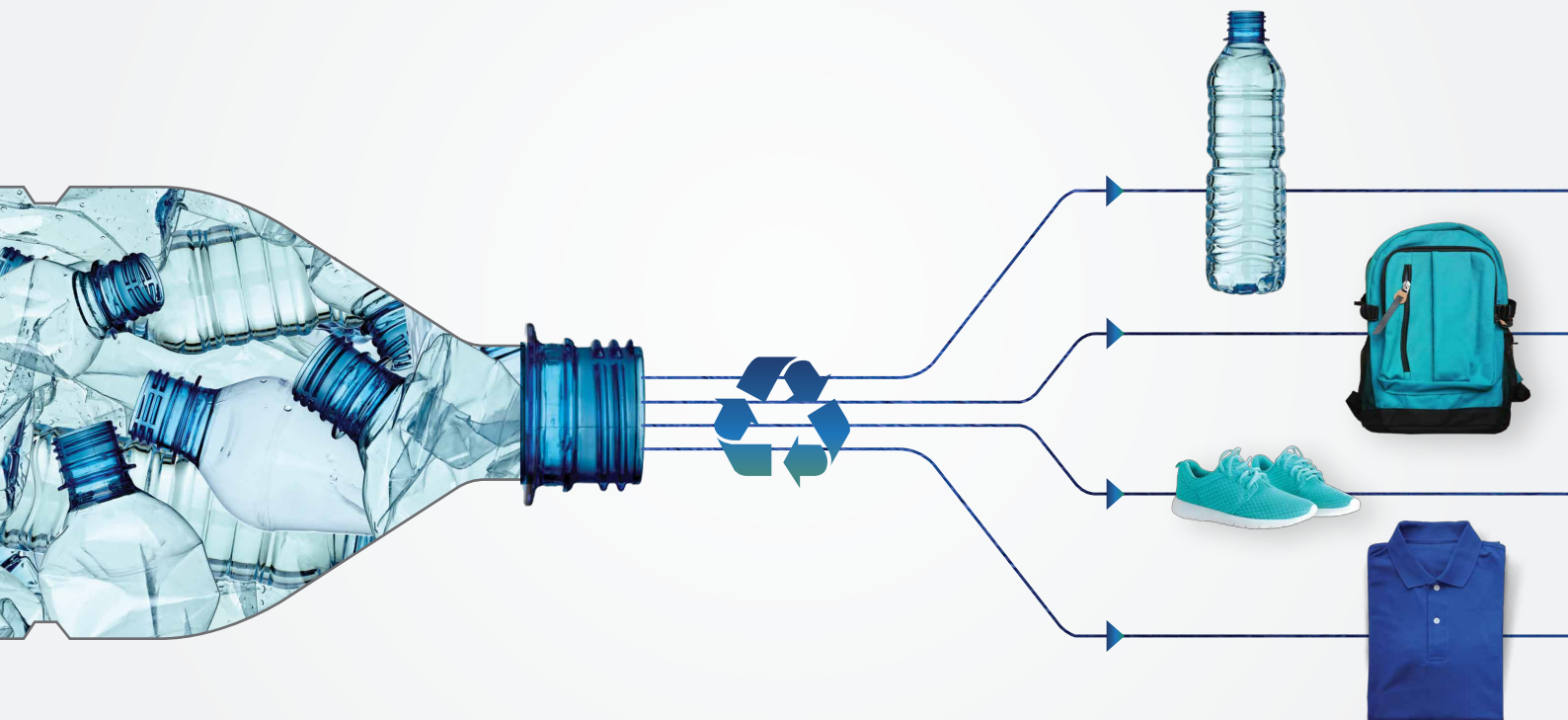




TO BE A WORLD-CLASS CHEMICAL COMPANY  
MAKING GREAT PRODUCTS FOR SOCIETY

# Sustainability Report Executive Summary 2018



**We Source - We Make – We Recycle**

# Our Board

**The Catalyst for where IVL Stands Today**



For More Information



# Group CEO Message



*“Next economic revolution is underway, and this fundamental shift revolves around **Sustainability**.”*

**Sustainability** is not only a social or environmental issue, but **an idea** that will increasingly **transform our economies** and the companies that embrace them.

**Alope Lohia**  
Group Chief Executive Officer



For More  
Information

# IVL at A Glance

## IVL Operating Sites

as of 31 Dec, 2018



**93**

Sites

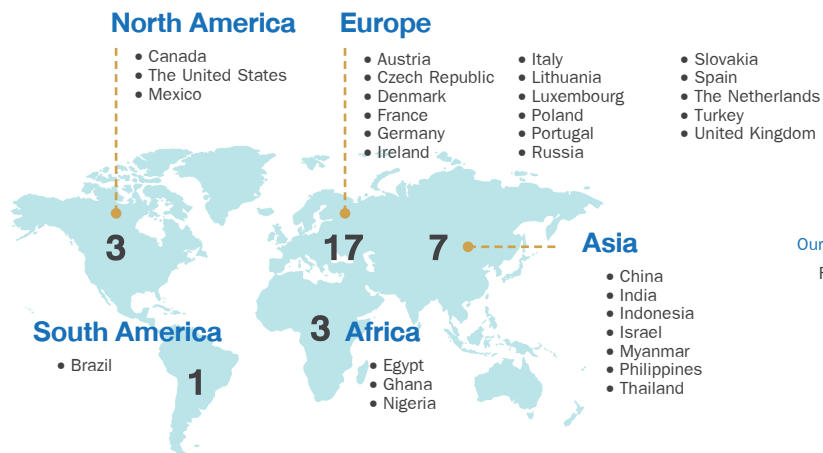
**5**

Continents

**31**

Countries

In 2018, **19** New sites



Our worldwide locations

For More Information



### Feedstock

We integrated backwards to produce the upstream materials for the production of PET and Polyester.

