





Investing today to protect tomorrow



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## Message from the Board

We care about how we do our business

- S.P. Lohia, Chairman

Today, Indorama Ventures PCL is a growing global entity where our responsibility towards society should honor the triple bottom line of Planet, Profit and People while doing business. We know how critical it is that we profitably – yet safely produce products that benefit society and improve everyday lives. All our global business units are already involved in this sustainability journey and it is our firm endeavor to continue to make further strides on this noble commitment.

At IVL, we define 'Sustainability' as our pre-eminent and ongoing commitment to re-think how we operate to meet the needs of all our stakeholders.

Business exists to serve society, sustainable development is hence the only way forward

- Aloke Lohia, Group CEO

Our Sustainability Program aims to make a positive contribution to society:

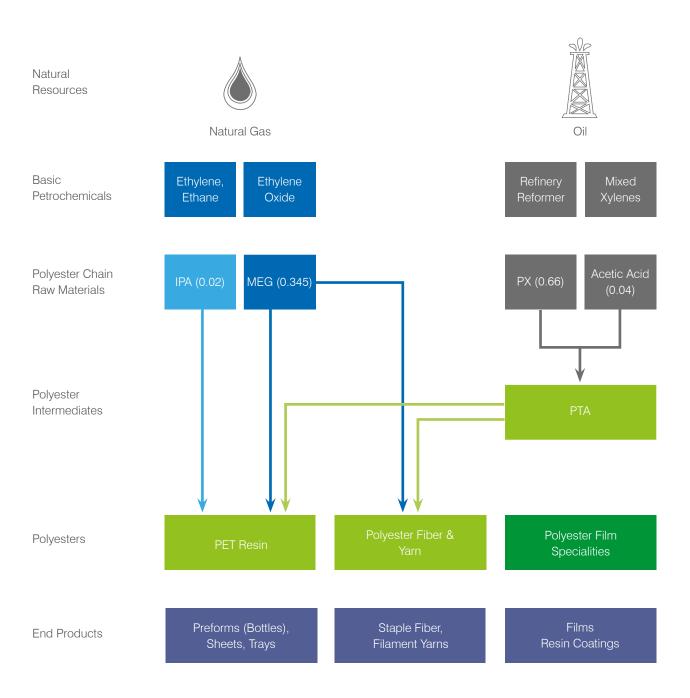
- by improving the quality of life of its employees and the community in general;
- to improve health and safety to international standards;
- to decrease the Company's impact on the environment and seek the sustainable development of its business in tandem with the suppliers, global industry, local governing authorities and customers

# **1 Polyester as a green product**

### What is polyester?

Polyester is the most affordable and highly consumed polymer in the world. It is produced using raw materials derived from crude oil and natural gas, with the key components being Purified Terephthalic Acid (PTA) and Mono-Ethylene Glycol (MEG). Polyesters are manufactured in three basic forms - fibers, films and plastics.

### **Integrated Polyester Chain**





### Use of polyester

Polyester can be fiber, film or bottle grade (PET) depending on supplementary additions to ester functional group. As a fiber (PSF), polyester finds uses in apparel, home furnishings, blankets, carpets. As a film such as BOPET, polyester finds uses in insulating tapes, dielectrics in capacitors, wires etc. It's bottle grade is used to make bottle containers for water, Carbonated Soft Drinks (CSD), juices .

Polyester is used for a wide range of end use markets, such as:



Home textiles



Automotive



Non Woven



Water bottle



**Technical Textiles** 



**Food Packaging** 



Apparel



**Consumer products** 

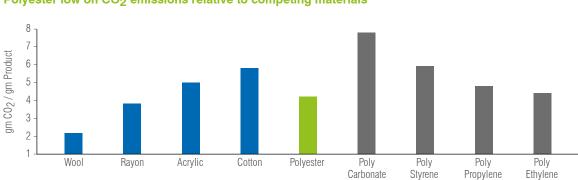
### **Polyester - A Material of Choice**

- Most versatile packaging and textile raw material
- Replaces energy intensive materials Aluminum, Glass
- Light weight: Reduced primary and secondary fuel consumption
- Ecologically and economically replaces scarce cotton, wool and wood pulp
- Can be recycled multiple times with ease

# 1.1 Polyester – Fiber is green

### Low CO<sub>2</sub> emission

As shown in the graph, polyester has lower CO<sub>2</sub> emissions than comparable plastics such as polycarbonate, polystyrene, polyethylene, and polypropylene. Interestingly, it is also lower by about 50% than the natural fiber Cotton on CO<sub>2</sub> emissions as per the study done by a leading research center.



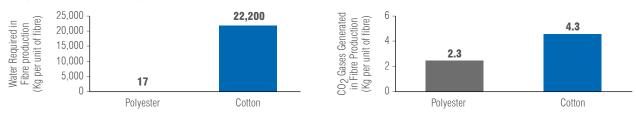
Polyester low on CO<sub>2</sub> emissions relative to competing materials

Source: SEI Stockholm Environment Institute



### Polyester fiber & yarn is more sustainable and eco-friendly than cotton

#### Polyester fibre: "Life Cycle Assessment"<sup>(1)</sup>



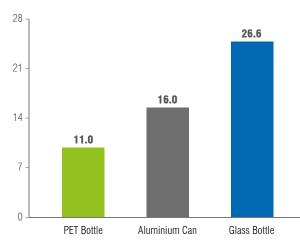
Source: Eija M. Kalliala & Pertti Nousiainen (Tampere University of Technology, Finland)

Note: 1. "Life cycle analysis" = a cradle to grave approach to finding consistency of production energy and consumption as well as chemical consumption and emissions to air and water

## 1.2 Polyester – Bottle is green

### Low CO<sub>2</sub> emission and Low energy consumption

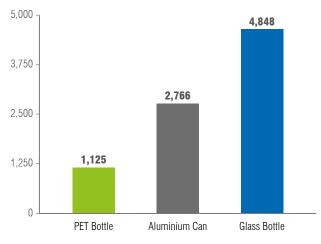
PET bottle, as depicted at far left corner in the chart, is a more sustainable packaging material compared to other alternatives, specifically on CO<sub>2</sub> emissions and energy consumption



**PET resin** 

Energy Required To Produce Packaging for 100 Koz of soft drink (MM Btu)





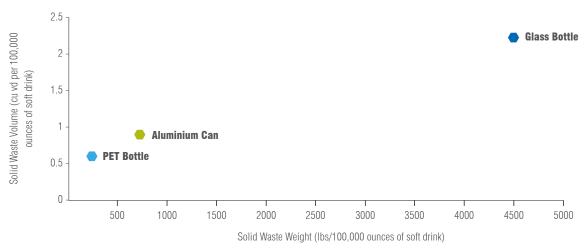
Source: Franklin Associates, a Division of ERG

### Solid waste

PET scores lower than aluminum cans and glass bottles in both solid waste volume and weight parameters, making a strong case for replacing them as a container of choice for beverages, milk, etc.

#### **Unquestionable Choice for Packaging**

PET bottle low on solid waste both by volume and weight



Source: Life cycle assessment by Franklin Associates for PET Resin Association

### Recyclable

Polyester – PET bottle & polyester fiber – is recyclable post consumption with the same material benefits as before. With new technologies and incentives from local authorities for environment protection, recycling post-consumption polyester is more economically viable and beneficial for the society.







