ミャンマー国

Ministry of Electric Power

ミャンマー国
全国基幹送変電設備整備事業
（環境社会配慮）
【有償勘定技術支援】
第一次～第四次現地業務結果報告書

平成２７年７月

（２０１５年）

独立行政法人

国際協力機構(JICA)

イー・アール・エム日本株式会社

第一次現地業務結果報告

ミャンマー国/全国基幹送変電設備整備事業（環境社会配慮）
【有償勘定技術支援】

現地業務工程

日にち	内容
2015.1.21（水）	ミャンマーへ移動
2015.1.22（木）	ネピドーへ移動 報告書作成
2015.1.23（金）	Myanmar Electric Power Enterprise (MEPE)へのヒアリング 報告書作成
2015.1.24（土）	ヤンゴンへ移動 報告書作成
2015.1.25（日）	報告書作成
2015.1.25（月）	現地視察
2015.1.27（火）	JICA ミャンマー事務所との打合せ E Guard（ローカルコン）との打合せ
2015.1.28（水）	報告書作成
2015.1.29（木）	MEPE へのヒアリング Htan Ta Pin Township General Administration Department (GAD)へのヒアリング Deik Knoe Village Ward へのヒアリング
2015.1.30（金）	JICA ミャンマー事務所との打合せ Environmental Conservation Department (ECD)へのヒアリング 日本へ移動
2015.1.30（土）	日本へ帰着

打合せ記録

日時	2015 年 1 月 23 日　11:00 – 13:00
場所	MEPE, Nay Pyi Taw
参加者	Zaw Ye Myint, D.Y.C.E, PTPD, MEPE Daw Su Sabal Aung, Administration, PTPD, MEPE 川口、江口、鈴木、柏木氏（JICA 本部） 餘語、丸山（調査団）　（敬称略）
打合せ内容	

1) パヤジー変電所予定地
新たな予定地については当初の予定地（軍用地）から 1.1km 南へ移動する予定である。場所が南に移動し、軍用地に送電線を立てることになるが、このことについて軍からは了承を得られているとのこと。
2) ラインタヤ変電所予定地
予定地で用地取得に合意をしていない 1 軒は投資目的で土地を所有している模様である。最初は土地を売ってもよいとのことだったが、その後当分売る予定はないと言われたとのことである。
3) 担当者
本プロジェクトの Project Manager はヤンゴンにいるとのことで紹介をいただいた。
連絡先:Project Manager、Mr. Thet Paing Myo　TEL: 098601031

日時	2015 年 1 月 23 日　13:00 – 13:30
場所	MEPE, Nay Pyi Taw
参加者	Daw Aye Aye Myint, Director, Finance, MEPE Daw Zaw Zaw Than, General Manager, Finance, MEPE 川口、江口、鈴木、柏木氏（JICA 本部） 餘語、丸山（調査団）　（敬称略）
打合せ内容	

1) 用地取得、補償に関する予算について
一年毎に PTPD より Financial Department へ予算の申請が行われ、Financial Department で承認後、財務省へ申請が行われる。年に 1 度、補正予算もあ。
本プロジェクトの予算の内容については PTPD で把握しているとのことである。

日時	2015 年 1 月 25 日　8:00 – 17:00
場所	現時視察
参加者	Paw Oo, Civil Engineer, MEPE 川口、江口、鈴木、柏木氏（JICA 本部） 餘語、丸山（調査団）　（敬称略）
打合せ内容	

1) ラインタヤ変電所予定地
プロジェクトエリアに住宅や文化的に重要とされるものは目視では確認されなかった。
買収済みのところは柵が立てられ始め、作業員のための小屋も確認された。
MEPE は現地点は進入路は拡幅せず、補強をする予定である。しかし、同行調査団によると幅が 6m 必要であり、その場合には拡幅が必要とのことである。
（道路の入り口 Village（monastery）のための門がある。ローカルコンに確認したところ、道路拡幅に際し、新設をしても問題がないとのことである。）
予定地の東には Ministry of Transportation の土地である。
本社の Project Manager Ohne Soe 氏が用地取得の担当であり、用地取得地の変更はここで検討されているとのことであたった。
2) 現ラインタヤ変電所の見学
3) パヤジー変電所予定地
プロジェクトエリアに住宅や文化的に重要とされるものは目視では確認されなかった。
埋め立てが必要になるが、同行調査団によるとそれほど大きな容量は必要ではないとのことである。
土地は水がたまりやすく、農作業に適さない土地とのことである。
視察中、えさを食べさせるために牛を連れてきているものがいた。
動物はネズミ、サギ、ヘビ、カエル、メダカ、ヒルなどがいるとのことである。
プロジェクトエリアは土地管理省のものであり、現在所得について申請中である。

日時	2015 年 1 月 27 日　11:30 – 12:10
場所	JICA ミャンマー事務所
参加者	黒沼（JICA ミャンマー事務所） 川口、江口、鈴木、柏木（JICA 本部） 餘語、丸山（調査団）　（敬称略）
打合せ内容	

1) ラインタヤ変電所、パヤジーのの予定地での用地取得について MEPE へのヒアリング、現地視察の状況の報告を行った。ラインタヤの用地取得の合意が得られていない一軒についてはいつまでに MEPE 判断をするか決める hi 必要がある。
2) 送電線の ROW にかかる気の補償金額について再確認を行う。
3) 環境社会配慮については、1 月 30 日に再度帰国前ほうこくを行う。

日時	2015 年 1 月 27 日　13:00 – 18:00
場所	E Guard 事務所
参加者	Myat Mon Swe　（E Guard） 丸山（調査団）　（敬称略）
打合せ内容	

1) ラインタヤ変電所、パヤジーのの予定地での用地取得について MEPE へのヒアリング、現地視察の状況について情報共有を行い、その後今後の作業方針について検討を行った。
2) Project Manager、Thet Paing Myo 氏と 1 月 29 日の打合せを設定しようとするか、その日は不在とのことで、Electric Engineer が対応いただけるとのことであった。
3) 打ち合わせ中、Chief Engineer　Wana Soe 氏に電話し、以下の点についてをした。
   - ラインタヤ変電所の用地については残りの一軒からも用地取得について了承が得られた。
   - パヤジー変電所の用地については、新しい土地の政府のとちであり、取得が難しいため、他の用地を探し始めている。（ローカルコンの話の感触では 75%の可能性）
   - 用地取得に関する合意書などのコピーを提出することに Wana Soe 氏は了承をしたが、MEPE の別の Chief Engineer　Thein Hlaing 氏へのレ

