



TOYO ENGINEERING

GLOBAL NETWORK

Toyo Engineering Corporation

● HEAD OFFICE / ENGINEERING CENTER

2-8-1 Akanehama, Narashino-shi, Chiba
275-0024, Japan
Tel: 81-47-451-1111

● TOKYO HEAD OFFICE

HIBIYA FORT TOWER, 16th Floor
1-1, Nishi Shimbashi 1-chome
Minato-ku, Tokyo 105-0003, Japan
Tel: 81-3-3508-0111

OFFICES

● Jakarta

Wisma IKPT, 2nd Fl., JL. MT. Haryono Kav.
4-5, Jakarta 12830, Indonesia
Tel: 62-21-835-4170
Fax: 62-21-835-4149

● Moscow

Room No.207, Entrance7,
World Trade Center, Krasnopresnenskaya
Nab.,12, Moscow 123610, Russia
Tel: 7-495-258-2064/1504

GROUP COMPANIES

● TEC Project Services Corporation (TPS)

2-8-1 Akanehama, Narashino-shi, Chiba
275-0024, Japan
Tel: 81-47-454-1178
Fax: 81-47-454-1550

● Toyo Engineering Korea Limited

[Seoul]
Toyo B/D.11,Teheran-ro 37-gil, (Yeoksam-dong),
Gangnam-gu,Seoul,06142,Korea
Tel: 82-2-2189-1620
Fax: 82-2-2189-1890

● Toyo Engineering Corporation (China)

[Shanghai]
7F, New Bund Oriental Plaza I, No. 512 Haiyang
West Road, Pudong New District,Shanghai
200124, China
Tel: 86-21-6187-1270
Fax: 86-21-5888-8864/8874

● Offshore Frontier Solutions Pte. Ltd.

[Singapore]
9 North Buona Vista Drive, #21-01 The Metropolis
Tower 1, Singapore 138588
Tel: 65-6496-4000
Fax: 65-6496-4191

● PT. Inti Karya Persada Teknik (IKPT)

[Jakarta]
JL. MT. Haryono Kav. 4-5, Jakarta 12830, Indonesia
Tel: 62-21-829-2177
Fax: 62-21-828-1444/62-21-835-3091

● Toyo Engineering & Construction Sdn. Bhd.

[Kuala Lumpur]
Suite 25.4, 25th Fl., Menara Haw Par,
Jalan Sultan Ismail, 50250 Kuala Lumpur, Malaysia
Tel: 60-3-2731-1100
Fax: 60-3-2731-1110

● Toyo Engineering India Private Limited

[Mumbai]
"Toyo Technology Center", 71, Kanjur Village Road,
Kanjurmarg (East), Mumbai-400 042, India
Tel: 91-22-2573-5000
Fax: 91-22-2573-5842

● Toyo Engineering Europe, S.r.l

[Milan]
10 Via Alzata, I-24030 Villa d'Adda, Bergamo, Italy
Tel: 39-035-4390520

● Toyo Engineering Canada Ltd.

[Calgary]
Suite 640, 840-6th Avenue S.W. Calgary,
Alberta T2P 3E5, Canada
Tel: 1-403-266-4400
Fax: 1-403-266-5525

● Toyo U.S.A., Inc.

[Houston]
15415 Katy Freeway, Suite 600, Houston,
TX 77094, U.S.A.
Tel: 1-281-579-8900
Fax: 1-281-599-9337