# **2 IVL Overview**

### At a Glance

#1 pure play integrated company in polyester value chain in the world

Global presence with approximately **6,000** employees across 23 sites in 12 countries across 3 continents

PET sites strategically co-located with suppliers and energy generation sites

2010 EBITDA of approximately US\$ 435 MM

2010 Net Sales of approximately US\$ 3.05 Bn

**60%** Annualized Top-Line Growth for the last 4 years



StarPet, United States



Indorama Polymers Workington, United Kingdom



AsiaPet and Indorama Polymers, Thailand

### Myths & Realities of Polyester (PET Basics)

### What is PET resin or PET?

PET, which stands for polyethylene terephthalate, is a form of polyester (just like the clothing fabric). It is extruded or molded into plastic bottles and containers for packaging foods and beverages, personal care products, and many other consumer products.



# 2.1 IVL Profile

### The largest vertically integrated polyester value chain producer

Indorama Ventures Public Company Limited is the largest vertically integrated polyester chain producer in the world with focus on PET, PTA and Polyester Fiber & Yarn around the world and independent operations in wool yarns & packaging, based in Thailand.



Disclaimer: All third party logos used herein are the property of the respective companies and are used here for illustrative purposes only.

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 food, beverages, personal and home care, health care, automotives, textiles and industrials.



Indorama Ventures is guided by a continued focus on building strong and lasting relationships with all its stakeholders, such as customers, employees, environment, investors, business partners and communities, and to provide the best quality products and services. Our success is the direct result of our committed workforce of around 6,000 people and clear company goals set by our experienced management.

Our dedicated relationships with customers, manufacturing presence in the high growth industries, focus on low cost and efficiency, as well as the fact that our products are primarily consumer staples, places Indorama Ventures in the strongest of positions to withstand the current economic climate.

### Key highlights

- Global leader in the polyester industry with a diverse product portfolio and a value-creating long-term strategy
- Competitive advantage based on industry focus, market access, integration and cost leadership
- Successful track record of growth via M&A, greenfield projects, expansions
- Listed on Stock Exchange of Thailand
- World-class, modern assets with strong R&D platform

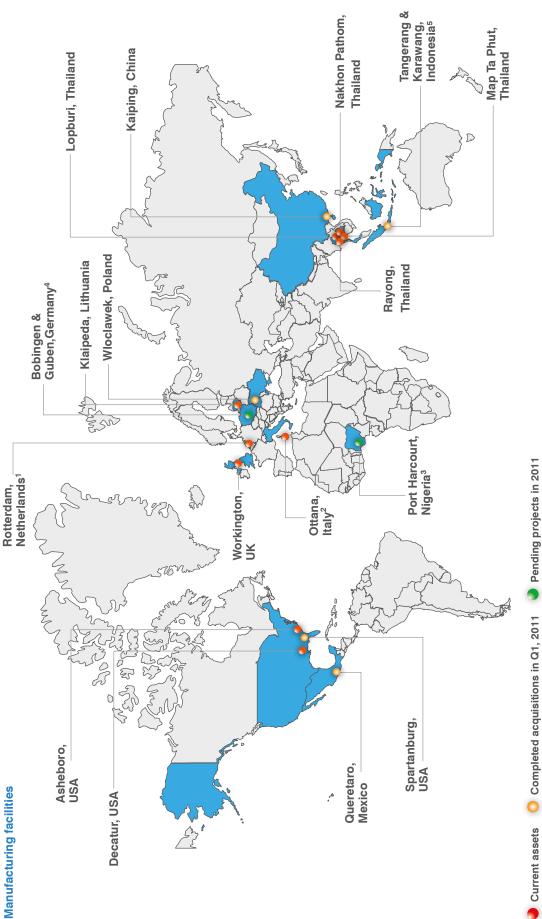
### Myths & Realities of Polyester (PET Basics)

### Why is PET used to package so many items?

PET is a highly valued packaging material because it is strong yet lightweight, nonreactive, economical, and shatterproof. PET containers are popular for packaging sodas, water, juices, salad dressings, cooking oil, peanut butter, shampoo, liquid hand soap, mouthwash, pharmaceuticals, even tennis balls. It is safe for food, beverage, personal care, pharmaceutical and medical applications recognized by health authorities around the world. Special grades of PET are used for carry-home prepared food containers that can be warmed in the oven or microwave.



Indorama Ventures PCL



Note: (1) Indorama will increase its PET capacity in Rotterdam from 200ktpa in 2012. (2) 50:50 JV between IVL and PCH Holding SRL (3) Under construction and expected to come online in Q3 2011 (4) 75:25 JV between IVL and Sinterama (5) On 14 Mar 2011, IVL announced that it will build a new continuous polymerisation resin plant (300ktpa) in Purwakarta (Indonesia). The plant is expected to come online in 01 2013

Source: Company information

# 2.2 Vision, Mission, Values

### Vision

To be one of the leading global company producers with key focus on people and processes thus making Indorama one of the most admired companies in the world.

### **Mission**

Continuously upgrade quality of products and services through people involvement and world class processes to attain customer delight thus becoming a preferred supplier and institutionalize people learning as a key factor for business growth.

### Values

### People First

- We believe that people are our core strength, be it our employees, suppliers, customers, shareholders and stakeholders
- Their involvement and satisfaction are the key drivers for our success and growth

### **Customer Focus**

- We believe we exist because of our customers
- We focus our activities to achieve customer delight and loyalty for a long lasting relationship

### Social Responsibility

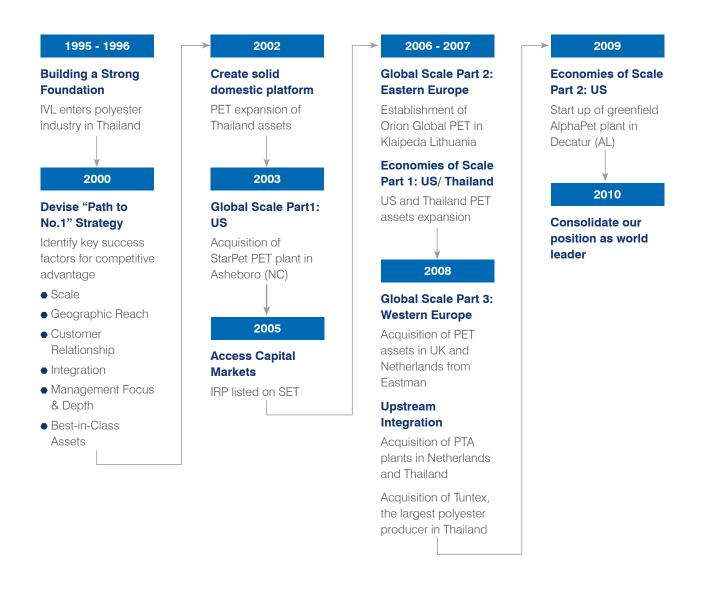
• We believe in being responsible and caring for the society and maintaining as well as enhancing the environment around

### Corporate Governance

- We believe in transparency, accountability and ethics
- We aim to achieve highest degree of governance in accordance with the best practices

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## 2.3 History and Timeline



Indorama Ventures Public Company Limited (IVL) is a polyester value chain business based in Bangkok, Thailand.

In 1995, the company entered the petrochemical industry with the establishment of a Polyethylene Terephthalate (PET) resin facility in Thailand and entered the polyester business in 1997. Later, in 2008, the company acquired Tuntex Thailand, and became Thailand's largest polyester fiber & yarn producer.

The company expanded internationally in 2003, with the acquisition of StarPet in the USA, and Orion Global PET in Lithuania in 2006. Later, IVL expanded further with the acquisition of two PET resin facilities from Eastman Chemical in Europe in 2008, and a new investment in the USA in 2009 called AlphaPet.

In 2010, Indorama Ventures launched its new business plan for the next four years. Called "Aspiration 2014," the plan calls for tripling total production capacity by 2014, to 10 million tonnes. To commence this new phase in the company's growth, it acquired businesses in Italy, China, the USA, Mexico, Indonesia and Poland during the course of the year. Future growth will take the company into the Middle East and India as well as further into Asia and Europe.

