Chandra Asri

2019 • 2nd Edition

CAPture

Mitra Pertumbuhan Anda

Logo dan Slogan Baru Chandra Asri

John Leiman

Memodifikasi Mesin Pirolisis untuk *Zero-Waste*

Pabrik Baru Polyethylene

Meningkatkan Kapasitas Produksi

A New Perspective on Plastic Use

WE ALL WANT A WORLD WITHOUT

plastic pollution,

BUT WE WOULDN'T WANT A WORLD WITHOUT PLASTIC,"

Steve Russell

Foreword

Menutup tahun 2019, Chandra Asri ingin berterima kasih kepada para pembaca sekalian, para pelanggan serta mitra kami. Tahun ini merupakan tahun yang bermakna bagi kami, terutama karena kami telah berhasil menyelesaikan pembangunan pabrik baru *Polyethylene* yang diresmikan oleh Presiden Joko Widodo pada 6 Desember 2019. Fokus utama dari ekspansi ini adalah memenuhi kebutuhan dalam negeri yang sekarang masih didominasi impor dan berdampak pada defisitnya neraca perdagangan Indonesia.

Tahun 2019 juga menjadi tahun transformasi bagi kami, dengan perubahan logo yang mewakili semangat kami untuk terus maju ke depan bersama para pelanggan. Chandra Asri juga semakin yakin akan menjadi mitra pertumbuhan yang kokoh bagi pelanggan dengan selesainya *turnaround maintenance* pabrik kami di 2019, yang menjadi bekal kami untuk operasi pabrik yang lancar dalam beberapa tahun ke depan.

Pada tahun ini kami akan tetap fokus mengetengahkan kiprah kami di dunia otomotif melalui pengembangan bijih plastik untuk interior mobil berbahan plastik ringan yang tahan lama. Kami juga fokus mengembangkan produk plastik tahan lama dengan memasarkan bahan baku pembuatan pipa untuk mendukung perkembangan industri air minum dan gas dalam negeri, serta memperkenalkan produk insulasi kabel yang kuat dan aman untuk menopang distribusi listrik di Indonesia.

Chandra Asri juga tak alpa pada aspek *sustainability* dan *responsibility* yang menjadi visi kami. Dalam mengatasi maraknya polusi sampah plastik, Chandra Asri fokus menerapkan prinsip *circular economy* sebagai metode pengelolaan sampah plastik terpadu yang terus dikampanyekan melalui aksi nyata, edukasi, advokasi dengan pembuatan jalan menggunakan aspal plastik dan turut berpartisipasi dalam *World Clean Up Day* pada bulan September lalu.

Akhir kata, selamat memasuki tahun baru 2020 dan sukses selalu teruntuk para pembaca sekalian.

Sincerely,

Erwin Ciputra
President Director

As 2019 comes into an end, Chandra Asri would like to thank all of our readers, customers and partners. This was a meaningful year for us, as we have successfully completed the new polyethylene plant which was inaugurated by President Joko Widodo on December 6th, 2019. The main focus is to fulfill domestic demand that is now predominantly catered by import materials and has resulted in trade deficit in Indonesia.

Year 2019 was also the year of transformation for us, with a change of our tagline that represents our passion to move forward with our customers. It also adds to our confidence to be a solid growth partner for customers with the completion of our turnaround maintenance at our plants, which is aimed to ensure the best efficiency of our plant operations for the coming years.

We also stay focused on supporting the automotive industry as we produce high quality automotive-grade plastic resins for making durable and lightweight car interiors. Moreover, we are also doing our best effort in developing high quality plastic resins for drinking water and gas pipe applications, as well as resins for durable and safe cable insulation materials to ensure efficient and sustainable power distribution across the country.

Chandra Asri also remains steadfast in the sustainability and responsibility aspects of our vision. Chandra Asri commits to the principle of circular economy as an integrated plastic waste management approach, which is continuously disseminated through real actions, education and advocacy. This was realised by constructing roads out of plastic asphalt and by our active participation in World Clean Up Day 2019 last September.

Finally, we wish you a very Happy New Year 2020 and all the success in the coming year.

Contents

Mitra Pertumbuhan Anda

Logo dan Slogan Baru Chandra Asri

Merangkum kiprah perjalanan selama 27 tahun serta mengikuti perkembangan yang semakin pesat, Chandra Asri hadir dengan tampilan logo baru.

Your Growth Partner

The Transformation of Chandra Asri's Logo and Slogan

Chandra Asri recently reveals its new logo that embraces the company's journey in the last 27 years and accentuates the organization's vision and missions.

Chandra Asri

Menapaki usia bisnis yang kian matang, kehadiran logo baru ini sekaligus menjadi wujud aspirasi Chandra Asri untuk menggelorakan lebih banyak lagi energi positif dengan menjalin kerja sama, berpartisipasi, dan berkolaborasi dengan bertransformasi menjadi "Mitra Pertumbuhan Anda".

Dengan mempertahankan karakter "*The Moon*" sebagai identitas utama, Chandra Asri hadir dengan tampilan logo yang lebih *bold*, modern, dan sederhana. Chandra Asri berupaya menjadi mitra yang tulus, berintegritas, dan profesional dalam membangun bisnis, meningkatkan taraf hidup masyarakat, dan memajukan Indonesia melalui kemitraan yang saling menguntungkan, inovasi terarah, serta solusi berkelanjutan.

Dalam transformasinya kini, Chandra Asri percaya akan kemajuan bersama. Bukan sekadar program, tetapi berbagai kolaborasi dengan pemangku kepentingan, baik dari kalangan akademik, lembaga swadaya masyarakat, dan pemerintah merupakan upaya untuk menciptakan harmoni kehidupan serta meningkatkan kesejahteraan masyarakat. Dengan wajah baru ini, Chandra Asri yakin akan terus berkembang dan berkontribusi terhadap lingkungan dan masyarakat sekitar.

Having reached its business maturity, the new logo is the manifestation of Chandra Asri's aspiration in generating more positive energy by working together, participating, and collaborating by creating a new tagline, "Your Growth Partner".

Preserving the tricolour "Moon" as its logo, Chandra Asri comes with bolder, modern, and yet simpler new logo. Chandra Asri thrives to be a sincere and professional partner in building business with integrity, improving people's standard of living, and advancing Indonesia through fruitful partnerships, innovations, and sustainable business solutions.

Chandra Asri believes in mutual growth. With its new transformation, Chandra Asri commits to collaborate actively with many stakeholders, ranging from academic institutions, private sectors, governmental bodies and many more, and aim for creating good harmony and improving people's welfare. The new logo and tagline summarise Chandra Asri's optimism that the organization will continue to thrive and contribute to the environment and the community.

Pabrik Baru Polyethylene

Meningkatkan Kapasitas Produksi

Bertujuan untuk meningkatkan kapasitas produksi guna memenuhi kebutuhan domestik, Chandra Asri telah menyelesaikan sejumlah proyek ekspansi sepanjang 2019 ini.

Presiden Joko Widodo accompanied by Founder of Chandra Asri, Prajogo Pangestu; President Director of Chandra Asri, Erwin Ciputra; Minister of Industry Agus Gumiwang Kartasasmita and Governor of Banten, H. Wahidin Halim, inaugurated Chandra Asri's New Polyethylene plant.

Chandra Asri senantiasa berupaya meningkatkan reputasi dan kinerjanya dengan kualitas produk dan layanan yang terjaga. Upaya itu diwujudkan melalui penerapan strategi bisnis yang tepat, termasuk membangun pabrik baru guna ekspansi kapasitas produksi.

Sepanjang 2019 ini, Chandra Asri pun telah melakukan berbagai proyek ekspansi di sejumlah lini bisnis dan produksinya. Terbaru, Chandra Asri telah menyelesaikan pembangunan pabrik *New Polyethylene* (NPE) yang mampu meningkatkan kapasitas produksi sebesar 400 KT/tahun. Angka ini meningkatkan total kapasitas menjadi 736 KT/tahun.

Fasilitas pabrik yang pembangunannya dimulai sejak Februari 2018 silam ini ditargetkan akan mampu memproduksi *High Density Polyethylene* (HDPE), *Linear Low Density Polyethylene* (LLDPE), dan *Metallocene* LLDPE (mLLDPE).

Kehadiran pabrik baru PE ini tentu saja dilatarbelakangi tingginya kebutuhan PE di pasar domestik. Saat ini kebutuhan produk PE dalam negeri diperkirakan mencapai sekitar 1,4 juta ton per tahun dan cenderung meningkat. Ironisnya, angka kebutuhan tersebut masih harus dibantu dengan pasokan impor sebanyak 45%.

Tak sebatas meningkatkan reputasi di pasar domestik, langkah ekspansi Chandra Asri ini tentunya akan sangat membantu pemerintah. Kehadiran pabrik NPE Chandra Asri sejatinya mampu meningkatkan pasokan PE domestik, mendukung substitusi impor, dan pada akhirnya berkontribusi untuk mengurangi pembayaran valuta asing.

Didukung kemampuan produksi yang lebih besar, Chandra Asri juga berkomitmen dalam memberikan berbagai keuntungan bagi pelanggan di dalam negeri dengan menjamin ketersediaan pasokan, waktu pengiriman yang lebih singkat dibandingkan impor, dan *technical support* yang baik.

APRESIASI DAN DUKUNGAN BERKELANJUTAN

Langkah Chandra Asri dalam meningkatkan kapasitas produksi PE telah mendapat dukungan pemerintah dengan diberikannya fasilitas pembebasan pajak atas investasi pabrik PE baru tersebut. Fasilitas pembebasan pajak ini terdiri dari pengurangan pajak penghasilan perusahaan sebesar 100% untuk 10 tahun pertama setelah dimulainya produksi komersial.

Dukungan dari Pemerintah Republik Indonesia melalui Kementerian Keuangan ini mencerminkan kepercayaan pemerintah terhadap industri petrokimia serta upaya kerja sama dengan sektor swasta untuk mendorong investasi dan pertumbuhan ekonomi di negeri ini.