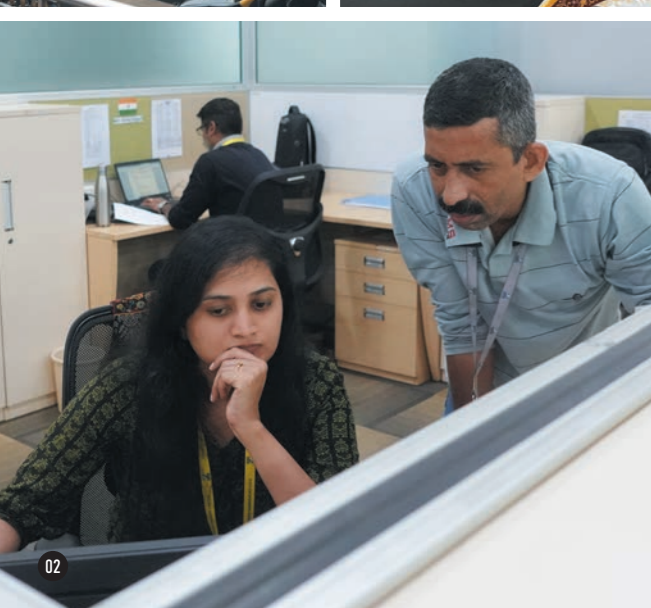
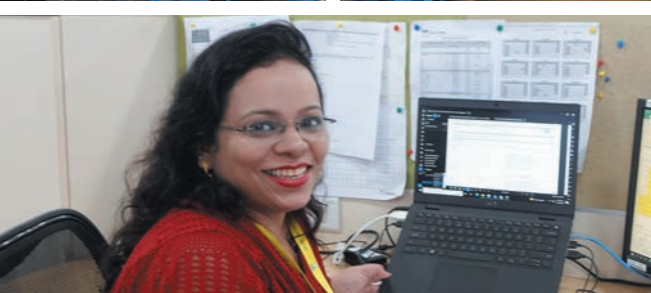
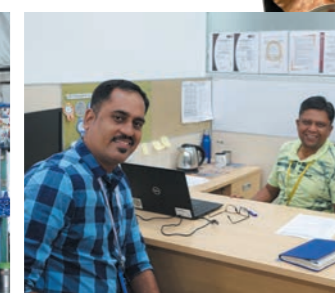
● TS Participações e Investimentos S.A.

[Sao Paulo]
Edificio Birmann 12, Rua Alexandre Dumas, nº
1.711, 1º andar, 04717-911,
Chácara Santo Antônio, São Paulo-SP, Brazil
Tel: 55-11-5525-4834
Fax: 55-11-5525-4841



Special
feature

INDIA



TOYO -

Toyo Engineering India Private Limited

India's future

TOYO's first overseas project was the construction of a fertilizer plant (ammonia and urea) in India, which was conducted two years after the establishment of TOYO in 1961. Since then, TOYO has implemented multiple fertilizer projects in India. TOYO established Toyo-India in 1976, which was early for the establishment of a local corporation of a Japanese company, and it has handled many oil refinery, petrochemical, general chemical and LNG terminal plants and other projects.

With the number of employees having grown from about 30 when it was first established to about 2,300 today, Toyo-India has evolved significantly into one of the leading comprehensive engineering companies in India.

Mumbai, where Toyo-India is located, is the largest city in India, also known as the financial center.

In line with TOYO's strategy "Advanced EPC*1 Operation" in its medium-term management plan, Toyo-India is currently taking steps to improve work efficiency and enhance its construction execution capabilities through operational reforms and digitalization, aiming to reliably execute projects that are becoming increasingly large and complex.

Toyo-India is also actively pursuing carbon neutral projects in line with TOYO's strategy "Sustainable Technology and

Business Development." Toyo-India, which has accumulated numerous project achievements over the 45 years since its establishment, plays an active role as the center of the TOYO Group's EPC project implementation bases.



Prachi A Vasudeo
Software Support & Deployment

The amount of freedom to be given to an individual is the biggest motivating factor in Toyo-India. Toyo also gives enough exposure to newer technologies which are challenging and fun to learn. TOYO is the right mixture of young & senior talent, particularly in our department. This helps in adopting new challenges with lots of professional maturity. Decision making in TOYO is always based on sound logic and result of well thought procedure. No decision is taken without weighing Pros and Cons of the same. TOYO Culture is very conducive for female employees.



Siddhesh M Chipkar
Control & Instrumentation Engineering

I am working with Toyo-India since past four years in C&I department as a Design Engineer. In my working tenure, till date the one thing that I have learnt about TOYO is that if you have the desire to learn and grow you will get the best of the opportunities to showcase your caliber and skills. Moreover, the quality of detail engineering done here helps in overall growth of an Instrumentation Engineer. I look forward to serve this organization to the best of my abilities.