### Packaging

Our products comprise PET molding bottles (preform), bottle caps and bottles.

### PET

We offer products in different grades, including hot-fill, high and low intrinsic viscosity, quick heat and general grade, and much more.

### Wool

We began our first business in premium worsted wool yarns, using best-in-class machinery and the latest technology.

### Fibers

Our polyester and yarns are used in the Automotive and Technical, Home and Apparel, and Hygiene and Medical segments.

### Recycled Products

Our recycled products are bottle flakes, recycled PET or rPET, and recycled fibers.

### Our products



Our products

For More Information



# IVL's Sustainable Value Creation for Stakeholders



## Our Capitals

**4,680**

Million USD  
Total Equity

**59.9**

Million GJ  
Energy  
Consumption

**11.8**

Million Tons  
Raw Materials  
consumption

**60.3**

Million m³  
Water withdrawal

**30.43**

Training hours  
per employee

**173.60**

USD  
Training  
expenditure  
per employee

**15,221**

Permanent  
Employees

**2.35**

Million USD  
CSR Contribution



## Our Business Model

### Vision

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

### Mission

We commit to be a responsible industry leader leveraging on the excellence of our people, processes, and technologies to create value for our stakeholders.



### Values

- » The customer is why we exist.
- » Our people make the difference.
- » We see change as an opportunity.
- » Diversity is our strength.
- » We are responsible.

**31** Countries

**93** Sites

**5** Continents

**5** Segments

**15** Research Centers



## Our Results

**10,741**

Million USD  
Total Revenue

**789**

Million USD  
Core Net Profit

**11.34**

Million Tons  
Total Production  
(including  
intercompany sales)

**86.01%**

Customer  
Satisfaction Index

**23%**

Vitality Index  
Fibers Business

**33%**

Vitality Index  
PET HVA Business

**0.522**

tCO<sub>2</sub>e/Ton of  
production

**2.75**

Million GJ  
Renewable Energy

**3.85**

Employee  
Engagement Score

**0**

Fatalities

**350,903**

Tons of PET  
Recycling

**LTIFR = 3.71**

(cases / 1,000,000  
man-hours)

# 2018 Financial Highlights

We achieved year-on-year EBITDA growth of 44%, and managed to increase our EBITDA by more than 250% in the last four years.

**Revenue**  
**10.7**  
**Billion USD**

**+27%**  
**YoY**

**Operating  
Cash Flow**  
**989 Million USD**

**+16%**  
**YoY**

**Earning  
Per Share**  
**4.61 Thai Baht**

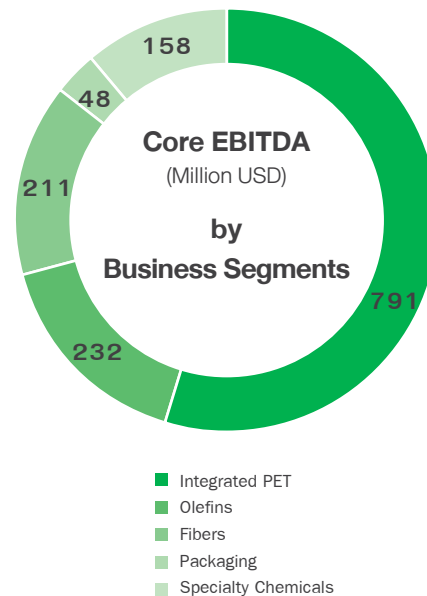
**+16%**  
**YoY**

**Core  
EBITDA**  
**1.4 Billion USD**

**+44%**  
**YoY**

**Core Net Profit  
after Tax and NCI**  
**789 Million USD**

**+72%**  
**YoY**



# External Recognitions

MEMBER OF

**Dow Jones  
Sustainability Indices**

In Collaboration with RobecoSAM

- Member of 2018 DJSI Emerging Markets Chemicals Industry
- Ranked among the top ten of all global chemical companies



**FTSE4Good**

- A constituent of the **FTSE4Good Index Series Best ESG Score** in the 100% percentile of the group in 2018



- 2018 **Climate Change Rating: B**
- 2018 **Supply Chain Rating: B-**



- **Gold Recognition**
- Top 3% of suppliers in all categories

**Bloomberg**

**Best ESG Disclosure Score**  
in 2018

**MSCI**



**ESG rating: BB**



**2018  
ESG Disclosures**



**The Stock Exchange of Thailand**

- **SET Sustainability Awards 2018 Outstanding**
- **Thailand Sustainability Investment 2018**



For More  
Information



# Sustainable Development Goals (SDGs) and IVL

Considering the nature of business, IVL is committed to play its role by contributing to the achievement of following Sustainable Development Goals. The fully coloured goals are directly impacted by business activities which IVL strongly supports. The faded goals are indirectly impacted by business activities which IVL keeps monitoring.