ターが必要である。
- Wana Soe 氏は必要に応じて、ネピドーで情報収集のために会うことを了承した。

日時	2015 年 1 月 27 日　10:30 – 12:00
場所	MEPE, ヤンゴン
参加者	Tin Maung Maung Oo , Executive Engineer, MEPE Thun Thuna Naing, Executive Engineer, MEPE Myat Mon Swe （E Guard） 丸山（調査団）　（敬称略）
打合せ内容	

1) トランスの廃油処理について
Sweden 製の Nynas という Organic Oil を使用している。トランスはオイルピットに囲まれている。
2) 廃油は変電所にある Purification system で処理後、MEPE 内で再利用か民間業者に販売予定（低圧変転所で利用される）だが、Waste Management Plan はない。
3) ラインタヤの残りの 1 土地については了承を得られていることを再確認。
4) ラインタヤの進入路については拡幅のための協議を始めている。
予定地は Ministry of Transport と民間の所有地である。詳細は Chief Engineer Wana Soe 氏に聞くことをすすられた。

日時	2015 年 1 月 29 日　13:00 – 13:30
場所	ラインタヤ変電所
参加者	Dhura Saw, Executive Engineer（MEPE） Myat Mon Swe （E Guard） 丸山（調査団）　（敬称略）
打合せ内容	

1) トランスを囲むオイルピットを確認。
2) 使用後のオイルに使用するという Purification System を確認。油をトランスに入れるときにも使用するが、それ以来使用していない。
3) 雨水、生活排水は敷地内の排水路から大通りの排水路へながれ、Tuo 川へ排水される。

日時	2015 年 1 月 29 日　15:30 – 13:30
場所	Htan Ta Pin Township GAD
参加者	Phillip Lin, Duty Chief（GAD） Myat Mon Swe（E Guard） 丸山（調査団）　（敬称略）
打合せ内容	

1) Htan Ta Pin Township Deik Knoe Village に存在するすることが、ラインタヤ Township　GAD に行った際に確認され、Htan Ta Pin Township へ行くことにした。
2) Htan Ta Pin Township Deik Knoe Village で 2015 年に民間プロジェクトの際、Near Road 500L/acre (IEE では 400 L/acre)、Inner Road で 400L/acre (IEE では 70 L/acre)だった。GAD に土地の単価表のようなものはない。
3) Market Price, Resettlement Work Plan, Cultural Heritage にヒアリングをするため、Deik Knoe Village Ward を紹介いただいた。

日時	2015 年 1 月 29 日　17:00 – 17:30
場所	Deik Knoe Village Ward
参加者	Win Zaw Oo, Head of Date Kong Village Ward Myat Mon Swe　（E Guard） 丸山（調査団）　（敬称略）
打合せ内容	

1) ラインタヤ変電所用地ですでに支払われている補償は 62 L Kyat/acres である。価格は対象地の土地所有者、GAD, MEPE 及び village ward による話合いで決定された。
2) 進入路については、民間の所有者は 2 名。350L Kyat　（0.9Acre）　が現在要求している金額である。土地所有者の一部であり、生計への影響はないと考えられる。
3) この地域に関しては住民移転が発生しないため、Resettlement Work Plan は作成されていない。
4) プロジェクトサイト及びその周辺に Cultural Heritage はない。

日時	2015 年 1 月 30 日　9:00 – 10 :00
場所	JICA ミャンマー事務所
参加者	黒沼、Mi Mi Cho（JICA ミャンマー） Myat Mon Swe, Aye Thiha （E Guard） 丸山（調査団）　（敬称略）
打合せ内容	

1) ラインタヤ変電所、パヤジーのの予定地での用地取得について 27 日以降の MEPE へのヒアリング、現地視察の状況の報告を行った。パヤジーに関しては MEPE にいつまでに用地の選定を行うか期限を区切り、その後作業を開始するのがよい旨、黒沼氏から提案があった。
   - ラインタヤ
     MEPE によると変電所用地の残り 1 箇所についても用地取得について合意を得られたとのことである。GAD によると取り付け道路についての話合いを始めている。
   - パヤジー
     2 回目に選定した土地も購入が難しいため、他の土地についての検討を始めたところである。
   - 送電線
     用地買収の状況については今後確認をしていく。
2) MEPE が情報の提供についてレターを要求していることを説明。JICA ミャンマー事務所からレターを発行していただけることとなった。
3) これまでの関係者へのヒアリングの結果、必要な情報はネピドーに行かないと入手が困難なようである。JICA ミャンマー事務所には MEPE の PMU の中の担当者の確認で協力をいただくこととなった。
4) スケジュール
   MEPE　CE の予定(2 月 5-12 日不在)やミャンマーの祝日を考慮し、E Guard は 2 月 3 日、か 4 日にネピドーへいき必要な情報を得ることとする。
5) 丸山は 2 月 9 日―17 日に第 2 回調査を予定し、16,17 日ネピドーにいる CE に合えるように調整を行う。

日時	2015 年 1 月 30 日　13:30 – 14:30
場所	JICA ミャンマー事務所
参加者	Myo Lwin, Director, ECD Yangon Region Myat Mon Swe （E Guard） 丸山（調査団）　　（敬称略）
打合せ内容	

1) EIA Guideline はまだ発行されていないが、Environmental Conservation Law および Environmental Conservation Rule に基づき本プロジェクトは EIA が必要である。
2) Prior Permission（先に許認可を取得し、1 年以内に EIA を作成するもの）については可能性があるが、MEPE が MIC に問い合わせをし、可能性を確認するべきである。
3) EIA 承認のほかには農地の転用の手続きが必要である。（Land Use Department に LA-NA(39)の手続き）
4) 埋め立てについては、100,000m3／年未満であれば、EIA、IEE が不要である。EIA の中に、EMP の中に含めればよい。
5) ECD には自然環境の情報はない。必要であれば、Wildlife Conservation Society や WWF に行くのがよい。
6) 環境基準については 2017 年に、EIA Guideline は近い将来に発行される予定である。
7) EIA Guideline, EIA Instruction など様々な名称の文書が出来ているが、EIA Procedures が正式な書類である。

添付資料 1：Summary report of the activities by E Guard

添付資料 2：IEE/EIA Project List draft8 (E Guard による英訳版)

添付資料 3：Environmental Safeguards with emphasizing on Oil and Gas Industries_U Than Aye(19-12-2014) (ECD より受領)

500kV, Power Transmission Project

Summary report of the activities of ERM and E Guard on 28th and 29th January 2015 according to JICA's TORs by E Guard

