

# ENERGY SPOTLIGHT

A Myanmar Times Special Feature - August 2012

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# The geopolitical challenge for Myanmar's energy sector

By Soe Myint

INTERNATIONAL financial institutions state that Asia is fast becoming a leader in the world economy. The emergence of Asia as a global powerhouse is being led by China, India, Indonesia, Japan, South Korea, Malaysia and Thailand.

Asia's contribution to global economic growth is stated to have risen from 11.3 percent from the early 1990s to an estimated 21.9 pc in 2011. By 2030, Asian GDP will exceed that of the G-7 and will account for 51 pc of global GDP by 2050. In parallel to its economic growth, Asia's urbanisation rate is also growing rapidly.

And as population, economic development and urbanisation rates accelerate, the energy demands of the region mean access to secure reliable energy supplies will become central to national and foreign policy of the region's countries.

With growing energy consumption increasingly exceeding domestic energy production and resource availability, energy security has thus become a central theme for enabling economic growth.

In this situation, Myanmar is well positioned, both geographically and in terms of available resources to help supply the region's energy needs.

It is noteworthy that three of the region's leading economies, in India, China and Thailand, happen to be neighbouring countries of Myanmar.

India in 2009 was the fourth largest energy consumer in the world after the USA, China and Russia. Petroleum demand in the transport sector is growing as vehicle ownership in India expands. While domestic energy resources base is substantial, India still depends on imports for its energy use.

India's crude oil consumption is 3.2 million barrels of oil per day while producing 0.95 million barrels of oil per day. For its deficit, India has to import and in 2010, India became the fifth largest importer of crude oil, importing 70pc of consumption.

India has made major discoveries of natural gas in recent years and production is continually increasing. Yet consumption is continually increasing largely in the electric power sector. Natural gas is expected to be an increasingly important component in its pursuit of energy resources diversification policy and

overall energy security policy.

India has been an importer of natural gas since 2004 and in 2010, India's import of natural gas as LNG amounts to 429 billion cubic feet. As India's natural gas import is expected to increase over the years, India aims to increase imports of natural gas through pipelines from neighbouring countries including several Central Asian countries and Myanmar. However, to date, a proposed gas pipeline from Myanmar has failed to materialise because of politico-economic issues with Bangladesh.

As Myanmar's big neighbour to the west, India has implemented a 'Look East Policy' since the early nineties to build a strong relationship with ASEAN and enhance its political influence in the region. And yet connectivity between India and the ASEAN region has languished for many years. The delay results in the following: lower trade volume with ASEAN compared to China and Japan; lower investment in the ASEAN region; BIMSTEC not working at the expected levels; outreach over the Indian Ocean not at the expected level.

A major impediment is the

## Abundant natural resources give Myanmar a chance to join Asia's golden age. Let's make that chance a reality

absence of deep engagement with Myanmar, seen as a gateway for India to ASEAN and Indochina. This setback together with the fact that India failed to look further east beyond Bangladesh, leads India to miss out on its imminent opportunities to acquire Myanmar natural gas.

In light of increased investment by other Asian countries in recent years, the recent visit by Prime Minister Manmohan Singh to Myanmar, is seen as an effort to put Myanmar back on track in its "Look East Policy".

Myanmar's other large neighbour has achieved even greater economic growth over the past two decades, emerging as an influential power in the global economy. China is now the second largest economy in the world after the US. By 2020 it is projected to surpass the US to become the world's biggest economy.

As a net exporter of crude oil until the early 1990s China went on to become the world's second larg-



Technicians discuss onsite at a natural gas pipeline in southern Myanmar last year. PIC: KAUNG HTET

est oil importer by 2009. China's oil consumption accounts for a third of the world's consumption growth in 2010. China has 30.6 billion barrels of proved oil reserves as of January 2011. They produced 4.3 million barrels of crude oil per day and consumed 9.2 million barrels in 2010. It is projected that for China to be able to keep up its economic growth, it will require more than 17 million barrels of oil per day by 2030.

China became a natural gas importer in 2007 with plans to expand the use of natural gas from the current 3 pc to 10 pc of total energy consumption by 2020. Gas requirement is expected to triple by 2035, growing by about 5 pc per year. To meet demand, China plans to import natural gas via LNG or a number of natural gas pipelines from neighbouring countries such as Myanmar and central Asian countries.

Sharing 2185 kilometres of com-

mon border to the east, launched its own 'Go West Campaign' in 2000, primarily to bridge the gap between the economies along its eastern coastal regions and its western provinces.

In the early 1990s, Yunnan Province was just one of many poor provinces in western China. But Yunnan is now positioning itself as a regional logistics hub. Through Kunming, it has direct linkages with major cities in China and exit routes to Vietnam, Thailand via Laos, Myanmar and Bangladesh via Myanmar. By 2007, about 1500 km of highway and 1300 km of railway leading to bordering countries were added in Yunnan. Moving westward, China has made headway in strengthening connectivity to Myanmar, with the Kyaukkphyu-Kunming Railway and highway link together with the Myanmar-China crude oil and natural gas pipelines.

The "Go West Policy" has allowed Yunnan to become a major trading partner for Mekong River Basin Countries, and regional trade has increased significantly from 2000

to 2009, according to statistics of Department of Commerce, Yunnan Province.

This very fact has been instrumental in realising the acquisition of Myanmar gas by China, the construction of Myanmar-China oil and gas pipeline and the planning of a Myanmar-China railway and highway link. The crude oil will be used as feedstock for a new refinery in Kunming and Myanmar natural gas will be used for industries in Yunnan Province and beyond. These transportation links will continue to be a crucial part of AFTA and bridging East and West Asia.

In fact, the Myanmar-China gas pipeline connecting the Shwe gas field can accommodate 1.2 billion cubic feet of gas per day, far more than the current export capacity of 500 million cubic feet a day.

Although Myanmar's closest ASEAN neighbour, Thailand, is a

growing producer of crude oil and natural gas, the country remains a net importer of oil and natural gas, taking a significant amount from Myanmar.

Thailand produced around 330,000 barrels of crude oil per day and has proven reserves of 400 million barrels of crude oil in 2010. The country also holds 11.0 trillion cubic feet of proven gas reserves and produces 3.51 billion cubic feet a day of gas.

However, Thailand imports 70 pc of its total oil consumption and 30 pc of its gas to meet demand. And the country is planning to increase energy imports of natural gas and electricity from neighbouring countries.

Myanmar currently exports to Thailand around 1.1 billion cubic feet of gas a day amounting to 27-30 pc of Thailand's gas consumption.

From Myanmar, Zawtika gas field is scheduled to export 300 million cubic feet a day by the end of 2013 in addition to current exports from Yadana and Yetagan gas fields in southern Myanmar. There are also plans to import electricity from Myanmar through several hydro-power projects.

Myanmar lags behind most countries in the region, and faces many

challenges in order to catch up. But with energy hungry neighbours, and considerable energy resources yet to be exploited, the country has a golden opportunity to make good its development task.

Myanmar's GDP per capita in 2010 was \$592 compared to the ASEAN average of \$3092, according to ASEAN statistics (2011). Thailand's GDP per capita is \$4735 while Malaysia and Vietnam are \$8262 and \$1238 respectively.

Selected basic ASEAN indicators (2011) showed that Myanmar exports in 2009 were \$6.34 billion, a mere 0.78 pc of the ASEAN region, while trade volume is only 0.66pc of ASEAN's \$1.54 billion.

The immediate challenge facing Myanmar is how to balance its resource-based development. Myanmar requires managing its natural resources both to fuel its economy through exports while catering for its own development needs.

Myanmar's consumption of petroleum is about 60,000 barrels of oil equivalence a day, compared to more than one million barrels of oil per day consumption of Thailand. According to released statistics in the state news paper, Myanmar's natural gas consumption is 270 million cubic feet a day while Thailand is consuming 4.3 billion cubic feet a day in 2010.

Myanmar's installed capacity of electric power generation is 3494 MW, generating around 9711 GWh annually and supplying electricity to 26 pc of the country. Thailand's installed electric power generation capacity is 31,446.7 MW, generating more than 160,113 GWh annually. Thailand also plans to expand to 65,547 MW installed capacity by 2030.

The government needs to come to terms with how to effectively implement these competing aspects.

And finally, such exploitation of natural resources also means paying a price environmentally. We have to be mindful that the price we are paying is as minimal as possible.

Abundant natural resources gives Myanmar a chance to join Asia's golden age. Let's make that chance a reality. ■

The author Soe Myint is a retired director-general of the Department of Energy Planning under the Ministry of Energy.

### SPOT LIGHT ON ENERGY SPECIAL FEATURE

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# Positive FDI picture, but hurdles remain

By Juliet Shwe Gaung

**I**N an indication of where Myanmar's oil and gas sector is headed, a latest bidding round for 28 new offshore oil and gas blocks in September is expected to include western oil and gas companies, a Ministry of Energy official said earlier this month.

Several international oil and gas companies, including US Oil companies Exxon Mobil, Chevron, Conoco Phillips that participated in a weekend tour of Myanmar last month are expected to participate in the bidding, he said.

"Currently, there are many who want to work on offshore blocks including companies from Australia, the European Union, Japan, the US, England [UK] and even Italy who has never participated before," he said.

Onshore blocks will also be called for bidding at the same time as the offshore bidding, he added.

"Among the 34 eligible onshore blocks, about 15 blocks will be called for the next bidding round. All of the available blocks could not be called due to some accessibility reasons.

"Before, offshore bidding rounds had been done under direct negotiation, he said, but there weren't so many companies who could work on exploration and production in a leading role," he said.

The entrance of US oil companies would boost deep sea technologies in Myanmar, the official added.

Attracting greater international interest, the future of the oil and gas industry seems to be buoyant for several reasons - more investment is expected, more transparency measures planned, and the Ministry has outlined its intention to amend laws related to the sector.

With the Ministry of Energy's aim to include domestic allocation in all new gas findings together with a commitment to working with the international Extractive Industry Transparency Initiative, the sector looks to be turning over a new leaf.

However, there is still little information available on which specific laws are hoped to be or have already been amended.



Technicians at work on the oil rig at Yadana offshore project in southern Myanmar. Pic: Total E&P

One change to the PSC in June was a reduction of income tax from 30percent to 25pc, said an official from Energy Planning Department.

The sector faces conflicts with the new application process and existing laws that raises legal concerns for investors, said a former Myanmar Oil and Gas Enterprise official.

The current application of the production sharing contract (PSC) system in the oil and gas sector differs with the existing Oil-field Act (1918) and Oil-field Rules that determine the concessionary system.

"Contractors under PSCs have to comply with the Myanmar laws including these existing laws. It may well create conflicts in the future," he said, adding that amending the laws would take time.

"In order to avoid any controversy, it is better to exclude those laws that

are not in conformity with the PSC system," he said.

U Than Maung, senior associate of Kelvin Chia Yangon Ltd, an international law firm, said that as oil and gas is the country's major income generator the laws need to be in line with the current situation.

"There are many things that need to be done," said U Than Maung about the country's overall legal and regulatory regime. He said the amount of work needed to reform has built up because the ministries did not keep updating the laws.

Nevertheless, figures from the Ministry of Commerce show that export of gas for the 2011-2012 financial year topped US\$3.5 billion, out of a total \$9.1 billion for the year, compared to \$2.5 billion in 2010-11.

The first quarter figures for the current financial year, between April

1 and August 3, export of gas has already reached \$931 million.

Figures from the Ministry of Commerce show that foreign direct investment (FDI) in the oil and gas sector reached \$14 billion as of June 30 this year. At 34 pc of all investment to the country, the sector ranked second highest out of \$41 billion invested so far.

The country's top export earning comes from gas sold to Thailand from the M5 and M6 blocks of the Yadana project offshore Mottama and the Yetagun gas project's M12, M13 and M14 blocks offshore Tanintharyi.

Meanwhile allocation for domestic use has increased with a second pipeline drawn from the Yadana project, constructed in 2010, and to supply Yangon. This greatly improved domestic supply

in addition to the already existing pipelines running from Kanbauk in Tanintharyi Region to Myainggalay in Kayin State, established in 2001, and from Myainggalay to Yangon, constructed in 2006.

Figures from the Ministry of Energy show that the Yadana project exports about 600 million cubic feet of gas per day (mmcf) with about 200 mmcf supplied for domestic use. The Yetagun gas project has been exporting 400 mmcf since 2000.

The two major projects primed for export in 2013 are Shwe and Zawtika. The A1 and A3 offshore blocks of the Shwe gas project in Rakhine State is operated by Daewoo while the Zawtika gas project will take gas from the M9 block offshore Mottama and is operated by PTTEP.

The Shwe project is expected to export about 400 mmcf to China and 100 mmcf allocated for domestic purpose.

The Zawtika project will export 240 mmcf to Thailand as well as a domestic supply of about 60 mmcf.

Gas produced from the M3 block offshore Mottama, also operated by PTTEP, will be used for domestic use.

To make the most of the lucrative oil and gas sector, Dr Maung Aung, senior economist from the Union of Myanmar Federation of Chambers of Commerce and Industry said the Ministry needs to attract foreign expertise who can bring improved technology.

To do this the government needs to overcome obstacles such as infrastructure and allay remaining fears concerning the country's political situation. But the government is doing their best to address this, he said.

He sounded a warning however, that while the country needs to make the most of its abundant natural resources and geographical location this should not be seen as the sole means to achieve its development.

"The country needs to promote its value added industries. We need to try to create our country to be an international business hub. That way, income through natural gas will be important but only to a certain extent," he said. ■

## Three main types of insurance policies in energy sector



Myanma Insurance general manager, Dr Mg Maung Thein, at his office in Yangon last week. PIC: THIIHA TOE

General manager of the Myanmar Insurance, Dr Mg Maung Thein discusses with *The Myanmar Times* reporter Thiha Toe about insurance policies in the energy sector.

**Q: HOW MANY TYPES OF THE INSURANCE ARE THERE FOR ENERGY PROJECTS?**

There are many types of the insurance. The main three policies come during the discovering step, the digging and building step and the production step. When a person discovers petrol and natural gas, he is usually already insured for it. When he digs and builds up to make products, he will be insured there too. So, he makes many types of insurance in these three portions.

**Q: AS OUR COUNTRY MOVES TOWARD DEMOCRACY, MANY FOREIGN INVESTMENTS MAY COME TO**

**OUR COUNTRY. IN THIS CONDITION, HOW MANY NEW TYPES OF THE INSURANCE FOR ENERGY PROJECTS WILL MYANMAR NEED TO MAKE?**

A: We have no need to make new types of the insurance for the energy sector. Foreign investments have been coming to our country for 20 years. The types of the insurance will be just the same. However, we need to extend our insurance to wider market than it has right now.

