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TOYO ENGINEERING

Contributing to NEXT TOYO 2015 by Strengthening Project Execution Capabilities

—The potential of the Chinese market and Toyo-China's growth strategies

Kiyoshi Nakao
Senior Executive Officer
President, Toyo-China

The Chinese economy is growing based on its vast territory and plentiful human resources. In 1972, the year that China-Japan relations were normalized, TOYO won a project to build an ethylene plant in China. Since then, TOYO has built an impressive record of almost 200 projects in China. After establishing Toyo-China in 2004, TOYO further accelerated business expansion in China, and today has established itself as the leading foreign Engineering, Procurement, and Construction (EPC) company in China. In this interview, we asked Kiyoshi Nakao, Senior Executive Officer of Toyo Engineering and President (Managing Director) of Toyo-China, about the potential of the Chinese market and Toyo-China's growth strategies.

Building an Organization Capable of Executing EPC Lump-sum Projects

To begin with, could you outline the current situation at Toyo-China?

Toyo-China was established in 2004, and has steadily expanded its business since then. In fiscal 2012, orders totaled approximately 520 million Chinese yuan (US$83.5 million), a 40% increase in the past two years. We've worked on such major projects as a siloxane plant for Dow Corning (Zhangjiagang) Co., Ltd., and petrochemical plants (Phase I and II) for BASF-YPC Company Limited, a joint venture of BASF and SINOPEC. Currently, we have many projects at hand. Our contracts are gradually shifting from Engineering, Procurement services and Construction management (EPsCm)* to EPC. We are also expanding our human resources, the source of our competitiveness. Currently, including expatriates from Toyo-Japan and the staff of our satellite engineering offices, our human resources total about 650 people.

*EPsCm: compared with EPC lump-sum basis, EPsCm is to execute engineering, procurement service, and construction management service on a cost reimbursable basis.

It has been three and a half years since you became President of Toyo-China. How has the company changed during that time?

I set a goal for myself when I became President in 2009: to build Toyo-China into a company able to execute EPC lump-sum projects independently. One year later, in September 2010, we won the first EPC lump-sum project to build an ethanolamine plant in Jiaxing, Zhejiang Province for Honam Petrochemical Corporation, Korea. Since EPC lump-sum projects are more difficult than EPsCm projects, this was a great challenge for us, but we were able to achieve the completion of the project on time. That experience to manage an EPC lump-sum project has become an invaluable asset for Toyo-China. U.S. and European engineering contractors are also operating in China, but most of them cannot handle EPC lump-sum projects. This is an advantage for Toyo-China among Korean, Japanese, and other clients who prefer EPC lump-sum contracts.

So Toyo-China is continuing to steadily evolve?

Yes. I see Toyo-China as currently being in its third development stage. The first occurred during the period from its establishment in 2004 to around 2006. The projects that we were involved in during that stage, such as the petrochemical complex for BASF-YPC (IPS-I) and the fluoro resin project for Daikin Industries, Ltd., were in fact fully managed by Toyo-Japan. Toyo-China only provided manpower as necessary. On the other hand, the IPS-II project for BASF-YPC was representative of our second stage of development. During this stage, manager-class personnel of Toyo-China participated in the team to make decisions.

Now we are in our third stage of development. The construction of a caprolactam plant for DSM Nanjing Chemical Company, Ltd. (DNCC), at Nanjing is a good example of a third stage project. Basically, project execution is mainly handled by Toyo-China. Only when absolutely necessary, key personnel are dispatched from Toyo-Japan. Our next goal is to reach the fourth stage of development, where Toyo-China will be able to completely execute the projects independently till the completion.

Toyo-China's sites under construction

Three Roles in Achieving TOYO's Medium-term Business Plan

TOYO is presently working on its medium-term business plan, NEXT TOYO 2015. What role does Toyo-China play in achieving the goals of the plan?

The main goal of NEXT TOYO 2015 is to increase the consolidated net income, 50% of which is to be realized by TOYO's overseas companies. Toyo-China has three roles to play in realizing that target.

The first role is to win large-scale EPC projects in China and achieve profits. We have to enhance our capability quickly to handle large projects that are around ¥10 billion in scale.