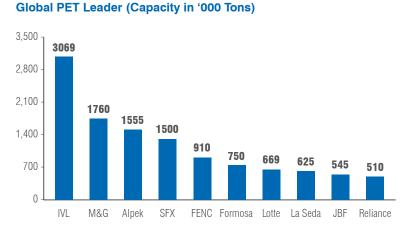


### 2.4 Global Leadership

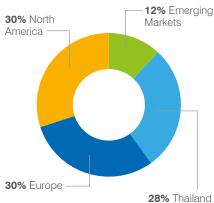
Indorama Ventures is the world's leading producer in the polyester value chain with the global customer service network and manufacturing across Asia, Europe, North America and Africa. Its products serve major players in diversified end use markets, including food, beverages, personal and home care, health care, automotives, textile, and industrial.

### Indorama Ventures - global industry leader

- Indorama Ventures is the largest PET producer globally
- We are the largest polyester fiber & yarn producer in Thailand
- Indorama Ventures is a leading manufacturer of Purified Terephthalic Acid (PTA), a key raw material for the production of polyester
- We are globally recognized as a major producer of premium worsted wool yarns



### Sales by Region in 2010



Source: Franklin Associates, a Division of ERG

### IVL's development and strategy

Becoming the undisputed leader in polyester



Source: Company information

### Believe it or not

### **Plastic Holiday Home for Tourists**

A British man has created an island home in the Caribbean – with 120,000 plastic bottles. Richard 'Rishi' Sowar used the rubbish that would otherwise have been buried in landfill make Spiral Island II in a lagoon off Mexico's Caribbean coast. Filling fabric bags with the discarded bottles and then attaching them to pallets, the environmentalist's island has a house, beaches, two ponds and even a solar-powered waterfall. Situated in Isla Mujeres near the tourist resort of Cancun, it appears Rishi has created his very own piece of paradise. Rishi said the bottles, though man-made, easily fit in with their surroundings with coral taking root on the undersides of his home as he continues to expand. He uses a boat to get to the shore and receives visitors from around the world keen to help with his ambitious project.





The island is the second built by Rishi – in 1998 he created a much larger one using 250,000 bottles off Puerto Aventura, Mexico.



## 2.5 Organization Structure

Our corporate structure comprises of four business segments, PET, Polyester fiber & yarn, PTA and Wool.

Indorama Ventures' polyester chain business consists of three key verticals – PET, Polyester fiber & yarn, and PTA. Our keen focus has always been on the polyester value chain. In a proactive move towards maximizing its value chain and operational synergies, Indorama Ventures has expanded its PET and Polyester businesses in recent years. Towards our goal of vertical integration we entered into the PTA business with the acquisition of three PTA plants in 2008.

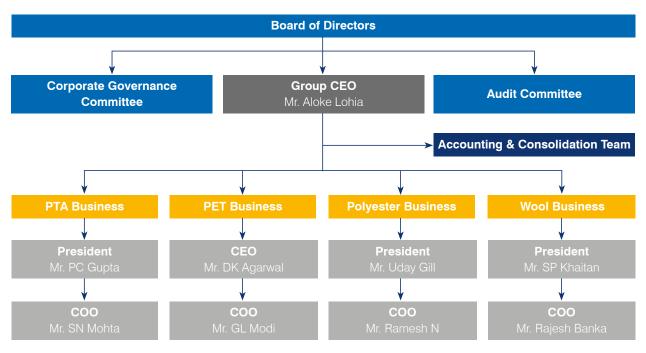
Our historical expansions and investments in the polyester value chain have always been undertaken keeping in mind the value creation initiatives of scale, integration, geography, and product mix. With a continual focus on cost and efficiency, Indorama Ventures is now firmly positioned amongst the lowest cost polyester chain producers in the world.

### Myths & Realities of Polyester (PET Basics)

How can I distinguish PET bottles and containers from other plastics?

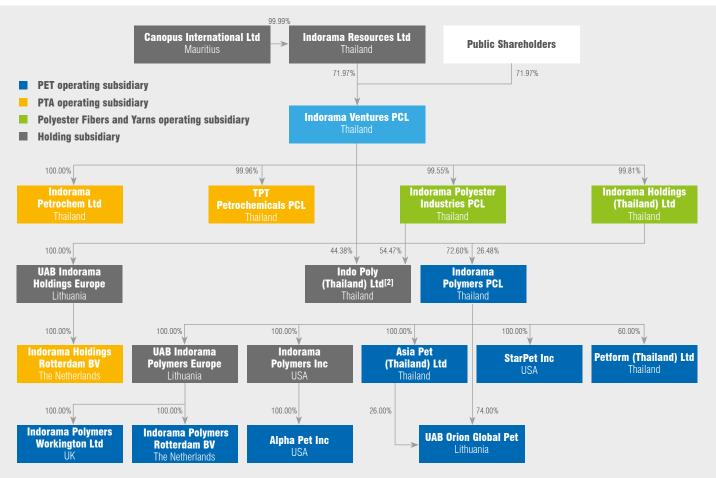
PET plastic containers are identified by the #1 recycling code -- the triangular "chasing arrows" symbol with the number 1 in the center and the acronym PET or PETE underneath. The recycling symbol can usually be found molded into the bottom or side of the container or bottle. Only PET carries the #1 identification code.





### **Organization Structure Indorama Ventures Public Company Limited**

### IVL Corporate Structure<sup>(1)</sup>



Notes: 1) As of 31 December 2010 2) Indo Poly (Thailand) Ltd under dissolution IVL has incorporated a 100% owned subsidiary IVL Belgium to enter into a 50:50 JV for acquisition of PTA/PET plant in Ottana, Italy

# 2.6 People Culture

As a global firm, we engage employees from various cultural background & nationalities. We adopt the contours of the local environment at our local business sites, while we strive to move towards a multi-cultural system in our headquarters in Bangkok.



We focus on engineering an entrepreneurial work culture that emphasizes on ownership of tasks to deliver the final result. We reward performance only and do not restrict the growth of our employees by time etc.

### **Entrepreneurial Culture**

- Self-learner & self motivated
- High sense of work ownership
- Strong ethics, integrity of business managers
- Freedom to innovate and experiment
- Ability and empowerment to take informed risk
- Internal competition for resources and rewards

### Performance culture

- Focus on standalone BU performance
- Focus on Operational excellence
- Clearly identified and communicated KPI's
- High level alignment of BU goals with corporate goals

Creating Ownership

Maximizing

Performance



### 2.7 Overall Financial Information

IVL has grown significantly and successfully from one PET plant in Thailand in 1995 to having a truly global footprint.

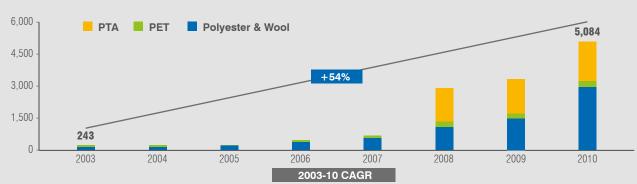
### EBITDA growth 34% YonY and 74% QonQ in the 4th Quarter 2010:

(in US\$ millions)	4th Quarter 2010	3rd Quarter 2010	4th Quarter 2009	FY 2010	FY 2009
Net sales	838	752	628	3,055	2,331
EBITDA	141	115	81	435	324
Net profit after tax & minorities*	134	93	41	333	141
Annualized Earning per Share	3.70	2.71	1.65	2.49	1.44
Annualized Return on Capital Employed (%)	22%	19%	13%	17%	14%
Annualized Return on Equity (%)	54%	46%	33%	43%	32%

Source: Audited consolidated financial statements and Management discussion and analysis for the year 2010.