Teks & Foto:
PT Chandra Asri Petrochemical Tbk

Pada 6 Desember 2019 lalu, Presiden Republik Indonesia, Joko Widodo, meresmikan pabrik baru *Polyethylene* (PE) Chandra Asri. Dalam sambutan peresmiannya, Presiden Joko Widodo menyampaikan harapannya agar kehadiran pabrik baru dari Chandra Asri ini dapat memenuhi pasokan domestik dan dapat menjadi substitusi impor bahan baku industri petrokimia tanah air.

New Polyethylene Plant

Expansion to Increase Production Capacity

In order to increase its production capacity to meet domestic demand, Chandra Asri has completed a number of expansion projects throughout 2019.

Chandra Asri always strives to improve the performance of its business with excellent product quality and services. This effort was realized through the implementation of good business strategies, including building a new Polyethylene (PE) plant in order to expand production capacity.

Throughout 2019, Chandra Asri has carried out various expansion projects in some of its production lines. This includes the expansion of the current total PE capacity by 400 KT/year to 736 KT/year.

The new PE plant construction began in February 2018, and this new plant is designed to produce High Density Polyethylene (HDPE), Linear Low Density Polyethylene (LLDPE) and Metallocene Linear Low Density Polyethylene (mLLDPE). Chandra Asri hopes that with this new plant, it can obtain more portion of PE market share to cater the domestic demand.

Current domestic demand for PE is at around 1.4million MT/year and is foreseen to continue increasing along with Indonesia's economic growth. Imported materials accounts for around 45% of the total of PE demand in Indonesia.

In addition to improve its positioning and service excellence in domestic market, this expansion will also provide great assistance to Indonesian government. The presence of Chandra Asri's new PE plant is targeted to increase domestic PE supply, and substitute imported materials.

Supported by higher production capabilities, Chandra Asri is also committed to offer various benefits to domestic customers by ensuring supply availabilities, shorter grace periods, better working capital cycles, as well as excellent technical support.

APPRECIATION AND CONTINUOUS SUPPORT

Chandra Asri's effort to increase its PE production capacity has received support from Indonesian government. The government has granted a tax exemption facility for the investment on this new PE plant. This tax exemption facility includes reducing company's income tax by 100% for the first 10 years after the commencement of commercial production. The Indonesian government's support through the Ministry of Finance reflects the government's trust in the petrochemical industry and also serves as a proof of collaborative efforts with the private sector to encourage more investments and economic growth in the country.

Aerial view of Chandra Asri's New Polyethylene plant.

On December 6th, 2019, President of the Republic of Indonesia, Joko Widodo inaugurated Chandra Asri's new Polyethylene (PE) plant. In his speech, President Joko Widodo expressed his hopes that the presence of Chandra Asri's new plant will be able to fulfill domestic supplies and can be a substitute of imported raw materials for domestic petrochemical industry.

President Director's Insight

Dukungan Kami Memajukan Industri Dalam Negeri

Sejumlah langkah pengembangan bisnis mulai diwujudkan Chandra Asri guna memperkuat reputasi bisnis sekaligus memajukan industri dalam negeri.

Teks: Hapis Sulaiman. **Narasumber:** Erwin Ciputra, President Director of Chandra Asri.

Clockwise: Erwin Ciputra, President Director of Chandra Asri; Chandra Asri's resin stored in the warehouse; Plant facilities at Chandra Asri's industrial complex.

Beberapa proyek ekspansi dan peremajaan sudah dilakukan Chandra Asri di sejumlah lini produksinya. Kini, Chandra Asri juga mulai mempersiapkan pembangunan kompleks petrokimia terintegrasi keduanya. "Sebagai perusahaan domestik, kami berupaya memenuhi kebutuhan bahan baku di pasar domestik. Karenanya, Chandra Asri kini fokus berekspansi dengan membangun kompleks ke-2 yang akan meningkatkan total kapasitas produksi menjadi dua kali lipat," jelas Erwin Ciputra selaku Direktur Utama Chandra Asri. Beliau menyebutkan bahwa pembangunan kompleks kedua ini akan selesai pada tahun 2024.

Keputusan ekspansi Chandra Asri didasari pada tingginya permintaan kebutuhan bahan baku di pasar domestik. "Konsumsi bahan baku plastik selalu meningkat. Sayangnya, perusahaan petrokimia di dalam negeri baru bisa memenuhi sekitar 30% dan sisanya masih didukung impor," jelas Erwin.

Langkah Chandra Asri ini juga diharapkan bisa membantu pemerintah dalam mengurangi beban impor bahan baku industri. Sebagai perusahaan di sektor industri strategis, ekpansi Chandra Asri ini akan mampu memajukan geliat industri di dalam negeri dengan pasokan bahan baku produksi yang terjaga dan berkualitas. Dibandingkan impor, Erwin meyakinkan bahwa dengan membeli bahan baku di dalam negeri konsumen akan lebih memiliki kepastian, baik dari kualitas, proses pengiriman, maupun dukungan teknis lainnya.

Ekspansi Diiringi *Sustainability*

Chandra Asri sadar dan peduli akan isu sampah plastik. Keputusan ekspansi yang dilakukan Chandra Asri sudah tentu dibarengi penerapan program bertema *sustainability* yang tak kalah gencar. "Berkenaan dengan lingkungan, kami tentu saja memahami adanya permasalahan penting terkait dengan pengolahan sampah plastik. Tapi kami percaya bahwa bahan baku plastik merupakan material ajaib yang memiliki manfaat sangat besar," ujar Erwin.

Mengimplementasikan visinya sekaligus menjawab tantangan pengelolaan sampah, Chandra Asri hadir dengan penerapan sistem *circular economy* yang diwujudkan dalam 3 aksi. Pertama, penerapan *circular economy* di dalam proyek-proyek *sustainability* Chandra Asri berupa pembangunan aspal plastik dan mempromosikan bank sampah. Kedua, bekerja sama dengan berbagai pemerintah kota untuk penerapan *circular economy* dan pengelolaan sampah di daerah. Ketiga, Chandra Asri senantiasa mengedukasi dan mengadvokasikan materi *circular economy* melalui berbagai program edukasi dan *marketing communication*-nya ke setiap *stakeholder*, dari pemegang saham, *customer*, hingga pemerintah.

Chandra Asri kini juga telah selesai membangun panel surya di lokasi pabrik di Cilegon, yang akan mengurangi emisi karbon sebesar 644 CO_2 per tahun. "Kami berkomitmen untuk terus beroperasi secara bertanggung jawab dengan menggunakan panel surya ini," tambah Erwin. Panel surya Chandra Asri akan memasok sekitar 934,5 Mega Watt energi terbarukan per tahun untuk gedung kantor Chandra Asri di Cilegon, sekitar 15% dari total pengunaan energi di lokasi pabrik Chandra Asri.

Harapan untuk Semua Pihak

Bertujuan untuk memperkokoh kinerja bisnis, langkah ekspansi yang dilakukan Chandra Asri sudah tentu membutuhkan dukungan dan investasi yang sangat besar. "Kami berterima kasih atas dukungan penuh dari semua pihak yang telah memberikan kepercayaannya kepada kami," tutur Erwin.

Karenanya, beliau berharap dengan langkah ini *customer* semakin percaya terhadap Chandra Asri. "Bagi kami *customer* adalah mitra pertumbuhan yang sangat penting. Tentu saja kita berharap *customer* kita bisa bertumbuh bersama. Dengan ekspansi Chandra Asri, hal itu bisa membawa dampak positif terhadap bisnis *operation customer*. Kami komitmen sebagai mitra pertumbuhan," tutup Erwin.

President Director's Insight

Our Support in Promoting Domestic Industry

Chandra Asri has begun implementing a number of development plan to strengthen its business reputation and promoting local industry.

There were several expansion and revamping projects at Chandra Asri. "As a local and sole petrochemical company, we strive to meet the needs of raw materials in the domestic market. Therefore, Chandra Asri is now focused on expanding by building its second integrated complex which will increase its total production capacity twice," said Erwin Ciputra, President Director of Chandra Asri. He mentioned that the construction of the second complex is scheduled to be completed in 2024.

"Consumption of plastic raw materials is always increasing. Unfortunately, domestic petrochemical companies can only meet about 30% and the rest is still supported by imports," said Erwin. Striving in a strategic industrial sector that supplies other industrial sectors, Chandra Asri's expansion is also expected to be able to advance the growth of local industries with high quality supplies. Erwin asserted that by sourcing the raw materials locally, consumers would have more assurance, especially in terms of quality, delivery process as well as readiness of technical support should there be any problems.

Expansion with Sustainability

Chandra Asri is also fully aware and shows great concern for plastic waste issue. Therefore, Chandra Asri's expansion is also supported by the sustainability program. "Regarding environmental issues, we understand that the problem is on plastic waste management. But we believe plastic is a material that has a great benefit," Erwin stated.

Implementing the vision as well as answering to the waste management challenges, Chandra Asri comes up with circular economy concept. Firstly, the implementation of circular economy in Chandra Asri's sustainability project in plastic asphalt and promoting waste bank. Secondly, cooperating with the municipal governments for efficient waste management in their region. Thirdly, Chandra Asri continues to educate and advocate circular economy concept in every educational and marketing communication program to all stakeholders, from shareholders, customers to government.

Chandra Asri has now also completed constructing of solar panels at the factory in Cilegon, which is expected to help reducing carbon emissions by 644 CO_2 per year. "We are committed to continue operating responsibly by using this solar panel," Erwin added. The solar panel will supply about 934.5 Mega Watt of renewable energy per year for Chandra Asri's office building in Cilegon, about 15% of the total energy used at plant site.

Hopes for All Parties

Chandra Asri's expansion also requires enormous support and investment. "We are grateful for the support from all those who have given their trust to us," said Erwin.

Therefore, he expects customers to be more confident in Chandra Asri. "Customer is our valuable growth partner that is very important to us. Of course we hope our customers can grow together. With Chandra Asri's expansion, I hope that we can bring a positive impact to the business operation of the customer. We are committed as a growth partner," Erwin concluded.

