Group CEO Message

“Indorama Ventures has set out a clear vision that embeds environmental preservation and sustainability into our business culture, day-to-day operations and long-term business strategy.”

Aloke Lohia
Our vision: To be a world-class chemical company making great products for society.

- In accordance with the GRI:G4 Guidelines
- Data verification of nine environmental and social indicators by an external assurance

Materiality Issues

Material Economic Issues
- Business Ethics & Integrity
- Regulatory Compliance
- Corporate Governance
- Innovation Management

Material Environmental Issues
- Environmental Management
- Environmental Compliance
- Product Stewardship

Material Social Issues
- Health and Safety
- Human Rights
- Human Capital Management
Materiality Assessment & Stakeholder Engagement

- Extended to more external stakeholders & integrated materiality into business strategy

1. Material Issues Identification
2. Engagement with stakeholder
3. Materiality Identification
4. Materiality Prioritization
5. Assurance and Reporting

External Stakeholders – Feedback/Suggestions

- "As a brand owner, we are interested in increasing use of recycled materials."
  Director - Global Procurement, PepsiCo

- "CG policies and practices provide insight into IVL’s leadership, integrity and best corporate practices."
  VP Global & Emerging Market Equities, AGF Investments

- "Risk management is increasingly critical to not only business survival, but also to company’s growth and sustainability."
  Deputy Head of Research, CIMB Security Thailand
Data Verification & Report Assurance

- **Standardized Environmental and Social Data for Sustainability Report**

## External Assurance Audit Coverage

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>20 Sites</td>
<td>22 Sites</td>
<td>All Sites</td>
</tr>
<tr>
<td>=</td>
<td>=</td>
<td>=</td>
</tr>
<tr>
<td>40% Production Capacity</td>
<td>50% Production Capacity</td>
<td>100% Production Capacity</td>
</tr>
</tbody>
</table>

### GRI G4 – 9 Indicators

- **G4 – EN3** Energy Consumption within the organization
- **G4 – EN8** Water Withdrawal by Source
- **G4 – EN15** Direct green house gas (GHG) emissions (Scope1)
- **G4 – EN16** Indirect green house gas (GHG) emissions (Scope2)
- **G4 – EN21** NOx, SOx and VOCs
- **G4 – EN22** Total Water discharge by quality and destination
- **G4 – EN23** Total weight of waste by type and disposal method
- **G4 – LA6** Types and rates of injuries, occupational diseases, lost days, absenteeism, work-related fatalities
- **G4 – LA9** Average hours of training per year per employee
Sustainability Performance

Bronze Class: RobecoSAM’s Sustainability Yearbook 2017

Bloomberg
Leading in SET Index: Bloomberg ESG Disclosure Scores

IVL Percentile Rank vs. DJSI World Chemical Companies

FTSE4Good
A constituent of: the FTSE4Good ASEAN5 Index and the FTSE4Good Emerging Index

EcoVadis
#1 Thai MNC: Transparency in Corporate Reporting

MSCI
MSCI ESG Rating - B

CDP
Climate Change Rating - B

Our vision: To be a world-class chemical company making great products for society.
Global Certification

- **Certificate status**
  (as of Dec’ 16)

- **ISO 9001**: Quality Management System
- **ISO 14001**: Environmental Management System
- **ISO 50001**: Energy Management System
- **OHSAS 18001**: Occupational Health & Safety System
- **ISO 14064 – 1**: Quantification and reporting of GHG emissions
- **ISO 22000**: Food Safety Management

**ISO Certification status: 2015 vs 2016**

- ISO 9001: 89% (2015) vs 91% (2016)
- ISO 14001: 59% (2015) vs 71% (2016)
- OHSAS 18001: 25% (2015) vs 37% (2016)
- ISO 50001: 16% (2015) vs 18% (2016)

**Other Global standards:**
- **REACH**: The European Regulation on Registration, Evaluation, Authorization and Restriction of Chemicals
- **OEKO – TEX Standard**: Standard for textiles products
- **EuCertPlast**: European Plastics Recyclers
- **EMAS**: Environmental Monitoring and Assessment
- **ISO/TS 16949**: Quality management system requirements for automotive related products
- **SA 8000**: Social Accountability International Standard
Innovation Management

PRODUCT INNOVATION & BUSINESS DEVELOPMENT

Our Approach

Achievements in 2016

IVL’s Fibers Business achieved a vitality index of 22.2% (as against 21.6% in 2015)

Process innovation environmental attributes, 2016

- GHG savings
- Energy savings
- Materials savings
- Recycling
- Water savings
- Health, wellness & safety
- Renewable energy