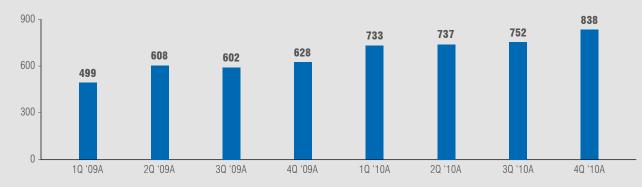
Translated Thai Baht figures to US\$ based on average forex rate for the period.

\*Includes extraordinary income of US\$ 38 million in Q4 2010, US\$23 million in Q3, 2010 and in total US\$ 77 million for year 2010



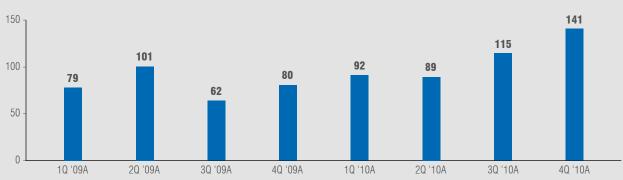
#### Significant and rapid capacity growth since 2003

Note: Capacities in K tpa; IVL capacity after pending project 2010 YTD



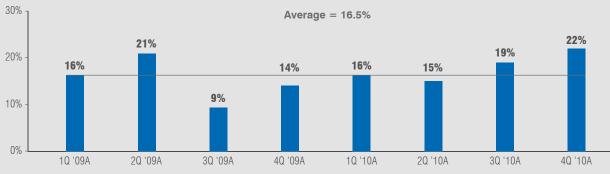
### Revenue (US\$ MM)

Note: Average THB/USD: Q4'10=30.0, Q3'10=31.6, Q2'10=32.4, Q1'10=32.9, Q4'09=33.3, Q3'09=33.9, Q2'09=34.6, Q1'09=35.3



### EBITDA (US\$ MM)

Note: Average THB/USD: Q4'10=30.0, Q3'10=31.6, Q2'10=32.4, Q1'10=32.9, Q4'09=33.3, Q3'09=33.9, Q2'09=34.6, Q1'09=35.3



### Financial Returns (ROCE)

Note: Average THB/USD: Q4'10=30.0, Q3'10=31.6, Q2'10=32.4, Q1'10=32.9, Q4'09=33.3, Q3'09=33.9, Q2'09=34.6, Q1'09=35.3

# **3 Sustainability at IVL**



At IVL, we try to live by the above motto, proactively identifying areas for our contribution to our local environments. We strongly believe that all the sites where we operate should take care of the needs of the surrounding communities. As a plastic manufacturer, our overwhelming focus on energy saving, environmental pollution control and recycling is a clear action on the adage:

We must educate people that Polyester Fiber & Bottle is recyclable

### Hence, we say:

- 1. We are aware of the burden on the environment from consumption of resources and energy in business activities, disposal of wastes. Hence, we are trying to conserve energy, effectively utilize resources, and reduce emissions.
- 2. We are proactively engaging with suppliers, customers, industry and local governing authorities to explore best practices to reduce carbon footprint and ensure health and safety for all.
- 3. We are committed to not using toxic chemicals for packaging materials as much as possible.
- 4. We are trying to realize a society which is based on circulation and symbiosis by encouraging reuse of waste and adopting recycling of post consumption materials.
- 5. We are running a range of local community enhancement programs that directly fulfill the needs of the concerned communities.

### Myths & Realities of Polyester (Uses for PET)

### Can a PET water bottle be refilled and reused?

Yes. PET bottles are cleared for both single and repeated use by the FDA and other world health-safety agencies. PET is a stable, inert material that doesn't biologically or chemically degrade with use, and is resistant to attack by micro-organisms. Regulatory authorities have tested PET bottles and found no harmful substances in either new or re-used PET bottles.



# 3.1 IVL Sustainability Program

### Sustainability is an integral part of our business model

Indorama Ventures has taken various steps towards the sustainability of not only the company, but of the community as a whole. We do our best to:

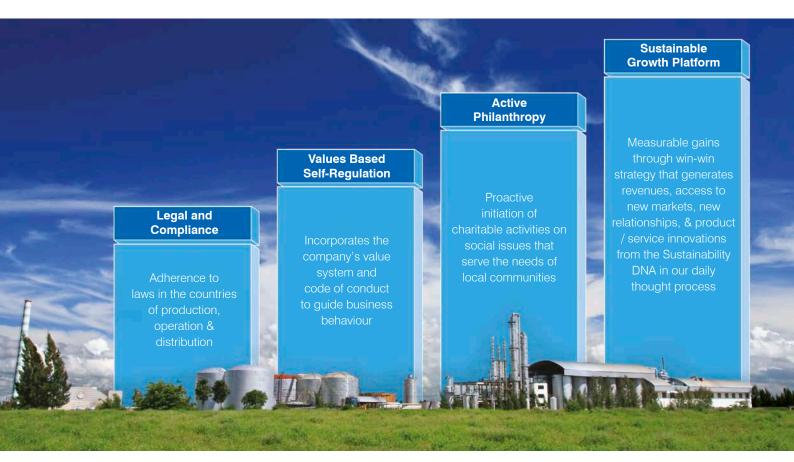
- Consistently supply high quality products and services to our customers
- Create value for our investors
- Provide a favorable working environment
- Be a good community neighbor
- Minimize the environmental footprint we leave behind

We are committed to meet and surpass the environmental laws and regulations pertaining to each business and region, with periodic analysis and third party inspection conducted in each plant.



### IVL Climbing the Sustainability Value Chain

We see sustainability as an ongoing journey where we try to climb up steps from being a responsible compliant to a leading thought-provider.



The future of our business depends very much on making our business sustainable in a long term

### Myths & Realities of Polyester (Uses for PET)

Are PET containers made for use in the oven or microwave different from PET containers used for beverage bottles and food jars?

Yes. Special grades of PET are used for take-out food containers and prepared food trays that can be warmed in the oven or microwaved. These "dual ovenable" trays and containers have the same basic chemical formula as PET bottles and jars, but have special additives that crystallize and toughen the PET so it can withstand the much higher temperatures of oven and microwave heating. Ovenable PET is approved as safe by the FDA and other health-safety agencies around the world.



### 3.2 Corporate Governance at IVL



Mr. SP Lohia



Mr. Aloke Lohia



Mrs. Suchitra Lohia



Mr. SP Khaitan



Mr. DK Agarwal



Mr. Amit Lohia



Mr. Rathian Srimongkol



Dr. Siri Ganjarerndee



Mr. Chakramon Phasukavanich



Mr. Kenneth See



Mr. Maris Samaram



Mr. William Ellwood Heinecke



Maintaining the highest levels of corporate governance and transparency to its stakeholders is central to Indorama Ventures philosophy.

IVL believes that Corporate Governance is a key to create credibility for the Company. The highest levels of corporate governance are necessary to ensure stakeholder satisfaction. It enables the Company to develop sustainable growth and increase long-term value for the Company's stakeholders. The ultimate goal is to meet the expectations of our shareholders, investors and other stakeholders.

The company through its directors, management and employees is committed to conduct its operations in accordance with the principles of good Corporate Governance and considers it as the major factor in enhancing its overall success as a responsible member of society.

# 3.3 CSR Policy

IVL operates within established laws and promote an ethical organizational foundation. The Company cooperates with all authorities to ensure it utilizes fair employment practices that meet international standards with respect to human rights and common labour practices.