Industri Hulu & Hilir Petrokimia

Inisiatif Pemerintah dan Prinsip Ramah Lingkungan

Inisiatif pemerintah dalam membangun industri hulu dan hilir petrokimia di negeri ini perlu dilanjutkan mengingat terus meningkatnya kebutuhan *supply* bahan baku industri dan *demand* produk petrokimia.

Teks: Dr. Hendri Saparini. **Foto:** Dok. Istimewa dan Dok. Pribadi

Tahun 2020 merupakan tahun yang cukup prospektif bagi industri hulu petrokimia. Pertama, dikeluarkannya Peraturan Pemerintah No. 66 Tahun 2019 tentang penambahan modal negara ke PT Tuban Petrochemical Industries (TPI) merupakan langkah positif yang menunjukkan kesungguhan pemerintah dalam membangun industri hulu petrokimia. Langkah ini juga menjadi indikasi keseriusan pemerintah untuk mendukung pemenuhan kebutuhan *supply* bahan baku industri petrokimia.

Alasan kedua dari sisi *demand*. Tidak ada keraguan bahwa permintaan dalam negeri untuk produk petrokimia akan tumbuh cukup signifikan. Dengan pertumbuhan konsumsi Rumah Tangga (RT) tahun 2020 yang tetap di atas 5% dan pertumbuhan manufaktur yang masih sekitar 3-4% memberikan harapan positif industri hulu petrokimia di tahun depan.

Berkembangnya industri hulu petrokimia tentu akan menjadi kabar baik bagi industri hilir nasional termasuk makanan dan minuman karena ada peluang meningkatkan efisiensi dengan ketersediaan bahan baku yang lebih stabil dalam negeri, baik volume maupun harga, sehingga akan memperbaiki daya saing. Selain itu, dengan tingkat pertumbuhan konsumsi masyarakat yang tinggi serta pergeseran gaya hidup masyarakat dengan porsi konsumsi makanan olahannya makin tinggi, maka dipastikan kebutuhan kemasan terutama makanan-minuman juga akan berkembang pesat. Tahun ini, pertumbuhan konsumsi makanan dan minuman triwulan 1 sebesar 5,3%, lebih tinggi dari pertumbuhan konsumsi RT secara total.

Saya berharap keseriusan pemerintah dalam membangun industri hulu-hilir petrokimia akan berkelanjutan dan didukung dengan kebijakan yang komprehensif. Berkembangnya industri petrokimia di dalam negeri akan menjadi harapan besar bagi ekonomi Indonesia untuk membangun struktur industri yang kokoh. Alasan penting lain perlunya membangun industri petrokimia adalah untuk segera memperbaiki neraca perdagangan dan mengurangi ketergantungan Indonesia atas impor bahan olahan industri petrokimia. Langkah ini juga akan mendorong daya saing industri nasional tidak hanya industri plastik, tekstil, cat, kosmetik, dan farmasi, tapi hampir semua industri manufaktur yang memerlukan dukungan industri petrokimia.

Untuk mendorong industri hulu perlu pembenahan kebijakan investasi. Relatif rendahnya pertumbuhan investasi dan tidak dijadikannya Indonesia sebagai tujuan utama relokasi industri negara-negara maju menunjukkan bahwa Indonesia perlu strategi dan kebijakan investasi yang lebih baik. Saya yakin pemerintah serius dengan adanya Kementerian Koordinasi Maritim dan Investasi. Meski demikian, pemerintah perlu diingatkan agar kebijakan yang akan disiapkan untuk mendorong investasi baru tidak kontraproduktif terhadap *existing* investor agar dapat melakukan ekspansi.

Industri Petrokimia dan *Environmental Sustainability*

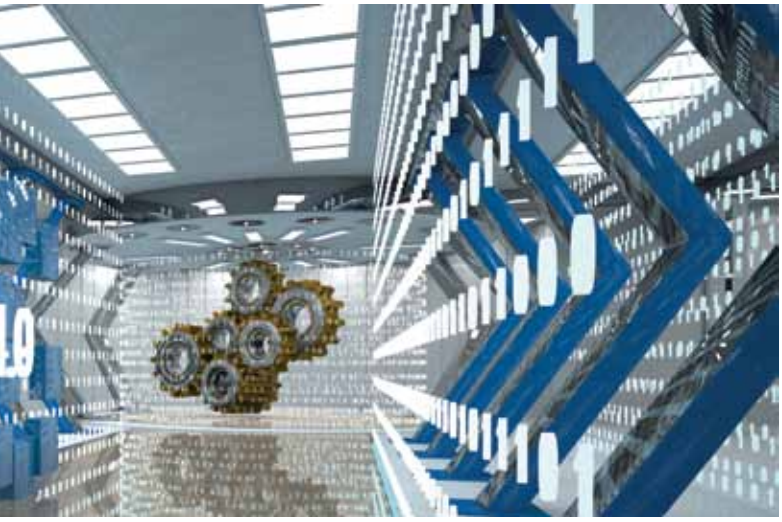
Membangun industri petrokimia yang *environmentally friendly* harus dilakukan bersama antara pelaku industri dan pemerintah dengan kebijakan yang tepat, baik dalam proses produksi maupun penanganan limbah dari *end user*.

Untuk industri petrokimia yang telah ditetapkan pemerintah sebagai salah satu pionir revolusi industri 4.0, maka skema insentif, baik fiskal maupun non-fiskal yang tepat sangat diperlukan agar industri dapat menerapkan teknologi baru yang semakin aman bagi lingkungan. Strategi dan kebijakan diperlukan untuk menyelesaikan limbah dari industri maupun *end user*, salah satunya limbah plastik. Kebutuhan plastik dunia masih tinggi. Bukan hanya bagi Indonesia, kebutuhan plastik di negara maju pun masih akan tumbuh. Artinya yang mendesak adalah merumuskan kebijakan dan program untuk mengelola sampah plastik. Pemerintah perlu duduk bersama asosiasi dan industri untuk mencari kebijakan insentif yang tepat, baik untuk pemerintah dalam menjaga lingkungan dan industri, bagi masyarakat yang masih membutuhkan plastik, maupun pelaku industri agar tetap kompetitif.

Dr. Hendri Saparini
Ekonom dan *founder of* Center of Reform on Economics (CORE) Indonesia. Sejak 2016, beliau aktif sebagai anggota Komite Ekonomi dan Industri Nasional (KEIN) yang dibentuk Presiden Joko Widodo.

Upstream & Downstream Sectors of Petrochemical Industry

The Government's Initiatives and Environmentally-friendly Principle



The government's initiative in developing the country's upstream and downstream sectors of petrochemical industry needs to be fully supported to meet the ever-increasing supply requirements of petrochemical industry's raw materials as well as for petrochemical products.

The year 2020 is still considered to be prospective. for petrochemical upstream industry. Firstly, Indonesian Government issued Government Regulation No. 66 of 2019 regarding additional state capital to PT Tuban Petrochemical Industries (TPI) which is a positive step that showcases the government's commitment in developing upstream sector of petrochemical industry. The said step is also an indicator of the government's support to fulfill the supply requirements for petrochemical industry's raw materials.

The second reason comes from the demand side. It is almost certain that the domestic demand for petrochemical products will grow quite significantly. The growth of Household Consumption (HC) in 2020 is projected to remain at above 5% and manufacturing growth at around 3-4%. This gives positive sentiment for the upstream sector of petrochemical industry next year.

The development of petrochemical upstream sector is received positively by the national downstream sectors, including food and beverages industry because there is an opportunity to increase efficiency due to the consistent availability of raw materials in the country, both in volume and price, so that it could improve competitiveness. Moreover, with the heightened growth in public consumption and a shift in people's lifestyle, in which people consume more processed food, it is certain that the needs of packaging, especially for food and beverages, will also increase rapidly. This year, the growth in food and beverages consumption during the first quarter was 5.3%, higher than the total growth of the household consumption.

I hope that the government's commitment in developing the country's upstream-downstream sectors of petrochemical industry will be sustainable and supported by efficient policies. The development of the domestic petrochemical industry will be a great hope for the Indonesian economy to build an extensive industrial structure. This could also help the government to improve the trade balance and reduce Indonesia's dependence on imported materials. This step will also encourage the competitiveness of the national industry not only in the plastics, textiles, paints, cosmetics, and pharmaceutical industries, but also in all petrochemical downstream production lines.

Investment policies are also crucial to be improved to stimulate upstream sector. The relatively-low investment growth and the fact that Indonesia is not a major destination for industrial relocation among other developed industrial countries show that the country needs better investment strategies and policies. I believe that the government is committed to solve the issue by forming Coordinating Ministry of Maritime Affairs and Investment. The government needs to be reminded that the new investment-related policies will not be counterproductive to the existing investors who plan expand their investment areas.

Petrochemical Industry and Environmental Sustainability

Building an environmentally-friendly petrochemical industry must be conducted together by all industry players and government with the right policies, both in the production processes and the waste management system.

Indonesian government has set petrochemical industry as one of the pioneers in the industrial revolution 4.0 program. Hence, appropriate incentives, both fiscal and non-fiscal, are essential so that the industry may implement new technologies and at the same time their operations are environmentally-friendly. Globally, plastic demand remains high and keeps on increasing, not only in Indonesia or other third-world countries, but also in many developed countries. This fact urges the government, industry players and many associations, to formulate incentives/ policies and programs for efficient plastic waste management, in order to minimise negative impacts from plastic uses to the environment.

DR Hendri Saparini
Economist and the founder of Center of Reform on Economics (CORE) Indonesia. Since 2016, she is an active member of *Komite Ekonomi dan Industri Nasional (KEIN)* that was established by President Joko Widodo.

Plastik untuk Kehidupan

Nyatanya, penggunaan plastik dalam kehidupan manusia tak bisa ditolak. Karena itu, menghilangkan plastik tidak bijak dan kontraproduktif.