Team Leader: Maruyama Naoko , ERM

Member: Myat Mon Swe and Myo Thet Tin, E Guard

Report Date: 29th January 2015

Date	References	Activities	Result
28.01.2015	Discussion with ERM[1] at E Guard's Office	Things to do for 500kV Power Transmission Project	1) Preparing call letter/ appointment letter to Chief Engineer, Power Transmission Plans Dept., MEPE[2] (Nay Pyi Taw) for the preparation of supplementary survey information related to Environmental and Social point of view and RAP Monitoring Plan. 2) Schedule for Primary survey a) Primary survey of HTY[3] Substation on 29th January 2015, b) Base on the discussion with JICA and ERM on 30th January, Primary survey of PG[4] Substation on 2nd February 2015 , meeting with MEPE in Nay Pyi Taw on 4th February to collect data/documents will be done for the preparation of stakeholder meeting for two substations of HTY and PG (Phase II), and confirmation of Phase I by summarized issues and recommendation. c) Data collection for contact Dept/ Organization and persons in charge (U Thet Paing Myo, Project Manager, Power Transmission Plan Dept, MEPE, North Dagon.-Ph: 098601031) and U Wanna Soe, Planning Manager, Nay Pyi Taw Substation II, Nay Pyi Taw (Ph: 098610429/ 067-435155
29.01.2015	Base on JICA's TORs (I) + Additional JICA's TORs for E Guard	Interview with GAD of Hlaing Thayar, Htan Ta Pin Township and MEPE (Yangon) to confirm the compensation including price survey and Environmental Impact of waste of transformer.	
		1) Interview with U Tin Maung Maung Oo, EE[5] (Ph: 09798346234) , U Tun Tun Naing, EE from Power Transmission Plan Dept, MEPE, North Dagon.	1) For EC, the transmission line installed in high of tower 21 to 28 m up than previous high 8m. 2) Using Oil Purifier Plant for reuse of low grade organic oil for transformer. Note: Layout Section of Transformer is received.
		2) U Thuya Zaw, EE, Hlaing Thayar Primary Substation, Hlaing Thayar	Analysis of Environmental Impact of Transformer/ Oil Purifier (1200 l/hr), Sino-NSH (China) and its specification which is a typical using machine for oil purification in Myanmar. 1) No use of PCB[6] 2) Using organic oil (NYNAS made in Sweden) 3) Using IFC[7] standard for EC[8]. 4) Basement of transformer is graveled.

[1] ERM: Environmental Recourses Management,
[2] MEPE: Myanmar Electrical Power Enterprise,
[3] HTY: Hlaing Thayar,
[4] PG: Phayar Gyi,
[5] EE: Executive Engineer,
[6] PCB: Polychlorinated biphenyl
[7] IFC: International Finance Corporation,
[8] EC: Environmental Conservation

Date	References	Activities	Result
			5) Oil pitch is using. 6) Well drainage system is installed, but water discharges directly to Htoo Stream without Wastewater management. Note: Image of Oil Purifier (1200 l/hr) and its specification, Skeleton Diagram of Hlaing Thayar Primary Substation are received.
		3) U Aung Win Naing, Deputy Township Officer, GAD, Hlaing Thayar	1) To confirm the location of the 500kV HTY Substation which is in Htan Ta Pin Township. 2) Inquire of Contact person in charge of GAD, Htan Ta Pin Township
		4) U Philip Win, Deputy Township Officer, GAD, Htan Ta Pin Township	1) Procedure of Compensating (MEPE + GAD + Housing Dept.+ Land Use Dept. 2) Current market price of land near the project area of Htan Ta Pin is 500 L/acre for paddy field which is valued as a second standard. 3) Contact Information of the person in charge of Compensating and the area availability for expend road assess.
		5) U Win Zaw Oo, Head of Date Kong Village Ward, GAD, Pauk Tan Village, Htan Ta Pin Township Ph: 092506720020, 0973149579 and U Myat Soe, BC, Ph: 09254261545	1) The land of the projected area owned by 7 persons of 6 households has been compensated with the price 62 L/ acre since last year. (U Myo Myint, Daw Yi, Daw Than Than Swe, U Tint Lwin, U Myo Zaw, Daw Cho Cho Win and U Kyi Win.) 2) One owner (U Myo San) of land (9 acre) who didn't want to sell his land by current market price of 350L/acre. So that there is no dealing with MEPE up to date. 3) 90% of projected area has already bounded. 4) For the expend of road access from 3.5 to 6 meter, some area owned by Ministry of Transportation is being under discussion, and 0.9 acre from two private owners (U Kyaw Yin and Daw Tin Ohn) have already agreed to have the compensating price with 350 L for those total land area. 5) The copies of the Evidence of Land Compensating contracts between land owners and MEPE will have to get from MEPE, U Wana Soe, Planning Manager (Civil, Southern Part), No(2), substation, Nay Pyi Taw, and U Myo Tin, EE of Same Dept inquiry through proper channel with JICA's letter to U Thein Hlaing, Chief Engineer, Power Transmission Plan Dept., Nay Pyi Taw. Ph: 067-410210 6) There are no cultural heritages within 10 km, and no residents as well. 7) Some of the small ponds of rainy water collection for drinking water and irrigation water for summer paddy fields are nearby. 8) There are no socio-economic impact for the effected people by the selling of their parts of land (paddy fields), because they have existing residents in Pauk Tan Villages and they sold only a part of their own land of paddy filed. That's why they could set up huge another business with this compensated money and their living standard is higher than previous. 9) No need RAP for HTY Substation.

Reported by Myat Mon Swe, Consultant, E Guard Environmental Services.com

No.	Type of investment projects	IEE	EIA	Reference	IFC Standards
Special Investment Projects					
1	Projects in which investment is decided by the Parliament or the President		All sizes		
Energy Sector Development Project					
2	Hydro power plant project	1 Mega W and above; Under 15 Mega W or Total storage water under 20,000,000 cubic meter or Reservoir area under 400 hectare	15 Mega W and above; or Total storage water 20,000,000 cubic meter and above or Reservoir area 400 hectare and above		
3	Nuclear Power Plant	-	All sizes		
4	Natural Gas or Bio Gas Power Plants	5MW and above, under 50 MW	50 MW and above	IFC Thermal Power Plant	IFC Thermal Power Plant
5	Coal Fire Power Plant	1 MW and above, under 10 MW	10 MW and above	IFC Thermal Power Plant	IFC Thermal Power Plant
6	Thermal Power Plants (not including No 4 and 5)	5 MW and above, under 50 MW	50 MW and above	IFC Thermal Power Plant	IFC Thermal Power Plant
8	Wind Power Plant	10 MW and above, under 50 MW	50 MW and above	IFC Wind Energy	IFC Wind Energy
8	Geo-Thermal Energy Power Plant	5 MW and above, under 50MW	50 MW and above		
9	Combine Energy (Gas and Thermal) Power Plant	5 MW and above, under 50 MW	50 MW and above		
10	Solar Energy Power Plant	50 MW and above	All Projects advised to do EIA through IEE process		
	Power Plants using waste as energy source	50 MW and above	All Projects advised to do EIA through IEE process		
11	Oil and Gas pipeline construction and	10 km and above, under 50	50 km and above	IFC Gas	Oil or Gas

