

**YANGON UNIVERSITY OF ECONOMICS
MASTER OF PUBLIC ADMINISTRATION PROGRAMME**

**A STUDY ON HUMAN RESOURCE CAPACITY
BUILDING AND DEVELOPMENT
(CASE STUDY: UPSTREAM ENERGY SECTOR OF MYANMAR)**

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EMPA - 78 (15th BATCH)**

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**A STUDY ON HUMAN RESOURCE CAPACITY BUILDING AND
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A thesis submitted as a partial fulfillment towards the requirements for the degree of
Master of Public Administration (MPA)

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ABSTRACT

Capacity is about the growth of an individual in knowledge, skills and experience. The aim of this study is to examine the employee capacity in the upstream energy sector in Myanmar and to analyze the undertaking the employee's capacity development of international oil and gas energy companies in Myanmar to play a successful role. Both quantitative and qualitative case study research design and descriptive methods were used for this study. E-survey was conducted with 150 randomly selected respondents from the departments of upstream energy companies operating in the upstream energy sector in Myanmar in the offshore region. Individual in-person interviews were also conducted with key informants to validate data obtained. The results of this study indicate that the biggest challenge is the lack of well-trained petroleum engineer due to not having the proper suitable background education and proper training even though the organization involved appear to have robust Human Resource programs which are also timely kept up to date and closely linked to short term and long term company strategies. There are limited amount of oil and gas fields which are operational at the moment that limits on the job training opportunities. Another important finding was to create policies that will attract more international oil and gas companies where this will result in more opportunities to develop our Myanmar employee capacity.

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LIST OF ABBREVIATIONS

ASEAN	Association of South East Asian Nations
CSO	Civil Society Organizations
CSR	Cooperate Social Responsibility
E&P	Exploration and Production
FDI	Foreign Direct Investment
GDP	Gross Domestic Product
HR	Human Resources
HRM	Human Resources Management
IOCs	International Oil Companies
LMICs	Low and Middle Income Countries
LNG	Liquefied Natural Gas
MEMP	Myanmar Energy Master Plan
MOEE	Ministry of Electricity and Energy
MOGE	Myanmar Oil and Gas Enterprise
MPE	Myanma Petrochemical Enterprise
MPEE	Myanma Petroleum Products Enterprise
MPRL E&P	MPRL E&P Pte Ltd
NEMC	National Energy Management Committee
NEP	National Electrification Plan
NGO	Non Governmental Organizations
O&G	Oil and Gas
OfD	Oil and Gas for Development
PSC	Production Sharing Contracts
PTTEP	Thailand Public Company in Oil and Gas Exploration
R&D	Research and Development
SCM	Supply Chain Management
TCF	Trillion cubic feet
TNCS	Transnational Cooperations
UNECA	United Nations Economic Commission for Africa
UNFCCC	United Nations Framework Convention on Climate Change
WIO	Western Indian Ocean

ABSTRACT

Capacity is about the growth of an individual in knowledge, skills and experience. The aim of this study is to examine the employee capacity in the upstream energy sector in Myanmar and to analyze the undertaking the employee's capacity development of international oil and gas energy companies in Myanmar to play a successful role. Both quantitative and qualitative case study research design and descriptive methods were used for this study. E-survey was conducted with 150 randomly selected respondents from the departments of upstream energy companies operating in the upstream energy sector in Myanmar in the offshore region. Individual in-person interviews were also conducted with key informants to validate data obtained. The results of this study indicate that the biggest challenge is the lack of well-trained petroleum engineer due to not having the proper suitable background education and proper training even though the organization involved appear to have robust Human Resource programs which are also timely kept up to date and closely linked to short term and long term company strategies. There are limited amount of oil and gas fields which are operational at the moment that limits on the job training opportunities. Another important finding was to create policies that will attract more international oil and gas companies where this will result in more opportunities to develop our Myanmar employee capacity.

CHAPTER I

INTRODUCTION

1.1 Rationale of the Study

Capacity is about the growth of an individual in knowledge, skills and experience. Growth of the group that surrounds this individual as these skills and knowledge are passed on as well as from this individual and group, toward the growth of a society and nation.

Capacity development is about supporting growth – within individuals, groups and across societies as a whole. Capacity development is the process through which individuals, organizations and societies obtain, strengthen and maintain the capabilities to set and achieve their own development objectives.

Institutions or Agencies or Business Industries, within the mission should offer support when and wherever it is most needed – to people on the ground as well as to national and international agencies or farms. We are always guided in our support by what we have learned in practice about capacity development and it is emerging that capacity cannot be separated from sustainable human development: capacity is development. There is also growing understanding that capacity must be viewed from three distinct but related perspectives: such as “Individual for the skills and knowledge vested in individuals, communities and groups” “Organizational for the internal policies, systems and strategies that enable an organization to operate and to achieve its goals” and “Enabling Working environment for the wider society within which individuals and organizations function”.

These days, the Myanmar petroleum industry dates back at least seven centuries when oil wells were dug by hand. Crude Oil was in fact unearthed and traded in Mann, Kanbauk, Htaukshar Pin, Chauk oil fields in Myanmar under the direction of Myanmar Oil and Gas Enterprise (MOGE) to date and its predecessors continuously developed the onshore oil and gas industry since 1885 in order to supply the country with its needs in energy and feedstock for the petrochemical industry. Over time and as more oil and gas was found, achieving new discoveries became

more and more challenging. Thus in 1989, Myanmar first opened its doors towards attracting international oil and gas companies to invest and take the risk as well as bring in the capital to undertake exploration and production activities in the country.

One of the unusual features of Myanmar's heavy industry sector is the dominance of the cement industry in the use of energy; this reflects the local nature of the existing industrial structure. In the power, oil and gas subsector, Myanmar's willingness to sell oil and gas to its near neighbors impacts GDP growth in two ways, firstly in terms of royalties, taxes and employment and secondly in terms of the oil and gas that is secured from international investors for the purposes of local consumption.

Where foreign investors develop oil and gas fields for export, it is only the allocation of the energy carriers reserved for national energy supply that are of direct relevance to national energy planning. Given that a significant proportion of the gas being produced in Myanmar is being sold internationally, there is clearly a need to consider how electricity production can be increased economically with available resources and how to best supply petroleum products to address local production to serve growing demands. Strong growth is expected in the power and gas sector. The other sectors such as construction and manufacturing, will need the production of products which rely on energy intensive local industries that in turn will rely on stable energy supplies.

Economic growth will require resources – capital, labor and energy supply. For the purpose of energy planning, it is assumed that capital formation will support the achievement of GDP growth under any scenario that is envisaged. In the case of labor and energy supply however, it is necessary to quantify the relationship between agricultural sector labor productivity and energy use to understand the potential for labor to be released from the primary sector to supply the secondary and tertiary sectors to support growth.

Myanmar's labor work force is expected to grow at a modest rate of 2.3% to 2020, falling to 1.2% thereafter. High growth in all sectors of Myanmar's economy could be expected to lead to a competition for scarce labor. Myanmar's business leaders consistently report that there is a shortage of skilled labor and so it appears that the competition for labor will increase. Such competition is the reason that rural populations decline in industrializing nations when higher wages are offered by industry.

In Myanmar to date, total employment rate is 22.02 million, with women accounting for only 42.5 percent, and the vast majority of employment 73.4 percent was based in rural areas. Only 33.3 percent of all workers were wage employees, and a vast majority 63.2 percent were either own-account or contributing family workers. Employment was heavily concentrated in the Agricultural sector 53.2 percent, followed by Wholesale and retail trade 15.2 percent, Manufacturing 10.0 percent and Transportation and storage 4.5 percent. Education accounted for 2.7 percent of total employment. Among them, merely 0.2% of labor distribution is in Electricity, Oil and Gas production. (Annual Labour Force Survey, 2017)

In terms of the working together of the international experts and national employees, the capacity development initiatives are important. Provisions of several trainings in the country and abroad are to be considered as vital by employers as well as remunerations during tenure in the way forward. The current condition in upstream energy sector requires foreign technical professionals and these foreign technicians run oil and gas companies as operators as our national technicians in this sector are needed to be technically skillful. Thus this study was carried out to partially provide some ways to improve the human resources capacity building in this sector.

1.2 Objectives of the Study

The objectives of the study are - to investigate the current status of employee's capacity in upstream energy sector in Myanmar and to analyze the initiation of oil and gas energy companies in Myanmar to undertake the development of employee's capacity.

1.3 Method of Study

The descriptive method was mainly used with primary and secondary data for this study. For primary data, the structured questionnaire was used to gather data from the research participants who are the employees of four (exploration and production) companies of upstream energy sector in Myanmar. A sample of 150 respondents were randomly chosen from the departments of operating companies that currently explore gas in upstream energy sector of Myanmar such as MPRL E&P Pte Ltd; Total E&P Myanmar; PTTEP International Limited; and POSCO International Corporation.

In addition, individual face-to-face interviews were conducted with key informants (i.e., Country Manager, Director (Planning, MOGE) (Retired), Director

(Offshore, MOGE) (Retired), Head of Contractual and Commission Support, Deputy Director of External Relation & CSR Team, Human Resources Manager, Human Resources officer) to validate data and information obtained. The secondary data are obtained from related reports, documents, articles, papers and websites, etc. Both quantitative and qualitative methods are applied in the study.

1.4 Scope and Limitations of the Study

This study covers only the offshore upstream energy sector in Myanmar. The survey period was from June 2019 to mid-July 2019 and face-to-face interviews with key informants for 2 weeks in July.

In this study, human resources capacity building in onshore, midstream and downstream energy sectors were excluded because I would like to more empathize the upstream energy sector in Myanmar within the study period.

1.5 Organization of the Study

This study is organized into five chapters. Chapter one is the Introduction, Chapter Two is the Literature Review including capacity building and awareness of knowledge management in upstream energy sector. Chapter Three covers a study on oil and gas industry in Myanmar. Chapter Four looks into the data analysis and discussion. The analyzed data is presented in charts, tables in frequencies and percentages where applicable. Collected data is analyzed and discussion on the results initiated. Chapter Five entails conclusion which includes findings and recommendation drawn from the findings to explain the requirements in upstream energy capacity building.

CHAPTER II

LITERATURE REVIEW

2.1 HR Systems and Strategies

The HR system consists of strategies, policies and procedures. Many organizations have multiple discrete HR practices (e.g. employee well-being, employee development, pay and reward etc.) with no explicit or discernible links between them. When organizations seek to improve their people management arrangements they will typically consider to develop a HR Strategy. A HR strategy sets out what the organization wants to do about its human resource management policies and how delivering on these will help to achieve the overall objectives of the organization.

In some organizations a HR strategy may exist without necessarily being deliberate or even written down. It may simply exist in the collective minds of the relevant people. Armstrong (2016) identifies three types of HR strategy:

- (a) Broad statements of intent with regard to HR in the organization. Sometimes it is referred to as an ‘umbrella strategy’. The core components of these may include items such as building a strong performance culture, developing leadership capability, attracting and retaining talent, developing HR systems.
- (b) HR strategies based around specific models of HR such as ‘High-performance management’
- (c) HR strategies in respect of specific areas, for example a talent management or learning and development strategy.

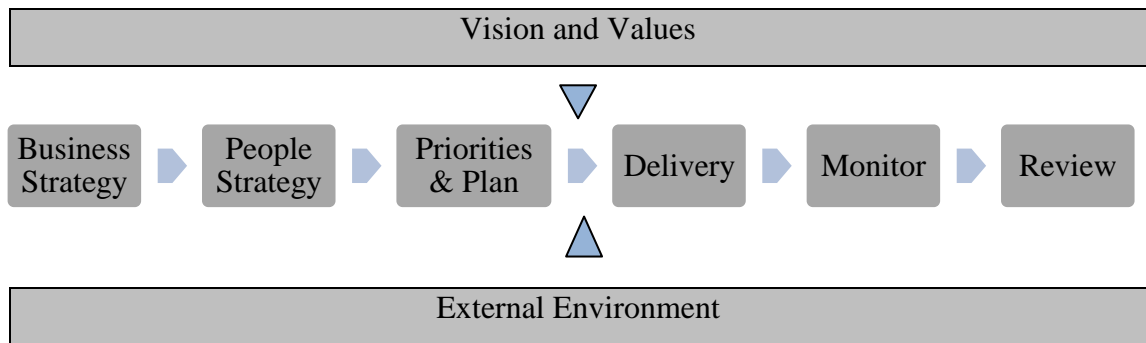
Because all organizations are different, all HR strategies are different. There is no such thing as a standard strategy. However, Armstrong and Taylor (2015) provide some general criteria with regard to HR strategies:

- (i) It satisfies organizational needs.
- (ii) It is researched and evidence-based, not just wishful thinking.
- (iii) It can be turned into actionable initiatives.

- iv) Its components are coherent and integrated.
- (v) It takes account of all stakeholders in the organization and doesn't reflect only the views of, for example, senior management or the HR function.

Reilly (2012) further emphasizes the importance of a HR strategy being informed by both external factors and the values of the organization, and of ongoing monitoring and review.

Figure (2.1) The Stages Involved in Formulating a HR Strategy



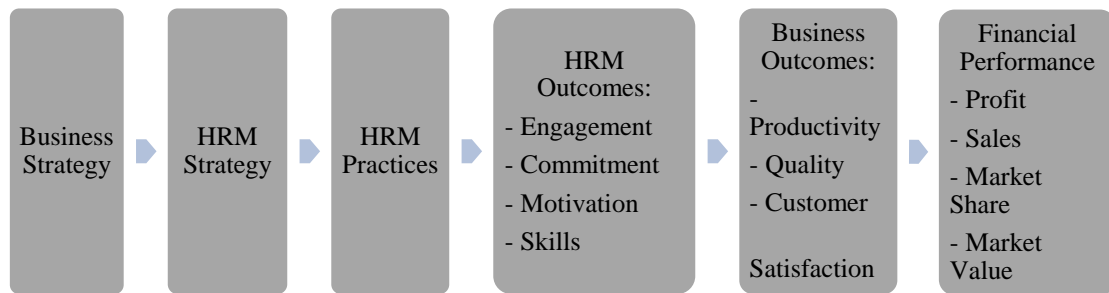
Source: Reilly, 2012

According to Armstrong and Taylor (2015), ‘the main argument for articulating HR strategies is that unless someone know where they are going, they will not know how to get there or when they have arrived’. HR strategies articulate what the organization’s overall convictions are in respect of its people and provide a framework for future decision making and action. However, it’s important for those developing HR strategies to remind themselves of Fombrun et al’s (1984) long-standing dictum that organizations and managers should perform well in the present to succeed in the future. In other words, ‘there is no great strategy, only great execution’ (Gratton, 2003).

2.1.1 HR and Performance

An ongoing challenge for the HR profession has been the need to prove that good HR practice, in addition to being something that it is good to do, contribute to better organization performance. This is necessary to prove that HR rather than representing a cost to the organization ‘adds value’. Thinking in this regard is based on the premise that good HR practices enhance the motivation and commitment of staff which in turn impacts positively on productivity and performance.

Figure (2.2) Impact of HRM on Organization Performance



Source: Adapted from Armstrong (2015)

However, it is difficult to prove this definitively. As Ulrich (1997:304) commented ‘HR practices seem to matter; intuition says it is so; survey findings confirm it’. However direct relationship between performance and attention to HR practices is often fuzzy. So while research can show an empirical association between HR practices and organization performance, it is difficult to know what factors or practices are particularly important and what HR outcomes are leading to the better organizational performance.

2.1.2 Career Development and Opportunities

Career progression and development are essential motivation and retention tools. However, career progression does not have to include promotion. Employees value greater autonomy, varied work, and opportunities to acquire new skills. Two considerations for organizations are the importance of development opportunities for all staff, even those that remain at the same level and the need to develop an appropriate and honest message in respect of development opportunities.

2.1.3 Training Opportunities

Training is the use of systematic and planned instruction and development activities to promote learning. Training opportunities enhance staff commitment and, if it is based on an objective assessment of need, the result is that the organization is more efficient and effective. ‘On the job’ coaching or ‘stretch’ assignments are frequently more useful to staff than formal training.

2.1.4 Job Influence and Challenge

Job design is an area that deeply influences people's experience of work. Where people have some influence over how they do their job, and where they find their job demanding and challenging, they are much more likely to have job satisfaction. Techniques that support good job design include, job rotation, job enlargement, job enrichment and self-managed teams.

2.1.5 Involvement and Communication

The opportunity to contribute to decisions and have a sense of involvement is valued by most employees. Much of the knowledge required by organizations to be more productive is in employees' heads, so accessing it makes good business sense. Where managers encourage involvement it is associated with higher levels of satisfaction with management in organizations. Effective communication is a further vital part of the process. The good intentions of leaders can be ruined and mutual trust damaged by managers who do not pass on messages, who distort the message they are entrusted with, or who do not feed-back what they have been told by staff. A range of mechanisms are used by organizations to promote involvement and participation by staff, for example employee opinion surveys, suggestions schemes, town hall meetings, partnership committees and works councils.

2.1.6 Performance Management and Appraisal Processes

In employee opinion surveys, tolerance for underperformance frequently emerges as a major source of dissatisfaction among employees. However, in order to be able to identify under-performance, organizations need to clarify for both managers and staff what constitutes an acceptable level of performance. In addition, performance reviews should focus more on performance planning and improvement than on retrospective appraisal.

2.1.7 Work-life Balance

Work-life balance emerges as an important area influencing employee attitudes towards their employer. It is important to consider work-life balance for all employees not just those with young children and the type of flexibility that people want. It is often not so much reduced hours that employees indicate they would

benefit from but the possibility of varying hours at short notice to deal with whatever pressures they have outside of work.

However, consistent with other research, the research by Purcell and his colleagues found that good HR practices are not enough. What makes a bigger difference is ‘the way people work together to be productive and flexible enough to meet new challenges’ (Purcell et al, 2003). This is facilitated by two key ingredients – organization culture and the attitudes of line managers. Meaningful and easily understood organization values help to unite an organization around a shared mission, while the way in which managers implement policies and exercise leadership is positively related to positive employee attitudes in respect of the range of issues that support increased motivation and productivity. (Purcell et al, 2003)

Their managerial behavior - in implementing HR policies, in showing leadership by involving staff and responding to their suggestions, and in controlling quality, timekeeping and absence – makes a real difference to employees’ attitudes. It’s not something that can be legislated for because it’s behavior rather than a duty. It’s strongly linked to the way that the line managers are themselves managed and to the wider values and culture of the organization.