**Q: DOES THE MYANMA INSURANCE HAVE ANY DIFFICULTIES IN THE ENERGY SECTOR? HOW DO**

**YOU SOLVE THESE DIFFICULTIES?**

A: Before sanctions from the United States made it difficult to sell policies. Now that they have been lifted we have no difficulties.

**Q: HOW DO YOU THINK MYANMA INSURANCE COULD BE IMPROVED? WHO SHOULD DO IT AND WHY?**

A: We're currently working on a report titled, "To improve the market of the Myanmar Insurance". It will be published soon. The main point of the report is that we have to permit private insurance. When the private insurance is allowed, both private companies and ourselves will get many more customers. ■

# Concerns remain over Shwe gas benefits

By Juliet Shwe Gaung

**U** KHIN Maung Thein, a resident of Kyaukphyu township, Rakhine State, recalled a statement he once heard that development is simply a change for the good.

Kyaukphyu sits at the southern end of a pipeline that will transport oil coming from the Middle East as well as gas from the off-shore Shwe fields off Rakhine State across the country to supply Myanmar's energy hungry neighbour China.

U Khin Maung Thein questioned whether he could describe the Shwe gas project as good development for Kyaukphyu.

He said that while the project brings in a lot of money by selling gas and renting the land for the pipelines that will bring benefits to the country, many people where he lives are not so happy about it.

"As the project starts in Kyaukphyu, the media say there's development for the region. However, in its current state, our roads are not as good as before, the public jetty is now used solely for the ships for the project and we have not received a new one even though it was promised," said the 52 year old.

Myanma Oil and Gas Enterprise (MOGE) figures show that Myanmar will get US\$6.9 million per year in charges for the right of way for each of the oil and gas pipelines. \$1 for every tonne of crude oil will be received in transit fees while the country will also get a share of both crude and gas for domestic use.

"What kind of rule can be used to measure development? Is it right for the country to get the money while nothing has happened for the local residents," he said.

However, he was optimistic that those who get jobs, mostly as labourers, for the project can be considered fortunate.

The Rakhine Nationalities Development Party vice chairman, U Tin Win, said in February that the quota of 100 million cubic feet of gas a day for domestic use has already been agreed to be allocated for central Myanmar and insisted the Rakhine people also have a right to three gas turbines built in Kyaukphyu with an output capacity of 33 megawatt each.

U Win Myo Thu, managing director of EcoDev - a local NGO, said the reason why social problems occur in the region was due to a lack of assessment of the companies' efforts to resolve them.

"If we ask why such concerns arise, is it not because the efforts to prevent them are not being encouraged, or social impact assessments or environmental impact assessments done right," he said.



Local residents repair roads while a truck carries big gas pipes near Kyaukphyu in Rakhine State last May. PIC: JULIET SHWE GAUNG

He said it is important for the companies involved to know about the problems arising in the region.

"There could be confusion. The Chinese would think they have provided compensation, and that it is sufficient. But it could all be in vain if it is not effective," he said.

The allocated funds could be directed poorly without them knowing, he said.

He suggested the problems should be solved in the open and should not be hidden away.

"Even if the villagers want to talk about their complaints, they don't know where to go. People should know that the way to solve a problem is not just about giving money," he said, adding that a qualified consultant company could be hired to solve such social problems.

U Zaw Naing Oo, a physical resource specialist from the consultancy firm Resource and Environment Myanmar Ltd, pinpointed the lack of environmental laws and regulations in

Myanmar as the root to such complaints.

He said that problems arise because of weaknesses inherent in implementing monitoring plans for the project.

"Environmental by-laws have not yet appeared to be able to effectively implement a monitoring plan. If we could have that, it would contain sections such as who should do the monitoring and what kind of groups need to be set up and solve such problems," said U Zaw Naing Oo.

In 2009, Resource and Environment Myanmar Ltd managed to conduct a terrestrial ecological survey for the supply base and jetty, along with ERM Hong Kong Ltd for Daewoo E&P, and also an environmental baseline data collection and preliminary impact assessment for the Myanmar China Gas Line on the Myanmar section, together with International Environmental Management Ltd, Thailand.

"Base line data on the physical environment and biological environment have been collected and the effects of the project are being analysed. Efforts are planned to mitigate the impact. Such detailed plans are already drawn up," he said.

"The pipeline is situated in three earthquake zones so there is a need to do the construction carefully according to seismic designs," he said.

Kyaukphyu is also home to tortoises and the assessment includes that if any tortoise is found anywhere on the project's construction site, they should be released back into the sea from the onshore gas terminal site.

The monitoring commission needs to focus on whether the plan is followed.

Whether or not the work is achieved depends on the monitoring work, he added. Either the government or a third party can conduct monitoring work in order to adequately identify any weak points in the project. A monitoring commission should also monitor periodically, he said.

However, a spokesperson from the Friendship Association for Myanmar-China Pipeline said their standard of environment assessment works and environment protection regulations have strictly adhered to World Bank

standards, including qualified environmental supervision.

There are also different departments and partners monitoring social problems arising in the region, he said.

"The office of Land Works is in charge of problems of land compensation. For the protection of roads, the local Ministry of Construction and the government supervise the work [such as ensuring sufficient distance between the pipeline and roads]. For the environmental concerns, we have environmental supervisors working together with the Health, Safety and Environment department," he said.

Local residents have also been told they can contact any department, including the friendship association, to discuss the problem, he said, adding that the departments have the responsibility to solve the problems.

The friendship association also said that land compensation is being provided to farmers in Kyaukpyu.

External investigations conducted by Punj Lloyd Limited of people assisted by MOGE, show that there are 69 households who require additional land compensation.

"We didn't expect these farmlands to be affected before the project, so they were not in the compensation plan at first. However, as soon as we found their farmlands were affected, we altered the compensation to make up the loss," said the friendship association spokesperson. So far, 31 of the 69 households have already been paid.

There have been calls from NGOs that all parties involved need to work on reducing complaints for the second half of the project's construction, as well as for the future production years.

As U Khin Maung Thein believed the project only brings money for the country and not his region, U Kyaw Sein, a researcher and Rakhine national, hopes that moves such as a recent request by the government for assistance from the Extractive Industry Transparency Initiative, indicate that stake holders are showing signs they will work together to ensure sales of gas be distributed fairly and efficiently for the whole country. ■

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# “I expect to see rapid ch

The potential for Myanmar's energy sector has never been better in light of the government's efforts to reform the economy and subsequent lifting of many Western sanctions. Myanmar's oil man, MPRL E&P CEO U Moe Myint, discusses with *The Myanmar Times* the potential for investment in the sector and what it means for the country's development potential.

**Q: HOW WOULD YOU JUDGE THE CURRENT SITUATION OF INVESTMENTS IN THE ENERGY SECTOR OF MYANMAR?**

A: At the moment compared to other countries in the region, the amount of investment I would say is quite limited. However, with recent political changes such as the easing of sanctions on investments in Myanmar, I would expect to see this situation to rapidly change for the better. In fact, in the petroleum sector, on account of sanctions, major foreign oil & gas companies, which in the past chose not to or could not participate in E&P activities in Myanmar, are now visiting the country and meeting with both government and private entities to discuss potential opportunities for new investment related to both upstream and downstream sectors of the industry.

As part of this increased activity, a new bidding round for both onshore & offshore concession areas is being planned by MOGE and the Ministry of Energy and is expected to take place later in the year. Many industry players including major companies from Australia, the United States and Europe are closely

watching, and are all expecting an increase in transparency in the way bidding is handled and contracts awarded.

**Q: HOW DO YOU SEE THE ENERGY SECTOR IN THE DEVELOPMENT PROCESS OF THE MYANMAR ECONOMY?**

A: The energy sector is a critical component in terms of development of the Myanmar economy. Many Southeast Asian nations in the ASEAN region underwent tremendous growth in a very short period of time partly on account of this sector. Myanmar will very likely undergo vast growth on a similar time scale. However, in comparison, Myanmar is a nation with an abundance of natural resources, particularly in the energy sector. Managing this abundance of natural resources to fuel such growth will be an integral part of both the Myanmar economy and the people of Myanmar.

Furthermore, the energy sector is the key sector that needs massive incentives and investments to be able to fuel the ambitious development program planned by the nation. Gas and hydro-power are

so far the best developed, most environmentally friendly, and are the sectors which may grow the fastest, should new reserves be found quickly. Without the discovery and development of new and existing energy resources within Myanmar, it will be difficult and expensive to develop other capital intensive infrastructure projects which are essential to fuel economic growth, hence the need for significant investment in the energy sector.

**Q: HOW DO YOU SEE CHANGES IN THE SECTOR IN THE COMING YEARS DUE TO THE REFORMS BEING MADE BY THE GOVERNMENT?**

A: The sector may change rapidly if the pace of the reforms keeps up, and if the government is committed to durable changes leading to a complete dismantlement of sanctions.

In fact, the rate of hydrocarbon discoveries and the pace of development projects to fuel the desired growth may be the biggest challenge for the country in the near term.

Nevertheless, I believe there will be increased transparency in the management and administration of the sector which will result in more of the major international corporations seeking opportunities here. There should also be an increase in technological transfer and the training of Myanmar nationals as the level of activities in the sector increases.

I also feel there will surely be an increase in regulatory measures to ensure that workers are adequately remunerated and protected, and that environmental regulations are strictly adhered to.

**Q: WHAT ARE THE RISKS YOU TAKE WITH YOUR INVESTMENTS IN THE INDUSTRY? IN YOUR EXPERIENCE, ARE THE CURRENT CHANGES REDUCING THE RISKS AND IMPROVING THE SECTOR?**

A: The key risks for MPRL E&P still remain the risks associated with subsurface uncertainties.

Having successfully operated in the oil & gas sector in Myanmar as a group for the past 25 years, we are very comfortable with not only the contracts prevalent in the industry, but with MOGE and the Ministry of Energy as well. From our experience, we have long found MOGE and Ministry to be fair and pragmatic in their approach to working with the investor in maximizing the value of the country's hydrocarbon resource base.

However, for a fresh foreign investor looking at investing in the oil & gas sector in Myanmar, changes such as holding an open bidding round with regard to the remaining offshore blocks, is a very positive



MPRL's CEO U Moe Myint

sign that MOGE and the MoE are further endeavouring to create an even more favourable investment climate in terms of transparency and fairness.

The administrative changes as such do not reduce the risk associated with subsurface geology. However, by paving the way for an increase in investment, the opportunity to introduce "state of the art" technology and methodology to the E&P industry in Myanmar, is significantly enhanced.

**Q: WHAT WOULD BE YOUR ADVICE TO FOREIGN INVESTORS IN THE INDUSTRY, IN DEALING WITH THE MINISTRY AND MYANMAR BUSINESS PARTNERS?**

A: With regard to dealing with the Ministry, I would advise foreign investors not to believe that this is a Ministry that is young and naïve. Although foreign investment in exploration and production sector of Myanmar may only date back to the early 1990s, Myanmar is a nation where its people have been exploring and producing oil since the time of the monarchs. MOGE, together with the Ministry, have been successfully operating the oil and gas sector since after World War II.

Yes, there may be areas, such as the terms of the current deep water offshore PSCs, where there may be room for amendments that may benefit both the foreign investor and the state. The Ministry has long been an advocate of pragmatism working closely with operators in achieving alignment in such matters.

What the Ministry would like to see is for foreign investors, with a long standing successful track record in the industry, to propose such amendments which are fair and equitable to both the investor and the resource owner. But what the Ministry would not like to see is for an investor to take a heavy handed 'know-it-all' approach, and I can assure you of the negative consequences that may develop as a result.

Foreign investors need to ensure

that any commitments they make concerning work programs are realistic and achievable. MoE recently has been terminating agreements with companies which have failed to meet their contractual commitments. However, MoE is extremely practical and fair, and are prepared to agree to period extensions in order for commitments to be met, provided of course, the reasons for such requests are practical and technically justifiable, and most importantly, fair and equitable to both the foreign investor and the nation.

In terms of dealing with Myanmar business partners, I would advise foreign investors to perform their technical, legal and accounting due diligence carefully and thoroughly. I very much welcome the Ministry's directive in having foreign investors to partner with local companies in order to qualify for onshore and offshore bidding. There are tremendous opportunities for technology and knowledge transfer. However, it is imperative from a long term strategic partnership point of view for companies to align with Myanmar business partners with a proven track record, preferably in the oil and gas sector, and if not, with companies which have transparent and successful track record of managing their business.

**Q: WHAT DO YOU SEE ARE THE DIFFERENCES BETWEEN ASIAN INVESTORS AND WESTERN INVESTORS? AND HOW WOULD THE COMPETITION HELP?**

A: The key differences between Asian investors and Western investors are: Adherence to strict industry standards in terms of HSE, less adversity when it comes to taking managed risks, and availability of in-house expertise and technology.

Many western oil & gas majors' number one priority is health, safety, and the environment (HSE), even to the extent that this comes before key economic measures such as profitability and growth. A tag line that you will often hear western majors use is 'Do it safely, or do not do it at all.'

As a result, the HSE operational discipline that is often displayed encompasses practices above what is recognised as the industry standard. An example can be observed during the process of offshore development well planning and design.

In Myanmar, there are no stringent offshore well design requirements or criteria that are currently enforced. Even without such constraints, western majors will often develop a well design concept that consists of contingencies such as a dual barrier well. This provides a fail-safe in case the first barrier fails on account of unforeseen circum-



Two men chat near the Shwe gas pipeline in Kyaukphyu, Rakhine State.

PIC: JULIET SHWE GAUNG

# Change for the better” - U Moe Myint

stances, where the second barrier prevents hydrocarbons from potentially breaching the wellhead and as a result, contaminating the ocean.

Needless to say, this does not mean that everything western companies do is safe. BP's Macondo incident is testament to this. However, such practices result in dramatically reducing the risk of HSE incidents.

Western majors also generally have a larger risk appetite when compared to Asian investors. This is a result of access to larger amounts of financial capital and also because most western majors have been exploring and producing oil & gas since at least the early 20<sup>th</sup> century.

The exploration of oil & gas has long been an extremely high risk area, and being exposed to such high risks for longer allows majors to be more comfortable in making high risks decisions.

Needless to say, risks are typically well managed through appropriate data acquisition and use of tools such as decision analysis. For example, let's look at a decision to drill an exploration well where the probability of success is about 20 percent and the cost of such a well is about US\$100 million. An Asian investor with less than 10 years of

experience in operating in the industry will generally tend to forego such an opportunity. However, a western major, successfully operating in the industry for more than 20 years, may more likely find such risk and capital acceptable.

Today, most western majors invest in hiring top tier subject matter experts and have even further invested in state of the art research and development. This has allowed western companies to be at the pinnacle of science in the exploration and production arena, a clear example of which can be observed in seismic acquisition and processing.

Currently in the industry, there are advanced seismic processing methods where reservoir rock properties such as porosity, fluid migration, and pressure may be inferred based on 3D seismic data.