Prashant R Patil
Piping Engineering

I am feeling glad to work in TOYO because TOYO is one of the best Licensor and Lead Engineering contractor globally. TOYO has wide experience in all type of projects like EPCm*2, FEED*3, EPC, PMC*4 of various field like Oil & Gas refineries, Fertilizer, Petrochemical, Chemical plants, Infrastructure etc... TOYO has finest future plans, Strong & Positive leaders, always ready to catch good opportunities, Positive & Employee friendly corporate culture, Healthy work environment, latest technologies, provided excellent customer services and always delivered a best quality product.

*1 Engineering, Procurement, Construction
*2 Engineering, Procurement, Construction management

*3 Front-end Engineering Design
*4 Project Management Consultant



On going
PROJECT



Site	Taloja, Navi Mumbai, Maharashtra
Facility	Ammonia plant, An associated offsite and utility facilities
Capacity	1,500 MTPD
Licensor	KBR

We will continue to work hard for our client with safety first, high quality and delivery the project in time.



Toyo Engineering India Private Limited
Department : PROJECTS
Vishwas T Pund

Currently, multiple EPC* projects by Toyo-India are in progress across India. Below is an ammonia plant construction project for Performance Chemiserve Limited (PCL) in Navi Mumbai, Maharashtra, in southwest India. This project is to construct an ammonia plant with a daily production capacity of 1,500 tons by utilizing KBR technology in the US, which has partnered with TOYO for over 50 years and this product is used mainly for fertilizer applications. The contract concluded in March 2021, and we started EPC project. At the peak of construction phase, approximately 3,000 workers were at site. The project achieved a 11 million-hour no lost time injury accident record as of February 2023 and will be completed soon.

India is a large country and it is now the world's most populous country, with a population of approximately 1.4 billion people. It is a world-class agricultural powerhouse. Agriculture is positioned as an industry that is highly important both economically and political-ly. Therefore, ammonia is used mainly as a raw material for fertilizers.

PCL planned this project aiming for a stable supply of cost competitive ammonia by having its own production facility by changing from imported source Through this project, TOYO will continue to contribute to the development of the country.



