

Insight!



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MPRL E&P Newsletter

26th June 2020



Drill ship testing the Pyi Thit well in Block A-6

“Insight” into Offshore Block A-6 Ultra-Deepwater Development Project

Myanmar Offshore Block A-6 Development Project is very important for the future of MPRL E&P and the country of Myanmar, not only because of the economic benefit but also because of the role it plays in the development of Myanmar's technical capabilities. With this being the first and only ultra-deepwater development project in Myanmar, it provides a unique learning opportunity for all involved in the project. In fact, it is more than an opportunity for MPRL E&P. It is our company's core value and long-term expectation to develop MPRL E&P as the one and only deepwater exploration and production company run and managed entirely by Myanmar national staff, and to function as the future Operator of A-6 Project as well as other offshore operations.

Therefore, in the interest of knowledge sharing, an article on Block A-6 Project will appear in each issue of Insight! for the foreseeable future. The goal is to create a better understanding of the A-6 Project and the technology that has been developed over time, which allows such a project to become a reality.

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Your Opinion : What is your Reflection on Recent Coronavirus Pandemic?

Thiri Win

Junior Coordinator (Legal and Compliance)
Compliance Department



I remember having the worst natural disaster which affected our country: Cyclone Nargis. It hit the Irrawaddy delta and Yangon Region on May 2, 2008. The storm caused the most casualties in the history with an official death toll of over 130,000 and destroyed our country's infrastructure. The second worst thing in my life is the current global COVID-19 Pandemic. This significantly impacts my daily routine like going to the office, shopping, dining outside, and attending social gatherings with friends.

At present, many factories, shops and workplaces are either partially or fully closed due to the pandemic, and not only are workers and employees suffering from losing their jobs but also business owners are struggling to survive. I really express my thanks to the doctors, nurses, healthcare workers and volunteers who are in the frontlines confronting and combating the virus. We are sending them prayers, while following the instructions and guidelines from government to stay home. To remain healthy, and to prevent and control the pandemic, I am exercising regularly, keeping a nutritious diet, and sleeping well at home. We need to have strong immune system. Now people are using social media more effectively and even our government's personnel are using social media to communicate with citizens and staff as it is easy to reach everyone, especially during this period.

Beyond the crisis, there will be more digitalization, online services and people will be using the internet more effectively by sharing and getting information from reliable sources. I also believe that this will help to accelerate the transformations of a quicker E-Government System. Finally, I strongly believe that we can overcome this crisis together with unity and perseverance.

Be strong and stay safe! ■

Htin Kyaw

Field Technician
Field Operations Department



The outbreak of Coronavirus Disease, also known as (COVID-19) originated in Wuhan, the capital city of Hubei Province in the People's Republic of China in December 2019. The momentum of the transmission of the disease is getting worse around the world, the World Health Organization (WHO) on March 11, 2020, declared the COVID-19 a global pandemic. Like the rest of the countries in the world, unfortunately, Myanmar found its first COVID-19 positive patient in March.

As soon as I heard the news of positive cases in Myanmar, I was working in Mann Field, so I called my family to take necessary and strict preventative measures and to follow the regulations set by the government and health authorities: frequent and systemic handwashing, and not to go outside unnecessarily. As I was on duty at Mann Field, I also followed rules set in the camp, like washing my hands, wearing a mask and keeping a social distance of six feet.

In my view, staying at home as much as we can during this period is the best and safest option, but for those who need to go out for a living must take necessary precautions not to catch the virus themselves. I have read news on the shut-down and pending status of most local and global businesses, portraying the severe impacts on every industry worldwide, not to mention our country Myanmar alone. Starting with me and you, we can slow transmission by being responsible. Hopefully, a breakthrough for the vaccine should be found soon, which can help cure positive tested patients, and return them to a normal and stable life. Lastly, I wish each and every one in the entire world to be free from the worries and fears of the virus. ■

Insight!

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Raising Awareness on COVID-19 among Communities in Mann Field in Cooperation with the Department of Health (Minbu)



Raising Awareness on COVID-19 among Communities in Minbu in Cooperation with the Department of Health (Minbu)



COVID-19 Donation Drive by MPRL E&P's Employees to Minbu General Hospital, Man Kyo Community Health Center, and Mei Bayt Kone Community Health Center





THINKING ALOUD with

U Thein Naing Win

Department of Agriculture (Minbu Township)



Kindly introduce yourself first.

I am U Thein Naing Win, Township Head of Department at the Department of Agriculture (Minbu Township).

How does the Department of Agriculture (Minbu Township) work together with MPRL E&P's CSR Program in order to launch agricultural initiatives that can support the livelihood activities of the farming communities in Mann Field?

The cooperation between MPRL E&P's CSR Program and the Department of Agriculture (Minbu Township) commenced in the fiscal year 2018-2019, and MPRL E&P's CSR Program contacted us as the farming households in Mann Field would like to seek support from us according to their needs assessment activities that explore the needs and concerns of the local communities in Mann Field. Since then we have been working together to introduce good agricultural practices (GAP) and to produce region-suited quality seeds among the community small holder farmers.

What are the policies, programs and co-operation that the Department of Agriculture (Minbu Township) is promoting in an effort to boost the agricultural sector in the region?

In terms of policies, the Department of Agriculture (Minbu Township) sets its sights on increasing regional agricultural productivity, lifting socio-economic standards of farmers through marketing of quality crops, promoting (access to) GAP and agricultural produce that are safe and healthy for consumers in the country. In this regard, its initiatives include producing and distributing quality seeds for the farmers in the region, training and knowledge sharing on modern agricultural techniques, and conducting agricultural research projects.

Is there a plan for long-term cooperation with MPRL E&P's CSR Program in Mann Field? Would you like to share any reflection on the initiatives implemented up to now, including challenges and success?

The Department of Agriculture (Minbu Township) intends to continue working side by side with MPRL E&P's CSR Program for the farming communities in Mann Field. We started with a 4-acre chickpea farm that aimed to produce quality seeds (Chickpea Yaysin-12 which is a winter crop) with the involvement of four growers from Mann Field during the fiscal year 2018-2019. We were able to extend to 23 acres in the following fiscal year 2019-2020. We are now working with a total of 48 farmers from Lay Eain Tan Village to grow 87 acres of sesame (which is a summer crop) using GAP.

There are several challenges to tackle concerning the region's agricultural sector- (1) low agricultural output due to climate change, (2) labour shortage, and (3) low market prices at the time of harvest.

During these two fiscal years, we helped set up a community-based seed bank (which is a type of gene bank that intends to preserve the region's genetic diversity). As a result our farmers in Mann Field were able to secure region-suited quality chickpea seeds at a reasonable price in time for their winter growing season. This is a success story I would like to share here.

Currently we are carefully documenting the progress of the four associations formed with the 48 farmers who are growing 87 acres of sesame this

summer. Our farmers will be able to secure good prices for their yields to develop their livelihoods further, and hence living standards, by leveraging these associations. Based on the success of the results of using the GAP in these sesame plantations, we will continue to expand the coverage in the area.

Since Myanmar Economy is agriculture based, what is the role of private entities in promoting the agricultural sector within the region?

I have worked at the Department of Agriculture (Minbu Township) as the Township Head of Department since 2012. During these periods, the Department has cooperated with a range of non-governmental organizations such as NAG, RFDA, My SFDA, P4 ICCO, Safe Crops, and MPRL E&P to support the region's agricultural sector. All these entities carry out a variety of activities to address the needs of farming communities in cooperation with our Department on non-profit basis-including but not limited to providing seeds and technical support, knowledge sharing on agricultural techniques, assistance in selling produce in a cooperative manner, supports to disaster affected farming households, and ensuring production of safe and healthy fruits and vegetables by regional farmers. There have been many benefits that farming communities have received from these activities. I desire to see such cooperation in the region. ■



Urgency of Vocational Education for Youth Development & Employment

Thal Sandy Tun



Student : Myat Thu Maung
Village : Pauk Kone
Course : CAD/CAM (Computer-Aided Design & Computer-Aided Manufacturing)



Student : Yarzar Aung
Village : Man Kyoe
Course : Automobile Maintenance



Student : Zayar Phyto
Village : Man Kyoe
Course : Automobile Maintenance

Vocational education forms an integral part of human resources development, allowing individuals to contribute to their community economically and socially through acquired employable skills. This can also be called “technical training” or “career education” which is as valuable as a university or college degree.

Given Myanmar’s young population (aged 15 to 34) who make up more than a third of the total population of 54 million, vocational education in Myanmar has become a solution to bring about nation-wide development. By investing in our youth skill development, we can help strengthen vocational education in the country to develop a skilled adult labor force outside of university systems that can support sustainable economic development.

Recognizing this, MPRL E&P’s CSR Program in Mann Field initiated its first educational assistance for youths from the surrounding communities to attend the No. (5) Industrial Training Centre (Magway) in the fiscal year 2019-2020.

One student who benefited from the initiative was Maung Yarzar Aung from Man Kyoe Village who was enrolled in Automobile Maintenance for 11 months. He said, “It is really important for young people like me to be able to get vocational training. It will enable us to enter the job market confidently and also support our families later. I tried hard to be able to complete the course successfully where we have been trained in not only practical skills but also extracurricular activities which have enhanced our teamwork and interpersonal communication skills.”

Another youth from Man Kyoe, Maung Zayar Phyto, enrolled in the same course out of personal interest and for a better chance at employment. “We have been trained to drive a car, understand its systems and maintenance, as well as how to use a computer -- an essential skill in today’s work culture. The dual training system was 70 percent practical training and 30 percent classroom learning. It’s also quite important that we lived up to the rules set by the centre. I learned about MPRL E&P’s CSR Program through our Community Volunteer and I am very glad I became a beneficiary.”

Maung Myat Thu Maung from Pauk Kone Village joined the CAD/CAM course at the centre. He considered that youth from Mann Field communities could also benefit from attending vocational courses at the centre located in Magway. “Getting a formal job after graduating is a challenge for youth everywhere in Myanmar as they do not have the practical skills and experiences employers are looking for. MPRL E&P’s CSR Program has been beneficial for our communities in Mann Field including this assistance to us especially,” he said.

With regard to their employment plans, they have differing ideas. Maung Yarzar Aung considered putting his skills into use while Maung Zayar Phyto applied to become a government or a company employee. It is no wonder some might consider migrating to apply their skills more effectively. Maung Myat Thu Maung from Pauk Kone Village voiced, “I would like to work in a private organization in Myanmar. Otherwise, I am interested in finding overseas employment opportunities like going to Japan to work.”

MPRL E&P’s CSR Program intends to support a new group of community youths to study at the No. (5) ITC in Magway as well as No. (4) ITC in Pakokku in coming months.

About No. (5) Industrial Training Centre (Magway)

The centre is located in Magway and is run under the Ministry of Industries. It offers a variety of vocational courses in cooperation with KOICA to support youth skill development all over the country.

Fact Check:

Countries with well-developed vocational training systems such as Norway, Finland, Switzerland, USA, and Germany topped the Human Development Index. It indicated, that countries should strive to utilize the full potential of their human resources by doing more to nurture and develop people’s knowledge, talent and skills as these can lead to positive social and economic outcomes. A potential challenge for vocational training may be of the view that it is meant for people from low socio-economic classes which is not entirely true. ■



"It is really important for young people like me to be able to get vocational training. It will enable us to enter the job market confidently and also support our families later"

MPRL E&P Submitted “Two” Environmental Monitoring Reports to Environmental Conservation Department (ECD)

Nay Myo Aung

The extractive industry – drives economic growth across the world. However, these benefits come at a cost.

There is increasing momentum in private sector and government circles to improve environmental performance of the extractive industry. A number of companies are striving to develop robust environmental practices and industry associations have developed and disseminated best practice guidance on environmental management.

What is Environmental Monitoring Program and why is it critical?

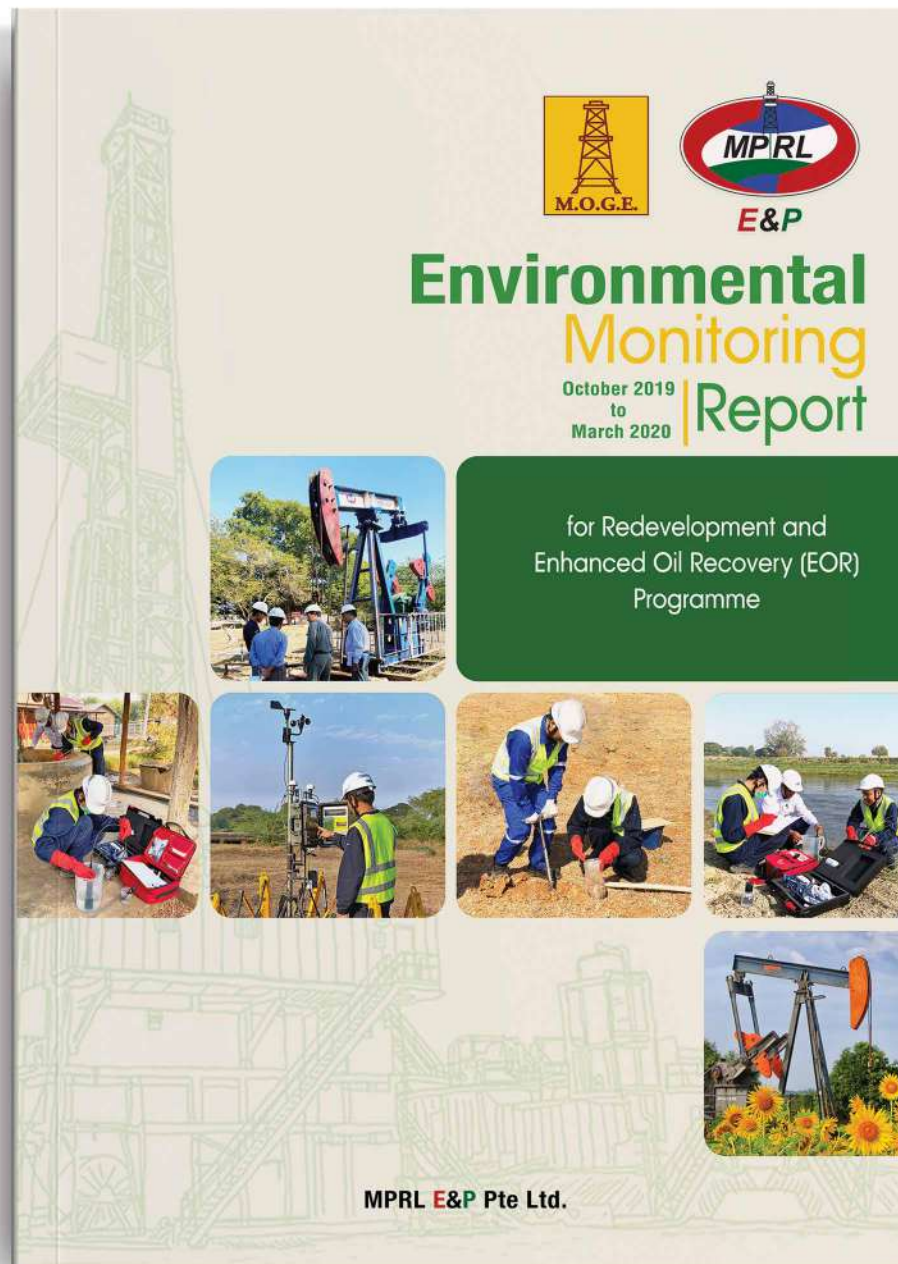
Environmental Monitoring is critical to know whether the quality of our environment is getting better or worse. It is designed to help us understand the natural environment and protect it from any negative outcomes of our production operations activities and human activity as well. The process is an integral part of environmental impact assessments and results can directly determine whether or not projects are given the all-clear. Environmental monitoring assessments involve establishing a baseline quality, uncovering environmental trends, identifying any variations, determining the success of projects and confirming whether or not environmental goals have been met.