2.2 Needs for Awareness of Knowledge Management in Upstream Oil and Gas Industry

The oil and gas upstream industries operate based on its strength of its natural resources, its infrastructure, processing facility and technology, human resources and the most important energy products market demands. If one of the factors fluctuates, it affects the industry operations, planning and production. To be a successful venture it is important to make use of the best available resources and meet rest of the shortcomings by the best possible practical approaches. Everyone could be a master in their own domain but to be a master of all in a particular capital venture, one need to understand all available data collectively as teams and groups by analyzing, sharing experience, knowhow and knowledge.

Oil business is a global business. So, oil platform in one part of a geography is not that different from an oil platform in the other part of the geography, and a refinery in some part of the country is not that different from a refinery in other part of the country. The challenges are in such a way that the oil and gas businesses are

therefore, having some common challenges, and solutions need to be shared and applied all around the globe. Knowledge Management can be a real solution for this challenge in the energy sector, particularly oil and gas sector.

The energy sector incorporates a huge variety of organizations, from oil and gas majors, to conventional, renewable and nuclear power companies, to specialist drilling, mining firm and all allied industries related with. It is an industry dominated by huge numbers of multinational organizations, each of which must contend with the difficulties and challenges of maintaining a geographically dispersed workforce, operations, and functioning according to clearly defined operational procedures. At the same time, they must cope with external pressures relating to deregulation, growing environmental concerns and strict health and safety guidelines. It is therefore not surprising that some of the world's biggest energy companies were early pioneers of the principles and working practices of knowledge management and, indeed, still lead the way on a global scale. That said, most energy companies are still to realise the full potential of the resources at their disposal and have not understood the importance of knowledge management and its fruitfulness, and Knowledge Management represents a powerful means for these firms to deal with the challenges that lie ahead and growing endlessly according to the techno and social changes.

There are Major challenges in finding effective ways in the exploration of Oil business, in knowledge-intensive areas such as drilling, geology and geophysics, to access the most valuable knowledge reservoir as one million man-years of experience. Also other challenges are delivering performance improvement in the risky and expensive offshore megaprojects. Also, ways to connecting people those who are useful by real-time collaboration technologies, opportunities to bring global knowledge and skills to bear on local problems are additional challenges. Framing user-populated Knowledge Bases, for Protecting the base in Oil Company on reducing capital and operating costs, increasing utilization and up time, and improving market positioning to compete in the global market becomes a major challenge in the Oil and Gas Industry.

Organizations should learn and update new culture to handle not only man power and also their knowledge that they kept in their head of the people involved as experts, is also a major challenge to organizations. So, organizations in operations, are facing lots of issues and challenges, in handling information required to operate as well as to execute in their business activities. Also organizations should understand

the cost of their internal knowledge, which people involved possess in their head called information, and trying to find the way to explore opportunities, and ways to use their information to maximize their corporate returns, as one of their key strategy by implementing knowledge management in their organization. Also another challenge is that the bottom line for their clients should have better information and smarter decision.

Major challenge in Energy Sector is Identifying and framing response teams in the Energy Sector which can solve a majority of their challenges in the aspects of safety and related research and development with related issues. Integrating picture of the oil extracting field as it relates to the presence of hydrocarbons in the water column is a challenge in the oil and gas sector. The organization should have the ability to better understand what kind of threat remains out there and this will also set the stage for long term natural resource damage assessment and any long-term sampling requirements that might need to be carried out under the shift to the natural resources damage assessment, as the key impact of the knowledge management implementation. Hence, the focus on Knowledge Management from the oil companies started aggressively. Particularly in the developing and developed countries, developments within the industry to avoid disaster are also likely to impact, if they are in the oil and gas industry. The biggest challenge in the oil and gas sector is safety. Organizations are exploring the possibility of implementing and the opportunities to find ways to improve safety. However, since the disaster, there are those who have speculated that issues with knowledge management could have contributed to the incident.

The Community of Practice approach is common, and communities are very active in major energy sector organizations etc. These are very popular and very effective way in the exploration end of the business, in knowledge-intensive areas such as drilling, geology and geophysics. In addition to Communities of Practice, another powerful aid to the development of communities is setting up a "people index" or Yellow Pages system, which becomes a new way to access the most valuable reservoir as one million man-years of experience. Lessons Learned systems are crucial for delivering performance improvement in the risky and expensive world of the international and offshore megaprojects, and these are applied with a rigor seen in few other places. Discussion forums, becomes more and more vital for connecting people in communities of practice, and these can usefully be supplemented by real-

time collaboration technologies. Many studies reveal that the story of the many energy sector organizations shows how desktop videoconferencing was used to bring global knowledge and skills to bear on local problems.

User-populated Knowledge Bases are also proving to be valuable tools here. Energy sector organizations have implemented a portal strategy embodied in their service hub on the company Intranet. They use this system of portal, both as a virtual workspace for participating teams, as well as a discussion and document forum for their communities of practice, and is rapidly growing to become the single solution provided for reference material. The major benefit that knowledge management has given oil companies so far is "protecting the base", oil company jargon for maintaining and improving the core business. The objective is on reducing capital and operating costs, increasing utilization and up time, and improving market positioning to compete in the global market. Knowledge is captured and shared about topics such as increasing success in finding oil fields, reducing maintenance down-time in oil refineries, and increasing the speed of building of gas stations. But as oil runs out, and focus turns to renewable, then the oil majors are going to have to turn their Knowledge Management spotlight on developing new knowledge, on innovation, and on rapid learning of new skills and new business models. That's when the winners and losers will be determined by their learning speed and by the efficiency of their knowledge management. That's when organizations will see whether the oil sector really has staked their future on Knowledge Management.

Culture related Knowledge Management becomes more and more popular to reap the fruits of competitive advantage. Economic conditions remain tough and tougher than earlier due to cutthroat competition, globalization, strategic operations against competition both local and global level, smarter work force than harder work forces etc., Companies should learn and update new culture to handle not only man power and also their knowledge that they kept in their head of the people involved as experts, which is not at all easy to codify, which is tough to express either in oral way or in document way, but it is costlier in comparison with new human replacement, where time becomes quite costlier than the raw materials or services in production or solution respectively. So, organization in operations, are facing lots of issues and challenges in handling information required to operate as well as to execute in their business activities. Also, organizations should understand the cost of their internal knowledge, which people involved possess in their head called information, and try to

find ways to explore opportunities, and ways to use their information to maximize their corporate returns, as one of their key strategy by implementing knowledge management in their organization.

Web Portal becomes the most essential tool in the Energy Sector. Organizations in energy sectors operating at international level started developing and applying required portals to keep a transferable database of reservoir engineering techniques. The ultimate objective that they used to follow for implementing knowledge management is that the bottom line for their clients should have better information and smarter decision, from both an organizational knowledge capture perspective and as an aid to training a transitioning workforce. Filling the need for more information following the disaster, the companies which understood about the worth of knowledge management and its success stories in various sector, realized their mistakes for not implementing so far, and invalidity of their excuses by giving their size as a reason, are now also looking to incorporate web pages into their Portals, which contains information on over humpty number of fields, as their knowledge management initiatives.

The major challenge in the Energy Sector is identifying and framing response team in Energy Sector which can solve majority of their challenges in the aspects of safety. Organizations can form a team called response team to explore the need and applicability of knowledge management practices to improve the safety of the upstream oil and gas industry. To keep research and development as a continuous process to protect the people involved and their knowledge acquired and to also avoid tragedy in future by protecting the knowledge they gained, so far in the repository, and the lessons they learnt, organizations in oil and gas sector started engaging academic institutions, to monitor sub sea oil in association with the regulating authority of environmental protection, oceanic administration, and atmospheric agency. Organizations understood that by integrating information and knowledge in association with all of these organizations through knowledge management can become key strategy to handle relevant issues and challenges in the oil and gas sector.

Also, organizations trying to implement knowledge management in the oil and gas sector clearly understood the need of the extensive efforts and the necessity to unify them into a comprehensive knowledge management-based picture of the oil extracting field as it relates to the presence of hydrocarbons in the water column. All data relating to hydrocarbon reserves in the countries which contains oil and natural

gas called oil field, is to be brought together to provide a picture that can be used to draw conclusions about the regions. These amount of efforts along with knowledge management in the oil and gas sector can help the organization to better understand what kind of threat remains out there and this will also set the stage for long-term natural resource damage assessment and any long-term sampling requirements that might need to be carried out under the shift to the natural resources damage assessment, as the key impact of the knowledge management implementation. Then, there is a very strong performance drive and clear metrics. Organizations should know whenever they have to do a good job, because it is measurable. In their business routine, they can measure the length of feet they drilled that day, or the quantum of barrels they produced that month, or the amount of time it took them to get the retail station built. And if some other organization did the same better and faster, then there's a real incentive to learn from them. Hence, the focus on Knowledge Management from the oil companies started aggressively. (C.S.Ramanigopal, 2012)

2.3 Human Resources Capacity Building in Oil and Gas Development Programme

The Human Resource discipline is becoming a central concept to any organization today. There is a saying that the best asset that most organizations have are their people. More companies in the Oil and Gas (OG) sector are now recognizing the importance of Human Resource (HR) in the entire value chain. However HR shortages are an issue throughout the global oil and gas industry that has the potential to shake the foundations of the industry and at the same time, rapid technological change is demanding new kinds of workers with far more sophisticated technical training and skills than have been required by oil and gas professionals in previous generations. In order for OG companies to achieve long term success, they must demonstrate exceptional performance in HR functions included in organisation's HR strategies. HR strategies are internally consistent bundles of human resource practices with the aim of articulating what an organization intends to do about its human resource policies and practices now and in the longer term and also that business and managers should perform well in the present to succeed in the future. HR strategies vary depending on type of the organization/industry (Armstrong and Baron, 2002; Armstrong and Long, 1994 as cited in Armstrong, 2006). Two basic types of HR strategies can be identified:

- General strategies such as high-performance working
- Specific strategies relating to the different aspects of human resource management such as recruitment, training and development and succession planning

It is also important to remember that HR strategies are best designed and implemented for a particular job or a set of jobs. Few organization manage their clerical workers the same way they manage their senior executives, each group is recruited differently, is selected according to different criteria, attends different training programs so as in the Oil and Gas industry. In order to ensure that organization has the right people with the right skills doing the right things, HR strategy suggests that there are some best practices including; recruiting large pools of applicants that enable you to be more selective, using valid selection tests to assess the skills of the applicants, providing substantial training to upgrade or maintain skill levels.

Most recently, Human Resource localization has received attention and has been a focus of many countries initiatives. Human Resource localization is a significant staffing consideration which refers to the extent to which jobs which originally held by expatriates are filled by local employees who are competent. However, localization is effective only if local employees are competent to perform the jobs originally performed by expatriates. Localization programmes have become a key feature of Human Resource Management in the Middle East, with countries such as Oman, Saudi Arabia and the United Arab Emirates adopting politically led nationalization initiatives. Also the nationalization of human resources has been a major objective for many transnational corporations (TNCs) in the People's Republic of China.

Although localization is implemented in these countries, recruitment, development and retention of competent and high-performing local employees continue to create problems for foreign firms and there is little evidence on how localization process should be managed. In a study on localization policy in Saudi Arabia, recruitment and training was found as the powerful determinants of localization success (Alanezi, 2012). It is suggested that localization is likely to proceed at a much slower pace than its main advocates may wish or anticipate and that there are practical, cultural and strategic factors which may and perhaps should, inhibit rapid localization. Such factors range from the lack of suitably qualified local

managers, to control and surveillance functions and expatriates' roles as trainers, coordinators and relatively neutral 'outsiders' (Gamble, 2011).

Emphasizing the role of HR is more important in the Oil and Gas sector as localization of the workforce is a major driving force. As countries develop and the industrial sector expands, more sophisticated skills become necessary in OG industry, the need arises for development of skills especially of highly technical and senior levels, in professional disciplines such as geosciences and various forms of engineering, as well as mid-level technical and managerial positions. Therefore investing in local human resource development is essential to the success and sustainability of the local industrial and service capacity and need to be carefully paced through close collaboration between industry and governments.

2.4 Challenges for the Management of Human Resource

HR managers are facing many challenges in present business scenario like Globalization workforce diversity, technological advances and changes in political and legal environment, change in information technology. All these challenges increase the pressure on HR managers to attract, retain and nurture talented employees. HR professionals can't ignore these challenges, rather they ought to be able to design and execute innovative mechanisms of developing skills and competencies of human resources to prepare them to accept the emerging challenges.

2.4.1 Globalization

At a political and economic level, globalization is the process of denationalization of markets, politics and legal systems i.e. the use of the so-called global economy. Globalization refers to an extension beyond national borders of the same market forces that have operated for centuries at all levels of human economic activity (village markets, urban industries, or financial centers). It means that world trade and financial markets are becoming more integrated. Growing internationalization of business has its impact on HRM in terms of problems of unfamiliar laws, languages, practices, competitions, attitudes, management styles, work ethics etc. HR managers have a challenge to deal with more functions, more heterogeneous functions and more involvement in employee's personal life.

2.4.2 Workforce Diversity

The future success of any organizations relies on the ability to manage a diverse body of talent that can bring innovative ideas, perspectives and views to their work. The challenge and problems faced in workplace diversity can be turned into a strategic organizational asset if an organization is able to capitalize on this melting pot of diverse talents. With the mixture of talents of diverse cultural backgrounds, genders, ages and lifestyles, an organization can respond to business opportunities more rapidly and creatively, especially in the global arena, which must be one of the important organizational goals to be attained. More importantly, if the organizational environment does not support diversity broadly, one risks losing talent to competitors. This is especially true for multinational companies (MNCs) who have operations on a global scale and employ people of different countries, ethical and cultural backgrounds. With a population of only four million people and the nations strive towards high technology and knowledge-based economy; foreign talents are lured to share their expertise in these areas. Thus, many local HR managers have to undergo cultural-based Human Resource Management training to further their abilities to motivate a group of professional that are highly qualified but culturally diverse. Furthermore, the HR professional must assure the local professionals that these foreign talents are not a threat to their career advancement. In many ways, the effectiveness of workplace diversity management is dependent on the skillful balancing act of the HR manager.

2.4.3 Technological Advances

There is a challenging task of adapting workplace to rapid technological changes which influence the nature of work and generate obsolescence. Advanced technology has tended to reduce the number of jobs that require little skill and to increase the number of jobs that require considerable skill, a shift we refer to as moving from touch labor to knowledge work. There is a new-new working technology. In this situation organizations have to change their technology. New technology creates unemployment and on the other hand, there comes scarcity of skilled manpower. In this way, technological change brings difficulties and challenges in organization.

2.4.4 Changes in Political and Legal Environment

Changes in political and legal environment means changes in political parties and rules and regulations due to which new laws emerge and people have to follow all laws while doing business. Many changes are taking place in the legal and political framework within which the industrial relation system in the country is now functioning. It is the duty of human resource and industrial relations executives to fully examine the implications, of these changes and to bring about necessary adjustments within the organization so that better utilization of human resource can be achieved. It is the responsibility of Human Resource managers to anticipate the changes and prepare organization to face them without any breakdown in its normal functioning.

2.4.5 Changes in the Economic Environment

This includes examination of the impact of a number of factors on production. Some of the key factors are the scarcity of raw materials and other inputs including power and electricity, encouragement of the culture of consumerism, increasing consumer awareness and demand for quality products, continuing upward trend in the inflationary pressures with decrease in the purchasing power and its spiraling effects in the ever increasing aspirations of workers for higher wages and other material benefits and mounting costs on the employee welfare and other benefits. In an inflationary economy, the resources tend to become scarce and the costs of machine, materials and labor multiply. These push up the capital and running costs.

2.4.6 Revolution in Information Technology

Information technology has influenced HRM through human resources information systems (HRIS) that streamline the processing of data and make employee information more readily available to managers. In the future there will be impact of revolutionary computerized information system in the management and it covers two primary areas in the application of computers in the managerial decision making process:

- (1) Use of electronic computers managerial decision making process
- (2) In future, computerized information system will have increasing impact at the coordinate and strategic levels of organization.

2.4.7 Mobility of Professional Personnel

One of the interesting facts will be an increase in the mobility of various managerial and professional personnel between the organizations. As individuals developed greater technical and professional expertise, their services will be greatly demand by organizations in the environment. (Srivastava, E. & Agarwal, N.,(2012)

2.5 Challenges for the Upstream Oil and Gas Industry

The Oil and Gas industry investments in the energy renaissance will continue to shift. As a result, new innovative trends will flow from the upstream sector to midstream infrastructure, refinery operations, and petrochemical facilities. The Upstream operators in the oil and gas industry will focus on harvesting value from recent discoveries and acquisitions through more efficient operations, looking at measuring the risks the industry is facing and the application of new technologies and innovations. Below are the top 10 Challenges of the Oil and Gas Industry:

(a) Frontier acreage and access to reserves

‘Frontier acreage’ challenge represents exploration and development of new fields that were previously regarded as too difficult, too expensive or too politically unstable to justify operations. Access to reserves involves competition for access to proven reserves which became more difficult in comparison to decades ago due to expansion of government role.

(b) Unconventional resources

These resources were not commercially viable until recently. Mainly due to technology advancement, ‘unconventional’ became so popular nowadays, resolving partially the issue of global demand.

The unconventional resources are shale gas, oil sands and coal bed methane (CBM). Although it is a convenient solution for our energy needs, the technology it involves, i.e. hydraulic fracturing, raises debates among communities and professionals about harm it makes to nature conservation and water resources. This in turn might impede its development through governments’ unfavorable legislation.