* Engineering, Procurement, Construction

TOYO's Ammonia

zero-emission fuel



Fertilizer plant

INDIA



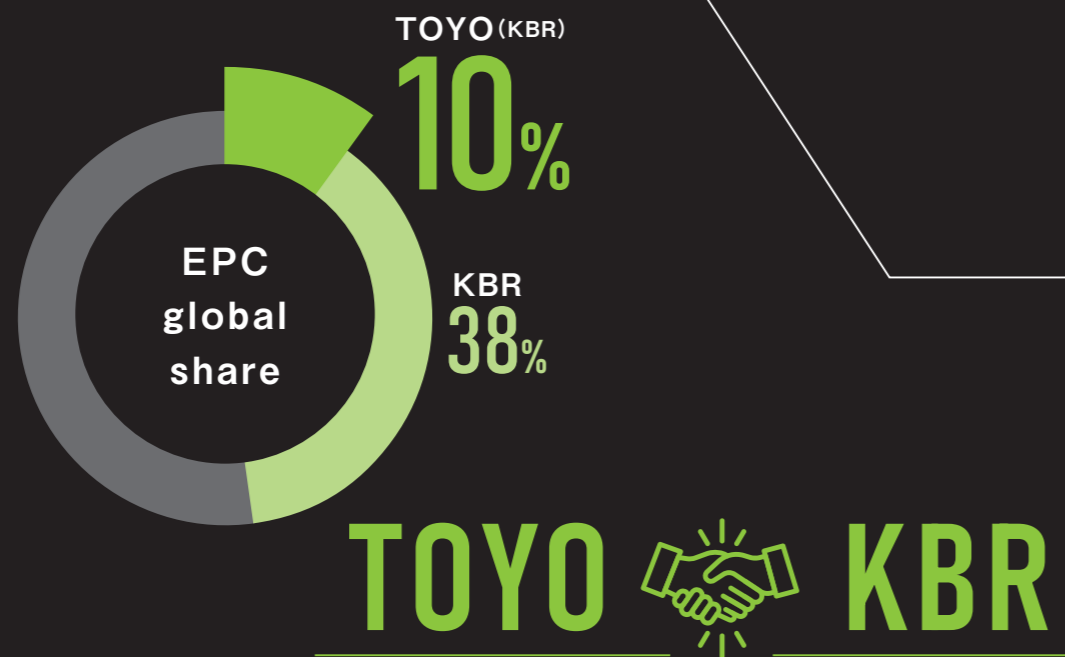
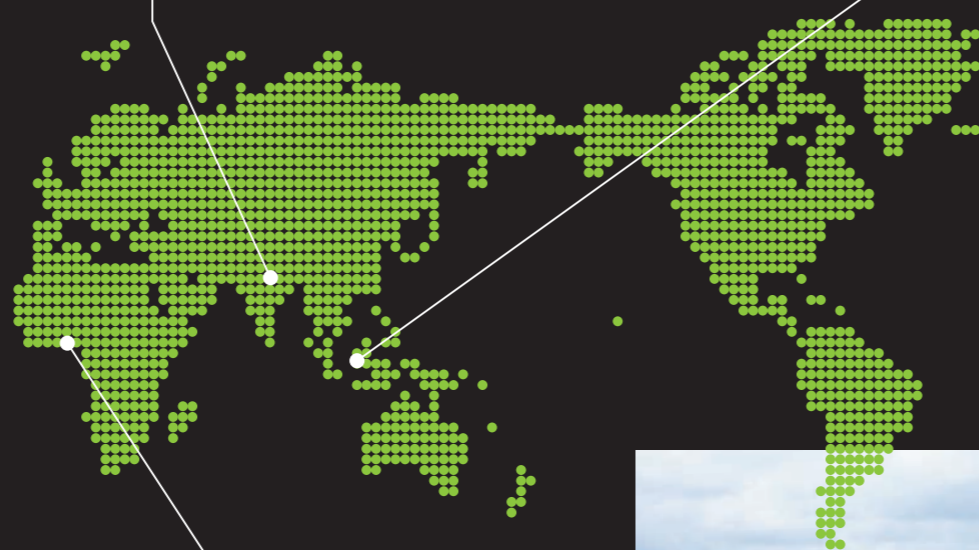
Fertilizer plant

INDONESIA

TOYO has a track record of over 80 ammonia plant construction projects and over 50 years of experience as a key partner of major licensor KBR.

Ammonia is used primarily as a fertilizer and has supported food production in many countries.

More recently, ammonia has been spotlighted as a carbon-neutral fuel and fuel carrier for hydrogen.



Fertilizer plant

NIGERIA



Signing Ceremony (Left: TOYO President & CEO, Haruo Nagamatsu
Right: JGC Holdings President & COO, Tadashi Ishizuka)

Alliance Agreement on EPC Projects for Fuel Ammonia Plants

TOYO and JGC Holdings Corporation announce that the two companies have signed an alliance agreement on April 26, 2022 related to the receipt of orders and execution of engineering, procurement, and construction (EPC) projects for fuel-ammonia manufacturing plants and ammonia receiving terminals, starting from feasibility studies (FS) and front-end engineering design (FEED).

In October 2020, the Japanese government declared its goal of realizing carbon neutrality by 2050. Fuel ammonia shows promise as a decarbonized fuel for power generation, shipping, etc. The government has therefore set expanded implementation targets of 3 million tons per year as of 2030 and 30 million tons per year as of 2050. Accordingly, various companies and organizations both in Japan and overseas have launched initiatives aimed at the manufacturing, transport and use of fuel ammonia.

In response to this move toward the expanded use of fuel ammonia, the TOYO Group and the JGC Group reached an alliance agreement with the aim of speedily demonstrating to fuel ammonia business operators enhanced proposal capabilities and competitiveness by combining the TOYO Group's extensive track record and technical expertise in ammonia manufacturing plants with the JGC Group's extensive record of constructing process plants in regions such as Australia and the Middle East, integrating efforts from the conceptual stage to EPC.

A coalition of the Japanese government and companies is expected to play a key role in the fuel ammonia business in the future. The TOYO Group and the JGC Group will jointly pursue business operations and project execution related to the evaluation, planning, engineering, procurement and construction of fuel ammonia manufacturing-related facilities around the world, including for overseas companies.