Our next role is to strengthen our capabilities as TOYO's procurement center. We will procure equipment and materials with good quality and at cost-competitive prices in China, take responsibility for delivering them to TOYO's project sites around the world, and manage the delivery schedule and quality control. While there is a growing trend worldwide to procure materials from China, we gain an advantage by acting before this trend becomes universal. I believe that it is our task to stay ahead on procurement in China at full scale.

Toyo-China's third role under the plan is supplying manpower. We have many talented staff members, but most of them are working only on domestic projects in China. I think we need to quickly develop a mechanism whereby Toyo-China's staff can be assigned to projects in Southeast Asia, the Middle East, and elsewhere around the world.

Will Toyo-China continue providing support for market entrance projects by Japanese, U.S., and European companies?

Since its establishment in 2004, Toyo-China's major clients have consistently been private-sector companies from Japan, the U.S.A, and Europe. When making investments in China, these clients generally preferred to select foreign engineering companies well accustomed to the domestic market, rather than Chinese Design Institutes (CDIs).* However, in recent years, CDIs have developed the capability to handle EPC projects independently, resulting in more and more foreign investors selecting them. Today, only if we wait for Invitation To Bids (ITBs), it is impossible to win projects in competition with highly cost-competitive CDIs. Of course, we will continue to support U.S., European, and Japanese companies entering the Chinese market. However, I am aware that the period when we could mainly rely on market entrance projects is already over.

*CDIs: Chinese design institutes are engineering companies in China whose main operations are engineering, but in recent years they have added procurement and construction capabilities.

In that case, where will Toyo-China's business opportunities come from in the future?

Our new target is the domestic private sector. There are many domestic companies in China with abundant capital, but they are unsure of how to utilize it effectively. On the other hand, TOYO has extensive knowledge of products and processes as well as the capability to propose appropriate business plans. I believe that in this market, we will see many opportunities to participate in clients' plans from the beginning stage by helping them decide how to utilize their capital and resources—that is, determining what kind of products are feasible and what kind of returns can be expected. Toyo-China does not have adequate knowledge or know-how because of its short history, but by sharing Toyo-Japan's knowledge of processes and feasibility studies, we intend to actively promote our sales activities to local clients.

So if you start by winning and successfully executing projects in the domestic private-sector, you will be able to have Toyo-China's capability recognized widely in the domestic market?

Yes. For example, there currently are many Japanese companies or their joint ventures constructing plants at Nantong in Jiangsu Province. TOYO is involved in so many projects there that the area could be called the "TOYO Showcase!" The reason behind our success there is a project in 2008 for a Japanese client operating in the region. The client gave us a very high evaluation for our successful completion of the project. They praise us whenever they have a visitor to their plant, saying "TOYO did a great job." Having such a good reputation for our company led to many inquiries from other companies and resulted in the award of new projects. Chinese society places a lot of importance on personal networks, and each success leads to producing new business opportunities.

Polysilicon and Pharmaceutical Markets as Next Development Areas

Will you also be enhancing collaborations with the many CDIs in China?

I think our collaborations with CDIs can be divided into three categories. In the case of large-scale projects, we will continue to be a partner with leading CDIs from China's top ten, as we did on the petrochemical plant projects for BASF-YPC with CDIs of Beijing and Xi'an. While these companies also are competitors, given Toyo-China's limited resources, it is important to maintain friendly relationships with them so we can cooperate whenever necessary.

The next category covers cases where Toyo-China subcontracts the work to CDIs with about 200 to 500 employees for our own projects. On such projects, adding CDI staffs with relatively lower manpower rates to Toyo-China's staff is important to achieving competitiveness.

The third category is when we work with CDIs as manpower suppliers. For example, we might request them to provide us with three piping engineers. Such jobs do not account for a large percentage of our work, but to ensure the smooth execution of projects, these collaborations are also necessary.

With the number of Toyo-China employees increasing as well as expanding collaboration with CDIs, it must be important for you to convey TOYO's business principles, technologies, and know-how to people who have newly joined us.

The human resource development is a key management issue at Toyo-China. At engineering companies, technology is created through the interactions of people. Nothing is the same among 100 different projects. Therefore, applied skills for managing technologies and people flexibly are necessary. At Toyo-China, we have our own training program, called "Toyo College," where we teach those applied skills to people who have newly joined the company. We also prepare the same program for people at our collaborating CDIs with the aim of instilling and sharing TOYO's business principles and corporate culture.