\*\*\* = Major  
\*\* = Moderate  
\* = Monitor

\*\*\*  
Guaranteeing the health  
and safety of our products,  
employees and contractors

\*\*\*  
Providing learning and  
development opportunities  
to all staff and promoting  
recycling education in society

\*  
Supporting gender  
equality and the increased  
participation and  
advancement of women

\*  
Increasing the use of  
electricity from renewable  
sources where possible

\*\*  
Providing decent working  
conditions, equalities and  
non-discrimination in our  
operations

\*\*\*  
Improving resource use,  
energy efficiency, and  
developing strong  
low-carbon strategies



\*\*  
Managing sustainable  
water use and analysing  
global water risk with  
mitigation action plans

\*\*\*  
Reducing the impacts  
of our products in the use  
phase and promoting ways  
to include recyclability

\*\*\*  
Partnering with  
organizations to intensify  
our contributions to  
the circular economy

\*\*\*  
Collaborating with  
like-minded organizations  
to address waste  
in oceans

\*\*\*  
Reducing the risk of potentially  
adverse environmental  
impacts and monitoring the  
areas near our operations





# Corporate Governance



We are committed to operating ethically, transparently, without bribery and corruption, throughout our global operations.



No penalties were imposed on IVL in 2018 for material non-compliance with respect to corporate governance regulations.



We do not take any particular political positions. No direct political donation or contribution was made by IVL or its subsidiaries in 2018.

## Whistleblower

IVL has a Whistleblower Policy which provides information about whistleblower practices and provides channels to lodge any anonymous complaints. The website of the Company provides various communications channels for external parties who may contact the Whistleblower Committee or independent directors, including sending to: **ethics@indorama.net** and **independentdirectors@indorama.net** without revealing their identity.

## Anti-corruption

The Company successfully renewed its certification for **Thailand's Private Sector Collective Action Coalition Against Corruption (CAC)** in May 2018.

(IVL received its first certification in October 2014.)



## Corporate Governance Evaluation

Corporate Governance and Board Evaluation was carried out for the first time by external professional body (IOD) and the **findings found that IVL has a strong sustainability mindset and governance structure.**



An **Excellent 5-Star** CG Score in the practice of **Corporate Governance of Thai-Listed Companies**



For More  
Information

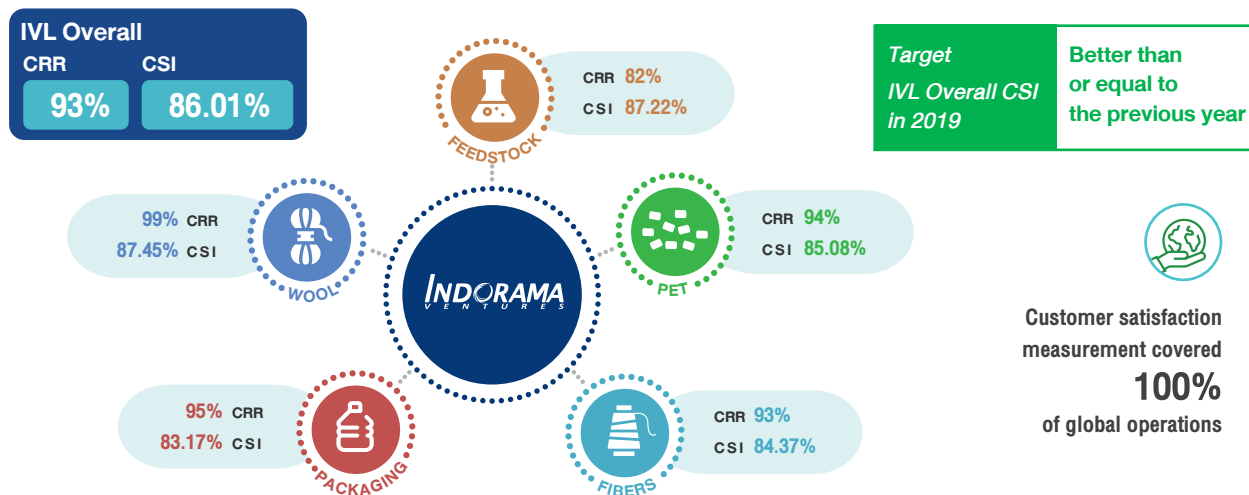
# Customer Relationship Management



In order to maintain our 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.

The Customer Satisfaction Measurement enables us to understand the current and future needs of our customers and their satisfaction with our products and services. This, in turn, helps us to foresee their customers' future plans.

## Customer Satisfaction Index (CSI) and Customer Retention Rate (CRR)



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



# Innovation Management



Innovation Management focuses on developing new and improving efficiency of existing products that meet social and environmental needs and in line with our guiding principles and policies for environmental stewardship and sustainability.