(c) Conventional reserves in challenging areas

This represents mostly unstable political regimes, what in turn leads to lack of security for investments. There are countries with unstable political situation (Nigeria, Lybia, Iran) or areas with new discoveries in unfamiliar environments where environmental legislation is represented by soft law. (Arctic Environmental Protection Treaty)

(d) Rising emerging market demand

As per the Energy Institute, 51% of oil and gas respondents reported making significant investments to achieve growth in emerging markets, i.e. China and other Asian economies. Since performance in emerging markets is mostly dependent on government pricing policy, a significant risk is involved for any foreign direct investments and creates the issue of ‘bargaining power’ of the state.

(e) NOC-IOC partnership.

One of the main goals of this partnership from the IOC viewpoint is access to acreage, which is another big challenge. National Oil Companies (NOC) are the gatekeepers of their national reserves, while International Oil Companies (IOC) are the gatekeepers of their advanced technology. The growth of NOCs not only in their states but also outside their home markets, will lead to increase in power and possibility to acquire the necessary technological knowledge, which is very alarming for IOCs future concerns.

(f) Investing in innovation and R&D

Every company understands nowadays, that R&D and Innovation is a key to growth and prosperity. This position creates severe competition between market-players with sufficient resources for R&D.

(g) Alternative fuels, including second generation biofuels

The environmental pressure and market demand that oil companies experience today force them to explore new industries, i.e. renewables. According to Petroleum Review, 47% of respondents had already invested in ‘clean tech’. This urge requires additional resources, company policy and revised strategy.

(h) Worsening fiscal terms

The fluctuation of fiscal regime in Host-Governments puts enormous pressure on oil companies, creates insecurity for the entire company financial strategy and investment policy. According to the first meeting of the UK Oil and Gas Fiscal Forum, (Oil and Gas UK), the industry needs secure and predictable fiscal regime as there is a £2.3 billion drop in expected tax revenues due to dramatic fall in exploration drilling and production. Thus, measures to stimulate investment need to be introduced as a matter of urgency. Brazil might be another example of concerns with oil and gas industry fiscal regimes, (Deloitte), as current tax policy is extremely complex and impedes the growth of the industry. Innovation in tax regimes is another 'headache' for operating companies. China recently introduced experimental resource tax on crude oil and natural gas products with 5%-10% on sales. (BBC)

(i) Price volatility and role of speculators

The role of speculators involves huge debate between the leading energy agencies, as well as investment institutions and governments. However, this is only one of the influencing factors on oil and gas prices. The fundamental economy drivers currently play the main role in reaching the equilibrium in natural gas prices. As it can be seen, the abundance of supply today leads to lower prices. The US is a perfect example.

(j) Corporate social responsibility

This challenge includes relations with various stakeholder groups, health and safety concerns, i.e. human rights, employee rights, stakeholder rights, environmental protection, community relations, transparency and corruption issues. CSR requires oil companies to success in each criterion in order to build a reputation as a reliable potential partner for public-private strategic partnerships: cross-sector and government.

The above challenges represent only a tiny part of concerns of this extremely complex industry. However, it provides a brief overview of trends the interested party, whether it is an oil company or an investment institution, needs to take into consideration while building its strategy. (Fidan Aliyeva, 2012)

2.6 Review of Previous Studies

Peter Virtic and Rebeka Kovacic Lukman from University of Maribor, Slovenia (2018) conducted a research “The Importance of the Capacity Building for Implementing Energy Efficiency and Renewable Energy Solutions”. This research identified competences needed to successfully implement energy related projects in the Drava River Croatia-Hungary-Slovenia cross-border region. The studies revealed a set of missing competencies, which were from the content perspective gaps in innovations (technology options), management (legal requirements, administrative procedures, financing), analytical and research skill (basic and general knowledge, data analyses) to personal, such as effective communication and interpersonal abilities. In line with the gaps identified, four e-learning modules were prepared and tested on the target audience, comprehending students, SME, NGO and decision-makers at the municipalities. Another very important segment related to the development of competencies, in order to increase the sectors of renewable energy sources and energy efficiency is developing infrastructure for improving the management of flexibilities in the energy networks.

“HR issues in Upstream Oil and Gas Industry of India: Some Reflections” is a paper undertaken by Ashutosh Muduli from Pandit Deen Dayal Petroleum. This paper explored the HRM challenges in the upstream oil and gas industry. Attempt was also made to suggest solutions to the problems. The HRM challenges were explored through the key characteristics of the Industry such as Cyclical nature, Restructuring, Regulatory processes, Industry cycle stage and Workplace skills. For example, Continuous restructuring in response to competitive pressures and commodity price fluctuations will have long term impact on attracting and retaining skilled workers. The new entrants to the job market may frequently see the oil and gas business as one that does not offer long-term career stability and growth. This affects industry’s ability to attract and retain top-flight people. Regulatory processes also influence the business development and, therefore, employment opportunities. The Industry life cycle can also affect the HRM practices. For example, HR strategies at the beginning of the life cycle are managed differently from mature regions. The paper suggested some action points for the government, the organizations and the education sector. Innovative HR practices such as designing suitable reward system, nurturing an environment of employee engagement and empowerment is essential for managing attrition of the industry.

Another related study from this country is A Study on Energy Security with Emphasis on the Petroleum Sector of Myanmar by Kay Khine Myo Thwin (EMPA-14th Batch) (2018) from the University of Economics, Yangon. This study analyzed the status of petroleum supply and demand situation during the period from 2006 to 2016 and focused on benefit sharing through the current fiscal terms and conditions of the Production Sharing Contracts (PSC's) for oil and gas exploration and production, executed between the state owned enterprise (MOGE) and the international oil companies (IOCs) in Myanmar.

CHAPTER III

HUMAN RESOURCE CAPACITY BUILDING IN UPSTREAM ENERGY INDUSTRY OF MYANMAR

3.1 Overview of Upstream Oil and Gas Industry in Myanmar

Myanmar has one of the most diverse energy sectors in the ASEAN region consisting of the following energy sources: 62 hydropower projects, 1 coal-fired power plant, 20 gas-fired power plants and numerous renewable and solar power projects across the country. The dynamic Oil and Gas sector reflects the high demand of electricity consumption generated by the government's ambitious Myanmar Energy Master Plan (MEMP) (December 2015). The sector has also attracted more than \$22.4 billion in foreign direct investment (FDI) from 154 permitted foreign enterprises, approximately 30% of Myanmar's total FDI. As of January 2017, there was \$69 billion in cumulative FDI in the Myanmar oil and gas sector. The ongoing production of oil and gas does not fully supply the country's demand; large quantities of natural gas are exported to neighboring countries such as Thailand and China under contracts with developers. In 2016, the MEMP was initiated by the Myanmar's National Energy Management Committee (NEMC) in conjunction with the National Electrification Plan (NEP). The GOM's goal is to achieve universal electrification by 2030. The plan includes a focus on off-grid solutions, 500,000 small-scale, subsidized solar home projects, as well as an additional 35,000 mini-grid solar developments. In addition, the plan aims to boost coal-fired projects' contribution to 30% by 2030.

Under the umbrella of the Ministry of Electricity and Energy (MoEE), the three state owned enterprises, the Myanmar Oil and Gas Enterprise (MOGE), the Myanmar Petrochemical Enterprise (MPE) and the Myanmar Petroleum Products Enterprise (MPPE) are responsible for issuing tenders to foreign companies. MOGE is the oil operator, service provider and regulator of oil and gas sector. It oversees the two other state-owned enterprises MPE and MPPE. MPE is responsible for oil and gas exploration, production and domestic gas transmission and MPPE manages retail and

wholesale distribution of petroleum products through four main fuel terminals, 24 sub-fuel storage facilities and 12 oil stations across the country.

While there is optimism about Myanmar's potential O&G reserves, there is also a large degree of uncertainty. MoEE highlights 16.6 trillion cubic feet (TCF) of proven onshore and offshore natural gas reserves for investment opportunities but further exploration may unveil more substantial reserves. Now that Myanmar is open to international exploration, major international oil companies are making significant investments using updated technology to locate new sources.

Myanmar has 53 onshore blocks in operation; 17 blocks are operated by 12 companies, mostly international companies. Offshore areas are divided into 51 blocks and 18 are in operation. The existing offshore gas projects are Yadana Project, Yetagun Project, Shwe Project (exporting gas to China) and Zawtika Project. The daily production rate of the Yadana natural gas project is 910 million cubic feet (Mcf); Shwe produces around 500 Mcf; Zawtika produces 360 Mcf; and Yetagun produces over 250 Mcf. There are six deep rigs, nine medium rigs and eleven shallow rigs. The total length of natural gas pipeline in the country is 2,200 miles. Myanmar has 45 compressed natural gas (CNG) filling stations and has over 27,000 CNG vehicles. The average domestic natural gas supply is 300 Mcf per day. (Burma - Oil and Gas Overview, 2018)

3.2 Profile of Operating Oil and Gas Companies in Myanmar

MPRL E&P Pte Ltd.

MPRL E&P, which is established in 1996, is an independent foreign registered oil and gas exploration and production company. MPRL E&P, the flagship company of the MPRL E&P Group of Companies, plays a leading role in the upstream energy sector in both the onshore and offshore regions of Myanmar and has experience in oil and gas sector over a decade. In 1996, MPRL E&P operated as a JV partner with Baker Hughes to enhance oil recovery services in Mann field, an asset operated by the state-company MOGE. In 1999, the company operated solely and slowed the field decline rate from more than 12% to 4% per annum subsequently, turning Mann field into a cash-flow positive venture.

MPRL E&P operates with the responsibility of enhancing production in Mann Field under a Performance Compensation Contract (PCC) with MOGE which is the

national oil company of Myanmar and the operator of the Mann Field. Since the signing of the PCC in 1996, MPRL E&P, together with MOGE, has significantly slowed down the annual decline rate of the field by drilling new wells, deepening existing wells and perforating by-passed oil-bearing sandstones.

Apart from Mann Field, MPRL E&P have also been extended to the offshore region of the country resulting in exploration success in block A-6 in 2012. At first, MPRL E&P solely operated and successfully discovered first gas at Pyi Thar in the Western Ayeyarwady Basin in 2012. This success attracted Woodside and Total E&P to become joint venture partners with MPRL E&P. The appraisal well, Shwe Yee Htun-2, has been successfully drilled in 2018 with formation evaluation results indicating a gas column and net pay thickness that substantially exceeds prior expectations. MPRL E&P's success with gas discovery in Offshore Block A-6 will fulfill the need of the country energy requirements and increase the progress of the country's economy in the long-term.

TOTAL E&P Myanmar

Total E&P Myanmar, one of the subsidiaries of Total S.A, is an Oil and Gas Exploration and Production Company. Total S.A is a French multinational integrated oil and Gas Company founded in 1924 and one of the seven "Supermajor" oil companies in the world. Its businesses cover the entire oil and gas chain, from crude oil and natural gas exploration and production to power generation, transportation, refining, petroleum product marketing, and international crude oil and product trading. Total is also a large scale chemicals manufacturer. Total started gas exploration operations in Myanmar since 1992. The company began developing the Yadana gas field to supply local markets in Myanmar and Thailand. Exploration is also in progress at other blocks.

Total E&P Myanmar (TEPM) operate the Yadana offshore gas field in Blocks M5 and M6 with a 31.24% interest, on stream since 1998. The Yadana field also meets 50% of domestic demand via two pipelines built and operated by state-owned Myanmar Oil and Gas Enterprise (MOGE). The production from M5 and M6 blocks currently supplies half of Myanmar's gas consumption and around 12% of gas consumed by neighboring Thailand. In 2017, TEPM has started up production from the Badamayar project, which enables an extension of the Yadana gas field's production plateau beyond 2020.

TEPM is also actively pursuing exploration activities in Myanmar, particularly in deep offshore, and currently holds significant interests in seven offshore blocks. The company announces a successful appraisal of the A6 block Shwe Yee Htun-2 discovery, offshore Myanmar, completing a major step towards confirming a commercial project.

PTTEP International Limited

PTT Exploration and Production Public Company Limited (PTTEP) is a national petroleum exploration and production company based in Thailand. It is a subsidiary of the state-owned PTT Public Company Limited. PTTEP's core business is exploration and production of petroleum in Thailand and foreign countries. PTTEP has invested in E&P activities all around the world such as Thailand, Myanmar, Vietnam, Indonesia, Malaysia, United Arab Emirates, Algeria, Mozambique, Australia, Canada, Mexico and Brazil. As of June 30, 2018, PTTEP Group had 40 petroleum exploration and production projects in 11 countries; 16 projects in Thailand, 15 projects in Southeast Asia, 5 projects in Americas, 3 projects in Africa and 1 project in Australia.

In Southeast Asia, the company has 13 projects which are located in the Republic of the Union of Myanmar (Myanmar), the Socialist Republic of Vietnam (Vietnam), Malaysia and the Republic of Indonesia (Indonesia). The exploration phase projects in this region are mainly located in onshore and offshore of Myanmar. The Zawtika Project, located in the Gulf of Mottama, Myanmar, has maintained its production as planned and completed the construction of one production platform in Phase 1C in 2017. The major highlights including Myanmar M3 Project are awaiting approval for the Field Development Plan from the Government of Myanmar. Myanmar M11 project is in preparation for drilling plan of an exploration well and is seeking partner to manage the project's risk. Myanmar MOGE 3 project completed drilling and exploration well in January 2019. Currently, the project is in process of drilling the second exploration well as well as preparing for 2 exploration wells drilling in 2019. Also, the Company carried out portfolio rationalization activities during 2017, including the selection of Total E&P Myanmar (TOTAL), who possesses world class knowledge and experience in oil and gas exploration, as a joint-partner to mitigate risks in the Myanmar MD-7 Project, together with the

relinquishment of the Myanmar PSC G & EP 2 Project which is in the process of receiving the official approval from the Government of Myanmar.

POSCO International Corporation

POSCO International is a ‘Globally Integrated Corporation’ that is directly involved in the entire major business processes beyond the conventional trading business. The company operates in the field of investment-related trading businesses including steel, automobile parts, and agro resources, and establishes the energy value chain encompassing resource development to development of power plants. It plays a leading role in trade, project organization, new growth businesses, resource development, and steel processing services. As a driving force for its future growth, the company actively promotes resource development business. It has engaged in overseas resource development projects in oil and gas, mineral and agro resources.

POSCO International promotes oil and gas development projects in many countries such as Myanmar, Peru, Vietnam, Canada, etc. The company solidifies its standing as a global E&P company by using its world-class technology and years of know-how. It has been widely recognized as an expert in the upstream sector such as the exploration, development and production of oil and gas. POSCO International’s offshore gas field project in Myanmar first began in 2000. After over a decade of exploration and development process, it started commercial production in June 2013. ONGC VIDESH (Oil and Natural Gas Corporation Videsh Limited), MOGE (Myanmar Oil and Gas Enterprise), GAIL (India) Limited, KOGAS (Korea Gas Corporation) are operated together with POSCO International. Shwe, Shwe Phyu and Mya, three of the largest oil and gas fields developed overseas by a Korean company, have enabled the company to step up to become Korea's top resource developer. In 2018, the company signed the Gas field phase -2 EPCIC Contract of Gas field in Myanmar.

3.3 Policies in Capacity Building of HR in Upstream Energy Sector

There are policies which are used in building capacity of human resources in upstream energy sector. The following policies are mainly used to build up human resources capacity building.

3.3.1 Employment Policy

This policy ensures all employment rights, including those concerning working hours, compensation, opportunity, human rights, and working conditions, which are safeguarded in compliance with applicable laws. Breach of this Employment Policy may result in disciplinary action, up to and including dismissal. Oil and gas companies reserve the right to amend or update this policy as required from time to time.

To safeguard employment rights, oil and gas companies are committed to:

- Create a work environment free of discrimination and harassment.
- Prohibit the use of any forced, involuntary, or child labor.
- Remunerate according to skills, performance and experience of their employees in relation to the local labor market.
- Practice an open door approach that enables their employees to engage in open and honest communications without fear of reprisal.
- Provide a safe and healthy work environment in full compliance with applicable work place safety standards mandated by law.
- Respect the right of all employees to join any legally recognized employee associations and comply with any laws relating to employee representation and collective bargaining.
- Adhere to all principles related to employee rights articulated in the Human Rights Policy Statement.
- Adhere to the prevailing applicable laws, rules and regulations in areas where we operate.

Human Resource Department is responsible for implementation, administration and recordkeeping.

3.3.2 Learning and Development Policy

This policy ensures that every employee gets learning opportunities to meet the corporate goals and strategic objectives of the organization. Then it facilitates employees' personal development through the administration of learning opportunities and assisting them to enhance their existing skills and knowledge. The Human Resources (HR) team of operating oil and gas companies shall

provide policy awareness trainings and workshops occasionally based on requirements by respective departments. Training contents are as follows;

- Learning & Development Policy & Procedures
- Assessing the needs and planning for relevant trainings
- Administration, monitoring and evaluation for different types of trainings
- Developing a continuous learning culture and creating a learning organization

After completion of any external learning programs provided by company, participant has to submit a comprehensive report including the major objectives of the program and how it can be applied in actual job tasks. Employees' learning and development is the responsibility of all employees of those operating oil and gas companies.

HR Department

HR is responsible for the management and overview of Learning and Development Policy Manual and its administration, including the review of the policy once every two years or upon requirement. HR also holds the responsibility of providing necessary awareness workshops and trainings of the processes and procedures relating to the Learning & Development Policy Manual.

Head of Departments (HoDs) and Supervisors

All HoDs shall identify learning needs with their staff through the competency/training need assessment or performance management process and recommend requests for training and other learning and development opportunities before sending documents to HR and the senior management for budgetary approval and enrollment.

Individual Employees

All levels of employees shall take responsibility for improving their skills to maximize their level of performance and job satisfaction, which will enable them to advance their career opportunities and personal development as well. Employees must also share the newly acquired knowledge within their department in return. Each department shall have one training local person appointed by his or her respective

HoD. The training focal person has are responsibility to share training related information and update the feedback before and after the training programs.

Internal Trainings (Internal Knowledge Sharing Trainings)

In general, internal knowledge sharing trainings typically comprise of skill specific technical trainings, policy & procedure awareness raising trainings and general knowledge sharing trainings.