MPRL E&P has been undertaking production enhancement operations in Mann Field for nearly 25 years while improving field production and environmental management practices. MOGE, MPRL E&P, and all stakeholders involved the first achievement of the Environmental Compliance Certificate for the project in onshore oil and gas industry in Myanmar. The project is committed to monitoring and managing its surrounding environment so as to reduce environmental impacts which may arise from the project operations activities. To control the adverse impacts on ambient air, ground water, surface water, noise and soil, regular monitoring and management on required parameters of the ESIA report has been accomplished to produce the environmental monitoring report on the basis of monitoring through a third-party contractor and ECD in the Mann Field.

What is Baseline Survey and how we select the monitoring points?

Environmental Baseline Study surveys determine the characterization of an area prior the development of a project and establish the initial environmental status. An overview of environmental baseline features for Mann Field is presented in the ESIA Study. The main parameters described include:

- Physical environment, including climate and meteorology, geomorphology, geology, noise, air, surface water, groundwater and soil quality



- Biological environment, including terrestrial habitats as well as the associated flora and fauna including avifauna, butterflies, herpetofauna, mammals and aquatic fauna.

Information on the above parameters has been collected through desktop review of publicly available information. Primary data collection has also been undertaken in May 2015 to establish the baseline physical and biological environment of the project area. Baseline field surveys of ambient air quality, noise quality, surface water quality, groundwater quality and soil quality were conducted in May 2015 (wet season) within Mann Field. The baseline data obtained have been used to characterize the project area and informed the assessment of potential environmental impacts from the proposed re-development and EOR activities at Mann Field.

The selection of monitoring points for Ambience air quality & noise quality, the designated monitoring stations are chosen to assess the potential impacts to the Air Sensitive Receivers (ASRs) in the project area based on the study of environmental specialists.

For surface water and groundwater quality, survey points were chosen to represent baseline water quality at Water Sensitive Receivers (WSRs) within the wider Mann Field area where the project will be implemented. The soil sampling locations were chosen as close as practicable to the existing producing wells within Mann Field.

How we manage environmental monitoring process?

As per our commitment, MPRL E&P has commissioned Advancing Life and Regenerating Motherland (ALARM) to undertake the environmental monitoring for the project. The environmental monitoring reports involve progress of implementing the Environmental Management Plan and monitoring activities with the parameters of ambient air quality, noise, surface water, groundwater, soil and these results compared to verify compliance against with all the indicators and standards set in the National Environmental Quality Emission Guideline (NEQEG).

The monitoring report also presents an overview of CSR initiatives that have been implemented in our communities around Mann Field in an effort to manage our social impacts in a mutually beneficial way:

- Vocational Empowerment for the Locals
- Community Livelihood Development Programs
- Mobile Clinic Program for the Medically Underserved Communities
- Education Partnership Program between MPRL E&P and No. (5) Industrial Training Centre (ITC-Magway)
- The effective function of the Mann Field Operational Grievance Mechanism (OGM), Social Management Audit, regular stakeholder engagement activities
- Capacity Building Initiatives for Village Development Committees (VDCs) and Community Volunteers
- Community-led Waste Management Program
- Trash Hero Minbu Clean-ups
- Awareness Raising on the Importance of Proper Waste Management
- Awareness Raising Campaign on COVID-19 staged by MPRL E&P in cooperation with Department of Public Health (Minbu) for the 14 surrounding villages in Mann Field and in Minbu Township.

MPRL E&P submitted the second environmental monitoring report to ECD as per ECC guideline and will continue conducting its responsible business practices related to managing environmental monitoring process, implementation of environmental management plan and creating shared environmental monitoring results with progress for the host community in Mann Field in line with all applicable laws, regulations and principles as a leading oil and gas company in Myanmar. ■

The History and Importance of Natural Gas

Brian Logan

Introduction:

Many people know about MPRL E&P’s role in discovering the gas reserves in the Block A-6 and the ongoing ultra-deepwater development project. But few people know how natural gas became such an important part of the world’s economy and energy supply, and why it is the fastest growing source of energy today. This article will explain the history of the natural gas industry; how it got started, why it was slow to mature, and the role that LNG is playing in the current industry expansion. It will also explain the current status of the natural gas industry in Myanmar, and the impact of the A-6 Project on Myanmar’s development. The overall objective is to develop an appreciation for the A-6 Project and the role that it will play in Myanmar’s energy future.

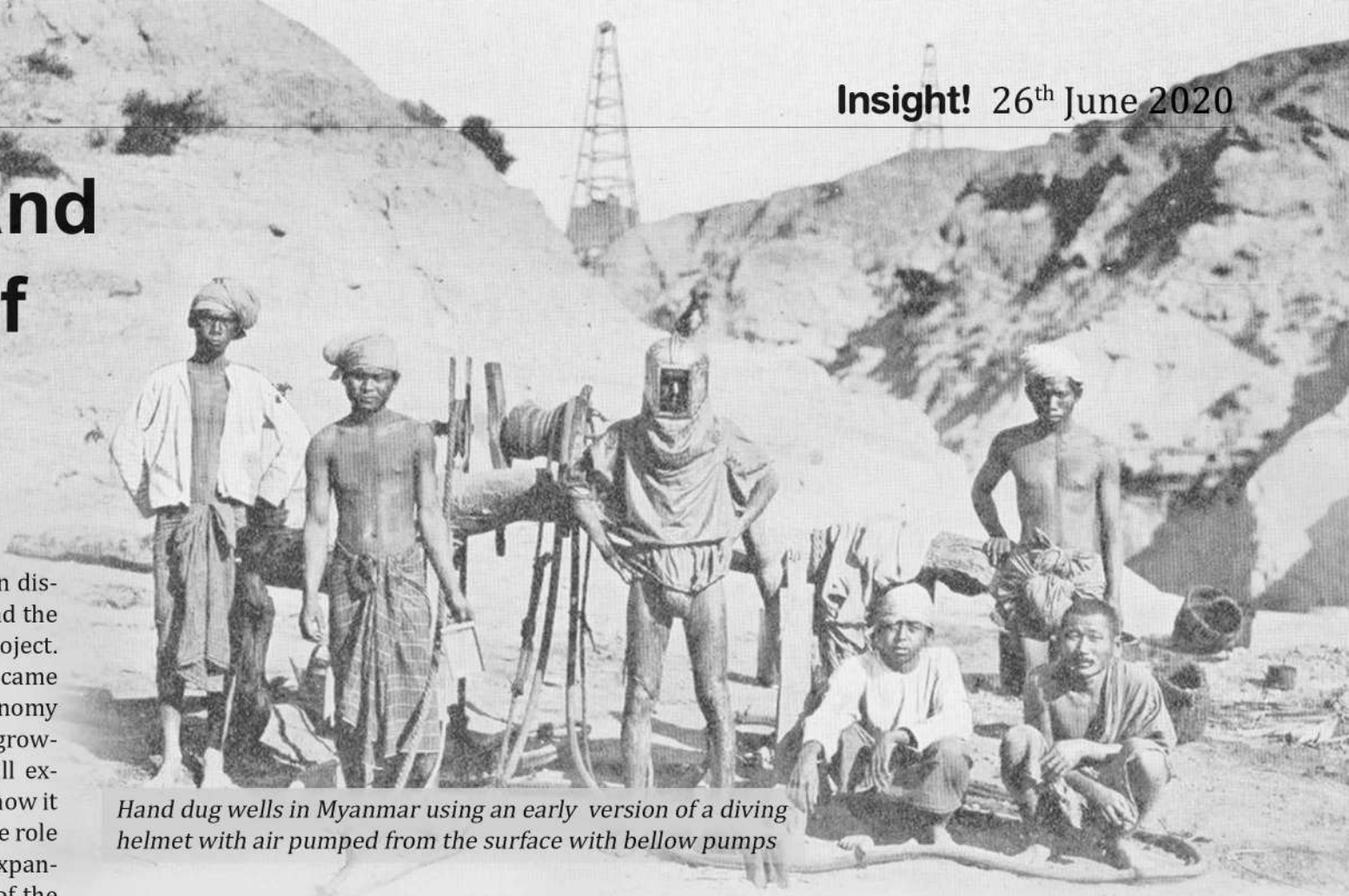
History of the Natural Gas Industry:

Natural gas is nothing new. It is a naturally occurring product that existed on earth long before the presence of mankind. However, it took people a long time to understand what it is and how to use it for their benefit. The history of natural gas production and use covers more than 3,000 years, from ancient times when natural gas was a magical and mystical phenomenon to modern day developments using state-of-the-art technology.



LNG Tanker

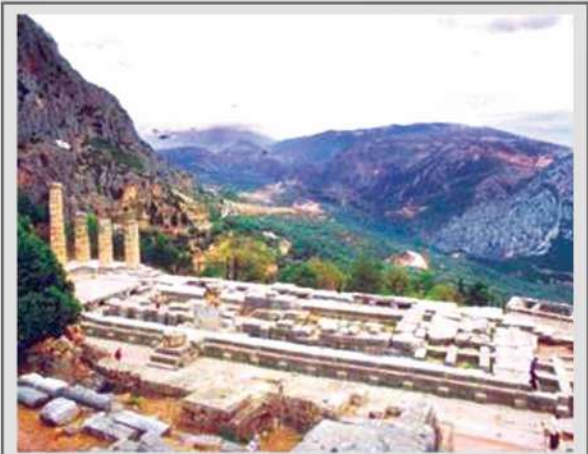
Despite being recognized for more than 30 centuries, it wasn’t until the very recent past that natural gas became a leading industry. The major reason for the slow industrial growth was the challenge of transportation. The reliance on pipelines and the inability to transport gas overseas limited natural gas usage to areas nearby the source. Therefore, many areas with high demand were isolated from the supply, and unable to use natural gas despite their need. With the development of LNG (Liquified Natural Gas), whereby gas is cooled to the point of liquification so that it can be transported as liquid cargo on ships, it is now possible for gas to be distributed to all regions, including the areas with high demand but limited supply. The development of LNG technology provided access to the worldwide market, and is the main reason for the sudden growth in the natural gas industry in recent years.



Hand dug wells in Myanmar using an early version of a diving helmet with air pumped from the surface with bellow pumps

The Historical Timeline of Natural Gas:

There is an old saying, “You don’t know where you are going until you know where you’ve been”. The following timeline takes you through the 3,000-year history of the natural gas industry, to show where we have been over time and to give some insight to where we may be going in the future. Myanmar’s history is specifically included in the chronology, to show how Myanmar’s natural gas industry progressed in comparison to other areas of the world.



The world’s most famous (and powerful) oracle resided at Delphi, high up the slopes of Mount Parnassus in the Temple of Apollo. In ancient times, supplicants would wind up the mountainside, patiently hoping for words of wisdom from the priestess (called the Pythia) in the temple’s adyton (inner chamber). Corbis

- 1000 B.C. Gas seeps are naturally occurring at the earth’s surface, and are frequently the cause of forest fires sparked by lightning strikes. This was the source of many myths and superstitions in ancient times. In 1000 B.C. on Mt. Parnassus in Greece, a goat herdsman noticed a burning spring. The people believed it was of divine origin so built a temple on that site, which housed the priestess Oracle of Delphi, who gave out prophecies she claimed were inspired by the flame.
- 900 B.C. The first record of hand dug wells in Myanmar for collection of surface oil seeps. These early efforts targeted oil only, due to the inability to capture and collect the gas.
- 500 B.C. The Chinese noticed natural gas seeps at the surface and built crude pipelines out of bamboo to boil seawater, for the purpose of removing salt and making the water drinkable.
- 1626: Naturally occurring natural gas was discovered in America by Native American Indians, where they ignited gas seeps near Lake Erie for heat and cooking.
- 1635: British explorers reported an oil extraction industry from hand dug wells in Yenangyaung, Myanmar. This was the first official record of the oil industry in Myanmar, which remained largely focused on oil with very few gas developments until recent years. (Note: Although hand dug wells occurred as early as 900 BC, it is believed that the oil was only for personal use).

- 1812: The first commercial use of natural gas was in Britain, which used gas from coal to light houses and streetlamps. Some sources report usage as early as 1785, but 1812 is accepted as the start of commercialization.
- 1816: The first commercial use of manufactured natural gas in the U.S. was in Baltimore, Maryland for street lights.
- 1820: British Michael Faraday chilled natural gas into a liquid form. This technology laid the groundwork for the LNG business which started nearly a century later.
- 1821: William Hart saw gas bubbles in a creek in Fredonia, New York and dug a well 27’ deep trying to increase the gas flow. It was not successful, but later the Fredonia Gas Light Company was formed as the first American natural gas company.
- 1836: The first municipality owned natural gas distribution company was the City of Philadelphia, Pennsylvania. There are now more than 900 companies in the U.S. but the City of Philadelphia is still the oldest and largest in operation.

1853: The first oil was exported from Burma. This was from hand dug, shallow wells.



1855: Robert Bunsen invented the Bunsen Burner, which mixed natural gas with air, and allowed safe burning for cooking and heating. Soon after, it was combined with temperature regulating thermostatic devices which allowed regulation of the flame and temperature. This increased the use of natural gas for residential use.

1859: Colonel Edwin Drake drilled the first well and made a discovery at 69' in America. He then ran a 2" pipeline for 5-1/2 miles to Titusville, Pennsylvania. Despite prior hand dug wells and established oil export trade in other areas of the world, this was credited as the beginning of the E&P gas industry because of the methods used.



The first well drilled in 1859 by Colonel Edwin Drake in Pennsylvania, which made a discovery at a depth of 69'.

1860: During the early to mid-19th century, gas was used mainly as a source of light. The lack of pipelines limited use to areas near the source. Most gas was from coal, not wells.

1871: Burma Oil Company (BOC) was formed, mainly to target the oil in Yenangyaung Field. BOC had a monopoly in Myanmar until Standard Oil Company obtained a lease in 1901.

1887: The Burma Oil Company began production in Yenangyaung for oil. Natural gas was not developed as an industry in Myanmar until much later.

1889: The first "deep" wells in Myanmar were drilled using cable tool percussion drilling method, which was essentially chisel and bailer tools run alternatively on wire cable.