Plastic for Life

Human life has become highly dependent on plastics. Therefore, completely eliminating plastic may not be the best option and could be counterproductive.

Teks: Agung Suharjanto **Foto:** TPG Images

Seiring berkembangnya gaya hidup, plastik mampu menjawab kebutuhan manusia dengan pemanfaatannya yang beragam dalam berbagai bidang, salah satunya industri pengemasan yang memiliki peran penting dalam rantai pasok untuk berbagai sektor strategis, seperti industri makanan dan minuman, farmasi, dan kosmetik.

Wakil Presiden Divisi Plastik *American Chemistry Council* (ACC), Steve Russell, mengatakan bahwa mengganti plastik dengan bahan alternatif dalam kemasan justru menyebabkan peningkatan penggunaan energi, konsumsi air dan limbah padat, emisi gas rumah kaca, eutrofikasi, dan penipisan ozon. Studi ini membuktikan bahwa proses produksi plastik membutuhkan energi paling sedikit dibanding produksi material lain.

Beberapa produk berbahan dasar plastik sudah memiliki alternatif, seperti *metal straw*, *woven bag*, dan *glass bottles*. Namun, penggunaan material alternatif dalam produksi masal juga dapat memberikan dampak yang lebih buruk dari segi lingkungan, kesehatan, dan perubahan iklim.

Oleh karenanya, yang perlu dikedepankan saat ini adalah pengelolaan sampah plastik dan kebijakan daur ulang secara efisien disertai komitmen melalui program aksi bersama. Saat ini mulai berkembang pendekatan ekonomi sirkular dalam pengelolaan plastik sebagai strategi yang menyinergikan aspek perlindungan lingkungan hidup, pertumbuhan ekonomi, serta stabilitas sosial dengan tujuan akhir pembangunan berkelanjutan.

As lifestyle changes, plastics could be the answer to human needs with diverse utilization in various fields, one of which is in the packaging industry that has an important role in supply chain for various sectors, such as food and beverages, pharmaceutical and cosmetic industries.

The Vice President of the Plastic Division of the American Chemistry Council (ACC), Steve Russell, said that replacing plastic with alternative materials for packaging will actually cause increases in energy use, water consumption and solid waste, as well as increasing greenhouse gas emissions, eutrophication and ozone depletion. The plastic production process requires the least amount of energy compared to the production of other materials.

Several plastic-based products may have material alternatives, such as metal straw, woven bag, and glass bottles. However, the consequences that will be faced from using alternative materials also have more alarming impacts on environment, health and climate.

Hence, the priority today is to develop effective management of plastic waste and recycling policies through definitive action programs altogether. Currently, circular economy approach to plastic management has begun to emerge. By synergizing aspects of environmental protection, economic growth, and social stability, the approach and strategy have the ultimate goal of achieving a sustainable development.

Resin HD Blow Chandra Asri

Dukungan Bahan Baku untuk Industri Domestik

Pasokan dan kualitas bahan baku resin *HD Blow* dari Chandra Asri mampu memberi dukungan terhadap kinerja industri hilir di tanah air.

CV Asia Plastik adalah salah satu pelaku industri pembuatan kemasan plastik yang memanfaatkan resin *HD Blow* Chandra Asri. Berdiri sejak 1982, berlokasi di Rungkut SIER, Surabaya, Jawa Timur, CV Asia Plastik memulai kiprahnya di bidang pembuatan kemasan plastik injeksi saja. Baru pada 1988, CV Asia Plastik mengembangkan usahanya dengan memproduksi barang-barang botol dan *jerry can* dari bahan *HD Blow* guna memenuhi permintaan pasar. Hingga kini, CV Asia Plastik sudah memiliki lini produk yang lebih beragam.

Dalam menjalankan produksinya guna memenuhi permintaan pasar yang terus meningkat, CV Asia Plastik membutuhkan resin *HD Blow* dengan kualitas yang prima, di antaranya *stacking* yang kuat, *drop test* yang kuat, warna stabil, dan proses *molding* yang cepat pula. Untuk bahan baku tersebut, CV Asia Plastik memenuhi sebagian besar kebutuhannya dari dalam negeri. Namun, ketersediaan dan fluktuasi harga bahan baku menjadi salah satu tantangan yang dihadapi CV Asia Plastik dalam menjalankan roda usahanya.

Bermitra dengan Chandra Asri

Terhitung sejak 1998, CV Asia Plastik memilih Chandra Asri sebagai pemasok bahan baku *HD Blow* untuk kinerja produksinya. Kemitraan CV Asia Plastik dengan Chandra Asri salah satunya didasari oleh kualitas resin *HD Blow* yang ditawarkan Chandra Asri dengan *impact strength* dan *stacking* yang kuat.

Sebagai perusahaan petrokimia terkemuka di tanah air, Chandra Asri memberi jaminan dalam memastikan ketersediaan pasokan bahan baku *HD Blow* bagi CV Asia Plastik. Hal ini tentunya memberikan banyak efisiensi yang mempengaruhi kecepatan kinerja produksi CV Asia Plastik.

Chandra Asri's HD Blow Resin

Raw Material for Various Domestic Industry

Chandra Asri supports many downstream industry sectors in Indonesia with its continuous availability and high quality plastic resins.

CV Asia Plastik is one of plastic packaging manufacturers that utilizes HD Blow Chandra Asri resin. Established in 1982, located in Rungkut SIER, Surabaya, East Java, CV Asia Plastik started its business in the field of injection plastic packaging. In 1988, CV Asia Plastik expanded its business by producing bottle goods and jerry cans using HD Blow material. Until now, CV Asia Plastik already has various product lines.

Running its production, CV Asia Plastik requires HD Blow resin with prime quality, which means it has passed quality test and displays positive results for strong stacking, drop test, stable color, and fast molding process. For the raw material, CV Asia Plastik meets most of its needs domestically. Nevertheless, availability and fluctuations in price of raw materials become one of the challenges faced by CV Asia Plastik in running its business.

Partnering with Chandra Asri

Since 1998, Chandra Asri has been supplying resins to CV Asia for HD Blow. High quality HD blow resin with strong impact strength and stacking has assured CV Asia to choose Chandra Asri as their main supplier for HD blow resin.

As a well-known petrochemical company in Indonesia, Chandra Asri guarantees in ensuring the availability of HD Blow raw materials supply for CV Asia Plastik. This certainly provides a lot of efficiency that affects the production performance speed of CV Asia Plastik.

Teks: Hapis Sulaiman **Narasumber:** CV Asia Plastik
Foto: http://asiaplastik.com

Junghans Leiman

Perjalanan 19 Tahun Bersama Chandra Asri

Membangun dan menjalankan bisnis manufakturnya, PT Jaya Nurimba, Junghans telah bermitra dengan Chandra Asri sejak 2001 silam.

Teks: Hapis Sulaiman. **Foto:** Adieth Nugraha.

Terhitung 26 Mei 2001, PT Jaya Nurimba memulai kiprahnya di dunia industri *flexible packaging* dengan bermodalkan satu *co-extrusion blown film machine*. Hari ini, 19 tahun sudah bisnisnya berjalan dengan produksi *cast and blown film* untuk pengemasan produk makanan ringan, daging, kebutuhan rumah tangga, dan lain sebagainya.

Menekuni bisnis ini, Junghan percaya sektor industri kemasan fleksibel sangat menjanjikan. "Massa dari plastik kemasan sangat ringan, hanya plastik film, tapi memiliki kekuatan yang bisa bersaing dengan material lain seperti kaleng atau botol yang massanya lebih berat. Termasuk pengembangan ke depannya sangat potensial. Sampai hari ini konsumsi per kapita dari *flexible packaging* di Indonesia masih rendah. Jadi ekspektasi pertumbuhannya masih sangat besar," papar Junghans.

Namun, ia mengakui bahwa sektor manufaktur ini bukan tanpa tantangan. *Business cycle* yang panjang adalah salah satunya. "Dari mulai beli bahan baku sampai terima uang dari *customer* prosesnya panjang, terutama untuk bahan baku impor. Begitu juga dengan *supply* bahan baku yang menjadi *back bone* industri saya," jelas Junghans.

19 Tahun Mengenal Chandra Asri

Usaha memenuhi kebutuhan bahan baku untuk pabriknya membawa Junghans berkenalan dengan Chandra Asri sejak 2001 silam. Kualitas bahan baku menjadi pertimbangan Junghans memilih bermitra dengan Chandra Asri. "Untuk kategori LLDPE Film C4, produk Chandra Asri sangat bagus. Saat itu, saya ingat ada dua perusahaan di Indonesia yang mampu membuat LLDPE Film C4 untuk *flexible packaging*, salah satunya Chandra Asri. Kita bisnis di Indonesia, kita tidak bisa lepas dari industri pendukung dari lokal juga. Secara kualitas dan *location wise*, saya memilih Chandra Asri," ungkapnya meski ia mengakui tak bisa menggantungkan pasokan dari satu *supplier* untuk mencegah *shortage* dari *supplier* yang bisa berimbas pada *cycle* produksi usahanya.

Mengenai produk, Junghans juga mengakui kualitas prima yang disodorkan Chandra Asri, meski ada tipe bahan baku kebutuhan pabriknya yang belum bisa dipenuhi. "*Basically* Chandra Asri terkenal sebagai perusahaan yang penuh pertimbangan dalam strategi bisnisnya. Secara bisnis Chandra Asri juga menerapkan aturan main yang baik kepada pelanggannya," papar Junghans.

Berkenaan langkah ekspansi kapasitas produksi Chandra Asri dengan hadirnya pabrik baru, Junghans sangat mengapresiasi. "Chandra Asri ini sudah *on the right track*. Apalagi di Indonesia kita defisit. Secara keseluruhan, angka konsumsinya lebih besar dari pada *supply*. Tak heran banyak impor. Makanya bila Chandra Asri bisa menyediakan ini, setidaknya bisa mengurangi angka impor untuk pemenuhan kebutuhan bahan baku di pasar domestik," ujar pria yang filosofi bisnisnya terinspirasi dari olahraga lari.