Through the expanded use of fuel ammonia, the two Groups will contribute to the realization of a decarbonized society.



MOVING ON

TOYO COMMUNICATIONS

Order received

New award for Diesel Hydrotreating and Hydrogen Recovery Unit by consortium with a Brazilian Affiliate Company

Toyo, together with its Brazilian affiliate TOYO-SETAL Empreendimentos Ltda. (TSE), has been awarded a contract by Petróleo Brasileiro S.A. (PETROBRAS, Head Office: Rio de Janeiro) for the construction of a new Diesel Oil Hydrotreating Unit and Hydrogen Recovery Unit at the Replan Refinery*¹(REPLAN).

As part of PETROBRAS' 2022-2026 strategic plan, this project will boost production of S-10 diesel*² (ultra-low sulfur diesel) by 63,000 bpd and all diesel produced at the refinery will be low sulfur.

*1 Replan Refinery: The largest refinery in Brazil, established in May 1972. Processing capacity is 434,000 bpd.

*2 S-10 diesel: Diesel oil with low environmental impact in which the sulfur content of diesel oil is reduced to less than 10 ppm through desulfurization treatment. It has been introduced in Brazil since 2013.



An overview of REPLAN (Image from Website Petrobras)

Scope	Detailed Engineering, Procurement, Construction and Commissioning
Scheduled Completion	2025

Order received

Awarded Two Successive Biomass Power Plant in Japan

TOYO was awarded two biomass-fired power plant construction projects in succession across April of 2022.

The first is a 50 MW capacity plant being planned for construction in Tomakomai-shi, Hokkaido, Japan by Tomatoh Biomass Power GK.

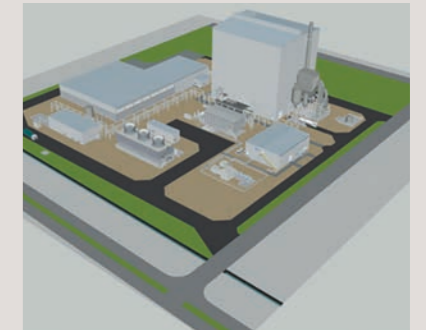
The next is a 50 MW capacity plant being planned for construction in Gobo-shi, Wakayama, Japan by Gobo Biomass Power Plant G.K. which is jointly established by JAG Energy Co., Ltd., Osaka Gas Co., Ltd., and SMFL MIRAI Partners Company, Limited.

Both of power generation facilities are a highly efficient biomass-fired plant based on the reheat system*.

TOYO positions infrastructure, centered on power plants, as one of its principal business areas.

* Reheat system: Steam, after expansion through high pressure steam turbine, is sent back and reheated in the boiler, then sent to the low pressure steam turbine for further expansion. This system realizes high power generation efficiency.

3D Model of Biomass-fired Power Plant (Hokkaido Prefecture)



3D Model of Biomass-fired Power Plant (Wakayama Prefecture)

Scope	Engineering, Procurement, Construction and Commissioning
Scheduled Completion	2024

Order received

Awarded Two Oil Refinery Projects in India



IOCL Panipat Refinery



IOCL Gujarat Refinery

Toyo-India has been awarded a contract by Indian Oil Corporation Limited (IOCL) for the EPC of a 3.6 MMTPA Vacuum Gas Oil Hydrotreater (VGO-HDT) Unit at Panipat in the state of Haryana, and a new 2.5 MMTPA Vacuum Distillation Unit (VDU) in Vadodara in the state of Gujarat, India.

Toyo-India is also currently implementing projects for IOCL at their Paradip and Barauni Refineries.

In India, which has a vast population and huge middle-class population strata that continues to grow, TOYO is committed to contributing to the economic development of the country.

Scope	Engineering, Procurement, Construction and Commissioning
Scheduled Completion	2024

Order received

TOYO Awarded Polyacetal Plant Project in China

Toyo-China has been awarded the project to construct a Polyacetal (POM) Plant in Nantong, China from a newly established Chinese subsidiary of Polyplastics Co., Ltd. Upon the high demand of POM in the market of China and Asia, Polyplastics Co., Ltd has decided to invest for the new construction of POM plant in China. We believe that TOYO's extensive experience in China, and established performance led to receiving the order from the client.