1891: One of the first regional pipelines was installed in the U.S. from central Indiana to Chicago. Due to poor quality and welding, it was not efficient.

In the early 1900's electricity was used by Tesla for the AC motor. Prior to that, in 1882, the first light bulb was invented. These technologies largely re-

placed gas as the source for lighting and reduced the demand for natural gas.

1901: The first lease outside the Burma Oil Company (BOC) monopoly was obtained in Myanmar by Standard Oil Company. Standard Oil Company soon left and the monopoly reverted back to BOC and remained that way until 1961.

1912: The first LNG plant was built in West Virginia, but the plant did not have regassification capability. This allowed natural gas, which is primarily methane, to be cooled to a liquid state at -163 degrees Celsius and reduced in volume by 600 times, then transported to other locations where it was then allowed to warm and convert back to a gas state. This provided the first alternative to pipeline transport.

1920: Although LNG was already developed, the technology was very new and use was very limited. Therefore, efforts were devoted to installation of pipelines in the U.S.

1941: First LNG production and regassification plant was built in Cleveland, Ohio. This allowed excess gas during periods of low demand to be converted to liquid and stored until gas is needed to fill high demand. Unfortunately, the plant exploded in 1944, killing 131 people and injuring 225 others. This disaster was a major setback for the industry. It took years to restore confidence, but there are now more than 100 LNG plants in the U.S. alone.



First LNG production and regassification plant was built in Cleveland, Ohio in 1941



LNG plant in Cleveland, Ohio after the explosion that killed 131 people and devastated many nearby homes

1945: All wells in Myanmar were destroyed during World War II. Burma Oil Company continued with their monopoly in Myanmar until 1961.

1945: After World War II, welding and pipe manufacturing technology was improved, which resulted in thousands of

miles of gas pipelines by the 1960's. Today there are more than 2 million miles of pipelines in the U.S alone.

1959: The first LNG ocean transport was sent from the U.S. to England.

1960: The improved pipeline system allowed gas to be transported, which triggered wider use and application such as heating, water heaters, ovens, and cooling. Industrial use expanded into manufacturing and processing plants.

1961: Union Oil and General Exploration Company leased most of the central basin of Myanmar, breaking the long-standing monopoly by Burma Oil Company.

1963: The oil industry of Myanmar was nationalized: The People's Oil Industry (to become Myanma Oil Corporation in 1970 and finally MOGE) was established as the national oil company and made responsible for all oil fields and the 1200-mile onshore pipeline network. Burma Oil Company and Union Oil lost the rights to all leases.

1964: The first commercial LNG production and export was established in Algeria.

1969: The first LNG exports from Alaska were sent to Japan, which helped grow Asia to the largest gas demand market in the world.

1970: The US started importing LNG because domestic production was not enough to meet demand.

1974: Offshore blocks in Rakhine, Myanmar were opened for exploration by foreign companies. Exploration results were poor, so no development followed.

1982: MOGE discovered the Yadana Field offshore Myanmar in Blocks M-5/6. MOGE did not develop the field immediately, but later awarded the block to Total E&P for development.

1988: The onshore oil industry in Myanmar was opened to foreign investment by MOGE.

1989: Myanmar opened the entire offshore area to foreign investment and had the first offshore bid round.

1990: Premier Oil secured the offshore Myanmar lease which eventually led to the Yetagun development in blocks M-12/13/14. Texaco, Nippon and PTTEP later joined with Premier in 1997. In 2003, Petronas took over as operator and currently operates the field.

1990: During the 1970's and 1980's a majority of the electric power was provided by hydro-power, coal and nuclear power plants. By the 1990's a majority of the electrical power was provided by natural gas. The forecast is for gas to provide 80% of the U.S. power supply by 2035, simultaneous with extensive worldwide growth as availability of gas increases.

1991: Shell discovered the onshore Apyauk gas field 50 km northwest of Yangon. This was the first major gas production within Myanmar.

1992: Total E&P acquired Yadana Field in offshore blocks M-5/M-6, which was previously discovered by MOGE. They were later joined by Unocal for the development.

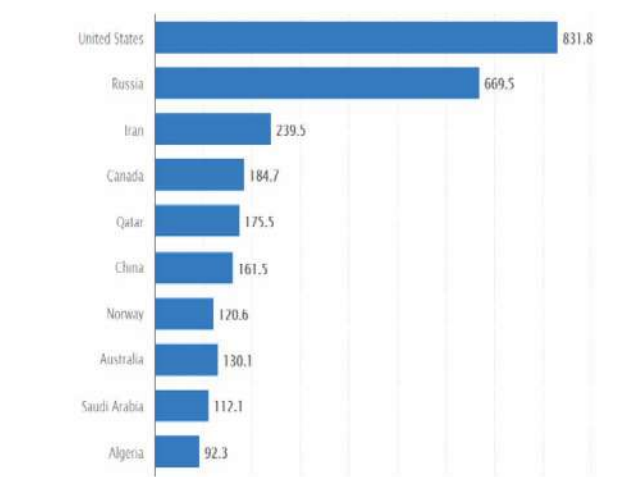
1997: Arco discovered the Zawtika Field in Block M-9 offshore Myanmar but did not pursue the development. The block was later awarded to PTTEP in 2003.

1998: Myanmar's first offshore gas field at Yadana came online and quickly ramped up to peak rates of more than 900 mmscf/d (million standard - or surface - cubic feet per day). This project established the gas export pipeline between Myanmar and Thailand and also the domestic gas pipeline to Yangon area.

2000: Horizontal drilling and frac technology grew the US gas production. The U.S. is now one of the top producers of natural gas, surpassing Russia and Iran. The ability to export LNG made it possible for the US production to rise above their domestic demand.

2000: The Yetagun field in Myanmar commenced production with peak rates of about 250 mmscf/d, further increasing the export gas sales to Thailand and domestic gas to Myanmar. The rate reached about 400 mmscf/d in 2004 after additional phases of development. At the same time, Daewoo secured the offshore Myanmar lease that eventually led to the Shwe development in blocks A-1/3.

World Natural Gas Production in 2018, by Country
(in billion cubic meters)



2003: PTTEP secured the lease of Block M-9 in Myanmar, which led to the development of Zawtika Field.

2007: MPRL E&P signed the Block A-6 Production Sharing Contract (PSC) and started data acquisition.

2011: MPRL E&P completed data acquisition in Block A-6, including 2D and 3D seismic.

2012: Most U.S. and U.N. sanctions were lifted, which increased the flow of foreign investment into Myanmar.

2012: MPRL E&P achieved the first gas discovery in Block A-6 with the Pyi Tar exploration well.

2013: Woodside became MPRL E&P's partner in Block A-6, and a new 3D seismic survey was acquired.

2014: The Shwe field offshore Myanmar commenced production and obtained peak rates of about 550 mmscf/d. This established the major gas export business between Myanmar and China and provided another major gas supply for the domestic market.

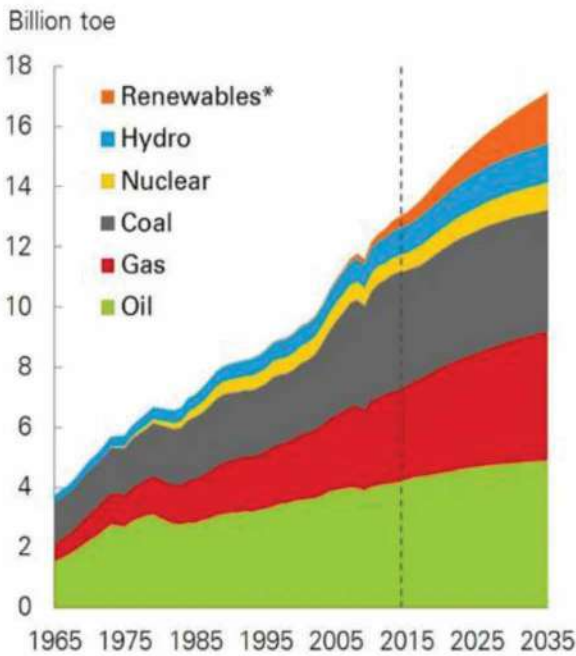
2014: The Zawtika field offshore Myanmar came online at peak rates of about 360 mmscf/d, further increasing export gas sales to Thailand.

2015: Total E&P Myanmar joined the Block A-6 partnership with MPRL E&P and Woodside. The partnership then commenced their ultra-deepwater exploration and appraisal drilling program which led to three more gas discoveries between 2015 and 2018.

2016: Due to regulations, LNG export from the US was difficult until recent years. In 2016, the first LNG was exported from mainland U.S to Brazil. The US now exports to more than 25 countries.

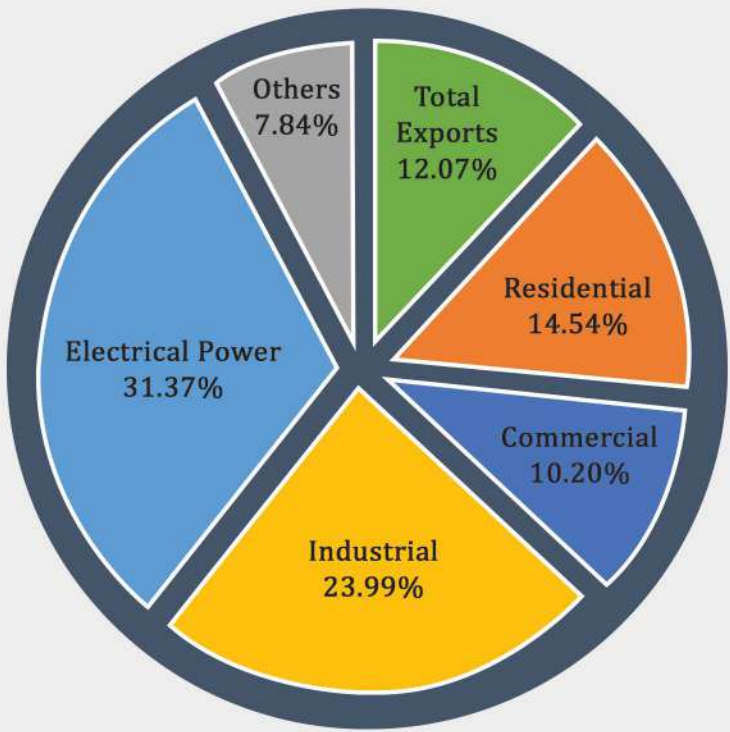
2019: Worldwide gas production grew 5.2% in 2018 to 129 TCF (trillion cubic feet) in line with a 5.3% increase in natural gas consumption. At the same time, worldwide energy consumption grew 2.9%, of which 40% of the growth was due to natural gas. Natural gas, along with renewable energy sources, are the fastest growing source of energy, replacing the less clean, higher cost alternatives.

Primary Energy Consumption by Fuel



Use of Natural Gas:

Total Natural Gas Demand by End User (% share of 12-Month Total)
as of August 2019

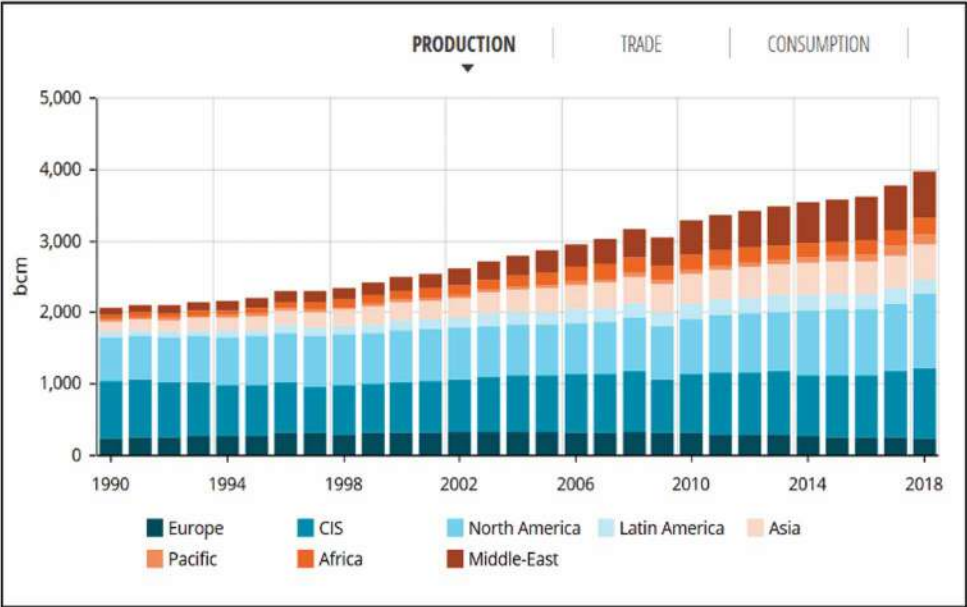


Natural Gas is now widely used for electrical power generation to serve both residential and industrial needs. With increased focus on the environment, gas is growing in popularity because it is one of the cleanest energy sources which is available in large quantities. The use of natural gas vehicles is also increasing, with 5 million vehicles worldwide.

In addition to power generation, natural gas is used in the manufacturing of many products such as plastics, fertilizer, anti-freeze, fabrics, pharmaceutical products and methanol to name a few. Common industrial uses include waste treatment, incineration, drying and dehumidifying processes, glass melting, steel heating, industrial boilers and food processing.

Recent Growth in Natural Gas Industry:

From 1990 to 2018, the worldwide gas production doubled from 2000 billion cubic metres (bcm) (or 71 Tcf or trillion cubic feet) to nearly 4000 bcm (or 141 Tcf). The recent growth in the gas industry can be largely attributed to LNG technology, which allows gas to be transported worldwide to areas of high demand. Today the largest LNG producer is Russia, with other leading producers being Algeria, Australia, Brunei, Indonesia, Libya, Malaysia, Nigeria, Oman, Qatar and Trinidad. Worldwide demand for natural gas is also on the rise, largely due to the increased availability and push for clean fuels. The demand in the U.S. grew by 10% in 2018, which is the highest gain in the past 30 years, while the overall worldwide demand increased by 5% in the same period.



Natural Gas Industry in Myanmar:

The oil industry has a long history in Myanmar, but with the exception of the Apyauk onshore gas field, Myanmar’s production was primarily oil until the recent offshore gas developments.

Currently, Myanmar ranks about 30th worldwide on total proven gas reserves with between 10 to 42 Tcf depending on the source of data. However, only a small portion of those reserves are currently developed and a majority of the producing fields have limited remaining field life.