Ia berharap Chandra Asri akan terus berkembang dan menjaga kemitraan dengan para pelanggannya. "Dengan prinsip saling menghormati, kita bisa terus bekerja sama. Chandra Asri juga bisa terus menjaga harmonisasi dengan para *customer*-nya, termasuk dengan kebijakan *pricing* yang menguntungkan kedua belah pihak," ujarnya tersenyum.

Circular Economy di Pabriknya

Junghans sadar dengan isu sampah plastik saat ini. Namun, ia tak ingin sebatas mengeluhkan akibat sampah plastik tanpa tahu solusinya. "Lalu kalau tidak pakai plastik, kita pakai apa? Dalam opini saya, penanganan sampah plastik bisa dengan *circular economy*, baik dalam proses sederhana (*mechanical recycling*) maupun yang lebih kompleks (*chemical recycling*)," paparnya yang pernah studi di bidang *chemical engineering*.

Prinsip dan pengelolaan sampah plastik dengan *circular economy* juga sudah diterapkan di pabriknya. "Di pabrik saya tidak ada barang yang jadi *waste*. Semua *waste* langsung ditangani secara *in-house recycling* menggunakan metode *mechanical recycling*. Bahkan sampai pembungkus resin Chandra Asri bisa kita *recycle*," paparnya bangga.

Junghans Leiman

Nineteen-year Journey with Chandra Asri

Building and running his manufacturing business, PT Jaya Nurimba, Running a business with PT Jaya Nurimba, Junghans has been partnering with Chandra Asri since 2001.

As of May 26, 2001, PT Jaya Nurimba began its business in flexible packaging industry with only one co-extrusion blown film machine. Today, the business has run for nineteen years in producing cast and blown film for snacks, meat, household product packaging, and so forth.

Choosing to pursue this business sector, Junghans believed that flexible packaging industry sector is very promising. "Plastic packaging is lightweight plastic film, but has the strength that can compete with other heavier materials, such as cans or bottles. In addition, the future development is significantly potential. To date, the per capita consumption of flexible packaging in Indonesia is considerably low. Hence, the robust growth is particularly potential," claimed Junghans.

Nevertheless, he admitted that the manufacturing sector was not without any challenges. A complex business cycle was one of them. "Starting from purchasing the raw materials to receiving the payment from the customers, it takes a long process, especially for the imported raw materials likewise with the supply of raw materials that is the backbone of my industry," explained by Junghans.

Nineteen years of knowing Chandra Asri

The needs of good quality of raw materials for the factory brought Junghans to Chandra Asri in 2001.The raw materials quality was certainly the main consideration that led Junghans to partner with Chandra Asri. He said, "Chandra Asri's LLDPE Film C4 product quality is excellent. In 2001, I remember there were only two companies in Indonesia that produced LLDPE Film C4 for flexible packaging, one of which was Chandra Asri. Since our business is based in Indonesia, it is best to source the raw materials locally. Furthermore, I choose Chandra Asri due to its product quality and location as well." However, he admitted that he could not depend on only one supplier to guarantee continuous supply that could impact the production cycle of his business.

He acknowledges the excellent quality of the products offered by Chandra Asri despite there are still several types of resins needed by his factory that could not yet be fulfilled. "Chandra Asri also renowned for being well-considerate in its business strategy. Chandra Asri also applies excellent terms for its customers," said Junghans.

Junghans also immensely appreciated Chandra Asri's expansion steps with the establishment of the new polyethylene (PE) plant and the additional production capacity. "Chandra Asri is on the right track. Especially in Indonesia, we have a polymer supply deficit. Overall, the consumptions figures are greater than the supply; hence rising import figures. Therefore, if Chandra Asri is able to provide, it might reduce the number of imports to meet the raw materials needs in the domestic market," said the man whose business philosophy was inspired by long-distance running.

He also hopes that Chandra Asril would continue to grow and maintain good partnerships with its customers. "With the mutual respect as well as by retaining product quality and specifications, we can continue to work together. Chandra Asri should also maintain the relationship with its customers, by issuing a pricing policy that could benefit both parties, " he said with a smile.

Circular Economy at PT Jaya Nurimba Factory

Junghans is very aware of the plastic waste issue that is really concerning at the moment. However, he do not want to only complain about the matter without coming up with a solution. "If we don't use plastic, what do we use? Well, in my opinion, the issue might be managed by circular economy, both through a simple process (mechanical recycling) or the complex one (chemical recycling)," he professed based on his experience studying chemical engineering.

Junghans has also applied circular economy principle and efficient plastic waste management in his factory. "In my factory, there is no single item that becomes waste. All waste is handled by in-house recycling using mechanical recycling method. We can even recycle the resin packaging manufactured by Chandra Asri," he explained proudly.

Environment

Inauguration ceremony of Zero-Waste Management Program, Masaro.

Chandra Asri Resmikan IPS Masaro

Berkomitmen dalam pengelolaan sampah di Indonesia, pada 12 September 2019 lalu Chandra Asri meresmikan fasilitas Industri Pengolahan Sampah Manajemen Sampah Zero (IPS Masaro) yang berlokasi di Cilegon, Banten. Kehadiran IPS Masaro ini menjadi langkah penerapan konsep manajemen sampah berbasis masyarakat dalam sistem ekonomi sirkular. Fasilitas pengolahan sampah ini dibangun Chandra Asri yang bekerja sama dengan Asosiasi Industri Olefin, Aromatik Plastik Indonesia (INAplas), Institut Teknik Bandung (ITB), Pemerintah Daerah, serta masyarakat dalam penerapannya. IPS Masaro ini mampu mengelola sampah dari 1.000 kepala keluarga. Sampah yang sudah dipilah masyarakat dapat ditukarkan dengan insentif berupa *voucher* belanja. Dalam pengolahannya, sampah yang terkumpul di IPS Masaro dikelola menyeluruh untuk didayagunakan secara ekonomi. Memanfaatkan teknologi pengolahan terkini, sampah-sampah ini akan diproses hingga tanpa sisa. Chandra Asri juga mengajak masyarakat untuk meninggalkan sistem pengelolaan sampah konvensional Kumpul-Angkut-Buang dan berpindah pada sistem Pilah-Angkut-Proses. Hadirnya IPS Masaro dan konsep manajemen sampah ini diharapkan bisa menjadi percontohan yang dapat direplikasi untuk menjadi solusi permasalahan sampah di Indonesia.

Chandra Asri Inaugurates IPS Masaro

As its commitment to efficient waste management in Indonesia, Chandra Asri inaugurates Zero-waste Management Industry (IPS Masaro) facility in Cilegon, Banten. Chandra Asri built IPS Masaro in partnerships with Asosiasi Industri Olefins Aromatik Plastik Indonesia (INAplas), Insititut Teknologi Bandung (ITB), and the local government together with the local community. IPS Masaro implements community-based waste management system, as a part of circular economy action plans that complement the organisation's vision. It is capable to manage waste from 1,000 households. The waste is sorted and collected by the community, and is then exchanged with incentives, such as shopping vouchers. The collected wastes are then transported to IPS Masaro, where they will be further processed to become something with economic values. With this facility, Chandra Asri also encourages the community to stop using the conventional waste management concept (Collect-Transport-Dispose) and to start following the new concept, Sort-Dispose-Process concept instead. IPS Masaro, with the help of local community, hopes that this could be a pilot project that can be replicated in many places and can be an excellent solution to help the government for handling waste issue in Indonesia.

CSR

World Cleanup Day 2019: *Cleanup for Peaceful Indonesia*

Chandra Asri turut ambil bagian menyukseskan keikutsertaan Indonesia dalam gelaran aksi bersih-bersih global "World Cleanup Day 2019 (WCUD)". Pada 21 September silam, Chandra Asri mengirimkan sebanyak 100 orang relawannya untuk ikut dalam aksi WCUD Indonesia di Provinsi DKI Jakarta, yang berpusat di kawasan Taman Wisata Alam Mangrove, Pantai Indah Kapuk, Pluit, Jakarta Utara. Beberapa perwakilan direktur pun ikut turun langsung dalam aksi ini mewakili kepedulian perusahaan terhadap lingkungan. Dengan antusias para relawan memungut dan memilah sampah untuk diserahkan kepada bank sampah guna didaur ulang. Tahun ini merupakan keikutsertaan Indonesia kedua dalam WCUD yang digelar serentak di 157 negara. Dengan mengusung tema "*Cleanup for Peaceful Indonesia*", WCUD di Indonesia menargetkan 13 juta masyarakat Indonesia untuk ikut serta dalam aksi bersih-bersih serempak yang dilaksanakan di 34 provinsi di Indonesia.

The volunteers and representatives from Chandra Asri in World Cleanup Day 2019 at Taman Alam Mangrove, Pluit.

World Cleanup Day 2019: *Cleanup for Peaceful Indonesia*

On September 21st, Chandra Asri took part in the "World Cleanup Day 2019 (WCUD) - Indonesia" for the Special Capital Region of Jakarta area. Chandra Asri dispatched around one hundred volunteers to contribute to this movement. The event took place at the Mangrove Nature Park, Pantai Indah Kapuk, Pluit, North Jakarta. Directorate representatives were also present and showing their proactive action, representing the company and reflecting company's awareness and concern for the environment. Volunteers partook in cleaning up the area, as they were seen picking up and sorting out the litter enthusiastically before being collected to the waste banks for recycling process. This year marks Indonesia's second participation at the WCUD that simultaneously took place in other 157 countries. With this year's theme "Cleanup for Peaceful Indonesia", WCUD in Indonesia targeted around 13 million Indonesians to participate in this global cleanup movement as it was held in other 34 provinces of Indonesia concurrently.

John Leiman

Modifikasi Mesin Pirolisis untuk *Zero-Waste*

Dari tiga unit mesin pirolisis yang dioperasikan di IPS Masaro, satu di antaranya merupakan modifikasi mesin berbahan bakar gas yang digagas seorang *volunteer*. Ia adalah John Leiman, siswa kelas 11 di Jakarta Intercultural School.