We conduct our business ethically and treat all stakeholders with respect. The Company complies with all applicable laws and regulations and maintains open dialogue with authorities and NGOs to promote and maintain a good image for the Company in all its business and social transactions.

As a leading industrial corporation, IVL seeks to limit its impact on the environment and adjacent communities by actively seeking methods to reduce industrial waste through reusing, recycling and the promotion of energy conservation.

### 3.4 CSR Committee

IVL has a Global CSR committee based at its Bangkok Head office to oversee the creation and communication of its CSR policy; monitoring and assessing the impact of its policies towards the community and environment on a regular basis. Each business office or factory is responsible for the creation of activities for its employees and community inline with IVL's CSR policy. Local working groups are set up to coordinate activities with employees, communities and local authorities. All activities are monitored locally for effectiveness and feedback. Data on the implementation and related statistics are kept and also sent back to Head Office for assessment.

Head Office will monitor and assess CSR activities on a global basis, assisting local working groups to learn from the experience of other working groups and benchmark themselves to the group as a whole.



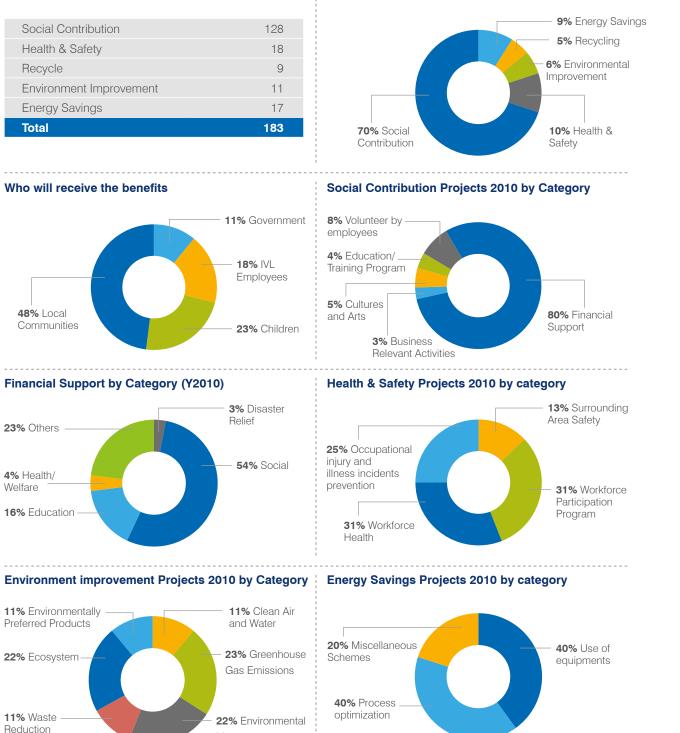
The CSR Committee is chaired by Mrs. Suchitra Lohia, Director.

- Mr. V.K. Gupta, Senior Vice President: Corporate Affairs
- Mr. Prateek Rajvanshi, Executive Assistant to Group CEO
- Mr. Richard Jones, Head of Investor Relations and Corporate Communications
- Ms. Naweensuda Krabuanrat, Public Relations Manager
- Ms. Sayumporn Laovachirasuwan, HR Specialist

# 3.5 Summary Snapshots

IVL has established a global reporting system that integrates all our business units around the world with the central CSR committee at our headquarters in Bangkok. We engage our own employees on the 7 Pillars identified as the base of our Sustainability Program.

**Overview CSR Projects by Category** 



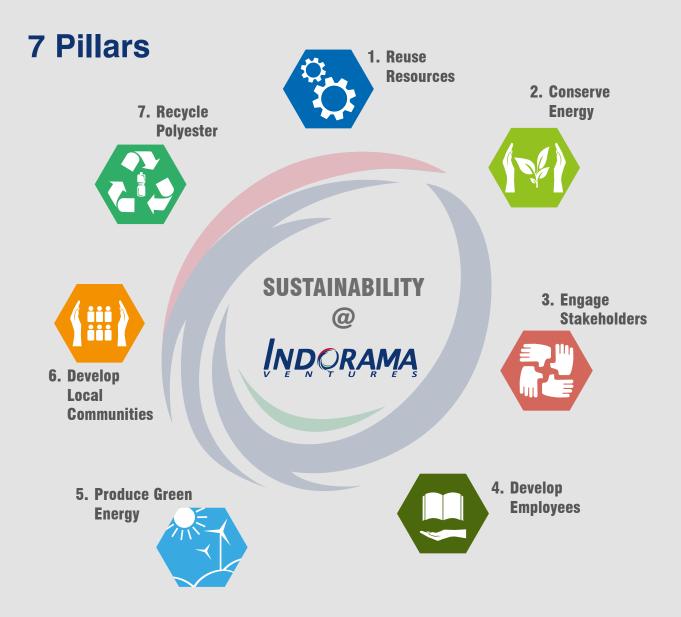
Management

### **Overview CSR Projects by Category**

## 3.6 7 Pillars of IVL's Sustainable Development

### **CSR** operational framework at IVL

- 1. Central CSR committee communicates with local CSR champions on the Group Policy. The local CSR teams then create an annual CSR plan in discussion with the central CSR committee
- 2. Throughout the year, we organise activities to implement the annual CSR plan
- 3. We set target benchmarks for each activity and assign activity leaders
- 4. We authorize necessary budget for implementation
- 5. We undertake a periodic audit to check performance, savings and expenses
- 6. We use collected data and feedback for reporting, compliance and internal assessment





We continue to focus on reusing the resources we consume, such as steam, raw materials, metal catalysts, water, solid & liquid wastes, emissions, in order to decrease our carbon footprint. As a company, we unreservedly pursue technological improvements in our processes and plant equipment to achieve this.

### **Summary Snapshot:**

- We have reduced plant lighting consumption by an average per year of 877,354 Kwh at Indorama Holdings.
- That subsidiary now saves 15,609cu.m/ year.
- Its bunker oil consumption has been reduced by 10,527 Litres.
- The reduction in Hydraulic Acid (35%) consumption 24,321 Litres.
- Indorama Polyester saves 1.9 Million baht per year in the energy its takes to pump.
- TPT has reduced power consumption by 3.6 million baht/year.
- TPT also reduced its CO<sub>2</sub> footprint by 323 Tons, equivalent to the entire Saudi Arabian gold reserves.
- Our Rotterdam plant reduced its carbon footprint by 800 kg/h or 6,720 ton/year, about the size of a US attack ship from WW II.
- Our plant in Lithuania reduced its natural gas consumption by 432,000 m3 to reduce power consumption.

### **Key Initiatives:**

### Waste Water Treatment

Raw Water, after passing through an MGF tank, is returned to a sand filter bed, cleaned & goes back to a pond. This helps to ensure that any waste water produced by the plant is cleaned and poses no risk to the local community.



### **Replace Water Pump**

Low efficiency water pumps have been replaced by higher efficiency pumps in order to save energy. Total Power saving: 3,007 Kwh/ day.



### Myths & Realities of Polyester (Uses for PET)

### How do I clean PET bottles for re-use? I'm concerned about accidental bacteria growth.

Although PET bottles are approved for both single and repeated use, the refilling and re-use of any bottle first requires careful cleaning. Always use soap and hot water. Dry thoroughly to make sure it is sanitary and free of moisture, which can promote bacterial growth. Consumers should avoid re-using any bottle that has been scratched inside, since bacteria can become lodged in scratches.



#### **Cooling Tower**

A newer and more efficient cooling tower was installed, reducing energy consumption.



#### Car CO<sub>2</sub> Emission

We reduced CO<sub>2</sub> from company vehicles by changing from diesel to CNG.