Environmental product innovation attributes, 2013 to 2016

- GHG savings
- Recycling
- Energy savings
- Materials savings
- Health, wellness & safety
- Renewable energy
- Water savings
Customer Relationship Management

Customer satisfaction measurement and performance

<table>
<thead>
<tr>
<th>Business Segment</th>
<th>2016 CSI * (%)</th>
<th>CSI Target for 2017</th>
<th>2016 CRR ** by Revenue (%)</th>
<th>CRR by Revenue Target for 2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fibers</td>
<td>83</td>
<td></td>
<td>72</td>
<td>≥ 73</td>
</tr>
<tr>
<td>PET</td>
<td>85</td>
<td></td>
<td>97</td>
<td>≥ 94</td>
</tr>
<tr>
<td>Feedstock</td>
<td>88</td>
<td></td>
<td>97</td>
<td>≥ 80</td>
</tr>
<tr>
<td>Wool</td>
<td>86</td>
<td>Equal to or better than 2016 CSI</td>
<td>90</td>
<td>≥ 85</td>
</tr>
<tr>
<td>Packaging</td>
<td>80</td>
<td></td>
<td>95</td>
<td>≥ 95</td>
</tr>
<tr>
<td>Total IVL</td>
<td>86</td>
<td></td>
<td>93</td>
<td>≥ 85</td>
</tr>
</tbody>
</table>

* Customer Satisfaction Index  ** Customer Retention Rate

Highlights and achievements in 2016

Customer satisfaction measurement covered 100% of operations

- Customer satisfaction survey standardization
- Net Promoter Score (NPS) calculation

Net Promoter Score (NPS)

Promoters | Passives | Detractors | NPS
---|---|---|---
48% | 41.80% | 10.2% | 38

(NPS) = % Promoters - % Detractors

0 – 6: Detractors  7 – 8: Passives  9 – 10: Promoters

Q: How likely is it that you would recommend us as a supplier?

<table>
<thead>
<tr>
<th>Not At All likely</th>
<th>Extremely likely</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>5</td>
</tr>
<tr>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>5</td>
<td>5</td>
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<tr>
<td>6</td>
<td>5</td>
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<tr>
<td>7</td>
<td>5</td>
</tr>
<tr>
<td>8</td>
<td>5</td>
</tr>
<tr>
<td>9</td>
<td>0</td>
</tr>
<tr>
<td>10</td>
<td>0</td>
</tr>
</tbody>
</table>
Recycling Business

From 2011 to 2016

Approximately 500,000 tons of PET waste saved from landfills

Over 156,000 tons of CO₂ reduced from recycling

Year-on-Year growth of IVL’s Recycling Business

- 2013: 227,503 Tons
- 2014: 278,144 Tons
- 2015: 338,248 Tons
- 2016: 398,340 Tons

rPET resin that contains up to 25% recycled content
Energy Consumption

<table>
<thead>
<tr>
<th>Year</th>
<th>Total energy consumption (million GJ)</th>
<th>Renewable energy intensity (GJ / Ton of Production)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013</td>
<td>33.2</td>
<td>0.09</td>
</tr>
<tr>
<td>2014</td>
<td>37.5</td>
<td>0.08</td>
</tr>
<tr>
<td>2015</td>
<td>41.4</td>
<td>0.10</td>
</tr>
<tr>
<td>2016</td>
<td>52.2</td>
<td>0.13</td>
</tr>
</tbody>
</table>

Year-on-year increase in RENEWABLE ENERGY usage in IVL operations

856,864 GJ

ENERGY INTENSITY

5.25 GJ / Ton of Production
Green House Gas (GHG) Emissions

Disclosed and verified 100% of GHG scope 1 and 2 emissions

Total GHG Emissions Intensity
(tCO₂e/ton of production)

2016  0.517
2015  0.544
2014  0.546
2013  0.59

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

GHG Scope 1 & 2 Emissions Intensity
(tCO₂e/ton of production)

2016
2015
2014
2013

Scope 1: From sources owned or controlled by a company
- Stationary and mobile combustion
- Wastewater emissions
- Refrigerants / HFC / CFC
- Company owned vehicles

Scope 2: From electricity, heat, or steam purchased by a company
- Purchased electricity
- Purchased heating and cooling
- Purchased steam

Scope 3 (Target): From sources not owned or directly controlled by but related a company
- Purchased Goods and Services
- Upstream and Downstream Transportation and Distribution
- Wasted Generated in Operations
- Business Travel
- Employee Commuting

IVL’s GHG Targets

- 6% Reduction of Combined scope 1 & 2 by 2020
- 100% Disclosure of scope 3 by 2020 (selected criteria)
- Committed to Science Based target (SBTi)
Renewable Resources

Use of Bio MEG

59,340 tons

from 2013 - 2016

Over 26,000 tons of Poly Lactic Acid (PLA) have been produced from 2012 - 2016

Reducing our carbon footprint by over 40,000 tons
Our vision: To be a world-class chemical company making great products for society.