Teks & Foto: Hapis Sulaiman & Dok. Istimewa

Sosok muda dengan antusiasme besar mewujudkan kepedulian pada lingkungan dan Indonesia. Dalam usianya yang belia, ia berani menyodorkan alternatif dalam pengelolaan sampah yang sejalan dengan visi manajemen *zero-waste* dan *circular economy*.

Inisiatif John dengan proyek modifikasi mesin pirolisis ini tak lepas dari kegiatannya sebagai *volunteer* di IPS Masaro dan memperhatikan mesin-mesin pengolahan sampah, yang menurutnya kurang optimal secara desain. "Dari situ saya putuskan untuk menyiapkan mesin pirolisis dengan desain yang cocok," ujarnya.

Ini bukan proyek yang murah. Banyak juga pihak yang mulanya meragukan kemampuannya yang masih belia. John juga harus membobol tabungannya, termasuk meminta bantuan dana, untuk memodali proyeknya ini. Untuk mesinnya, termasuk modifikasi yang dimintanya dari desain awal, pengiriman, dan pemasangan John menghabiskan dana kurang lebih Rp75 juta.

Bersyukur John dikarunia kedua orangtua yang juga memiliki kepedulian pada lingkungan. Melihat semangatnya dalam melakoni proyek ini, mereka pun memberi dukungan besar. Sang ayah juga merelakan areal pabriknya sebagai lokasi aktivitas proyek John.

Berbekal ketelatenannya, John berhasil mengembangkan mesin pirolisisnya. "Selama 6 minggu, setiap harinya saya tes masing-masing 10 jam. Kurang lebih 30 kali tes sudah dijalankan. Awalnya saya pakai sampah di pabrik. Kemudian saya pakai sampah dari IPS Masaro. Hasilnya cukup memuaskan. Hasil uji coba itu saya presentasikan ke tim di IPS Masaro dan mereka sangat apresiasi sekali. Bulan lalu sebelum peresmian sudah dites di Masaro. 6 kg plastik dapat 4 kg BBM," paparnya bangga.

John menjelaskan bahwa pirolisis berasal dari bahasa Yunani, yaitu: *pyro* berarti api dan *lysis* berarti pemisahan. Proses pirolisis adalah pemisahan unsur-unsur yang terdapat dalam suatu material yang dilakukan pada temperatur tinggi. Pirolisis pada sampah plastik memecahkan rantai hidrokarbon menjadi unsur-unsur yang berbeda pada suhu di atas 400 derajat Celcius. Proses ini dilakukan dalam reaktor yang kedap udara. Proses pirolisis lebih aman untuk lingkungan dan bisa menghasilkan produk yang bisa digunakan kembali. Dari proses pirolisis plastik dapat dihasilkan bahan bakar cair, bahan bakar gas (*synthetic gas*), dan *carbon black residue*.

John menyadari mesin rancangannya ini masih bisa dikembangkan lagi. Kedepannya, dia sudah merencanakan berbagai inisatif untuk meningkatkan kinerja mesin pirolisis ini, termasuk memperdalam pengetahuannya di bidang *chemical engineering* atau biokimia di bangku kuliah kelak. Utamanya, ia ingin langkahnya ini bisa disebarluaskan dan memberi manfaat bagi masyarakat.

"Saya melihat di Indonesia permasalahan sampah dan plastik sangat dilematis. Hanya ada dua opsi yang umum dilakukan, dibakar atau dibuang. Keduanya memiliki dampak negatif," ujarnya. Nyatanya masih ada solusi yang bisa dikembangkan untuk mengelola sampah plastik termasuk menjadikannya bermanfaat kembali, *100% circular economy*. "Saya ingin ikut berkontribusi menyelamatkan bumi ini untuk masa depan generasi kita selanjutnya," tutupnya.

John Leiman

Pyrolysis Machine Modification for Zero-Waste

Of the three pyrolysis machines operated at IPS Masaro, one of them is a modification of a gas-fueled engine that was constructed by a volunteer. He is John Leiman, an 11th grade student at the Jakarta Intercultural School.

John Leiman demonstated how his modified pyrolysis machine works.

A young figure with great enthusiasm embodies high awareness for the environment and Indonesia. At his young age, he dares to offer alternatives in waste management that are in line with the vision of zero-waste management and circular economy.

John's initiative with this pyrolysis engine modification project arose from observing the waster processing machine, which he said were less than optimal by design, during his participation as a volunteer at IPS Masaro. "From there I decided to build a pyrolysis machine with a suitable design," he said.

The project is not cheap. Many people initially doubted his capability due to his young age. John also had to use all his savings, even asking for financial support, to fund this project. For building the machine itself, including the modifications that he requested from its initial design, delivery, to installation, John spent approximately Rp75 million.

Fortunately, John is blessed with parents who have deep concern for the environment. Seeing John's enthusiasm in carrying out this project, his parents gave him full support.

John Leiman explained how his modified pyrolysis machine works at Forum Indonesia Bersih talk show.

John's father even shared a part his factory area for his project activities.

Due to his dedication, John managed to develop his pyrolysis machine. "For 6 weeks, I have carried out 10-hour test run of the machine each day. Up to 30 tests had been run. Initially I used the waste from the factory, and then I used the waste from IPS Masaro. The results are quite satisfying. I presented the trial results to the team at IPS Masaro, and they were very appreciative. Before the inauguration last month, the machine was tested at IPS Masaro. Six kilograms of plastic produces 4 kilograms of fuel," he said proudly.

John explained that the word 'pyrolysis' comes from Greek, namely: pyro- means "fire" and -lysis means "loosening". Hence, pyrolysis process is the separation of elements contained in a material that is carried out at high temperatures. Pyrolysis in plastic waste breaks the hydrocarbon chain into various elements at temperatures above 400 degrees Celsius. This process is carried out in an airtight reactor. The process of burning plastic waste produces pollution while the pyrolysis process is safer for the environment and can produce products that can be reused. The plastic pyrolysis process can produce liquid fuels, synthetic gas, and carbon black residue.

John understands that there is still rooms for improvement for the machine that he designed. Going forward, he has planned various initiatives to enhance the machine's performance, including honing his knowledge in chemical engineering or biochemistry in college later. Currently, he wants his initiative to be disseminated extensively to provide benefits to the community.

"I see that in Indonesia, garbage and plastic issues are very dilemmatic. There are only two options that are commonly done, either to be burned or thrown away. Both have negative impacts," said John. As a matter of fact, there are still other solutions that can be explored to manage plastic waste, including repurposing, which supports circular economy a 100%. "I want to contribute to saving the earth for the future of our next generations," he concluded.

Diskusi Circular Economy Bersama Forum Indonesia Bersih

Bertempat di Conclave Wijaya, Jakarta Selatan, Forum Indonesia Bersih, menggelar *talkshow* bertema "*How About Circular Economy*".

Acara kolaborasi Forum Indonesia Bersih dan Circulation ini digelar pada 12 Oktober 2019 dengan menampilkan sejumlah pembicara dengan inisiatif kreatif dalam visi *circular economy* dan *zero-waste*. Acara dimulai oleh Adinda Sekar Prastanti mewakili Forum Indonesia Bersih yang hadir memaparkan fakta-fakta mengenai sampah dan urgensi pengelolaan sampah. Disusul kemudian, Ibu Ellen yang bercerita pengalamannya menjalankan Bank Sampah Induk Gesit. Berikutnya, John Leiman, pembicara termuda, memaparkan mesin pirolisis hasil modifikasinya yang mengubah sampah menjadi bahan bakar minyak. Hadir pula Rendy Aditya Wachid dengan gayanya yang santai memaparkan aksinya menciptakan kawasan bebas sampah di Parompong. Terakhir, Arunee Sarasetsiri mewakili Magalarva mempresentasikan keberhasilannya memberdayakan sampah organik dengan memanfaatkan larva *Black Soldier Fly* menjadi pakan hewan ternak. Tak sebatas cerita yang menginspirasi dari para pembicara, *talkshow* ini juga menekankan pentingnya membangun kesadaran dan praktek pengeloaan sampah yang bijak dalam keseharian kita.

Teks: Hapis Sulaiman **Foto:** Adieth Nugraha

Clockwise: Intimate talkshow atmosphere; Ms. Ellen explained her experience with Induk Gesit Waste Bank; Rendy Aditya Wachid told his passion to create zero-waste area in Parompong.

From above: Adinda Sekar Prastanti, a representative of Forum Indonesia Bersih, giving an appreciation to Rendy Aditya (Guest Speaker); Arunee Sarasetsiri was explaining about the organic waste processing by Magalarva.

Circular Economy Talk Show by Forum Indonesia Bersih

Forum Indonesia Bersih held "How About Circular Economy" talk show at Conclave Wijaya, South Jakarta on 12 October 2019.

The collaborative event that was organized by Forum Indonesia Bersih and Circulation invited numerous speakers with creative and innovational visions in circular economy and zero-waste. Adinda Sekar Prastanti, representing Forum Indonesia Bersih, opened the discussion by presenting facts about waste materials and the urgency of waste management. Followed by Ms. Ellen who shared her experiences in managing Bank Sampah Induk Gesit. Next, John Leiman, the youngest speaker, explained about the pyrolysis machine he invented that decomposes waste into oil fuel. Also in attendance was Rendy Aditya Wachid with his signature casual style who shared about his achievement in creating waste-free area in Paromopong. Lastly, Arunee Sarasetsiri, a representative of Magalarva, presented their success in producing animal feed from organic waste by exploiting black soldier fly larvae. "How About Circular Economy" talk show was organized not to showcase the speakers' inspiring accomplishments, but to emphasize the importance of raising people's awareness on circular economy concept as well as smart and applicable waste management practices in our daily lives.

Kelola Sampah di Rumah

Pembentukan karakter manusia berawal dari rumah.

