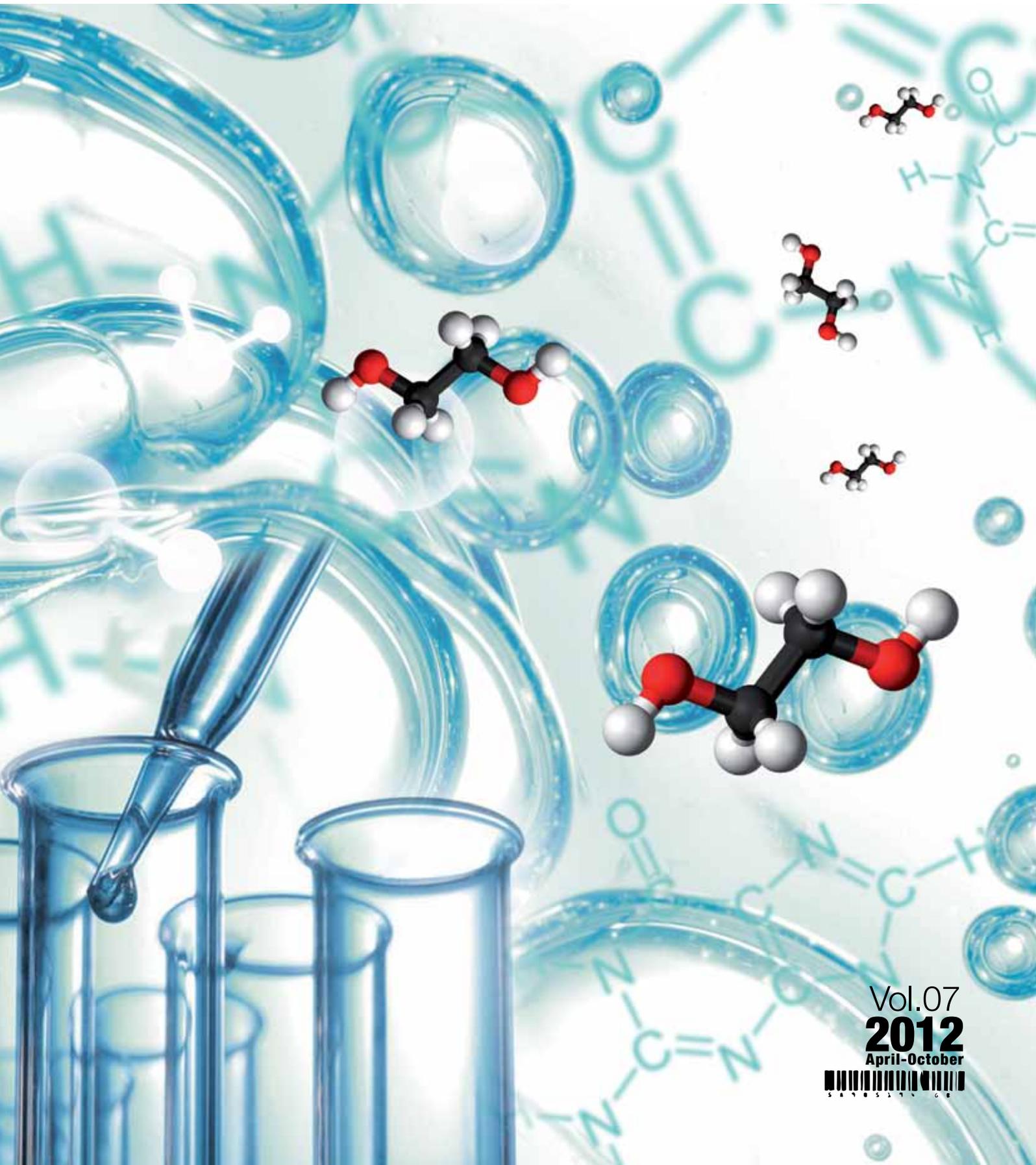


# The Beacon



Vol.07  
**2012**  
April-October



## Cleaner Water from His Majesty the King of Thailand

The first Royal initiatives to treat wastewater took place between 1984-1987, by flushing out canals and rivers to purify them. His Majesty's water treatment project is a lot simpler. His Majesty suggested to the Royal Irrigation Department that Maccassan swamp be used to filter wastewater, and the outflow into Saen Saep Canal, by using water hyacinth, or Java Weed. Almost anyone who lives in Southeast Asia will recognize it floating in large patches along rivers and canals.

His Majesty also introduced the idea of harvesting water hyacinth and using it as a compost fertilizer. About thirty tons of hyacinth are required to make 5.5 tons of compost. The hyacinth crop can reproduce five-fold in forty days and that is the period when it is usually harvested. It can also be used as a fuel since compacted water hyacinth burns at 870° Celsius.

Water hyacinth has the capability of absorbing heavy metals. The result may not be as clean as the end-product of proper wastewater treatment, but plants and fish can live in it. The people in the area of the Maccassan swamp have received other help in the form of occupational training in cottage industries, on how to utilize the water hyacinth as a material for making baskets, placemats, purses and other things that help them earn additional income.



### Editor's Note

With Indorama Ventures 7<sup>th</sup> edition of The Beacon, we discuss IVL's feedstock business. While there are many ways of communicating, our magazine tries to convey a better understanding of the business to allow you to see what has been going on at IVL.

Last week I received an e-mail telling us to have a "Happy Day" with many good quotes inside. All were good tips about our way of thinking but the one I liked most and would like to quote here is -

"The world always says – find good people and leave bad ones. But I say, Find the good in people and ignore the bad in them because no one is born perfect"

Another one is "Negative thinkers focus on problems... positive thinkers focus on solutions"...so have a happy day!

Sirima Phanomuppathamp  
Editor

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The Beacon is published every quarter to provide information about the company's news and activities to all stakeholders. Not for sale.



## Message from Mr. Dilip Kumar Agarwal

Our Feedstock business is a key part of the company's integration strategy to ensure we have raw material security into the future and that we gain the maximum margin from the combination of our upstream and downstream businesses. We are in a Polymers business that has become commoditized over the years and the key to our success has been to seek out margin wherever we can. When the key feedstocks of PTA and MEG are close or adjacent to our downstream manufacturing, then we can maximize margin by mitigating many costs associated with such businesses, such as logistics and infrastructure. The benefits of securing feedstock include providing comfort to our customers that we can supply them at all times with PET and Polyesters that use PTA and MEG as feedstocks. We save on costs through cost sharing in instances where two sites for PET and PTA are integrated and we can also share some facilities and infrastructure elements.

Currently, both PTA and MEG are produced from fossil-based materials, such as crude oil or natural gas. Whereas there is some research underway, and even some recent initiatives, to use natural-based alternatives, like bio-MEG and bio-PTA, we are in a position to accept these technologies should they come about. In the case of bio-MEG, we have been a forerunner in the research and development of PET resins that incorporate MEG made from the ethanol derived from plants such as sugarcane. The first of our customers to utilize bio-MEG was Coca Cola with their PlantBottle®.

