholders and the public.

Methodology of the Data

Data Coverage:

Data verification coverage was expanded this year to 69 sites covering 100% of total production capacity excluding the entities mentioned in the exceptions below, compared to 22 sites last year covering over 50% of production capacity globally. Twelve indicators, as mentioned in the Independent Assurance Statement section, were selected for the assurance audit based on the issues that are most significant to the sustainability performance of the business, as well as the key risks identified by the entire group.

Assurance Audit Coverage Target:
100% Production Capacity by 2020
Target achieved 100% Production Capacity in 2017

Reporting Boundaries

The scope and reporting boundaries cover our disclosures across IVL as a group including subsidiaries and factories except those mentioned under the “Exceptions” topic, within social, environmental and economic parameters and are indicated in the GRI Content Index. The information of the companies acquired during the year includes the information from the date of acquisition.

Environment

The environmental data is based on data sources from accounting evidence, meter reading, data from production systems and estimation with ground rules.

Greenhouse Gas (GHG) Accounting and Verification

During the reporting year, GHG accounting was carried out systematically across all our operations globally as per the Greenhouse Gas Protocol on Corporate Accounting and Reporting by the World Resources Institute (WRI)/World Business Council for Sustainable Development (WBCSD).

**Our company's Carbon Footprint has been verified by
TÜV NORD CERT GmbH in accordance with ISO 14064-3**

Changes in size, structure and ownership

In 2017, IVL acquired Glanzstoff Industries (Qingdao) Company Limited (China); Glanzstoff Longlaville S.A.S (France); Performance Fibers, S. de R.L. de C.V (Mexico); Performance Fibers (Kaiping) No. 3 Company Limited (China); incorporated a new Filipino manufacturing company, Meycauayan; and expanded the business of Indorama Ventures Packaging (Philippines) Corporation to two additional locations in Bacolod and Meycauayan.

Further details on our acquisitions are available on our website under Media Center.

Exceptions

The 2017 Sustainability Report includes environmental, safety and human resources data from all our business units, including some joint venture entities, except the following:

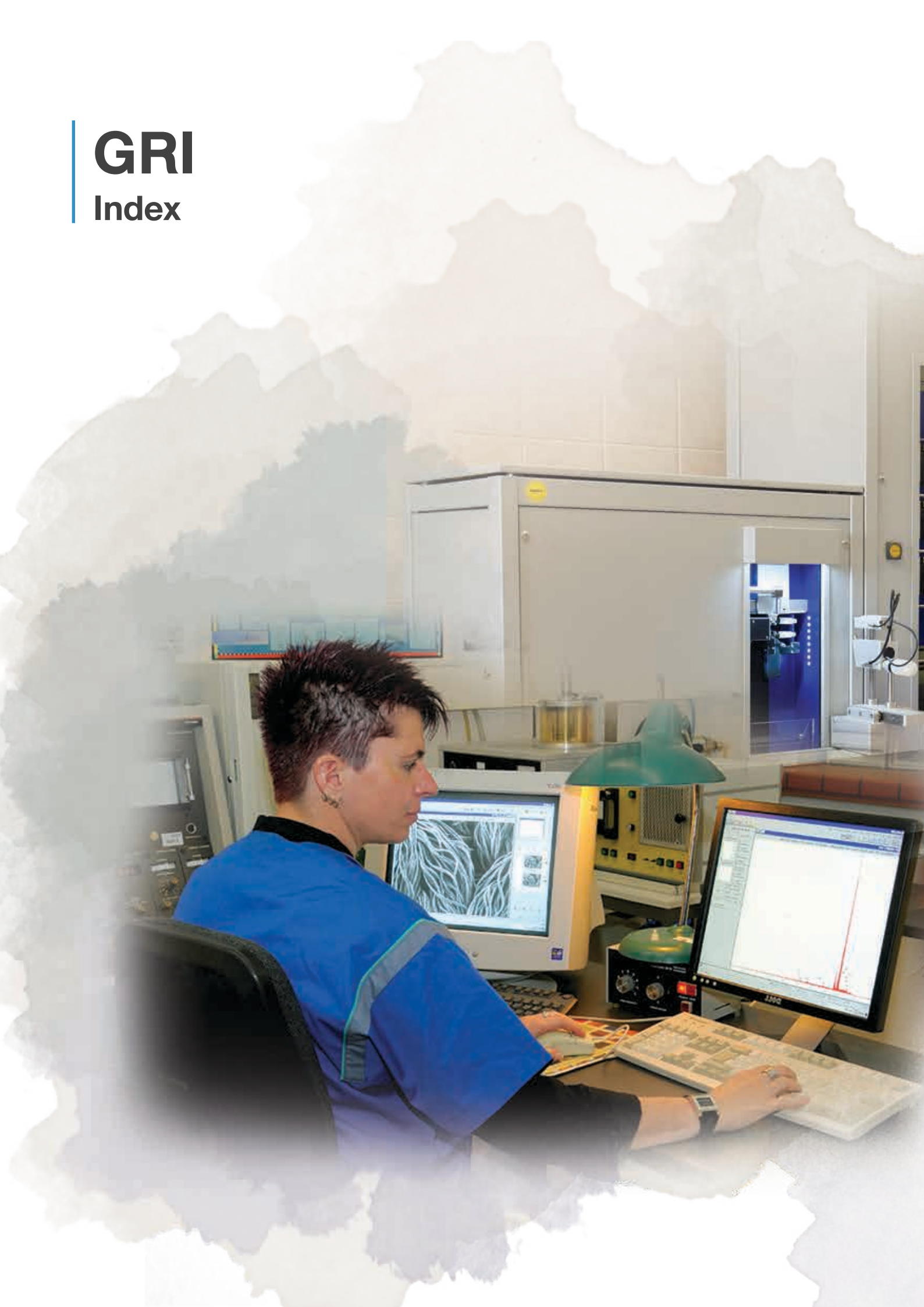
- Glanzstoff Industries (Qingdao) Company Limited, China
- Glanzstoff Longlaville S.A.S, France
- Performance Fibers Operations Mexico, S. de R.L. de C.V, Mexico
- Indorama Ventures Packaging (Philippines) Corporation, Meycauayan, the Philippines
- Performance Fibers (Kaiping) No.3 Company Limited, China
- Indorama Ventures Olefins Holding LLC, United States
- Shenma-PHP (Pingdingshan) Air Bag Yarn Manufacturing Co., Ltd., China
- Environmental and safety information of sales offices, corporate offices