Saat kita memimpikan perilaku hidup sehat dan lingkungan bersih tanpa sampah, juga diawali di rumah. Nah, untuk turut andil dalam menangani sampah, termasuk plastik, bisa kita mulai dari rumah. Yuk, simak caranya:

Memilah Sampah
Kumpulkan sampah sesuai kategorinya. Ada tiga kategori sampah yang umum kita kenal, yaitu sampah organik (seperti sisa bahan makanan dan dedaunan); sampah anorganik (seperti benda-benda plastik, wadah makanan-minuman instan, dan *styrofoam*); dan sampah B3 (Bahan Beracun dan Berbahaya, misalnya cairan kimia).

Mengolah Sampah Organik
Beberapa jenis sampah masih bisa bermanfaat apabila dikelola dengan baik. Ini sejalan dengan konsep *circular economy*. Sampah organik bisa diolah menjadi pupuk kompos. Caranya, buatlah lubang biopori di taman atau di wadah khusus. Kelompok usaha Magalarva sukses mengkonversi sampah organik dengan bantuan larva *Black Soldier Fly* menjadi pupuk dan pakan ternak.

Daur Ulang Sampah Anorganik
Kita bisa menggunakan sampah anorganik sebagai bahan kerajinan tangan. Dalam skala yang lebih *hi-tech*, mesin pirolisis hasil modifikasi John Leiman mampu mengkonversi sampah plastik menjadi bahan bakar minyak. Kehadiran bank sampah seperti Bank Sampah Induk Gesit yang dikelola Ellen De Wilde, juga membantu kita dalam mengelola sampah, sekaligus mendapatkan insentif.

Kumpulkan Sampah B3
Selain limbah pabrik industri, sampah ini juga terdapat di rumah. Produk rumah tangga yang termasuk sampah B3 adalah cairan pembersih, aerosol, baterai, kapur barus, dan lain-lain. Jangan sembarangan membuangnya. Kumpulkan sampah ini dalam satu wadah, beri keterangan 'B3', lalu bawa ke bank sampah.

Stop Membakar Sampah
Selain mengotori lingkungan menjadi polusi udara, asap pembakaran sampah juga membahayakan kesehatan.

Yuk, mulai memilah sampah di rumah kita!

Teks: Putri Ningrum
Foto: Shirley Hirst, EKM-Mittelsachsen, Elias Sch. (Pixabay)



Waste Management at Home

A person's character-building starts at home.

One has to start from home with healthy and clean living to form the habit of it. In terms of cultivating awareness and good habit regarding plastic-waste disposals, we can also start from our own domestic households. Here are ways on how we should do this:

Sorting Waste
Collect waste according to the categories. There are three common waste categories in daily practice, such as organic wastes (from food, leaves, other organic matters), inorganic waste (such as plastic-products, packaging, etc.), and finally B3 waste (*Bahan Beracun dan Berbahaya*, which means waste that contains toxic and hazardous substances, e.g. chemicals liquid).

Processing Organic Waste
Certain types of waste can still be valuable when managed properly. In line with the circular economy concept, organic waste can be processed into compost. We just have to put the organic waste into biopore infiltration pores in our garden or to a special container. Magalarva Group successfully converts organic waste into fertilizer and fodder with the help of black soldier fly larvae.

Recycling Inorganic Waste
We can make use of inorganic waste as handicraft materials. Supported by advanced technology like the modified pyrolysis machine, designed by John Leiman, this machine is capable in converting plastic waste into fuel oil. Moreover, the presence of waste banks such as Induk Gesit Waste Bank, managed by Ellen De Wilde, could also help us collecting and managing waste, at the same time getting some incentives.

Collecting B3 Waste
In addition to waste from industrial plant, such waste can also be found in houses. Household products that are included in B3 waste are cleansing liquid, aerosol, battery, camphor, etc. These should be disposed with care. One of the best way is by labelling a separate container with 'B3' sign, before disposing them into the waste banks.

Stop Burning Garbage
Burning your household garbage could give potent risks to our health and environment. They produce a lot of smoke and various toxic substances, which then become pollutants to our air and soil groundwater.

Let's start sort out our own waste at home!

Plastik dalam Fashion dan Seni

Teks: Putri Ningrum **Foto:** Dok. Istimewa

Berhenti mengkambinghitamkan plastik. Saatnya beraksi nyata dengan mengelola plastik dan menjadikannya bernilai kembali. *Fashion* dan seni nyatanya tak haram memanfaatkan plastik.

Tak hanya identik dengan produk-produk rumah tangga, plastik juga telah sukses memikat dunia *fashion* dan seni. Diolah tangan-tangan terampil para visioner dan dipadu inspirasi kreatif, plastik sanggup hadir menjadi sesuatu yang bernilai estetik.

Fashion

Jika biasanya plastik digunakan untuk mengemas belanjaan atau digunakan sebagai bahan perlengkapan alat rumah tangga, maka lain cerita yang terjadi di dunia *fashion*. Meski sebetulnya material plastik juga sudah menjadi bagian dari dunia *fashion*. Beberapa tahun silam kita sempat dibuat demam dengan tren kerajinan rumah tangga dengan daur ulang sampah plastik menjadi beberapa produk kreatif yang unik dan bernilai fungsi, seperti tas belanja dari sampah plastik pembungkus sabun. Nah, pada 2017 silam, upaya yang lebih berkelas telah dibuktikan oleh beberapa nama besar di industri *fashion* dunia, seperti Chanel, Balenciaga, Valentino, Givenchy, dan sederet *brand fashion* ternama lainnya yang menjajal kreasinya dengan material plastik.

Harus diakui, plastik ternyata mampu menambah sentuhan artistik pada garis rancangan mereka. Pada Milan Fashion Week 2017 lalu, dalam koleksi Spring/Summer 2018, Givenchy menampilkan koleksi *clutch* menerawang, Chanel menghadirkan kesan klasik dan futuristik lewat paduan *tweed* ikonis yang disempurnakan dengan material plastik dan menjadi *twist* tersendiri dari koleksi terbaru rancangan Karl Lagerfeld ini. Tidak semua plastik yang disulap menjadi *fashion item* tersebut tampil transparan. Beberapa *brand* ternama bahkan menampilkan material plastik yang dikreasikan menjadi jaket, *poncho*, hingga celana dengan warna-warna seru yang membuat koleksi mereka terlihat menarik.

Ajaibnya, eksplorasi plastik dalam industri *fashion* oleh para desainer dan *brand* kenamaan dunia ini terus berlanjut hingga kini.

Meski sebatas proyek sosial, produsen sepatu asal Jerman, Adidas, juga pernah menghadirkan produk sepatu sampai pakaian olahraga yang berbahan limbah plastik. Seri koleksi bertajuk Adidas x Parley tersebut diluncurkan pada 2016 silam. Mereka mengubah botol-botol plastik menjadi benang yang kemudian dicampur bahan lain untuk dibuat sepatu olahraga dan *apparel* lainnya.

Seni Rupa

Tak kalah dengan dunia *fashion*, para seniman juga tak kalah aksi dalam memanfaatkan plastik. Tergerak oleh intuisi kreatifnya juga ekspresi kegelisahan, sejumlah seniman kenamaan dunia sudah lebih dulu pernah meluapkan kreasinya memanfaatkan limbah, termasuk plastik.

Seniman HA Schult yang tinggal di Köln, Jerman, terkenal dengan karyanya berupa manusia-manusia sampah: patung dari sampah (termasuk plastik) yang dipadatkan. Begitu juga dengan seniman Ed Franklin Gavua yang lahir di Ghana juga terkenal karena membuat topeng-topeng Yiiiiikakaii dari sampah plastik.

Pada 2017, Eko Nugroho, seniman kenamaan Indonesia, merancang dan membuat instalasi besar-besaran yang ia namai 'Bouquet of Love' di Bali. Karya kolaborasinya itu dibuat dengan 300 kilogram sampah plastik yang disusun berbentuk Colosseum.

Yup, dengan upaya kreatif dan dipadu teknologi yang tepat, plastik dan limbah plastik nyatanya mampu disulap menjadi produk-produk gaya hidup yang bernilai fungsi dan estetis. Kiranya langkah kreatif ini perlu dilanjutkan sebagai upaya global mengurangi sampah plastik secara bijak.

From left: German artist, HA Schult with his iconic masterpiece; One of Yiiiiikakaii's mask by Ed Franklin Gavua.

Plastic in Fashion and Art

Plastic is not to take the blame. Instead, it is time to take real actions to properly manage plastic waste and or to turn them into items with more values. Plastics are widely used globally, even in fashion and art.

Though there are concerns on plastic waste issue, plastics are commonly used in our daily lives, ranging from household/ consumer goods, automotive, as well as fashion and art and many more. Plastics could turn to something beautiful under the skillful hands of the designers or artists.

Fashion

Plastics have become more commonly used in fashion industry nowadays. It has become a new trend to utilise recycled plastics as raw materials in fashion goods, such as groceries bag made of plastic wraps for soaps. In 2017, In 2017, more luxury fashion superbrands, such as Chanel, Balenciaga, Valentino, Givenchy and many others, started to follow the trend to use recycled plastic materials in their creations.

Many artists and designers admit that plastic is able to add extra artistic touch to their designs. At Milan Fashion Week 2017, in the 2018 Spring/Summer collection, Givenchy launched transparent plastic clutch bag collection, and in the latest collection by Karl Lagerfeld, Chanel's iconic tweed was refined by blending plastic materials and has become a 'twist' of its own. Not all plastics that are turned into a fashion item would appear transparent. Some well-known brands even created plastic jackets, plastic ponchos, to plastic pants with fun colours and attractive designs.

The German shoe manufacturer, Adidas, has also launched sportswear products that are made from plastic waste. The collection series, Adidas x Parley, was launched in 2016. They turn plastic bottles into yarn which is then blended with other materials to make sneaker and other apparels.

Art

In the world of creative art, many prominent artists also address their concerns on environmental issues through their art pieces. Many artists use and recycle plastic wastes and turn them into beautiful art pieces.

