



Thaioil shaping new breed of engineers through ChEPS on-site training program

With the global marketplace being driven by ever-growing economic competition, Thailand is focusing its development strategy on building a skillfully trained local workforce. Public and private sectors alike are eager to invest in building development knowledge to enable their effective participation in the global economy on a sustainable basis. Scientific and technological knowledge in particular have been identified as areas critical to social and economic development.

Established almost five decades ago as Thailand's first oil refinery, Thai Oil Public Company Limited ("Thaioil") has progressed alongside the country's development. With its core petroleum business securely strengthened, the Company has expanded downstream into the comprehensive petrochemical industry as well as diversified into marine transportation and power generation operations. These are all basic industries that are integral to the economic growth of the country.

Thaioil is today one of the leading refineries in the region and utilizes the most advanced technologies similar those being deployed by other forefront refineries around the world. Its technological capabilities make the Company a potential knowledge hub. Thaioil has, therefore, been a staunch, albeit low-profile, supporter of the Chemical Engineering Practice School ("ChEPS") program for nearly ten years. This is a Master's degree program under the collaboration of two top science and technology academic institutions in Thailand and the United States: King Mongkut University Technology Thonburi ("KMUTT"), and Massachusetts Institute of Technology ("MIT"). Thaioil is one of many enterprises on-site training and experience in an industrial setting.

ChEPS bridges classroom theory and real-world challenges

"We were the first to launch the ChEPS program," explained **Dr. Krissanapong Kirtikara**, Dean of KMUTT. "It opened up a new world to engineering postgraduates who were familiar with learning from the comforts of a classroom and by memorizing textbooks, listening to lectures, writing reports, sitting for exams, and researching in labs. But knowledge taught in a classroom environment is effective only up to a certain level. We can now bridge that gap between theory and practice to complete the training process with the support we are receiving from the industrial sector for the ChEPS program.

"Thaioil was one of our corporate pioneers who offered their facilities as a practice school station from our very first class up until this year's sixth class. The feedback from industrial employers has been most

encouraging: ChEPS engineers are well-educated professionals with good working experience and English skills, fully qualified to meet the requirements of the industrial sector.”

Thaioil invests 50 million baht in building professional capacity with no strings attached

Thaioil's philosophy underscores the achievement of business growth without sacrificing social responsibility. At the same time, the Company fully recognizes that knowledge in science and technology are integral to the development of Thailand's industrial sector. Thaioil, therefore, makes it its responsibility to support and encourage continuous learning in young adults in order to produce quality professionals with accomplished qualifications, while also maintaining its focus on environmental and social responsibilities.

Thaioil has so far allocated 50 million baht to sponsor the ChEPS program since 1997. The Company participates in the program as a practice school station to train engineering postgraduates by putting them to work in real industrial situations. Thaioil also manages the training, determines the curriculum, provides class instructions, acts as program advisor, and offers scholarships free of any obligations.

“Scientific innovation and technological knowledge are the key tools to drive development in Thailand,” stated Dr. Piti Yimprasert, Managing Director of Thaioil. “We must therefore do all we can to invest in human capital. We recognized early on that, to achieve this goal, we must transform knowledge base into practical knowledge in depth and breadth. We require our engineers to have the ability to apply their knowledge and potential into practical use on the job, the maturity to analyze and solve problems at hand, and the flexibility to work as a team. Up until now, these qualifications have been mostly lacking in new graduates and it was our job to train our recruits in these areas. During the time Mr. Kasame Chatikavanij was Chairman and Managing Director of Thaioil, we sent new members of our engineering staff to attend the Masters program at the Imperial College in the United Kingdom. We sent three to four classes of about ten people in total. These engineers have returned and gone on to become key members of the Company.

“When we realized the benefits of participating in human resource development from an early stage, Thaioil offered to provide ChEPS students with on-site training. Under real situations at our refinery facility, students learn to formulate work plans, solve problems in the work process as well as in the manufacturing process which affects modifications being made to reduce production costs, and study the viability of new projects. Each step is a valuable learning process. The students are supervised by their professors and closely looked after and guided by our process engineers. The Company also encourages our executives and engineers to participate as invited lecturers to teach engineering management in class. Our efforts supplement classroom teaching to make the learning experience and knowledge more comprehensive.”

Dr. Piti added that: “This year, Thaioil is providing two scholarships to ChEPS students in the amount of some two million baht. We view this as part of our social responsibility because we are funding the production of well-educated and well-trained engineers. More importantly, the scholarships are offered free of any obligation. Six ChEPS graduates have so far opted to work at Thaioil and their performances have been very satisfactory. I believe this program is beneficial to the industrial sector because it has the capacity to produce qualified engineers who can create innovations to fuel the country's sustained growth, such as developing an energy cost-saving project, or a project that promotes greater energy efficiency by Thailand.”

Mr. Teerajate Boonpayoong, a ChEPS graduate currently an engineer with Thaioil, gave his opinion that: “The gains from this program are countless. The experience offered us the opportunity to take part in a leading enterprise, work with qualified personnel, have access to refining technology and information technology systems and resources, as well as the chance to present our projects to Thaioil's executives for comment as in real working life.

“We also learnt about teamwork from both the perspective of a team leader and team member,” added **Mr. Teerajate**. “More importantly, we received training to enhance our analytic and problem-solving skills with advice and guidance from Thaioil's officers on how to apply the theory learnt in class to practical use in order to achieve the objectives of the project. In addition, we were given access to Thaioil's housing and sport facilities, and were well looked after by our supervisor and other refinery staff at Thaioil. The skills

assimilated from this program far exceeded the theories taught in class, and have proved very valuable to me."

Thaioil stands firm behind success, offering knowledge and experience

Dr. Hong-ming Ku, Director of ChEPS said: "This pilot program by KMUTT has been very successful given the cooperation of leading enterprises in offering their facilities as practice school stations. Thaioil, for example, has been very committed to the two-year program. First-year students learn basic subjects and undertake a research project based on real refinery problems. Second-year students develop practical skills under the close supervision of on-site professors and Thaioil officers. Were the support and scholarships provided to be calculated in monetary terms, it would come to a very high amount. But we are getting in return very capable research engineers with great potential to help develop Thailand's oil and petrochemical industry in future years."

ChEPS graduates have proven that they have the qualifications to succeed in the industrial sector. The program is, therefore, a good model for early development of human resources. Not only does this model of education save time and resources that would otherwise be spent later on in skills training, it will also yield benefits to the country in the long run by answering industry needs. Particularly in this age of globalization and intense economic competition, the government and the industry must combine forces to earnestly develop national capacities. Only then can we hope to produce a professional workforce with the capability to create and adapt scientific advances and technological innovations for industrial application, and achieving sustainable growth for the sector and the country.

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