Most small independents, including Asian investors, will typically have to outsource this type of work to a specialist contractor. However, western majors have the resources and capability to perform such work in-house, providing them with a tremendous advantage in terms of data quality control and project scheduling.

Nevertheless, increased competition regardless of where it origi-

nates has its benefits. Competition in the form of bidding rounds for the right to explore particular areas is usually beneficial to the state, provided there is a wide range of interest in the areas being offered for bidding.

The opportunity now exists for major international oil companies with access to the latest technology including their own extensive R&D programs to participate in E&P activities in Myanmar. In my opinion, this will lead to improvement in the overall "work practices" of the local E&P sector.

**Q: WHERE DO YOU SEE THE MOST POTENTIAL IN MYANMAR'S FUTURE DEVELOPMENT?**

**A:** Although interest in Myanmar's energy sector and extractive industries such as mining is strong, efforts to boost income from other areas that depend heavily on access to foreign markets, such as agriculture and manufacturing, are still struggling due to both internal and external factors.

We could also face serious problems if it engages in fast economic growth without proper checks and balances. Rapid development financed from abroad can widen

wealth gaps and enrich vested interests unchecked by governmental authority.

While Myanmar's own shortcomings, particularly its weak infrastructure, are a significant hurdle to growth, even the recent suspension of most sanctions by the West has not gone far enough to create a level playing field for Myanmar's exports. I do believe that the international community could do more to assist our country to ensure the country can progress together with the development of an essential middle class.

Among its many resources, it is the human resources of Myanmar which hold the greatest potential for development.

Isolation of the country has been counterproductive. Myanmar needs to dramatically boost investment in its most valuable natural resource, its people, to ensure the country develops its rich natural capital without sacrificing it. Myanmar not only needs a clear vision of how the country wants to develop, but also a strong foundation in place to support this vision - one that is both broad and inclusive.

Myanmar's road to development needs to be built on robust and committed institutions and officials,

with clear and transparent lines of responsibility, and greater capacity to assess projects and priorities in line with the public's best interests. These initiatives require human capacity and commitment.

They also require time, and there are few easy shortcuts.

As Myanmar embarks upon this exciting new chapter of its development, it is imperative that it begin measurably ratcheting up investment in the development of all its people's skills. If the country's skill base grows in concert with its economy, its people will be better able to fully reap the benefits of the country's newfound openness.

At the end of the day, connectivity and capacity are only two pieces in Myanmar's much larger development puzzle, but they are indispensable pieces. With these building blocks in place, Myanmar will be much better positioned to realise its development goals, and its people's aspirations.

I also hope that an increase in investment to the Myanmar economy will create opportunities for the many talented Myanmar citizens who have been educated and are working abroad to come back to Myanmar to participate in the development and growth of the nation. ■



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# Current development of major hydropower projects

## AYEYARWADY MAYKHA/ MALIKHA DAMS

The Myanmar Ministry of Electric Power (MEPE) signed an agreement with China Power Investment Corporation in May 2007 for the implementation of seven large dams along the Ayeyarwady, Maykha and Malikha Rivers in Kachin State. Collectively the dams will have an installed capacity of 17,259 megawatts (MW). Investment is estimated to be US\$3.6 billion. However, in September 2011, President Thein Sein announced a suspension of the Myitsone Dam as 'the will of the people' due to outstanding environmental concerns. Construction of the Dam began in 2009 and projected revenue generated by the dam was estimated to range between \$558-597million a year. China has said if the Dam is cancelled then Myanmar must pay compensation.

## TAMANTHI DAM

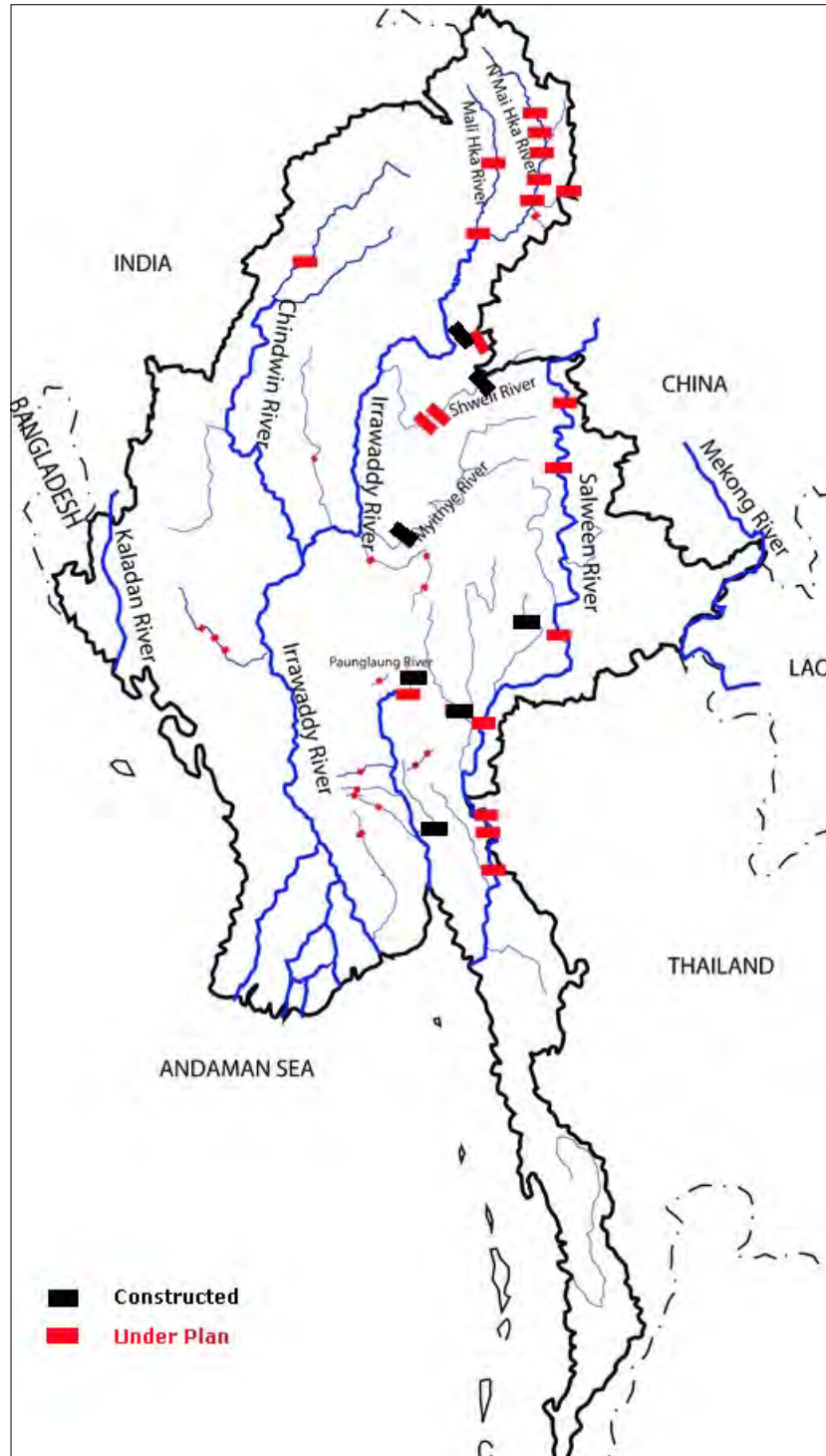
The government signed an MOU with India's National Hydroelectric Power Corporation (NHPC) in 2004 to develop the Tamanthi dam on the Chindwin River in western Sagaing Region. A new agreement was signed in 2008, forming a joint venture to develop Tamanthi as well as Shwesayay dams. The dam will be 80 metres high, with an installed capacity of 1200 MW and an annual production of 6685 Gwh. The estimated cost of the Tamanthi dam is \$3 billion. Eighty percent of the electricity will go to India, and the rest will power Monywa mining operations. Construction at the dam site began in 2007, but is subject to delays. A detailed project report (master plan) is being prepared by NHPC.

## TASANG DAM

The Tasang dam is the biggest of five proposed dams along the Thanlwin River in Eastern Myanmar. In July 1996 Thailand signed an MOU with the Myanmar government. Tasang dam is set to be 228 metres in height, with an installed capacity of 7110 MW and an annual production of 35,446 Gwh. When built it will be the highest dam in Southeast Asia, taller than China's Three Gorges dam. Most of the electricity from the Tasang dam is intended for sale to Thailand. The initial estimated cost of the Tasang dam was \$6 billion. However the actual costs are likely to be far higher. Initially signed with Thailand's MDX Group, China Gezhouba Group Co won a contract for initial dam construction in early 2007. In mid-2008, Sinohydro, China Southern Power Grid Co., and China Three Gorges Project Corporation signed an agreement for the development of the Thanlyin River Basin in Myanmar, including the Tasang dam. Work on the dam has been stalled, and there has been little activity at the dam-site.

## YEYWA DAM

The Myanmar government first announced plans for the Yeywa dam in late 2001. In 2004, MEPE signed an MOU with a consortium of Chinese companies to build the dam on the Myitnge River in Mandalay Division. It is one of the largest roller-compacted concrete (RCC) dams in the world. The dam is 134 metres high with an installed capacity of 790 MW and an annual production of 3550 Gwh. MEPE signed an agreement with a consortium created by China International Trust & Investment Co (CITIC) and Sinohydro Corporation in 2004. The overall cost is estimated at \$700m. Construction was completed in 2010.



Sources: Government data, state media, and Burma Rivers Network

## WEIGYI DAM

The Electricity Generating Authority of Thailand (EGAT) signed an MOU with Myanmar on December 9, 2005 for the development of Weigyi to provide electricity for Thailand. The dam will be 168 metres high and an installed capacity of between 4540 and 5600 MW. Construction costs are estimated at \$3 billion. Most of the electricity from the Weigyi dam is intended for sale to Thailand.

## UPPER THANLWIN DAM (KUNLONG)

In April 2007, two Chinese companies, Hanergy Holding Group Company and Gold Water Resources Company Limited, signed an MOU with the Myanmar government for the Upper Thanlwin dam in northern Shan State. Installed capacity will be 2400 MW. The two sides signed the memorandum of agreement in Nay Pyi Taw in February 2010. The project is under implementation.

## HATGYI DAM

Myanmar's Ministry of Electric Power, EGAT, and China's Sinohydro signed an agreement in 2006 for the joint implementation of the Hatgyi dam on the Thanlwin River in Karen State. The dam will be 33 metres high, have an installed capacity of 1200 MW and an annual production of 7335 Gwh. The estimated cost of building the Hatgyi dam is \$1 billion. Most of the electricity from the dam is

intended for sale to Thailand.

Thailand is pushing for it to be the first of the dams built on the Thanlwin River. Once built, it will pave the way for the building of the other larger dams.

Construction of the Hatgyi dam has begun. Commercial distribution of power was projected to begin in 2013-2014, however, EGAT has announced it will be 2019.

## LAWPITA HYDROPOWER PROJECT

Lawpita Hydropower Project in Kayah State was initiated in 1950 with a bilateral war reparation agreement between Japan and Myanmar. Lawpita was the first large-scale hydropower project in Myanmar. The project remains an important source of electricity for central Myanmar, representing 24 percent of Myanmar's total hydropower capacity. Lawpita Hydropower Plant No 2 was the country's first power station to become operational, completed in 1974. It has a capacity of 168 MW with six generators. Construction of Plant No.1 began in 1986 and was completed in 1992. It has an installed capacity of 28 MW.

## DAGWIN DAM

The Dagwin, or Lower Thanlwin dam will serve as a pumped storage facility for the upriver Weigyi dam. Dagwin is estimated at 56 metres high, with an installed capacity of 792 MW. Although the Electricity Generating Authority of Thailand (EGAT) has been involved in planning the Dagwin dam since the early 1980s, in April 2008, three companies from China signed a strategic cooperation agreement. The cost of building the Dagwin dam is estimated at \$900m.

## DAPEYIN DAM

State-owned China Datang Company has agreements to build two dams on the Dapein River near the China border, involving state-owned Myanmar Electric Power Enterprise. The dams will have an installed capacity of 408 MW. Total cost is reportedly 108 million Yuan. ninety percent of the electricity will be sold to China. Construction of the Dapeyin 1 hydropower station began on December 19, 2007 and was completed and started distributing electricity in February 2011. Work continues on Dam 2.

## UPPER AND LOWER PAUNGLAUNG DAMS

In March 2005, MEPE, along with financial and construction support from Chinese companies, completed the Lower Paunglaung dam on the Paunglaung River. The dam is 131 metres in height and an installed capacity of 280 MW. The Upper Paunglaung dam is under construction and is expected to be completed in 2012. The dam will be 103 metres high, with installed capacity of 140 MW and an annual production of 454 Gwh (million kilowatt hours yearly). Both dams provide power for Myanmar's capital, Nay Pyi Taw.

## SHWELI DAMS

Myanmar's Ministry of Electric Power signed its first Build-Operate-Transfer agreement with China for a hydropower dam on the Shweli River, a tributary of the Ayeyarwady, in northern Shan State in 2006. Two additional dams are planned downstream. The dams will have a total installed capacity of 1440 MW. Investment could reach \$1.4 billion. Electricity will be transmitted to China and government-run mining operations in Myanmar. The project is a joint venture between MEPE and Yunnan Joint Power Development Company.

## YWATHIT DAM

In January 2010, the Chinese state-owned Datang Corporation signed an MOU with the Myanmar government to build three dams in Kayah State, including a 600 MW dam on the mainstream Thanlwin at Ywathit, and two others on its tributaries, the Pawn and Thabet rivers. Ywathit dam will have an installed capacity of 600 MW and investment is estimated to reach \$600m.

## Myitsone should . . .

from page 9

However, villagers from Temphre, Myitsone and Lepe villages sent a letter to the state minister and the president on March 17 to request permission to continue their old farming.

"They [state authorities] didn't take any action despite us returning to our village to farm after sending the letter to the president. As they didn't say anything officially we are continuing to farm but it is unofficial. We know they can arrest us at

any time," said U Tu Hkaung.

At present, there are 327 households in Aung Myin Thar Sanpya village housing villagers from Temphre, Myitsone and Lepe villages.

"There are 50 households in Temphre village, we go between the new and old villages because we still do our business in the old villages, but live in the new village for education and health services. There is no school or clinic in the old village as they were moved to the new village," said U Tu Hkaung.

CPI representatives have begun to pay visits to the new village and offer assistance to the villagers.

"On April 16, they [CPI] come to our village and asked us what difficulties we face. They explained to us the advantages of building the dam, saying we can get higher incomes and jobs through the project. They promised to support us with donations of rice and in May gave eight pyi [one pyi equal 2.13kg] for each person. We accepted it but we didn't thank them because they created this suffering first, and only

now are they showing their sympathy," said U Tu Hkaung.