Forward-Looking Statements:

This Sustainability Report contains statements reflecting our views about our future performance that constitute “forward-looking statements.” Forward-looking statements are generally identified through the inclusion of words such as “aim,” “believe,” “estimate,” “expect,” “goal,” “intend,” “may,” “plan,” “target” and “will” or similar statements or variations of such terms and other similar expressions. Forward-looking statements inherently involve risks and uncertainties that could cause actual results to differ materially from those predicted in such statements, including changes in demand for our products, changes in the legal and regulatory environment, imposition by any jurisdiction (within or outside of Thailand) of new or increased taxes or other measures that impact our products and the timing thereof, our ability to compete effectively, our ability to achieve our goals with respect to sustainability, unfavorable economic conditions in the countries in which we operate and the other factors discussed in our public securities filings. Investors are cautioned not to place undue reliance on any such forward looking statements, which speak only as of the date they are made. IVL undertakes no obligation to update any forward-looking statements, whether as a result of new information, future events or otherwise.

GRI

Index





GRI Standards Content Index for “The Core Option”

GRI Standard Disclosures	Disclosure Title	Page Number	External Assurance
Organizational Profile			
102-1	Name of the organization	AR p. 22 / SR p. 88	-
102-2	Activities, brands, products, and services	AR p. 77-80 / IVL website	-
102-3	Location of headquarters	AR p. 22 / SR p. 88	-
102-4	Locations of operations	AR p. 23 / SR p. 10-11	-
102-5	Ownership and legal form	AR p. 23 / SR p. 88	-
102-6	Market served	AR p. 23 / SR p. 8-9	-
102-7	Scale of the organization	SR p. 7, 80	-
102-8	Information on employees and other workers	SR p. 12, 61-62, 80	-
102-9	Supply chain	AR p. 96-97 / SR p. 10-11	-
102-10	Significant changes to the organization and its supply chain	SR p. 89	-
102-11	Precautionary principle or approach	SR p. 88	-
102-12	External initiatives	AR p. 62 / SR p. 14-15, 45, 53, 68-69	-
102-13	Membership of associations	SR p. 15 / IVL website	-
Strategy			
102-14	Statement from senior decision-maker	SR p. 2-5	-
102-15	Key impacts, risks and opportunities	SR p.29	-
Ethics and Integrity			
102-16	Values, principles, standards, and norms of behavior	SR p. 18, 37-38	-
102-17	Mechanisms for advice and concerns about ethics	AR p. 181 / SR p. 38 / IVL website	-
Governance			
102-18	Governance structure	SR p. 16-19 / IVL website	-
102-20	Executive-level responsibility for economic, environmental, and social topics	SR p.18-19 / IVL website	-
102-21	Consulting stakeholders on economic, environmental, and social topics	SR p. 28	-
102-22	Composition of the highest governance body and its committees	SR p. 18 / IVL website	-
102-23	Chair of the highest governance body	SR p. 19 / IVL website	-
102-24	Nominating and selecting the highest governance body	SR p. 18-19, 37	-
102-26	Role of highest governance body in setting purpose, values, and strategy	SR p. 19 / IVL website	-
102-28	Evaluating the highest governance body's performance	SR p. 37	-
102-29	Identifying and managing economic, environmental, and social impacts	SR p. 29	-
102-30	Effectiveness of risk management processes	AR p. 117-125, 127-129 / SR p. 46	-
102-31	Review of economic, environmental, and social topics	SR p. 36-69	-
Stakeholder Engagement			
102-40	List of stakeholder groups	SR p. 22	-
102-41	Collective Bargain	SR p. 83	-
102-42	Identifying and selecting stakeholders	SR p. 20-23	-
102-43	Approach to stakeholder engagement	SR p. 22-23, 28	-
102-44	Key topics and concerns raised	SR p. 20-33	-
Reporting Practices			
102-45	Entities included in the consolidated financial statements	AR p. 77-80 / SR p. 89	-
102-46	Defining report content and topic boundaries	SR p. 28, 88-89	-
102-47	List of material topics	SR p. 29	-
102-48	Restatements of information	SR p. 79	-
102-49	Changes on reporting	SR p. 72-73, 89	-
102-50	Reporting period	SR p. 88	-
102-51	Date of most recent report	SR p. 88	-
102-52	Reporting cycle	SR p. 88	-
102-53	Contact point for questions regarding the report	SR p. 100	-
102-54	Claims of reporting in accordance with the GRI Standards	SR p. 88-89	-
102-55	GRI content index	SR p. 92-93	-
102-56	External assurance	SR p. 88-89, 96-99	-
Management Approach			
103-1	Explanation of the material topic and its boundary	SR p. 30-31, 36-69	-
103-2	The management approach and its components	SR p. 36-69, 84	-
103-3	Evaluation of the management approach	SR p. 36-69	-
Economic Performance			
201-1	Direct economic value generated and distributed	AR p. 82, 193 / SR p. 12, 74	-
Market Presence			
202-1	Ratios of standard entry level wage by gender compared to local minimum wage	SR p. 62	-
Anti-Corruption			
205-1	Operations assessed for risks related to corruption	SR p. 37	-
205-2	Communication and training about anti-corruption policies and procedures	SR p. 37	-
205-3	Confirmed incidents of corruption and actions taken	SR p. 37	-
Anti-Competitive Behavior			
206-1	Legal actions for anti-competitive behavior, anti-trust, and monopoly practices	SR p. 37	-