Employees in the probation period and all permanent staff are entitled to participate in the internal knowledge sharing trainings.

Mentoring

Reference to the approved" Formal Mentorship Program" which has been rolled out since September 12, 2017.

On-the-Job-Trainings

Under the on-the-job training program, teaching job scope related skills, knowledge, procedures, principles and competencies that are needed for employees to perform daily operational job activities within the workplace. On-the-job training uses regular or existing workplace tools, machines, documents, equipment, knowledge, and skills necessary for employees to perform his or her job effectively. It occurs within the normal working environment that an employee experiences on the job. It may occur as the employee performs the actual work, or it may occur elsewhere within the workplace using training rooms, training work stations, or training equipment. Senior experienced colleagues mentor and coach relative topics during daily operations. As a result, employees learning and skills taught in the on-the-job training, but also comply with rules and regulations of the workplace and working environment.

Soft Skills Trainings

Soft skills trainings such as communications, teamwork, time management, leadership, decision making, conflict resolution, critical thinking, interpersonal skills and problem solving, etc. will be provided occasionally or upon requirement of the companies' workforce. The provision of soft skills trainings shall be organized by HR. There is no default bond compensation under such kinds of training. All

permanent staff members are entitled to attend any kinds of soft skills related training programs. Selection for soft skill training participants depends on the relevancy of the training topic chosen and the job roles of the staff member.

External Seminars / Forums / Conferences / Workshops

Every employee can request to attend external seminars, forums, workshops or conferences held locally or overseas but they need to ensure that the contents of seminars or forums should be relevant with their current job scope and job title. Employee must comply with the terms and conditions of the Training Bond, if he or she attends such courses with the company budget.

Employees can attend any type of topic for free seminars and need to get confirmation from respective HoDs. In case of cost incurred, the employee needs to get approval from respective HoDs first and then from the senior management together with the training request form.

External Trainings (Local)

Every employee applying for a company budget can make the request with a "Training Request Form" together with the "Training Need Assessment Form " and any kinds of technical related, further studies of subject matters, computer and language proficiency trainings are provided by established local external training centers and institutes. If employees apply for company sponsorship, they are obliged to obey terms and conditions.

External Trainings (overseas)

Every employee applying for company budget can make the request with the "Training Request Form" together with the "Training Need Assessment Form" and any kinds of technical related, further studies of subject matters, computer and language proficiency trainings provided by established overseas external training centers and institutes. If employees apply for company sponsorship, they are obliged to obey terms. In case of overseas training required, the HoDs and Senior Management will discuss and make approval decisions on a case by case basis. In certain cases, Senior Management shall also choose the suitable employee to send for oversea trainings based on operational and business requirements.

3.3.3 Formal Mentorship, Secondment / or Succession Program

Formal mentorship, secondment & /or succession program at oil and gas companies is developed for;

- Newly recruited staff to get settled and adapt quickly to the organization
- Successors, secondees and interims for promotions to be well trained and mentored by their supervisors under a structured guided plan
- Providing a learning opportunity for the employees to obtain required skills from experienced mentors
- Ensuring that supervisors share their knowledge and experience as appropriate for the job with their supervisees who need to acquire or develop skills
- Ensuring that senior employees and expatriates share all their knowledge and experience with designated suitable employees in a definite time frame
- Assist as a tool to supervisors and employees to plan, develop and manage the career paths
- Enables the supervisors to enhance the leadership, management skills and transferring of knowledge
- Promotes an ongoing interaction and exchange of knowledge and experience among the teams
- Increasing employee retention, employee satisfaction and assisting in the promotion process

This policy with its procedures shall apply to staff in probation period and permanent staff members of operating oil and gas companies as receivers ("mentees, "secondees" and /or "successors"), and all supervisors, senior employees and expatriates as providers ("mentors").

The HR Department has the general responsibility for the companies' Formal Mentorship Program. The general responsibilities shall include;

- Communication of the procedures to the staff,
- providing required trainings for the awareness raising and for implementation of the procedures,
- providing assistance during tracking and monitoring within the mentorship, secondment & / or succession period,
- providing support in assessing the success of the mentorship, secondment & / or succession program
- Based on the availability of annual data & records relating to the program,

propose annually to Senior Management for the provision of appropriate recognition for the top participants

For the success of the program, the implementation of the Formal Mentorship Program requires the involvement of all concerned employees. Every direct supervisor will be required to identify the needs of the supervisees and the possible are as that can be covered through the mentorship, secondment & / or succession program. The supervisors will need to utilize the mentorship program as a developmental tool for the employees whose required skill development can be covered with the program. In the implementation stage, both the mentor/supervisor (and) mentee/supervisee has to be engaged. The implementation should be monitored and tracked carefully using the mentorship, secondment &/ or succession form and the records should be timely sent to HR.

Although a tracking system is provided for the monitoring purpose and as a structured guideline for the mentorship, it is also important to note that the mentor and mentee relationships encompasses not only providing assistance and training for certain selected topics but also improving the supervisor and supervisee relationships by giving more accessibility and communication to each other, giving inspiration to mentees by acting as a role model, promoting the mutual respect, trust and exchanging knowledge and experience in the everyday process of work. In addition to the formal mentorship program with a tracking system, informal mentorship relationships are encouraged to take place throughout the workplace.

Performance Management Program

Operating oil and gas companies will provide policy awareness trainings upon requirement to all staff in orientation programs (and/or) before the performance review periods for awareness (and/or) occasionally upon direct request by user departments depending on the organizational situation. Training will vary depending on the target audience and requirements, including some or all the following topics;

- Performance Management Program Policy & Procedures
- How to develop individual business targets and key performance indicators (KPIs) in opening goal settings
- How to fairly and equitably assess the performance of an employee in performance reviews

- How to apply Promotion Recommendation Forms and 360-degree Feedback along with the PMP reviews
- How to manage the Performance Improvement Plan
- PMP feedbacks and discussion workshops

The HR Department has the general responsibility for Performance Management Program and Processes, including the review of the policy on once in every two years basis or upon requirement, assistance to employees for the smooth application of the PMP process, administration of the PMP review results and the conduct of awareness- raising workshops and presentations. The Performance Management Program requires the involvement of all employees. It is a two-way communication process. Every direct supervisor and his / her supervisee shall have to discuss and agree on the annual performance goals and the PMP results at the performance reviews. The next level supervisors (or) the heads of departments (HODs) will have the responsibility to oversee and finalize the performance rankings given between the direct supervisors and the supervisees to ensure that the rankings have been given correctly and fairly. The Senior Management will be involved in giving final approval of the annual targets set in the PMP opening stage and in approving the mid-term and end-term PMP results.

Recognition and Rewards

High performers (Ranks B and A) will be awarded certificates of high performance by the organization as a recognition depending on Senior Management's approval. The performance evaluation results shall always be considered as reference and the high performers shall be given preference when considering for promotion, succession to appropriate managers or any opportunity for development. Promotion recommendations for high performers based on the results of end-term PMP's can be submitted for suitable employees initially as interim roles. The promotion committee will review the submitted recommendations for promotion by referring to the justifications in the promotion recommendation form, PMP results and 360 degree feedback responses. Upon approval of senior management, the assignment of the interim will be notified and announced by the HR team. The performance of the interims will be reviewed at the end of the interim assignment period by the promotion committee and with approval of Senior Management, those who have successfully performed at the interim roles shall be promoted.

Consideration of the PMP Results in Increments

Financial rewards such as bonus or increments will be decided by the Senior Management based on organizational circumstances as well as by factors in the business environment of the organization. The PMP results shall be used as reference when considering for salary increments or financial rewards. Certain increment /bonus types shall have its respective calculation formulas aligned with the PMP results for consideration of the increment /bonus payment rate.

Performance Improvement Plan (PIP)

This process provides a framework for the fair and equitable management of an employee whose work performance fails to meet the standards established by the organization. It is intended to give the employee clear information on those standards and the extent to which they have failed to meet them, and an opportunity to demonstrate that they will do so in the future. By providing information, guidance, coaching and time, the objective of PIP is to achieve improvement and success for the employee.

This process will be initiated by the supervisor (or) the next level supervisor / HoD at anytime when:

- There appears to be a sustained shortfall in the actual performance of an employee relative to the standards established for the job role
- There appears to be a serious error or lack of judgement on the part of an employee which calls into question overall competence and /or suitability for the role
- An employee is rated a final ranking in a performance management review

3.3.4 Outstanding Performer of the Six-Month Period/ the Year

Reward and recognition programs are extremely important and meaningful towards creating a sense of belonging and work satisfaction for employees at a workplace. Such programs are an effective tool that has a positive impact towards employee retention and continued performance, also acting to motivate all staff to deliver high or exceptional performance-based outcomes.

The high/exceptional performance-based outcome is defined by the nominating person usually the supervisor and/or Head of Departments (HoDs) and

should normally be linked to the employee's performance management process (PMP) and Job Description. The high/exceptional performance- based outcome should have had a positive and valuable impact towards the goals associated with the individual employee, team, department, and/or corporation. Although preference and weighting will mainly be based on high/exceptional performance based outcomes, on some unique occasions, employees may also be nominated for providing exemplary service to the corporation and demonstrating a willingness to work above and beyond the call of duty to demonstrably show leadership, teamwork, volunteerism, and sacrifice that has a distinct and notable impact towards the entire department and/or corporation.

The Outstanding Performers of the Quarter/the Year should also consistently exhibit robust behaviours at the workplace as well as have achieved high/exceptional performance based outcomes through the use of such behaviours. Such behaviours may consist of, but are not limited to, having a positive attitude, complying with policies, engaging constructively with fellow employees, being helpful toward other staff, maintaining company brand at external engagements through always exhibiting professional attitude, having a consistent record of attendance, and adhering towards operational discipline (concerning HSE for example).

To be eligible for consideration, an employee must meet the following criteria:

- The nominee must be a permanent staff member who has successfully completed the probationary period.
- The nominee must have received an overall rating of superior performance (A) or met standards with good results (B) on his/her last performance evaluation. (This will be verified by The Selection Committee and Human Resources)
- The employee must not have any instances exhibiting poor professional behaviour or attitude unbecoming of a high performing team member.

Selection Criteria

The committee will select the recipient(s) based on the criteria of the assessment which are as follows:

Outstanding performer of the half-year

PMP Result - Nominated employees should have received **at least a "B"** grade on a first mid-term PMP and next six-month term PMP.

Technical Skill – Applies relevant technical skills beyond the scope of their job role/ description.

Leadership – Sets challenging goals for themselves, co-workers and teams and drives hard to achieve them.

Team Work Relationship – Promotes constructive and result-oriented team work, interacts positively/ constructively with co-workers.

External Stakeholder Relationships – Engages with key external stakeholders in a way that positively reflects the company brand and noticeably lifts the company brand.

Apart from the PMP result, other selection criteria justification should be filled in the "Outstanding Performer Assessment Form".

Outstanding performance of the year

Regarding selection criteria for the "Outstanding Performer of the Year," the awardees, one from MYO and another from MFO, must have received at least one "Outstanding Performer of the six-month period" award and should have at least a "B" grade on the End Term PMP. Nominations will be submitted in sealed envelopes to Human Resources Manager no later than the end of the 1st (first) week of March. Committee review meeting will be held and senior management's approval will be secured in the second and last week of March.

3.4 Offshore Exploration and Development Challenges in Myanmar

Up to 2013, limited exploration activity in the offshore sector was undertaken in Myanmar in relation to the large amount of acreage that is available. Table (3.1) summarizes the key success drivers for challenges/barriers against the successful exploration and development of oil and gas in the offshore region of Myanmar.

Table (3.1) Challenges and Success Drivers Impacting Oil and Gas Exploration and Development Offshore, Myanmar

Challenges	Success Drivers
Deep water oil and gas exploration involves high risks, is capital/technology intensive, and requires a long term approach	Significant interest and participation in the last bidding round
Challenging production sharing contract (PSC) fiscal terms	New applicable exploration play concepts developed
	Robust exploration success track-record to date
	The best energy companies undertaking exploration and operating in the country
	Proximity to key markets with existing infrastructure (domestic/international)

Source: Myanmar Upstream Oil & Gas Industry Outlook (2016)

Nevertheless, within this context and during this period, there have still been several exploration successes as well as projects such as Yadana, Yetagun, and Shwe that have successfully reached development and production. Because of such successes, regional petroleum geoscience studies, as well as the country's rich history of the oil and gas sector of the country, Myanmar is believed to potentially hold vast amounts of hydrocarbons, particularly in the offshore region.

Oil and gas exploration is very challenging, whereby undertaking such activity in deep water environments (as is prevalent in the offshore region of Myanmar) involves the highest levels of risk, requires the right technology/ expertise, are extremely capital intensive, and take time. The oil and gas asset life cycle involves five main phases which are as follows:

1. Exploration
2. Appraisal
3. Development
4. Production
5. Abandonment

3.4.1 Exploration Phase

Exploration is the phase that involves the highest levels of risk and uncertainty, particularly in deep water environments. The risks involve:

- Not finding sands where oil and gas are usually found
- Finding oil and gas bearing sands but of too poor quality to flow commercially feasible flow rates
- Finding gas that is very low concentration, whereby the sands are mostly filled with water
- Finding pressures so high as to exceed drilling technology

At present within the oil and gas industry, exploration wells are generally drilled when the estimated probability of success ranges from 15-35% whereby it is unlikely, from a technical and scientific point of view, for the calculated probability of success to exceed this range. This indicates that, on average, only about one out of every four exploration wells drilled result in a discovery. The work activity involved in the exploration phase includes undertaking field studies, acquiring data to image what is below the ground (seismic data), processing the acquired seismic data, interpretation of the processed seismic data to identify potential drillable oil and gas bearing prospects, and planning for and executing an exploration drilling program (the exploration drilling program undertaken only if drillable oil and gas bearing prospects exists and are identified on seismic data). The following table indicates the approximate time required for each exploration phase work activity.

Table (3.2) Exploration Phase Work Activities and Approximate Associated Time Required

Exploration Phase Work Activity	Approximate Time Required
Field/Surface Studies	1 year
Seismic Data Acquisition	1 year
Seismic Data Processing	1 year
Interpretation of Processed Seismic Data	6 months – 1 year
Drilling Program Planning	1 – 2 years
Drilling	2 months per well

Source: Myanmar Upstream Oil & Gas Industry Outlook (2016)

Exploration phase work activity can be planned to overlap in some instances to optimize and improve the length of time required. However, most of the time, the above mentioned steps must more or less be completed in sequence. Furthermore, during the exploration phase, the cost of drilling a deep water well is the most capital intensive compared to the other types of work activity indicated above, and can range from US\$ 60-90 Million per well.

3.4.2 Appraisal Phase

Once a discovery is made, then a decision is made on whether a discovery is worth appraising. The objective of the appraisal phase is to determine whether a discovery can be commercially developed. The work activity in the appraisal phase includes acquiring/processing more seismic data, drilling multiple appraisal wells, and undertaking engineering/commercial studies (front end engineering design, market studies, etc). Appraisal well flow testing is an important aspect of the appraisal phase and is undertaken in order to answer the question of how much a well can produce for how long. Deep water gas wells, on average, are expected to produce at a range of 50 to 100 million cubic feet a day for 15-25 years to be considered commercial.

Deep water environments generally result in appraisal activity taking more time as opposed to shallow water environments or appraisal activity undertaken on land. The length and work activity of the appraisal phase is generally driven by the geological complexity of the discovery and the favorability of the fiscal terms in the production sharing contracts (PSCs). Thus, depending on these factors, the appraisal phase can mostly last anywhere from 3-10 years. Generally, appraisal wells are more expensive than exploration wells, whereby in deep water environments can cost around US\$80-110 Million per well. On average, anywhere from 3-8 appraisal wells are drilled in order to be in a position to be able to decide whether or not a discovery can be commercially developed. There is also a likelihood that a discovery may be deemed unfit to commercially develop during the appraisal phase indicates that there is still a fair level of risk exposure.

3.4.3 Development Phase

Should a discovery successfully undergo and complete appraisal, then it is deemed to be a commercial discovery. This is when the development phase begins.

The development phase work activity in deep water environments includes drilling development wells, constructing production/processing platforms, and constructing petroleum transport infrastructure such as pipelines. There is a significant reduction in risk exposure during the development phase, however, this phase is the most capital intensive phase of the entire oil and gas asset life cycle. A general offshore deep water development concept can cost anywhere from US\$1 billion (standard processing platform) to over US\$10 billion (LNG terminal). Development time can also range from 2-4 years depending on the complexity of the development concept used.

3.4.4 Production and Abandonment Phases

The production phase of deep water oil and gas assets generally last anywhere from 15-25 years and is highly influenced by what is stipulated in the terms and conditions of the existing production sharing contracts as well as oil/gas sales agreements. The abandonment phase commences towards the end of the life of an oil and gas asset and involves the decommissioning of development wells, production/processing platforms, petroleum transport infrastructure, and any onshore facilities. The decommissioning phase can generally take anywhere from 1-2 years.

3.4.5 Challenging PSC Fiscal Terms

The exploration and production of petroleum is generally governed worldwide by production sharing contracts (PSCs) between the nation (the resource owner) and the petroleum companies, whereby the nation and the company share the profit of the sales of petroleum after the company has recouped its costs (cost recovery). Cost recovery mechanisms are very common in PSCs world-wide since an investor is required to take significant risk and invest significant capital over a long period of time. Cost recovery mechanisms assist in enabling the investor to recoup their sunk cost (sunk over many years of exploration, production, and development) quickly during the production phase. The terms and conditions of such contracts are very stringent and cover all the fiscal, contractual, social (corporate social responsibility, labor, local content, training, etc) and environmental requirements that oil and gas companies must abide to.