"We ask everyone to help our situation and save the Ayeyarwady. If they build the Myitsone dam, we will suffer more difficulties. We don't agree that the project should be resumed," said

During the 'Our Ayeyarwady Our Future' talk, Friar Thomas from the Roman Catholic Church in Temphre village requested continued support to ensure the dam project does not negatively affect his community further.

Members of the 88 Generation of students present at the talk pledged to help protect Ayeyarwady as much as they can.

"We have to do more awareness programs from the grassroots level," Ko Jimmy said at the talk.

"It is not enough that President U Thein Sein postponed the Myitsone dam project in his administration. It is important to advocate having candidates who will guarantee the preservation of the Ayeyarwady river in the upcoming 2015 general election," he said. ■



# Myitsone should not resume, say experts and locals

By Ei Ei Toe Lwin

Activists and local residents are renewing calls that the Myitsone dam project cannot be allowed to resume in the face of continuing efforts by China to restart.

The Ministry of Electrical Power 1 signed a Memorandum of Understanding with China Power Investment Corporation (CPI) on December 28, 2006 to implement the US\$3.6 billion Myitsone Dam.

It is one of seven dams to be built by CPI, a Chinese state-owned entity, on the upper reaches of the Ayeyarwady River in Kachin State. The dam would be capable of generating more than 6000 megawatts.

However, after a sustained nationwide campaign against the project and its social and environmental consequences, President U Thein Sein announced on September 30 2011 it was to be suspended for at least the five-year term of his government.

But the question remains whether Myitsone would resume after U Thein Sein's administration ends in 2015.

China has stated that if Myanmar wants to stop the project completely, it will need to solve the situation legally and provide compensation for the contract.

U Ko Ko Hlaing, chief political adviser to President U Thein Sein, said the president's stance on the issue had not changed since he suspended the dam on September 30 "in accordance with the wishes of the public".

"It is still the president's stance but we are not sure whether it will restart under the next government," he told *The Myanmar Times*.

"The government has two duties: one is to fulfil the people's desire and the other is to continue projects started by the previous government under an international law called the Law of State Succession. In this case, the previous government and China signed an official contract so if we break this contract, we must compensate them. We need to consider whether people are willing to compensate them or not," he said.

"I believe that the government can find the best solution between the people's desire and its duties."

Foreign minister, U Wunna Maung Lwin, paid a visit to China in October 2011 where he met with Chinese Vice Pres-

ident Xi Jinping and Chinese Foreign Minister Yan Jiechi to ensure 'mutual benefits' between the two countries.

According to AFP, the Chinese foreign ministry spokesperson, Liu Weiman, said the meeting had been arranged "to handle this project in the proper way and continue to move forward with bilateral relations which are very important for us".

"If they [China] want to get compensation, I want the government to compensate them. I think the public feels the same as me," said U Win Myo Thu, managing director of Ecodev (Economically Progressive Ecosystems Development).

Concerns remain, however, that the Chinese government and CPI is continuing to push for a restart to the dam project by lobbying the government, persuading local residents, extolling the advantages of building the dam via the media and even asking the International Commission on Large Dams (ICOLD) to conduct a third party assessment of the project.

"Now, they [China] have asked ICOLD to be a third party. But I think ICOLD is biased because they want dams built. It is unacceptable," said U Win Myo Thu.

"Dam builders are always more interested in the construction of a dam," he said to *The Myanmar Times* last week.

Another reason to reject ICOLD participation, he added, is the fact that CPI executives dominate the organisation's high ranking executive members.

However, the ICOLD published a statement in May, to say that had received a request from "the builder of the Irrawaddy Myitsone dam project in Myanmar" to assess its work, but clarified that it is "not entitled to evaluate a particular dam project and has never been engaged in any mission to do so."

The ICOLD went on to say that, independently of the project, Myanmar had moved to become a full member last year.

"Myanmar knows that dams are a crucial tool for development and wishes to share the technical knowledge with the 95 countries composing ICOLD," the statement said.

However, experts say that not only is further scientific research on the long term implications of building dams on the Ayeyarwady required, it needs to be combined with

an appreciation of how to mitigate social and environmental effects.

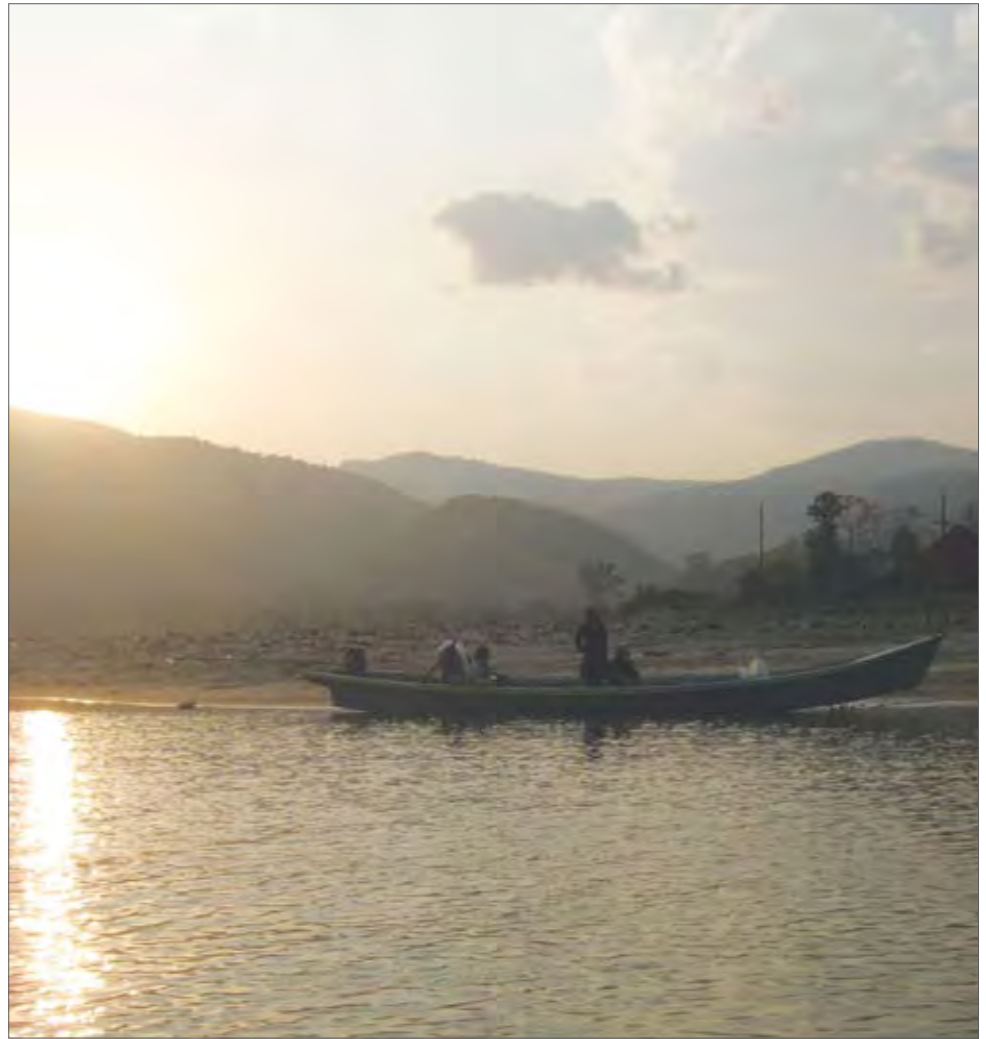
"It is not enough to say the fundamental way to solve all these ecological problems is to develop hydropower according to a scientific approach. It cannot only be solved by technological and scientific means, it has to be integrated in a socio-technological way that meets a triple bottom line of being financially beneficial, environmentally sustainable and socially inclusive," Dr Khin Ni Ni Thein said at an environmental talk held at the Excel Treasure Tower, entitled 'Our Ayeyarwady Our Future' on July 16.

"They can build a dam over the Ayeyarwady river but it must be done with an Integrated Water Resource Management System," Dr Khin Ni Ni Thein, founder and president of Water Research and Training Centre, said.

Experts have questioned whether enough has been done to assess the environmental and social impacts of the Myitsone dam project, saying that the project should not be renewed until these have been properly addressed.

"I do not see any improvement of the environment because of hydro-power development," said U Ohn, vice president of FREDIA (Forest Resources and Environmental Development Association).

"On the other hand, if China really wants to implement this project for the sake of the Myanmar people, why don't they publish any EIA-Environmental Impact Assessment and SIA-Social Impact Assess-



A boat stops near a place in Kachin State where two rivers join to become Ayeyarwady River or Myitsone (rivers join) where the dam project has been suspended. PIC: THE MYANMAR TIMES

ment for the people.

"China as a neighbour to Myanmar needs to show their sincerity first and talk later. Now, we all feel that Sittwe [Kyaukphyu] pipe line is just to divide our country into two halves," U Ohn said, referring to the Shwe gas pipeline project to export gas to China.

There are calls the government should open the issue to the public and solve it through parliamentary debate.

"The public needs to be able to research as much as they can about Ayeyarwady and discuss [their concerns] with their representatives ... It is very important that the state and public combine. The public have the right to say what they want. We can say our desire through the Hlut-taw because they promise to listen to the public voice and act in accordance with the

public desire. I think the Hlut-taw [members] will accept our words if we say in good will," said Dr Khin Ni Ni Thein.

"The state owns all natural resources in accordance with the constitution. However, citizens must have a say on management and allocation of our natural resources according to their rights. So, if we agree to build the Myitsone dam it must be for the energy needs of our country, not for them [China]. In the future, energy security will become very important in the world. So, why should we give our energy to China," U Win Myo Thu said.

There have also been calls from local residents that uncertainty over the dam is making life more difficult.

"At the moment we are living with uncertainty and fear," U Tu Hkaung, a villager of

Temphe village told *The Myanmar Times* earlier this year.

Despite the dam's suspension, many villagers have already been relocated away from the project site to a new village site, Aung Myin Thar Sanpya, and are facing struggles to their livelihood.

Many villagers have expressed they are not willing to live in the new villages and attempted to secure official permission to return home because the farmland at the new villages is not good enough to sustain their livelihoods.

Villagers who have attempted to return to their old homes have been arrested and local authorities forced them to sign a disclosure not to return saying the companies have already provided compensation for their land and crops.

see more page 8

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# Engineering prospects with energy

By Yhoon Hnin Phyu

**F**OREIGN investors from Thailand, China, India, and the USA are currently flocking to Myanmar with one thing on their minds: exploring Myanmar's lucrative and largely untapped energy resources.

This increase in demand for energy will mean an increase in demand for energy engineers. Just how can the citizens of Myanmar learn the skills of this booming field? The first step is choosing your field. Energy sector engineering jobs can be divided by where employees work, either onshore or offshore. The high demand jobs are mainly geological engineer, civil engineer, mechanical engineer, drilling engineer, electronic engineer, production engineer, chemical engineer, as well as general support engineers.

U Win Khaing, President of the Myanmar Engineering society, said "There are many stages in the operation process of the energy sector. We should understand the

stages of energy production. Civil engineers are also responsible for the building of bridge, road, laboratory and others. Then mechanical engineers have to set up the machines that are needed for the drilling. Drilling (mining) engineers are digging and electronic engineers have their own sector to operate."

U Win Khaing, who is also the chairman of the United Engineering company, said that in onshore work the workers listed above are important but in the oil refining industry, he emphasised that chemical engineers play a key role in the production of oil.

The China & Myanmar Gas and Oil Project recruited 60 graduates and gave them training for nine months starting in February 2012. The first three months focused on learning English, the second 3 months they study subjects related to pipeline work and the final third will be experience on-site.

Work experience is an essential part for engineers who want to work in the energy sector. Candidates who want



An engineer explains about the gas pipeline to journalists at Kanpauk in southern Myanmar last year. PIC: THE MYANMAR TIMES

to work for Total E&P Myanmar need to do an internship program for 11 months to learn the skills of the trade. According to a job description in *The Myanmar Alin*, the candidates must be able to use a computer, have team spirit and be skilled learners.

For those who are hired, the risks and rewards are high. "Workers in oil and gas industry have a very dangerous job.

The are risking their lives so the financial terms are very high" said U Win Khaing. In addition to large paychecks, employees enjoy the option of working in exotic locales across the globe.

Given the many risks, worker safety is of top concern for many energy companies. In addition to special burn-resistant suits, goggles, and shoes, The United Energy Company

keeps a close watch on their workers' mental health. "Employees don't have the chance to work over the limited time because this can harm their mental state."

Only graduates or diploma holders from an engineering school can work as an environmental engineer and must attend training in an environment that is recognised by the energy industry. ■

## Climate change adds challenges

Pinky

AS Myanmar makes strides to modernise and join the global community, it finds itself reckoning with a very modern and global problem: climate change. The causes of climate change, both within and outside Myanmar, are varied and complex. They include increasing numbers of vehicles on the road and epidemic levels of deforestation.

Being a developing country dependent mainly on sectors like agriculture, livestock, and forestry, Myanmar is especially vulnerable to the problems associated with climate change.

For many, the chief concern is extreme changes in the weather.

"Rain may have advantages for the dry zone in central Myanmar," said Dr U Tun Lwin, retired Director General of the Department of Meteorological Hydrology, "On the other hand when it rains too much in some other parts of Myanmar like, Shan State, Kayin, Ayeyarwady, Yangon and Bago Regions, can suffer floods."

While many states are already suffering from severe flooding, Dr U Tun Lwin went on to say that several years from now when the country is facing drought, citizens will miss the days of heavy rain. The prospect of drought is especially pressing for Myanmar's electricity grid, which relies in a large part on Hydroelectric Dams.

Electricity is a big part of production in industries both large and small. If they are forced to use other resources like oil or gas to continue production, the costs of their products will increase.

One industry in particular that depends on both electricity and regular rain are the many coastal fisheries. "The amounts of production from last year have been reduced to 50 percent when compared to period years because of climate change and not enough electricity," said Dr Toe Nandar Tin, chairperson of the Anawa Devi Fishing and General Trading Company.

The populations of fish and prawns need heavy rain to thrive, and once they're caught the workers need constant power to keep them refrigerated. Lacking both of these, this once lucrative business will continue to suffer.

In a counseling session on August 4, U Win Kyaing, the General Secretary of the Myanmar Livestock federation, explained the risks of drought for agriculture "Myanmar has been suffering from both poverty and climate change. Farmers are faced with difficulty when there was no rain. Our country suffers more since we don't have high technology in production." ■

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Energy efficient buildings like this have become a trend in Myanmar. PIC: INTERNET

# Homeowners pick green designs for energy efficiency

By Htar Htar Khin

**A**RCHITECTS across Myanmar have long recognized the value of the global movement toward green design. Industry sources have said they are attracted to the energy efficiency and social responsibility of the green movement, and lately homeowners are picking up on the trend.