IVL works closely with our customers to keep pace with rapidly shifting market needs, global challenges and mega trends including the SDGs, and to fulfil their requirements and needs.



For More  
Information

## Vitality index\*



**Fibers  
Business**

**23%**

2018 Target > 20%



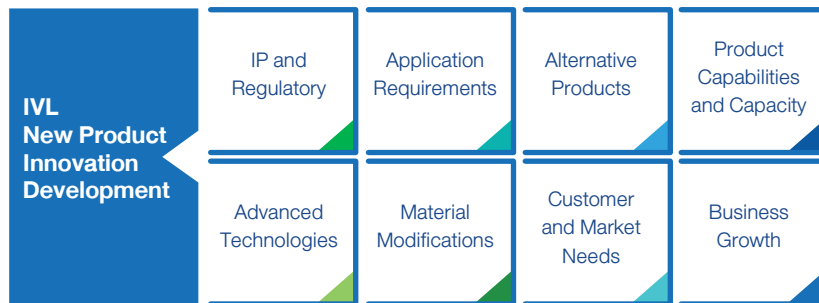
**PET HVA  
Business**

**33%**

2018 Target = 33%

<i>Target Vitality Index* in 2019</i>	<b>21%</b> Fibers Business	<b>34%</b> PET HVA Business
---	----------------------------------	-----------------------------------

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



# Product Stewardship



Product Stewardship at IVL provides a framework for active engagement across the company to ensure that our products present no risk to human health and the environment when used as intended, and to generate value by identifying opportunities to reduce resource use and material consumption.



## Sustainable Products Classification

We are in the process of classifying our products. 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 and society and provide clear positioning of our sustainable product portfolio. We are targeting to complete this classification by 2020.

## Life Cycle Assessment (LCA)

We completed LCAs at all our plants in Asia (excluding new acquisitions in 2018) and some plants in the United States and Europe, in accordance with ISO14040/44:2006 involving 65% of our total production. We plan to extend LCAs to the rest of our operations in other regions.

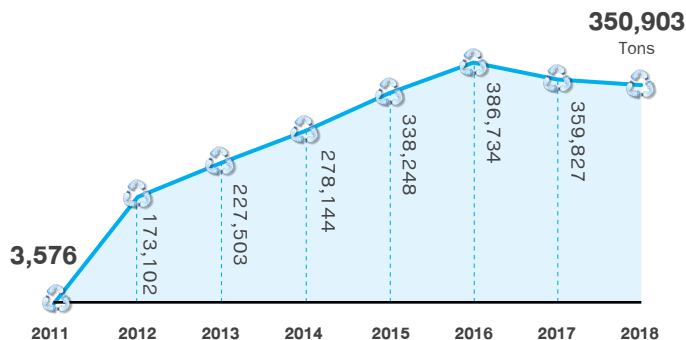


# Recycling



PET – Recycling – The renaissance to reduce PET plastic waste going to nature, and preserve natural resources.

*Target of Recycling*  
Global commitment to incorporate 750,000 Tons of PET post-consumer materials as feedstock into our polyester production by 2025



\* rPET resin that contains up to 30% recycled content

**Around 38 billion bottles are recycled from 2011–2018**



We are the  
**leading PET Recycler**  
in Asia, Europe  
and North America.

We are  
the leading producer  
of high quality polyester  
fiber products from  
recycled post-consumer  
PET bottles.

We are  
the leading producer  
offering PET resin with  
recycled content (in-melt  
technology) globally.

## Mechanical recycling

- Continued expansion – Sorepla acquisition in 2018

## Chemical recycling

- A collaboration with Unilever and Ionika
- A collaboration with Loop Industries