No.	Type of investment projects	IEE	EIA	Reference	IFC Standards
	distribution systems	km		distribution systems	transmission pipeline: 4930 Transport via pipeline Gas distribution: 3520 Manufacture of gas; Distribution of gaseous fuels through mains
12	Petroleum and Natural Gas Refineries (LPG, Mo Gas, kerosene, Deiseal, HFO (Heavy Fuel Oil), Petrol, Coal Tar, Bitumen, asphalt, Sulphur	-	All sizes	IFC Petroleum Refining	1920 Manufacture of refined petroleum products
13	Petroleum and Natural Gas Terminals	-	All sizes	IFC Crude Oil and Petroleum Product Terminals	5210 Warehousing and storage
14	Retail Petroleum Networks (including LPG and Natural Gas (CNG)	Storage Capacity under 10 cubic meter (10000 liter)	All Projects advised to do EIA through IEE process	IFC Retail Petroleum Networks	IFC Retail Petroleum Networks
15	Oil storage and Natural Gas Storage Tanks constructions	Oil storage under 10000 tons, Gas storage under 2500 ton	Oil storage 10000 tons and above, Gas storage 2500 ton and above		522 Support activities for transportation
16	Under 230 kw electricity transmission line construction	under 50 km	50 km and above	IFC Electric Power Transmission and Distribution	IFC Electric Power Transmission and Distribution
17	230 km and above (National Grid) electricity transmission line construction		All sizes	IFC Electric Power Transmission and Distribution	IFC Electric Power Transmission and Distribution
18	High Voltage Transformer Stations	*Under 10 hectare*	*10 hectare and above*	IFC Electric Power Transmission and Distribution	IFC Electric Power Transmission and Distribution
19	Oil and natural gas exploration using	All sizes	All Projects advised to do		

No.	Type of investment projects	IEE	EIA	Reference	IFC Standards
	Geo-physical methods		EIA through IEE process		
20	On shore oil and Natural Gas development (Seismic exploration, test well, production, pipeline construction and transportation and distribution, blowing, measurement, rod metal construction, suction and storage, other supporting works, and disclosure	-	All sizes	IFC Onshore Oil and Gas Development	IFC Onshore Oil and Gas Development
21	Off shore oil and Natural Gas development (Seismic exploration, test well, production, pipeline construction and transportation and distribution, blowing, measurement, rod metal construction, suction and storage, other supporting works, and disclosure	-	All sizes	IFC Offshore Oil and Gas Development	IFC Offshore Oil and Gas Development
22	Petroleum-based Organic Chemical Manufacturing		All sizes	IFC Large Volume Petroleum-based Organic Chemical Manufacturing	IFC Large Volume Petroleum-based Organic Chemical Manufacturing
23	Natural Gas Processing (Naphtha, gasoline, kerosene, diesel fuel, waxes, lubes, or methanol		All sizes	IFC Natural Gas Processing	IFC Natural Gas Processing
24	Liquefied Natural Gas(LNG) Facilities		All sizes	IFC Liquefied Natural Gas(LNG) Facilities	IFC Liquefied Natural Gas(LNG) Facilities
Agriculture, Livestock and Forestry Development					
25	Industrial Crop Plantation and Production, Rubber, Oil Palm, Coco, Tea, Coffee, Banana, Sugar Palm)	200 hectare and above, under 3000 hectare	Over 500 hectare	IFC Plantation Crop production	IFC Plantation Crop production

1

No.	Type of investment projects	IEE	EIA	Reference	IFC Standards
26	Annual crop production (cereals□ pulses□ roots□ tubers□ oil-bearing crops□ fiber crops□ vegetables□ and fodder crops)	500 hectares and above, under 3000 hectare	3000 hectares and above	IFC Annual crop production	IFC Annual crop production
27	Clear-felling and logging	Under 500 hectares	500 hectares and above		
28	Concession Forest	Under 10000 hectares	10000 hectares and above		
29	Irrigation systems	100 hectares and above, under 5000 hectares	5000 hectares and above		
30	Livestock production, (cattle, buffalo, horse, sheep, goat and etc.)	Livestock Unit (LSU) 500 and up, under 3000	LSU 3,000 and above	IFC Mammalian Livestock Production	0141 Raising of cattle and buffaloes, and 0142 Raising of Horses and other equines, and 0144 Raising of sheep and goats
31	Poultry production, (chicken, duck and other commercial poultry production)	Chicken, duck and turkey 5,000 and above, under 20,000. Long necked and foot birds 50 and above, under 200 Quail 25,000 and above, under 100,000	Chicken, duck and turkey 20,000 and above. Long necked and foot birds 200 and above. Quail 100,000 and above	IFC Poultry Production	0146 Raising of poultry
33	Raising of swines/pigs	2,000 and above, under 5000	5,000 and above	IFC Mammalian Livestock Production	0145 Raising of swine/pigs
35	Aquaculture, fish fingerling raising in fish ponds and fish raising, shrimp farming	Over 10 hectares of pond area and above	All Projects advised to do EIA through IEE process	IFC Aquaculture	032 Aquaculture
□□	Fish fingerling raising and farming (aquaculture tanks in the rivers)	Tank area 1000 square meters and above, or capable of producing100 tons and above	All Projects advised to do EIA through IEE process		

No.	Type of investment projects	IEE	EIA	Reference	IFC Standards
36	On shore fish and shrimp farming after clearing of mangrove forest	10 hectares and under 100 hectares	100 hectares and above		
37	Raising of oysters and pearl production	50 hectares and under 200 hectares?	200 hectares and above		
38	Wildlife rearing and caring projects	All sizes	All Projects advised to do EIA through IEE process		
39	Reptiles farming	Crocodile, hard skin with four legged and tail reptiles and large snakes under 1,000. Snakes and other reptiles under 5000	Crocodile, hard skin with four legged and tail reptiles and large snakes 1,000 and above. Snakes and other reptiles 5000 and above		
Industry Development, food and beverages					
40	Meat Processing (Cattle, pigs, Sheep and others)	15 ton per day and above, under 50 ton per day	50 tone per day and above	IFC Meat Processing IPPC 2008 Annex 1: 6.4(a)	1010 Processing and preserving of meat
41	Poultry Processing (Chicken, duck and other commercial poultry processing and preservation of meat plants)	15 ton per day and above, under 50 ton per day	50 tone per day and above	IFC Poultry Processing IPPC 2008 Annex 1: 6.4(a)	1010 Processing and preserving of meat
42	Fish processing (fish, crustaceans, gastropods, cephalopods, and Bivalves, includes by products such as fish oil and fish meals)	15 ton per day and above, under 75 ton per day	75 tone per day and above	IFC Fish Processing IPPC Annex 1: 6.4(b)	1020 Processing and preserving of fish, crustaceans and mollusks
43	Food and Beverage Processing (Value added product from meat and vegetable raw materials)	10 tons and above, under 20 tons	20 tons and above	IFC Food and Beverage Processing	IFC Food and Beverage Processing
44	Dairy processing (from raw to final products)	Based on annual production 200 tons per day and above,	All Projects advised to do EIA through IEE process	IFC Dairy Processing IPPC	IFC Dairy Processing IPPC