As we go forward through these times of economic uncertainty, rest assured that we will keep you up-to-date with our movements through the auspices of this periodical.

Sincerely,  
D.K. Agarwal  
CEO



**Mr. Bruce Bush**  
Vice President for Operations  
at Indorama Ventures (Oxide & Glycols) LLC.



**Mr. Joel Saltzman**  
Head of the Ethylene Oxide and  
Glycols Business

## Message from Mr. Mohta

Dear Colleagues,

Since acquiring the MEG (monoethylene glycol) business in April 2012, we have created a new business line called simply Feedstock. This will help to streamline our raw materials business, which go to feed our downstream materials of Polymers and Fibers. Both PTA and MEG are essential ingredients required to manufacture our core products.

The company that we acquired, called Old World, now has a new name - Indorama Ventures (Oxide & Glycols) LLC., reflecting not only our strong corporate branding but the fact that we can produce more than just MEG, including other products like Purified Ethylene Oxide, Diethylene Glycol (DEG) and Triethylene Glycol (TEG). All these products garner a high margin in the U.S. This market segment has extended IVL's customer base and provided reach to various brand owners.

The current tightness in the North American MEG and EO market implies that the value of this business will rise over time, so it appears that IVL is once again in the right place at the right time.

I will take this opportunity to introduce my colleagues at Indorama Ventures (Oxide & Glycols), Joel Saltzman, who is the business head and Bruce Bush, who takes care of operations.

As this is the first time that The Beacon has had an issue on the Feedstock division of our company, I hope you find it interesting and enlightening.

**Best wishes,  
S.N. Mohta  
President**



It is with great pleasure that I, along with Mr. Agarwal and Mr. Mohta, welcome you to this issue of the Beacon, focusing on our Feedstock Business. Backward integration into PTA has been one of the key strategies of Indorama Ventures since 2008 to ensure the security of our raw materials and high-rate operations of our downstream units. Wherever possible, co-location with Polyester units further saves the logistic cost.

The PTA industry, after seeing three excellent years, is now passing through challenging times with very poor margins due to the sudden expansion of capacity, particularly in China - far beyond the growth of the Polyester sector. Also, the new plants are highly efficient both in terms of capital and variable cost as compared to previous generations. We see this as an opportunity to improve our costs and maintain our leadership amongst the old plants. We have been implementing various improvement capex to achieve this objective in various units. Despite this temporary setback, integration should continue to maximize the chain value and certainly work for us in the long term.

While Asian PTA spreads have been depressed since the last quarter of 2011, there is still potential upside as current levels are unsustainable. In Europe, the situation is not as bleak as our PET

capacity in Rotterdam has been expanded and PTA there will be fully-utilized internally. We are planning a brown field expansion of this plant by adding some balancing equipment and maximizing the use of existing equipment thereby substantially improving the variable cost. In North America, we have deliberately chosen not to build our own PTA plants due to the proximity of this feedstock to our production plants. In Alabama, we are virtually integrated as our Alphapet plant stands on the grounds of a third party PTA manufacturer.

I appreciate that all the stakeholders in IVL read this magazine hoping to get a view of the future. The industry is currently passing through consolidation phase and we will continue to update you on further developments in future too through this medium.

**Sincerely,  
Prem C. Gupta  
President, PTA Group**



**Mr. Sunil Fotedar,  
Chief Manufacturing Officer,  
TPT Petrochemicals PCL.**

**Mr. Sandeep Kamat,  
Vice President (Manufacturing),  
Indorama Petrochem Ltd.**



**Mr. Sanjeev Sharma,  
Vice President  
(Commercial),  
Indorama Petrochem Ltd.**



# Feedstocks – an important factor in IVL strategy

## A basic Introduction

In 2008, Indorama Ventures entered the feedstock segment for the first time with acquisitions of PTA plants in both The Netherlands and Thailand. In this case, a feedstock is a raw material that is just one step away from the manufacturing process. For instance, PTA and MEG are one step before PET in the polyester value chain. Crude oil or natural gas would not be termed feedstocks because they are several more steps above PET in the chain.

On March 31, 2008, we acquired the PTA assets of Eastman Chemical at the Rotterdam site. The Company had also been acquiring shares of TPT Petrochemicals in Thailand. By October 2008 the company had also acquired Indorama Petrochem in Thailand. In July 2010, the company entered into a joint venture agreement to purchase an integrated PET/PTA facility at Sardinia, in Italy, called Ottana Polimeri and finally, in June 2011, the company acquired a 41% stake in PT Polyprima to enhance its expansion into Indonesia.

IVL's first foray into MEG came in April 2012 with the acquisition of a business in the USA. Now named Indorama Ventures (Oxide & Glycols), the operations of that company are carried out at Clear Lake in Texas, but the head office is located in Chicago.

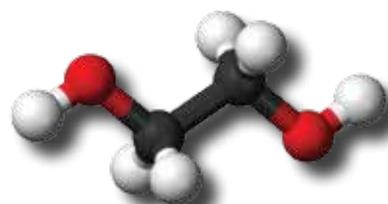
For IVL, feedstocks mean PTA and MEG. In full PTA is Purified Terephthalic Acid and it is an organic compound. This colourless powder is a commodity chemical, used principally in the manufacture of Polyethylene Terephthalate (PET), which is generally used to make clothing and plastic bottles. Several billion kilograms are produced annually.

Terephthalic acid is produced by the oxidation of Paraxylene (PX) by oxygen in air. The commercial process utilizes acetic acid as a solvent together with a catalyst composed of cobalt and manganese salts, with a bromide promoter.

A radical chain reaction occurs in a series of intermediates, starting with the oxidation of Paraxylene to p-tolualdehyde (TALD), then p-toluic acid (PT), 4-carboxybenzaldehyde (4-CBA), and finally to terephthalic acid (TA).

Most PTA is consumed as a feedstock of PET, however a few small niche uses occur, such as in the analgesic drug oxycodone, which occasionally comes as a terephthalate salt. More visibly, terephthalic acid is used as a filler in some military smoke grenades, most notably the American M83 smoke grenade, creating a thick white smoke when burned.

The other major feedstock produced by Indorama Ventures is monoethylene glycol (MEG) which is an organic compound. In its pure form, it is an odorless, colorless, syrupy, sweet-tasting (and poisonous) liquid. Ethylene glycol is produced from ethylene (ethane), via the intermediate ethylene oxide. Ethylene oxide reacts with water to produce ethylene glycol.



MEG molecule

Due to its low freezing point ethylene glycol resists freezing. A mixture of 60% ethylene glycol and 40% water freezes at  $-45^{\circ}\text{C}$  ( $-49^{\circ}\text{F}$ ). The minimum freezing point is observed when the ethylene glycol percent in water is about 70%. This is the reason pure ethylene glycol is not used as an antifreeze—water is a necessary component as well.