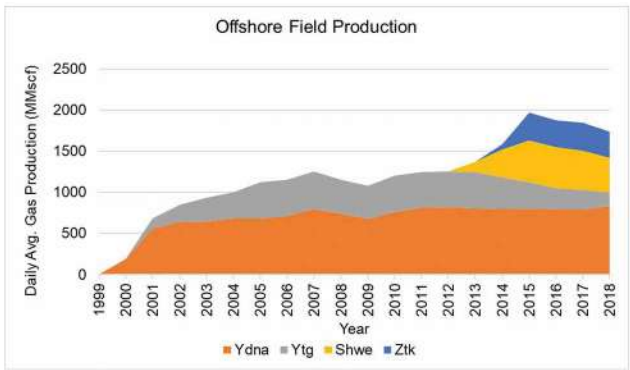
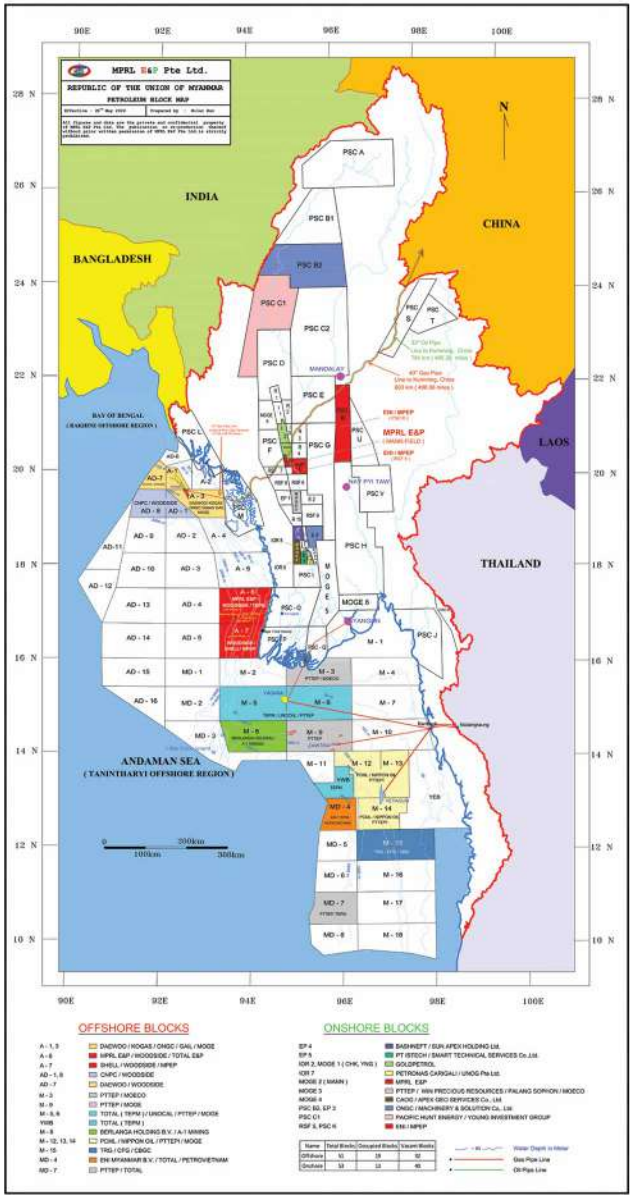
The four major offshore gas producing fields in Myanmar are Yadana, Yetagun, Shwe and Zawtika. Yadana was discovered by MOGE in 1982. The PSC was awarded to Total in 1992 for the development, and came online in 1998 as the first offshore Myanmar field at peak rates of about 900 mmscf/d. The field is still the leading producer in Myanmar, but expected to start rapid decline soon and go off production no later than 2028.

Yetagun came on stream two years later in 2000 at about 250 mmscf/d. The rate was further increased to about 400 mmscf/d in 2004 after additional phases of development. The field is now producing less than 120 mmscf/d and expected to terminally decline within the next two years.

After a long period without new offshore developments, Shwe came online in 2013 at peak rates of about 550 mmscf/d. Additional drilling is now ongoing to further develop reserves and extend the production life. The field is currently producing about 620 mmscf/d.

Zawtika came online shortly thereafter in 2014 at peak rates of about 360 mmscf/d. The field is still producing at that rate.

The addition of Shwe and Zawtika increased the total yearly production in Myanmar by roughly 50% from 1.2 bcf/day (billion cubic feet) in 2012 to 1.9 bcf/day in 2015. The total production in Myanmar has experienced slight decline since that time, but is expected to show rapid decline from Yadana and Yetagun fields over the next few years. By 2028, without the development of new fields like the A-6 block, the total production in Myanmar would be less than half of what it is today.



Myanmar exports roughly 2/3 of the total gas production and retains about 300 mmscf/d for domestic use. In 2018, the revenue from gas exports was US\$ 4.45 billion, which is the second largest source of income for the Myanmar government next to textiles. However, the decline of current production is creating a difficult situation for

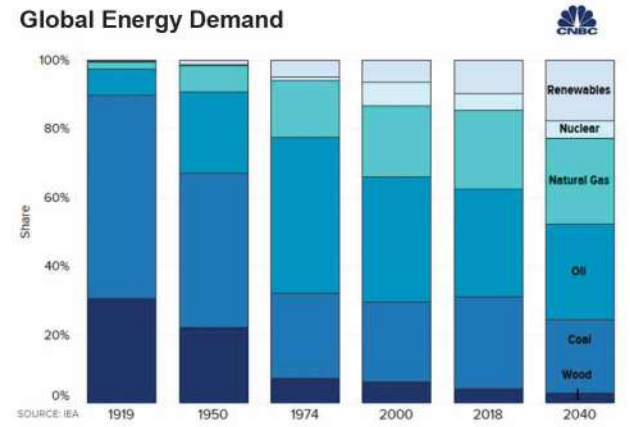
Myanmar, whereby the government has to balance the need for domestic gas versus the need for export revenue, which is critical for the overall economy and ability to develop key infrastructure. Therefore, in light of the declining domestic production, the A-6 Project gas will come online at a critical time to help sustain Myanmar’s growing economy.

To put things into perspective, consider that Thailand uses 10 times more electricity per capita than Myanmar, and fewer than 60% of the homes in Myanmar have electricity service. Therefore, there is tremendous growth opportunity in Myanmar for electrical power generation whenever gas can be provided. The A-6 Project will play a key role in meeting Myanmar’s power needs, both through the production of gas and export revenue.

Myanmar is expanding its use of natural gas in many ways. There are now more than 2200 miles of pipelines throughout Myanmar. CNG (Compressed Natural Gas) is also growing in use with 27,000 CNG vehicles and 45 CNG filling stations. The use of natural gas for power generation is also on the rise, with gas replacing other less clean, more costly and/or less environmentally friendly options. The twenty (20) existing gas fired power plants currently provide a little more than 20% of the total power generation in Myanmar. The output is expected to increase to more than 35% after installation of planned future projects.

Summary:

The natural gas industry was slow to develop, but in the past year has become the fastest growing source of energy in the world, even growing faster than renewables in 2018. That recent growth is largely due to the fact that it is a clean fuel and is easily transported as LNG to areas with high demand. With many major worldwide developments now underway or planned for the near future, the natural gas industry is expected to have continued growth into the foreseeable future and provide enough gas to meet the world’s energy demands for many decades.



Natural gas also plays a key role in Myanmar by providing more than 20% of the electrical power, with plans to expand that to 35% in the near future, and generating the second highest source of foreign revenue at US\$4.45 billion per year from export of natural gas. Declining production from the mature fields makes it critical to develop more in-country resources. The development of the A-6 Project will come online at a critical time, simultaneous with the loss of Yadana and Yetagun production, and play an important role in meeting the country’s economic and energy needs.

At the same time, the A-6 will be recognized in the industry as one of the few ultra-deepwater developments in the world, and will offer an amazing opportunity to develop this unique technical skill and knowledge within the people of Myanmar.

Pushed to Devise Innovative Business and Operational Strategies

Thal Sandy Tun

1. Please introduce your name, role and responsibilities in Mann Field first.

I am Zaw Thet, a Senior Engineer assigned in Mann Field. I am responsible for the field operations campaigns that are carried out to enhance production through coordination with other departments as a Production Team Leader.

2. So what does the work program for Mann Field in this new fiscal year look like? How does it differ from last year's work program with regard to production enhancement?

In this new fiscal year, our Technical Team has developed a work program: two injectors with one injection pump, GreenZyme Treatment and Re-open/Pumping Test concerning Mann Field. Due to the ongoing oil price crisis, there is a little bit of adjustment to the work program for this fiscal year.

3. In relation to this coronavirus pandemic in countries around the world including Myanmar, how has the company been managing the operations staff in performing their duties in Mann Field? What have been the major risks and the priorities?

All of the staff in Mann Field are required to follow the prevention guidelines released by the Ministry of Health and Sports (MoHS) in the daily operations and in their stay at the Base Camp to reduce the risk of infection. Because operations in Mann Field involve teams working side by side, it is a challenge to implement preventive measures such as physical distancing. However, we are now focusing on preventative measures and procedures-wearing face masks/shields, washing hands, using hand sanitizer, social distancing in every worksite, reducing face-to-face meetings, teleworking, isolating staff with quarantine zones if needed, and running operations with the minimum crew.

4. The coronavirus outbreak is said to have a twofold effect on the oil and gas industry as people stay home and businesses come to a standstill to curb the spread of the virus, reducing the overall needs for energy across the many sectors of the global economy. In light of this new observation, how does the outlook of the oil and gas industry look like over the coming months and beyond?

The oil price crash combined with the COVID-19 pandemic has affected every nook and cranny of the world we are living in. The outlook especially for the oil and gas industry is, to a large extent, related to how quickly governments contain the coronavirus, how successful their efforts are, and what lingering impacts the global health crisis has on the economic activities. However, I remain optimistic that things will definitely get better in one or two years.

5. How can we ensure that the oil produced from Mann Field remains competitive in terms of price and amidst this boom and bust cycle of oil and gas industry?

To remain competitive for the oil production from Mann Field, we are pushed to devise new and innovative business and operational strategies that will enable the company to remain resilient during the downturn period.

6. Could you tell us about your education background and career history?

I have a bachelor's degree in Petroleum Engineering from the Yangon Technological University and a master's degree in Petroleum Engineering from the Mandalay Technology University. I worked at the Thanlyin Technological University as a lecturer for 2 years. Afterwards, I joined MPRL E&P in July 2010.



7. As a Senior Engineer in Mann Field, how do you follow your own professional development and job satisfaction?

The current training opportunities provided by the company are absolutely important in maintaining a happy workforce and a sustained company-employee relationship. As for me, I have completed all the trainings provided by the company, and I am trying to get the cross-functional trainings from other departments in order to shore up my professional development. I am able to apply knowledge received through these activities in my daily work and that is something conducive to achieving job satisfaction.

8. Do you prefer to work in the field or in an office? What are the reasons for your preference?

As a veteran Petroleum Engineer, I prefer to work in the field because I can apply operational knowledge and ideas practically.

9. What have been the essential skills for an engineer working in the oil and gas fields? Should he or she have some understanding of social risks surrounding oil and gas exploration in addition to being technically strong?

An engineer working in oil and gas fields should have strong technical skills as well as soft skills which are becoming more important today. Moreover, he or she should also have understanding and adapt to changes that are common in the oil and gas industry. They also should nurture their professionalism as this will be a long-term career. Additionally, understanding corporate social responsibility in the oil and gas business – such as the role of conducting public consultation and supporting community development -- is an asset if they want to become well-rounded professionals.

10. What are your insights and observations about the certain aspects of the oil and gas industry as well as your career experiences that you would like to share with young generations and a wider audience?

I believe that the future of the oil and gas industry will be a positive one in two or three decades, although we are facing a number of momentary challenges at the moment. What we can do is prepare the best for post COVID-19. In the meantime, we have to work more efficiently and support younger generations in their accumulation of knowledge and skills in the field. ■

A Logistics Man Gets Things Right

Supplying materials and equipment to oil fields requires coordination, compliance with regulations, time management, and organization skills.

Thal Sandy Tun

U Han Lin Zaw is in charge of ensuring these steps are taken properly as a Logistics Officer at the Material and Logistics Department. He said he works together with other technical and business support departments to ensure material and logistics needs are met in an anticipated manner so there are no delays to operations in Mann Field and Block A-6.

"As a Logistics Officer, my responsibilities range from applying import licenses to the Myanmar Investment Commission (MIC) through the Myanma Oil and Gas Enterprise (MOGE) for the whole year's worth purchase orders by the company's end-user departments to coordinating with our suppliers and vendors to ensure timely delivery of orders. I also report for the custom clearance letters to the MOGE, and then I put the materials and goods in motion safe and sound to Mann Field."

Graduating with a degree in Chemistry, Han Lin Zaw started out his career as a security staffer at Myint & Associates Company Limited, MPRL E&P's sister company, in 2005. He explained, "I wanted to attend some additional job-related training in town while working, preferably some part-time jobs. I wanted to work at a place that was not far from the training centre I wanted to attend. Unfortunately, at the time there were almost no available part-time jobs. So by working as security at Myint & Associates, I could go to a training school which was within walking distance from the company location."

However, opportunities arose four years later. Han Lin Zaw applied for Senior Material and Logistics Assistant at the Material and Logistics Department, which meant he transferred to MPRL E&P in 2009.

He attributed the company's thoughtfulness in developing employees' career to his desire to always perform more than what is expected of him—from something as basic as arriving at the office on time to demonstrating a full understanding of his job as well as working hard to take on extra tasks.

He said, "In those days, I would arrive at work 30 minutes early. I was happy to lend a hand to whoever needed it at the workplace. I was well aware of my responsibilities and I always did my best to fulfill them. In this regard, I lived up to the guidelines and rules of the company. I believed those were the factors that made me get further promoted."

Han Lin Zaw went into detail how working at a business support function like the Material and Logistics Department, where he has been for about 10 years, looks like.

"Our Material and Logistics Department is supporting both Mann Field and Block A-6 in their supply chain and logistics needs. In doing so, we have to ensure we do so in a cost-effective manner and in compliance with all applicable laws and procedures for logistics, importation, exportation and custom clearance processes. One challenge is from time to time procedure changes and what we need to kept abreast in order to minimize risks such as operations delays."

As his job involves working alongside suppliers and contractors, the Logistics Officer explained to the importance of following company policy and procedures in order to steer clear of potential issues that may arise.

"The company has declared its zero tolerance policy towards corrupt practices in all arenas of our business activities and has been reporting to the UN Global Compact annually on its anti-corruption performance. In meeting our supply chain and logistics needs, we work together with a range of suppliers and contractors from both Myanmar and overseas in accordance with this policy and related procedures."

Due to the ongoing coronavirus pandemic which has affected businesses, public health, and travel industries, he pointed out the importance of leveraging electronic communication channels with government offices, suppliers, contractors, freight forwarders and end-user departments to stay connected, and how to stay organized while working from home.

"Thanks to fast communications through email and messaging applications, we are able to get our jobs done much quicker with coordination at multiple levels and people, especially at such a time of unprecedented crisis."

He said it is also critical to keep an open perspective during the pandemic by staying on top of the latest news surrounding the coronavirus around the world, and be au fait with what can be next amidst the uncertainties caused by the pandemic since its outbreak globally over the last weeks and months. "Most importantly, I follow the instructions and information released by Senior Management to plan our internal processes well in-advance and minimize damage."