GRI Standard Disclosures	Disclosure Title	Page Number	External Assurance
Materials			
301-1	Materials used by weight or volume	SR p. 72	-
301-2	Recycled input materials used	SR p. 13, 53, 74	-
Energy			
302-1	Energy consumption within the organization	SR p. 13, 74-75	SR p. 96-99
302-3	Energy intensity	SR p. 13, 75	SR p. 96-99
302-4	Reduction of energy consumption	SR p. 13, 75	-
Water			
303-1	Water withdrawal by source	SR p. 75	SR p. 96-99
303-3	Water recycled and reused	SR p. 13, 75	SR p. 96-99
Emissions			
305-1	Direct (Scope 1) GHG emissions	SR p. 13, 75	SR p. 96-99
305-2	Energy indirect (Scope 2) emissions	SR p. 13, 75	SR p. 96-99
305-4	GHG emissions intensity	SR p. 13, 75-76	-
305-7	Nitrogen oxides (NOx), sulfur oxides (SOx), and other significant air emissions	SR p. 76	SR p. 96-99
Effluents and Waste			
306-1	Water discharge by quality and destination	SR p. 76	SR p. 96-99
306-2	Waste by type and disposal method	SR p. 76	SR p. 96-99
306-3	Significant spills	SR p. 76-77	SR p. 96-99
306-4	Transport of hazardous waste	SR p. 76	-
Environmental Compliance			
307-1	Non-compliance with environmental laws and regulations	SR p. 51, 77	-
Supplier Environmental Assessment			
308-1	New suppliers that are screened using environmental criteria	SR p. 40	-
Employment			
401-1	New employee hires and employee turnover	SR p. 80-81	-
401-3	Parental Leave	SR p. 81	-
Occupational Health and Safety			
403-1	Workers representation in formal joint management-worker health and safety committees	SR p. 77-79	-
403-2	Types of injury and rated of injury, occupational diseases, lost days, and absenteeism, and number of work-related fatalities	SR p. 12, 77-79	SR p. 96-99
403-3	Workers with high incidence or high risk of diseases related to their occupation	SR p. 78	-
Training and Education			
404-1	Average hours of training per year per employee	SR p. 12, 82	SR p. 96-99
404-2	Programs for upgrading employees skills and Transition assistance programs	SR p. 64-65	-
404-3	Percentage of employees receiving regular performance and career development reviews	SR p. 82-83	-
Diversity and Equal Opportunity			
405-1	Diversity of governance bodies and employees	SR p. 37, 61	-
405-2	Ratio of basic salary and remuneration of woman to man	SR p. 83	-
Non-Discrimination			
406-1	Incidents of discrimination and corrective actions taken	SR p. 83	-
Child Labor			
408-1	Operations and suppliers at significant risk for incidents of child labor	SR p. 38	-
Force or Compulsory Labor			
409-1	Operations and suppliers at significant risk for incidents of forced or compulsory labor	SR p. 60	-
Security Practices			
410-1	Security personnel trained in human rights policies or procedures	SR p. 84	-
Human Rights Assessment			
412-1	Operations that have been subject to human rights reviews or impact assessments	SR p. 83	-
412-2	Employee training on human rights policies or procedures	SR p. 85	-
Local Communities			
413-1	Operations with local community engagement, impact assessments, and development programs	SR p. 85	-
Supplier Social Assessment			
414-1	New suppliers that were screened using social criteria	SR p. 40, 60, 84	-
Public Policy			
415-1	Political contributions	SR p. 37	-
Customer Health and Safety			
416-2	Incidents of non-compliance concerning the health and safety impacts of products and services	SR p. 39	-
Marketing and Labeling			
417-3	Incidents of non-compliance concerning marketing communications	SR p. 39	-
Customer Privacy			
418-1	Substantiated complaints concerning breaches of customer privacy and losses of customer data	SR p. 39	-
Socioeconomic Compliance			
419-1	Non-compliance with laws and regulations in the social and economic area	SR p. 38, 77	-

Independent

Assurance Statement





Independent Assurance Statement

Introduction and Engagement

Indorama Ventures Public Company Limited (hereafter 'IVL' or 'the Company') commissioned TUV India Private Limited (TUVI) to conduct the independent assurance of IVL's sustainability report (hereinafter 'the Report'), which includes "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 within the sustainability information for the applied reporting period. This assurance engagement was conducted against the Global Reporting Initiative Standards and AA1000AS (2008) Protocol (Type 1, Moderate Level) for verification of the Sustainability Report. The onsite verification was conducted in March 2018 for plants in Indonesia namely, PT Indorama Polypet Indonesia; PT Indorama Petrochemicals; PT Indorama Ventures Indonesia; and PT Indorama Polychem Indonesia in addition to the desk review carried out for all other sites of the Company except those mentioned under the heading 'Exceptions' in About This Report.

IVL opted for external assurance for the 2017 calendar year. The Report covers IVL's sustainability information for the period 1 January 2017 to 31 December 2017.

Scope, Boundary and Limitations of Assurance

The scope of the assurance includes the environmental and social indicators in the report as per the core disclosures required by GRI Standards. In particular, the assurance engagement includes the following:

- Verification of the application of the Report content, and principles as mentioned in the GRI Standards, and the quality of information presented in the Report over the reporting period (1 January 2017 to 31 December 2017);
- Review of the policies, initiatives, practices and performance described in the Report;
- Review of the disclosures made in the Report against the requirements of the GRI Standards and AA1000AS (2008), with a Type 1, moderate level of assurance;
- Verification of the reliability of the GRI Standards Disclosure 302-1, 302-3, 303-1, 303-3, 305-1, 305-2, 305-7, 306-1, 306-2, 306-3, 403-2, 404-1.
- Specified information was selected based on the materiality determination and needs to be meaningful to the intended users;
- Confirmation of the fulfilment of the GRI Standards; 'in accordance' with the Core criteria, as declared by the management of IVL.