It is a fact that PSCs in Myanmar offer some of the least competitive terms and conditions in the world. It is standard international oil & gas industry practice to

calculate the net government take versus contractor take (calculated as a percentage) to understand and compare the competitiveness of PSC terms and conditions provided by various countries world-wide. Generally, government take is calculated to include items such as royalty payments, all taxes, cost recovery rate, and government share of profit petroleum split. Contractor take is calculated as government take subtracted from 100%. The existing terms and conditions of PSCs in Myanmar offer a government take of approximately 85% which then provides for a contractor take of about 15%. This means that for every 100 barrels of petroleum that is produced, the government retains 85 barrels equivalent petroleum and the contractor/investor retains on 15% (whereby contractor/investor is exposed to all the exploration and appraisal costs as well as all the associated risks upfront). Should the investor not find any commercial accumulation of petroleum – an occurrence of about 75% of the ventures worldwide - it loses all of its money.

The key issue that challenging fiscal terms create towards the development of oil and gas asset is that larger volumes of oil and gas are required. This has a direct impact towards both the exploration and appraisal periods of the oil and gas asset lifecycle. During the exploration phase, and particularly in deep water environments, larger sized exploration prospects must be identified and screened to ensure that they may potentially contain adequate volumes for them to even have a chance at being commercially viable for development. Following a discovery and during the appraisal phase, challenging fiscal terms will generally lead to the requirement for more time and capital to be spent appraising a discovery to ensure that it can actually meet the higher commercial threshold required to proceed to the development phase.

Furthermore, a relatively higher oil or gas sales price will also be necessary in order for the economics of the project to justify development. Such assurances are necessary since, in the case of an asset that involves the production of gas, gas sales agreements generally require a constant gas flow rate to be guaranteed over the 15-25 years production life. If one encounters a production shortfall from the agreed gas flow rate, then the oil and gas company will face significant penalties that, at a minimum, amount to payment equivalent to the production shortfall it encounters.

3.5 Local Employment and Local Content in the Oil and Gas Sector

Local employment and local content in oil and gas sector refer to the participation of indigenous experts and people in Myanmar's upstream petroleum sector.

Mismatch between expectations and skill levels: There are high expectations of employment from local communities but most often a lack of skills and education matching job requirements. Apart from the relatively short peaks of demand for unskilled labour during certain periods of exploration and development (e.g. for seismic survey work and construction) there are often limited unskilled jobs on a longer-term basis. While there will usually be a surplus of unskilled labour which brings its own risks of exploiting temporary workers, it will be hard for companies to among the local workforce.

High local competition: Given the limited range of unskilled labour opportunities, particularly in the post-construction period, there is high local competition for unskilled labour opportunities that do and will exist, which can lead to tensions within the community and with the company and also to risks of corruption/bribery in connection with hiring.

Local procurement challenges: The model Production Sharing Contract (PSC) contains general requirements on local procurement of goods and services. This provides another opportunity of developing local sharing of benefits from projects, but companies will initially have challenges in finding local companies that meet their quality, safety and other requirements, sometimes even around the most basic needs, such as food supplies. There is and will be predictable mismatches between local community perception of "local" procurement (meaning local from the community) and the company / legal definition (meaning from Myanmar rather than foreign services).

Lack of educated workers: Given the low levels of educational spending and achievements, the scarcity of educated, skilled staff is likely to continue for the foreseeable future as it will take years for current educational reforms to deliver results in terms of improved education outcomes. The Government has adopted the Employment and Skills Development Law, which provides for skills training and a fund which employers pay in to, but it will take some time for the system to be set up and workers to graduate from any programmes (assuming there are programmes relevant to the sector).

Healthcare is a key wish: The widespread lack of health care throughout the country means companies will face expectations that they provide some form of health care services, at least for their workers. Communities may request health services too.

Health Risks: Employee or contractor actions can have significant health impacts on the community in relation to the transmission of sexually transmitted infections (STIs), including HIV/AIDS, as well as vehicular fatalities and injuries, exacerbating the already high rate of road fatalities. Company related activities therefore have the potential to impose additional health burdens and costs on local communities who have neither the facilities nor the funds to address their health situation. This can and has been complicated by the diversity of contractors and sub-contractors often working on a project and a lack of clarity about which party if any is responsible for more obvious impacts such as accidents or fatalities, much less for longer term health implications such as increasing the disease burden in an area.

Malaria: Building and construction activity which invariably alters habitats has the potential for both short- and long-term disease consequences, and can have pronounced impacts on vector-borne diseases including malaria which can affect workers and the local community in Myanmar's malaria prone areas.

Mismatch between infrastructure demand and resources: Currently there is no specific mechanism for revenue sharing between the Union Government and the State/Region governments of O&G revenue that would provide additional funding for additional infrastructure or social services. It also does not match the inflow of companies and attendant demands on infrastructure and services, which can cause frustration in local communities and among companies. Moreover, local government often do not have sufficient resources to repair local infrastructure, including roads and bridges, which may be damaged by heavy construction vehicles from operations. Compensation for damage caused by companies using local infrastructure is appropriate.

Expectations of company-provided infrastructure: Where there is simply a lack of infrastructure or services, communities will often expect that O&G companies will provide public services and infrastructure to the communities surrounding their facilities. Myanmar communities generally seem to prefer company provided services to Government provided services. This can create a longer-term situation of dependency by both the Government and communities on O&G companies for

infrastructure and services, with the Government relying on the companies to provide these and communities failing to demand infrastructure and services and accountability from the Government. Where there is a demand for local infrastructure, this can be combined with local government planning and funds in order to develop better quality infrastructure that serves both the project and the population.

3.6 Training Courses and Capacity Building for the Oil and Gas Industry in Myanmar

Increased access to energy is vital for social and economic development. Energy access can transform lives and communities by providing opportunities for business and employment, education and improved health services. 1.3 billion people, one in five people on earth, lack access to energy. Yet, global energy resources are more than adequate to meet the world's energy demand. Norway has extensive experience in the management of both renewable and fossil energy sources. IN light of this, energy has for some time been a key priority of Norwegian development assistance.

The Oil for Development (OfD) programme, launched by the Norwegian government in 2005, offers experience transfer to developing countries asking for advice on how to manage their hydrocarbon resources. The overall goal of the programme is to promote “Economically, environmentally and socially responsible management of petroleum resources which safeguards the needs of future generations”.

This goal is further specified through three objectives. Firstly, that sound policy and legal framework are developed. Secondly, that the relevant institutions are able to implement and enforce the policy and legal framework. Thirdly and finally, that the relevant institutions are held accountable to the citizens of the country. In 2013, the OfD programme encompassed activities in a total of 19 countries located in Africa, Latin-America, the Middle-East and Asia. In 2007 the Clean Energy for Development Initiative was launched, to coordinate and ensure the quality of an increased clean energy portfolio in the Norwegian development cooperation. Importance of support to renewable/clean energy was furthermore stressed in St. Meld. 14 in 2011 - Report to the Storting (white paper); *Towards greener development: On a coherent environmental and development policy*. The overall goal of the initiative was “*To increase access to clean energy at an affordable price based*

on the long-term management of natural resources and efficient energy use. It is also intended to contribute to sustainable economic and social development in selected partner countries and to international efforts to reduce greenhouse gas emissions.”

In 2011 the Norwegian government developed and launched an international energy and climate initiative, Energy. The launch of this new initiative, coupled with already ongoing efforts, and a steady increase of funds allocated over the last years to clean energy projects, reflect the overall commitment to support global targets of universal energy access for all by 2030. Priority Focus Areas of the EnPe- Programme: Human capacity and strong, efficient institutions is crucial to ensure a well-functioning framework of institutions, policies, rules and regulations in the energy and petroleum sector. Capacity building and institutional strengthening is therefore of great significance for the overall Norwegian energy and petroleum efforts. One area of this is strategic support to higher education and research, focusing on the needs of our partner countries in low and middle-income countries (LMICs).

The following areas are prioritized:

1. Human Capacity Building, with special focus on:

Qualification of staff at Higher Education Institutions to provide high quality teaching and learning within the relevant fields of energy and petroleum with the long term aim of providing access to affordable clean energy and sustainable economic and social development.

Expansion of qualified professional workforces according to local needs and priorities, both within the operational systems within energy and petroleum as well as a focus on administration and management, judicial and regulatory systems.

2. Institutional Development, with special focus on:

Sustainable, strong and efficient institutional capacity and performance of HEI in the targeted countries to deliver quality education and research within the fields of energy and petroleum.

System development, administration and infrastructure, enabling innovative and holistic approaches and comprehensive educational programs

Gender mainstreaming approach including design of curricula and research projects, human resources and recruitment, teaching, supervision, research activities as well as monitoring and evaluation. Educational programs and research activities which explicitly address issues related to gender equality are encouraged.

3. Applied Research, with special focus on:

HEI in targeted countries being able to educate and maintain competent research staff. Economically, environmentally and socially responsible management of petroleum and energy resources which safeguards the needs for future generations.

Creation of research programmes, collegial peer networks and academic career paths that can attract researchers to pursue academic careers and generate research products for use by both regional/in-country decision makers and professional/non-professional staff within the energy and petroleum sectors at all levels.

Eligible Countries in Myanmar for Petroleum are Angola, Cuba, Ghana, Iraq, Lebanon, Liberia, Mozambique, Myanmar, South-Sudan, Sudan, Tanzania, and Uganda and for Energy are Angola, Bhutan, Ethiopia, Ghana, Kenya, Liberia, Mozambique, Myanmar, Nepal, South- Sudan, Tanzania and Uganda.

If a project wishes to collaborate with countries that are not on this list; the countries have to be among the list of 84 countries that Norway has chosen as countries of cooperation. In addition, the role of such countries would be limited to developing capacity in the EnPe target countries. The list of eligible countries may be amended at any time due to shifting Norwegian political priorities. Amendments will not affect effective agreements, but may affect pending applications. It is an aim to contribute to gender equality in education, and empowerment of women. Master and PhD programmes as well as research projects should pursue the enrolment and retention of female candidates, and facilitate participation of female candidates in EnPe through active recruitment strategies and integration of gender perspectives in the planning and implementation of all aspects of the project cycle.

CHAPTER IV

SURVEY ANALYSIS

4.1 Survey Profile

The information of the study was obtained through interviews with structured questionnaires to the staff of the operating companies that currently explore gas in upstream energy sector of Myanmar.

MPRL E&P, which is established in 1996, is an independent foreign registered oil and gas exploration and production company. MPRL E&P, the flagship company of the MPRL E&P Group of Companies, plays a leading role in the upstream energy sector in both the onshore and offshore regions of Myanmar and has experience in oil and gas sector over a decade. Total E&P Myanmar, one of the subsidiaries of Total S.A, is an Oil and Gas Exploration and Production Company. Total S.A is a French multinational integrated oil and Gas Company founded in 1924 and one of the seven "Supermajor" oil companies in the world. Its businesses cover the entire oil and gas chain, from crude oil and natural gas exploration and production to power generation, transportation, refining, petroleum product marketing, and international crude oil and product trading. PTT Exploration and Production Public Company Limited (PTTEP) is a national petroleum exploration and production company based in Thailand. It is a subsidiary of the state-owned PTT Public Company Limited. PTTEP's core business is exploration and production of petroleum in Thailand and foreign countries. PTTEP has invested in E&P activities all around the world such as Thailand, Myanmar, Vietnam, Indonesia, Malaysia, United Arab Emirates, Algeria, Mozambique, Australia, Canada, Mexico and Brazil. POSCO International is a 'Globally Integrated Corporation' that is directly involved in the entire major business processes beyond the conventional trading business. The company operates in the field of investment-related trading businesses including steel, automobile parts, and agro resources, and establishes the energy value chain encompassing resource development to development of power plants.

4.2 Survey Design

The study employed various sampling techniques to select 150 respondents from respective departments of the operating oil and gas companies: MPRL E & P Pte Ltd., Total E&P Myanmar, PTTEP International Limited, and POSCO International Corporation. To collect the data, e-survey was used.

Out of the total 150 respondents, this figure had a 100% questionnaire complete rate. These individuals are hypothesized to be more knowledgeable about the capacity in upstream energy sector in terms of trained manpower to deal with the constraints.

HR manager from MPRL E&P asked the respective HR departments of other companies- Total E&P Myanmar, POSCO International Corporation and PTTEP International Limited to give a chance to collect e-survey. E-survey was collected randomly via e-mail with the help of HR departments of the above companies from 50 persons of each company. 50 persons from MPRL E&P, 31 from POSCO International Corporation, 35 from Total E&P Myanmar and 34 from PTTEP International replied respectively. Survey collecting period lasted more than one month. At first, pilot test of survey questions was made to 5 colleagues and the questions were edited with the help of their advice and were finally confirmed. Though the first aim was to collect from 200 respondents, the final result was with only 150 respondents because it was e-survey not fact-to-face survey and some did not reply. Key informant interviews which took two weeks are also made to 5 persons from the above companies and 2 retired persons from Myanmar Oil and Gas Enterprise.

All respondents are from respective departments of those above companies. They were requested and assisted to fill the structured questionnaire. Participation was done at individual level to maintain confidentiality. Participants willingly answered the survey questionnaire when informed that the study was purely academic purpose.

4.3 Survey Results and Interpretation of the Key Informants Interviews in Upstream Energy Sector

To achieve the identified aim and objectives of this study, an extensive study was carried out at the companies in the upstream sector. This chapter therefore presents analyzed results of the research conducted on 150 respondents from four oil and gas companies. The analyzed data is presented in tables in frequencies and percentages where applicable. In the survey questionnaire, there are (4) parts :

4.3.1 Part (A) Demographic Background

(I) Demographic Profile of the Respondents

In this survey, information on the basic characteristics of the men and women is essential for the interpretation of the findings presented in this report. The specific characteristics of these respondents are presented in the presentations and discussions that follow.

Table (4.1) Demographic Profile of the Staff

Characteristics of Respondents	Number of Respondents	Percentage
Gender		
Male	85	57
Female	65	43
Total	150	100
Age of respondents		
21-30	28	19
31-40	67	45
41-50	33	22
51-60	20	13
61-70	2	1
Total	150	100
Level of formal education		
(a) Technical		
Graduate	44	29
Post graduate	10	7
PhD	2	1
(b) Business support		
Graduate	60	40
Post graduate	34	23
Total	150	100

Table (4.1) Demographic Profile of the Staff (Continued)

Characteristics of Respondents	Number of Respondents	Percentage
Type of organization		
MPRL E & PPte Ltd	50	33
Total E&P Myanmar	35	23
POSCO International Corporation	31	21
PTTEP International Limited	34	23
Total	150	100
Respondents' working experience years		
Under 10 years	88	59
11-20 years	37	25
21-30 years	23	15
Over 30 years	2	1
Total	150	100

Source: Survey Data, 2019

In this Table (4.1), respondents to survey questions were 57% males and the females were 43%, among this group, both males and females were well represented. This brings to focus the gender issues as far as the kinds of jobs taken up by the different genders at the oil and gas companies.

Among the respondents, the majority 45% can be seen in (31-40) age group. This was followed by the age group of between 41 and 50 (22%). And the least age group is 61-70(1%). This indicates that people of all ages were fairly distributed.

(69%) of respondents are holding graduate degrees while (30%) of the respondents were educated to post graduate levels. This indicates that the study was dealing with well-educated respondents. It was important in this study to seek information on education levels because it could be assumed that the workers who are more educated are likely to get information about upstream energy sector.

The respondents' organization was analyzed. Majority 33% of the core respondents were from MPRL E&P, 23% were from Total E&P Myanmar and PTTEP International Limited respectively and 21% from POSCO International Corporation.

It was found that most of the respondents, 59% have work experience under 10 years while 25% are between 11 to 20 years, and 21-30 years (15%) respectively. Only 1% of respondents have more than 30 years of working experience.

4.3.2 Part (B) Assessing an Organization's Human Resources Components

In the following tables, human resources components assessing in an organization are described.

Table (4.2) Information of Human Resource Management

Particular	Yes	No
Are there experienced human resource management staff in your organization leading maintain human resource functions?	91.7%	8.3%
Does a human resource development and management plan exist in your organization?	98.3%	1%
Is a human resources information system in place to gather employee data that can be used in human resources planning and forecasting?	91.7%	8.3%
Do personnel files exist for all staff?	88.3%	11.7%
Do staff members have access to these files?	77.2%	22.8%
Is a job classification system in place?	90%	10%
Is a system in place to determine salaries and to determine upgrades and merit awards?	96.7%	3%
Is orientation offered to all new employees?	98.3%	1%
Does an updated personnel policy manual exist? Is it used by managers and supervisors to address employment questions?	86.7%	13.3%
Are employees empowered to manage their own career development and competency building?	86.7%	13.3%
Do job descriptions exist for the positions in the organization?	95%	5%
Does each staff member have a copy of his or her job description?	91.7%	8.3%
Is a training plan in place? Does it include a plan for management and leadership development?	100%	-

Source: Survey Data, 2019

The above Table (4.2) shows the human resource management in an organization and the development of management plan. 91.7% indicated that their companies had experienced staffs in human resource management who led to maintain management functions. Only 8.3% answered they did not have such staff.

98.3% of the respondents reported that their organization had a human resource development and management plan. But only 1% respondents responded they had no such management plan.

Overall, 91.7% respondents responded that a human resources information system was in place to gather employee data for human resources planning and forecasting. Only 8.3% answered that the information system for human resources was not in place.

88.3% of respondents indicated that personnel files existed for all staff. Then, according to the survey data, 77.2% of respondents had access to the personnel files. The fact that job classification is in place is also described in the above table. 90% respondents replied that the job classification was in place.

The data from the table shows if there is a system to determine salaries and to determine upgrades and merit awards. 96.7% responded that they had a system to determine salaries, upgrades and merit awards.

The table describes about offering of orientation to new employees. The respondents 98.3% answered that orientation was offered to all new employees.

Whether there is an updated personnel policy manual which is used by managers and supervisors to address employment questions is stated in the table. Overall 86.7% respondents answered that they had update personnel policy manual while 13.3% responded that they did not have an update personnel policy.

To manage own career development and competency building for employees is also depicted in this table. 86.7% of respondents were empowered to manage their own career development and competency building while 13.3% were not empowered. In this case, it can be assumed that employees are able to attend capacity development course for their competency.

Respondents 95% gave the answer that job descriptions exist for the positions in their organization while 5% answered that they had no such kind.

Then 71.7% of overall respondents responded that each staff member had a copy of his or her job description. Only 8.3% did not have job description copy for them.