The major end uses of ethylene glycol are as antifreeze for automobile radiators, which accounts for over 50% of ethylene glycol's commercial uses, and as raw material in the production of PET, which accounts for 40% of total ethylene glycol consumption globally. Besides automobiles, MEG is often used as a medium in liquid cooled computers, chilled water air conditioning systems and geothermal heating/cooling systems

Less known uses include the manufacture of capacitors, as a chemical intermediate in the manufacture of 1,4-dioxane; in the manufacture of some vaccines, though it is not itself present in the vaccine that is injected; as a minor (1–2%) ingredient in shoe polish and also in some inks and dyes. It can be used to treat wood rot and wood infected by fungi like partially rotted wooden objects or wooden boats, and is relatively cheap. It is commonly used as a preservative for biological specimens, especially in high schools during dissection as it is safer than formaldehyde. It is also used as part of the water-based fluid used to control subsea oil and gas production equipment.

People should be aware that due to its sweet taste, children and animals may consume larger quantities of it than other poisons unless cans or jars are kept safely out of reach.

Strategically, entry into feedstocks holds several advantages, especially where the acquisition is fully-integrated with PET, such as in Rotterdam or Ottana, or close enough to received piped supply, such as in Indonesia. Fully integrated plants require less manpower—for instance, one common entrance requires one reception area, or a common access road or shared firefighting facilities.

Distance between feedstock and end product means more costs are added to the final production of PET. In practice, the proximity of third party feedstock supply can save cost if pipelines are used, for instance, in Poland where the PTA supplier is next door. In Alabama, the company's PET facility has been built on the land next to a third party PTA plant, meaning that it is not always necessary to own the facility; it is the integration that is important.

Integration implies certainty of supply. This provides a competitive advantage at a time of shortages in the market for any reason. Even third party integration involves long term supply contracts so that security is maintained. Integration also implies faster service. No delays by railway companies or trucking services provides the PET company with more accurate delivery times to customers – one less obstacle to on-time delivery has been removed.

While this is a brief introduction to feedstocks, we hope to add to your knowledge over time.

## Keep up with the Latest News from Indorama Ventures

It has been a very interesting first half as we entered 2012; a few more acquisitions propelled IVL out into the forefront of the polyester value chain. Not only is IVL the largest polyester value chain company in the world by capacity, but we are the only one that is truly global, with a continuing strategy of being close to our customers, and often close to our feedstock suppliers, in every important market.

Geographically, no other PET resin supplier can offer customers local or regional delivery on every major continent. Moreover, we are developing our acquisitions with a view to offering a more diverse platform of products so that customers see IVL as a one-stop-shop for everything from PET resin to Polyester or Polyolefin fibers, filaments and yarns. We continue to be very active in moving toward further integration both up and downstream.

## Moving into new businesses



Starting the year with a bang in January 2012, IVL completed the acquisition of FiberVisions, a polyolefins fiber company that is the global hygiene segment leader with operations in America, Europe and China, pushing IVL into a leading position in this fast-growing segment. Moreover, the acquisition of the recycled PET and fiber manufacturing businesses of Wellman International in Europe in November 2011 makes IVL Europe's most prominent recycled PET and fiber producer, with a footprint across the polyester value chain.

What made headlines for investors was the push upstream into our feedstock Mono Ethylene Glycol (MEG) with the acquisition of Old World Industries I, Ltd. and Old World Transportation Ltd. (collectively called Old World). This US\$ 795 million deal closed successfully in April 2012.

Old World, now renamed Indorama Ventures (Oxide & Glycols) has added a new line of business to IVL and made us the only global polyester chain producer with integration into both PTA and MEG. With this acquisition, IVL also gained about 30% market share of merchant PEO (Purified Ethylene Oxide) in North America. The production facility is located in Clear Lake, Texas, near Houston. More on this in our article entitled In the Vicinity

The integration into a rising MEG market in the U.S. will help offset somewhat the poor PTA margins in Asia at present. IVL's PTA plants will continue to operate at high utilization rates and benefit from the increase in captive consumption of PTA of above 50%. IVL is integrated into PTA in Europe and Asia and virtually integrated in the USA via co-location with a PTA supplier in Alabama.

Indorama Ventures has been taking large strides into the Indonesian market, a market that we believe has a great future. We acquired PT Polypet Karyapersada, which has up to 100,800 metric tons per annum of PET capacity and is conveniently situated adjacent to the PTA assets of PT Indorama Petrochemicals (formerly known as PT Polyprima Karyesreska) at Cilegon, West Java, which Indorama Ventures acquired under a joint venture in 2011. The synergies created by integrating the two plants are expected to lower costs through shared services and logistic cost saving and will be accretive to the bottom line.



IVL saw sales revenue of US\$ 1.696 million in the first quarter of 2012, an increase of 21% over the previous quarter. Consolidated EBITDA for the quarter climbed 129% over the previous quarter to US\$ 98 million. After adjusting for inventory gains and losses, core EBITDA was US\$ 84 million. Net profit was US\$ 55 million, an improvement on the net loss of US\$ 51 million in Q4 2011. With markets continuing to be turbulent globally, our business as the linkage between the upstream petrochemicals industry and downstream fast-moving consumer goods companies on a global basis has enabled the company to continue growing.



The company anticipates greater operational improvements taking place in the first half 2012 in Thailand and Indonesia and the debottlenecking of capacity at the IVL plant in China to 500kt per annum will lead to further revenue and earnings growth in 2012.

Certainly, the second quarter was looking up with sales of US\$ 1,741 million and a core EBITDA of US\$ 151 million and core net profit after tax and minority (excluding exceptional items and Inventory gain/loss) of US\$ 54 million.

## Debenture Launches with Great Success

Indorama Ventures successfully completed its second debenture issue (the first was in October 2011) to raise Baht 9.4 billion that will assist the company to pursue future growth. Institutions and the public took up the Thai Baht bond quickly.



Investors were again looking for longer tenors, with almost 60% of the demand being for seven and ten years. Retail investors bought nine times as many bonds as in the October issue, reflecting their confidence in the long term strength of the Company. The debentures were rated A+ by Thailand's TRIS rating service.

## Lopburi Restarts

Last year's flooding in Thailand caused terrible suffering to the Thai people and closed our industrial complex in Lopburi, Central Thailand, from September onwards; we were able to get Indorama Polymers, AsiaPet and Petform plants in Lopburi up and running by May. Indorama Holdings' wool production will return to service later in the year.

## New Nigeria Plant: Africa becomes the latest continent for Thailand's global PET giant



The moment many had been waiting for; our first step into a new continent. Our new 84,000 tonne per annum PET Solid State Polymerization (SSP) facility in Port Harcourt, Nigeria makes IVL not only the first PET producer in Nigeria, but also the only one in the whole of West Africa. The facility produces bottle-grade PET chips through Solid State Polymerization, the second stage of the PET production process after the initial chips formed by a polycondensation process.