TOYO will continuously support the customer's investment in China, especially for the petrochemical, specialty chemicals products and fine chemicals fields, and realizing the TOYO's mission of "Engineering for Sustainable Growth of the Global Community".

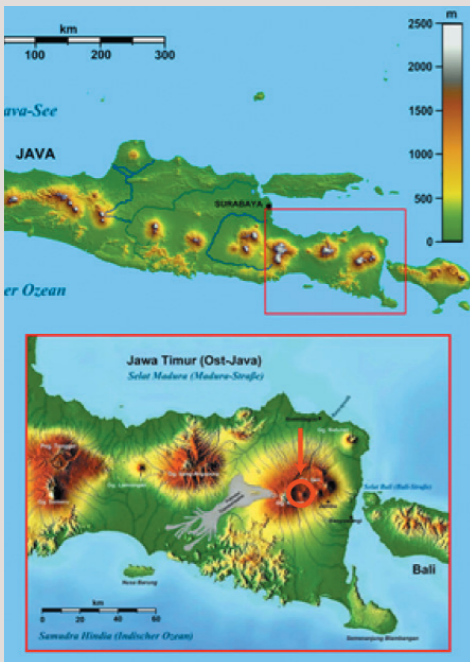


Groundbreaking ceremony

Scope	Engineering, Procurement and Construction
Scheduled Completion	2024

Order received

Awarded for Geothermal Power Plant Project in Indonesia



Project Location(East Java province, Indonesia)

IKPT(Indonesian affiliate PT Inti Karya Persada Teknik), a subsidiary of TOYO, along with a Consortium partner PT Multi Fabrindo Gemilang has been awarded a contract by PT Medco Cahaya Geothermal (MCG) for the construction of a Geothermal Power Plant Project.

This Project is listed in Indonesian Electricity Master Plan (Rencana Usaha Penyediaan Tenaga Listrik or RUPTL 2021 – 2030), which is a 10 years electricity development plan for the operating areas of PT Perusahaan Listrik Negara (Persero) or usually mentioned as PLN. Furthermore, it is a part of Renewable Energy for carbon neutral target and environmentally friendly to maximize the usage of clean energy.

TOYO and IKPT will continue to contribute the realization of a sustainable society and the economic development of Indonesia.

Scope	Engineering, Procurement, Construction and Commissioning
Scheduled Completion	2024

Completion

Completed Yonago Biomass Project

A Yonago Biomass Power Generation LLC power plant facility (generation capacity: 54 MW) constructed by TOYO in Yonago-shi, Tottori was handed over to the customer in March 2022.

This project started on September 14, 2018 and had been faced several difficulties during engineering and construction phase due to the impact of the COVID-19 pandemic, which has been an issue since the spring of 2020. However, project members overcome the problems and passed the baton from design to procurement to construction and on to pre-commissioning, finally delivering the facility within the contract period successfully.



Completion

Completed Fushiki Manyofuto Biomass Project



A Fushiki Manyofuto Biomass Power GK powerplant (generation capacity: 51.5MW) that TOYO constructed in Takaoka-shi, Toyama, has started commercial operations since July 2022.

This is the second biomass power project that TOYO has worked on, following the 50MW-class power plant project in Ibaraki completed in February 2022.

The annual generation capacity of this biomass power plant is equivalent to approximately 120,000 households.

Completion

Oriental Yeast India Yeast Plant Opening Ceremony

Toyo-India completed the construction of an Oriental Yeast India Prv. Ltd. (OY India) yeast factory in the industrial complex near Pune, Maharashtra, India in cooperation with Shimizu Corporation, and an opening ceremony was held in December 2022.

This plant is the first yeast plant that Oriental Yeast Co., Ltd., an affiliate of the Nisshin Seifun Group, to be constructed in an overseas country with a daily production capacity of 100 tons.