All respondents (100%) gave the same answer that there was a training plan for management and leadership development.

Table (4.3) Human Resource Development and Management

Particular	Number of Respondents	Percentage
How frequently is the human resource development and management plan updated?		
Every 6 months	20	13.3
Every 12 months	81	53.5
Every 18 months	2	1.2
Every 24 months	11	7
Other	37	25
Total	150	100
How often are job descriptions revised?		
Every 6 months	8	5.5
Every 12 months	47	31
Every 18 months	3	2
Every 24 months	19	12.7
Other	73	43.3
Total	150	100
Does the training plan focus on		
- only the immediate term/immediate projects	55	36.7
- account for future projects / business extension	95	63.3
Total	150	100

Source: Survey Data, 2019

In the above table, the frequency of updating human resource development and management plan is also demonstrated. Majority of the respondents, 53.3% replied that their organization had updated the human resource development and management every 12 months. Only 13.3% responded that their organization had updated every 6 months. And 25% responded that their organization had updated the plan depending on situations.

The fact that job descriptions are revised is described in the table. 28.3% respondents answered that job descriptions were revised every 12 months. Only 11.7% respondents gave the answer that their organization had revised job descriptions every 24 months.

63.3% of respondents indicated that the training plan focused on account for future projects or business extension while 36.7% responded that the training plan focused on only the immediate term or immediate projects.

4.3.3 Part (C) Upstream Oil & Gas Sector in Myanmar

(I) Information about Upstream Oil & Gas Sector in Myanmar

Table (4.4) Term of Oil and Gas Business

Is the oil & gas business a long term or short term business?	Number of respondents	Percentage
Long term	150	100
Short term	-	-
Total	150	100

Source: Survey Data

In this table (4.4), the term of oil and gas business is depicted. 100% respondents answered that oil and gas business was a long term business.

Table (4.5) Risk, Cost and Interest of General Public in Producing Oil and Gas Resources

Particular	Number of respondents	Percentage
What is the level of risk involved in exploring and producing oil and gas resources?		
Low	2	1.3
Medium	10	7
High	138	91.7
Total	150	100
What is the level of cost associated with exploring and producing oil and gas resources?		
Low	4	2.5
Medium	4	2.5
High	142	95
Total	150	100
What is the level of interest of the general public with regard to the Myanmar oil and gas sector?		
Low	15	10
Medium	72	48.3
High	63	41.7
Total	150	100

Source: Survey Data, 2019

Whether employees in upstream oil and gas sector have the awareness for this field or not is stated in Table 4.5. According to the survey data, 91.7% respondents had known that the level of risk involved in exploring and producing oil and gas resources was high and the level of costs associated with that of exploring and producing oil and gas resources was also high (95%). Then, the level of interest of the general public with regard to the Myanmar oil and gas sector was 41.7% (high), 48.3% (medium) and 10% (low) respectively.

What are some of the positive impacts of the oil & gas sector?

This oil and gas sector helps to develop the State's infrastructure and it also increases Myanmar Business Income. It makes better transportation and it fulfills electricity requirement in some way. It can be seen that there are high-paid job opportunities in this sector as foreign investment comes to our country. We can get high technology and knowledge sharing from foreign expertise concerning with this oil and gas sector as there are many joint-ventures with foreign companies in this sector. It could bring good revenue stream for the country as well as the development of other industries.

What are some of the negative impacts of the oil & gas sector?

Global oil and gas price is unstable and directly related to oil and gas sector in our country. If oil price is decreased, it leads to slow down exploration because it is a kind of high cost and high risk business and it can reduce the employees. Then it makes environmental pollution in which the toxicity of petroleum contributes to air pollution, water pollution and negative impacts on safety. It needs to throw away hazardous waste properly. This sector requires a lot of time and a large amount of capital to develop. Relying solely on the oil and gas can be a challenge in future as it has been using natural resources of the country. There may be inaccurate exploration even though it has explored with large drill rig using high technology. Job opportunities are in weak position as operating fields are needed to explore more. Educational system is still needed to upgrade in universities concerning with this sector as high and latest technology has to be used in this sector. If oil prices rise, the consumer products prices will also rise due to the transportation cost.

Table (4.6) The Importance of Oil and Gas Sector

Particular	Number of respondents	Percentage
What is the current view of the importance of the Myanmar Oil and gas sector?		
Not important	-	0
Somewhat important	2	1.3
Very important	138	91.7
I do not know	10	7
Total	150	100
How important is the availability of electricity to your life?		
Not important	-	0
Moderately important	22	15
Very important	128	85
Total	150	100

Source: Survey Data, 2019

Table (4.6) describes about the importance of oil and gas sector. The current view of the importance of the Myanmar Oil and gas sector was very important according to data 91.7% and 85% responded that the availability of electricity was important for their life.

What is the current view of the importance of the Myanmar oil & gas sector?

In order to develop infrastructure of Myanmar, the Myanmar oil & gas industry is an essential sector because energy always plays a vital role in national and global development. By developing infrastructure of Myanmar, foreign investment will be sustainable, and finally, Myanmar economic income will be good in future. Energy security is uncertain at the moment as electricity supply and demand is not in balance. Oil consumption is greater than oil production in Myanmar. Myanmar gas is a cornerstone of providing affordable electricity to all people while renewable energy is being implemented.

How important is the availability of electricity to your life?

Electricity is the vital role for daily activities such as transportation, work place, communication & education and so on. Without electricity, we cannot run mills, factories and machines. We cannot run motors and pumps for water resources.

Table (4.7) Knowledge of Oil and Gas Sector

Particular	Number of Respondents	Percentage
Who is generally the owner of oil and gas resources in most nations around the world?		
Government	105	70
Private Company	25	16.7
Citizens of a nation	20	13.3
Head of State	-	0
Total	150	100
Other than transportation, which other areas involve using oil and gas resources?		
Education	-	0
Electricity	146	97.2
Construction	-	0
Health Care	4	2.8
Total	150	100

Source: Survey Data, 2019

The general knowledge of oil and gas sector was demonstrated in the above table. Most respondents 70% assumed that the owner of oil and gas resources in most nations around the world was government, 16.7% answered that the owner was private company and the rest 13.3% responded that the owner of such oil and gas was citizens. Overall 97.2% respondents answered that oil and gas resources were also used for electricity other than transportation.

Table (4.8) Knowledge about Technical Functions in Oil and Gas Sector

Particular	Number of Respondents	Percentage
What are the main technical functions associated with the global oil & gas sector?		
Geoscience	82	54.5
Engineering	56	37
Housekeeping	2	1.5
Finance	10	7
Total	150	100
Within the technical functions, which of the following are the further sub-functions associated with geosciences?		
Geology	38	25
Geophysics	79	53
Civil Engineering	3	2
Mapping	30	20
Total	150	100

Source: Survey Data, 2019

The respondent's percentage that shows the main technical functions associated with the global oil and gas sector are geosciences (54.5%), engineering (37%), finance (7%) and housekeeping (1.5%) respectively. Then, the percentage for further sub-functions associated with geosciences is geophysics (53%), geology (25%), mapping (20%) and civil engineering (2%) respectively.

Table (4.9) Knowledge about Non-technical Functions in Oil and Gas Sector

Particular	Number of Respondents	Percentage
What other non-technical functions are necessary to have in place in an oil and gas company?		
Human Resources	66	43.3
Finance	42	28.3
Supply Chain	30	20
Administration	12	8.3
Total	150	100
What programs do oil and gas companies use to develop human resource potential?		
Performance Management Plan	40	26.8.
Career Development Plan	29	19.3
Mentoring Framework	8	5.6
Training and Competency Development	73	47.9
Total	150	100

Source: Survey Data, 2019

Table 4.9 depicts non-technical functions that are necessary for an oil and gas company and the programs oil and gas companies use to develop human resource potential. Majority of the respondents 43.3% answered that human resources are necessary for an oil and gas company, another 28.3% for finance, 20% for supply chain and 8.3% for administration. Then, 47.9% reported that training and competency development used to develop human resource potential, 26.8% replied that they used performance management plan and only 19.3% for career development plan mentoring framework.

Table (4.10) Educational Degrees and Training Programs

Particular	Yes	No
Are the oil and gas related educational degrees being offered in universities and colleges adequate?	56.7%	43.3%
Do oil and gas companies have good training programs to appropriately develop new hires?	85%	15%

Source: Survey Data, 2019

According to the survey data, 56.7% of respondents responded that oil and gas are related educational degrees being offered in universities and colleges adequate while 43.3% are not. Most of the respondents 85% replied that oil and gas companies had good training programs to appropriately develop new hires.

Table (4.11) Key Human Resources Challenges

Particular	Number of respondents	Percentage
Which of the following are the key human resources challenges being faced by the Myanmar oil and gas sector?		
Lack of available degrees in most universities	25	16.7
Lack of employment opportunities	40	26.7
Lack of proper job training and development	57	38.3
Lack of operating assets to work for experience	28	18.3
Total	150	100

Source: Survey Data, 2019

The key human resources challenges which are faced by the oil and gas sector are as follows: lack of proper job training and development (38.3%), lack of employment opportunities (26.7%), lack of operating assets to work for experience (18.3%) and the last is lack of available degrees in most universities (16.7%) respectively.

What is the biggest human resource challenge being faced by the industry today?

The biggest challenge is lack of well-trained petroleum engineers, esp. offshore and production engineers. And another fact is the lack of legal framework on local content to force foreign petroleum companies to train local personnel. It is needed to have good background education and proper training. There are very few technical universities in the nation at the moment which can provide effective curriculum. To develop capacity building it requires both soft skills such as leadership, management, communication and technical skills. In this oil and gas sector, it is still needed to have upgraded laws and regulation that can support this sector well as working hours in oil and gas industry could potentially be conflicted with Labor Law. To select and recruit the most suitable and qualified employee for the right position is also a challenge as job opportunities, in other words, operating oil fields are still in demand. From HR point of view, it is difficult to maintain good staffs since career development plan for every staffs is not strong. It can be found out that it is still lack of expertise local content.

A key informant interview was conducted to obtain vital information about capacity building and development in upstream energy sector and to provide opinions and perspectives of the key respondents. In this study, key informant interviews are qualitative in-depth interviews with 7 persons who know what is going on in upstream energy sector. The compilations of the findings of 7 key informant interviews are shown as follows.

Question (1): *In support of human resource capacity building, what is the approach taken by your organization and your department?*

Answered by

Interviewee 1

Capacity building at MPRL E&P is undertaken based on short term and long term business needs. Short term and long term strategies are developed under the guidance and leadership of Executive Management and the functional leaders/managers of the organization. Based on these strategies, the organization is assessed to understand what functions (technical or business support and specifics

within each group) and levels of competency/capability as well as experience are desired to achieve the objectives of the strategy. In terms of building capacity, the following approaches are taken by the organization:

- a. Hiring fit for purpose staff with the desired capability and experience
- b. On the job training
- c. Mentoring
- d. External training
- e. Secondment into partner companies

Interviewee 2

At every Thursday weekly team meeting, what was done last week and what will have to be done next week, what the challenges are and how to overcome those have been discussed. The office allows its staff to attend the training course in their respective subjects. Staffs are meant to support the seniors, but they have also to share with each other at the same level. They practice the way to teach juniors. It creates team culture because people differ in their opinion. It can be successful when there is balance. Team building is very crucial for friendly relationship in order to aid progress in productivity.

Interviewee 3

Much have been done for capacity building. It maintains staffs using transforming technology by saying that a person has to transform. HR Team must be ideal and a role model for other teams in the organization. Negotiation between corporate management and the staffs doing quarterly town hall meeting.

Interviewee 4

Total has local training program and foreign training program for capacity building. Trainings are given on job requirement and the staffs sent to study abroad. Usually, in-house trainings are given in Paris Head Office. There are so many experts in Paris and training centers. Trainings are given by observing the condition of work done. Supervisors know training needs in that way. Making appraisal every six month to know clearly is another way. Staffs have the chance to speak out about what is needed. Training is designated with the consent of staffs and their supervisor to direct

discussion. Training is in line with timeline by dividing the things that must be done immediately and those that can be put off for a while.

Interviewee 5

Jobs are assigned to team members weekly. Every team has a weekly target and a monthly target. How well staffs can perform on those assignments has also been observed. By asking what difficulties they encounter, the ways of solving them are to give on-the job training to be conducted with timeline. Mentorship programs are given to the staffs individually. Soft skills development trainings have also been conducted. Staffs are sent to other countries as exposure trips to get international experiences and inspirations. Staffs are given the chances to choose and attend the courses they want.

Question (2): *What challenges have you encountered in building human resource capacity in your organization/department? How were these challenges overcome? What more could have been done?*

Answered by

Interviewee 1

Developing human resource capacity has various challenges, some of which are unique to the industry and the nation. The following are some of the challenges that have been identified:

- (1) The oil and gas sector is one where there is a shortage of skilled and experience individuals and thus identifying and recruiting someone with the right skills/experience is often extremely difficult and also can be very expensive. This in itself makes such direct sourcing of capacity a key challenge. Furthermore, it is even more difficult to identify and recruit Myanmar staffs that have the desired capacity and experience in the oil and gas field. This challenge is overcome by not only relying on internal recruiting initiatives, but also relying on external recruitment agencies that help source the right people either within Myanmar or from the expat community.
- (2) Myanmar is a resource rich nation, however there is limited foreign investment that is being undertaken in the country with regard to the oil and gas sector. As a result, there are a limited amount of companies working in the oil and gas sector which creates a situation whereby the availability of oil and

gas related positions are limited. Since there are limited positions (unlike other industries such as hotels for example), there are also not a lot of opportunities for people to have proper on the job training. One of the reasons for this is that the current terms and conditions of the Myanmar production sharing contracts (PSC) that govern oil and gas exploration, development, and production are not investor friendly and make it difficult to commercialize projects. Thus, in order to have more opportunities to move projects forward and expand their scope, renegotiation of PSC terms and conditions have been carried out that have enabled more projects to be moved into the development and production phases where there are more opportunities that can be leveraged for direct on the job training. Furthermore, secondment of staff into partner projects/companies have also provided a means for our staff to obtain the desired on the job training from such projects/companies.

Interviewee 2

Managing staffs and making them to behave properly is the barrier. It is important to meet corporate culture in which there are multi nationals. Culture barrier is inconvenient because there may be misunderstanding. It is difficult in supervising Myanmar staffs as most of them are only impressed foreigners. When there is little exposure, there is language barrier.

Interviewee 3

Language is a barrier in making progress for the staffs. Way of thinking is different between Thais and Myanmar (developed country and developing country). There is also culture barrier. Progress is different based on the basic qualifications. There need to be much negotiations in this situation.

Interviewee 4

There are challenges concerning with training programs. It would be difficult to conduct needed trainings without a program. Timetable has to be also negotiated with the instructors. Participants should be the ones who really want to learn and should apply what they have learnt. Action plan/program should be conducted to evaluate how and where to apply and there should be follow-ups. It is crucial to be the

right man at the right place. It is needed to appoint the person according to his ability and there should be career management.

Interviewee 5

The team is so busy. Aged staff and long service staff who do not want to change themselves and they do not want to change policy, are difficult for the organization. It is difficult to accept the international changes. Most of the high rank staffs are old service. They do not want to change and use advanced technology and are accustomed to live in comfort zone. So responsible persons must be models and should put in efforts to inspire the whole organization.

Question (3): *How do you assess human resource capacity within your organization?*

Answered by

Interviewee 1

Human resource capacity is assessed through performance management processes and also competency mapping programs.

The capacity of an organization can be observed in the ability of each staff and team's performance towards achieving long term and short term objectives. If a team or individual is performing in a manner that achieves or even exceeds objectives, then the desired competency levels are in place. However, if underperformance is observed not just by a few individuals but rather by teams and groups, then there is a clear need to address and raise capacity.

Competency of each team member is also carefully mapped and compared against the job descriptions of each of the available functions. Each job description details the responsibilities of each of the individual employees. Normally, there are some responsibilities that are undertaken within expectations, some above expectations, and some below. Capacity building is targeted generally for the responsibilities that a staff member may not have the skillset yet to deliver within or above expectations.

Interviewee 2

KPI (Key Performance Indicator) is for everybody, team and corporation. KPI is used for monitoring. Bonus is linked with KPI and performance evaluation as the salary of E&P companies is high.

Interviewee 3

Employee engagement survey is made yearly. It has been made twice a year when it became necessary since 2017. The level of satisfaction and the part with which people are satisfied, what needs to be prepared can be known. As this survey is made anonymously, it can be known clearly.

Interviewee 4

Annual assessment and biannual assessment are used to measure how managers and their subordinates can do more as in the job description.

Interviewee 5

It can be seen how team is improved at weekly meetings. Goals are set and done with KIP. Performance Management Plan is also drawn. It was monitored for the first time with timeline.

Question (4): *What advice would you offer to others who are developing plans and strategies for human resource capacity building?*

Answered by

Interviewee 1

The most important step before development human resource plans/strategies for capacity building is to first have robust short term and long term company business plans. Ensure that such plans are applicable and have the buy-in of all key internal stakeholders of an organization and are also properly shared with staff. From here, there is a need to carefully map out what are the desired capacities to achieve short term goals and what are the desired capacities to achieve long term goals. After this, there is a need to also assess the available/existing capacity and compare this to what is desired. After this, a human resource capacity development plan should be established which details how to obtain and fill the desired capacity that is not yet where it needs to be. There should not be a focus only on training since this is just one element. A balance between a, b, c, d, and e as indicated in the response to question 1 should be achieved.

Interviewee 2

Besides, it gives its staffs the chance to attend the required courses, team building is recommended if there is needed for such recommendation. To have a smooth relationship, staffs to get to know each other. Culture barriers need to be removed.

Interviewee 3

It needs to set organizational goal to strengthen the organization. HR strategy should be set exactly to know people's mindset and to adjust. E survey is more effective. Making town hall meeting quarterly has already negotiated between corporate management and the staffs.