Toyo-China has licenses to carry out EPC business by the Chinese authorities. What is the advantage in holding these licenses?

Toyo-China is a foreign affiliated contractor that holds all three licenses* required for EPC projects. This proves that our company is deeply rooted in the Chinese market, which we present as a strong point. When doing business in China, many kinds of approval are usually required and applying and receiving approval from the authorities is a necessity to proceed with projects. How quickly approval is received can greatly affect the project schedule. Overseas companies entering the Chinese market are aware of these difficulties. Therefore, they often ask Toyo-China, with its experience and know-how, to handle their projects.

*Engineering license, procurement license and construction license

Finally, what are your growth strategies for Toyo-China?

Toyo-China's current goal is to improve our capability to independently execute EPC lump-sum projects worth more than ¥10 billion. Right now, contracts account for approximately half of our ongoing projects. Excellent project managers can handle projects of this size on their own, but projects cannot be handled properly without establishing company-wide procedures and organizations when they exceed ¥10 billion. Creating and setting up systems is an urgent task for the further growth of Toyo-China.

There are two new emerging fields we are targeting for these projects in addition to the existing chemical or petrochemical fields. The first field is polysilicon plants. Although the market has fallen into recession since 2012, we feel that China's polysilicon market, which includes solar power panels, semiconductors, and other products, has great potential. The other emerging field is pharmaceutical plants. We plan to develop this market in China by putting together a collaborative organization with Toyo-Japan.

Profile

Kiyoshi Nakao

Mr. Nakao joined Toyo Engineering Corporation in 1977. Gaining experience in Mechanical Engineering, he worked in Overseas Projects/Proposals before becoming a head of the Mechanical Engineering Group in 1999. He was appointed an Executive Officer in 2004 and contributed to acquiring many projects as the General Manager of the Proposal Division. Following his appointment as General Manager of the Procurement Division in 2006, Mr. Nakao became a Senior Executive Officer in 2008, and was appointed President of Toyo-China in 2009. He led Toyo-China's drive for innovation in the constantly growing Chinese market. Mr. Nakao is scheduled to return to Toyo-Japan and become Senior Executive Officer and Plant Project Division Director in April 2013, and Director of the Board in June of the same year. Ms. Dong Benli, currently Vice President, will take over the role of President of Toyo-China as of April 2013.

A Message from the Vice President of Toyo-China

Enhancing Toyo-China's Market Presence

Developing Human Resources and Building Project Management Capabilities

Toyo-China's Vice President Terry Tan speaks about the company's efforts to raise their presence in the Chinese market.

Terry Tan

Profile

Toyo-China's Vice President and Director, Mr. Tan hails from Singapore. After graduating from Washington State University, U.S.A., he worked for an engineering company in Singapore. In 2002, he joined TOYO. Mr. Tan has over 20 years of experience in the oil, gas, and petrochemical fields. He is currently the head of the Project Operation Division at Toyo-China.

Dow Corning Project Pivotal

The Dow Corning project that started in 2007 was the first large-scale project led by Toyo-China. Up to that point, Toyo-Japan had been in charge of project management. However, Toyo-China took the leading role in the Dow Corning project, assigning its own Chinese project manager, engineering manager and construction manager to execute the job. Toyo-Japan provided strong support by organizing a decision-making team called the "project directorate." Looking back, I think that project was the turning point in Toyo-China's evolution to become an independent engineering company.

Aiming to Be a Reliable Engineering Partner

Since the Dow Corning project, Toyo-China has continued to tackle new challenges in order to evolve. In addition to the IPS-II project, we secured and played a leading role in managing a large-scale caprolactam project for DNCC.* We expanded our business field into new territory—for instance, we began a cooperative research project with a U.S. company holding proprietary in silicon slurry recovery technology. And we received an order for design and construction of a full containment low temperature ethylene terminal for Lanxess, Germany. In other areas, we are forming engineering partnership agreements with major clients to establish our reputation in the market as a "reliable engineering partner." For example, in July 2011, we concluded such a frame agreement with Bayer MaterialScience.

*DNCC: DSM Nanjing Chemical Company Ltd.

