

# Draft Myanmar Environmental Impact Assessment (EIA) Procedures: Comments<sup>1</sup> on aspects relevant to Offshore Oil and Gas Exploration and Production

## Appropriate EIA phasing for Petroleum E&P Activities

According to best international practice, an EIA or ESIA process needs to be specific to the actual development being considered and therefore different types of activity/development are dealt with separately. However the current draft of the EIA Procedures (Annex A) stipulates that **'Onshore'** and **'Offshore Oil and Gas Development'** regardless of size or extent be subject to full EIA. It is not made clear whether separate EIAs should be conducted for different activities.

During the early phases of exploration (onshore or offshore) it would not be possible to carry out an EIA to international standards for a future oil and gas development project. The assessment could only be speculative, and could neither assess the environmental and social impact, nor identify the relevant and appropriate mitigation and management measures to be applied. The assessment could only be specific in relation to the activity proposed i.e. seismic survey.

It is recommended that the EIA Procedures reflect the nature of the range of activities normally undertaken by the upstream petroleum E&P business, and facilitate a phased approach where the IEE / EIA process is considered and applied separately for each of the distinct phases of E&P activities. Further information about these phases are set out below.

## Petroleum Exploration and Production (E&P) Phases

The offshore blocks currently being subject to licensing by the Government of Myanmar will be subject to the provisions of Production Sharing Contracts. These contracts typically set out key activities as follows:

1. Exploration studies and geophysical prospecting including seismic surveys;
2. Drilling of exploration wells (and possibly appraisal wells); and
3. Development, which may include design, construction and commissioning of hydrocarbon production facilities and infrastructure, and production/transport of Hydrocarbons such as natural gas, condensate and crude oil.

Activities associated with each of these are significantly different, both in terms of the equipment/development required, and the duration and impact of the activities taking place. Before the commencement of data gathering, i.e. studying existing seismic data or conducting new seismic surveys, it is not possible to predict the outcome, i.e.

- The presence or not of hydrocarbons;
- The potential for a commercial discovery;
- The development scheme including type/locations of facilities required to produce the hydrocarbons;
- Producing hydrocarbons, i.e. oil, oil with associated gas, dry gas, or gas with condensate;

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<sup>1</sup> These comments incorporate the suggestions of some of the companies who attended the 18 August workshop.

- For gas, is it H<sub>2</sub>S rich, CO<sub>2</sub> rich or sweet gas;
- Type of processing necessary; e.g. oil refinery, gas processing terminal, LNG terminal (existing or new); or
- The means e.g. pipeline, offshore loading etc, by which to bring the hydrocarbons to processing facilities and to market.

### *Seismic Surveys*

During the initial exploration phase which consists of geophysical data gathering (seismic surveys) and analysis, physical activities offshore are limited to the operation of a survey vessel with support vessels, and the towing of several parallel cables (streamers). These activities are short term, temporary and transient, and extend to perhaps a couple of months, during which the survey ship is constantly moving within set boundaries.

If no prospects are identified, the licence will be relinquished. If the geophysical survey data and subsequent studies result in identifying adequate prospects, exploration drilling will take place.

### *Drilling of exploration wells*

An exploration drilling programme will be designed on the basis of the characteristics of the prospects identified by the studies. This could be a single well of a couple of months' duration, or several wells typically drilled subsequently and possibly over several seasons, depending on the prospect(s). The vessels (drilling rigs or ships) and the characteristics of the drilling activity including well location, target depth, diameter, duration of drilling, drilling fluid types and characteristics, and other associated facilities to be used for exploration drilling are also determined by the prospect, and cannot be specified prior to carrying out the studies described above. The studies will typically identify whether the primary target is oil or gas, but the nature of fluids can only be confirmed **after** drilling and testing.

In the event of a hydrocarbon discovery during exploration drilling, the drilling of appraisal wells and associated studies will follow. If this results in the discovery being deemed commercial, the project will progress into development and production subject to the terms of the Production Sharing Contract.