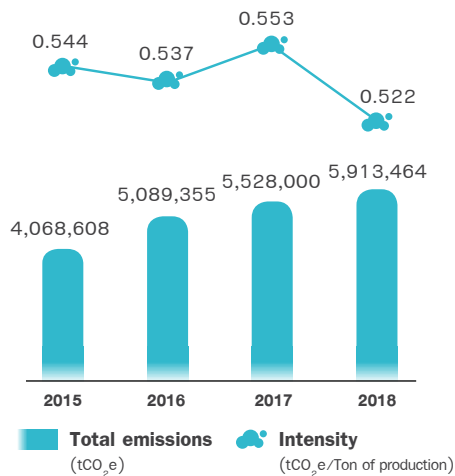


For More  
Information

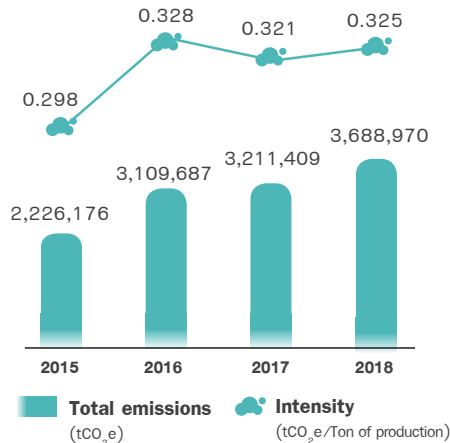
# Green House Gas Emissions



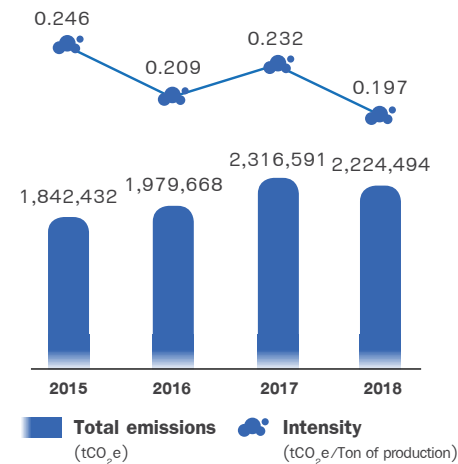
## Total GHG Emissions – Scope 1 & 2



## Direct GHG Emissions – Scope 1



## Indirect GHG Emissions – Scope 2



We are committed to proactively managing our environmental footprint and investing in initiatives that have a positive impact.

*2020 Target  
combined  
Scope 1 and 2  
intensity reduction  
from 2013 levels*

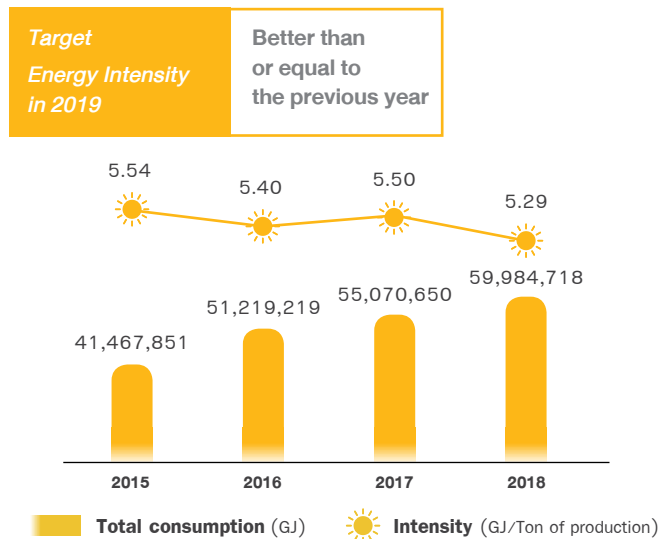
**6%**

IVL's GHG Scope 1 and 2 emissions have been verified by an external auditor (in accordance with ISO 14064-1 and ISO 14064-3).



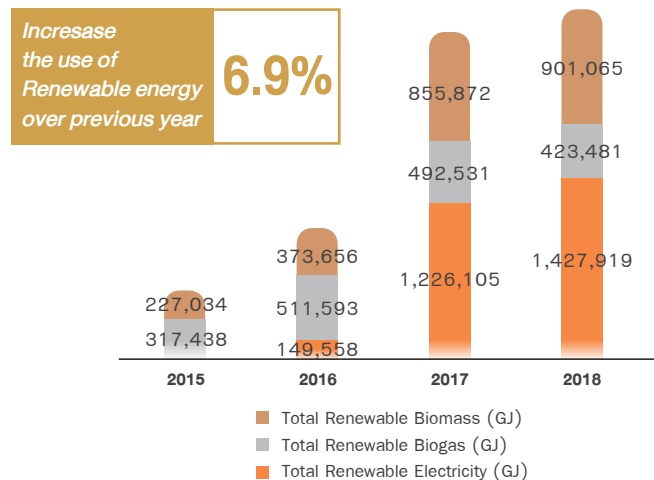
Our focus on energy efficiency has continuously increased as this further helps us become more competitive by reducing energy costs while also dealing with climate change. We have been undertaking several energy saving initiatives concurrently.

## Total Energy Consumption



**Three of our plants, Orion Global Pet in Lithuania, Indorama Ventures Quimica in Spain and Wellman International in Ireland, are using 100% renewable electricity.** Indorama Holdings in Lopburi, Thailand, has installed a 5MW solar power plant to generate green renewable energy. IVL continues to explore further possibilities to increase our use of renewable energy.

## Total Renewable Energy Consumption



For More  
Information

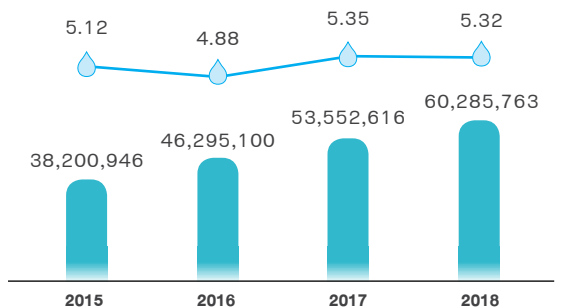


# Water Management



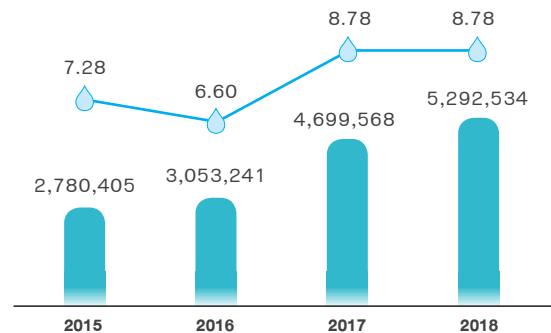
IVL is committed to sustainable water management (including water withdrawal and discharge) by complying with and going beyond all applicable environmental laws, international standards, and regulations in countries where we have operations, and will be proactive in demonstrating leadership and responsibility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