Highly Skilled Staff Underpin Toyo-China's Reputation

Toyo-China's reputation for excellence rests on the capabilities of its highly skilled staff. Since the establishment of Toyo-China in 2004, we have built up a team of experienced project managers and their respective line managers who can now execute large-scale projects. Presently, we are developing the capabilities of our staff to handle EPC lump-sum projects, which will further differentiate us in the market. To be even more competitive, we also are implementing effective training regarding project quality, design, and safety. At the same time, we are working on increasing employees' skills in negotiations, communication, and presentations.

Leading TOYO's Global Strategy with High Quality Work

Toyo-China's role within the Group is to contribute to TOYO's earnings growth by doing high quality work for foreign clients planning on entering the Chinese market or for Chinese private-sector companies expanding their operations. Building Toyo-China's reputation within China will, without a doubt, have a positive impact on TOYO's development worldwide. I believe that, by working with Toyo-Japan and other group companies, Toyo-China will be able to demonstrate its capabilities on projects outside of China in the not too distant future. Tackling overseas projects while cooperating globally will provide our employees with an opportunity to grow further and develop themselves.

Formed Business Alliance with U.S. Middough in Bio-pharmaceutical Field

Business alliance signing ceremony

TOYO recently formed a business alliance with Middough Inc., U.S.A., an engineering company with expertise in pharmaceuticals. The alliance will strengthen business development in bio-pharmaceuticals, which have particularly high market growth potential within pharmaceuticals, a field of focus for the Company.

Established in 1950, Middough has offices nationwide in the United States with its head office in Cleveland, Ohio, and a staff of more than 900. It operates a comprehensive engineering business in a wide range of fields, covering architecture, life science, industrial, and process (such as chemical, oil & gas, and refining) businesses. Middough has particular strengths in designing facilities in the bio-pharmaceutical field for all stages from research laboratories to commercial production facilities and implementing cGMPs.*1 It also boasts abundant experience in such biological fields as microorganisms, animal cells, and vaccines.

TOYO has experience with providing Japanese pharmaceutical manufacturers with technologies for building API*2 multi-plants (high-mix, low-volume production), particularly for chemical synthesis production. The Company has also provided technologies for constructing high potency API manufacturing plants that utilize containment technologies. Based on this new business alliance, TOYO will be targeting domestic and overseas orders in the promising bio-pharmaceutical field.

*1. cGMPs: current Good Manufacturing Practices *2. API: Active Pharmaceutical Ingredient

EBR Shipyard Construction Ongoing in Brazil


EBR shipyard image

TOYO and SOG – Óleo e Gás S.A. (SOG), a leading Brazilian engineering company, have established TS Participações e Investimentos S.A. (TSPI). TSPI's wholly owned subsidiary Estaleiros do Brasil Ltda. (EBR) is constructing a module fabrication and integration yard for offshore business, such as FPSO,*1 in the state of Rio Grande do Sul, the southern part of Brazil.

In Brazil, oil and gas is now mainly produced offshore, especially in the pre-salt layer (about 5,000 m beneath the seabed), where many offshore energy development facilities are under planning. The Brazilian government intends to increase requirements for local content ratio and technology transfer, and only local companies such as EBR will be eligible to meet these requirements.

The EBR shipyard is planned for module fabrication and integration for two VLCC*2 class vessels (200,000–300,000 deadweight tonnage) in an area of 1,500,000 m^2. EBR will actively participate in the Brazilian offshore market based on these facilities.

*1. FPSO: Floating Production, Storage and Offloading *2. VLCC: Very Large Crude Carrier

Awarded a Series of Fertilizer Projects

Recently, the demand for fertilizer has been increasing in emerging countries in Asia and other regions. In addition, resource-rich countries have been diversifying the use of their natural gas resources. Against this background, TOYO, with its proprietary urea synthesis technology ACES21®, urea granulation technologies, and strong record in fertilizer plant construction, has been receiving many inquiries and a series of orders for fertilizer-related projects. TOYO expects that demand will increase for nitrogen-based fertilizers, such as ammonia and urea produced using natural gas, and is actively planning to expand its orders in this field.