“Owners ask for energy efficient designs in terms of health, energy factors and to be environmentally friendly. Particularly since 2006,” said U Sun Oo, the leading architect of the Design 2000 architecture firm.

U Sun Oo credits the rise in local awareness to a combination of the world wide green movement’s success and the growing demand for energy within Myanmar. While he is pleased by the progress, he said there are a few constraints that are getting in the way of green development.

The first problem is people turning to untrained companies for their home design, “This means that they can get fake architects like computer graphic designers and auto CAD designers and the problem is they don’t understand the theory of the green buildings at all.”

Another problem is customers requesting a traditional style for their home, not understanding that this style can conflict with the fundamentals of green design. “I suggest [that] architects should cleverly extract the essence of the passive design and then compose into the design of the modern Myanmar buildings

for the preference of home owners,” he said.

Passive design is a broad term that refers to designing a building in a way that fully uses the local climate to its advantage. Unlike active design, which involves using machines and other technology, passive design takes advantage of the climate through careful placement of windows, shades, and insulation.

U Sun Oo went on to say that cost can be one barrier to homeowners being interested in green design. “For example, putting sunshades and other extra walls are the most expensive properties to regulate [building] temperatures.” While green design provides many savings in the long term, it can be difficult for architects to convince customers to pay the start-up costs. For this reason, U Sun Oo sees creating awareness of the long-term benefits as a key part of his job.

Ma Chaw Kalyar, an architect from Statement architect and design firm, said for her clients focus on natural resources like lightning and ventilation is a priority. “What clients focus on in the past was the aesthetic beauty of the house rather than the lighting and ventilation but now what they focus on is [cutting back] electricity consumption, and more airy design through windows. They dislike dark feeling rooms,” she said. In addition to the ecological benefits of green design, Ma Chaw Kalyar believes people prefer natural air and light on a deep, emotional level. “In my opinion, using natural resources can bring some kind of ease and comfort to the occupants.” ■

# More funding necessary for education and health sectors

By Naw Say Phaw Waa

MYANMAR exports billions of dollars in energy such as natural gas every year. As the country has opened its borders, this amount has only gotten higher. Many citizens as well as Hluttaw representatives have suggested that more of this incomes should be used in the education and health sectors.

In the fiscal year of 2011-2012, Myanmar got over US\$3.563 billion and it has set a record according to the government figures. So far, the majority of that money has gone towards the military.

Union Minister U Hla Tun of the Finance and Revenue reported that Parliament agreed to increase their expenditure on education and health in coming 2012-2013 fiscal year. They have used K310 billion for education and K92 billion for health in the past year, and will grow the budgets to K617 billion for education and K367 billion for health this 2012-2013 fiscal year.

U Saw Than Myint, a second treasurer from Shan Democratic Party, said even though the budget schemes that the president has drawn up said to grant more money to these sectors, it’s still not enough, “How can [the country] be developed if they don’t give the budget for the education and health? Nothing can work out just by talk-

ing on air.”

U Nyi Hla Myine, a professor and advisor at Yangon Institute of Technology, said that to get budget to solved the nation’s financial problems will not be easy. For one thing, Universities will have to wait a year to see the government’s new budget. “We can’t wait that long. That’s why we have to ask donation from the companies and some of the alumnus to solve the budgetary problems.”

Although the new government said that the budget for health and education is higher than before, the government is only putting 4 to 5% of energy profits toward the sector “With this amount of budget, I don’t see education and health problems can be well resolved,” U Tun Shwe from Unity and Peace Party told the *The Myanmar Times*.

U Saw Than Myint used to be a middle school headmaster in a small village in Kachin State. “The schools don’t look like school and the teachers don’t look like teachers. As well the hospitals don’t look like hospitals and the doctors don’t look like doctors.”

He blames the poor conditions on the lack of government funding, and wonders how the countries future leaders can be cared for and trained in this environment. ■

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# Joint ventures could be key to development success

By Victoria Bruce

**A**S Myanmar's oil and gas sector opens up to foreign investment, incoming firms will need to team up with local joint venture partners to tap opportunities in the lucrative industry.

An influx of international firms, bringing with them new techniques and technology, could boost the local industry and many Myanmar firms are jostling to team up with international partners, industry experts said.

Some big industry names such as Malaysia's Petronas and Thailand venture PPTTEP rose to global prominence through joint ventures, said an executive from American drilling services firm Weatherford.

"Most National Oil Companies in Asia get foreign firms to invest by means of a Production Sharing Contract (PSC) - which is an elegant name for a joint venture," the executive said.

"Joint ventures are good for the local industry and Weatherford is all for making the local industry stronger and broader," he said.

"Petronas, Pertamina, PTTEP and PetroVietnam all grew to what they are today through the PSC mechanism, so in that way one could conclude that joint ventures with local partners has been a stirring success," the Weatherford executive said.

Myanmar's four big offshore ventures in the Yadana, Yetagan, Shwe and Zawtika gas fields are held by consortiums of heavyweights, such as France's Total, America's Chevron and Thai firm PTTEP's joint venture partnership with MOGE for the Yadana project in Myanmar's south.

And while Myanmar energy firms have a long way to go before they reach heavyweight status, pairing up with international firms could provide great opportunities to build their knowledge and expertise in the

burgeoning industry.

"There are tremendous opportunities for technology and knowledge transfer," said U Moe Myint, chief executive officer of local oil and gas exploration firm MPRL.

"I very much welcome the Ministry's directive in having foreign investors to partner with local companies in order to qualify for onshore and offshore bidding," U Moe Myint said.

Multinational firms such as Total, which has been operating in the country since 1992, frequently offer training programs to joint venture partners and contractors, thus ensuring knowledge transfer is not

## There are tremendous opportunities for technology and knowledge transfer

restricted to local employees, the company said.

"TEPM has ... worked closely with its contractors and with MOGE in training personnel and helping them to gain new experience and access to cutting-edge technology and modern management methods," said Namita SHAH, General Manager of Total E&P Myanmar.

There are now more than 60 local companies registered with the Ministry of Energy which can act as local partners in joint venture arrangements with foreign firms, an official from the Myanmar Oil and Gas Enterprise told *The Myanmar Times*.

Previously foreign firms could enter the industry with 100 percent foreign ownership, the official said however the requirement to take a local partner, on top of a production sharing contract with MOGE, has been in place since President Thein Sein's government came to power in late 2010.

Privately owned local firm Parami Energy, part of Parami Group of Companies, is keen to join forces with international partners and learn from their expertise, said the company's chief executive officer and president, U Ken Tun.

Joint venturing with reputable foreign firms is a good way for Parami to expand further into the lucrative oil and gas sector, U Ken Tun said, adding established foreign firms could provide new and improved technology as well as knowledge and expertise.

"New technology, capability and reputation are the three most important things a foreign partner can

bring," U Ken Tun said. "There are many Myanmar firms keen to learn how to improve their business standards and practices and they can do this through engagement with a reputable foreign partner."

Parami recently signed a Memorandum of Understanding (MOU) with Russian-Vietnamese venture Vietsovpetro to bid in the upcoming international tender and if they are successful in winning a block, Parami hopes to become the operator and majority shareholder.

The company is also the minority partner of PSC-I block in the Ayeyarwady Region in Southern Myanmar, which it won with Indian firm Jubilant Energy in last year's onshore bidding round.

Dr Aung Thura, chief executive officer of local research and consultancy firm Thura Swiss said the joint venture model was a government policy to ensure that local companies gain in technical knowledge and

expertise and can have their share in the oil and gas industry.

"Government policies to bolster the local industry are normal in many countries, especially in the oil & gas industry," said Dr Thura, adding many countries in the Middle East have more protected markets than Myanmar.

"Nevertheless, I don't think that it is necessarily a disadvantage for foreign companies to form a joint venture with a local company. If the foreign company finds the right partner, the joint venture will benefit from local experience and a good network," Dr Thura said.

And choosing the right joint venture partner may pose a challenge for many foreign firms, since little is known about the background of the myriad of local firms operating in Myanmar's energy sector.

Although Myanmar's Ministry of Energy has more than 60 local companies on its books which could act as local partners, experts say big name multinationals will prefer to partner with well-known, reputable local firms to ensure compliance with international law and to guarantee they don't fall foul of sanctions requirements.

American firms in particular need to do their homework and pay close attention to US compliance requirements, such as ensuring their local partner does not have links to individuals on targeted sanctions blacklists.

"In terms of dealing with Myanmar business partners, I would advise foreign investors to perform their technical, legal and accounting due diligence carefully and thoroughly," said U Moe Myint from MPRL.

"However, it is imperative from a long term strategic partnership point of view for companies to align with Myanmar business partners with a proven track record, preferably in the oil and gas sector, and if not, with companies which have

transparent and successful track record of managing their business," he said.

The US Government maintains a list of individuals and companies with close links to Myanmar's former military regime and American firms are forbidden to engage with these entities.

US heavyweights tipped to be scoping out opportunities in Myanmar include operators Chevron, ExxonMobil and ConocoPhillips, as well as drilling services companies Weatherford, Halliburton and Schlumberger, industry insiders said.

"Foreign oil companies that are considering operating in Myanmar are required to partner with a local company and this demands a thorough due-diligence process by US companies," said Dr Aung Thura, chief executive officer of Myanmar research and consultancy firm Thura Swiss.

Incoming firms can greatly mitigate any reputational, financial and legal risks with the right due diligence, Dr Thura said.

"We would advise them to contact a local company (like Thura Swiss) that offers a due-diligence not only on financial matters but also on compliance issues and reputation of possible partners," Dr Thura said.

The longer a local firm has been operating in Myanmar, the greater the risk of them having links to the international government blacklists, Dr Thura explained, noting Myanmar was only recently emerging from a strictly regulated business environment under the former military government.

While experts agree joint ventures add an extra element on risk to any project, thorough due diligence will assist in mitigating these risks and increased competition in the oil and gas industry will ensure that over time, as Myanmar continues to open up to foreign investment, the country's best firms rise to the top. ■

# Privatisation sees costly improvements

By Myat May Zin

THE privatisation of the fuel distribution network has led to a raft of improvements but a steady increase in prices, say motorists.

In mid-2010 the government sold of its network of 260 Myanmar Petroleum Products Enterprise (MPPE) filling stations to the private sector. Since then, the number of filling stations countrywide has grown to 439, with another 540 being built, according to data provided by MPPE.

Motorist U Moe Kyaw said the best aspect of the privatisation is the absence of long queues, which dogged Yangon and Mandalay in 2010 and 2011.

"Facilities available to motorists have significantly improved since the privatisation, especially in the past 12 months. We don't have to wait in lines for long periods anymore," he said.

"There were quarrels when we had to queue for a long time and we had to pay tea money to the staff if we wanted to save time. Now we need

only five minutes to fill the tank," he said.

Private companies sell imported diesel and high-octane gasoline (petrol), as well as rationed gasoline at a slightly lower price.

However, car drivers have seen prices rise.

"The price of petrol was cheap when the government handled the local industry. But we have to import [octane, premium diesel and diesel] from abroad so we set the price according to the international market, where rationed fuel is sold at a loss to the government because it's subsidised," said U Aung Soe Tha, director of Denko petroleum group.

Immediately after the privatisation in 2010, rationed fuel was sold at K2500 a gallon (4.55 litres), while diesel sold for K3000 and octane was K3100.

Prices increased steadily through 2011 to a high in January 2012. Motorist U Thein Minn said the price of gasoline jumped from K4300 a gallon on December 31 to K4500-4600 the next morning, after the government



A worker fills gas at Max filling station in Yangon last month.

Pic: The Myanmar Times

sharply increased rationed prices.

"Only the government can control the price of gasoline because it is very sensitive," U Thein Minn said.

In September 2007 fuel price increases sparked widespread protests in the country as people commuting via bus saw fares double overnight.

The government embarked on a privatisation drive to boost investment in the industry and spread the fuel distribution network, a move that was vindicated when the long-dormant car import market was thrown open in September 2011. Since then, tens of thousands of newer vehicles have hit the road, replacing older cars, trucks and buses.

In May, the government further reduced the cost of fuel subsidies by cutting the fuel quota for each car from two gallons to one.

"There have been no problems with the smaller quota on the market," said U Aung Soe Tha. "Most of the owners of newly imported cars prefer using octane anyway because it's higher quality," he said.

U Tun Win, a taxi driver in Yangon, said: "After the privatisation, the fuel distribution market became a private business, which motivates competition. That meant the quality of fuel also improved. Customers have more options to choose the quality and service in the market," said U Tun Win.

A spokesperson of the Ministry

for Energy said the government-subsidised gasoline covers only 33 percent of total consumption in the market and the government will help domestic companies to improve the security, quality and service they offer in the long-term.

About 145,000 tonnes of diesel and 1200 tonnes of octane are imported each, mainly from Singapore and partially from China and Malaysia.

According to Myanmar Petroleum Products Enterprise, under the Ministry for Energy, figures from 2010-11 Myanmar acquired about 139.3 million gallons of condensate from Yadana project (block M-5, M-6 in the gulf of Mottama) and took about 86 million gallons of local crude from its onshore oilfields. About 129.3 million gallons of motor spirit (gasoline) were produced. The figure is an increase from 2009-10, when the country acquired about 109.2 million gallons of condensate from Yadana and about 94.6 million gallons of local crude. The production of motor spirit was 112.6 million gallons. ■



## Lessons learned from Jatropha?

By Noe Noe Aung

**I**N late 2005, the government announced a massive new initiative to cultivate and harvest oil from the Jatropha curcas plant [Jetsu]. The government stated their goal was to have bio-diesel fuel meet all of the country's energy needs. The plant needs four years to reach maturity, and by then the government expected to be using and exporting Jatropha oil in vast quantities.

A report by the Ethnic Community Development Forum describes the massive support the new Jatropha program enjoyed, "In 2006, the chief research officer at state-run Myanmar Oil and Gas Enterprise said Burma hoped to completely replace the country's oil imports of 40,000 barrels a day with home-brewed, jatropha-derived biofuel." Under the government's plan, Jatropha plantations were to cover 8 million acres by 2009, enough plants to cover the nation of Belgium.

Myanmar was not the only country under the spell of Jatropha. Within the decade, there were over 240 active Jatropha projects across the world, mainly concentrated in Asia, Africa, and South America. "Jatropha was mistakenly promoted as an almost magic crop that ordinary farmers

could grow and squeeze the oil out to power their engines" said Dr Carl Kukkonen, CEO and co-founder of the green energy firm Viaspace.

Within two years, the size of this mistake had become abundantly clear in Myanmar. From the growing period of 2006-2007, Jatropha projects in different states were reporting success rates well below the government's forecasts. Agriculture officials in Rakhine State reported losing about 55 percent of their crops, while locals in Karen State reported failure rates as high as 75pc.