The reporting boundary is based on the internal and external materiality assessment. The reporting aspect boundaries are set out in the Report covering the sustainability performance of the Company to the above-mentioned sites.

Our engagement did not include an assessment of the adequacy or the effectiveness of IVL's strategy or management of sustainability related issues. During the assurance process, TUVI did not come across the limitations to the scope of the agreed assurance engagement. No external stakeholders were interviewed as a part of the sustainability engagement for the period 1 January 2017 to 31 December 2017.

Verification Methodology

This assurance engagement was planned and carried out in accordance with the GRI Standards and AA1000AS (2008). The Report was evaluated against the following criteria:

- Adherence to the principles of Stakeholder inclusiveness, Materiality, Responsiveness, Completeness, Neutrality, Relevance, Sustainability context, Accuracy, Reliability, Comparability, Clarity and Timeliness; as prescribed in the GRI Standards and AA1000AS (2008);

- Application of the principles and requirements of the GRI Standards for its 'in accordance' Core criteria.

During the assurance engagement, TUVI adopted a risk-based approach, concentrating on verification efforts on the issues of high material relevance to IVL's business and its stakeholders. TUVI has verified the statements and claims made in the Report and assessed the robustness of the underlying data management system, information flows and controls. In doing so:

- TUVI reviewed the approach adopted by IVL for the stakeholder engagement and materiality determination process. TUVI performed limited internal stakeholder engagement to verify the qualitative statements made in the Report;
- TUVI verified the sustainability-related statements and claims made in the Report and assessed the robustness of the data management system, information flow and controls;
- TUVI examined and reviewed the documents, data and other information made available by IVL for the reported disclosures including the Disclosure on Management Approach and performance indicators;
- TUVI conducted interviews with key representatives including data owners and decision-makers from different functions of the Company during the site visit;
- TUVI performed sample-based reviews of the mechanisms for implementing the sustainability related policies, as described in IVL's Sustainability Report;
- TUVI verified sample-based checks of the processes for generating, gathering and managing the quantitative data and qualitative information included in the Report for the reporting period.
- TUVI verified the Process Safety Events (Tier 1 & 2) as per American Petroleum Industry Recommended Practice API RP 754 at all visited sites.

Opportunities for Improvement

The following is an extract from the observations and opportunities for improvement reported to the management of IVL and are considered in drawing our conclusions on the Report; however they are generally consistent with the Management's objectives.

Opportunities are as follows:

- IVL can establish micro-level benchmarking especially in steam, coal, compressed air, chilled water, DM water, etc., for all departments/machines/products.
- IVL can develop scientific tools to calculate its annual sustainability budget by considering the scale of its impacts on the environment and social aspects.
- IVL can accelerate the application of renewable energy (solar energy) at each site.
- IVL can prioritize water recycling and reuse at all plants. Harvesting of rain water should be explored.
- IVL can organize additional training on Process Safety (API RP 754), Functional Safety (ISO 26262), and energy and water management.

Conclusions

The Sustainability Report was prepared based on the GRI Standards Reporting Principles and Standard Disclosures 'in accordance' with the GRI Standards Core option. 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 aspects, related strategies, and performance indicators, 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' - Core reporting criteria. Organization refers to general disclosure to report contextual information about an organization while the Management Approach is discussed to report the management approach for each material topic.

- Topic Specific Standard: TUVI is of the opinion that the reported specific disclosures for each material topic generally meet the GRI Standards reporting requirements for 'in accordance' - Core reporting criteria.

The requirements below were verified by the assurance team:

- Disclosure **302-1**: Energy consumption within the organization
- Disclosure **302-3**: Energy intensity
- Disclosure **303-1**: Water withdrawal by source
- Disclosure **303-3**: Water recycled and reused
- Disclosure **305-1**: Direct (Scope 1) GHG emissions
- Disclosure **305-2**: Energy indirect (Scope 2) GHG emissions
- Disclosure **305-7**: Nitrogen oxides (NOx) / sulfide oxides (SOx) and other significant air emissions
- Disclosure **306-1**: Water discharge by quality and destination
- Disclosure **306-2**: Waste by type and disposal method
- Disclosure **306-3**: Significant spills
- Disclosure **403-2**: Types of injury and rates of injury, occupational diseases, lost days, absenteeism, and the number of work-related fatalities
- Disclosure **404-1**: Average hours of training per year per employee

Limited Assurance Conclusion: On the basis of 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, in accordance with the GRI Standards, "Core option", sustainability reporting guidelines or that the sustainability information is not reliable in all material respects, with regards to the reporting criteria.