Nigeria has an estimated demand of approximately 53,000 tonnes of PET in a country of around 120 million people and is one of the fastest growing economies in Africa. Port Harcourt is a port town in Southern Nigeria that is the center of the country's large oil and petrochemicals industry. As part of our strategy to serve customers wherever they may be, the new facility is a great first footing in Africa and will contribute towards the Nigerian economy.



Mr. Sunil Fotedar (3 from left), CMO representing of TPT Petrochemicals Pcl and Wijit Kamkom, Associate General Manager Public & Employee Relations (6<sup>th</sup> from left) representing of Indorama Petrochem is shown receiving "White Factory: Level 1" Certification from Mr. Arthit Is-mo, Director-General of the Labor and Welfare Department, which took place at IEAT Rayong on August 30, 2012.

Subsidiaries of IVL receive National Outstanding Industrial Establishment on Labour Relations and Welfare Award 2012. The award ceremony was organized by the Department of Labour Protection and Welfare, Ministry of Labour on September 14, 2012 at Grand Diamond Ballroom, Building 9, Impact, Muang Thong Thani. Indorama Polyester Industries (Rayong) won for the eighth consecutive year (2005-2012); Indorama Holding for the seventh consecutive year (2006-2012); Indorama Polyester Industries (Nakhon Pathom) for the fourth consecutive year (2009-2012) Indorama Petrochem for two consecutive years (2011-2012)



On April 26, 2012 Indorama Ventures Pcl held its own Annual General Meeting at Plaza Athenee Hotel Many shareholders attended. The board of

directors is shown here answering questions raised from the floor and informed shareholders of the company's direction in 2012.

Indorama Ventures Public Company Limited held a seminar on "Understanding the Basics of IVL" at the Stock Exchange of Thailand Building on July 18, 2012. The



seminar was opened by Mr. Chanitr Charnchainarong (5<sup>th</sup> from left), Executive Vice President Issuer and Listing Division, the Stock Exchange of Thailand. The seminar covered a wide range of topics, including a basic explanation of the company's lines of business, how investors can study its financial statements and the company's strategies for success. Approximately 250 people attended, including investors, the media and members of public.

Indorama Ventures Polymers Mexico received the certificate "Empresa de 10" granted by INFONAVIT (The National Institute for the Development of Living Quarters for Workers) from the Secretariat of Labor and Social Welfare. In the picture Mr. Manuel Vargas (4<sup>th</sup> Left), Ms. Rosaura Nieto, INFONAVIT Regional Delegate (5<sup>th</sup> left) and representative staff from Finance and unions joined the ceremony.



Mr. Manuel Vargas, Mr. Guillermo Escalona representatives of Indorama Ventures Polymers Mexico and representatives of industrial chambers of commerce met Mr. José Calzada governor of Querétaro, México (5<sup>th</sup> from left).



FiberVisions and JNC representatives attend the groundbreaking ceremony for the new bicomponent fiber joint venture to be built on the FiberVisions Suzhou, China site on June 15, 2012. The plant should be on-stream in the fourth quarter of 2013 and will provide the fast growing Chinese market with high-quality, differentiated bicomponent fibers.

Ms. Naweensuda Krabuanrat (left), a representative from IVL, went to congratulate the Bangkok Post newspaper (the first English Newspaper in Thailand), which celebrated its 66<sup>th</sup> anniversary. Mr. Charoen Kitikanya, Deputy Editor-Business received flowers on behalf of the Bangkok Post.



In February Mr. Lohia and the PET management team visited Guangdong IVL Pet Polymer in China.



On February 8, 2012 FiberVisions and JNC Corporation signed a joint venture agreement establishing ES FiberVisions (Suzhou) Co., Ltd. This new company will build a new bicomponent fiber plant on FiberVisions' existing site in Suzhou, China. The plant should be on-stream in the fourth quarter of 2013 and will provide the fast-growing Chinese market with high-quality, differentiated bicomponent fibers.



Top Trevira CS customers were awarded Gold Club Membership for their business, loyalty and creativity at the Heimtextil Fair in Frankfurt.



Indorama Polymers PCL, AsiaPet (Thailand) Limited, Indorama Holdings Limited and Petform (Thailand) Limited received an award from the Ministry of Labor on February 29, 2012 for being a good model for labor management and social responsibility during the floods of 2011

Mr. Anivesh Tewari Vice President Plant Head, Indorama Polyester Industries PCL. (2<sup>nd</sup> from left) and TPT Petrochemicals PCL Mr. Sunil Fotedar, Chief Manufacturing Officer (3<sup>rd</sup> from left) are seen receiving the "Thai Labor Standard Certification Completion Level" from Mr. Padernchai Sasomsap, of the Labor Department on the occasion of Thai Labor Standards Day 2012 on June 1, 2012 at BITEC Bangna, Bangkok



March 21, 2012 The Association of Postconsumer Plastic Recyclers has recognized Auriga Polymers Polyclear<sup>®</sup> as a recyclable packaging innovation. Congratulation to Dr. Drbohlav and his team!



Congratulations to Trevira in Germany, which received the EN ISO 50001:2011 Energy Management System Certificate in July. In the picture are Mr. Klaus Holz, Managing Director (left) Mr. Robert Gregan, CEO (center) and Mr. Manfred Christian (right) Bobingen Plant Director.



March 27<sup>th</sup> is a historic date in the life of IVL's PET operations in Wloclawek, Poland when external Auditors confirmed our compliance with the Quality Management System, awarding us the first quality certificate of ISO 9001 in 7 years since its inception.

On July 19, 2012, Mr. S.P. Kamat (left), Vice President of Manufacturing of Indorama Petrochem Limited in Rayong, received the Best Manufacturer Award for Safety, Occupational Health and Working Conditions 2012 from Khun Visa Khanthap (right), Deputy Minister for Labor, Ministry of Labor, at the Eastern Region Safety Week 2012 event at the Star (Plaza) Hotel, Rayong Province.



On 13 March 2012 Indorama Petrochem, represented by Mr. S.P. Kamat, (1), Mr. Somdech Chaisurin, representing Indorama Polyester Industries Rayong (2) and Mr. Sunil Fotedar representing TPT Petrochemicals (3), received "The Environmental Governance Award 2011 (Green Star Project)" from the Industrial Estate Authority of Thailand (IEAT), from Khun Jakkarat Lertopas, Deputy Governor (Industrial Port) - representing the Governor of IEAT, at Somjate Room, Map Ta Phut Industrial Estate Office.



Mr. Anivesh Tewari, Vice President and Plant Head of Indorama Polyester Industries PCL, Nakhon Pathom (3<sup>rd</sup> from left) received the Health Promotion Enterprise Award from Professor Doctor Kasem Wathanachai, Privy Councillor. Ms. Prapai Palakawong Na Ayuthaya, Sr. Manager, Personnel & Admin (4<sup>th</sup> from right) received a certificate as Outstanding Person for Health Promotion, organized by the Association for the Development of Environmental Quality on June 20, 2012.