The Ethnic Community Development Forum's report credited the plague of crop failure to a combination of poor planning and a poor understanding of the Jatropha plant. While Jatropha is able to grow in poor soil, the plants that grow will be weak and more prone to failure.

Additionally, the people tasked with planting the seeds were often not farmers or specialists of any kind. They were normal citizens forced into work by the old government. Teachers, students, children, farmers, nurses, civil servants, and prisoners were forced to plant the tree along roadsides, at schools, hospitals, religious compounds, and on farmland formerly used for

producing rice.

There is no official date on when the Jatropha project ended, but it appears to have folded soon after the disastrous first year of production. The Military government invested a large amount of money, force, land, and time into the project and today there is nothing to show for it.

**The Myanmar Times** contacted several people involved with the project, but most declined to comment. A retired director general from the Department of Energy Planning said "[Jatropha] didn't work. No one wanted to do it patiently and people didn't have a passion to make it a success. I think that's why we failed."

The new civilian government of President U Thein Sein has often promoted their commitment to sustainable energy, and Dr Kukkonen remains optimistic about the prospect of bio-fuel in Myanmar. "The potential of Myanmar's land and favourable climate... [could] produce not only abundant food, but also dedicated energy biomass crops to produce clean electricity, biofuels and bio-materials, and to provide employment for farmers."

He only hopes that the new government won't let themselves be discouraged by the failure of Jatropha. ■

## Companies provide support to Myanmar-China pipeline area

By Juliet Shwe Gaung

AS the Myanmar-China sister oil and gas pipeline construction work picks up to meet its 2013 completion date, socioeconomic work to benefit those in the areas around the project is also underway. However, some villagers are disappointed with their lack of input in the decision making process.

The sister pipeline is operated by South East Asia Gas Pipeline Co Ltd (SEAGP) and South East Asian Oil Pipeline Co Ltd (SEAOP) who contributed a combined total of US\$ 2 million in 2011 and will continue their contributions yearly for the next 30 years.

China National Petroleum Company has contributed \$6 million since 2011, said Mr Zhang Ye, supervisor of the project's socioeconomic department.

The money for socioeconomic projects is for initiatives in Rakhine State, Magwe Region, Mandalay Region and Shan State where the pipeline passes through Myanmar.

SEAGP's \$1 million each year is worked in Northern Shan State and Mandalay Region while SEAOP's work applies to Rakhine State and Magwe Region.

Mr Ye said the improvement works started in June 2011 and focus mainly on the construction of schools and health centres.

"It is because the Ministry of Energy has given us instructions to focus on these two sectors," he said.

The order from the Ministry urged a top-down approach, one that did not include dialogue with the villagers about what their regions specifically needed.

Instructions from the Ministry also included asking to use local companies as contractors for the projects.

"I do the inspection of the raw material and the quality of the building," said Mr Ye while inspecting one high school building in Taung Yin, Kyaukpyu in May, which is planned to house 2000 students.

He said that currently, sustainable development methods such as teaching technology to villagers is not possible but will be within the next 30 years.

Also, socioeconomic work will soon be given for the township electricity supply where \$10 million will be used for setting up Kyaukpyu electricity transmission lines.

An ambulance donation by the Myanmar-China Pipeline Project will take place in Muse.

These development projects have given locals like 19-year-old Ma Sandar Khin from Ywama village in Madae Island a new job.

She got a job at a clinic near the project site soon after finishing high school. Primarily workers from the site visit the clinic.

Ko Kyaw Moe Tun, 20, also from Ywama village joins her and gets medical experience working with a Chinese doctor stationed at the clinic.

"There are at least 10 people from the site who visit the clinic daily," he said.

On Madae Island, a water reservoir can be seen near the pipeline site. "Rain water is collected in the reservoir which is then pumped up the hill and then distributed to all the villages on the island, which has a population of 5000. The water is purified and tested in labs," explained a translator.

An official from the project said in the future, the villagers from the island would be given training in agriculture technologies including vegetable cultivation. An agricultural expert would be presenting the technology and this could

give the villagers more choices apart from growing paddy and fishing in the future, he said.

Rules have been put in place to preserve the cleanliness of water in the reservoir.

"The township authority has set rules where no cattle should be fed near the reservoir, no one should live near it and no trees should be cut so that the water in the reservoir remains clean," the representative said.

Despite the improvements many residents of Madae Island have questioned why they have not been welcomed to participate in the discussions before work begins.

U Khin Win, village head of Ywama village on Madae Island said that the water distribution system through the reservoir helped the villagers quickly and easily access water but said, "The villages on the island had never had insufficient water before".

He also said those who lived on the land on which the reservoir was built were compensated but those who lived on land surrounding the reservoir, traditionally used to grow trees and other crops, were not.

He said about 30 villagers have asked for compensation from project officials but have until this point been denied.

"They don't allow us to care for the trees. They say the area near the reservoir should be green. It is not their land," said U Khin Win.

The village head was not consulted before the socioeconomic works or construction on the pipeline started.

"There was no communication with villagers. I knew about them (the socioeconomic works) only when the school construction started and only when I asked," he said. ■

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# Social responsibility core of PTTEP work

PTTEP answers questions from *The Myanmar Times* about what the company has learned from its long term investments in the country, its reputation as a responsible investor, and its future projects.

## Q. PLEASE TELL US BRIEFLY ABOUT YOUR PRESENCE IN MYANMAR AND THE PROJECTS YOU HAVE BEEN INVOLVED IN?

A. PTTEP International Limited (Yangon Branch) is a subsidiary of PTT Exploration and Production Public Company Limited, a Thailand based company. It established and opened its office in Yangon in 1996. Currently PTTEPI has acquired and operated in 3 offshore blocks: M3, M9 and M11 and 2 onshore blocks; PSC G and EP 2, have just been acquired through a Production Sharing Contract with MOGE in June 2012.

For block M9, it is now under a development phase known as the Zawtika Development Project. The gas from this project will be transported through a 28 inch pipeline to the shoreline located near to Dawei, Tanintharyi Region with an approximate production of 300 MMSCFD. The gas from this field will be used for domestic supply and partly exported.

In addition, we are a partner in the Yadana Project, operated by TEPM as well as Yetagun Project operated by PCML, with a total joint venture share of 25.5 per cent and 19.317 pc respectively.

## Q. WHAT LESSONS HAVE YOU LEARNT DURING YOUR PRESENCE IN MYANMAR?

A. PTTEPI believes that the ultimate standard of conducting business consists of six principles: accountability, responsibility, fairness and integrity, transparency, creation of long-term value to stakeholders and promotion of best practices. Following these principles will lead us to a successful achievement of our business operations in Myanmar.

In over a decade of operations in Myanmar, we have received a great opportunity to expand our business with the recognition and appreciation of our stakeholders. As a consequence, we are convinced that our way of conducting business is appropriate and we will continue to adhere to these principles.

## Q. HOW IMPORTANT IS IT FOR A COMPANY TO BE INVOLVED IN SOCIAL RESPONSIBILITY AND WHAT HAVE YOU DONE IN MYANMAR? DO YOU THINK PTTEP IS OPERATING AS A RESPONSIBLE INVESTOR?

A. PTTEPI deems it important to operate its business adhering to good corporate governance and code of business conduct, which are the foundations for to achieve as a company on a secure and sustainable basis.

The good corporate governance and code of business conduct of PTTEPI are in accordance with economic self sufficiency. Also, stakeholders are taken into consideration as well as social and environment responsibilities in order to create balance in society.

Since the beginning of our operations in Myanmar, PTTEPI has placed equal value on social responsibility and business expansion. The success of the company has been, and will be, measured not only in profit and growth but also in responsibility and concern for stakeholders within and outside the organization.

PTTEPI has launched a socio economic program, in which we have engaged and incorporated local communities at all times to ensure that we understand their core needs and that we create a sense of partnership and belonging.

Our socio economic program aims to promote health awareness and physical development of young people so they can grow up to be part of a healthy and valuable workforce for the country's development.

Moreover, we open the door of educational opportunity to students through our full scholarship program so they have the opportunity to continue study at a higher level and bring that knowledge to help develop their own communities.

Our socio economic programs mostly focus on youth development. However we also aim to create better living conditions and respond to the basic living requirements of other sections of the communities. We provide income earning opportunities with our road improvements and

electricity generation, we improve health services such as clean drinking water, upgrade health facilities and promote community culture with our monastery support program.

## Q. DO YOU FEEL THERE HAS BEEN ANY CHANGE IN PERCEPTION TO OPPOSITION LEADER DAW AUNG SAN SUU KYI'S COMMENTS ON THE NEED FOR INVESTORS TO BE RESPONSIBLE?

A. The comments from Daw Aung San Su Kyi does not affect our operations. We are always responsible in our investment for the country. We conduct our socio economic program to improve the quality of life of the people in the investment area. In addition, Myanmar and Thailand are adjacent neighbours, we cannot escape from each other. PTTEPI has to take highest responsible for our investment.

As a company with long term operations in Myanmar, we have observed many changes in the country that has improved the social welfare of people in the last decade.



Gas spews out of Yadana natural gas rig in Tanintharyi Region. PIC: THE MYANMAR TIMES ACHIEVE

Since its start, PTTEPI has conducted its business as politically neutral. We take great pride in consistently demonstrating international best practice and being a responsible investor by incorporating social responsibility in our operations with or without law enforcement.

## Q. WHAT ARE YOUR FUTURE PLANS IN THE COUNTRY?

A. PTTEPI joined the Yadana project as partner in 1995. We will continue to support Yadana gas production to supply natural gas for the country's domestic use until the end of the PSC in 2028.

Recently, PTTEPI was awarded a Production Sharing Contract for onshore blocks, PSC G and EP 2. PSC G is the largest block in this bidding round with a huge exploration block area of 13,333 Km<sup>2</sup> covering Meiktila, Magway, Taungdwingyi and west of Nay Pyi Taw. Block EP 2 has an exploration area of 1,344 km<sup>2</sup> and is located in the Aunglan area.

Later this year, for new onshore blocks, our team plan to run 2D seismic operations in both blocks and will propose drilling operations if we find any potential. And for the offshore blocks, M3 and M11, we continue our drilling campaign as planned. ■

# Getting in the energy sector of Myanmar

By Sandar Lwin

If you're interested in getting into the energy sector of Myanmar, now is the time to buy. The sector once catered only to millionaires and friends of the government, but now it is more open to the independent businessman. The procedures are much simpler and access to the information is also smoother than it has been in many years.

The sector is administered by the Ministry of Energy (MOE), you can reach them at [www.energy.gov.mm](http://www.energy.gov.mm). The Energy Planning Department (EPD) handles the tenders and it has formulated two procedures for onshore and offshore blocks. A simple bidding method is used for onshore oil and gas blocks. To get them, you need at least one local partner that has already registered at MOE or you can choose MOGE; state owned Myanma Oil and Gas Enterprise.

For offshore blocks, the ministry is still practising the individual direct negotiation method for each block. But the ministry declares that it is open to all interested foreign investors without any prior selection and you can run the operation on your investment alone.

If you would like to bid on the 2012 round of bidding for onshore blocks, which is through the ministry has not set the exact date yet, the industry sources say it is very near and may be within August or September, you just need to send one letter of expression of interest and four document of credentials; article of association (AOA), certificate of incorporation, latest annual report, latest financial statement or financial report.

However, your documents need to have endorsements by the embassy of Myanmar at the country of your company's registration. Then, put them into a sealed envelop, write "Confidential, Myanmar Onshore Blocks Bidding Round 2012" on the front and send it to Director General, Energy Planning Department, Building No. (6), Nay Pyi Taw, The Republic of the Union of Myanmar. You may also send your application via email at [myanmoe@mptmail.net.mm](mailto:myanmoe@mptmail.net.mm) or fax: 95 67 411 113.

The potential bidders will

be placed onto shortlist in line with the international petroleum industry practices based on technical competency, financial capability, past history and track record, present performance.

"Bidding is a simple but fair way for both host and bidders. The host can also get the right market price," said a coordinator to an Australian energy investor who asked for anonymity.

If you are on the shortlist, you will get summon and hear the lectures by the EPD on the ministry's preferable terms and conditions and other necessities and get the general data overview of the bidding blocks.

## Bidding is a simple but fair way for both host and bidders

Then comes the proposal process. You need to submit your proposal on terms and conditions and production sharing contract and complementing with MOU or MOA or DOA for incorporated Myanmar companies. One investor is allowed to propose only for three blocks.

Your proposals will be assessed and if your terms and conditions are deemed as the best among the proposals by EPD, then the EPD will provide you the already prepared Production Sharing Contract (PSC). You can also browse it in advance at [www.energy.gov.mm](http://www.energy.gov.mm).

The authors of the best proposals then go on to a series of meetings with the head of the EPD. "The negotiations are mainly about money. The civil servants from the departments are also welcome and supportive to the investors. But the government departments use the papers but not electronic system, so it takes much time to move from one table to another. And we also need to wait for long because of the time limitation of busy minister," said the Australian coordinator.

You can look the bill of Foreign Direct Investment law at [www.energy.gov.mm](http://www.energy.gov.mm). ■



# East and West eyeing off Myanmar oil wealth

By Victoria Bruce

**W**ESTERN oil and gas firms are tipped to dominate Myanmar's upcoming bidding war for onshore and offshore petroleum blocks, industry experts said. "There is a forthcoming bid round for a series of on and off shore concessions, to be launched by the Ministry of Energy in early September," said Christopher Drew, country manager of Australian exploration firm Twinza Oil.

"We expect it to be highly competitive, with a strong showing by the Americans," he said.

Chevron, ExxonMobil and ConocoPhillips were part of a delegation of some 40 US firms to visit Myanmar last month and the latter signed a deal in June to explore for gas in a controversial section of the Bay of Bengal claimed by Myanmar and India.

However, stringent reporting requirements and compliance issues imposed by their home government mean incoming US firms will be watching their step so they don't fall foul of American sanctions, said U Ken Tun, president and CEO of Parami Energy, a privately owned oil and gas firm.

"They are coming, but they are being very cautious," U Ken Tun said. He said American firms could develop investment vehicles outside of the US, such as forming official partnership companies registered in Singapore, to circumvent potential compliance issues.

"That's how they can ensure a safe entry," he said.

Other first-tier European players showing interest include Italian energy firm ENI and Dutch-British multinational Shell, the latter tipped to be scoping out opportunities to explore Myanmar's deep water blocks, sources said.

Currently, the sector is dominated by Asian companies with names such as Korean Daewoo and KMDC, Thailand's PPTEP, China's SINOPEC and Malaysia's Petronas, as well as some lesser known firms.

The Ministry of Energy reported eight foreign firms are currently working on 10 onshore blocks while 12 more have invested in 27 offshore blocks.