When asked why he has been working for so long at MPRL E&P, Han Lin Zaw responded that it is a matter of personal choice. As a matter of fact, business organizations may have great incentives to do all it can in order to keep talented and committed employees around as they are hard to find. While a high human resources policy, having long-term employees tend to be a sign of employee satisfaction with regard to recognition, responsibility, growth, and individual motivation.

Drawing on some inspiration from the Logistics Officer, "workaholic" is an apt description of Han Lin Zaw whose motto is "to always find something to do, and never sit around wasting time ... You could always find something to do if you look carefully. Do something, and keep busy." ■



"The company has declared its zero tolerance policy towards corrupt practices in all arenas of our business activities and has been reporting to the UN Global Compact annually on its anti-corruption performance."

- Han Lin Zaw

"The Employee Spotlight series engages MPRL E&P's personnel across different business and technical functions to explore their professionalism, lifestyles and recipes for job satisfaction."

Inspection of COVID-19 Measures in-Place at Vantage Tower by Government Authorities



Recognition and Inspection Certificates (Notarial Translations)

Notarial Translation

(Round seal of Regional Government
Yangon Region)
Letter No. 0741
Date : 08 May 2020

Yangon Regional Government
Recognition & Inspection Certificate to Reopen Factory, Workshop and Workplaces

- Myint & Associates Construction Co., Ltd. for which the beneficial owner is U Moe Myint at Kamayut Township, Western District, Yangon Region had been inspected on (07 May 2020) related to the following according to standards promulgated by the Ministry of Health and Sports (MoHS) in connection with Coronavirus Disease 2019 (COVID-19).
- Above mentioned ----- Factory, Workshop, Workplace is hereby granted to reopen / continue operations commencing from (08 May 2020) as being inspected and is conformable to the prescribed standards.

Sd/-xxx(8/5/2020)
Daw Moe Moe Su Kyi
Minister
Ministry of Immigration and Human Resources
Yangon Region Government

UHLA WIN
ADVOCATE & NOTARY PUBLIC
No.25, 35 STREET, KYAUKTADA TOWNSHIP, YANGON
REPUBLIC OF THE UNION OF MYANMAR
TEL: 09-2029179

Doc: No 0741/N 12 MAY 2020

SHWE PYI RUNG No.25, 35th Street, Kyauktada Township, Yangon, Myanmar Ph. 09-2029179

**Myint & Associates Construction
Company Limited**

Notarial Translation

(Round seal of Regional Government
Yangon Region)
Letter No. 1226
Date : 15 May 2020

Yangon Regional Government
Recognition & Inspection Certificate to Reopen Factory, Workshop and Workplaces

- Myint & Associates Trading Company Limited for which the beneficial owner is U Moe Myint at Kamayut Township, Western District, Yangon Region had been inspected on (14 May 2020) related to the following according to standards promulgated by the Ministry of Health and Sports (MoHS) in connection with Coronavirus Disease 2019 (COVID-19).
- Above mentioned ----- Factory, Workshop, Workplace is hereby granted to reopen / continue operations commencing from (15 May 2020) as being inspected and is conformable to the prescribed standards.

Sd/-xxx(15/5/2020)
Daw Moe Moe Su Kyi
Minister
Ministry of Immigration and Human Resources
Yangon Region Government

UHLA WIN
ADVOCATE & NOTARY PUBLIC
No.25, 35 STREET, KYAUKTADA TOWNSHIP, YANGON
REPUBLIC OF THE UNION OF MYANMAR
TEL: 09-2029179

Doc: No 0926/N 22 MAY 2020

SHWE PYI RUNG No.25, 35th Street, Kyauktada Township, Yangon, Myanmar Ph. 09-2029179

**Myint & Associates Trading
Company Limited**

Notarial Translation

(Round seal of Regional Government
Yangon Region)
Letter No. 0742
Date : 08 May 2020

Yangon Regional Government
Recognition & Inspection Certificate to Reopen Factory, Workshop and Workplaces

- MPRL E&P Pte Ltd. for which the beneficial owner is U Moe Myint at Kamayut Township, Western District, Yangon Region had been inspected on (07 May 2020) related to the following according to standards promulgated by the Ministry of Health and Sports (MoHS) in connection with Coronavirus Disease 2019 (COVID-19).
- Above mentioned MPRL E&P Pte Ltd. Factory, Workshop, Workplace is hereby granted to reopen / continue operations commencing from (08 May 2020) as being inspected and is conformable to the prescribed standards.

Sd/-xxx(8/5/2020)
Daw Moe Moe Su Kyi
Minister
Ministry of Immigration and Human Resources
Yangon Region Government

UHLA WIN
ADVOCATE & NOTARY PUBLIC
No.25, 35 STREET, KYAUKTADA TOWNSHIP, YANGON
REPUBLIC OF THE UNION OF MYANMAR
TEL: 09-2029179

Doc: No 0742/N 14 MAY 2020

SHWE PYI RUNG No.25, 35th Street, Kyauktada Township, Yangon, Myanmar Ph. 09-2029179

MPRL E&P Pte Ltd.

Notarial Translation

(Round seal of Regional Government
Yangon Region)
Letter No. 1222
Date : 15 May 2020

Yangon Regional Government
Recognition & Inspection Certificate to Reopen Factory, Workshop and Workplaces

- Asia Drilling (Myanmar) Limited for which the beneficial owner is U Moe Myint at Kamayut Township, Western District, Yangon Region had been inspected on (14 May 2020) related to the following according to standards promulgated by the Ministry of Health and Sports (MoHS) in connection with Coronavirus Disease 2019 (COVID-19).
- Above mentioned ----- Factory, Workshop, Workplace is hereby granted to reopen / continue operations commencing from (15 May 2020) as being inspected and is conformable to the prescribed standards.

Sd/-xxx(15/5/2020)
Daw Moe Moe Su Kyi
Minister
Ministry of Immigration and Human Resources
Yangon Region Government

UHLA WIN
ADVOCATE & NOTARY PUBLIC
No.25, 35 STREET, KYAUKTADA TOWNSHIP, YANGON
REPUBLIC OF THE UNION OF MYANMAR
TEL: 09-2029179

Doc: No 0922/N 22 MAY 2020

SHWE PYI RUNG No.25, 35th Street, Kyauktada Township, Yangon, Myanmar Ph. 09-2029179

**Asia Drilling (Myanmar)
Limited**

Notarial Translation

(Round seal of Regional Government
Yangon Region)
Letter No. 1221
Date : 15 May 2020

Yangon Regional Government
Recognition & Inspection Certificate to Reopen Factory, Workshop and Workplaces

- Myanmar Petroleum Exploration & Production Co.Ltd. for which the beneficial owner is U Moe Myint at Kamayut Township, Western District, Yangon Region had been inspected on (14 May 2020) related to the following according to standards promulgated by the Ministry of Health and Sports (MoHS) in connection with Coronavirus Disease 2019 (COVID-19).
- Above mentioned ----- Factory, Workshop, Workplace is hereby granted to reopen / continue operations commencing from (15 May 2020) as being inspected and is conformable to the prescribed standards.

Sd/-xxx(15/5/2020)
Daw Moe Moe Su Kyi
Minister
Ministry of Immigration and Human Resources
Yangon Region Government

UHLA WIN
ADVOCATE & NOTARY PUBLIC
No.25, 35 STREET, KYAUKTADA TOWNSHIP, YANGON
REPUBLIC OF THE UNION OF MYANMAR
TEL: 09-2029179

Doc: No 0921/N 22 MAY 2020

SHWE PYI RUNG No.25, 35th Street, Kyauktada Township, Yangon, Myanmar Ph. 09-2029179

**Myanmar Petroleum Exploration &
Production Company Limited**

Notarial Translation

(Round seal of Regional Government
Yangon Region)
Letter No. 1223
Date : 15 May 2020

Yangon Regional Government
Recognition & Inspection Certificate to Reopen Factory, Workshop and Workplaces

- Ngwe Saung Yacht Club & Marina Development Limited for which the beneficial owner is U Moe Myint at Kamayut Township, Western District, Yangon Region had been inspected on (14 May 2020) related to the following according to standards promulgated by the Ministry of Health and Sports (MoHS) in connection with Coronavirus Disease 2019 (COVID-19).
- Above mentioned ----- Factory, Workshop, Workplace is hereby granted to reopen / continue operations commencing from (15 May 2020) as being inspected and is conformable to the prescribed standards.

Sd/-xxx(15/5/2020)
Daw Moe Moe Su Kyi
Minister
Ministry of Immigration and Human Resources
Yangon Region Government

UHLA WIN
ADVOCATE & NOTARY PUBLIC
No.25, 35 STREET, KYAUKTADA TOWNSHIP, YANGON
REPUBLIC OF THE UNION OF MYANMAR
TEL: 09-2029179

Doc: No 0923/N 22 MAY 2020

SHWE PYI RUNG No.25, 35th Street, Kyauktada Township, Yangon, Myanmar Ph. 09-2029179

**Ngwe Saung Yacht Club & Marina
Development Limited**

Notarial Translation

(Round seal of Regional Government
Yangon Region)
Letter No. 1225
Date : 15 May 2020

Yangon Regional Government
Recognition & Inspection Certificate to Reopen Factory, Workshop and Workplaces

- Myanmar Independent Power Production Limited for which the beneficial owner is U Moe Myint at Kamayut Township, Western District, Yangon Region had been inspected on (14 May 2020) related to the following according to standards promulgated by the Ministry of Health and Sports (MoHS) in connection with Coronavirus Disease 2019 (COVID-19).
- Above mentioned ----- Factory, Workshop, Workplace is hereby granted to reopen / continue operations commencing from (15 May 2020) as being inspected and is conformable to the prescribed standards.

Sd/-xxx(15/5/2020)
Daw Moe Moe Su Kyi
Minister
Ministry of Immigration and Human Resources
Yangon Region Government

UHLA WIN
ADVOCATE & NOTARY PUBLIC
No.25, 35 STREET, KYAUKTADA TOWNSHIP, YANGON
REPUBLIC OF THE UNION OF MYANMAR
TEL: 09-2029179

Doc: No 0891/N 22 MAY 2020

SHWE PYI RUNG No.25, 35th Street, Kyauktada Township, Yangon, Myanmar Ph. 09-2029179

**Myanmar Independent Power
Production Limited**

Notarial Translation

(Round seal of Regional Government
Yangon Region)
Letter No. 1224
Date : 15 May 2020

Yangon Regional Government
Recognition & Inspection Certificate to Reopen Factory, Workshop and Workplaces

- Myanmar National LPG Trading Limited for which the beneficial owner is U Moe Myint at Kamayut Township, Western District, Yangon Region had been inspected on (14 May 2020) related to the following according to standards promulgated by the Ministry of Health and Sports (MoHS) in connection with Coronavirus Disease 2019 (COVID-19).
- Above mentioned ----- Factory, Workshop, Workplace is hereby granted to reopen / continue operations commencing from (15 May 2020) as being inspected and is conformable to the prescribed standards.

Sd/-xxx(15/5/2020)
Daw Moe Moe Su Kyi
Minister
Ministry of Immigration and Human Resources
Yangon Region Government

UHLA WIN
ADVOCATE & NOTARY PUBLIC
No.25, 35 STREET, KYAUKTADA TOWNSHIP, YANGON
REPUBLIC OF THE UNION OF MYANMAR
TEL: 09-2029179

Doc: No 0894/N 22 MAY 2020

SHWE PYI RUNG No.25, 35th Street, Kyauktada Township, Yangon, Myanmar Ph. 09-2029179

**Myanmar National LPG
Trading Limited**



Back to Work with the “New Normal”





Field Operations Department

The Field Operations Department is responsible for the implementation of all oil and gas operations including but not limited to drilling and production planning, geological consideration, and reservoir maintenance. The department is also in charge of other operational related activities such as HSE (Health, Safety and Environment), CSR (Corporate Social Responsibility) and JV (Joint Venture) Communications with Myanma Oil and Gas Enterprise (MOGE). The department is composed of multiple technical and business support sections, and every one of them is a professional who works together to carry out operations successfully -- in other words, meeting our annual corporate targets.

A key function of the Field Operations Department is monitoring all of the field operations-related materials, tools and equipment, their conditions and maintenance schedules to ensure all safety standards and work/safety procedures are compromised. Another important aspect of the field operations is reducing operations-related environmental impacts to a minimum and implementing an Environmental Management Plan in compliance with ECC (Environmental Compliance Certificate) commitments.

The CSR (Corporate Social Responsibility) initiatives in Mann Field ensure a long-term social license to operate, and the Field Operations Department supports the implementation of community infrastructural projects, the fully functioning OGM (Operational Grievance Mechanism), and community livelihood development activities for the 14 surrounding communities in this regard.

The Field Operations Department also plays a critical role in transferring operational knowledge and experiences to new petroleum engineers and geoscience students through the company's Internship Program. Such practical training normally continues to ensure career development for the new graduates joining the company.

An exhaustive list of the functions of the Field Operations Department is as follows:

- Manage all staff including joint venture crews, equipment, materials, and operations in the Mann Field to ensure safe and continuous production of oil in line with, or above, production forecasts in a cost-effective manner and with minimal environmental impact. Ensuring that all resources (people, material, equipment, facilities, etc) required to implement work plans are available as needed.
- Ensure the development of a realistic annual work plan for the Mann Field by providing detailed operational input to Head Office based technical staff tasked with developing the well program.

- Manage performance monitoring of the field and communicate daily plans for field activity to all staff to ensure full understanding of objectives and the interfaces within and between teams by maintaining close contact with all team members assigned to particular tasks and activities, and monitor and provide guidance and solutions as necessary.
- Hold safety meetings to provide leadership and direction and achieve awareness of any safety issues, and follow up on meeting outcomes to ensure monitoring and risk mitigation.
- Maintain close contact with joint venture regarding the work program and the provision of necessary facilities within Mann Field.
- Keep close contact with communities and public authorities located within Mann Field which may be impacted by operations. Seek to resolve any issues arising out of field activities and liaise with the Department of Corporate Social Responsibility on the development and implementation of long-term CSR programs.
- Provide leadership to members through mentoring, coaching, performance management, and development opportunities so that team members are effective contributors to department objectives and realize their potential for future assignments.
- Encourage team awareness and compliance with MPRL E&P policies, especially those relating to Equal Employment, Harassment, Health, Safety & Environment, and Conflict of Interest and Ethical Business Conduct.
- Control inventory levels by conducting physical counts -- reconciling with a data storage system. Monitor the status of outstanding Purchase Orders and critical materials. And updating all relevant parties at timely intervals and monitoring minimum and maximum levels and re-order materials.
- Be accountable for ensuring that all materials and equipment transfers/transportations are fully documented. Work with Material, Logistics and Procurement Department and Finance Department to maintain inventory system and accuracy for inventory stocktaking on a fiscal year audit.

The success of the Field Operations Department depends on teamwork among the Field Operations Staff who stay together in the base camp and work together for the same goals. The team solves the daily operational challenges together and feels the success in the same breadth because "Staying together is Process, Working together is Success".