If the drilling of an exploration well does not result in a discovery, the well will be abandoned, and the equipment removed. If an exploration drilling programme consisting of one or more wells does not result in the discovery of hydrocarbons, the licence will be relinquished. This will also happen if a discovery is later determined to be non-commercial.

### *Field development and production*

Field developments in deep water can range from a single subsea (seabed) completed well producing to a neighbouring field or directly to a production tanker, which can disconnect and bring the product to market, or a tension leg platform, permanently on location and producing to a pipeline, which has a landfall and from which onshore pipeline(s) take the product to market. It can also include the development of onshore reception facilities or processing terminals with significant processing of the product prior to export to market. The need for and details of development will always depend on a number of factors including, but not limited to:

- The composition and the characteristics of the hydrocarbons (oil/gas/condensate);

- The estimated producible hydrocarbon quantities;
- The characteristics of the reservoir;
- The physical aspects of the location, including water depth, current, weather/climate, distance to shore or other infrastructure;
- The existence and characteristics of existing infrastructure, i.e. pipelines, terminals, refineries; and
- Market factors.

## Phases and the EIA Process

The EIA process is used for assessing potential social and environmental impacts of any activity or project. Importantly it identifies the need for mitigation, the range of mitigation measures to be applied (through an EMP), and how and when mitigation will be applied to eliminate where possible, or minimise the impact on people and the environment. It also proposes appropriate monitoring of relevant parameters.

As can be seen from the description of industry activities above, there are a number of factors which need to be taken into account when determining what an IEE/ESIA process should capture. These include:

- The type of operations, extent and complexity of impacts, and area of influence, all of which may be very different in the various phases;
- Local issues, geographical area to be covered, and relevant stakeholders, also likely to be different for the different phases;
- The distinct phases are likely to extend over a number of years – e.g. first exploration well 2-3 years after seismic survey and field development potentially starting several years later – meaning that the relevant technical information needed to do the assessment will not be available at the start of the exploration study period; and
- The impact assessment process should be used to eliminate or mitigate impacts, which means that the assessment needs to be specific and integrated with the planning of the actual activity or development of facilities.

The Offshore Oil and gas operators are expecting the Production Sharing Contracts to require that the companies complete an ESIA during the **preparation period**, prior to commencement of the **study period** when seismic data acquisition activity will take place. However, according to the requirements set out in the current draft EIA procedures, the ESIA study, subsequent submission and approval could take up to 12 months. This long period has potential to result in delays to the exploration programmes, as well as cost increases.

Annex A of the draft EIA Procedures, Items 121 and 122, state that oil and gas developments are subject to EIA regardless of size and does not specify whether impact assessments should be carried out for each separate phase of activity (i.e. seismic survey, exploration drilling, field development and production, and decommissioning).

Although Items 121/122 include 'seismic exploration', exploration is also mentioned in Item 18 'Petroleum or Gas Exploration by means of Geophysical Drilling' (more accurately expressed, including in the PSC, as 'Petroleum or Gas Exploration by means of Geophysical Prospecting'). Item 18 is proposed as requiring an IEE possibly leading to EIA.

The Initial Environmental Examination (IEE) process outline in Chapter IV appears from a reading of the draft Annex to be targeted at activities or projects of relatively limited scale in a non-sensitive location or context, with impacts that are of a local, temporary, and largely reversible nature. This type of impact assessment is typically applied by major oil companies for seismic and drilling activities during the exploration phase. Such an approach is consistent with international best practice such as IFC Performance Standard 1.

**Recommendation:**

It is recommended that Annex A be amended as in Table 1 below to reflect a **phased approach** and to enable an **IEE** to be conducted for seismic surveys and non-complex drilling activities. It is proposed that Items 121 and 122 be replaced by new Items 121 – 124 as set out in red text below, and Item 18 deleted, as it will be redundant with the addition of the revised Item 121.

**Screening (Chapter III)**

The screening process described in the draft EIA Procedures enables the Ministry to determine whether the proposed activity or project is an EIA Type Project, an IEE Type Project or neither and therefore not required to undertake any further environmental assessment. In this context it is assumed that Annex A of the Procedures will provide a high level guide, but that for activities or projects which are proposed to take place in a sensitive or vulnerable context, either in terms of social or environmental impact, the Ministry may determine that a more extensive examination or assessment be required. The process outlined reflects international practice.