## The fibre for a new generation of fabrics: Trevira Moisture Control

Climate catastrophes have caused shortfalls in the supply of natural fibres; there have been increasing difficulties in the wool market and there is a growing global focus on sustainability. These factors have brought man-made fibers more into the foreground again - and mainly polyester. The fiber manufacturer Trevira is meeting this trend with a new fibre for high quality clothing, one that shows great potential in terms of innovation, coupled with supreme comfort for the wearer, and it is recyclable.

The new fibre is called Trevira Moisture Control and supplies these requirements. Fabrics made from it have the proven characteristics of Trevira apparel textiles, including very good pilling properties, excellent fastness to colour, resilience and easy care qualities. In addition, they offer an improved semi-dull appearance, first-class soft handle, and optimal moisture management, above all in 100% Trevira qualities.

Research at the Hohenstein Institute has demonstrated in terms of appearance and comfort that in every respect a suit in 100% Trevira Moisture Control matches a classic business suit in 100% wool. Made from the new fibers, the Trevira suit impresses with its elegant, high quality looks, its very good wear properties and its standard of comfort, assessed by Hohenstein as "very good". Traditional synthetics offer no comparison with these materials, which herald a new generation of fabrics.

Wear trials conducted at airlines have shown that a uniform in 100% Trevira Moisture Control guarantees the wearer an optimal feel good effect, accompanied by high standards of resilience. The fiber profile has a special dual channel system that accelerates transport of condensation molecules given off from the skin, from inner to outer layer. Moisture conducted onto the textile surface is quickly dispersed there and evaporates rapidly. In this way the inner side of the textile touching the skin stays drier, preventing an unpleasant chill effect.

Textiles containing the new fibres are ideal for use in corporate wear, business clothing or sportswear. Trevira Moisture Control may be used 100% or in blends with wool.

### **Trevira Moisture Control - properties at a glance**

- Very good moisture management
- Rapid dispersion and evaporation of moisture
- Quick drying
- Good pilling characteristics
- Easy care
- Washable with good fastness standards
- Pleasant handle
- Good electro-static properties
- Resistant to UV light and chlorine



▶ Indorama Ventures Public Company Limited provided financial support for the Bangkok Breast Cancer Support Group to be able to donate a chemotherapy pump to Mr. Kris Chatamra, Director of Queen Sirikit Centre for Breast Cancer (5<sup>th</sup> left) and Khunying Finola Chatamra, Honorary Advisor to the Queen Sirikit Centre for Breast Cancer and The Thai Red Cross (1<sup>st</sup> right) on January 19, 2012.



▶ PT Indorama Ventures Indonesia welcomes two students from Gajah Mada University for an internship program from February 16-March 15 2012.



▶ Guangdong IVL Pet Polymer, China, held a "Union Dinner Chinese New Year Party" at Pan Tower International Hotel to celebrate Chinese New Year.



▶ On February 23, 2012, PT Indorama Ventures Indonesia arranged the "IVI Safety Awareness for Zero Accident Section" and gave award to 79 employees from HR, SHE, and GA departments to promote and achieve a safe working environment.



▶ Indorama Ventures Polymers Mexico held a sport integration event (soccer and volleyball), the purpose of which was to encourage better teamwork. Management and employees enjoyed the event and then had lunch together.



▶ Indorama Polyester Industries (Rayong) held a free summer training course for Map Ta Phut children during 21 March to 26 April on Wednesday and Thursday at Ban Mapthaphut School between 9:30 am. - 11:30 am. 71 children from 15 communities joined. We provided two classes each of Mathematics, Science and English. The classes were taught by employees.



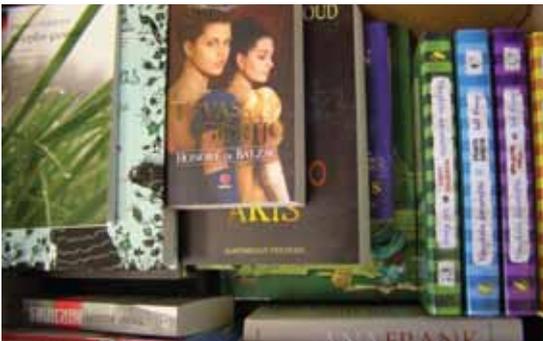
▶ Indorama Holdings Ltd organized a Scholarship Distribution Ceremony for 2011 for the children of employees. This included its Annual Service Award Ceremony when a total of eight employees were recognized for having completed 10 years of continuous service.



▶ Indorama Holdings Ltd. participated in the program "Recovery Operations for Those in Industries Affected by Flooding" conducted by the Provincial Skill Development Center. The training was for flood victims to teach them how to repair household appliances. The training was arranged at our factory for 10 days and 20 employees participated.



▶ Indorama Polyester Industries (Rayong) provided soil to the Community School in Mapthaphut for use in land leveling in preparation for a new school building. Over 300 m<sup>3</sup> of unneeded soil was moved from our plant to the school with IEAT permission.



▶ Orion Global Pet's HR team arranged for employees to donate over 200 books to the local city library between February-March.



▶ Mr. Wijit Kamkom (right), representing Indorama Petrochem, explained the company's product to Mr. Tawichai Terdpaothai, Rayong Governor (center) and Mr. Tada Soontonphan, Director of IEAT - Asia Industrial Estate (left) at Chak Mak Temple, Banchang District, Rayong Province, during a mini-exhibition in support of Rayong Province's project "Public Service for Happy Communities".



▶ HR Bangkok Head Office held "Cross Functional Communication training" for staff.



▶ IVL's employees from Head Office and Lopburi ran in the "24<sup>th</sup> Standard Chartered Bangkok Marathon." This is an annual activity for the company.



▶ IVL head office celebrated the "Songkran Festival" (the Thai New Year) in April. Employees sprinkled water on the hands of Mrs. Lohia and Mr. D.K. Agarwal to revere them and ask for blessings. This is an old Thai custom to pay respect to elders. After that, all enjoyed traditional Thai desserts together.



▶ Indorama Polymers Mexico celebrated its first anniversary – and with outstanding results. Modification of its production process and equipment reached new records in PET resin volumes of production. Three turn arounds without any incidents, (CP2, CP10 and CP11); a robust EHS culture obtaining an OSHA index rate of 0.17; clean Industry / ISO 14000 / ISO 9000 recertification.

▶ FiberVisions held a "FiberVisions Operational Excellence" (FOX) meeting at the Covington, Georgia plant. The meeting gathered over 20 key manufacturing personnel from around the world to review progress on the program and exchange best practices.



▶ AlphaPet took part in the Decatur General hospital Foundation's Dragon Boat race. This was a competitive race with 20 rowers from AlphaPet participating. They happily finished last, ending up with the Dragon's Tail Trophy in the form of a paddle.

▶ Evacuation training held at Wellman International





◀ Indorama Ventures Mexico achieved the best effort of safety in a chemical laboratory with no recorded injuries in 20 years. This is an amazing record!