- TOYO is participating in the construction of a urea plant in Carrasco, Cochabamba, Bolivia, that is being built by the Bolivian national oil company. Scheduled to come on stream in 2015, the plant will have a production capacity of 2,100 tons per day. Samsung Engineering Co., Ltd., Korea, is handling the plant construction, and TOYO is responsible for technology licensing, developing the basic design, and supplying proprietary equipment.

- TOYO is working on an EPC project to build a fertilizer plant for the Indorama Group in Rivers State, Nigeria. Scheduled for start-up at the end of 2015, the plant will be one of the largest in the world, producing 2,300 tons per day of ammonia and 4,000 tons per day of granulated urea, and is TOYO's first project in Sub-Saharan Africa. This project was won as a result of the client's high evaluation of TOYO's FEED* work submitted during the competition for the project that began in October 2011. Construction of the plant is being handled by Daewoo Nigeria Limited, the local subsidiary of Daewoo E&C, Korea, TOYO's consortium partner.


At the Indorama corporate office, Singapore

- A consortium of TOYO and the major Indonesian engineering company PT Rekayasa Industri (REKIND) is building a fertilizer production facility for state-owned Indonesian fertilizer company, PT Pupuk Sriwidjaja Palembang (PUSRI) in Palembang, South Sumatra. Scheduled for completion in December 2015, the plant will produce 2,000 tons per day of ammonia and 2,750 tons per day of urea. REKIND is responsible for the construction of the ammonia plant and the utility facilities, while TOYO will provide the urea plant and its technology licensing. The purpose of the project is to enhance fertilizer production through more efficient use of natural gas by replacing steam boiler fuel with coal produced in abundance locally.

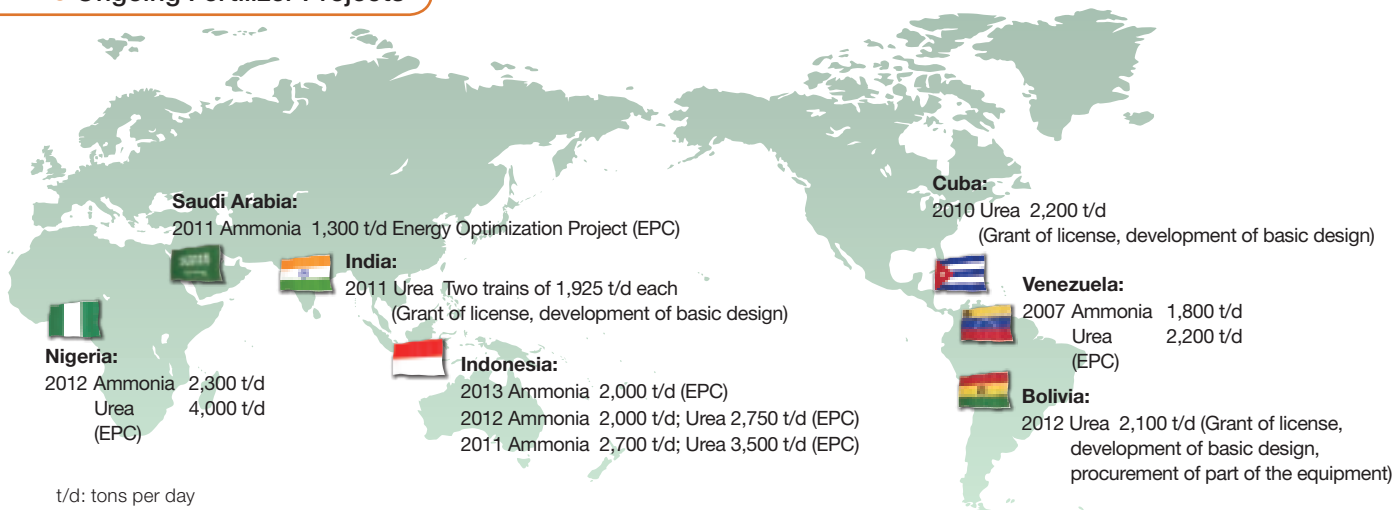

PUSRI fertilizer plant contract signing ceremony

- TOYO is executing an EPC project to build a fertilizer plant in Luwuk, Central Sulawesi, Indonesia for PT. Panca Amara Utama (PAU), a member of the major Indonesian LPG producing company PT. Surya Esa Perkasa Tbk. (SEP). The plant is to produce 2,000 tons per day of ammonia in 2015. This project makes possible the effective use of locally produced natural gas and production of high-value-added products. Its product will be used as a feedstock for urea fertilizer and polyacrylic fiber. TOYO offered various proposals from the initial stage to realize the early implementation of the project, which resulted in being awarded the contract after series of discussions.