Consistent with international best practice it is also important that the screening process results in determining the final level of assessment for a proposed activity with no ability to change the level of assessment after the screening stage.

**Recommendation:**

Annex A should be amended to ensure that it is the screening process, rather than an IEE, which determines the final level of assessment.

Unless this is intended to be provided in separate EIA Guidance, it is also recommended that Article 21 includes a bullet point listing of the information the Department requires, as a minimum, to be submitted in the Project Proposal Screening.

**Table 1: Recommended changes to Annex A**

No	Type of Investment	Size required to undertake IEE	Size required to undertake EIA	Reference	International code for industrial type <sup>2)</sup>
10	Oil or gas transport and distribution pipelines	< 10 km	≥ 10 km	IFC Gas distribution Systems	Oil or Gas transmission pipeline: 4930 Transport via pipeline Gas distribution: 3520 Manufacture of gas; Distribution of gaseous fuels through mains

<sup>2</sup> NACE Code - Nomenclature statistique des activités économiques dans la Communauté européenne.

11	Petroleum Refineries or Natural Gas Refineries (Include manufacturing of liquefied petroleum gas (LPG), Mo-Gas (motor gasoline), kerosene, diesel oil, heating oil, fuel oil, bitumen, asphalt, sulphur		All sizes	IFC Petroleum Refining	1920 Manufacture of refined petroleum products
12	Oil or Natural Gas Terminals		All sizes	IFC Crude Oil and Petroleum Product Terminals	5210 Warehousing and Storage
13	Filling Stations (including Liquid Petroleum Gas (LPG) and Compressed Natural Gas (CNG)	> 10 m3 fuel storage capacity <b>except for those where a full EIA is required (subject to screening determination)</b>	All projects where the <b>screening</b> process yields a recommendation to do an EIA	IFC Retail Petroleum Networks	
14	Construction of oil or gas storage facilities	< 10,000 tons oil storage capacity or < 25 tons gas storage capacity	> 10,000 tons oil storage capacity or > 25 tons gas storage capacity		
15	Electrical Power Transmission Lines < 230 kV	< 50 km	>50 km	IFC Electric Power Transmission and Distribution	
16	Electrical Power Transmission Lines ≥ 230 kV		All sizes	IFC Electric Power Transmission and Distribution	
17	High Voltage Transformer Substations	< 10 ha	≥ 10 ha	IFC Electric Power Transmission and Distribution	
<del>18</del>	<del>Petroleum or Gas Exploration by means of Geophysical Drilling</del>	<del>All sizes</del>	<del>All projects where the IEE process yields a recommendation to do an EIA</del>		
19	Petroleum-based Organic Chemicals Manufacturing			IFC Large Volume Petroleum-based Organic Chemicals Manufacturing	
20	Natural Gas Processing Plants Production of liquid petroleum products, which may include naphtha, gasoline, kerosene, diesel fuel, waxes, and lubes, or methanol		All sizes	IFC Natural Gas Processing	
21	Natural Gas Liquefaction Plants		All sizes	IFC Liquefied Natural Gas(LNG) Facilities	
Items 109-122 relate to Mining and the Extractives Industries. Only those related to O&G are included here					
<del>121</del>	<del>Onshore Oil and Gas Development (seismic exploration, exploratory and production drilling, development and production activities, offshore pipeline operations, offshore transportation, tanker loading and unloading, ancillary and support operations, and decommissioning)</del>		<del>All sizes</del>	<del>IFC Onshore Oil and Gas Development</del>	