No.	Type of investment projects	IEE	EIA	Reference	IFC Standards
		50 tons and above		2008 Annex 1: 6.4(c)	2008 Annex 1: 6.4(c)
45	Manufacture of prepared animal feeds	Under 300 tons per day < 600 t/d if the production is operating a maximum of 90d/a	300 tons per day and above ≥ 600 t/d if the production is operating a maximum of 90d/a	DK: Environmental Permitting Decree	1080 Manufacture of prepared animal feeds
46	Manufacture of starches and starch products	Under 300 tons per day < 600 t/d if the production is operating a maximum of 90d/a	300 tons per day and above ≥ 600 t/d if the production is operating a maximum of 90d/a	DK: Environmental Permitting Decree	1062 Manufacture of starches and starch products
□□	Manufacture of grain mill products (Rice and wheat flour, flours of corn, coffee, Quaker, beans, chilly and assorted vegetables	Under 300 tons per day < 600 t/d if the production is operating a maximum of 90d/a	300 tons per day and above ≥ 600 t/d if the production is operating a maximum of 90d/a	DK: Environmental Permitting Decree	1061 Manufacture of grain mill products
□□	Vegetable oil processing	Under 300 tons per day < 600 t/d if the production is operating a maximum of 90d/a	300 tons per day and above ≥ 600 t/d if the production is operating a maximum of 90d/a	IFC Vegetable Oil Processing DK: Environmental Permitting Decree	1040 Manufacture of vegetable and animal oils and fats
49	Mono Sodium Glutarmate Factory Construction (Seasoning Powder)	50 tons per day and under 100 tons per day	100 tons per day and above		
50	Sugar mill factory	Refined sugar under 300 tons per day < 600 t/d if the production is operating a maximum of 90d/a	Refined sugar 300 tons per day and above ≥ 600 t/d if the production is operating a maximum of 90d/a	IFC sugar manufacturing DK: Environmental Permitting Decree	IFC sugar manufacturing DK: Environmental Permitting Decree
51	Breweries (Liquor, Wine, Beer)	Under 300 tons per day < 600 t/d if the production is operating a maximum of 90d/a	300 tons per day and above ≥ 600 t/d if the production is operating a maximum	IFC Breweries DK: Environmental Permitting Decree	IFC Breweries DK: Environmental Permitting Decree

No.	Type of investment projects	IEE	EIA	Reference	IFC Standards
		Under 500,000 liters per year	of 90d/a 500,000 liters per year and above		
52	Non-liquor beverages Factories (Soda, Soft drinks, mineral water)	10,000 liters per day and above	All EIA proposals by IEE		
53	Ice mills Constructions	300 tons per day and above, under 1,000 tons per day	1,000 tons per day and above		
54	Mineral water productions, plastic bottle and glass bottle production	50,000 liters mineral water per day and above	All EIA proposals by IEE		
55	Tobacco and all tobacco related products	Under 15 production tons per day	15 tons per day and above		
Clothing, textiles and leathers					
56	Textile Manufacturing (clothing, textile and artificial textiles)	All sizes	All EIA proposals by IEE	IFC Textile Manufacturing	13 Manufacture of textile
57	Leather products (Natural and artificial hand bags, box, suitcases, chairs, shoes etc.	1000 product tons per year and above. Under 500,000- 1,000,000 tons per year	All EIA proposals by IEE *1,000,000 tons per year and above*	DK: Environmental Permitting Decree	
58	Tanning and dressing of leather; dressing and dyeing of fur	Under 12 finished product tons per day	12 finished tons per day and above	IFC Tanning and Leather Finishing IPPC 2008 Annex 1: 6.3	1511 Tanning and dressing of leather; dressing and dyeing of fur
Wood-based Industry					
59	Sawmilling and Manufactured Wood Products	Sawmills raw material 3000 cubic meters and above annually, less than 50,000 cubic meters annually. Manufactured Wood Products 1000 cubic meters annually and above, under	Sawmills raw material 50,000 cubic meters annually and above. Manufactured Wood Products 15,000 cubic meters annually and above	IFC Sawmilling and Manufactured Wood Products	IFC Sawmilling and Manufactured Wood Products

No.	Type of investment projects	IEE	EIA	Reference	IFC Standards
		15,000 cubic meters annually			
60	Board and Particle-based Products (Boards, Parquet, veneer, and also board from sugar cane, jute etc.)	Under 600 cubic meter per day, under 420 tons per day	600 cubic meter per day and above, 420 tons per day and above	IFC Board and Particle-based Products DK: Environmental Permitting Decree	IFC Board and Particle-based Products DK: Environmental Permitting Decree
61	Pulp and Paper Mills	Under 20 tons of pulp per day and above, under 50 tons per day	50 tons of pulp per day and above	IFC Pulp and Paper Mills	1070 Manufacture of pulp and paper and paperboard
62	Printing Services and other decorating services (Using organic solvents, decoration, printing, cover making, water proof, cutting, painting, cleaning or composing, de-coating etc.)	6 kg per hour and above, under 150 kg per hour of organic solvents	150 kg of organic solvents per hour and above	IFC Printing IPPC 2008 Annex 1: 6.7 DK: Environmental Permitting Decree	IFC Printing IPPC 2008 Annex 1: 6.7 DK: Environmental Permitting Decree
Chemicals					
63	Large volume Inorganic Compounds Manufacturing and Coal Tar Distillation (Ammonia, Nitric Acid, Hydrochloric acid, Sulphuric acid, Hydro fluoric acid, Phospheric acid and Choloro-alkhaline (chlorine, caustic soda, soda ash etc.) coal tar (naphthalene, phenanthrine, Intherrazin	-		IFC Large volume Inorganic Compounds Manufacturing and Coal Tar Distillation	IFC Large volume Inorganic Compounds Manufacturing and Coal Tar Distillation
64	Petroleum-based Polymers Manufacturing	-	All sizes	IFC Petroleum-based Polymers Manufacturing	IFC Petroleum-based Polymers Manufacturing
65	Coal Processing (processing of coal for gases, fuel liquids and other chemical liquids		All sizes	IFC Coal Processing	IFC Coal Processing