PAU ammonia plant contract signing ceremony

*FEED: Front End Engineering Design

Ongoing Fertilizer Projects



t/d: tons per day
EPC: Engineering, Procurement, and Construction lump-sum turnkey project

Note: Years represent the contract years.

Awarded Consecutive FPSO Topsides in Brazil

MODEC and TOYO Offshore Production Systems Pte. Ltd. (MTOPS), a Singapore joint company of TOYO and MODEC, Inc., has been awarded a letter of intent for an EPC contract to install topsides for an FPSO system.

Named the FPSO Cidade de ITAGUAÌ MV26, this FPSO is capable of producing 150,000 barrels of oil per day and 280 million cubic feet of gas per day. The FPSO will be deployed to an offshore oil field, which is under concession to a consortium comprised of four companies including Petróleo Brasileiro S.A. (Petrobras). The offshore oil field is located in the pre-salt layer about 5,000 m beneath the seabed in the Iracema North area, 300 km off the coast of Rio de Janeiro. The FPSO will be installed in the area in the fourth quarter of 2015. This is TOYO's seventh FPSO project, following the MV24 project awarded in March 2012.

Integration of topside units at shipyard

In addition, under the umbrella of the June 2012 established Brazilian joint company TS Participações e Investimentos S.A., Estaleiros do Brasil Ltda. is approaching to Brazilian companies on winning FPSO orders.

Oil Refinery Modernization Project in the Republic of Tatarstan

Rustam Minnikhanov, President of Tatarstan (left), and Albert Shigaboutdinov, General Director of the TAIF Group (right), at the solemn ceremony of foundation-stone laying into the basis of the plant.

TOYO will execute the detailed engineering and procurement for an oil refinery modernization project by TAIF-NK, one of Russia's leading oil refining companies. The company is a member of the TAIF Group of the Republic of Tatarstan in the Russian Federation. In modernizing its refinery in Nizhnekamsk, TAIF-NK will be using the VCC* technology of KBR, Inc., U.S.A., in a large-scale heavy residue oil cracking facility for the first time in the world. The modernized facility will be able to convert 2,700,000 tons per year of vacuum residue and 1,000,000 tons per year of vacuum gas oil. Not only will the plant achieve a high conversion rate in producing high-value-added and high quality petroleum products, it will also produce raw materials for petrochemicals. Completion of the modernization is scheduled for 2016.

Refineries in the Russian Federation face the urgent task of introducing facilities to upgrade the quality of heavy oil due to impending policy changes. The Russian government is planning on ending preferential tax treatment for heavy oil exports in 2015, with the goal of increasing the high-value-added content of oil exports and bringing domestic gasoline quality in line with Euro 5 environmental standards.

TOYO's strong reputation for heavy oil upgrading technologies and its record in the region led to winning this contract. Since the 1960s, TOYO has built a record of participation on over 60 plant construction projects, mainly in Russia and Commonwealth of Independent States (CIS) countries.

*VCC: Veba Combi Cracking

Overseas Group Companies Win Large-Scale EPC Contracts

Toyo-Malaysia has won an EPC contract to rejuvenate and revamp the No. 4 gas processing plant of PETRONAS Gas Bhd. (PGB), a subsidiary of the Malaysian national oil company PETRONAS. Located in Kerteh, the state of Terengganu, the plant has a capacity of 250 million cubic feet per day. Based on basic design work provided by TOYO, the project will extend the life of the plant another 20 years. Completion of the project is planned for the end of 2015.

TOYO's excellent track record for various PGB projects since the construction of the No. 1 plant in 1983 and PGB's high evaluation of TOYO's FEED for rejuvenation and revamp led to winning the new contract. This order follows the award of a contract to build a Flare Gas Recovery Unit for one of PGB's gas processing plants in 2012, and represents Toyo-Malaysia's largest project yet.