◀ FiberVisions' US teams from the Athens and Covington plants, the Danish and Chinese teams posing together at Suzhou office during their global safety meeting.

▶ On 27 March 2012, Auriga Polymers Inc. held a competition between departments to see which one would donate the most canned food for needy charitable organizations. The maintenance team won with their giving of an average 66.6 cans of food per person. In total, Auriga Polymers employees donated over 5,692 cans of food!



▶ Auriga Polymers employees pledged over \$50,000 to the United Way, a non-profit organization. The United Way distributes donations to local charities and employees were recognized for their donations with an ice cream social event with organizations giving small tokens of appreciation



▶ The PET Group and Indorama Holdings Limited Lopburi employees participated in National Labour Day 2012 activities held by the Department of Labour Protection and Welfare of Lopburi, part of the Ministry of Labour. The event was held at Thepsatri Rajabhat University Sports Stadium. This year, 23 companies participated and IRH received eight awards.



▶ Mr. Colin Semple (left) from Indorama Polymers Workington recently competed for Great Britain at the European Triathlon Championships in Eilat, Israel. Billy Young (right) a cancer survivor, completed the Keswick half marathon in aid of Carlisle NHS Radiotherapy unit.



▶ Auriga Polymers joined the 2012 March of Dimes Walk for Babies in the U.S.A., which saw 63 participants walk 5km to raise awareness and collected over \$500 for research to prevent birth defects. Each participant received an IVL t-shirt and some PowerAde®, a product of one of IVL's customers.



▶ PT. Indorama Ventures Indonesia welcomed government officers on an inspection visit to assess compliance with laws and regulations.



↻ A group of students from one of the major colleges for maintenance and process techniques visited Indorama Europort in Rotterdam.



↻ Indorama Ventures Mexico recognized its maintenance staff who outperformed during the CP-20 turnaround.



↻ Thomas Rademacher, Plant Director, speaks to employees on the start-up of the first three air-texturizing machines moved from Trevira's Polish site to Guben.



↻ Indorama Ventures was a silver sponsor of the Coca-Cola Scholars Foundation. The 24<sup>th</sup> Annual Celebration banquet was held on April 12, 2012 in Atlanta Georgia. The actor Morgan Freeman was a special guest. Representatives from Auriga Polymers also attended.



↻ IPI Nakhon Pathom celebrated its 14<sup>th</sup> anniversary. Staff who have worked with the company for 10 years were given gold awards to mark the occasion.

↻ Orion Global PET's volunteers, with villagers and children from local schools, cleaned Jakai Village School and had a picnic thereafter.



↻ Congratulations to Indorama Petrochem in Rayong for setting a safety record of one thousand days of continuous work without lost time through accidents.



↻ 40 students studying international business at LCC University, USA, visited Orion Global PET in Lithuania.



↻ On Saturday 28 July 2012, Indorama Ventures held a beach cleaning activity at Mae Ram Pheung Beach, Rayong. As part of our Adopt-a-Beach project, this activity aimed to clean and maintain "Mae Ram Pheung" Beach, the most popular tourist destination in Rayong.

Over 250 volunteers participated including senior management and staff. After the cleanup, a total of 1,741.5 kilograms of trash was collected.

↻ Indorama Ventures Pcl. donated 1 million baht to build a drinking water plant (RO system). Mr. Ramesh Narsinghpura (center), representing IVL, joined the grand opening ceremony at Tambon Huay Sampad, Udon Thani Province, on April 11, 2012



↻ Indorama Polyester Industries (Rayong) supported fruit farmers by buying 2,000 Kg of rambutan and distributed all to staff because rambutan were in over supply and the price was going down.



↻ PET Group Lopburi staff used scrap waste iron to construct a football goals and donated a set to Ban Pak Klong Phra community football field.

# Art Imagine

## Dear Readers,

Our "Art Imagine" column is still here in "The Beacon", with a painting competition at Ban Nern Saotong School on the topic "Year 2012, Year of Happiness". We would like to show you some lovely colorful paintings by our little artists reflecting their happy feelings through their work. The atmosphere on competition day was full of smiling faces and imagination being transferred on to white paper. They also enjoyed some snacks during the competition. The outcomes convey their happiness to all.

Even though it was very difficult to decide the winner and runners-up because there were so many lovely pictures, we selected the first, second and third prize winners' work to show you. Congratulations to all students.

The address of Ban Nern Saotong School is:  
133/1 Moo 12, Nongtaros-chakrao Road, Tapong, Muang,  
Rayong 21000



1<sup>ST</sup> PRIZE



1<sup>st</sup> Prize: Ms. Phongnapa Pongnairat

2<sup>ST</sup> PRIZE



2<sup>nd</sup> Prize: Ms. Kornkanok Kruanate

3<sup>ST</sup> PRIZE



3<sup>rd</sup> Prize: Mr. Thitinan Saengkrajang

# BRAND as a Tool to Increase Customer Loyalty (and get more sales)

## Part 2: It isn't the logo, but what the logo represents.

In Part 1, we looked at why it is necessary to prevent brand confusion by using a single brand. We create a brand so that it becomes aspirational. This means not only does the staff feel proud to be part of the brand, but other people aspire to be a part of the team too. It means that customers aspire to buy from this brand because they feel it is somehow “better” - perhaps in the case of commodity items they don't know why it is better, they just “feel” it is better. That's what a strong brand creates in stakeholders.



Most businesses use a corporate logo. One of the oldest and most familiar logos to travelers is the London Underground logo, created in 1918. Some beer logos, like Kloster, go back to 1050. Why the need for a logo? This is because a logo is a symbol of what a company or product stands for. This is a case of a picture literally standing for a thousand words. A logo says who we are and what we stand for. It symbolizes the brand, but is not the brand in itself. The brand is a catalog of many emotions.

Most businesses use the logo for easy brand recognition. If you see two golden arches in the distance, you know this means McDonald's, which means food, which means hot, juicy, hamburgers. A whole load of emotions are associated with this logo, like warmth, comfort and a bright, sunny atmosphere.

At Indorama Ventures, our logo, which I think is easy to recognize from a distance, should stand for customer delight, a passion for excellence, and a kaleidoscope of emotional hints that should say to the customer “We care about you.” Due to the meteoric nature of our growth, there hasn't been much time to explain that the logo is not just a picture to be used to decorate shirts, vehicles or bags.



The logo should be a symbol of recognition and an emotional trigger.

Our logo is a symbol of Indorama's dynamism, sustainability, and global footprint.

The Indorama name is presented in simple yet sturdy font, conveying the strong foundation in which the company is built upon, as well as our firm stand in the international environment. The font color is a softer and more contemporary blue, communicating the company's mindset of adaptability and continuous development. Indorama understands the need to change with the times and is constantly improving upon itself.

The first character in the name, “I”, stands more prominently than the others, illustrating Indorama's position as a leading player at the forefront of its industry. All of the characters are placed in italic and slanting to the right, depicting Indorama's forward-thinking and proactive business approach.