No.	Type of investment projects	IEE	EIA	Reference	IFC Standards
66	Chemical fertilizers production	-	All sizes		
67	Pesticide Manufacturing Formulation, and Packaging	-	All sizes	IFC Pesticide Manufacturing Formulation, and Packaging	IFC Pesticide Manufacturing Formulation, and Packaging
68	Oleo chemicals (fatty acid, glysarine, extracting fats and oil from vegetable and animal products using bio-diesel		All sizes	IFC Oleo chemicals Manufacturing	IFC Oleo chemicals Manufacturing
69	Pharmaceuticals and Biotechnology Manufacturing	-	All sizes 50 tons annually and above (Viet Nam)	IFC Pharmaceuticals and Biotechnology Manufacturing	IFC Pharmaceuticals and Biotechnology Manufacturing
70	Medical hospital equipment and measurement apparatus, eye-glass, time-pices (watches) production	all sizes	All projects proposed for EIA by IEE		
71	Rubber and glues production	2000 tons annually and above	All projects proposed for EIA by IEE		
72	All products of explosive materials		All sizes		2029 Manufacture of other chemical products
73	Other basic organic chemical productions		All sizes	IPPC 2008 Annex 1: 4.1	IPPC 2008 Annex 1: 4.1
74	Other basic non-organic chemical productions		All sizes	IPPC 2008 Annex 1: 4.2	IPPC 2008 Annex 1: 4.2
75	Manufacture of other chemical products (paints, ink, varnish oil, bar soap, powder soap, perfume, fire-works and photographic chemicals	5 tons per day and under 10 tons per day	10 tons per day and above		2029 Manufacture of other chemical products
76	Fire extinguisher and other firefighting equipment production	All sizes	All projects proposed for EIA by IEE		

No.	Type of investment projects	IEE	EIA	Reference	IFC Standards
77	Carbon dioxide gas production, retailing and industrial use liquid productions	1000 tons annually and above, under 3000 tons annually	3000 tons annually and above		
Household Goods					
78	Manufacture of glass and glass products	All sizes	All projects proposed for EIA by IEE	IFC Glass Manufacturing	2310 Manufacture of glass and glass products
79	Ceramic Tile and Sanitary Ware Manufacturing	Ceramic materials production 1000 tons per year and above, ceramic tiles 10000 tons annually and above	All projects proposed for EIA by IEE	IFC Ceramic Tile and Sanitary Ware Manufacturing *(Typical production levels for ceramic manufacturing facilities vary from 10 to 50 tons/day for fine ceramics and 450 to 500 tons/day for ceramic tiles)*	IFC Ceramic Tile and Sanitary Ware Manufacturing *(Typical production levels for ceramic manufacturing facilities vary from 10 to 50 tons/day for fine ceramics and 450 to 500 tons/day for ceramic tiles)*
80	TSR or rubber blocks productions	-	All sizes		
Construction Materials					
81	Cement and Lime Manufacturing	Cement under 30 tons per hour, lime under 50 tons per day	Cement 30 tons per hour and above, lime 50 tons per day and above □	IFC Cement and Lime Manufacturing	IFC Cement and Lime Manufacturing
82	Coal Sludge (Tar?) □□□□□□□□□□□□□□□□□□□□□□ □□□□□□□	All sizes	All projects proposed for EIA by IEE		
83	Other construction materials and raw materials production	30,000 tons per year and above, under 50,000 tons per year	50,000 tons per year and above		
84	Asphalt production	Under 100 tons per day	100 tons per day and above	IFC Petroleum Refinery	IFC Petroleum Refinery
Metal, machinery and electronic products					

No.	Type of investment projects	IEE	EIA	Reference	IFC Standards
85	Metal, Plastic, and Rubber Products Manufacturing	Production area 1000 sq. meters and above, use of organic solvents 6 kg per hour and above	All projects proposed for EIA by IEE	IFC Metal, Plastic, and Rubber Products Manufacturing	IFC Metal, Plastic, and Rubber Products Manufacturing
86	Base Metal Smelting and Refining (Lead, Zinc, Copper, Nickel and aluminum)	Non-iron metals under 20 tons per day of production, lead and non-cadmium metals under 4 tons per day of production	Non-iron metals 20 tons per day of production and above, lead and non-cadmium metals 4 tons per day of production and above	IFC Base Metal Smelting and Refining	IFC Base Metal Smelting and Refining
87	Integrated Steel mills (Raw Iron, and less steel %)	Under 2.5 ton per hour	2.5 ton per hour and above	IFC Integrated Steel mills	IFC Integrated Steel mills
88	Foundries (smelting of Iron, Steel, and noniron metals such as Aluminum, Copper, Lead, Nickel, Tin, Magnesium and Titanium based metals)	Iron under 20 tons per day, non-iron metals under 20 tons per day, precious metals under 4 tons per day	Iron 20 tons per day and above, non-iron metals 20 tons per day and above, precious metals 4 tons per day and above	IFC Foundries IPPC 2008 Annex 1: 2.4 and 2.5(b)	IFC Foundries IPPC 2008 Annex 1: 2.4 and 2.5(b)
89	Semiconductors & Other Electronics Manufacturing (Printed Circuit Boards-PCBs) (Printed Wiring Assembles-PWAs) connectors and electromagnetic products	Production area 1000 sq. meters and above, organic solvent usage 6 kg per hour and above	All projects proposed for EIA by IEE	IFC Semiconductors & Other Electronics Manufacturing	IFC Semiconductors & Other Electronics Manufacturing
90	Manufacture of electronic components, Electronic apparatus, household electronic apparatus (Computer, communication devices, laboratory devices, general electric devices, electric motor, Manufacture of electric lighting equipment	Production area 1000 sq. meters and above, organic solvent usage 6 kg per hour and above	All projects proposed for EIA by IEE		261 Manufacture of electronic components 271 Manufacture of electric motors, generators, transformers and electricity distribution and control apparatus