#### **Re-use excess heat**

We used the excess heat from the Water Removal Column underflow in the Crude Terephthalic Acid section to heat up the re-boiler of the Azeo Column in the Filtrate Purge section.

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#### **Burner Combustion Control**

We reduced gas consumption by auto controlling oxygen in the HTM burners.

Besides these projects, we installed many other energy-saving schemes.

### Myths & Realities of Polyester (PET Safety)

### Do PET bottles or containers contain BPA?

No. PET does not contain BPA. Bisphenol-A (BPA) is a compound used to make polycarbonate, a different type of plastic that's found in some baby bottles, the lining of metal cans, and reusable sports bottles. PET does not contain BPA and never has. Some legislators and consumer groups are concerned there might be a possible connection between BPA in polycarbonate and possible developmental or reproductive disorders, although BPA has been extensively studied and ruled safe by international health authorities. These concerns have caused some confusion about which plastics contain BPA, but PET does not contain BPA.



### Pillar 2: Conserve Energy

The faster we grow, the more energy conservation we need to do...

While we are growing our footprint around the globe, we expect to see society leading organizations in the creation of worldwide cooperation to protect global energy resources for future generations. Adjusting technology for both productivity and energy saving is a key focus.

### **Summary Snapshot:**

- At Indorama Holding, we can save around 200,000KW/Year of electricity, the equivalent of 550,000 Baht. (IRH)
- Overall our manufacturing sites reduce energy consumption by 10% through various internal initiatives.
- Various process and technological improvements at some sites helped us conserve energy by as much as 17%. One of our sites hence got "World Leader" rating on energy efficiency.

### **Key Initiatives:**

#### **Green Office Project**

By changing 2,175 lights from TL-8 36 Watt to TL-5 28 Watt with electronic ballasts we save 78,840 kWh of energy per year.



### **IVL Cares**

IVL Cares Program was a month long internal initiative focused on reducing energy consumption by:

- 1. Switching off lights, AC and other energy intensive appliances when not in use.
- 2. Voluntarily giving up use of appliances such as AC, micro-wave for an hour everyday.
- 3. Installing devices that shut down computers, engineering equipment if idle for more than the specified time.
- 4. Other simple steps such as conserving water, steam in offices and factories.

### Believe it or not

### Plastic bottle yacht sails into Sydney

A catamaran made out of plastic bottles and captained by an heir to a banking dynasty has arrived at Sydney's Darling Harbour.

The Plastiki is made from 12,500 Polyethylene Terephthalate (PET) bottles and sailed through the Heads earlier this morning, docking at Darling Harbour where some curious Sydney- siders gathered to watch its arrival.

The leader of the voyage, David de Rothschild of the banking dynasty, has sailed about 8,000 nautical miles from San Francisco to Sydney to make a point about the way plastic is used.

Speaking after the yacht docked, he said people need to start reducing the amount of plastic waste in the world's oceans.

"The Plastiki is literally a metaphorical message in a bottle about beating waste and reducing our human fingerprints on our natural environment," he said.





Transparent and up to date communication is the key to winning and keeping the trust of our stakeholders. Our willingness to listen to feedback and take action to improve our performance will allow us to keep pace with our stakeholders.

#### **Summary Snapshot:**

- We will reduce customer complaints by 100%.
- We have introduced a customer hot-line on the web to serve customer needs and accept their complaints in order to respond immediately.
- We overhauled company website to add investor micro site to engage more meaningfully with shareholders" and "We sought feedback from regulators/government agencies on audit reports sent.

Stakeholder group	Modes to engage	
Shareholder/ Investor	<ul> <li>Annual shareholder meeting, Annual Report, Information report to the Stock Exchange of Thailand, Investor meetings, Road shows, conferences, satisfaction surveys</li> </ul>	Stakeholder
Customer	<ul> <li>Customer Satisfaction Survey, Hotline, Customer meeting, Organize customer visits, Send corporate communication periodic materials (The Beacon)</li> </ul>	engagement
Employees	<ul> <li>Regular Performance Review</li> <li>High autonomy with high accountability, Performance linked Reward, Family-like care of employee by offering requisite perks</li> </ul>	
Community/ Society	<ul> <li>Sponsor, Organize community activities and local festivals, Attendance of community activities, Visit to communities</li> </ul>	- SOM
Regulation/ Government	<ul> <li>Keep in touch with relevant regulators and update them regularly on the information required, Audit Report</li> </ul>	

#### Myths & Realities of Polyester (PET Safety)

### Is PET safe? Is it approved by the FDA or other health-safety agencies?

PET has been approved as safe for contact with foodstuffs and beverages by the FDA, Health Canada, the European Food Safety Authority and virtually every other health-safety agency in the world. It has been used for food and beverage containers for nearly 30 years without any known adverse effects. Extensive studies of PET and PET packaging have repeatedly shown it to be safe.





"People First" - we believe that people are our core strength.

To retain high quality manpower, and to drive the business efficiently, we provide our people with a variety of training courses to improve their working skills. Furthermore, heath and safety are essential for our Indorama Ventures FAMILY.

#### **Summary Snapshot:**

- Employ more handicapped employees.
- In-house training.
- Ensuring performance linked reward and recognition.

#### **Key Initiatives:**

#### **Breast Cancer Project**

Breast cancer is the number one fatal disease affecting women in Thailand. In an effort to spread awareness, the Company held an educational workshop on breast cancer for female staff.



#### **Safety Training Project**

It is important to maintain the utmost in safety regulations and precautions at all our facilities. Management provides internal training on safety for all new staff.



First Aid training is provided by NCC Health Care to our employees to better equip them for emergency situations.





#### White Factory Project

The White Factory Project provides awareness of drug abuse by labour officers and the Police department. Annual checkups help us to provide corrective and preventative actions when substance abuse is detected.

#### Scholarship for Employees' Children Project

As an advocate of education, the Company provides scholarships to the children of employees.



Thailand was severely affected by floods in 2010, and the IVL Flood Relief Committee funded the procurement and delivery of survival kits to flood victims through employees who were affected. We also rebuilt broken houses of some flood victims.

#### **Social Events**

Social events are regularly held to develop the staff morale and create better teamwork.

#### **Sports Day**

We hold sports days to promote a healthy lifestyle for employees and encourage better teamwork.

#### **Employee Reward Project**

Rewards for the loyalty of employees towards IVL who have worked with us for 5, 10 and 20 years.













As an energy user, green power from natural sources, like solar and wind power, are applied at Indorama Ventures plants with the goal of using green energy is generally to reduce and create power with as little pollution as possible. Using green energy will result in the ability to preserve the planet for a longer time.

#### **Summary Snapshot:**

- Produce wind energy 25% of the site's energy needs.
- Wind energy reduces CO<sub>2</sub> emission by 9,000 TPA.
- Solar PV farm produces 17% of the site's energy needs.
- Solar energy reduces CO<sub>2</sub> emission by 18,000 TPA.

## I believe that renewable energy is the future of the country and the future of industry

#### **Key Initiatives:**

#### Wind Energy Project

Our PET facility in Workington, UK operates two wind turbines, producing 25% of the site's energy needs.

#### Solar Project

A solar PV farm is being installed at Indorama Ventures Lopburi province, Thailand. The project will generate 2.37 MW of energy and is expected to be operational by March 2011.



#### Myths & Realities of Polyester (PET Safety)

#### **Does PET contain endocrine disruptors?**

No. PET contains no known endocrine disruptors, and there is no credible scientific data to suggest that PET produces estrogen or endocrine modulating activity. Studies that exposed both male and female laboratory animals to terephthalates during all phases of the reproductive cycle found no reproductive or developmental effects in either the test animals or their offspring.