122	Offshore Oil and Gas Development (seismic exploration, exploratory and production drilling, development and production activities, offshore pipeline operations, offshore transportation, tanker loading and unloading, ancillary and support operations, and decommissioning)		All sizes	IFC Offshore Oil and Gas Development	
121	Onshore and Offshore Oil and Gas Exploration surveys activities, including seismic surveys, anchoring/site surveys and other exploration surveys using energy sources.	All sizes , except for those where a full EIA is required (subject to screening determination)	All projects where the Screening process yields a recommendation to do an EIA		
122	Onshore and Offshore Oil and Gas Exploration/appraisal drilling activities	All sizes , except for those where a full EIA is required (subject to screening determination)	All projects where the Screening process yields a recommendation to do an EIA		
123	Onshore and Offshore Oil and Gas Development activities including production drilling, development and production activities, offshore transportation, tanker loading and unloading, ancillary and support operations, and decommissioning.		All sizes	IFC Onshore/Offshore Oil and Gas Development	
124	Offshore oil and gas pipelines	< 25 km except for those where a full EIA is required (subject to screening determination)	≥ 25 km		

### Potential requirement to conduct an EIA to follow on from an IEE (Article 35)

As mentioned above, the determination **at screening stage** as to whether or not projects should be made subject to full EIA represents best international practice. The option introduced in Article 35 to change this decision to an EIA after completion of an IEE, is unusual and would pose a risk of cost increases and schedule delays to a project.

#### Recommendation:

It is recommended that Article 35 part (b) be removed, and that Article 35 read:

Upon completion of its review of the IEE Report, the Ministry shall;

- a. approve the IEE Report, subject to any conditions as may be prescribed, and issue an ECC; and
- b. publicly disclose its decision.

## Requirements concerning third parties undertaking EIA and IEE (Article 13-20)

Article 19 requires the Department to maintain and publish from time to time a list of all organisations and person who are licensed for the preparation of assessments.

### **Recommendation:**

It is recommended that an up-to-date Register of Consultants be made available to prospective Project Proponents such as licensed Oil and Gas companies to enable them to more effectively conduct their planning activities for each phase of petroleum E&P development.

It is also requested that the Ministry allow for the formal checking and confirmation of acceptability of IEE/EIA consultants to take place at any time in the cycle, both before, during and after IEE/EIA screening. A reading of the current draft text suggests that this is possible.

In relation to the criteria the Ministry may apply to determine the acceptability of prospective consultants, it is suggested that any requirement to have completed a significant number of previously approved IEE /EIA reports be considered carefully, as this may introduce an unintended constraint on the ability for new but competent local and international consultants to register, and also provide a constraint in the market which could drive up the price of consultancy services at times when several companies are planning to seek approval for activities at the same time.

### **Deadline for confirmation of third party consultant**

It is also requested that a deadline of 7 days for the Department to confirm the consultants' registration be included in the EIA Procedure both for IEE (Article 27) and for EIA (Article 40) as previously indicated in presentations on the subject.

### **Recommendation:**

Article 27 proposed amendment (in red):

*Upon receipt of the information about the identity of the proposed organisation(s) and/or person(s) selected by the Project Proponent to undertake the IEE, the Department will check the information provided and will make a decision on whether the individual or organisation is registered with the Department or qualified to conduct an IEE and provide a response **within 7 days**.*

Article 40 proposed amendment (in red):

*Upon receipt of the information about the identity of the proposed organisation(s) and/or person(s) selected by the Project Proponent to undertake the EIA, the Department will check to confirm that such organization(s) and/or person(s) has been duly registered with the Department or is qualified to conduct an EIA and provide a response **within 7 days**.*

## Other comments on implementation of the draft procedures

### **Environmental Baseline Data (Article 43 (d))**

In line with international best practice, in-field or local environment baseline data for offshore seismic activities is typically only required when operating in close proximity to a sensitive receptor

such as a coral reef. Therefore, the collection of specific environmental data would normally not form part of the preparation of an EIA report for a seismic survey.