Remedial & Workover Operations

Remedial & Workover Operations are the maintenance of production wells due to a multitude of issues such as paraffin, sand formation, mechanical, and subsurface problems. In such situations, Remedial & Workover operations include pump service, well-cleaning operations, well-stimulation operations, and the reopening of expected sand formations. There are casing swabbing operations -- using a swab cup with sand line -- and retrieving crude oil to the surface, which is effective for low-pressure formation wells where artificial life methods are unavailable. To make these efforts more successful and to maintain daily field production rate, other unnecessary problems such as well kick (environmental impact issues) have to be kept to a minimum.

The Remedial & Workover Operations engineers learn new or updated techniques from overseas professional engineers in enhancement projects, Greenzyme treatment operations, Hydraulic Fraction operations, Sem-jet operations, Waterflooding operations, Acid Spotting both in theory and practice. They have learned to systematically install various types of packers, an Anchor Catcher, and other operational downhole tools, and as a result we can slash operational costs for an expert trip of downhole tool installation.

In field operations, any Remedial & Workover Operations carries a significant risk because of the nature of working with heavy equipment and tools. Therefore, engineers are required to follow strict HSE procedures and maintain a safety culture to avoid accidents or incidents related to operations. Senior engineers in the team transfer their experience of technical knowledge downhole tool installation, job-safety analysis, and how to control operation working crews to junior engineers. The result is that any Remedial & Workover operations has been safely completed with the contributions of all team members.





U Myo Win
Field Operations Manager
Mann Field Enhanced Oil Recovery Project

U Myo Win is the Field Operations Manager in Mann Field Enhanced Oil Recovery Project which MPRL E&P has been undertaking since 1996. He graduated in Petroleum Engineering from Yangon Technological University and joined MPRL E&P, a Myanmar national led oil and gas company, in April 11, 2007 as an Assistant Operations Engineer. He subsequently was promoted step-by-step, and now manages the field operations in his current position.

His main role is to manage operations such as drilling, production, and yearly enhancement plans successfully, safely and with reduced environmental impacts. In doing so, he leads consultations with joint venture, Myanma Oil and Gas Enterprise (MOGE) and service providers to complete operations on time. He performs crew management in accordance with the Labour Law and supports delivery of operational materials on time. He also engages with the surrounding communities to encourage dialogue and promote trust in the community development initiatives.

U Myo Win oversees a multi-disciplinary team involved in all aspects of the project in his capacity

as Field Operations Manager. He is responsible for developing and improving business performance, deeply involved in strategic planning, and problem-solving alongside the Operations Team on a daily basis. He has proven ability in handling all types of operations in accordance with contractual terms and conditions. He is also an excellent team leader who works in a professional and conscientious manner.

His Operations Team is made up of many sections from both technical and business support functions to run daily operations efficiently. In this regard, his key challenge is comprehending people and how team dynamics and inter-personal relationships should be nurtured in an operations setting.

Key achievements in Mann Field include various CSR campaigns that support the completion of operations and an Environmental Compliance Certificate (ECC) with regard to the environmental management plans in Mann Field. The Field Operations Manager will continue focusing on safety targets and solving operational issues with his experience and capacity. ■



U Thaw Zin Win
Senior Engineer & Team Leader
Remedial & Workover Operations Team

U Thaw Zin Win was born in 1987, and graduated with a bachelor's degree in Petroleum Engineering from Thanlyin Technology University in 2008. He joined MPRL E&P in October 2009 and has more than 10 years of experience working in the field. He contributed to drilling new wells

and deepening wells with GD-2 Rig & P-100 Rig as a Drilling Engineer at Headquarters in 2012. Then he worked as a Production Team Leader responsible for the operations in Mann Field.

Now he leads Remedial & Workover Operations as its team leader. His duties are planning, monitoring, controlling and managing the workover operations and other remedial operations to meet production targets under the guidelines of safety procedures and the Environmental Policy. He identifies problems and offers solutions as a part of everyday operations for his team, an opportunity to learn how to apply new techniques in their work. He has collected experiences in Hydraulic Fracturing, GreenZyme Treatment, Additional Perforation and remedial operations. Moreover, he plans and managed the operations for water disposal wells which were injected with filtrated produced formation water by high pressure salt water injection pumps. This project is poised to become the best method to maintain reservoirs pressure for the Mann Field Enhanced Oil Recovery Project.

U Thaw Zin Win is keen to build his competence and ability further, and help train a new generation which will form a new basis for the company in the coming years. He believes in thinking for the long-term and does his best to contribute to the company. ■

tions and Gas Supply to Kyaw Zwa Fertilizer Plant and Shwe Taung Gas Turbine.

He then resigned from his work due to his father's death and supported his mother through farming. He made a living as a farmer for 13 years until his mother was 70 years old. A year after his mother died, U Soe Myint decided to send his CV to MPRL E&P. As a result, his engineering career life began again on December 7, 2003 at Mann Oil Field as a Drilling Supervisor with responsibilities for Remedial & Workover operations especially. Among them, the most interesting operations for him is fishing for unknown fishes left in holes in former days.

Many work-over operations and 64 deepening well operations have been successfully completed in Mann Field for enhanced oil production. Today the senior engineer is working continuously with over 16 years of engineering excellence in Mann Field. ■



U Minn Oo
Operations Engineer
Remedial & Workover Operations Team

U Minn Oo was born in 1966 and graduated with a Bachelor's in Petroleum Engineering from Yangon Institute of Technology (YIT) in 1993. In September 2009, he joined MPRL E&P as an Assistant Engineer in Mann Field. Before that he worked at a construction company. Now he has

over 10 years' experience working in Remedial & Workover Operations in Mann Field.

In his first month at Mann Field, he faced a lot of difficulties and challenges. His first assignment was to supervise pump servicing and remedial operations including swabbing & bailing, checking BHA, cleaning out bottom and fishing jobs which resulted in efficient operations and increased productivity. Due to operational needs, sometimes he supervises casing swabbing operations and tubing inspections at the warehouse. He actively participates in special projects using high technologies such as Hydraulic Fracturing (fracking) and GreenZyme Treatment Operations.

Currently he conducts Pre-Job Safety Inspection, Risk Assessment, SOPs, and JSA at the well sites in order to ensure zero accident and no harm to the environment. He supervises all operations with attention to detail and disciplines. He considers MPRL E&P's Mann Field is important to petroleum engineers and other professional engineers to learn modern high technologies and to become competent in their professional skills, duties and build confidence. Therefore, he finds life in the field very satisfactory, pleasant, and interesting. ■



U Soe Myint
Senior Engineer & Team Leader
Remedial & Workover Operations Team

U Soe Myint was born on January 1, 1953 in Myenegy Village, Nyaung Oo Township. He passed his Matriculation Exams with distinctions in Physics and Math in 1972-73 in Mandalay. He graduated with a bachelor's degree in Petroleum

Following graduation, he worked as a Drilling Engineer for six years in Mann Field (MOGE) and drilled 61 wells including one deep well, (Well depth – 7981 ft) by N-55 Sr-1 & GD-IV Drilling Rigs. In 1985-86, he was assigned as a Production Engineer for seven years at Prome Gas Field for Well Testing Opera-



U Aung Aung
Operations Engineer
Remedial & Workover Operations Team

U Aung Aung started his career as an Operations Engineer at MPRL E&P on January 3, 2011, and has over nine years' experience on Well Servicing, Deepening, Fracturing, Additional Perforation and GreenZyme Treatment operations. He graduated with a bachelor's degree in Petroleum Engineering from Thanlyin Technological University in November 2009.

Since day one, he has been assigned to work in field operations with the goal of optimizing and maintaining daily oil production rate. In this regard, U Aung Aung focuses on analyzing and monitoring more than 20 wells daily to meet the production targets. He conducts servicing activities for less-producing wells alongside the Remedial & Workover Operations such as scraping, swabbing and bailing operations, in accordance with the Standard Operating Procedures (SOPs), Job Safety Analysis (JSA) and HSE Standard Procedures.

U Aung Aung successfully led the drilling campaigns to the target depth in eight wells, and contributed to planned water disposing wells, reopening wells, work-over and GreenZyme Treatment operations. He ensures performing Toolbox Talks, SOPs and JSA before the commencement of operations in order to reinforce safety culture and has recently achieved the safety milestone of two million man-hours without an LTA in Mann Field. He is also implementing environmental commitments in line with the ECC and supporting CSR initiatives for the surrounding communities of Mann Field. ■



U Linn Wai Naing
Assistant Engineer
Remedial & Workover Operations Team

U Linn Wai Naing earned his degree in Petroleum Engineering from Yangon Technological University in 2002. Then he joined MPRL E&P in 2003 for the first time, and worked as a Production Technician for two years. He continued to attend Technological University (Thanlyin) and graduated with a bachelor's degree in Petroleum Engineering in 2009. Then he joined MPRL E&P again in 2014 and this time as an OJT Engineer.

He is now assigned as an Assistant Engineer under Production Operations Section in Mann Field. Based on the requirements of the field operations, sometimes he has to serve under Production Measurement and Echo/Dynamometer Teams and closely supervise remedial operations.

He is now assigned as an Assistant Engineer under Production Operations Section in Mann Field. Based on the requirements of the field operations, sometimes he has to serve under Production Measurement and Echo/Dynamometer Teams and closely supervise remedial operations.

As the pulling unit operations are interesting and involve a lot of operational objectives, he not only needs to be competent in technical skills but also has to manage the crews with good communications skills so that the operations are a success. The Remedial & Workover operations are also very challenging, and he collects lessons learned and other experiences from senior colleagues and the old service crew. Depending upon well behaviors, the operations are always full of new challenges on a daily basis.

Despite personnel's expertise, there are accidents that could occur during operations, requiring him to precisely follow the Occupational Health and Safety (OHS) Policy while environmental impacts are minimized in cooperation with the Environmental Officer. The Assistant Engineer believes all operations have been completed without an accident thanks to great teamwork. ■



U Win Ko
Assistant Engineer
Remedial & Workover Operations Team

U Win Ko graduated with a bachelor's in Petroleum Engineering from Technological University (Thanlyin) in 2013. He entered MPRL E&P as an OJT Engineer and worked in Production Measurement, Downhole Workshop, Echo/Dynamometer, and Tubing Inspection. Currently he is working as an Assistant Engineer in Remedial Operations and also as a supervisor under Production Measurement.

U Win Ko graduated with a bachelor's in Petroleum Engineering from Technological University (Thanlyin) in 2013. He entered MPRL E&P as an OJT Engineer and worked in Production Measurement, Downhole Workshop, Echo/Dynamometer, and Tubing Inspection. Currently he is working as an Assistant Engineer in Remedial Operations and also as a supervisor under Production Measurement.

He conducts and supervises all the Remedial & Workover operations such as Zone Isolation, Zone Combination, GreenZyme Treatment and Injectivity Tests under the guidelines of the safety and environmental objectives. In doing so, he works to ensure the technical guidelines of the project are followed through necessary discussions and coordination.

As field operations are more risky when compared to other office works, he has to work together with the Site Health and Safety Officer, and analyzes possible hazards while the operations are running. Moreover, he has to precisely follow Standard Operating Procedures and Job Safety Analysis, and hold the Tool Box Talk before starting the operations.

Last but not least, U Win Ko tries his best to support minimizing the environmental impacts from the operations in line with the objectives of the Environmental Policy in Mann Field. In this regard, the wastes and sludge coming out from the field operations are systematically managed not to harm both the environment and agricultural land nearby. ■



U Myo Than
Senior Engineer



U Soe Aung
Operations Engineer



U Pyae Phyto Saung
Assistant Engineer



U Myo Lwin Oo
Junior Engineer



U Min Ko Ko Lwin
Junior Engineer



U Kyaw Naing
Junior Engineer



U Zaw Zaw Aung
Junior Engineer



U Aung Naing Lin
Assistant Engineer
Remedial & Workover Operations Team

U Aung Naing Lin got his bachelor's degree in Petroleum Engineering from Technology University of Mandalay in 2012, and he started his career on January 14, 2014 by joining MPRL E&P as an OJT Engineer for two years. Then he became a junior engineer and was assigned to work in

GOCS (Gas & Oil Collecting Stations) and Casing Swabbing operations. In Mann Field, every engineer is trained to be capable of performing every section of the field operations independently—empowering and boosting employee morale and productivity.

The oil and gas industry is considered to be a risky workplace, dealing with heavy machinery. Thus, the Assistant Engineer performs any operations in compliance with the HSE rules and regulations of the company. He feels great satisfaction whenever he safely completes well servicing operations by following Standard Operating Procedures (SOPs) and Job Safety Analysis (JSA). U Aung Naing Lin was promoted to the role of an Assistant Engineer in 2018 and continues to work in the Remedial & Workover Operations Team.

The Assistant Engineer overcomes the difficulties in conducting Remedial & Workover operations by asking questions and learning from senior colleagues and studying in his free time. Working in the petroleum field is challenging because of a degree of uncertainty with what is happening underground. To deal with it, one should be able to link theories and practice. There are always opportunities to learn new things in the field too. He believes his passion and persistence over his six years working in Mann Field enabled him to become a competent operations engineer. ■



U Aung Nyein Chan
Assistant Engineer
Remedial & Workover Operations Team

U Aung Nyein Chan graduated with a bachelor's degree in Petroleum Engineering from Magway Technological University in 2011. He joined MPRL E&P on July 29, 2013, and has since worked in Mann Field.

During his early days, he assisted the Measurement Team and monitored the production rate and behaviors of each well to report to the Production Team Leader. He was responsible for collecting accurate data for each well. When working as an Operations Supervisor, he handled all remedial operations issues for the wells to meet production targets on a daily basis. Out of the routine work-over operations, he contributed to the GreenZyme treatment operations which have been currently successful. As the next step, the Spot Water Injection project will be carried out with the Assistant Engineer as a part of the project team to ensure its success.

Currently, U Aung Nyein Chan is assigned in the Echo Meter Team to monitor conditions of the wells and analyze and interpret the performance. In his six years in the remedial operations, he applied both his formal education and work experience to complete his jobs while developing robust working relationships. He fully supports the company's Occupational Health and Safety (OHS) Policy and Environmental Policy for promoting a safety culture in Mann Field. He feels lucky to work at MPRL E&P that offers both job security and personal safety. He looks forward to grow with the company in the coming years. ■



U Win Thein Oo
Assistant Engineer
Remedial & Workover Operations Team

U Win Thein Oo entered MPRL E&P as an Assistant Engineer on July 29, 2013. He graduated with a bachelor's degree in Petroleum Engineering from Yangon Technological University in 2002. Previously, he worked at Gold Petrol Myanmar in Yenangyaung and Chauk for about

two years. After seven years' experiences, he was promoted as a Field Operations Engineer in late 2019.