### **Service And Annotation Services Pillar 6: Develop Local Communities**

IVL is a part of the community- our top most focus is on the local people, especially education. We believe that education leads to well being and social sustainability.

#### **Summary Snapshot:**

- Buy 10,000 Kilograms of rambutan.
- Helping small fishing communities to earn more income 10%.
- Reduce waste 3,518.9 kg within 2 months and revenue will be scholarship to students.
- Assist develop children to achieve their full potential.
- Improve the community areas and object.
- Helping people in community to have more income.
- Support free lunch for students.

#### **Key Initiatives:**

#### **Support the Farmers**

Bought 10,000 kilograms of rambutan to relieve the local Rayong farmers from the impact of low fruit price.



#### **Fishery Project**

Released 1.71 million Babylonia snails, crabs and shrimps at Nong Fab Small Boat Fishery to increase the amount of aquatic life and create sustainable growth for both community and industry.

#### Waste Recycle Bank Project

The solid Waste Recycle Bank is one way to promote waste separation. The project started from children and communities using school as a place to perform the Waste Recycle Bank process. The objectives of this project are to encourage communities' moral sense in household waste separation for recycling and reduce pollution and promote environmental protection. The students and community will receive a better understanding on how to separate solid waste.





#### **English Tutor Program**

The spouses of senior management in the Company volunteer their time to teach English to the local children.

#### **Cleaning Community**

The company's employees cleaned and painted a local mosque, repaired and painted a children's play park, and donated books and book shelves.

#### **Education Project**

The Company supplied equipment for and taught villagers how to make menthol-fragranced objects to be placed around their homes for a fresh aroma.

#### **Book Donation**

"Read with the Heart – The Power of Family Love" Project Cooperate with the Nation to provide access to quality books at schools in 927 districts. The purpose of this program is to encourage children to love reading and enhance family bonds through reading together.

#### **Free Lunch**

Free lunch and give scholarship to poor school at Wat Kro Yai Cha School on 15th September, 2010.











#### Sponsored a chess and bowling tournaments

IVL supports youth initiatives such as Bowling Tournament, Chess Tournament, proceeds from which are used to help the underprivileged.

#### Sponsored Year Education of eight Children in India

Give financial support to the Remedial Education Sponsorship Program of Navjyoti India Foundation and other development services; Library Facilities, Exposure Trips, Basic Health Care, Nutrition, Computer Literacy, English Learning Lessons, Sports, Music Classes and etc.

#### Other local community activities



#### Myths & Realities of Polyester (PET Safety)

### Can PET bottles that are left in a hot car or put in the microwave release dioxins?

No. PET does not contain dioxins, nor can it produce dioxins, and no dioxins are created in the manufacturing of PET. Dioxins are a group of compounds sometimes formed by high-temperature combustion (over 750 degrees F.) and certain types of industrial processes involving chlorine. Dioxins can't be created without the presence of chlorine, and PET does not contain chlorine. Consequently, dioxins can't be produced when a PET container is heated or microwaved or frozen (all common urban myths).





The development of polyester fiber from recycled bottles is actually a matter of re-channelling the use of the chemical "polyethylene terephthalate" which is also the chemical ingredient in PET bottles. It was proven to be more cost efficient to recycle PET bottles, since there will be less heating and energy required in processing the polymer ingredient.

#### **Environmental Impact of Polyester Fabrics Made from Recycled Plastic Bottles**

The manufacture of polyester fabrics made from recycled plastic bottles is more energy efficient compared to the manufacture of virgin polyester fabrics since the latter has to start with the processing and heating of the chemical "polyethylene terephthalate" to achieve the required consistency.

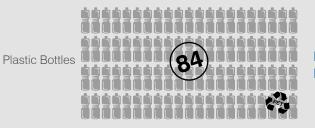
#### **Key Initiatives:**

- Project underway at Indorama AlphaPet to process 35 KMT/ year of Post-Consumer Recycle Material.
- 100% PET recycled business cards.
- PET Recycled-bottle Pens.
- Project underway at Indorama AlphaPet to process 35 KMT/year of Post-Consumer Recycle Material. The project employed UIF's FTR® technology for producing resin with PCR content in it.

IVL enhances the environmental performance of its manufacturing and operations. Some of our past green initiatives include:

- 75 Mn bottle equivalent flakes used annually for non woven fiber.
- 158,000 MT of renewable feedstock used annually in manufacturing processes.

#### **Recycle PET/Polyster**





Cabin Trolley

#### Myths & Realities of Polyester (PET Safety)

I've heard that a hot environment can create harmful levels of antimony oxide in PET-bottled water. Is that true? Should I be concerned?

There is no reason for concern. No studies have found any toxic amounts of antimony in PET-bottled water or containers. Unfortunately, there has been some consumer misunderstanding of studies showing higher-than-normal levels of antimony when water bottled in PET was exposed to extreme heat (176 degrees F) for extended periods of time. Even then, the highest measured levels paralleled established safe levels for antimony in drinking water. In short, the very small amounts of antimony that might be found in PETbottled water are of no concern and do not pose any health risk.





#### Myths & Realities of Polyester (PET Safety)

#### **Does PET contain phthalates?**

PET contains no phthalates. Phthalates (i.e., phthalate ester plasticizers) are not used in PET, and PET is not a phthalate. Plasticizer phthalates are sometimes used to soften other types of plastic, but they are not used in PET. Some consumers may have incorrectly assumed that PET is a phthalate because PET's chemical name is polyethylene terephthalate. Despite the suffix, PET is not a phthalate. Phthalates are low molecular weight monoesters made from ortho-phthalic acid. By comparison, PET is a high molecular weight polyester made from tere-phthalic acid. Chemically they are very different.



# 4 Highlights

## 4.1 The Journey Ahead...

We will continue our focus on sustainability in 2011 and hope to deliver more value to our surrounding communities. The three-pronged focus on recycling polyester, health of underprivileged, education of communities is in addition to our ongoing focus areas of last year.

#### a. Recycling

Introduction of Green PET Resin, Pre-colored yarns, Recycled PET, Recycled Fiber and ECORAMA – Recycled yarns.

#### 1. Green PET Resin

- Green PET with 33 % bio-content.
- 65 Mn Kg produced annually.
- 3.25 Bn PET bottles equivalent.
- Exclusive to brands committed to the environment.

#### 2. Pre-colored yarns by IVL

- Eco-friendly pre-colored Indorama yarns.
- 30 Mn Kg pre-colored yarns produced annually.
- Save 180,000 Kg of chemical dyes plus effluents.

#### 3. Recycled PET

- Indorama has announced a project to recycle Post Consumer PET at AlphaPet, Decatur, Alabama.
- The project is designed to reprocess 35 KMT/Annum of Post Consumer PET.
- AlphaPet shall be employing Uhde Inventa Fischer's patented FTR® process.
- Flakes will be partially glycolyzed in a twin screw extruder into depolymer.
- Depolymer will be double filtered and pumped into the virgin oligomer line.
- Blend ratios can be adjusted from 10 to 25%.







#### 4. Recycled Fiber

- Mechanically mix PET Bottle flakes into fiber.
- 10 Mn Kg produced containing 15 % PET flakes.
- 6 Mn Garments equivalent.
- 2.5 Mn Kg recycled chips for fiber use.

#### 5. ECORAMA – Recycled Yarns

- 1 Mn Kg post consumer recycled filament yarns.
- Made from 100 % post consumer recycled bottles.
- The quality and performance match virgin yarns.
- 5 Mn Garments per annum equivalent.