The character “O” placed in the middle of the logo expresses the dynamic and evolving nature of the company. The hint of red symbolizes a boldness and passion, whereas the green communicates sustainability and a social responsibility for our environment and community.

As a whole, Indorama's logo is a representation of our values and commitment towards being dependable, dynamic, and sustainable.

Official clothing needs to be branded, whether this is for uniforms or factory apparel. This will help to make membership of our corporate brand become natural, even desired over time. Pointedly, if our business people are able to create a strong brand that is instantly recognized and evokes deep meaning for all stakeholders, then staff will be demanding branded apparel.

The pervasiveness of the logo and colors is a tried and trusted method of advertising. The most effective television advertising is the repetition of the product or company name every few minutes. The repetition helps to make the name, with all its associated emotions, stick in the memory of the viewer.

Just remember, the brand is created by our daily work, the logo is the reminder of what we have created.

Next issue: Part 3: What are we expecting from branding?





## Not all Process Safety lessons come from our industry!



April 15, 2012 marked the 100<sup>th</sup> anniversary of the loss of the ocean liner Titanic in the North Atlantic Ocean, approximately two and a half hours after hitting an iceberg. Over 1,500 people died in the most renowned nautical tragedy in history. Thousands of pages have been written about the loss of the Titanic, as well as many documentary and fictional movies produced. Many focus on the construction of the ship and the actions of its captain and crew. Whatever the construction and operating issues, attention to one particular issue could have saved many lives: **Emergency Preparation!**

Various unequivocal failures in emergency preparedness prior to the sinking of the Titanic included:

- Insufficient lifeboats for all passengers and crew, possibly because the builders considered the ship “unsinkable”!
- No lifeboat drills had been performed, and many people did not know where to go or what to do.
- Several of the first lifeboats to leave

the Titanic were not full and some occupants were disinclined to pull others from the icy water for fear of capsizing their lifeboat.

- The decision to abandon ship was deferred while the captain and crew assessed damage. Had the captain started evacuation earlier, before people began to panic, more lifeboats may have been filled in a more organized evacuation.

### What can you do?

☞ Process plants may conduct many types of emergency drills. Fire, leak or spill responses, shelter-in-place, evacuation, and severe weather are some general types. Be conscious of your duty in each situation-it may be different.

☞ In a drill or actual emergency, watch for others who may not remember what they should do, especially new employees, visitors and contractors. Help them to respond safely.

☞ Swiftly report any problem you observe during a drill or emergency to



your supervisor. Some examples – actions which cannot be done in the available time, things you can't do safely because of the circumstances, exit signs that can't be seen or are confusing, emergency alarms or speakers that can't be heard, required safety equipment which is not available or not working correctly. Report your observations-it may save a life one day.



☞ Take drills seriously and remind others that they should as well. Don't think of drills as a time to see people from other units and let the drill become a social event.

☞ When you read about incidents in other industries, ask yourself if there is anything you can learn from what occurred to make your plant safer!

☞ Do not let your plant “sink” due to poor emergency preparation or lack of knowledge of how to react.

**Hello!**

In the last issue we presented how to make a PET Plant Pot and PET Bottle Lamp that were not too difficult to make. Hope you liked them. Next, we have a creative idea from Jonas Šamonskis, our friend from Orion Global Pet (Lithuania) and a story on PET Boat racing from Wellman International. Let's see our employees' innovations.



# 7 steps below describe how to make a PUFA.



1. From a 20 mm thick foam sheet cut a 49 mm diameter circle (it will be placed on the top to cushion the seat).



2. From 6 mm thick plywood cut 2 pieces of 49mm diameter circles (this will be the top and bottom base of the hassock).



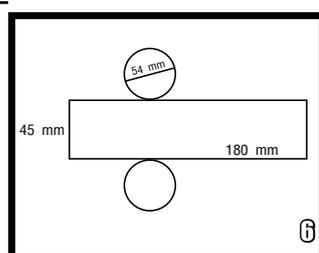
3. Cut a 170x35 mm long strip from the same thickness (20 mm) foam sheet. It will be used for engirding the bottles into one piece.



4. Take 24 mineral water bottles (carbonated because they are thicker), 1.5 capacity and bind them with tape to form a circle.



5. Arrange all component parts as per picture 5. In the picture our future hassock is placed bottom up.



6. Sew a velour cover on. It is the same size as the foam from point 3 (170x35 mm), just add 5 mm more. Two covers will be needed. Then sew everything as shown in the drawing. If you want you can sew in a zipper.



7. Put the new covers on. The hassock is finished. Isn't it fantastic? And it is so easy to do.

While many were enjoying the 2012 Olympics in London others were enjoying an event you won't find at the games, but is probably just as exciting as anything there - PET boat racing in Ireland!

Wellman International participated in this unique charity race, the purpose of which is to raise money to help local charities, such as the Irish Wheelchair Association (Drogheda branch), the Boyne Fisherman Rescue and Recovery Service, Boomerang Youth Cafe and the Drogheda Community Drugs and Alcohol Forum. This is the first time the raft race has been held in 30 years and the first time Wellman International has competed. The raft material can be anything but must be homemade. Our Wellman International team (The Wellman Warriors) used PET as it can float. The team made its PET Boat after working hours over a week and the first test run on Mullagh lake failed as the boat had no stability which is why they fitted the "out riggers" - 25 liter water bottles, which worked very well. The second test run was very successful. About 4 days including test runs to complete the raft. Wellman used 480 bottles of 2 and 4 25 litre water bottles. The PET Boat measured 8x4 feet.

The battles held on the River Boyne were on Sunday 6<sup>th</sup> May near Boyne Drogheda town. There were 30 rafts (or "boats") involved in the races. There were 5 races/heats with 6 "boats" in each followed by a final race with the six finalists. The Wellman International team members are shown in the photograph.

**(Left to right)**

- Mr. Enda Murray Finishing Team Leader
- Mr. Michael Howard Spinning Team Leader
- Mr. Kevin Carolan Charge haud electrician
- Mr. Paddy Martin Job Demonstrator Spinning Dept
- Mr. Alan Finnegan Charge Hand Fitter - All Crew members



Mr. Rory Cumisky - Development Engineer - isn't in the picture but helped the team build the boat.



We didn't win this year but from the picture you can see who had the better R&D!

If you have any creative idea about how to use old PET bottles, you can share them with us at [ir@indorama.net](mailto:ir@indorama.net).



# Texas the Lone Star State

Howdy, y'all! The acquisition in April 2012 of an MEG (monoethylene glycol) plant at Clear Lake, near Houston in Texas, was a big step upstream for IVL, and one that allows us vertical integration into this important feedstock. While the company offices are in Chicago, Illinois, this article will focus on Texas, where the operations are. Texas is the second most populous state - and the second largest state, behind Alaska. The word Texas comes from the Hasinai Indian word *tejas*, meaning friends or allies.