His role and responsibilities concern all aspects of onsite supervision of Remedial & Workover Operations. In addition, he is responsible for tracking the use of all materials and completing necessary paperwork and reports for operations. He also provides engineering support to all operations which fall under the responsibilities of Operations Supervisor, including drilling, completions and work-overs. He closely supervises Water Injection Program, GreenZyme Treatment Program, Additional Perforations, Reopen wells, Fishing Work-over jobs, Well Servicing and Swabbing activities to meet the production targets and with each operation gaining success to an extent.

He collaborates with the CSR Team and HSE Team in Mann Field to promote social and environmental initiatives such as OGM Campaigns and implementation of EMP. He encourages all MOGE crews to promote a positive safety culture in all operations on a daily basis. He believes that it is very important to him to be able to support field operations successfully every day. U Win Thein Oo is very pleased with his role and the chance to work for the company for such a long time with the support of his team and many other colleagues. ■

U Tun Zar Mung
Junior Engineer (Mann Field)

Four years ago, U Tun Zar Mung was a Petroleum Engineering student who was given a chance to understand what an actual Petroleum Engineer does in the oil field. To be exact, it was a 2-week internship offered by MPRL E&P, a leading upstream energy company in Myanmar, to experience oil and gas operations in Mann Field. It was an eye-opening adventure for him whose goal is to become part of this industry. He got to see the nodding donkeys, Gas and Oil Collecting Stations (GOCS), oil wells and production operations, which allowed him to combine classroom knowledge and real-life practice. He also learned about the company's CSR Program for the surrounding communities in Mann Field and understood why business has a responsibility to take care of society.

The Junior Engineer found everyone in the field to be kind and supportive. From senior colleagues' waking routines and work preparation before dawn, to the way they do hand-over to the night shifts at dusk, everything was inspirational to him. Hence, his decision to have a career as a Petroleum Engineer became firmer. MPRL E&P also takes good care of fresh graduates to adjust well in their transition from classroom to the workforce. Therefore, when the opportunity to work in Mann Field kicked in, he made a beeline to it.

Now, Tun Zar Mung is working as a Junior Engineer at the Field Operations Department, under the guidance of kind and humble senior colleagues. He is confident that he can become a bigger part of this company as he works hard to grow professionally in the industry and acting responsibly towards society. ■





U Thein Than Lin
Assistant Engineer
Remedial & Workover Operations Team

U Thein Than Lin graduated with a Bachelor of Petroleum Engineering from Pyay Technological University at 2009. He was recruited to work as an OJT Engineer at MPRL E&P in January of 2014.

After his 2-year journey as an OJT Engineer, he was promoted to a junior engineer in March 2016. During these years, U Thein Than Lin was assigned as an Independent Supervisor at GOCS, Casing Swabbing, and Well Servicing Operations. Moreover, he successfully performed remedial operations such as Pump Service, Swabbing, Bailing, GreenZyme Treatment, Reopening and Pumping Test, and Fishing Operations. Most important of all, every single job was performed safely by following the Standard Operating Procedures, HSE policies and procedures.

After two years of service as a junior engineer, U Thein Than Lin was promoted again as an Assistant Engineer in September 2018. Since then, he has been conducting remedial operations, striving to achieve expertise through gaining more experience. MPRL E&P has been promoting the best safety culture through the OHS Policy and Environmental Policy for every step and aspect of the operations. Hence, he is proud to be part of Myanmar's leading energy company, and is willing to grow with MPRL E&P for many years to come. ■

Daw Yu Nandar Myat Junior Engineer (Mann Field)

Daw Yu Nandar Myat started her career with MPRL E&P as a Junior Engineer in January 2020. She was a fresh graduate with a bachelor's degree in Engineering from Yangon Technological University. In her second year at university, Yu Nandar Myat joined MPRL E&P's Internship Program and underwent a 2-week internship in Mann Field where she mustered first-hand experience of oil field operations which enabled her to assimilate theories and practice as she progressed her academic years. She found the hands-on training by professionals in Mann Field was both challenging and rewarding in a way that further strengthens her true passion for the field of petroleum engineering.

Yu Nandar Myat had successfully completed her probation period from January to April 2020 as part of the Production Team in Mann Field. During her probationary period, she worked as a supervisor at the Gas and Oil Collecting Stations (GOCS), doing paper work, measurement tasks and HSE assignments, all of which proved to be a great experience in comprehending the importance of interpersonal communications, professional ethics and teamwork.

All these experiences of working as part of the Field Operations Team enabled her to gain more self-confidence as a young professional. Aware of the company's policy towards providing equal opportunities for both male and female employees in order to ensure diversity of the workforce, the Junior Engineer is determined to strive for the highest level of professional development as a female petroleum engineer. ■



U Myo Aung
Assistant Engineer
Remedial & Workover Operations Team

U Myo Aung graduated with a bachelor's degree in Petroleum Engineering from Magway Technological University on January 23, 2011. He collected field training and experience in Mann Field, Htauksharbin, Yenangyaung, Kyauk-Khwet and Letpando during his university studies. He

worked as a Maintenance Engineer at Myanmar Asia Optical International Co. Ltd. and at Parami Auto-Mobile Services after graduating.

Then U Myo Aung joined MPRL E&P as an On-Job-Training Engineer for field operations in November 2014, during which he got to understand well Pumping Unit Maintenance Operations, Workover Operations, Production Operations of Problem wells, Down-hole Tools Maintenance Operations, Fishing Operations and Solid Control of Drilling Fluids.

As an Assistant Engineer in Mann Field, he assists senior colleagues and shares the working experiences with junior colleagues. He has learned and contributed to achieving results without incidents and minimal environmental impacts in field operations. He is determined to continue supporting the field operations so as to become more efficient operations and further develop his career at MPRL E&P. He believes through his efforts he can be a great team player in the organization and its growth. ■



U Soe Kyi
Junior Engineer
Remedial & Workover Operations Team

U Soe Kyi started his career with MPRL E&P in April 2018. He has been assigned to work in Remedial & Workover Operations under the Production Operations team in Mann Field.

His responsibilities are planning daily operations, cooperating with MOGE personnel, supervising MOGE crew, and reporting to the senior engineer and Assistant Field Operations Manager regarding daily activities. He has three priorities-performing all the jobs in accordance with Standard Operating Procedures (SOPs) and safety procedures, keeping a strong relationship with MOGE personnel, and minimizing environmental impacts from our operations in line with the Environmental Policy and ECC commitments.

U Soe Kyi earned a bachelor's degree in Petroleum Engineering from Technological University (Magway) in 2010. After graduating, he worked as a supervising engineer to supervise general workers in different fields for about three years. Then he worked for about a year at SBT Japan Car Import Company as a Sales Executive, and nearly two years at Samsung Myanmar as a Retail Area Manager for Shan North region (Lashio) before joining MPRL E&P.

However, his dream was to work in an oil and gas field as he had studied petroleum engineering. He has now realized his dream. ■



Pursuing a Better Business, Empowering a Better World!

Pyae Pyae Phyo

There is no doubt that being a good corporate citizen has never been easier. A good corporate citizen values, monitors, and beneficially affects communities and societies at-large. They carefully balance shareholder needs with those of the community and always consider the environmental impact of business operations.

According to Boston College Center for Corporate Citizenship, the measurement and return on investment (ROI) of corporate responsibility and corporate citizenship is defined by how well companies responsibly manage not only their financial performance but also their environmental and social impact. The underlying goal of corporate citizenship remains clear: create a better world in which to do business and a better world in which to live.

Myint & Associates Offshore Supply Base Ltd. (M&AOSB) always tries its best to portray our business as both responsible and sustainable, by taking great and cautious care in the business activities to minimize impact as much as possible on the environment and local communities, where business is being conducted.

M&AOSB has made environmental and social commitments to demonstrate appropriate and sincere respect for the environment, particularly for preventing any accidental loss of resources or assets likely to have an impact on the environment, company employees, and communities. In addition, we focus on enabling business operation improvements in an environmentally responsible manner.

M&AOSB never forgets to consider ways of reducing adverse environmental and social impacts and enhancing project benefits. Since 2016, M&AOSB began socialization its proposed project activities with local community members by hosting public meetings and regular engagements, and has established Corporate Social Responsibility (CSR) program in 2017.

As a leading operator of offshore supply base, it is also our responsibility to maintain a sustainable environment surrounding the project in Nga Yoke Kaung. We successfully accomplished the Environmental Impact Assessment (EIA) process which mentioned details of anticipated risks, impacts, and mitigation measures against potential negative impacts from proposed development activities. After EIA process, we achieved the Environmental Compliance Certificate (ECC) granted by the Ministry of Natural Resources and Environmental Conservation (MONREC) on 24th April 2019.

We firmly comply with an Environmental Monitoring Report to the Environmental Conservation Department (ECD) of MONREC every six month as per the EIA procedure and ECC requirements. Since the project is in the pre-construction phase, there were few activities at the project location

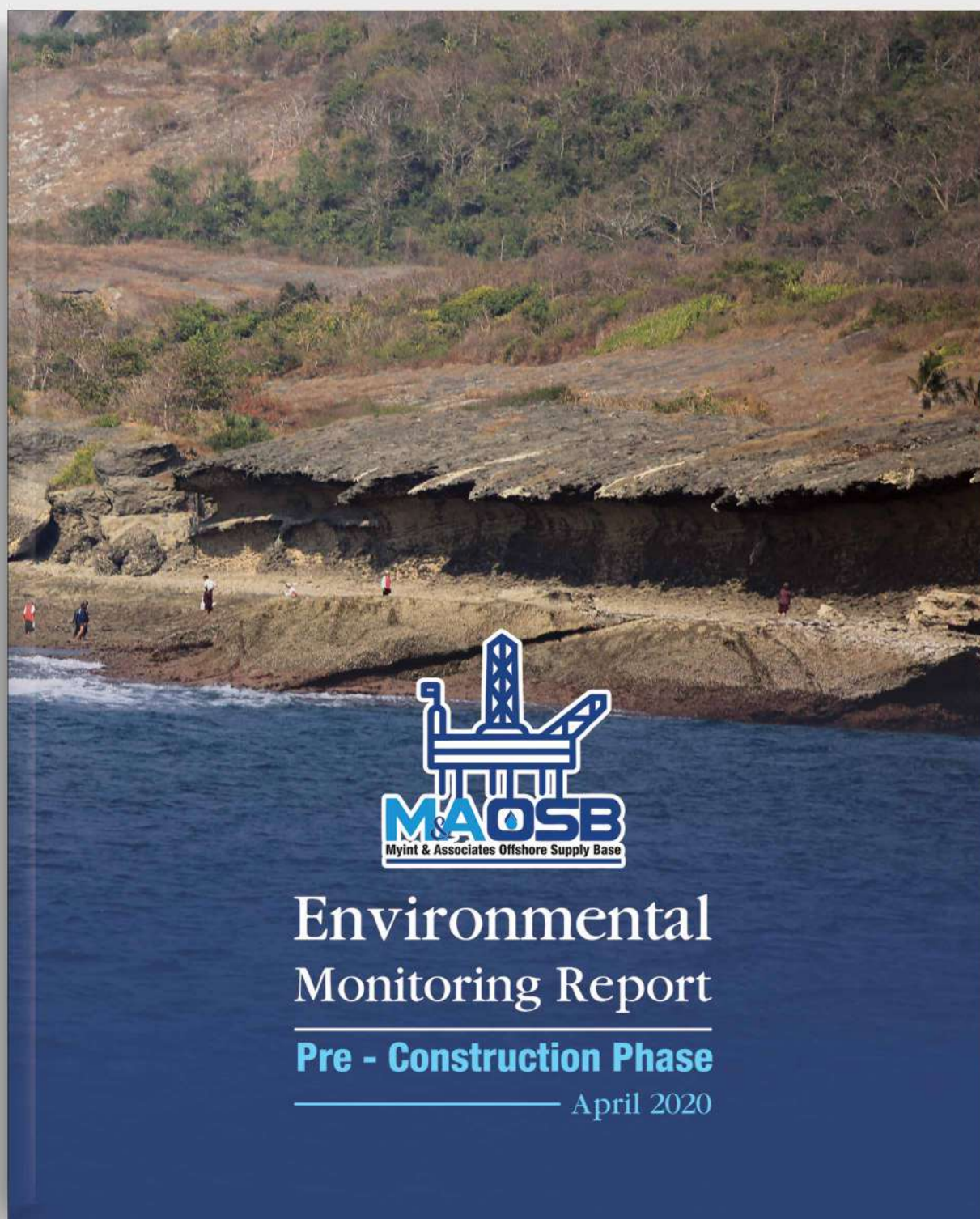
except the implementation of CSR initiatives and regular stakeholder engagement activities. The reports for the pre-construction phase were successfully submitted in October 2019 and April 2020.

The first report covered ECC disclosure workshops, electrical transmission line survey, evaluating process of design and build contractor selection, evaluating process of environmental monitoring service provider selection, and CSR progress activities.