#### b. Health

#### **Thalassemia Initiatives**

As a global institution, we are concerned about the health and well-being of local communities around the world. We have found that Thalassemia is a serious health hazard in Thailand and wish to support initiatives in tackling this challenge. We are starting by conducting Thalassemia camps near our factory locations that will educate and diagnose the affected.

#### c. Education

#### **Global Scholarship Program**

IVL Global Scholarship Program is a program designed to enable the brighter future of IVL family. As part our Corporate Social Responsibility initiatives, we want to enable pursuit of meaningful education to empower the next generation.

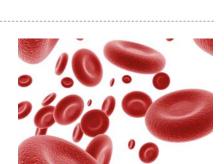
#### Myths & Realities of Polyester (Recycling & Sustainability)

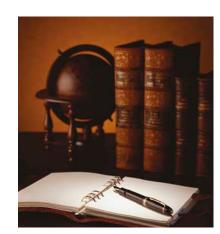
#### Can PET bottles and containers be recycled?

Absolutely. PET is recyclable and highly sustainable. It can be recovered and recycled again and again — back into containers for foods, beverages and personal care products – or into carpet and clothing fibers, automotive parts, construction materials, industrial strapping or other packaging materials. More than 1 billion pounds of used PET bottles and containers are collected in the U.S. each year for recycling. PET is the most recycled plastic in the U.S.











## 4.2 Awards & Recognition

IVL takes pride in being awarded recognition around the world for some of its initiatives as listed below:

#### Best Product of the Year and Successful Company 2010

- Golden medal award for the "Best Product of the Year" for Ramapet N1 and "Best Exporter of the Year" from Lithuanian Confederation of the Industrialists.
- Gold Medal for Product Ramapet R1 from the Chairperson of Parliament of Republic of Lithuania year 2010.
- Award conferred by Lithuanian Confederation of Industrialists. "Successful Company 2010" award.

### National Best Practices Award on Labour Relations and Welfare

National Best Practices Award on Labour Relations and Welfare by Ministry of Labour from 2005-10.

### National Occupational Safety, Health and Environment Award

National Occupational Safety, Health and Environment Award by Ministry of Labour in 2009.







#### **National QCC Best Practice Award**

National QCC Best Practice Award & selected for participation in IETEX 2009 & 2010 - Singapore by The Association of QC Headquarters of Thailand in 2009, 2010.

#### **National Best Practices Workplace on Training**

National Best Practices Workplace on Training by Ministry of Labour in 2009.

#### **National Zero Accident Award**

National Zero Accident Award by Ministry of Labour in 2009, 2010.

### Platinum Category on HIV/AIDS & TB Prevention and Management in the work place

ASO-T Thailand - Platinum Category on HIV/AIDS & TB Prevention and Management in the work place by Ministry of Labour & Ministry of Public Health in 2010.

#### **Environmental Governance**

TPT site received "Environmental Governance" from Industrial Estate Authority of Thailand 2009, 2010.

#### **CSR-DIW Standard Certification**

CSR-DIW Standard Certification by the Department of Industrial Works of Thailand's Ministry of Industry 4 plants IPI-N, IPI-R, IRPL, TPT.

#### NTCC Award 2010

Award for Largest Investment in Netherlands by NTCC 2010 (Netherlands Thai Chamber of Commerce).















## 4.3 Media Coverage

#### World's Today

Section: Business Date: 8 November, 2010

The Indorama Ventures PCL (IVL) representatives provided 150 sets which is some part of the disaster relief packages and gave to Mr. Ampol Kaemjaroen Head of Labour Protection and Welfare Department at Lopburi in order to distribute to people who affected by flooding disaster.



Bangkok Post

Date: 8 November, 2010

Indorama Ventures Staff transferring some part of the disaster relief packages, which supported by IVL, to a boat in order to distribute to people who suffered from flooding in Lopburi.



#### Myths & Realities of Polyester (Recycling & Sustainability)

#### What process is used to recycle PET?

PET can be recovered, and the material reused, through a series of washing processes or by chemical treatment to break down the PET into its raw materials or intermediates, which are then purified and converted into new PET resins.



#### Recharge

Section: Solar Date: 22 December, 2010

Headline: Conergy building 2.37 MW Solar Power Park in Thailand

Germany-based Conergy is building a 2.37 MW Solar Park for Thai firm Indorama Ventures in Lopburi, North of Bangkok.

#### Bangkok Post

Section: Business Date: 26 February, 2011

Headline: Let the Sun Shine

Ashok Upadhya (left), an assistant vice-president of Indorama Ventures Plc, explains the operation of the company's new solar power plant in Lopburi to Industry Minister Chaiwuti Bannawat (second from left) at a ceremony yesterday. Looking on are IVL chief executive Aloke Lohia (second from right) and Lopburi MP Ponsri Tharapoom (right).

### Stock News Daily (Khao Hoon)

Section: First Section Date: 28 February, 2011

Headline: IVL invest Bt 275 million Opens new Solar Power Plant in Lopburi.

Myths & Realities of Polyester (Recycling & Sustainability)

#### What kinds of products are made from recycled PET?

Bottles, jars and other containers made of PET can be collected and recycled into a wealth of products. PET can be recycled into new PET bottles and containers, carpet and clothing, industrial strapping, rope, upholstery fabrics, boat sails, automotive parts, fiberfill for winter jackets and sleeping bags, construction materials, and many other items.







## 4.4 Glossary

Abbreviation/ Term	Definition
BPA	Biphenol A
CSR	Corporate Social Responsibility
EGAT	Electricity Generating Authority
IPA	Isopropyl alcohol
IPI-NPT	Indorama Polyester Industries PCL. (Nakorn Pathom Branch)
IPI-R	Indorama Polyester Industries PCL. (Rayong Branch)
IPWL	Indorama Polymers Workington Limited
IRH	Indorama Holdings Ltd.
IRPL	Indorama Petrochem Ltd.
IVL	Indorama Ventures Public Company Limited
NGO	Non-governmental organization
MEG	Mono-Ethylene Glycol
OGP	UAB Orion Global Pet
PCR	Post Consumer Resin
PET	Polyethylene Terephthalate resin A thermoplastic polymer resin of the polyester family and is used in synthetic fibers; beverage, food and other liquid containers
Polyester	A synthetic polymer made of Purified Terephthalic Acid (PTA) and Mono-Ethylene Glycol (MEG).
Polyester fiber and yarn	A quick-drying resilient synthetic fiber consisting primarily of polyester.
PTA	Raw material used in the production of PET (see PET) and Polyester.
PX	Paraxylene
TPT	TPT Petrochemicals Public Company Limited

#### Myths & Realities of Polyester (Recycling & Sustainability)

#### Can new PET bottles be made from recycled PET?

Yes. Recycling used PET bottles and jars into new food-grade PET bottles and containers is a key example of the environmental benefits and sustainability of PET as a packaging material. The development of modern and efficient plants dedicated to the closed-loop recycling of PET bottles continues to increase around the world.

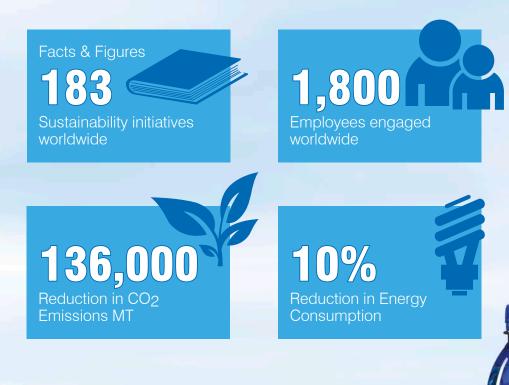


4

Signal Mall

5

## Sustainability Journey Snapshot



NKI

## The longest journey starts with a single step

- Chinese proverb

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