No.	Type of investment projects	IEE	EIA	Reference	IFC Standards
					274 Manufacture of electric lighting equipment
91	Manufacture of Batteries and accumulators	Under 3000 tons annually	3000 tons annually and above		272 Manufacture of Batteries and accumulators
92	Manufacture of machinery and equipment, Manufacture of motor vehicles	Production area 1000 sq. meters and above, organic solvent usage 6 kg per hour and above	All projects proposed for EIA by IEE		28 Manufacture of machinery and equipment 2910 Manufacture of motor vehicles
93	manufacture of weapons and ammunition	-	All sizes		2520 manufacture of weapons and ammunition
94	Non-iron metals smelting, iron mongering, wiring etc.	-	Products 20 tons per day and above		
95	Building of ships and boats, and shipyards	Shipyard area under 1 hectare and drawing capacity under 20,000 tons	Shipyard area 1 hectare and above, and drawing capacity 20,000 tons and above		301 Building of ships and boats
96	Manufacture of domestic appliance (may be same as 90, but not electric powered) (IFC standards different)	Production area 1000 sq. meters and above, organic solvent usage 6 kg per hour and above	All projects proposed for EIA by IEE		2750 Manufacture of domestic appliance
Vehicles					
97	Locomotive engines and carriages; buildings, repairing and assembling	-	100 carriages per year and above		
98	Old vehicles crushing business	Under 10 motor vehicles per day, under 50 motor cycles	10 motor vehicles per day and above, r 50 motor		Road Transport Directive

No.	Type of investment projects	IEE	EIA	Reference	IFC Standards
		per day	cycles per day and above		(Myanmar) □□□
	Auto Repair, Assembling, Maintenance Workshop	Use area 1000 meter and above			ditto
	Motor vehicles and Mortar cycles assembling and manufacturing plant	Use area 1000 meter and above	10,000 motor cycles per year and above, 500 motor vehicles per year and above		ditto
	Spare parts, accessories parts and engine production plant	Use area 1000 meter and above	1,000 ton per year and above		ditto
	Tire Factory (rubber tire, tubes etc.)	Use area 1000 meter and above	All size motor vehicle tires 50,000 per year and above. Cycle and bicycle tires 100,000 per year and above		ditto
Wastes					
99	Non-hazardous Waste Management Facilities	Landfilling under 10 tons per day. Waste under 25,000 tons (per year?). Other wastes under 50 tons per day	Landfilling 10 tons per day and above. Waste 25,000 tons (per year?) and above. Other wastes 50 tons per day and above	IFC Waste Management Facilities IPPC 2008 Annex 1: 5.3 and 5.4 DK: Environmental Permitting Decree	IFC Waste Management Facilities IPPC 2008 Annex 1: 5.3 and 5.4 DK: Environmental Permitting Decree
100	Non-Hazardous Wastes Incinerator Plant	Under 3 tons per hour	3 tons per hour and above	IFC Waste Management Facilities IPPC 2008 Annex 1: 5.2 DK: Environmental Permitting Decree	IFC Waste Management Facilities IPPC 2008 Annex 1: 5.2 DK: Environmental Permitting Decree
101	Recycling and Reuse of non-hazardous	Under 50 tons per day	50 tons per day and above	IFC Waste	IFC Waste

No.	Type of investment projects	IEE	EIA	Reference	IFC Standards
	waste			Management Facilities IPPC 2008 Annex 1: 5.3 DK: Environmental Permitting Decree	Management Facilities IPPC 2008 Annex 1: 5.3 DK: Environmental Permitting Decree
102	Hazardous solid waste disposal	-	All sizes	IFC Waste Management Facilities	IFC Waste Management Facilities
103	Recycle and reuse of Hazardous waste	Under 10 tons per day	10 tons per day and above	IFC Waste Management Facilities IPPC 2008 Annex 1: 5.1 DK: Environmental Permitting Decree	IFC Waste Management Facilities IPPC 2008 Annex 1: 5.1 DK: Environmental Permitting Decree
104	(Waste water treatment plant-centralized system)	-	All sizes	IFC Water and Sanitation	IFC Water and Sanitation
105	Collection system of waste water	Drainage canal 1 km and above, under 10 km	Drainage canal 10 km and above	IFC Water and Sanitation	IFC Water and Sanitation
Water Distribution					
106	Underground water development for Industry, Agriculture and Urban use	Under 4,500 cubic meter per day	4,500 cubic meter per day and above□	IFC Water and Sanitation	3600 Water collection, treatment and supply
Infrastructure and service development plans					
107	Land Filling projects for ponds, rivers, streams, canals, wetlands, water logged areas, swamps which are threatening to the people.	Under 50 hectares□	50 hectares and above		
108	Dams and Reservoirs	Bank under 15 meter or Storage water area under 400	Bank 15 meter and above or Storage water area 400		

No.	Type of investment projects	IEE	EIA	Reference	IFC Standards
		hectare	hectare and above		
109	Shipping (Freight and Passenger transportation, m	All sizes	All projects proposed for EIA by IEE	IFC Shipping	IFC Shipping
110	Ports, Harbors and Terminals	Under 25 hectares	25 hectares and above	IFC Ports, Harbors and Terminals	IFC Ports, Harbors and Terminals
111	Hospital Projects (Health Care Facilities)	All sizes	All projects proposed for EIA by IEE	IFC Health Care Facilities	IFC Health Care Facilities
112	Golf Courses	9 holes	18 holes		
113	Special Economic Zones, Industrial Zones, establishment and development	-	All sizes		
114	Tourism and Hospitality Development	80 rooms and above, under 200 rooms, Service area 4,000 sq. meters and above, under 10,000 sq. meters, or use area 20 hectares and above, under 50 hectares	200 rooms and above, service area 10,000 sq. Meter and above, use area 50 hectare and above	IFC Tourism and Hospitality Development	IFC Tourism and Hospitality Development
115	Cemetery Building, burial, Incinerating , etc.	All sizes			
116	Other large urban infrastructure projects (River and Sea retaining walls, Coastal Sea wall)	Under 2 km length of under 25 hectares	2 km length and above or 25 hectares and above		
117	Sand dredging	10,000 cubic meter per year and above, under 200,000 cubic meter	200,000 cubic meter and above		
118	River Training (Control of river channel, water surface and water volume)		All sizes		
Transport					