Life Cycle Assessment (LCA) – Cradle to Factory Gate

- **2016 – 17**
  - 100% coverage of all products in Asia
- **2016**
  - Adopted GaBi’s life cycle assessment software
- **2020**
  - Achieve Life Cycle Assessment for over 95% of products globally

**Life Cycle Assessment Criteria**

- Global Warming Potential
- Acidification Potential
- Eutrophication Potential
- Smog Potential
- Primary Energy Demand
- Toxicity
- Resource Depletion
- Water Depletion
- Land Use & Transformation
- Photochemical Ozone Formation
- Ionizing Radiation
- Dust & Particle Matters
- Ozone Depletion Potential

**Investing for a global impact:**
- The development of the green power market and supporting carbon offsetting
- The development of Sustainable communities.

**Beyond Compliance:**
- Lowering our overall environmental impact include a target of 100% Energy and Environmental Management Systems in all our operations by 2020.
## Water Management

<table>
<thead>
<tr>
<th></th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total water intake (million m³)</td>
<td>36.09</td>
<td>38.20</td>
<td>46.83</td>
</tr>
<tr>
<td>Water recycled / reused water (%)</td>
<td>6.75</td>
<td>7.28</td>
<td>6.90</td>
</tr>
</tbody>
</table>

### Water Intensity

- **2016**: 4.70 m³ / Ton of Production
- **2015**: 5.12
- **2014**: 5.43

### Total Recycled / Reused Water

- **2016**: 3,235,080 m³
- **2015**: 2,780,405
- **2014**: 2,436,929

Total water intake from 2014 to 2016:

- 2014: 36.09 million m³
- 2015: 38.20 million m³
- 2016: 46.83 million m³

Water recycled / reused water (%):

- 2014: 6.75%
- 2015: 7.28%
- 2016: 6.90%

**Our vision:** To be a world-class chemical company making great products for society.
Occupational Health & Safety

No fatalities

at IVL’s entire operations from 2012 - 2016

Zero recordable injuries

at 28 plants in 2016 representing 45% of total entities of the Company as against 29% of total entities in 2015
Diversity

Year-on-Year increase in FEMALE WORKFORCE

New male hire rate
New female hire rate

Increase the pipeline of new hires to build a diverse workforce

Gender diversity

22% 78%

Disability employment

- Visually impaired: 57%
- Physical disability: 39%
- Other disabilities: 1%
- Hearing disability: 1%
- Learning disability: 57%
- Speech and language disability: 1%
Global Employee Engagement

- Carried out Global Employee Engagement Survey

**Employee Engagement Scores**

- 2015: 3.64
- 2016: 3.70

2016 Target = 3.67

- Exceeded 2016 Target
- 93% of employees participated
- 1.65% engagement score increase compared to 2015
Human Rights Assessment

- Conducted Human Rights Assessment throughout our supply chain

Workplace Human Rights Assessment

Carried out globally in 21 countries covering 100% of operations

WHRA Process

Measure | Assess | Mitigate

Outcome: Areas for Improvement
- Safety & Security
- Freedom of Association
- Workplace Environment

Supplier Evaluation Process

- Acknowledge the Supplier Code of Conduct
- Respond to Self-Assessment

2014
Extended to 100% of Raw Material and critical non – Raw material suppliers

2016
Applied to all new Raw Material and critical non – Raw material suppliers

Customer, Business Partners and Competitors

“Any customers, business partners & other parties with concerns regarding the human rights impact of IVL’s activities may utilize the channels established in accordance with the Human Rights Policy”
Our vision: To be a world-class chemical company making great products for society.

Corporate Citizenship

TO ENSURE the company remains sustainable

GROUP WIDE STRATEGY

ECONOMIC GROWTH, INNOVATION
SOCIAL LICENSE TO OPERATE

CSR activities by theme

<table>
<thead>
<tr>
<th>Theme</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health</td>
<td>35%</td>
</tr>
<tr>
<td>Environment</td>
<td>16%</td>
</tr>
<tr>
<td>Education</td>
<td>25%</td>
</tr>
<tr>
<td>Others</td>
<td>24%</td>
</tr>
</tbody>
</table>

Philanthropic contributions

Community investments 68.15%

Charitable donations 20.05%

Commercial initiatives 11.81%
Contacts and Feedback

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