A German artist, HA Schult, is famous for his artwork, 'The Trash People'/ 'Trash Army.' Schult's eco-warriors are made of bottles, crushed cans, and other forms of wastes. Through his artwork, she tries to address the environmental issue to the world. Likewise, a Ghana-born artist, Ed Franklin Gavua, has given a whole new twist on the African mask, known as Yiiiiikakaii mask, by making them out of plastic wastes.

"Bouquet of Love" instalation by Eko Nugroho.

In 2017, Eko Nugroho, a well-known artist from Indonesia, designed and made a large-scale installation named as "Bouquet of Love" in Bali. His collaborative artwork was constructed of 300 kilograms of plastic wastes arranged into a structure, replicating the Colosseum.

With creativity and the right technology, plastic products/ wastes could be transformed into lifestyle-products with functional and aesthetic values. This creative step is crucial and serves as the global effort to manage plastic wastes wisely.

Chandra Asri Meriahkan Plastics & Rubber Indonesia 2019

Diselenggarakan pada 20-23 November lalu, di Jakarta International Expo Kemayoran, Jakarta, pameran ini merupakan satu-satunya di Indonesia dan terbesar di Asia Tenggara.

Teks & Foto: Hapis Sulaiman

Pameran bertaraf internasional ini fokus dalam memenuhi kebutuhan industri dengan menghadirkan mesin, pengolahan, teknologi dan inovasi terkini untuk pengemasan, cetakan, pewarna, serta bahan plastik dan karet. Mengusung tema "*The Future of Plastics*" pameran ini melibatkan lebih dari 500 perusahaan dan profesional dari 22 negara sebagai peserta pameran.

Dalam pameran yang digelar untuk ke-32 kalinya ini, Chandra Asri tampil dengan dua *booth*. *Booth* utama Chandra Asri hadir dengan sentuhan bentuk dan warna logo bulan berlapis yang dipresentasikan sebagai warna latar dan lorong yang memisahkan sisi kanan dan kiri. Selain area *lounge*, di salah satu sisi *booth* utama ini, Chandra Asri menampilkan koleksi resin dan contoh *end-product* dari bahan baku produksinya. Sementara itu, di *booth* promosi lainnya yang lebih kecil, diramaikan oleh berbagai aktivitas *marketing* dari Chandra Asri.

Selain aktivitas di *booth*, Chandra Asri juga menghadirkan sejumlah *onsite activities*, berupa presentasi dan *talkshow* interaktif. Ada dua sesi presentasi yang digelar dengan menghadirkan tenaga ahli yang membawakan berbagai *update* informasi dan keunggulan produksi Chandra Asri.

Bertempat di *Tech-Talk Corner*, hadir dua sesi presentasi mengenai produk-produk unggulan Chandra Asri. Di sesi pertama, Section Manager-Technical Service Chandra Asri, Suharso, juga hadir membawakan presentasi mengenai produk Chandra Asri Asrene UC1827 berupa material insulasi kabel listrik berbahan *Linear Low Density Polyethylene* (LLDPE) yang diproses menjadi *Crosslinked Polyethylene* (XLPE) sebagai material insulasi kabel yang kuat dan aman untuk menunjang proyek distribusi listrik.

Di sesi kedua menjelang sore, Senior Technical Service Engineer Chandra Asri, Andri Wijaya, hadir membawakan pembahasan mengenai kiprah Chandra Asri di dunia otomotif berupa produk *Polypropylene Block Copolymer* yang digunakan dalam pembuatan elemen interior mobil. Andri memaparkan secara rinci sejumlah kerja sama Chandra Asri dengan berbagai *brand* otomotif ternama saat ini.

Pameran Plastics & Rubber Indonesia 2019 ini digelar bersamaan dengan Water Indonesia 2019 yang menyuguhkan *conference* yang bertema "*Industrial Waste Water Day*". Sr. General Manager Technical Service, Edi Riva'i, dan Dept. Manager Technical Service and Application Development Chandra Asri, Ivan Sugiyono, turut hadir sebagai pembicara. Edi Riva'i menyampaikan prinsip kemitraan Chandra Asri dalam pemenuhan *supply* bahan baku untuk sektor industri kemasan dan pengelolaan air. Sementara itu, Ivan Sugiyono mempresentasikan tentang produk Asrene SP4808 dan menyatakan kesiapan Chandra Asri dalam mendukung industri pengolahan air dengan memproduksi bijih plastik berkualitas unggul untuk bahan baku pembuatan pipa air minum.

Edi Riva'i at Water Indonesia 2019.

Chandra Asri's booth at Plastics & Rubber Indonesia 2019.

Chandra Asri at Plastics & Rubber Indonesia 2019

Being held on November 20th – 23rd, at Jakarta International Expo Kemayoran, it was the only plastic & rubber expo in Indonesia and the largest in South East Asia.

This trade show focuses on meeting the needs of the industry by showcasing the latest technology and innovations for packaging, mold, dyes, plastic and rubber materials. Themed "The Future of Plastics", the exhibition involved more than 500 companies and professionals from 22 countries as exhibitors.

In this 32nd exhibition, Chandra Asri participated by having two booths. Chandra Asri's main booth was nicely designed with a touch of company's colour shades and the Moon logo. In addition to the lounge area, on one side of the main booth, Chandra Asri displayed a collection of resin and samples of the end-product of their customers. While in the smaller booth, there were marketing activities and official agents of Chandra Asri.

Besides on-booth activities, Chandra Asri also presented a number of onsite activities, such as product presentations and interactive talkshow. There were two presentations by Chandra Asri's technical experts and they were delivering update information on product excellence and the company's capability in catering Indonesia's resin demand.

At the Tech-Talk Corner, Chandra Asri's experts also delivered two presentations related to its high-value added (HVA) products. In the first session, Section Manager-Technical Service Chandra Asri, Suharso, presented about Chandra Asri Asrene UC1827 resin grade, which is made of Linear Low Density Polyethylene (LLDPE) and is used for electrical cable insulation. This material was processed as a Crosslinked Polyethylene (XLPE), whose characteristic is strong and safe for insulation material.

In the second session, Senior Technical Service Engineer Chandra Asri, Andri Wijaya, presented a discussion about Chandra Asri's contribution in the automotive world with the high quality of Polypropylene Block Copolymer resin, which is used in manufacturing of car interior parts. Andri explained in detail about Chandra Asri's collaboration with some famous automotive brands today.

Andri Wijaya (left) and Suharso (right) representing Chandra Asri at Tech-Talk Corner, Plastics & Rubber Indonesia 2019.

Plastics & Rubber Indonesia 2019 was held concurrently with the Water Indonesia 2019. In the conference titled "Industrial Waste Water Day", Sr. General Manager Technical Service, Edi Riva'i and Dept. Manager Technical Service and Application Development, Ivan Sugiyono, were present as speakers. Edi Riva'i conveyed the principles and Chandra Asri's commitment in fulfilling raw material supply for drinking water packaging and water management. Whilst, Ivan Sugiyono delivered a presentation on Asrene SP4808 and ensured Chandra Asri's readiness and capability to support the water treatment industry with superior pipe resin grade for high-quality drinking water pipe application.

Ivan Sugiyono presenting at Water Indonesia 2019.

From left: Inauguration Ceremony by Jusuf Kalla; Technical Product Presentation by Rachmat Ferdian from Chandra Asri; Chandra Asri's Booth at Indo Water Expo & Forum 2019.

Chandra Asri di Indo Water 2019

Sebagai industri petrokimia terbesar dan terintegrasi di Indonesia, Chandra Asri turut berpartisipasi sebagai peserta pameran Indo Water Expo & Forum 2019.

Chandra Asri at Indo Water 2019

As the largest integrated petrochemical complex in Indonesia, Chandra Asri participated at Indo Water Expo & Forum 2019.

Teks & Foto: Hapis Sulaiman

Di tahun penyelenggaraan ke-15 kalinya ini, Indo Water 2019, digelar selama tiga hari (17-19 Juli 2019) dan dipusatkan di Jakarta Convention Center (JCC), Senayan, Jakarta. Pembukaan pameran tersebut diresmikan oleh Bapak Jusuf Kalla.

Dalam *booth* berukuran besar dengan desain modern dan balutan warna putih-biru, Chandra Asri memamerkan berbagai variasi produk resin unggulan dan potensi pemanfaatannya, termasuk memberikan informasi terkini seputar layanan dan spesifikasi produknya kepada para pengunjung pameran. Menyempurnakan keikutsertaannya, Chandra Asri juga ambil bagian dalam sesi *Technical Product Presentation* dengan mempresentasikan ulasan bertema "*Asrene SP4808 (HDPE Pipe Grade) PE100 Qualified to Support Potable Water Project in Indonesia*" yang dibawakan Rachmat Ferdian. Dalam paparannya, Ferdian mengungkapkan berbagai keunggulan salah satu resin produk Chandra Asri dalam mendukung proyek distribusi air di Indonesia.

On its 15th year, Indo Water 2019 was held for three days (17-19 July 2019) at Jakarta Convention Center (JCC), Senayan, Jakarta. Jusuf Kalla was present at the inauguration ceremony and officially opened the exhibition on Wednesday 17 July 2019.

The large booth was designed in a modern concept, dominated by the company colours, shades of blue and white. Chandra Asri exhibited a variety of resin grades, as well as describing their technical specifications and potential uses. There was also an up-to-date information about future expansions projects and other services. Chandra Asri also took part in the Technical Product Presentation or mini seminar session, titled " Asrene SP4808 (HDPE Pipe Grade) PE100 Qualified to Support Potable Water Projects in Indonesia". In this session, Ferdian revealed various advantages of using Chandra Asri's resin in supporting water distribution projects throughout Indonesia archipelago.

Consuming less means throwing away less, while reusing things actually helps to save the planet as well as the pennies,"

Sheherazade Goldsmith

A

SMART CITY CANNOT BE IMAGINED WITHOUT PROPER RECYCLING,"

Rajnath Singh