According to state media, South Korean company Daewoo's blocks A1 and A3 contain 5.353 trillion cubic feet of gas, reportedly one of the largest gas reserves in South-east Asia, and Thailand petroleum giant PTTEP recently confirmed a new investment of US\$2 billion in Myanmar over the next four years for exploration and production operations at its Zawtika natural gas field in the Gulf of Martaban. PTTEP already has

seven projects including operating four exploration blocks in Myanmar.

US Energy giant Chevron has been operational in Myanmar since acquiring and expanding upon Unocal's existing projects in the Yadana gas field in 2005, operated by French multinational Total.

The project generated US\$4.83 billion dollars for the Myanmar government between 2000-2008, environmental group EarthRights International stated in a recent report, adding Total and Chevron are two of the biggest Western companies in Myanmar, both escaping wide-ranging EU and US sanctions imposed on the former regime.

Chevron declined to confirm if the company will participate in the upcoming international tender. "Chevron continues to assess US government actions with regards to Myanmar and will continue to comply with all U.S. laws and regulations," a Chevron spokeswoman said in an email.

The Ministry of Energy said 23 lucrative offshore blocks will be offered alongside 30 onshore blocks in the next bidding round, and industry insiders say Myanmar's untapped offshore oil and gas reserves are certain to lure in big name Western energy firms.

"US firms are interested in offshore, not onshore," U Ken Tun said. "These guys want to play big and the big games are all offshore." Myanmar already hosts a small European presence, including France's Total and Switzerland's Geopetrol, and sources say representatives from BHP Petroleum visited the resource-rich country in June.

"BHP have been revisiting the previous onshore opportunities in the oil and gas sector and no doubt eyeing off the lucrative offshore market," said a foreign consultant who spoke on condition of anonymity.

An Australian investor, Robert McLennan, said his company Dagon Oil Limited, was keen to get hold of four offshore blocks in the next bidding round.

"I'm preparing the letters of intent as we speak," he said during a phone interview, adding his company had made "great inroads" with the Ministry of Energy (MOE) in the past months.

But while Western energy companies are expected to make their presence felt, they won't be tipping the balance against Eastern firms just said, said Jared Bissinger, a PhD student from Australia's Macquarie University who is studying Myanmar's economy.

"Myanmar's oil and gas sector has many more firms from Asia than the West, and it will stay that way for quite a while," Mr Bissinger said.

"Part of the reason for this is simply geography - Myanmar's

location close to Asia and comparatively far from the West makes it more economical to export oil and gas to Asian countries. Remaining sanctions like the import ban play a role too, as does the SDN list," Mr Bissinger said.

All foreign firms investing in the oil and gas sector are required to enter into a production sharing contract and partnership with the Myanmar Oil and Gas Company (MOGE), the government entity which oversees licencing and holds a majority stake in all onshore and offshore blocks.

Under new rules, foreign oil and gas firms starting up in Myanmar must take on a local partner however concerns over lack of capacity and industry expertise mean Myanmar's few legitimate local energy firms will be highly sought after.

Parami Energy recently

signed a profit-sharing joint venture agreement with Indian firm Jubilant Energy and MOGE (the Myanmar Oil and Gas Enterprise) to explore for onshore oil and gas in the PSC-1 block in Areyarwady Region in Southern Myanmar and are teaming up with Vietnamese-Russian oil venture Vietsovpetro to bid for blocks in the upcoming round.

But not all local firms will have the necessary experience or capacity required to appear attractive potential partners to incoming foreign firms, particularly big name multinationals, experts said, pointing out local firms must be approved by the Ministry of Energy.

"I believe there are now up to 60 local companies recognised by the Energy Ministry to satisfy the new local content requirement," Mr Drew from

Twinza Oil said.

"These local partners don't have to do anything too much - they basically get a free carry of anywhere from 3 per cent to 8 per cent up to the development stage," Mr Drew said.

He said this arrangement might not be so well-received from American energy firms, which have to abide by strict post-sanction reporting requirements, including disclosing details of any deals with MOGE, if their investment is more than US\$500,000.

"I expect the Yanks may kick up a fuss about this, and we may not be surprised if they get some sort of exemption - let's see," Mr Drew said.

Myanmar's lucrative oil and gas industry has received over 90 per cent of foreign direct investment in past decades, mostly from Thailand and China, as its neighbours seek solutions to their growing

energy demands, however much of its offshore reserves remains largely unexplored.

"Myanmar has the potential to contribute to satisfying the energy shortage in India and China, but needs a lot of exploration work," Mr Drew said, adding the large gas potential was in the offshore Rakhine deep water areas.

"The problem is that there is such little hard data on the area, therefore it's very difficult to justify a high bid in a competitive process," he said.

Although Myanmar's untapped oil and gas industry will no doubt attract substantial interest from foreign investors, Western firms may be reluctant to enter a country Transparency International (Germany-based non-profit organisation) ranks as one of the world's most corrupt, despite its recent political and economic reforms. ■

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## Offshore gas fields

### A-1 and A-3 gas fields

The A-1 natural gas field is located offshore of Rakhine State and the block measures 3885 square kilometres.

A Production Sharing Contract (PSC) for the A-1 block was signed between Myanmar Oil and Gas Enterprise (MOGE) and a consortium led by South Korean firm Daewoo in August, 2000.

Daewoo discovered the first commercial natural gas deposits, at Shwe prospect, in January 2004. An additional gas discovery was later identified in at Shwe Phyu in 2005 and at the Ngwe prospect in 2006.

The A-3 gas field is also located off Rakhine State. The size of the block is 6780 square kilometres.

The A-3 block was awarded to Daewoo and it partners in 2004 and the company discovered commercial natural gas at the Mya-1 prospect in January 2006.

Daewoo, as the operator of both the A-1 and A-3 blocks, has a 51 percent stake in the consortium, followed by India's Oil and Natural Gas Corp with 17pc; Myanmar Oil and Gas Enterprise with 15pc; India's GAIL with 8.5pc; and South Korea's Korea Gas Corp with 8.5pc. In December 2008, Myanmar and China signed an agreement to sell natural gas from A-1 and A-3 blocks to China via pipeline. Construction work on the US\$2.5 billion pipeline is now underway.

The A-1 and A-3 fields are expected to, according to Ministry produce up to 10 trillion cubic feet of gas over the next 30 years.

### Yetagun gas project

The Yetagun natural gas field was discovered when Appraisal Well 1 was drilled by US oil company Texaco at the M-12 offshore block in November, 1992. It is located in the increasingly lucrative Gulf of Mottama region and spans sections of the M-12, M-13 and M-14 blocks.

Development of the project started in 1996-97 but Texaco elected to sell its entire interest and transferred operatorship to Premier Oil in 1997. Premier sold its entire share to Petronas, a Malaysian oil and gas company, in 2002.

Gas extracted from the project starting flowing to Thailand in 2000 at about 200mmcf. In August 2004 this figure doubled after four new wells went online. With the new wells, overall production climbed to 500mmcf, with 400mmcf exported to Thailand. Yetagun is operated by Petronas, with MOGE and Thailand's PTTEP the other major shareholders including NIPPON.

### M-3

Aung Singkha 2 well in 2011 March found that 154 barrels of condensates & 25.8 million cubic feet of gas per day could be

produced and will be used only for domestic exploration well consumption.

### M-9 offshore block

This newly-discovered field in the offshore M-9 block, in the Mottama Gulf, is located about 300 kilometres south of Yangon. The block was discovered by Thailand's PTTEP when it conducted an aggressive drilling campaign in the block in 2007.

First gas export is expected in July-December 2013. Pipeline will be 220 kilometers long for offshore and 70 kilo for onshore link both the diameters of the pipes 30 inches.

Agreement between MOGE and PTTEP International Limited and PTT Public Company Limited has been signed in June 2008.

Natural gas is expected to start flowing from the site soon. The M-9 block is expected to produce about 300mmcf (million cubic feet of gas a day), with 80pc being exported to Thailand and the balance used domestically.

Myanmar and Thailand have made a verbal agreement to sell natural gas from M-9 to Thailand via pipeline. Survey work on the pipeline route was completed in mid-2008 by local company Geocomp Myanmar.

PTTEP has held a production-sharing contract with Myanmar since 2003 and has total control over the M9 block. Preliminary exploration in the M-9 block was performed by American oil company Arco about 10 years ago and the company's initial tests showed traces of natural gas reserves. PTTEP currently buys about 1000mmcf from Myanmar's Yadana and Yetagun gas fields via pipeline to Thailand. PTTEP has also acquired the exploration rights to four other offshore blocks located in the Gulf of Mottama: known as M-3, M-4, M-7, and M-11.

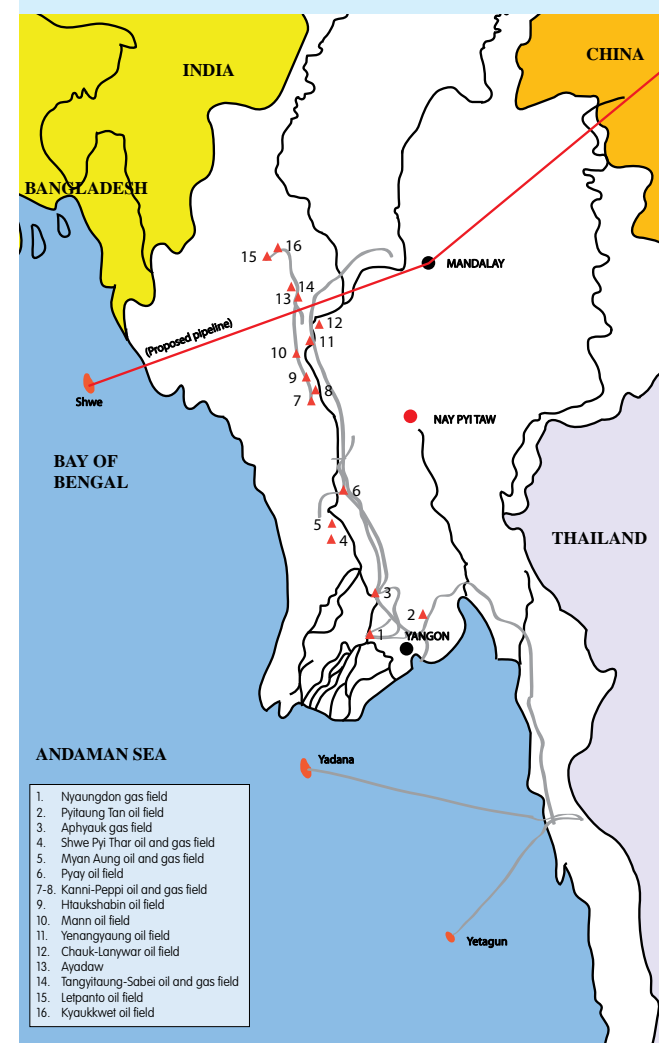
### Yadana gas project

The offshore Yadana gas field was discovered by MOGE in the Gulf of Mottama in 1982 and provides some of Myanmar's energy needs as well as billions of US dollars in foreign currency revenue. French company Total is the operator of the project, which exports 600mmcf to Thailand. About 200mmcf are used to meet Myanmar's domestic needs.

Gas exports from the project began in July 1998 and the gas sales agreement signed between Total and the government will run for 30 years, until 2028.

Yadana's major shareholders are Total Myanmar Exploration and Production, Unocal (United States), PTTEP International Limited (Thailand) and MOGE.

## MAP SHOWING OIL AND GAS FIELDS



## List of onshore winners announced in December 2011

No	Company	Awarded	Area
1.	PT Istech Resources Asia (Indonesia) + SMART	EP 5	Inbin + Thegyigon
2.	PTTEP (Thailand) & Win Resources	EP 2 PSCG	Aunglan Taungdwingyi
3.	Geo: Petrol (Switzerland) & A1-Construction	RSF 9	Pyalo + Pauk Khaung
4.	Petronas (Malaysia) & UNOG	RSF 2, RSF 3	Tuyin Taung, Gwegyo Ngashantaung
5.	CIS Noble Oil (Russia) & Alister	PSCE	Myingyan
6.	Tianjing New Highland (China) & Suntac	MOGE 4	Myittha
7.	Jubliant (India) & Parami Energy	PSCI	Hinthada
8.	EPI Holding & Aye Myint Khine	RSF 10	Kamma Natlaung

Total Company (Foreign Co;7) (Local Co;7)

Total Block (9 Blocks)

Note: No-6 Tianjing New Highland (China) and Suntac later withdrew its operations

## Onshore oil fields

### Myan Aung oil field

The Myan Aung oil field is located in Myan Aung, Ayeyarwady Region and was discovered in 1964. The field is 2.5km wide and more than 8km long and currently produces 51bpd and 0.274mmcf. The peak oil production from the field was 8908bpd in 1969. Total oil-in-state is 76.5 million barrels and 23.03 million had been produced to October 2005. Remaining recoverable oil stood at 680,000 barrels.

### Kanni-Peppi oil and gas field

The Kanni oil field is located in Minbu-Saku township in Magwe Region. The oil field was discovered in 1985 and is 5km long and 1.5km wide. In December 2005, production of oil and gas from the field was 1934bpd and 1.9mmcf respectively. Peak oil production was in 1992, when 3535bpd were produced. The field's total oil-in-state is 55.6 million barrels. To October 2005, 13.5 million barrels had been produced.

### Htaukshabin oil field

Htaukshabin oil field is located in Minbu township, Magway Region. The oil field was discovered in 1978 and is 15km long and 1.5km wide. Production of oil from the field was 607bpd in December 2005 and peak production was 10,359bpd in 1986. Total oil-in-state is 157.3 million barrels and 21.8 million barrels had been produced to October 2005.

### Chauk-Lanywar oil field

The Chauk-Lanywar oil field is located in Chauk township, Magway Region and is about 17km long and 1.5km wide. The oil field was discovered in 1901 and has total oil-in-place of more than 400 million barrels, with 169 million recoverable barrels.

Cumulative production was 149.3 million barrels to October 2005, when 19.8 million barrels, or less than 12pc of total recoverable oil, remained. Peak production was 12,805bpd in 1941 and average production was 541bpd in December 2005.

An Improved Petroleum Recovery Contract was signed between MOGE and Goldwater in October 1996 to increase production at the field. The current operator of the field is Goldpetrol, a joint operating company created in 2003 by French company Geopetrol and Singapore-based Interra Resources.

### Letpanto oil field

Letpanto oil field is located in Pauk, Magwe Region. The oil field was discovered in 1997 and is 28km long and 2.5km wide. According to MOGE figures, the oil field produced 668bpd in March 2006 and peak production was 1155 barrels in 1998. Total oil-in-state at Letpanto is 76.7 million barrels and 2.3 million barrels had been produced to December 2005. Recoverable oil at the Letpanto oil field was 20 million barrels.

### Tangyitang-Sabei oil and gas field

The oil field is located in Pauk township, Magway Region, and is 25km long and 5km wide. The oil field was discovered in 2000 and production was 439bpd and 16.33mmcf in December 2005. The peak production was 2057 bpd in 2004. Total oil-in-state is 137.8 million barrels and 1.6 million barrels had been produced to October 2005.