Reasonable Assurance Conclusion: On the basis of the procedures we have performed, in our opinion, IVL reported the direct and indirect (Scope 1 and 2) GHG emissions as a whole, which were prepared in accordance with the reporting criteria and is reliable, in all material respects, with regards to the reporting criteria.

TUVI did not perform any assurance of procedures on the prospective information, such as targets, expectations and ambitions, disclosed in the sustainability information. Consequently, TUVI draws no conclusion on the prospective information. This assurance statement has been prepared in accordance with the terms of our engagement. Type 1 moderate level assurance engagement with respect to sustainability related data involves performing procedures to obtain evidence about the sustainability information. The procedures performed depend on the practitioner's judgment, but their nature is different from, and their extent is less than, a Type 2 moderate level assurance engagement. It does not include detailed testing of source data or the operating effectiveness of processes, internal controls and consequently they do not enable us to obtain the assurance necessary to become aware of all significant matters that might be identified in a Type 2 moderate level assurance engagement.

TUVI has evaluated the Report's adherence to the following principles with respect to the requirements of the GRI Standards.

Stakeholder Inclusiveness: Stakeholder identification and engagement is carried out by IVL on a periodic basis to bring out key stakeholder concerns as material aspects 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 aspects that are internal and external to the Company's range of businesses. The Report fairly brings out the aspects and topics and its 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's policies and management systems including governance. In our view, the Report meets the requirements.

Completeness: The Report has fairly disclosed the General and Specific Standard Disclosures, including the Disclosure on Management Approach, covering the sustainability strategy, management approach, monitoring systems and sustainability performance indicators against the GRI Standards, 'in accordance' with the Core option. In our view, the Report meets the requirements.

Reliability: The majority of the data and information was verified by TUVI's assurance team at IVL's office on the factory's premises and found to be fairly accurate. Further desk review of web-based

data was carried out for all other sites mentioned above. Some inaccuracies in the data identified during the verification process were found to be attributable to transcription, interpretation and aggregation errors and these errors have been corrected. Therefore, in accordance with the GRI Standards and AA1000AS (2008) for a Type 1, moderate level assurance engagement, TUVI concludes that the sustainability data and information presented in the Report is fairly reliable and acceptable. In our view, the Report meets the requirements.

Neutrality: The disclosures related to sustainability issues and performances are reported in a neutral tone, in terms of content and presentation. In our view, the Report meets the requirements.

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 Company 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 – environmental and social indicators) disclosed by IVL in the Report. This assurance engagement is based on the assumption that the data and the information provided to TUVI are complete and true.

TUV's Competence and Independence

TUVI is an independent, neutral, third party providing sustainability services, with qualified environmental and social assurance specialists. TUVI states its independence and impartiality 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 toward any people interviewed during the assurance engagement.

For and on behalf of TUV India Private Limited



Manojkumar Borekar
Project Manager and Reviewer
Head – Sustainability Assurance Service
TUV India Private Limited

Date: 23/04/2018
Place: Mumbai, India
Project Reference No: 8115385158

www.tuv-nord.com/in



KEY CONTACTS AND FEEDBACK

Indorama Ventures welcomes your feedback on this report, and our sustainability policies and performance. Please email your comments to sustainability@indorama.net. You can also reach out to:



Mr. Richard Jones

Head - Investor Relations and Corporate Communications
Indorama Ventures Public Company Limited
Phone: +662 661 6661 ext 680
E-mail: richard.j@indorama.net



Mr. Harsha V Reddy

Head of Global Sustainability
Indorama Ventures Public Company Limited
Phone: +662 661 6661 ext 605
E-mail: harsha.r@indorama.net



Mr. Avinash Chandra

EHS Head Corporate
Indorama Ventures Public Company Limited
Phone: +662 661 6661 ext 184
Email : avinash.c@indorama.net

“Indorama Ventures, as the largest PET producer in the world, has responsibility to educate people on recycling. All the name cards that IVL employees carry are made of 100% recycled PET bottles.”



INDORAMA

V E N T U R E S





INDORAMA VENTURES PUBLIC COMPANY LIMITED

75/102 Ocean Tower 2, 37th Floor,

Soi Sukhumvit 19 (Wattana), Bangkok 10110 Thailand

Telephone: +662 661 666 Fax: +662 661 6664-5

www.indoramaventures.com