## Total Water Withdrawal



Total water withdrawn (m³) Intensity (m³/Ton of production)

## Water Recycled & Reused



Total volume of recycled/reused water (m³) Recycled / reused water (%)

*Target  
Water Intensity  
in 2019*

**Better than  
or equal to  
the previous year**



# Waste Management

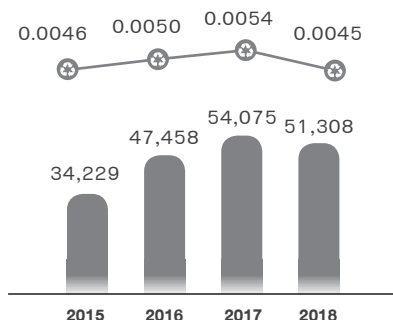


We manage our waste in a responsible manner and exceed regulatory requirements where possible. We are committed to reducing our waste and increasing disposal through sustainable vendors that can reuse, recover or recycle and also ensure that our hazardous waste is disposed of and handled by qualified vendors.

*Target  
Hazardous Waste  
Intensity  
in 2019*

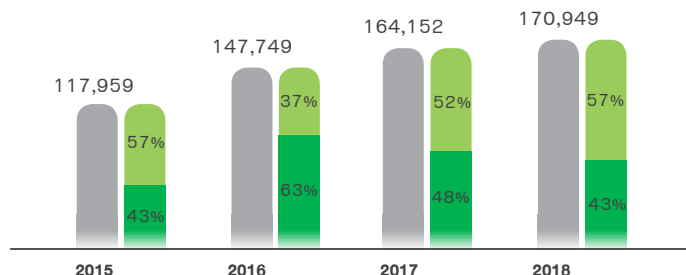
**Better than  
or equal to  
the previous year**

## Total Hazardous Waste



■ Total hazardous waste (Tons)  
● Intensity (Tons/Ton of production)

## Total Waste Generated, Disposed, Reused, Recycled and Recovered



■ Total Waste Generated (Tons)  
■ Total Waste Disposed (% of Total Waste generated)  
■ Total Reused, Recycled and Recovered Waste (% of Total Waste generated)



For More  
Information

# Occupational Health & Safety

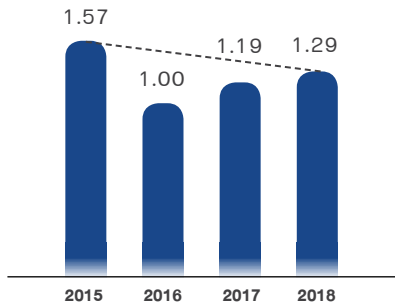


As of 31 December, 2018, 45% of total operations have OHSAS 18001/ISO 45001 occupational health and safety management system certifications in place.

Total recordable injuries and lost time injuries increased in 2018 from 2017 due to the higher number of accidents at certain sites that were acquired in 2018, and which are labor intensive. Enforcing our safety culture and practices at these sites was a key focus to reduce injuries in 2018.

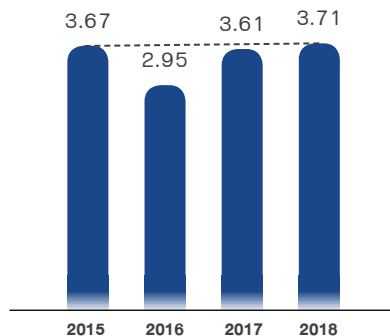
## Total Recordable Injury Rate (TRIR)

(cases / 200,000 man-hours)



## Lost Time Injury Frequency Rate (LTIFR)

(cases / 1,000,000 man-hours)