In India, where the bread market is growing rapidly alongside the country's economic growth, the plan to build the plant was adopted because of the increasing demand for yeast for breads and the high production volume of molasses, a raw material. Though this was Toyo-India's first food related project, it was completed successfully through smooth communications with client. Client expressed their gratitude for TOYO's excellent EPC implementation capabilities in their speech during the opening ceremony. Toyo-India will continue to support for Japanese client's investment projects.



Completed Construction of Pilot Facility to Produce Renewable Environmentally-Sustainable Ethanol-Based Ethylene



TOYO has completed a pilot plant construction project on schedule for a unit that will produce ethylene from renewable environmentally-sustainable ethanol feedstock for Sumitomo Chemical Co., Ltd. at Sumitomo's Chiba Works in Japan.

The goals of this pilot plant are to facilitate the transition away from fossil fuel-based materials for the realization of carbon neutrality and to work on technical verification for commercialization of non-fossil fuel-based polyolefin by Sumitomo Chemical.

TOYO will continue to contribute the realization of sustainable communities and societies through the construction of facility that address environmental issues.

Agreement regarding Establishment of Joint Venture Company with MODEC, Inc.



TOYO and MODEC, Inc. have executed the agreement for the establishment of a joint venture company for the Engineering, Procurement, Construction and Installation (EPCI) business of Floating Production Storage and Offloading (FPSO) vessels.

For the past 15 years, TOYO has been collaborating with MODEC which is one of the world's leading FPSO-related companies, on the topside EPC scopes for several FPSO projects. Through the establishment of the joint venture company, TOYO and MODEC will further deepen the form of collaboration and jointly strengthen the engineering and project management capabilities in order to carry out the challenging large-scale FPSO projects, and the two companies jointly aim to strengthen the technological capabilities and competitiveness in the FPSO industry. Furthermore, synergies between TOYO and MODEC are expected to be demonstrated in the exploration of new technology and product opportunities in growth markets as well as in the development of environmentally-friendly FPSOs for realization of decarbonized society.

TOYO to commence a Feasibility Study for Green Ammonia production in Indonesia

Pupuk Iskandar Muda (PIM) existing fertilizer plant



Location map of Pupuk Iskandar Muda (PIM) fertilizer plant

TOYO got an award from Ministry of Economy, Trade and Industry (METI), Government of Japan will start a feasibility study (FS) for the green ammonia* production in Indonesia, under the collaboration with Pupuk Indonesia Holding Company (PIHC) being a government enterprise in Indonesia, and Pupuk Iskandar Muda (PIM) which is a subsidiary company under PIHC.

During the FS, TOYO will study feasibility for the green ammonia production in Indonesia at the existing fertilizer plants owned and operated by PIM, and would like to establish a plan for the optimal development, with consideration for the selection of appropriate Renewable Energy power source, effective countermeasure against the fluctuation of Renewable Energy power supply etc.

TOYO has a lot of experiences in the consulting, engineering, procurement, construction and energy saving service for the ammonia plants with global track record of 86, among which 7 are in Indonesia. TOYO will contribute to the Greenhouse Gas reduction through various measures including the support for promoting the utilization of Ammonia

* Green Ammonia: Ammonia synthesized from hydrogen produced by renewable energy.

Launch of Pilot Project Aimed at Commercial Use of Fuel Ammonia to Naphtha Crackers Adopted as NEDO Green Innovation Fund R&D Project



This picture is just an image

TOYO, Mitsui Chemicals, Inc., Maruzen Petrochemical Co., Ltd., and Sojitz Machinery Corporation announced that a joint pilot project to be demonstrated by the four companies is to be funded by the New Energy and Industrial Technology Development Organization (NEDO). The project partners had applied to the Green Innovation Fund for projects aimed at the development of technology for producing raw materials for plastics using CO₂ and other sources, focusing in particular on the development of advanced technologies for naphtha crackers.

The goal of the pilot project is to switch naphtha crackers from running on conventional methane-based fuel to one in which ammonia is the principal component, thereby reducing the CO₂ emissions generated by combustion virtually to zero. The trial is expected to run for 10 years, from FY2021 until FY2030 in order to be implemented in society after feasibility has been demonstrated in an entirely ammonia-fired commercial cracker in the project's final year.