### Mann oil field

The Mann oil field is located northwest of Magway, approximately 580 kilometres north of Yangon, and is about 16km long and 1.5km wide. The Mann field was discovered in 1970 and there are now 660 wells in the field, 234 of which are producing and the remaining shut-in.

Total oil-in-place is 433.013 million barrels and 114.032 million barrels had been produced to October 2005. Peak production at the Mann field was 24,711bpd in 1979 and average production in December 2005 was 2268bpd.

MPRL E&P, formerly known as Myanmar Petroleum Resources Ltd, is the current holder of a Performance Compensation Contract originally signed between Baker Hughes Singapore and MOGE.

### Pyitang Tan oil field

Pyitang Tan oil field located in Shwe Taung township in Bago Region. The oil field was discovered in 1964 and is 50km long and 8km wide. Peak production at the field was 2435bpd in 1970 and in 2005 production averaged 201bpd.

The field has total oil-in-state of 49.7 million barrels and 12.04 million barrels had been produced to October 2005.

In 2001, an Improved Petroleum Recovery (IPR) contract was signed between MOGE and CNPC from China to boost production at Pyitang Tan.

## Onshore gas fields

### Nyaungdon gas field

The Nyaungdon gas field is located in Nyaungdon township, about 55 kilometres (34 miles) northwest of Yangon, and the field is about 6km long and 2.5km wide. The gas field was discovered by MOGE in 1999 and is the largest onshore gas field discovered so far in Myanmar. The Nyaungdon field produces about 70pc of the country's total onshore production and the majority – 87mmcf and 660 barrels of oil a day (bpd) – comes from the Nyaungdon South Prospect. In 2005, production at Nyaungdon was nearly 105mmcf.

The field's natural gas reserves are 297 billion cubic feet (bcf) and 117bcf, or 39.70pc, had been produced to October, 2005, according to MOGE figures.

Remaining recoverable reserves are about 104bcf. Total oil in state, in the form of condensate, is more than 5 million barrels and about 1.5 million had been produced to October 2005. The field has remaining recoverable reserves of 2.3 million barrels.

Gas from the Nyaungdon fields feeds power plants in Yangon and factories in upper Myanmar.

### Aphyauk gas field

The Aphyauk gas field is located between the towns of Taikkyi and Zalun in Yangon Region, about 80km north of Yangon.

The gas field, which was discovered in 1991, is almost 17km in length and 5km wide and produced about 9mmcf in 2005.

Figures in 2009 show that the field's total gas reserves are 483mmcf and to October 2005 about 307mmcf had already been produced.

### Shwe Pyi Thar oil and gas field

The Shwe Pyi Thar gas field is located at Myan Aung, in Ayeyarwady Region. The gas field was discovered in 1967 by MOGE and is 6.5km long and 2.5km wide. In 2005 it produced an average of 0.290mmcf and 372bpd. Peak production was 977bpd in 1991. Remaining recoverable gas stands at about 30mmcf – to October 2005, 91mmcf had already been produced. Figures from previous years show that total oil-in-state is 10.9 million barrels and to October 2005 3.3 million barrels had already been produced.

### Yenangaung oil field

The Yenangaung oil field located in Yenangaung, Magway Region and is about 32km long and 3km wide. It was first drilled in 1887 and has total oil-in-place of 540 million barrels, with more than 251 million recoverable. Cumulative production to October 2005 was 229.37 million barrels.

Peak production was 16,000bpd in 1918 and average production in December 2005 was 1810bpd.

An Improved Petroleum Recovery Contract was signed between MOGE and Goldwater in October 1996.

# Total E&P explains its position and activities

Total E&P has been present in Myanmar since 1993. Deciding to stay in a country despite widespread international criticism over human right abuses, things maybe coming full circle as Aung San Suu Kyi recently stated that she considered Total to be a responsible investor and called for other companies to emulate their business practice. Total's General Manager in Myanmar, Namita Shah, presented the company's position in the country to *The Myanmar Times* via written Q&A, explaining its social responsibility, local business practices and future developments.

## WHAT LESSONS HAS TOTAL LEARNT DURING THE COMPANY'S 20 YEAR PRESENCE IN MYANMAR?

From the moment that Total decided to operate in Myanmar, the Group had to do so without compromising its principles, while effectively ensuring that they would be enforced.

The results achieved through critical dialogue with all our stakeholders have created a region where economic development and respect for human rights coexist.

Total has no doubt that the right choice was not to refrain from involvement or to withdraw to preserve its reputation, but to be engaged and work for the welfare and protection of the population.

The experience gained in Myanmar has made Total more aware of the positive influence it can have on social progress in the regions where it operates.

The same issue arises for many multinational corporations, in particular those active in the extractive industries, because geological distribution of resources often means that they operate in countries affected by strong tensions. These tensions may be aggravated by the companies' presence because of the wealth and envy that they generate. Engagement in such countries involves taking a risk that could adversely affect corporate image. A responsible multinational has to reconcile its contribution to economic development with the respect of human rights where it operates, while refraining from interfering in local politics.

We welcome all opportunities for discussion and cooperation with the various national and international stakeholders in order to examine the ways we can better serve Myanmar's long-term interests.

Obviously, the Yadana Socio-Economic Program alone cannot resolve the problems in Myanmar, but the presence of a company like Total can help get the country moving in the right direction.

## WHAT DO YOU MAKE OF RECENT COMMENTS THAT TOTAL IS A RESPONSIBLE INVESTOR, AND HAS IT HAD ANY POSITIVE IMPACT FOR THE COMPANY?

As you know, Total has been often criticized for its decision to remain in Myanmar, but Total has always believed in responsible economic development.

Total has demonstrated by the work it is doing on the

ground that it is a responsible investor, along with its consortium partners, and certain organizations are beginning to acknowledge the work of Total. This acknowledgement greatly improves the morale of the employees of Total, who often face criticism for their work in Myanmar.

At the same time, Total must and will continue to monitor its activities and constantly adjust, grow and improve its CSR activities.

## HOW DOES THE COMPANY INTERPRET RESPONSIBLE INVESTMENT AND DO YOU THINK TOTAL IS SUFFICIENTLY ABLE TO COMPLY WITH THE EXPECTED NORMS AS A RESPONSIBLE INVESTOR? HOW?

Corporate social responsibility is the way in which companies integrate social, environmental and economic concerns in an open and responsible manner with exemplary business practices and creation of wealth and social improvement. It means that companies are responsible for the social as well as the environmental consequences of their economic and industrial operations, and it does not stop at the borders of the company, but extends to all stakeholders both internal and external to the company (employees, local authorities, service providers, etc.)

## HOW IMPORTANT IS IT FOR A COMPANY TO GET INVOLVED IN SOCIAL RESPONSIBILITY?

The Total Group is committed to respecting the environment, ethical practices, safety and corporate social responsibility. This entails three areas: Preparing for the future – as an energy company, Total must find a way to meet the energy needs of the future and addresses climate change; managing our activities and environment – to ensure the safety operations, human health and preserve the environment; contributing to the economic and social development of stakeholders – creating value for the various stakeholders in its operations is one of Total's major objectives.

The socio-economic program was planned and implemented with respect for traditional customs and practices. Launched in 1995, even before construction fieldwork began, the program has always been considered an integral part of the Yadana project.

At the end of 2010, the Socio-Economic Program (SEP)

disbursed some US\$26 million covering 25 villages in the pipeline region. Program costs are shared with the Yadana co-venturers in proportion to their investment in the project. The programs in the pipeline area are directly run by TEPM and not via any NGOs. Its priorities, which were defined with the villagers, focus on four key areas on public health, education, economic development and infrastructure with the design of program allowing even the poorest people in the project area to benefit from its development.

The CDA reports on TEPM activities can be accessed directly through CDA website [www.cdainc.com](http://www.cdainc.com).

## WHAT ARE THE CHALLENGES YOU HAVE EXPERIENCED WHILE WORKING HERE?

The biggest challenge of working in Myanmar has been the fact that Total's presence in Myanmar has been contested by human rights activists and NGOs, who have accused the firm of enriching and cooperating with the former junta that was accused of widespread human rights abuses. However, Total has invested in Myanmar and has continued to operate the Yadana project because it feels that it can apply our Code of Conduct in our sphere of operations. In the particular context of Myanmar, ensuring that these conditions are met requires vigilance and commitment.

Total also chose to stay in Myanmar when most western companies left because it believed that by working within the system it promoted universal values and had a positive impact on the lives of the people around its operations.

## HOW IMPORTANT IS TRAINING FOR EMPLOYMENT OF LOCAL STAFF WITH TOTAL? HOW DO YOU ACHIEVE THAT?

Employ local workers to the greatest extent possible, train them and provide them fair and satisfactory working conditions and career prospects is one of the means Total believes in contributing to the economic development of countries where it undertakes its projects.

At the same time, Total must ensure that its operations meet the technical and safety standards applied by it to all operations world-wide. This means that training for local staff is a key component of success of our operations. This requires patience,

persistence and real commitment of top management to succeed in the training of local employees. Cultural and language barriers need to be taken into account in this process.

Total has a strong focus on national staff development. Today, more than 90% of the employees (234 national staff as of 30/06/2012) currently working for Total E&P Myanmar were locally hired. TEPM also engaged around 650 contracted staff through its local supplier companies.

Along with training, hiring of local staff also has a favourable impact on the local working conditions, environmental issues and safety practices. It also promotes transfer of know-how and experience to the country.

In order to ensure that the company attracts and keeps the people it needs, and recruited candidates are offered jobs according to their abilities and experi-

ence, the Human Resources Development Dept. provides a systematic selection and recruitment service in strict respect of Group Recruitment Policy and TEPM Recruitment Procedures.

The high proportion of local recruits is the result of an extensive training program. So far, over 150 Myanmar technicians and engineers have been provided 10 months to two years of training at an overall cost of 11 Million US\$. This process began during the construction of the onshore and offshore facilities between 1995 and 1998 to prepare the local professional work force that would be responsible for the production and maintenance of the gas operations facilities.

## WHAT ARE THE TOTAL FUTURE PLANS IN MYANMAR, INCLUDING YADANA AND ANY OTHER PROJECTS?

The total investment outlay was about US\$1 bil-

lion. With an expected field life of 30 years, Yadana Gas Field is producing about 780 MMSCFD per day of natural gas, around 600 MMSCFD exported to Thailand and 180 MMSCFD supplied to Myanmar. The gas is transported onshore via a 346-kilometer subsea pipeline and to the Thai border via a 63-kilometer onshore pipeline.

The consortium is currently undertaking some investment activities in Yadana, including the drilling of wells to maintain the production plateau and a project to maintain the integrity of the Yadana platforms.

Total is considering potential development of its business in Myanmar. Just before coming over to Myanmar in June, Mr. Margerie expressed to the press after the gas conference in KL, Malaysia that "the Group will be delighted to participate with the additional development of Myanmar and will see what they can do." ■

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# Energy campaigns work

Locals ride in a boat near Myitsone in Kachin State where the dam project has been suspended. Pic: The Myanmar Times

**M**YANMAR'S energy capacity has increased dramatically since 2010. This is due to the rapid increase in energy projects that have been implemented. The most well known of these is the Myitsone Dam project in Kachin state which is the largest energy project in the country. Despite much enthusiasm for the project with the Myanmar and Chinese governments, after the new government elected in early 2011 local people have demonstrated to halt the project because of severe, long-term social and environmental impacts.

The many environmental campaigns to save the Ayeyarwady river from Myitsone Dam project include 'Sketch of a River Art Exhibition', showcasing images of the

Ayeyarwady River taken by local photographers organised by Green Hearts Environment Network started in September last year.

Novelists, writers, journalists, poets, cartoonists, artists and photographers cooperated with environmentalists from non-governmental organisations to launch special discussions, publish books and postcards, hold photo exhibitions, and release poems to raise awareness about the issue.

On September 21, Daw Daewi Thant Zin, an environmental activist and chief editor of the monthly *Aung Pin Lae* magazine, published a book titled *Ayeyarwady Ko Tot Ma Lwan Chin Par* (I Don't Want to Miss the Ayeyarwady), which deals exclusively with environmental issues related to the river. "I'm very

excited because I understand the public's desire and their love for the Ayeyarwady, which is wholly owned by Myanmar and we don't want to lose our heritage. I think other people feel the way I do so I published this book to

**"We have lost our life-earning farmlands as the pipeline has crossed over them"**

cooperate with everybody else who loves the Ayeyarwady," she said.

Such campaigns came after the Union Minister U Zaw Min said at a press conference on September 11, "Some media say we will retreat because environmental organisations are protesting but we won't give up on it, this project is

needed for our national economy to get electric power."

After a sustained nationwide campaign against the project and its social and environmental consequences President U Thein Sein announced on September 30 it

was to be suspended for at least the five-year term of his government.

Another campaign was launched by a group of Rakhine youths in their traditional tug-of-war or *Rahta-Swe-Bwe* held in Sittwe in February this year to stop the Shwe gas project.

*Ratha Swe Bwe* is one of

the most popular traditional games in Rakhine State and they launched the campaign with the game to raise wider awareness among their own Rakhine people who are being deprived of their rights in their own region.

The campaigners were wearing t-shirts that read "Stop the Shwe Gas Project" and "Give 24-hour Electricity to Rakhine".

Meanwhile, 49 farmers from Kyaukphyu Township in Rakhine state sent complaint letters to township administrator Regional Chief Minister, the Chairman of State Parliament, the State Administrator, and the Rakhine Nationalities Development Party.

The complaints said, "We have lost our life-earning farmlands as the pipeline from the Shwe Gas Project has crossed over them. We

have not only become landless but also suffered from great losses as our farmlands were covered with ripe paddy harvests when they were confiscated and bulldozed for the pipeline corridor."

The responsible officials responded on 14th Waxing Moon Day of Thadinkyut (11 October 2011) with a verbal promise that the remaining amount would be paid after 15 days.

"We would like to request you to take necessary steps for paying the remaining compensations to us with your kind considerations for our difficulties and sufferings."

Daewoo E&P is the operator of Shwe project expected to export gas in July and oil pipeline in September, 2013. The project started collecting environmental base line data in 2009. ■

## WHEELS

ဘက်စင်လှုပ်ရှားသွားရန်

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ဖြောင်းလဲမှုနှင့် ဥပဒေရေးရာ  
သမိုင်းကြောင်းများ

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မော်တော်ယာဉ်  
ရောင်းဝယ်ငှား  
ဈေးနှုန်းများ

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မော်တော်ယာဉ်ဆိုင်ရာ ကြော်ငြာများကို  
သင့်လျော်သောဈေးနှုန်းဖြင့်  
လက်ခံဆောင်ရွက်ပေးနေပါသည်။

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