Another overseas group company, Toyo-Korea, won an EPC contract to build a plant for Korea Petrochemical Ind. Co., Ltd. (KPIC), at Ulsan, southeast Korea. The plant will have a capacity of 80,000 tons per year of EO*1 and 205,000 tons per year of EG.*2 It will be constructed using the licensed technology of Scientific Design Company Inc. (SD), U.S.A., and is scheduled for completion by the end of May 2014. TOYO has constructed 13 EO/EG plants globally based on SD's technology, including two units in Korea.

TOYO aims to provide clients with competitive services rooted in their countries and regions through its overseas group companies.

*1. EO: Ethylene Oxide *2. EG: Ethylene Glycol

Contract signing ceremony in Malaysia

Contract signing ceremony in Korea

Project for Seven Electric Power Plants in Thailand Reaches Peak

The GKP1 electric power plant, located in Saraburi Province, was the first electric power plant completed out of seven plants now under construction in Thailand. The plant has a 110 MW capacity and began operating commercially in January 2013. TOYO, jointly with Mitsui & Co., Ltd., is building seven electric power plants for Gulf JP Co., Ltd., whose majority is owned by the Electric Power Development Co., Ltd., Japan.

The project is to construct seven gas-fired combined cycle electric power plants at sites located in the suburbs of Bangkok. Five of the plants will have a capacity of 110 MW and the other two plants 120 MW for a combined power supply of 790 MW. The project is being run by Mit-Power (Thailand), Ltd., Mitsui's local company. All plants are scheduled to be on stream in sequence by October 2013.

Each plant will commit to selling a portion of its electric power to the Electricity Generating Authority of Thailand (EGAT) on a wholesale basis for 25 years under Thailand's SPP Program.* Remaining electric power, steam, and chilled water will be also sold directly to the companies in neighboring industrial parks.

GKP1: the first completed plant in the project

*SPP Program: Small Power Producers Program

Groundbreaking Ceremony Held for Specialty Chemical Plant in Germany

In October 2012, Hi-Bis GmbH, a joint venture by Honshu Chemical Industry Co., Ltd.; Mitsui & Co., Ltd.; Mitsui & Co. Deutschland GmbH; and Bayer AG, held a groundbreaking ceremony for a 5,000 ton per year special bisphenol plant in Bitterfeld, state of Saxony-Anhalt in eastern Germany. The ceremony was attended by Dr. Reiner Haseloff, Minister-President of Saxony-Anhalt, and Mr. Takeshi Nakane, Japan's Ambassador to Germany.

The special bisphenol produced by the new plant will be used as raw material for the production of high heat resistant special polycarbonate resin. Hi-Bis GmbH will produce and sell the product to Bayer, mainly targeting growing demand for use in automobiles. The project follows a previous project of a 5,000 ton per year bisphenol plant completed by TOYO in 2004. The new plant is scheduled for completion in March 2014.

Groundbreaking ceremony

Awarded Food Flavoring Plant Project in Indonesia

TOYO, jointly with its Indonesia affiliate PT. Inti Karya Persada Tehnik (IKPT), has been awarded a project to build a food flavoring plant in Indonesia by P.T. Ogawa Indonesia. The plant will be constructed in the Karawang International Industrial City near Jakarta for the local subsidiary of Ogawa & Co., Ltd., Japan, and is scheduled for completion by the end of May 2014. Ogawa has been operating production facilities in Indonesia for more than 17 years. The company has decided to expand its production facilities in view of growing demand in Southeast Asia, including the notable growth in Indonesia.

Before this project in Indonesia, TOYO completed a plant for the same group in the Songjiang district of Shanghai, China. The order was received in 2011, and the plant was completed as originally scheduled in December 2012. It is currently in the commissioning phase, with commercial operations to start in April 2013. TOYO earned the client's trust on the China project, and is eager to complete the Indonesia project successfully.

Plant in China completed December 2012

Completion Ceremony Held for Highly Potent API Plant

In January 2013, Shionogi & Co., Ltd., celebrated the completion of a highly potent API plant at its Tokushima facility. TOYO handled the engineering, construction and project management for the new plant, which has a total floor space of 1,530 m^2. The completion ceremony was attended by Isao Teshirogi, President and Representative Director of Shionogi, representatives of the city and prefecture of Tokushima, and many other guests.