M&AOSB recognizes the importance of biodiversity conservation and supports it through our values, performance, communication and engagement. We aim to undertake activities to raise internal and external awareness of the importance of conserving biodiversity, and ways the company is addressing it. This will include engaging with the government, local communities, and others to understand and to address significant biodiversity issues in areas where we operate, while working

with a variety of external organizations to make positive contributions in the Nga Yoke Kaung area. With protecting the safety and health of people and the environment being a M&AOSB core value, we also strive to design our facilities and conduct our operations to avoid adverse impacts to human health and to operate in an environmentally sound, reliable, and efficient manner. The second report presented environmental and social management frameworks by outlining the compliance requirements, mitigation measures, and monitoring programs to be implemented throughout the project activities. The report highlights also included:

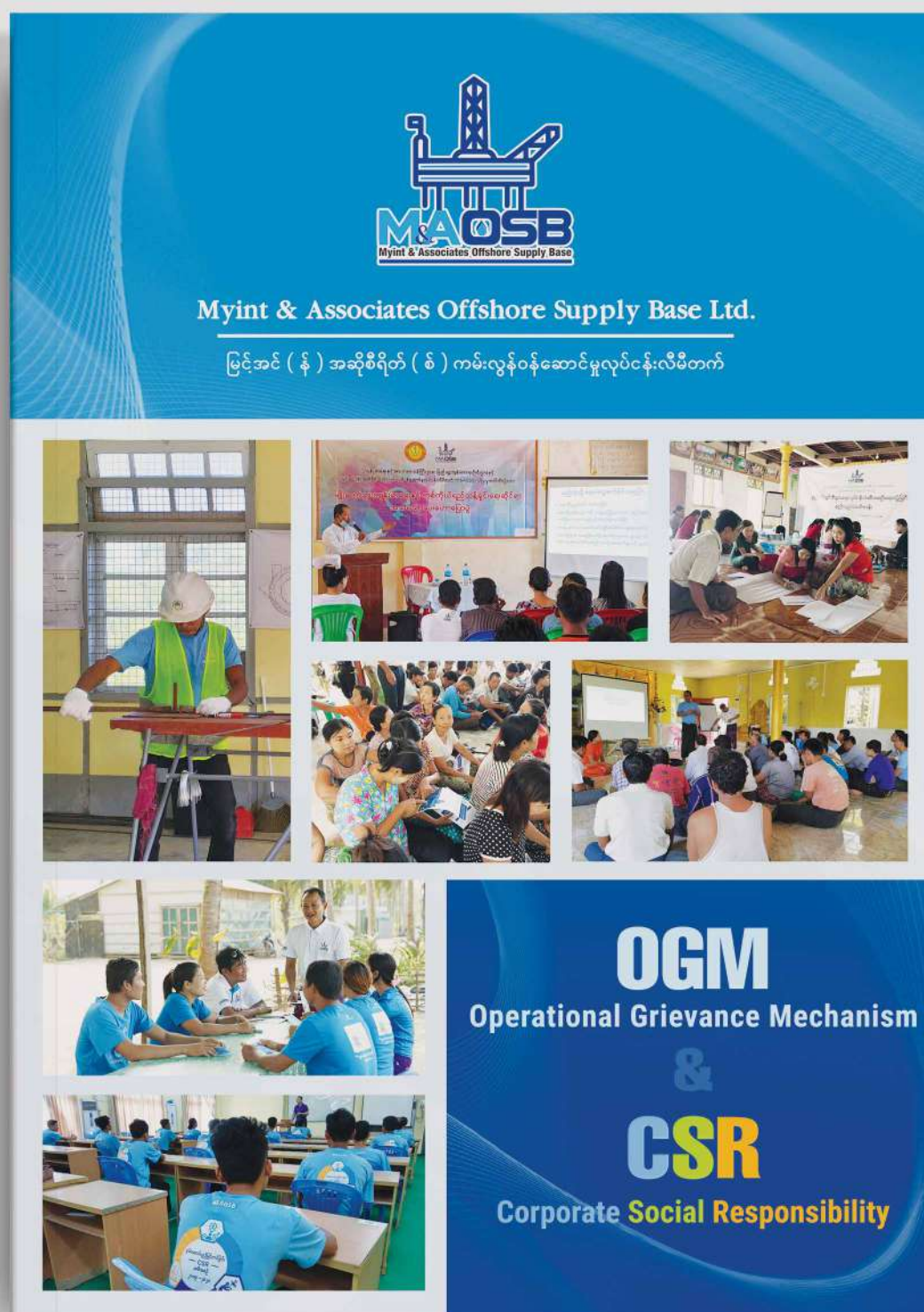
- Selection to China Harbour Engineering Co., Ltd (CHEC) as the design and build contractor
- Selection to Myanmar Koei International Co., Ltd (MKI) as the environmental monitoring service provider
- Preliminary Labour Camp Management Plan



- Emergency Response Plan for Onshore and Offshore Activities
- Occupational Health and Safety Plan
- Biodiversity Management Plan
- Livelihood Restoration and CSR Plan
- Operational Grievance Mechanism
- Completion of FY 2019-2020 CSR Work Program

As a responsible investor, M&AOSB is always committed to protect the environment and society by adhering to obligations and responsibilities in environmental and social management plans, as long as the supply base is in operation. M&AOSB will prepare the Construction Monitoring Report in accordance with clause D6 of ECC, by including the following in the report:

- Documentation of compliance with all conditions of this ECC, in particular on the commitments made in Table 8.2 of the EIA report.
- Progress made to date on implementation of EMPs against the submitted implementation schedule
- Difficulties encountered in implementing EMPs and recommendations for remedying difficulties and steps to prevent or avoid similar future difficulties.
- Number and type of non-compliances with EMPs and proposed remedial measures and timelines for completion of remediation
- Summary of self-monitoring reports including explanatory remarks
- Summary of accidents or incidents relating to the occupational and community health and safety
- Summary of complaints and operational grievance mechanism (OGM)



Sustainability at M&AOSB is understood as meeting the needs of the present generation without compromising the needs and ability of the next generation. Taking responsibility for how our operations impact societies and the natural environment shapes and influences the type of practices that are initiated within the organization. M&AOSB will continue to promote activities that contribute to sustainable development goals to create a better world. ■



Zin Mar Myint

Community Profile

Let Pan Ta Pin Village

Let Pan Ta Pin is one of the surrounding communities located in the eastern part of Mann Field. It has 203 households, and 759 residents -- most of whom work in agriculture and live on the alluvial land. Since 2015, MPRL E&P's CSR program has initiated several community initiatives which include providing water tanks, a water filtration unit, hand-wash stations and drainage – totaling MMK 38,727,425. These initiatives were carried out in cooperation with the Village Administrator, Village Development Committee, and community members based on needs assessment exercises. Every initiative, once completed, is followed by a review meeting to identify the best practices and reflect on lessons learned. According to the participatory nature of these activities, community and local authority cooperation are essential for sustainable results. ■

Ko Maung Wai
Community Volunteer

Ko Maung Wai is a 43-year-old Community Volunteer who represents Let Pan Ta Pin Village in Mann Field. His tenure started in August 2018, after being selected as a Community Volunteer based on his interest in community works, and desire to contribute. Ko Maung Wai said, "I believe the CSR initiatives by MPRL E&P benefit the communities, and I am happy to support it as a Community Volunteer. I work alongside other Community Volunteers in carrying out these initiatives in Mann Field in order to exchange knowledge and share knowledge to enhance our roles. Since we all work like a family and support one another, there is no discrimination. In our communities, there are differing attitudes to our work but we do our best to benefit our people. As I am well-aware of the importance of my role in helping maintain the relationship between the company and the community, I perform my duties actively. Since I have been provided an appreciation certificate by the CSR Program, my family is also very proud of the recognition for my contributions to the community. I am satisfied; our roles and contributions are recognized and appreciated by the communities too." ■



An Unforgettable Journey to the Seat of Enlightenment:

Bodh Gaya

Aung Zayar Myint

Every faith has a globally-known religious site. For Buddhists the most popular sites are the Birth-place of Gautama Buddha, Bodh Gaya where the Buddha attained enlightenment, Sarnath where Gautama Buddha delivered his first teaching, and Kushinagar where Gautama Buddha died and attained Parinirvana – ending his cycle of reincarnation.

Coupled with advice from good friends who had been to Bodh Gaya, I made the necessary preparations for my pilgrimage. I booked my trip through Myint Mo Kabar Pilgrimage Tour -- realizing afterwards that I made the right booking decision. I began my trip with my parents and aunt during Thadingyut.

The flight took about two-and-a-half hours from Yangon International Airport to Gaya International Airport, India. No sooner when we arrived at the monastery, we visited the Mahabodhi Temple Complex where Buddha attained enlightenment under the Bodhi tree. Through the tour company, the pilgrimage team donated golden lotus robes to Buddha's statue at Mahabodhi Temple. I felt calm and at peace.

Early next morning, we went to the Dungeshwari Cave Temple where Buddha meditated about six years in the cave at the Uruwala forest-- I vividly pictured the great Buddha attempting with great perseverance to practice the Dhamma. Afterwards, we visited Sujata Stupa and Sujata Temple. In the afternoon, we returned to the Myanmar Monastery for lunch. We then departed from Gaya to Varanasi, listening to the doctrines of Lord Buddha in the car. We could see that the Varanasi market was very crowded and while passing through the Varanasi, I saw a sea of people, bikes and cars on the road. That night we stayed at Myanmar Monastery and many of the guesthouses are perfect because of existing generous donors.



In the early morning, the pilgrimage team visited Sarnath also called "Mrigadava", where Lord Buddha gave his first sermon called the Dhammacakkappavattana Sutta to his first five Brahmin disciples, after he attained enlightenment. In the Mrigadava compound, we worshipped the Dharma-racika and Dhamek Stupas with a deep heart. That evening, we took a breathtaking boat ride on the Ganga River, and ate Varanasi's famous yoghurt food – truly an unforgettable experience. We also went to ancient Sankassa city and visited Asala Pagoda and the stone pillar, the site where Buddha taught the Abhidhamma Sermon.

The next day we headed to New Delhi, and on the way we entered the Taj Mahal, one of the Seven Wonders of the World, located on the bank of the Yamuna River in the India city of Agra. It was built roughly 400 years ago, and constructed with white marble; the architecture is amazing. We stayed overnight at the Hotel Kingston Park in New Delhi. In the evening, we visited the night market which was bustling. I found the night shopping experience was quite enjoyable, but also a bit worrying -- anyone of us could get separated from each other due to big crowd of people. The Indian breakfast at the hotel the next morning was very tasty and delicious especially puri and tea.

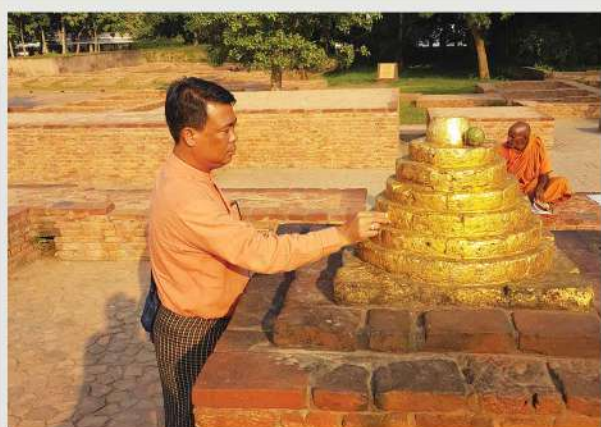
Next, the pilgrimage team visited the Mahasatipatthana Sutta and worshipped together. Moreover, we went sightseeing around New Delhi, visited India Gate, Indira Gandhi Memorial Museum and Lotus Temple. There were a lot of places to visit in New Delhi, but we could only choose a few places due to time. We travelled to Shravasti where the Lord Buddha spent 25 rainy seasons. Jetavana Monastery has numerous temples, ancient stupas and grand viharas, a monastery for Buddhist renunciates. There is no doubt that it was once a grand structure and a noble place. From Shravasti, we went to Lumbini Buddha's birthplace. The border between India and Nepal was busy from the trade flow of commodities and goods, so we waited in traffic for a while.

I was proud to see the efforts of U Thant (retired UN Secretary-General) on the Myanmar citizen-led regional redevelopment of Buddha's Birthplace. I purchased several souvenirs of Buddha for relatives and friends -- I must say, that the handicrafts were made with high quality. We left Nepal for India and went to Kushinagar where Gautama Buddha attained Parinirvana. The pilgrimage team visited the Parinirvana Stupa and Reclining Buddha. During the worship, I sadly remembered the teachings recounting Buddha's death.

Then we continued our trip to the ruins of Nalanda and Rajgir. The ancient Nalanda University is located in a large enclosed courtyard, I was astonished to see the ruins of such large buildings! We visited New Nalanda University and donated to Buddhist monks from Myanmar who were there as missionaries. The ancient city of Rajgir is surrounded by five mountains, making the city a natural fortress. We visited the Buddhist sites in Rajgir and visited the Vishwa Shanti Stupa also called "World Peace Stupa" in Ratnagiri Hill by cabin ropeway. We then returned to Bodh Gaya. Early

next morning, we visited the Mahabodhi Temple for the second time and worshipped with peace and tranquility, and bought some souvenirs at the Gaya market.

Going on a great journey has been a life goal of mine. If you want to make a trip, you will have to spend a lot of time and money, and you must be in good health. In my opinion, I would recommend Bodh Gaya for everyone, especially Buddhists. As a pilgrim, you will find many good deeds and foreign experiences. I would like to thank Myint Mo Kabar Pilgrimage Tour for helping us with whatever we needed to make the trip and keep pilgrims at ease. I hope to go there with my family again. ■



Seeing is Believing: Community Volunteer Pilots a Mushroom Model Farm

Thal Sandy Tun

Ko Nay Zaw is a 35-year-old Community Volunteer representing Chin Taung Village in Mann Field. As a Community Volunteer, he is involved in implementation of a wide range of CSR initiatives by MPRL E&P's CSR Program to support community development.

These include facilitating agricultural knowledge sharing sessions for community farmers, waste-management knowledge sharing sessions for the community households, environmental awareness information sessions at community schools, recommending potential trainees for vocational skill trainings, summoning village stakeholders to monthly CSR meetings, attending capacity building trainings, collecting OGM cases, and supporting the Mobile Clinic Program.

He then took a step further: becoming a champion for growing mushrooms through modern methods. "I used to grow mushrooms myself in the traditional way -- that is growing the mushrooms directly on the land", said Ko Nay Zaw.

After attending a hands-on training on mushroom cultivation organized by MPRL E&P's CSR Program in August 2019 in Mann Field, Ko Nay Zaw decided to apply his newly acquired skills at once. With the start-up funding from the CSR Program which was spent on building a mushroom house and buying ready-to-inoculate spawn, he set out his mushroom model farm by growing three types of mushrooms: Straw Mushrooms, Pearl Oyster Mushrooms, and Cloud Ear Fungus. The farm was in full-swing by November 2019.

"In my model farm, the focus is Pearl Oyster Mushrooms. It's a type of edible fungi that is most widely consumed around the world. It is also one of the easiest types to grow as they grow fast indoors under controlled conditions and can be harvested all year round for income. I also grow Straw Mushrooms in the rainy season. I am also currently testing Cloud Ear Fungus."

Ko Nay Zaw said confidently that cultivating popular mushrooms can help generate a daily income

and big profits in a few weeks. Starting a mushroom farming business is fairly easy too with a slim start-up cost and a high return on investment. "Additionally, you can grow mushrooms using organic waste and natural fertilizers. It is full of nutrients conducive to human health. You do not have to worry that you will not sell out all your harvest too."

Ko Nay Zaw was also eager to talk about his experience of cultivating the mushrooms using modern techniques learned at the training. "I experimented with Pearl Oyster Mushrooms first as they have a greater chance of success. So I was preparing the straws, monitoring the bags and spraying the growing room with water to increase humidity. As the community does not have access to the national grid for electricity, I had to find off-grid solutions such as solar power and sometimes batteries. I do all these things on my own with no extra cost for labour. Now it is summer and so harvest is just normal."

Some of his harvest goes to the Minbu Market and he also sells them at home for his customers in the community. He said he has no issue with distributing and selling his mushrooms.

As intended at the commencement, Ko Nay Zaw has reached out to fellow farmers interested in his mushroom model farm by imparting his experience and knowledge, answering questions patiently and at length. "A farmer from Kyauk Tan Village nearby came to study my model farm and he started to grow his own mushrooms commercially.



I explained how to build a growing house, how to water the mushrooms and how the mushroom market is. I believe more people in the area will start to follow my path as a result of these efforts over time and it will be our achievement," said Ko Nay Zaw.

Moving forward, Ko Nay Zaw entertains an idea of growing a value-added mushroom farming business covering its supply chain. He is also determined to deepen his experience and knowledge on the mushroom cultivation so as to ensure it becomes more profitable in the long run. He concluded, "Mushroom farming can be a home business that our community households can manage on their own. Mushrooms are also a sustainable food on our table as it is grown with organic waste. So I would like to express my thanks to the company and its CSR Program here for the supports given to me in the Model Farm Project."