Clear Lake, or the Clear Lake Area, is a region in parts of Harris and Galveston County. It is also part of the Galveston Bay Area, a section of the Houston-Sugar Land-Baytown metropolitan area. Clear Lake itself is a brackish lake that empties into Galveston Bay. Being close to the sea, nearby Clear Lake Shores is regarded as "The Yachting Capital of Texas."

The area is also home to the Lyndon B. Johnson Space Center (JSC), the National Aeronautics and Space Administration's center for human spaceflight training, research, and flight control. If you have ever seen the film *Apollo 13*, the phrase "Houston, we have a problem" will be familiar. Space Center Houston is the tourist arm of the Johnson Space Center and one of the most visited tourist attractions in Texas. Visitors can tour the Space Center grounds, view space capsules and artifacts, and find several educational activities including an IMAX theater.

For a period of over 7000 years, humans have inhabited the area. At the time Europeans arrived, the area around Galveston Bay was largely inhabited by Akokisa and Karankawa tribes, now extinct. In the early 19th century, Jean Lafitte established a pirate kingdom there from his base on Galveston Island. In 1901, the oil gusher at Spindletop launched the Texas Oil Boom. Soon oil wells and refineries were built in nearby Goose Creek (modern Baytown) and Texas City. Houston became the main commercial center in the area for the oil industry. While Texas has famously been controlled by six nations at one time or another, it was an independent nation from 1836 to 1845.

The region offers many artistic programs. The Bay Area Houston Ballet and Theatre group and the League City Ballet offer performances ranging from ballet to musicals. The Clear Lake Symphony offers multiple performances each year ranging from classical to pops performances. Famous entertainers from Texas include Kenny Rogers, Patrick Swayze, Buddy Holly and ZZ Top. I bet you didn't know that until 1985, the law prevented the sale of items like hammers, nails, washing machines, pots, pans, and other housewares as well as alcohol on Sunday. If you visit, keep in mind that it is illegal to milk another person's cow or to put graffiti on it. Be careful also as it is still illegal to shoot a buffalo from the second story of your hotel.





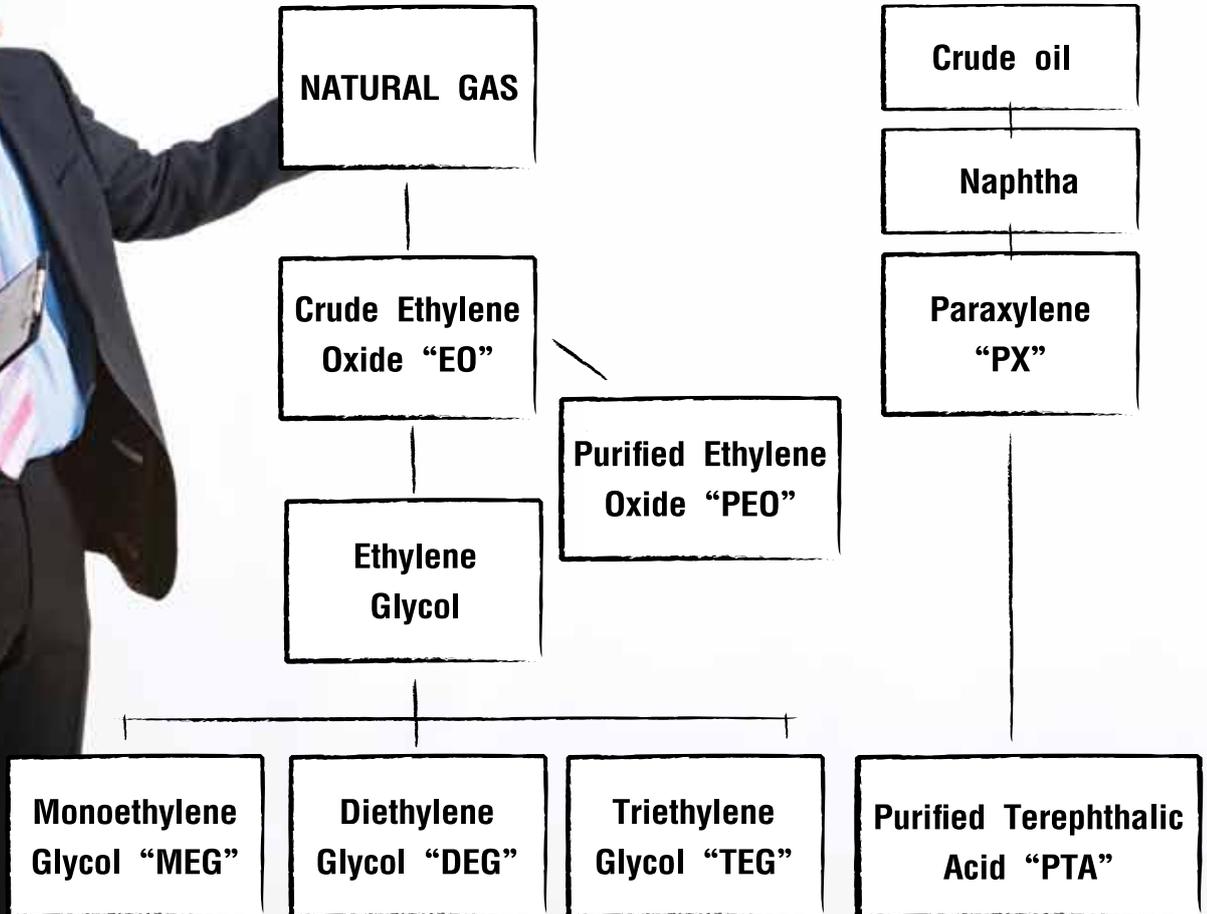
## Installation of Vapor Absorption Chiller (VAC) system for Air Conditioning of Plant buildings at IRPL

Indorama Petrochem Limited (IRPL) has installed a Vapor Compression Refrigeration system for the air conditioning of various plant buildings. A PTA plant has lots of low grade waste heat that is rejected into the atmosphere either by circulating cooling water or surplus flash steam. IRPL installed a Vapor Absorption Chiller (VAC) machine supplied by Thermax, India, to generate chilled water utilizing surplus process flash steam vented to the atmosphere. The chilled water thus generated is used to fulfill the air conditioning requirements of the control room, electrical substation and laboratory buildings. The VAC system was commissioned in December-2011 and has been operating successfully. It uses Lithium Bromide salt solution as a refrigerant, which is non-toxic and eco-friendly as opposed to the CFCs (Chlorofluoro Carbons) which deplete the ozone layer. The VAC system has very few moving parts and hence is easy to operate and maintain. Implementation of this scheme has saved 77.3 KW of electricity. IRPL management took a conscious decision to implement the VAC project as part of its Green House Gas Reduction and Ozone Layer Protection initiative even though payback was longer than internal norms. This scheme was registered for the EPPO subsidy scheme under the Ministry of Energy and IRPL received 677,055 THB as a subsidy from the Energy Policy and Planning Office, Ministry of Energy, Thailand (77.3 kwhr of power saving and subsidy @ 1 THB per kwhr).



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