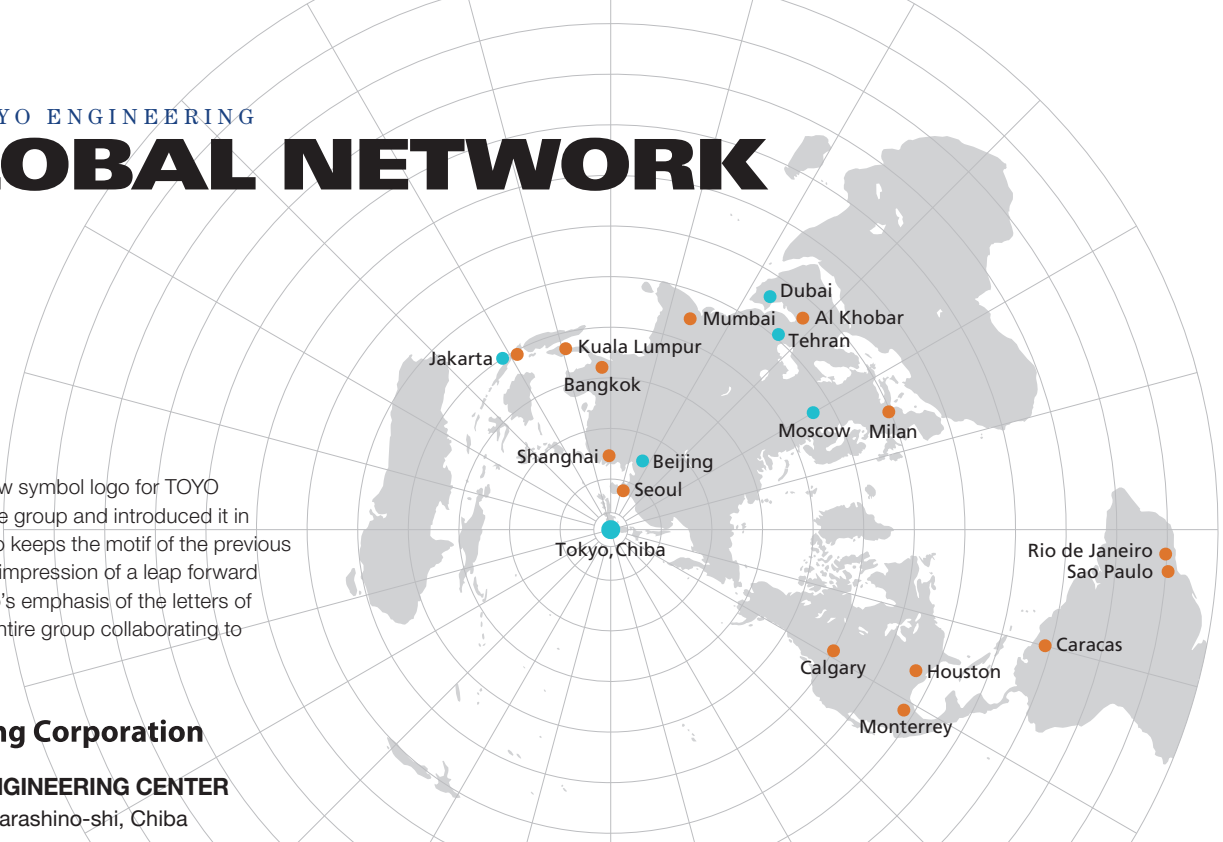
Highly potent API plant

The new state-of-the-art multi-plant was built to produce INDs,*1 or early commercial production stage highly potent APIs. The manufacturing processes used by the plant conform to both domestic and international GMP*2 standards for pharmaceutical manufacturing. From the perspective of worker safety, the plant has been fitted with special equipment and systems for the containment of highly potent substances.

In the future, demand for pharmaceutical plants that can safely manufacture highly potent APIs is expected to grow. TOYO plans to focus on winning more engineering services projects in this field.

*1. IND: Investigational New Drug
*2. GMP: Good Manufacturing Practice

TOYO ENGINEERING GLOBAL NETWORK



We have designed a new symbol logo for TOYO commonly applied in the group and introduced it in July 2012. The new logo keeps the motif of the previous logo while inspiring the impression of a leap forward into the future. The logo's emphasis of the letters of TOYO symbolizes the entire group collaborating to achieve new growth.

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