Interviewee 4

It is needed to know the level of one's own resource in giving suggestions. Development plan has to be drawn on that level. First, the level of own resource can be known in the way of in-house appraisal. Second, it can be known from external consultancy. Employees can be demotivated for several reasons. An employee can became bored with the job leading to decline in capacity. There may be also inconvenient relationships between team members. Some employees may be deterred since they are not getting their suitable pay rise.

Interviewee 5

Coordination schemes sanctions unfulfilled. Knowledge sharing should be made openly and a win-win strategy should be utilized.

Question (5): *What are the key strengths of your organization (internal) in human resource capacity building?*

Answered by

Interviewee 1

MPRL E&P has a total of 6 assets in the asset portfolio, 3 assets being located onshore and 3 assets being located offshore. Within this portfolio, MPRL E&P operates 2 assets (1 onshore and 1 offshore) and is a non-operated joint venture partner in another 4 assets. MPRL E&P has a broad range of on the job training opportunities within the 2 operated assets for staff to leverage. MPRL E&P is also

partnered with world-class oil and gas companies such as Total (France), Woodside (Australia), Shell (Netherlands), and ENI (Italy). MPRL E&P seconds staff into the projects that are operated by the above companies so that not only do staff get more on the job experience from different projects, but also directly learns first hand from these companies how they run and manage their projects. MPRL E&P also has a strong planning process for both the business and human resources which are periodically reviewed to ensure that the right people are in the right place at the right time.

Interviewee 2

Our company asks the staffs and allows them to attend the courses they want. The system that conducts weekly meetings and KPI progress is the strength. Internal talks are held to understand about the organization and the projects. The organization supports team building.

Interviewee 3

Staff mentoring is made regularly. In upstream, negotiation with stakeholders is conducted. Religious activities participated by all employees are made to build-up team spirits. To maintain good relationships with peer companies, a network should be in place.

Interviewee 4

Job appraisals are the key strengths. In-house trainings are efficient and effective as Total is an organization that has so many experiences.

Interviewee 5

Performance management plan is strength in this organization. Mentorship program is also conducted. Mentorship is more strengthened in sharing between field team and technical team. Job trainings are given effectively and there are continuous internships. Soft skill development plan is practically used. Succession plan is carried out.

Question (6): *What are the weaknesses (internal)?*

Answered by

Interviewee 1

MPRL E&P is currently undergoing significant growth with projects that are progressing very rapidly. Although robust training and development programs are being utilized, there is a shortage of staff to be a part of the growth and currently sourcing the right staff and recruiting them is proving to be a challenge.

Interviewee 2

It needs to observe other as well as their work. It also needs to observe this sector. It has found that staffs are not interested in vision, mission of the project, and the organization but they are interested in their professions. Most companies write their mission and vision in beautiful words that are not comprehensive. Staffs do not understand what they have to do.

Interviewee 3

It is the organization of joint venture with Myanmar and foreigner as it is a Corporate Company. It is weak in succession plan as foreigners take many roles. Succession plan needs to be effective. It needs to give the chance as Myanmar has to lead the joint-venture business. There is need to replace expatriate managers with Myanmar manager.

Interviewee 4

Capacity building may sometime be given to the wrong person. Also it may be wrong to give multi-capacity building to just one person. This leads to a mismatch between the training actually given and what the person really needed. There are differences between international and local concerning with job nature and it is difficult to manage.

Interviewee 5

Our culture of paying respect to older people, the youth are in limited by this trait. The youths cannot build up efficient capacity if they are under pressure. The young staffs need to try to have self-improvement without staying in comfort zone and show their ability.

Question (7): *What are the opportunities available (in the external business environmental) that your organization/department can take advantage of as you undertake human resource capacity development?*

Answered by

Interviewee 1

External training is a core part of our human resource capacity development program. Given our robust planning, external training is often conducted for groups of people whereby trainers are invited, both local and from overseas, to offer MPRL E&P trainees direct capacity development opportunities as per our development plans. There are various functional skills training on oil and gas sector available in Southeast Asia as well as robust soft skills (such as leadership) training available in Myanmar itself that have been leveraged. Also, as explained above, MPRL E&P also leverages partner companies for skills development using secondment programs and cross company learning.

Interviewee 2

There should be opportunities as cooperation. It needs to do by chance.

Interviewee 3

This sector is invested most. It is the condition that cannot be done easily. It is good for the staffs as this place gives many of experiences. In other words, it is high technology sector. It can enable easy access to other places. Good experiences are opportunities that make staffs grow up.

Interviewee 4

As opportunities, sponsorships are effective for capacity. There are sponsor programs for YTU students and they are accepted as internships. Reports are evaluated and recorded to know what students do and learn during internship period. It is to observe the records of students in time of need when they apply for a job after they have graduated as laid down in HR policy. The students who have potential are sponsored in Paris and those students are appointed after they have graduated. The quality of the students has been improving as they are assessed while they are in class.

Interviewee 5

Seconded is sent to the countries in which high technologies are used to make their skill more efficient. HR system is digitalized in the form of HRIS system. Secondment is conducted with international operator to improve skills.

Question (8): *What are the main threats (external) to human resource capacity development?*

Answered by

Interviewee 1

The biggest threat has been the fact that because global oil and gas prices dropped significantly during the downturn of 2015, a lot of world-wide (and in Myanmar) oil and gas exploration and appraisal activities were suspended or canceled. Without projects, there is not enough availability of positions in the sector thus there is also not as much interest in the sector by the general public.

In Myanmar, because of the policies that do not promote investment but rather deter it, there are also many oil and gas projects that are being suspended or canceled. If policies do not become more investor friendly, then there will not be a significant amount of projects that move forward which decreases the amount of opportunities for individuals to build capacity in the country. Furthermore, the longer this situation remains this way, the more the level of interest in the sector will decrease.

Another threat is that many oil and gas companies have skewed age demographics whereby there is a large number of seasoned staff that will be retiring in the next 5 years across the industry. There is a limited amount of time left for them to transfer their knowledge to the next generation so that the knowledge is preserved and moving forward.

Interviewee 2

There is no exact law for upstream energy sector. That fact does not support petroleum industry. Labor related laws are the threats and the laws that are not complete are risky for industry. Not only company staffs but also the staffs from MOGE need to make progress so that they are the ones who are not necessarily taken in sending secondees according to the contract. It needs to be the right man at the right place.

Interviewee 3

Market rate is low. Other industry can give more. It is difficult to maintain staffs for financial reasons. Operations field is low/little. There is little operation field. There is difficulty as there is world oil crisis. There is no clear-cut law for the Oil and Gas industry as a whole. All organizations need to maintain staffs. It is needed to think about the long term.

Interviewee 4

The fact that the right man is not in the right place is the main threat. There should be localization. Though Myanmar try to improve capacity building, there are few chances to apply as expatriates are in main positions and make major decisions. Myanmar are replaced gradually later in the place of expatriates. It is required to know the level and it is needed to make future development. Then it is needed to give delegation of authority to evaluate or the capacity would be in decline so that the turnover rate would decrease.

Interviewee 5

Government cannot ensure jobs for the youths of technical university after they have graduated. This means a kind of threats. Thai government always gives vocational trainings to employees internationally. HSE safety is given. Employers should give high salary to the staffs that are in good or high grade. Skilled workers are also needed. Labor Law is poorly provided as our country cannot perform at that stage.

Question (9): *Do you have any other comments/ recommendation for human resource capacity building development in the upstream energy sector.*

At Total E&P, there is a professional group in which retired persons can be the member of that group and there is also think tank group. There should be experiences sharing from the experts at the companies though they are retired. This method is cost effective and good experiences can be shared. Then it is one of the ways of taking care of retired persons. There are a few companies that do these deeds in Myanmar. Think tank plan should be drawn in development strategy as a kind of strategy. The qualifications from retired persons who shared their experiences and their papers to

the group should be reused. It is recorded what the experienced experts shared and this means less dependence on the expatriates.

At Local content, 75% 25%, next 50% 50%, next 25% 75% and then 100% takeover plan is required. There should be approved Myanmar Investment Law. Expatriates and local ratios should be included in giving trainings.

General Comments of Interviewee 6 & 7

Exploration for oil and gas in the offshore region of Myanmar began in 1968 when 2D seismic surveys were first conducted in both the Mottama and Rakhine (now west Ayeyarwady) basins. MOGE was the first organization to conduct offshore exploration drilling which took place in 1972. Myanmar's first oil and gas related bidding round was conducted in 1974. Four companies, which included ESSO Exploration Incorporated, Total, Arakan Oil Development, and Mottama Cities, participated and as an outcome of the bidding round, all four companies claimed exploration rights for blocks mainly located in the Mottama basin. There was limited exploration success achieved by these four companies at the time. However, in 1984, it was MOGE whom achieved exploration success and was the first organization to discover the Yadana field. However, because at the time, MOGE did not have the capital or offshore expertise to develop the field, there was not much progress beyond the first exploration success. In 1991, MOGE directed negotiated with Shell and Total in consideration to see who would be interested to pursue appraisal and development of the Yadana field. Total was selected and won the rights for appraisal and development of Yadana. Total was very fortunate to achieve the rights for appraisal and development of Yadana field since the exploration risk was also overcome (by MOGE whom discovered the field and took all the risk at the time). Around the same time, Premier oil also discovered the Yetagun field which was later acquired by Petronas whom led the appraisal and development of this field. What is worth noting that although MOGE desired to be operator of both fields and wished to lead both the appraisal and development activities, MOGE simply did not have the right level of human resource capacity to do so. Learning from this, this is why it is very important for our country to develop Myanmar human resource capacity in the oil and gas sector.

Since MOGE is the State National Oil Company (NOC), it is very important that MOGE develop its own human resource capacity do that in can be a strong

regulator of the industry and also be an operator of offshore oil and gas fields in all stages (exploration, appraisal, development, and production). The most beneficial and effective way for MOGE to develop human resource capacity is through relying on international oil and gas companies human resource development programs. As per the terms and conditions of the Myanmar Production Sharing Contracts, MOGE have a right to second MOGE staff to all international oil and gas companies operating in Myanmar. MOGE should use this right extensively since this will ensure that MOGE staff, at all levels of the organization, can be seconded to international oil and gas companies to receive proper training and knowledge transfer as necessary. MOGE should try to second MOGE staff directly into oil and gas operations in Myanmar and also second MOGE staff to oil and gas operations in other countries that such international oil and gas companies are operating in. At the present time, MOGE tends to send representatives with limited scope to work with international oil and gas companies. It would be more beneficial for MOGE to actual second their staff to organizations and projects since this gives the necessary exposure and work scope to truly build their human resource capacity. This also gives MOGE a direct chance to fully understand the value of such international oil and gas companies and what they are doing internally.

In addition to relying on secondment, the Ministry of Electricity and Energy as well as Myanmar government should also put in the right policies that can better guide knowledge transfer and Myanmar human resource capacity building. The right policies should set guidelines for percentage of workforce that needs to be Myanmar nationals and how such percentage needs to increase over time. This alone is also not enough. Ministry of Electricity and Energy should also monitor very closely the progress of knowledge transfer so that such transfer is taking place in the most meaningful and high impact job functions. Such policies should also provide guidelines for not only Myanmar human resource capacity building, but also for the purpose of transfer of technology.

Though technical subjects such as petroleum geology and petroleum engineering have been taught in universities, the curriculum is not most up to date and entirely suitable to the practical needs desired by international oil and gas companies at the present time. Specifically, there may be too much focus on scientific theories whereas practical/applicable knowledge is limited. It would be beneficial if there is closer contact and discussions between Myanmar universities that offer oil and gas

technical degrees and international oil and gas companies operating in Myanmar so that curriculum and up to date business needs in terms of human resource capacity is better in line.

MOGE also have to face the fact that the human resource development system at MOGE at the present time is out of date and needs to be improved. This is also a common observation and matter that many Myanmar companies are facing and thus are transitioning into a modern day human resource management and capacity development system. The best way for MOGE staff to learn how to improve the MOGE system is to observe and be involved in the usage of modern day human resource management and capacity development systems through secondment to international oil and gas companies.

It is clear that if there more oil and gas projects with a large range of international oil and gas companies actively operating in Myanmar, there will be more opportunities for Myanmar nationals to leverage international oil and gas companies to develop Myanmar human resource capacity. It would also be beneficial if the Ministry of Electricity and Energy and the government can develop the right policies to attract much more investment of international oil and gas companies to operate in Myanmar in the near future.

CHAPTER V

CONCLUSION

This chapter provides the conclusion and recommendations drawn from the findings to explain the status of employees' capacity in upstream energy sector.

5.1 Findings

The main objective of the study was to find out the current status of employees' capacity in upstream energy sector in Myanmar.

In this study, the majority of respondents indicate that there are robust human resource management frameworks established in their respective companies as well as experienced human resource management staff and procedures. Overall, 91.7% respondents responded that a human resources information system was in place to gather employee data for human resources planning and forecasting. 90% respondents replied that the job classification was in place. Concerning with salary and merit awards, 96.7% responded that they have a system to determine salaries, promotions and merit awards. Most respondents also indicated that updated personnel policy manual exists within their organizations. It was also found that most respondents were empowered to manage their own career development and competency building. In this aspect, it can be assumed that employees have opportunities to develop and shape their career development plans suitable to their role and ambitions as well as business needs. Most organizations have job descriptions concerning all staff and all staff also have access to their own job description. All respondents indicated that there are training plans in place for management and leadership development. It is clear that based on respondents, all organizations involved appear to have robust human resource management and capacity development initiatives in place and use.

Over 50% of respondents indicate that human resource development and management plans are live documents which are updated at least every 12 months and some replied that their organization updates such plans from time to time (ad-hoc

basis). Over 60% of respondents indicate that training plans focus on future projects as well as immediate projects.

Over 90% of respondents indicate that oil and gas business is a capital intensive, long term, high cost, and high risk industry. About 48% of respondents recognize that the general public regard of the Myanmar oil and gas sector is that this is a sector that is of medium interest. 42% of respondents believe that general public regard Myanmar oil and gas sector to be of high interest. Besides, it was found that some people were less interested in this sector because they did not know gas was one of the sources that can give electricity, which indicates that overall, there may also be a lack of fundamental understanding of the sector itself.

Of the respondents, it was indicated that the oil and gas sector has a significant positive impact towards nation-wide economic growth and development that also positively impacts many sectors development outside of the oil and gas sector. Respondents also indicate that oil and gas sector and companies is an area where there are opportunities for knowledge sharing as well as access to state of the art technology. Negative impacts are recognized by respondents that oil and gas sector is a sector that is volatile based on oil price. Respondents also indicate other negative impacts such as potential negative impact to environment such as air pollution, water pollution, health, and safety. Furthermore, respondents believe that there are currently limited job opportunities in the oil and gas sector of Myanmar. Respondents indicate that although Myanmar is believed to be a resource rich nation, there are a limited amount of operating offshore fields in Myanmar at the moment. Respondents also indicate that there is a need to further enhance the quality of oil and gas related foundation university learning in related disciplines.

Over 80% of respondents indicate that Myanmar oil and gas sector to be very important particularly towards the availability of electricity. Respondents indicate that energy security of reliable and affordable energy resources is of vital importance to the future growth and development of the nation. It is also necessary to drive the development of necessary infrastructure as well as to promote foreign investment.

In the knowledge of technical functions, most respondents appear to have a fundamental understanding of oil and gas related technical functions. Although mentoring is used as a part of capacity development, some respondents also indicate that current mentoring programs can be further enhanced. 56% of respondents indicate that oil and gas sector related educational degrees in Myanmar universities

and colleges are adequate for use during the present time. At the same time, 85% of respondents indicate that oil and gas companies have suitable and good training programs to develop new hires. 38% of respondents indicate that lack of proper job training and development is the key challenge being face by Myanmar oil and gas sector followed by 26% whom indicated that lack of employment opportunities is the key challenge. There are also further indications that the biggest challenge is the lack of well-trained petroleum engineers due to not having the proper suitable background education and proper training.

Key informant interviews stress that on the job training is of significant importance to capacity building in human resources, mentoring, and external training. Multinational organizations also indicate significant value received through training in different business units in different countries. A significant challenge in the oil and gas sector is the shortage of skilled and experienced individuals. Although Myanmar is a resource rich nation, there is limited foreign investment that is being made in the oil and gas sector thus on the job training/mentoring opportunities are very limited. One of the challenges to human resource development of Myanmar staff is the language barriers. Other informants also suggest that training and developing human resource capacity is very costly and a big investment. They also indicate the use of proven and effective human resource development practices such as performance management processes and measuring performance through KPIs.

Regarding advice for human resources capacity building, key informants suggest the need to have trainings plans closely linked with organizational short term and long term strategies. There are also suggestions to ensure that employees are effectively communicated regarding company strategy and direction and the need to empower employees to take control of their career development. In terms of weaknesses of organizational base human resource development activities, key informants once again indicate shortage of capable staff as being a weakness. Informants also indicate the need to have strong succession plans. One of the plans is that there is knowledge transfer between experience or expatriate staff and the local staff that is time driven and effective.

Key informants also indicate that significant investment needs to be made to send staff to regional external training programs. They also stressed the importance of internships to be pursued by individuals pursuing university degrees in oil and gas related disciplines. They also have a practical understanding of the sector and needs of

the workforce. Seconding staff to partner projects are also highlighted as a key opportunity to develop human resource capacity exposes them to other advance areas such as technology.

Regarding threats towards human resource capacity development, key informants indicate that Myanmar's current policies and lack of oil and gas law are not effectively promoting foreign investment and are in fact resulting in investors pulling out of projects resulting in such projects becoming suspended or canceled. There are limited amount of oil and gas fields that are operational at the moment which limits on the job training opportunities and job opportunities overall. Informants also suggest that not have proper succession and handover plans between expatriates and Myanmar staff are a key threat to human resource capacity growth.

5.2 Recommendations

Findings suggest that there is a shortage of human resources with the suitable capacity. One of the reasons for this is the lack of suitable background education and foundational knowledge associated with oil and gas sector related disciplines offered in Myanmar universities. It can also be assumed that pursuing degrees in Myanmar universities associated with oil and gas sector is not popular and most preferred by students. The following recommendations are made to improve the situation:

It is recommended for universities and the Myanmar government to further promote students to consider pursuing oil and gas related degrees. If there are more students pursuing oil and gas related degrees, then this will help address the shortage of labor that is being faced by the Myanmar oil and gas industry.