**Target**

*Reduction of  
TRIR and LTIFR  
the over  
previous year*

**2%**

## Fatality

**Target**

**Zero Fatalities**



**2018 Achievement**

**Zero Fatalities**



# Human Capital



**15,221**  
**Permanent Employees**

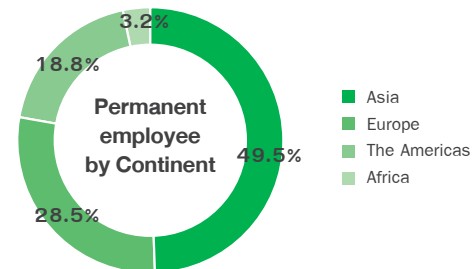
**88**  
*Employees with disabilities*

**21.53%**  
**Female**



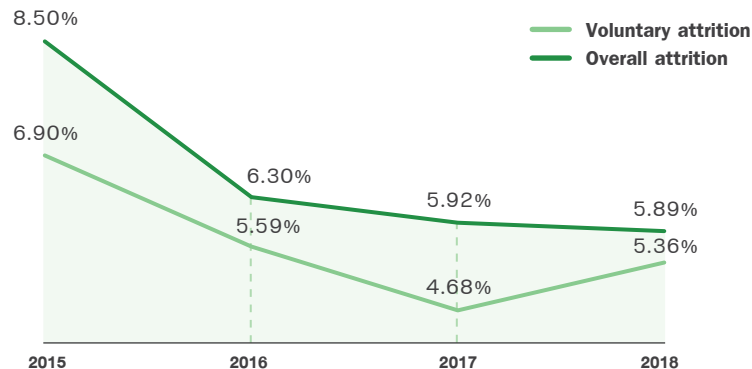
**74**   
**Nationalities**

**94.01%**  
**Retention Rate**



\* Excludes joint ventures with no operational control

Passionate global employees with multi-cultural backgrounds, different mindsets and languages provide us with the intellectual diversity that helps in turning challenges into opportunities. To ensure sustainability, we focus on meaningful investments in our employees to further develop their skills, knowledge and experiences.



For More  
Information

# Global Employee Engagement



In 2018, the employee engagement score was improved to 3.85 compared to 3.83 in 2017.

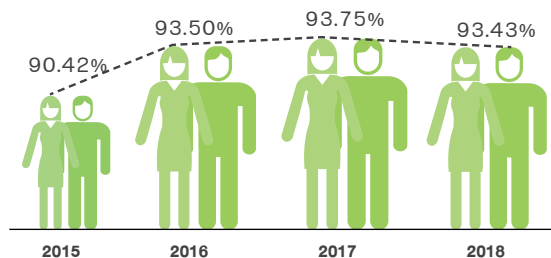
*Target  
Employee  
Engagement Score  
in 2019*

**Better than  
or equal to  
previous year**



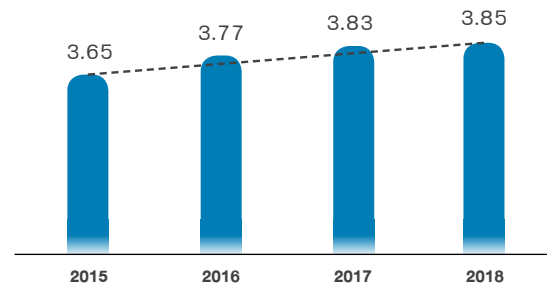
**93.43%**

*Participation in the Global  
Employee Engagement Survey*



**3.85**

*Employee  
Engagement Score*



# Experiential Learning



## Global Leadership Development Program

IVLDP, our global leadership development program is focused on building future leaders. A total of 130 executives were exposed to self-assessment and business assessment tools. A higher level program, i-Lead, was subsequently introduced which is designed to create a culture of experiential learning for future leaders. The program is led by the Group CEO. Another program, “v-Lead leadership development program”, was led by Business Heads to develop cross-functional expertise and build young talent to become an effective leader within the respective business.

**38** Participants  
i-Lead leadership  
development program

**27** Participants  
v-Lead leadership  
development program

## Global Lean Six Sigma (LSS) Program

In 2018, 1,376 employees attended LSS programs and undertook 252 projects. Over 43,920 Six Sigma training hours were completed from 2012 to 2018, yielding over USD 32 million in savings for the Company.

## Other Talent Development Programs

IVL provides a “Shadow Development” program to further support our employees at the corporate office. This nine-month program, co-developed by Indorama Ventures and Sasin School of Management, one of the most well-regarded business schools in Thailand, offers a unique blend of learning through a traditional classroom setting, site visits, projects and peer learning. A total of 18 high potential managers participated in this program which effectively develops and supports local staff.

**1,376** Participants  
LSS program

**18** Participants  
Shadow Development  
program



**173.60** USD  
Training expenditure  
per employee



**30.43**  
Training hours  
per employee



For More  
Information

# Operational Excellence Awards



## Feedstock Business

PT Indorama Petrochemicals, Indonesia



## Fibers Business

PT Indorama Ventures Indonesia, Indonesia



## PET Business

Guangdong IVL PET Polymer Company Limited, China



## Packaging Business

Indorama Ventures Packaging (Philippines) Corporations, Batino, Philippines

Operational Excellence Awards were introduced in 2017 to recognize the efforts of a unit team within a business segment. The criteria for the awards focus on Sustainability, Operations and Finance. Some of the sustainability criteria include GHG emissions, Injuries, Energy Consumption, Customer Satisfaction and Employee Engagement.

The best business units of the respective four business segments were awarded and felicitated by our Board members in the presence of IVL's global leaders at the Annual Global Strategy Meet held in Bangkok.





# Human Rights



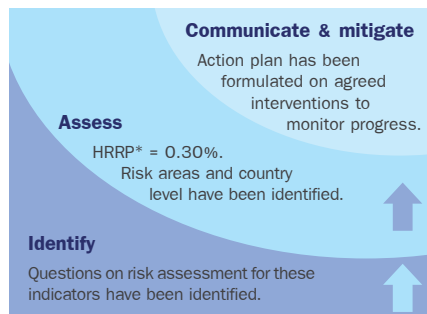
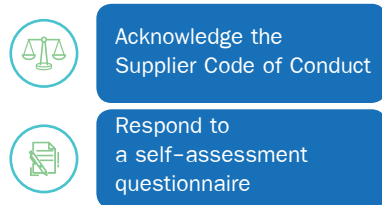
## Human Rights Assessment in our business value chain

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.