The understanding of distribution and abundance of biological populations such as fish and marine mammals is complex and requires significant data gathering and analysis over large geographical areas for many seasons. Although the nature of an offshore seismic survey would be such that it is unlikely to directly impact mammals or fish, best practice would be to apply management and mitigation measures that eliminate or reduce potential impacts to as low as reasonably practicable. As outlined during the presentations given at the 18<sup>th</sup> August ESIA workshop in Nay Pyi Taw, environmental management measures applied during offshore surveys can include but are not limited to employing marine fauna observers, conducting 'soft start' procedures for the energy source, employing exclusion zones where works are stopped if marine mammals are recorded within these zones, and choosing an appropriate sized power source e.g. making sure the energy/noise emissions are targeted and as small as possible to still achieve the survey objective. Likewise, active fisheries liaison before and during offshore surveys are also carried out to reduce the potential for any direct interaction between surveys and fishing gear and fishing boat. Adaptive management measures are also applied where necessary in the field during the activity, for example increasing or decreasing periods of no activity based on real-time marine mammal sightings in the field.

Marine species and vessel or fishing activity sightings information obtained during seismic survey can be used to inform future impact assessments for any activities in the next phase of the oil and gas activities such as drilling.

### Cumulative Impact Assessment (Article 57 (7))

The **ecosystem services** methodology described by MOECA in the workshop on 18<sup>th</sup> August for assessment of cumulative impact of projects is relevant to large scale onshore projects where there is potential for significant impact on ecosystem services. It enables the proposed project to be assessed cumulatively with other activities taking place in the same area.

**An ecosystems services** method cannot be practically scaled to cover smaller and temporary offshore projects. A better approach to cumulative assessment as typically applied to seismic surveys is **qualitative**, based on existing information and considering the cumulative impacts of **operations taking place nearby at or around the same time**. This is in line with best international practice.

### Monitoring and Inspection (Chapter VII)

It is noted that the draft EIA Procedures set out the Ministry's requirements for oversight in relation to an activity or project's compliance with all relevant and applicable social and environmental requirements and obligations. In this regard, it would be appropriate to make the Ministry aware of the potential difficulty of accessing ships which are located far offshore. Should the Ministry wish to arrange for ongoing inspection, their representative(s) may have to spend a considerable period at sea. There are also physical limitations on berth space over and above members of crew required to safely conduct the activities, and that inspection visits therefore may take some time to arrange.

### EIA Review and Approval Process

It is suggested that the following details are specified in the EIA Procedure or Guidance:



- Consultation period, public and inter- Departmental consultation, for example comments to be received by the Ministry 3 weeks from publication date; and
- Details or examples of which costs associated with the public consultation and report review process are to be borne by the Project Proponent, and how these are determined.

In the context of the Production Sharing Contracts currently being discussed between the Government of Myanmar and oil companies, there is a concern relating to the overall duration of conducting the EIA as well as the approval and associated permitting processes for offshore exploration activities. In particular it is considered that the 90 day approval timeline is unusually long when compared with international experience.

**Table 2: Summary of Recommended changes to EIA Procedure (Draft version 6)**

No.	EIA Procedure Reference (Version 6)	Recommendation
1	Annex A	Amend to reflect a phased approach; to enable an IEE to be conducted for seismic surveys and non-complex drilling activities; and to ensure that the screening process determines the final level of assessment. See Table 1 above.
2	Article 21	Article 21 (or Guidance) includes a bullet point listing of the information the Department requires, as a minimum, to be submitted in the Project Proposal Screening.
3	Article 27	Article 27 proposed amendment (in red): <i>Upon receipt of the information about the identity of the proposed organisation(s) and/or person(s) selected by the Project Proponent to undertake the IEE, the Department will check the information provided and will make a decision on whether the individual or organisation is registered with the Department or qualified to conduct an IEE and provide a response <b>within 7 days.</b></i>
4	Article 35	Remove Article 35 part (b) so that Article 35 reads: Upon completion of its review of the IEE Report, the Ministry shall; <ol style="list-style-type: none"> <li>a. approve the IEE Report, subject to any conditions as may be prescribed, and issue an ECC; and</li> <li>b. publicly disclose its decision.</li> </ol>
5	Article 40	Article 40 proposed amendment (in red): Upon receipt of the information about the identity of the proposed organisation(s) and/or person(s) selected by the Project Proponent to undertake the EIA, the Department will check to confirm that such organization(s) and/or person(s) has been duly registered with the Department or is qualified to conduct an EIA and provide a response <b>within 7 days.</b>