It is recommended that the government and the Ministry of Electricity and Energy also create policies that would require international oil and gas companies to partner and support Myanmar universities to improve education offered with regard to oil and gas related disciplines. This should include grants and scholarships for talented students, opportunities for university professors to obtain international training and exposure through networking with international professors from other countries, and grants for Myanmar universities to purchase and establish the right equipment for research and development.

Findings clearly indicate that international oil and gas companies operating in Myanmar regard human resource capacity building to be very important towards business success. International oil and gas companies also exhibit various

opportunities for further human resource capacity development beyond what staff learn through university degrees related to the oil and gas sector. Such opportunities consist of on the job training, mentoring, secondment, and external training. Such international oil and gas companies also ensure that human resource development programs are consistently reviewed, updated, and improved whereby they take into account not just the present needs, but short term and long term business growth as well. The following recommendations are made towards relying on international oil and gas companies to further development Myanmar human resource capacity:

It is recommended for the Myanmar government to consider making investment policies as well as oil and gas related laws more investor friendly and more effective. Oil and gas industry is already a long term, high risk, and very capital intensive sector which further suggest the need to rely more on foreign investment and international companies with the right capacity to drive and promote. In terms of policies, it is recommended for Myanmar government to review the investment incentives of the current Myanmar Investment Law and compare them to the investment incentives that are provided in other countries in the region. To attract the right level of foreign investment from the best international oil and gas companies, then Myanmar investment incentives should be better than those offered in other countries in the region. This would be the most effective and practical way, from a policy point of view, for international oil and gas companies with very advanced and successful human resource capacity development programs to operate in Myanmar.

It is recommended that the government and the Ministry of Electricity and Energy create policies that better ensure that international oil and gas companies operating in Myanmar increase the amount of Myanmar staff over time. More specifically, it is recommended that within the Production Sharing Contracts that govern oil and gas projects in Myanmar include requirements such as having, especially in key oil and gas related disciplines such as petroleum engineering and geoscience. At least 25% Myanmar staff during the first 2 years of operations, 50% Myanmar staff during the next 2 years of operations, 75% Myanmar staff during the next 2 years, and 100% Myanmar staff during the next 2 years. Thus, in 8 years, international oil and gas companies will be required to ensure that their human resource capacity building programs are fully targeting development of Myanmar staff so that their respective organizations can be led by 100% Myanmar staff.

It is recommended that the government and the Ministry of Electricity and Energy require that international oil and gas companies submit a Myanmar human resource development plan for review. Such plan should clearly include the following types of human resource capacity building programs that will be specially targeted towards Myanmar staff:

- a. On the job training
- b. Mentoring
- c. Secondment to partner companies or projects outside of Myanmar
- d. External Training

Such capacity building programs are already in place in international oil and gas companies, however, creating a Myanmar targeted plan will be most effective for human resource capacity building of Myanmar staff.

It is also recommended that progress of human resource capacity building should also be reported to government and the Ministry of Electricity and Energy on a monthly basis. No plan is perfect and plans are more effective when continuously reviewed, updated, and improved based on actual learnings and progress.

It is recommended that during the early stages of oil and gas exploration, the government and the Ministry of Electricity and Energy strongly encourage international oil and gas companies to second Myanmar staff to their international projects located in other countries. This will make sure that Myanmar staff that are being training by international oil and gas companies through direct on the job training in Myanmar projects. At the same time, there are Myanmar staffs that are being training by international oil and gas companies in international projects in other countries. This will ensure that Myanmar human resource capacity is more quickly improved.

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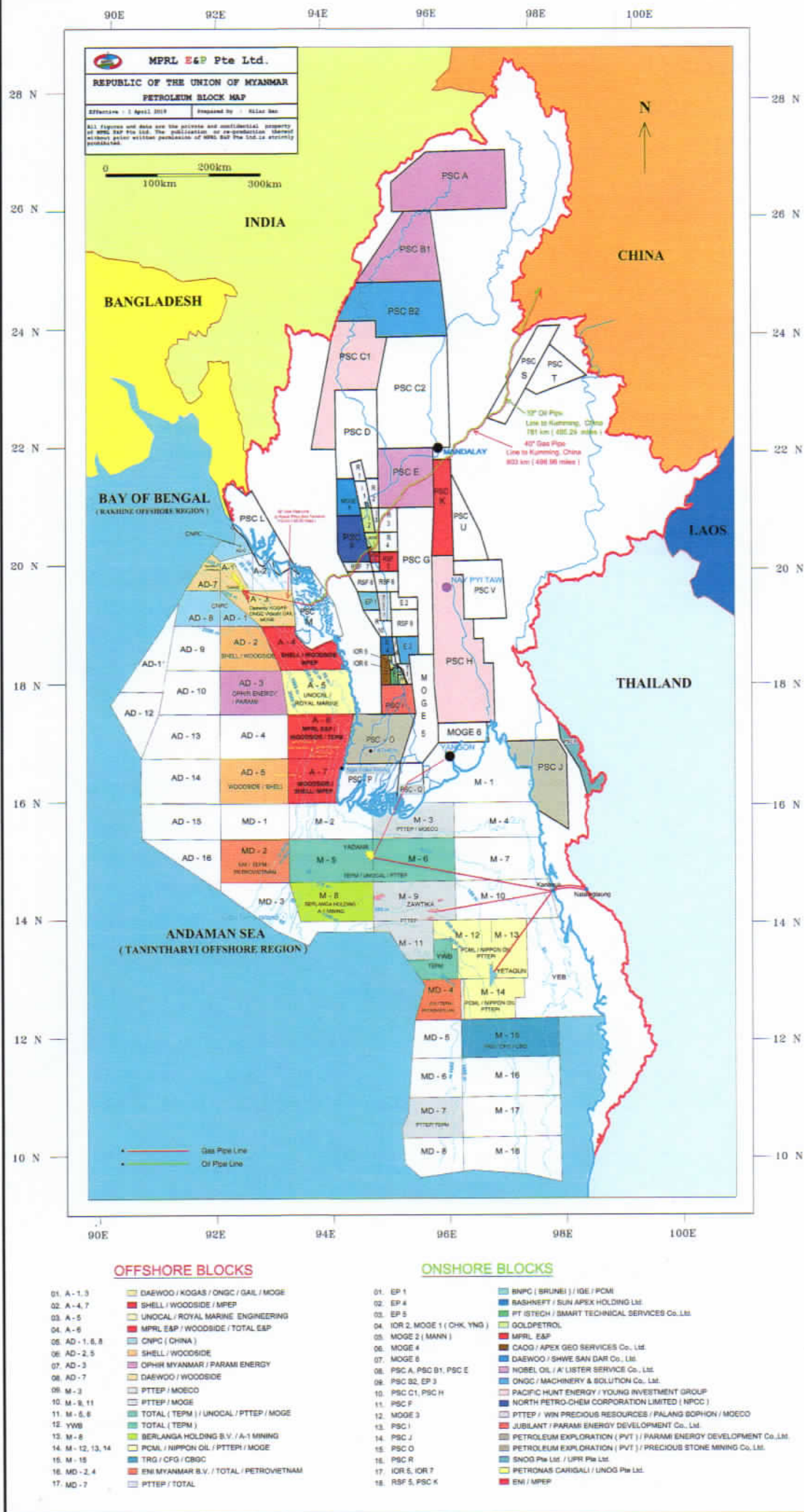
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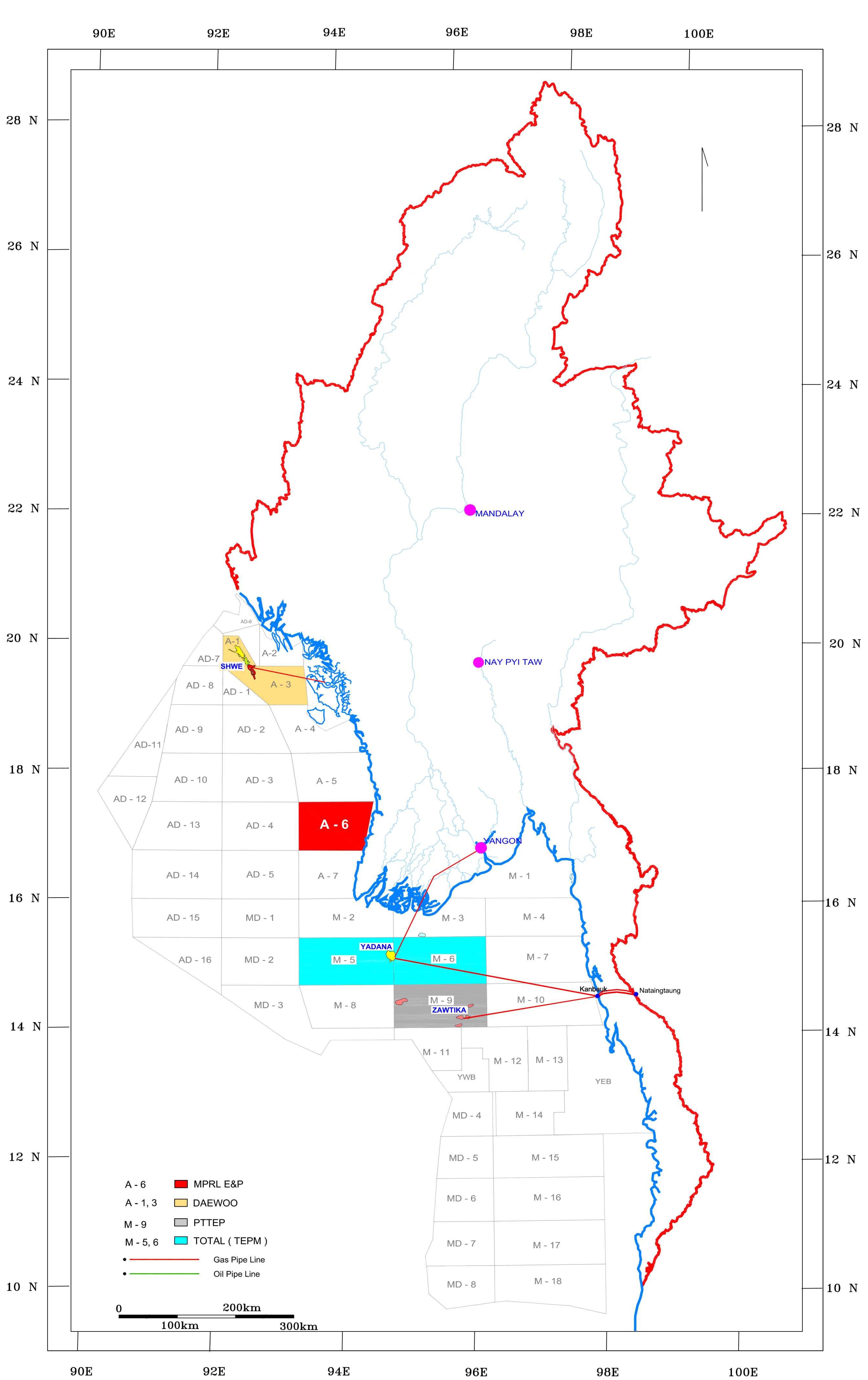
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APPENDIX (A)



APPENDIX (B)



APPENDIX (C)

Survey Questionnaire

The questionnaire is in support of my Master of Public Administration Thesis which is titled “A Study on Human Resource Capacity Building and Development in the Upstream Energy Sector”. All persons will remain anonymous and the responses will be used specifically for my Thesis only.

Part (A) Demographic Background

1. Organization _____
2. Gender ☐ Male ☐ Female
3. Age _____
4. Position _____
5. Education /Academic Qualification _____
6. Total Number of Years Working in Upstream Energy Sector _____

Part (B) Assessing an Organization’s Human Resources Components

7. Are there experienced Human Resource Management staff in your organization leading maintain human resources functions?
☐ Yes
☐ No
8. Does a human resource development and management plan exist in your organization?
☐ Yes
☐ No
9. How frequently is the human resource development and management plan updated?
☐ Every 6 months
☐ Every 12 months
☐ Every 18 months
☐ Every 24 months
Other _____

10. Is a human resources information system in place to gather employee data that can be used in human resources planning and forecasting?
- ☐ Yes
- ☐ No
11. Do personnel files exist for all staff?
- ☐ Yes
- ☐ No
12. Do staff members have access to these files?
- ☐ Yes
- ☐ No
13. Is a job classification system in place?
- ☐ Yes
- ☐ No
14. Is a system in place to determine salaries and to determine upgrades and merit awards?
- ☐ Yes
- ☐ No
15. Is orientation offered to all new employees?
- ☐ Yes
- ☐ No
16. Does an updated personnel policy manual exist? Is it used by managers and supervisors to address employment questions?
- ☐ Yes
- ☐ No
17. Are employees empowered to manage their own career development and competency building or is this initiative led key function within organization?
- ☐ Yes
- ☐ No
18. Do job descriptions exist for the positions in the organization?
- ☐ Yes
- ☐ No

19. How often are job descriptions revised?
- ☐ Every 6 months
- ☐ Every 12 months
- ☐ Every 18 months
- ☐ Every 24 months
- Other _____
20. Does each staff member have a copy of his or her job description?
- ☐ Yes
- ☐ No
21. Is a training plan in place? Does it include a plan for management and leadership development?
- ☐ Yes
- ☐ No
22. Does the training plan focus on
- ☐ only the immediate term/immediate projects
- ☐ account for future projects/business extension

Part (C) Upstream Oil & Gas Sector in Myanmar

What is the current level of general understanding of the Myanmar oil & gas sector?

23. Is the oil & gas business a long term or short term business?
- ☐ Long Term
- ☐ Short Term
24. What is the level of risk involved in exploring and producing oil and gas resources?
- ☐ Low
- ☐ Medium
- ☐ High
25. What is the level of cost associated with exploring and producing oil and gas resources?
- ☐ Low
- ☐ Medium
- ☐ High

26. Who is generally the owner of oil & gas resources in most nations around the world?
- ☐ Government
- ☐ Private Company
- ☐ Citizens of a Nation
- ☐ Head of State
27. What is the current view of the importance of the Myanmar oil & gas sector?
- ☐ Not Important
- ☐ Somewhat Important
- ☐ Very Important
- ☐ I do not know
28. Other than transportation, which other areas involve using oil and gas resources?
- ☐ Education
- ☐ Electricity
- ☐ Construction
- ☐ Health Care
29. How important is the availability of electricity to your life?
- ☐ Not Important
- ☐ Moderately Important
- ☐ Very Important
30. What is the level of interest of the general public with regard to the Myanmar oil & gas sector?
- ☐ Low
- ☐ Medium
- ☐ High
31. What are some of the positive impacts of the oil & gas sector? (at least 2)
-
32. What are some of the negative impacts of the oil & gas sector? (at least 2)
-

33. What are the main technical functions associated with the global oil & gas sector?

- ☐ Geoscience
- ☐ Engineering
- ☐ Housekeeping
- ☐ Finance

34. Within the technical functions, which of the following are the further sub-functions associated with geosciences?

- ☐ Geology
- ☐ Geophysics
- ☐ Civil Engineering
- ☐ Mapping

35. What other non-technical disciplines are necessary to have in place in an oil and gas company?

- ☐ Human Resources
- ☐ Finance
- ☐ Supply Chain
- ☐ Administration

36. What ways can oil and gas sector Human Resources be developed? Of the available ways to develop oil and gas sector Human Resources, please rank them in terms of importance on a scale of 1-5 (1 being most important).

- | | | | | | | | | | | |
|---------------------|---|--------------------------|---|--------------------------|---|--------------------------|---|--------------------------|---|--------------------------|
| Education | 1 | <input type="checkbox"/> | 2 | <input type="checkbox"/> | 3 | <input type="checkbox"/> | 4 | <input type="checkbox"/> | 5 | <input type="checkbox"/> |
| Internships | 1 | <input type="checkbox"/> | 2 | <input type="checkbox"/> | 3 | <input type="checkbox"/> | 4 | <input type="checkbox"/> | 5 | <input type="checkbox"/> |
| On the job training | 1 | <input type="checkbox"/> | 2 | <input type="checkbox"/> | 3 | <input type="checkbox"/> | 4 | <input type="checkbox"/> | 5 | <input type="checkbox"/> |
| Mentoring | 1 | <input type="checkbox"/> | 2 | <input type="checkbox"/> | 3 | <input type="checkbox"/> | 4 | <input type="checkbox"/> | 5 | <input type="checkbox"/> |

37. Which of the following are the key human resources challenges being faced by the Myanmar oil and gas sector?

- ☐ Lack of available degrees in most universities
- ☐ Lack of employment opportunities
- ☐ Lack of proper on the job training and development
- ☐ Lack of operating assets to work for experience

38. What is the biggest human resource challenge being faced by the industry today?

39. Are the oil and gas related educational degrees being offered in universities and colleges adequate?
- ☐ Yes
- ☐ No
40. Do oil and gas companies have good training programs to appropriately develop new hires?
- ☐ Yes
- ☐ No
41. What programs do oil and gas companies use to develop human resource potential?
- ☐ Performance Management Plan
- ☐ Career Development Plan
- ☐ Mentoring Framework
- ☐ Training and Competency Development
- 42.. What is being done to address and overcome the human resource challenges being faced by the Myanmar oil & gas sector?
-

APPENDIX (D)

Questions for Key Informants Interview

1. In support of human resource capacity building, what is the approach taken by your organization and your department?
2. What challenges have you encountered in building human resource capacity in your organization/department? How were these challenges overcome? What more could have been done?
3. How do you assess human resource capacity within your organization?
4. What advice would you offer to others who are developing plans and strategies for human resource capacity building?
5. What are the key strengths of your organization (internal) in human resource capacity building?
6. What are the weaknesses (internal)?
7. What are the opportunities available (in the external business environmental) that your organization/department can take advantage of as you undertake human resource capacity development?
8. What are the main threats (external) to human resource capacity development?
9. Do you have any other comments/ recommendation for human resource capacity building development in the upstream energy sector?