**Zero**  
Human Rights  
violations in 2018



The supplier evaluation process involves a systematic and harmonized approach requesting that they:



We respect the privacy of our customers and other business partners as mentioned in our Policy on Treatment of Shareholders; Policy on Treatment of Customers; Business Partners and Competitors Policy; and Trading Partners and Creditors Policy.



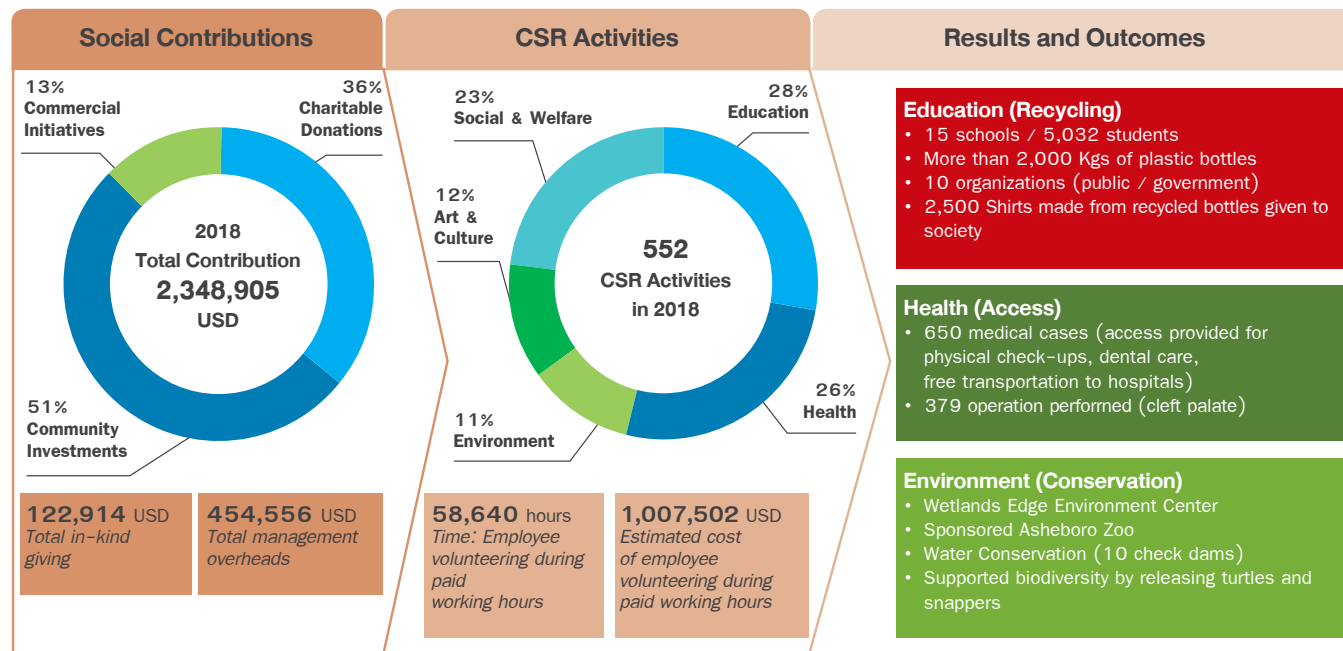
For More  
Information

Note: \* HRRP = Number of potential human rights risk identified / (Responses from total units x Total questions)

# Corporate Citizenship



Corporate Social Responsibility (CSR) is a key strategy in demonstrating the integrity of our business. Our actions demonstrate the positive effect we have as a company on society and the environment, which in turn, is vital to achieving sustainability.



# The Road Ahead, 2019 and Beyond



Global commitment to incorporate **750,000 Tons** of PET post-consumer materials as feedstock **into our polyester production by 2025**

**ISO Certification**  
**100%** of ISO 9001  
**98%** of ISO 14001, ISO 50001, ISO 45001/OHSAS 18001 of global operations **by 2020**

**Sustainable Products Classification by 2020**

More focus on **Zero Hazardous Waste to Landfill** in our operations globally

More focus on **Zero Liquid Discharge** in our operations globally

Continue to **increase** the consumption of **Renewable Energy**



For More  
Information

# Data Reporting, Verification and Report Assurance



*Reported based on the*  
***Global Reporting  
Initiative (GRI)  
Standards***

*Reporting Assurance*

**100%**

*in accordance with  
AA1000AS*

*GHG Verification*

**100%**

*in accordance with  
ISO 14064-1 and ISO 14064-3*

# Contacts and Feedback



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## Sustainability Report 2018



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## Annual Report 2018



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PET is an incredible product that is 100% recyclable.  
Together, let's use it wisely, and dispose of it responsibly  
**for a better tomorrow.**



**INDORAMA VENTURES PUBLIC COMPANY LIMITED**

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