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No.	Type of investment projects	IEE	EIA	Reference	IFC Standards
119	Railways (Infrastructure for railways transport, railway track building, maintenance and other railway transports	Under 5 km	5 km and above	IFC Railways	IFC Railways
120	Airport and runway building	Runway under 2100 meter	Runway 2100 meter and above	IFC Airports EBRD	IFC Airports EBRD
121	Bridge and river bridges building	Length 183 meter and above	All projects proposed for EIA by IEE		Ministry of Construction
122	Valley crossing bridges	Length 0.8 meter and up, under 10 km length	10 km and above		
123	Toll roads (New highway or extension of highway)	Length 10 km and up, under 50 km	50 meter and above	IFC Toll Roads	IFC Toll Roads
124	Tunnel building	Under 1 km length	Length 1 km and above		
125	Building roads (Union, State and Division, District and urban	Length 50 km and above, under 100 km	100 km and above		
126	Upgrading roads (Union, State and Division, District and urban)	50 km and above	All projects proposed for EIA by IEE		
127	Projects using partial or whole of National and regional protected areas, cultural and historical heritages, archaeology sites, or local rare landscapes or protected areas	-	all sizes		
128	Construction of Mass Rapid Transport Projects	All sizes	All projects proposed for EIA by IEE		
Mining and extraction					
129	Rock, gravel and sand mining from rivers and sea	1000 cubic meters per year and above. Under 5,000 cubic meter	5,000 cubic meter per year and above		
130	Construction Materials Extraction (Lime stone, shale, sand, gravel, mud, Gordan,	Under 100,000 cubic meter per year	100,000 cubic meter per year and above	IFC Construction Materials	IFC Construction Materials

No.	Type of investment projects	IEE	EIA	Reference	IFC Standards
	Feldspar, Sandstone, Quartz, rock sheets			Extraction	Extraction
131	Coal mining from earth surface	Under 100,000 tons per year	100,000 tons per year and above	IFC Mining	IFC Mining
132	Underground Coal Mining	Under 100,000 tons per year	100,000 tons per year and above	IFC Mining	IFC Mining
133	Industrial Mineral from surface soil	Under 75,000 tons per year	75,000 tons per and above	IFC Mining	IFC Mining
134	Industrial Minerals from underground (Igneous, sedimentary, Phosphate, salt, sulphur, phosphate etc.)	Under 100,000 tons per year	100,000 tons per year and above		
135	Iron, noniron and precious metals from surface soil	Under 50,000 tons per year	50,000 tons per year and above		Ministry of Mines
~~136~~	Iron, noniron and precious metals from surface soil(including sedimentary rocks)	~~Under 75,000 tons per year~~	~~75,000 tons per year and above~~		Ministry of Mines
~~137~~	~~Extraction of gold, other metals and gems from rivers streams and sandy loams~~	~~Under 50,000 tons per year~~	~~50,000 tons per year and above~~		Prohibited by notification 26/2012, dated 28-3-2012 of Ministry of Mines
138	Raw minerals extraction projects (no use of chemicals)	Small scale gold mining under 20 acres. Other small scale minerals under 50 acres	All sizes Small scale gold mining 20 acres and above. Other small scale minerals 50 acres and above		
139	Mineral refining process (hazardous and chemicals prohibited)	Small scale minerals production as prescribed under Mines Law and Rules	Large scale mineral production, 50,000 cubic meters and above		

No.	Type of investment projects	IEE	EIA	Reference	IFC Standards
140	Mineral production and refining using hazardous chemicals)	Small scale gold production under 20 acres, other small scale non-gold minerals under 50 acres	All sizes Small scale gold production 20 acres and above, other small scale non-gold minerals 50 acres and above		
141	Rock mining (limonite, rutile, zircon and monazite)	Under 50,000 tons per year	50,000 tons per year and above		
~~142~~	~~(In situ Leaching)~~		~~All sizes~~	~~IFC Mining~~	Ministry of Mines prohibited the process
143	Mining	Small scale gold production as prescribed by Mines Law and Rules, under 20 acres, other small scale non-gold minerals under 50 acres	Small scale gold production as prescribed by Mines Law and Rules, 20 acres and above, other small scale non-gold minerals under 50 acres		
144	Coal mining	Small scale coal mining prescribed by Mines Law and rules	Large scale coal mining prescribed by Mines Law and rules		
145	(Soda Ash) production	Small scale production prescribed by Mines Law and rules	Large scale production prescribed by Mines Law and rules		
146	Salt mining	Small scale production prescribed by Mines Law and rules	Large scale production prescribed by Mines Law and rules		
147	Limestone production	Small scale production of	Large scale production of		

No.	Type of investment projects	IEE	EIA	Reference	IFC Standards
		lime stone prescribed by Mines Law and rules	lime stone prescribed by Mines Law and rules		
148	Gem production in the Mineral Grants	-	250 hectares and above		
~~149~~	~~Mineral mining for cement factory~~	Small scale production prescribed by Mines Law and rules	Large scale production prescribed by Mines Law and rules		
150	Mining projects at archaeology sites, Historical sites, Historical parks, World heritage sites. Watersheds, sea place, forests, RAMSA wet lands, swamps near World heritage sites	-	all sizes		
151	Mining projects using explosives	Small scale gold production as prescribed by Mines Law and Rules, under 20 acres, other small scale non-gold minerals under 50 acres	Small scale gold production as prescribed by Mines Law and Rules, 20 acres and above, other small scale non-gold minerals under 50 acres		
~~152~~	~~Other Mining projects~~	Small scale production prescribed by Mines Law and rules	Large scale production prescribed by Mines Law and rules		
153	Mining concessions under Mining Law in Forest Lands	All sizes	All projects proposed for EIA by IEE		

5th Myanmar Oils and Gas Seminar and Exhibition

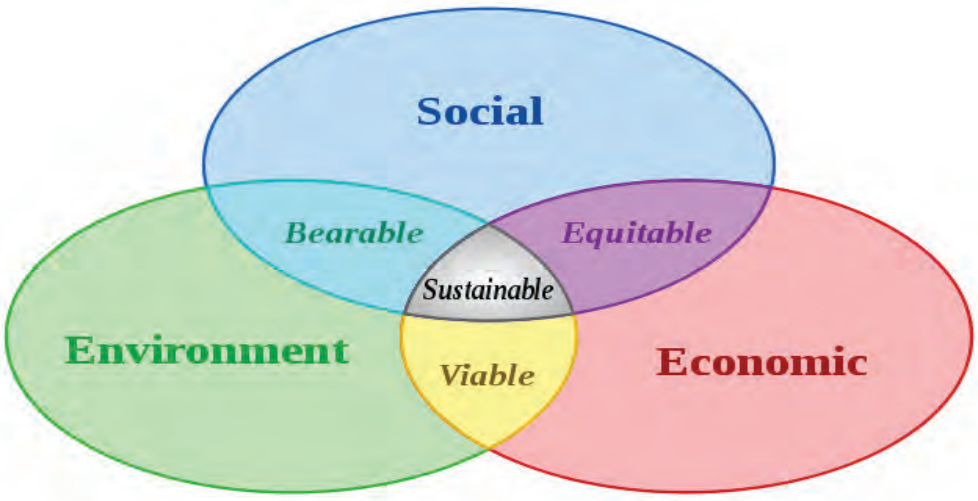
Jan 29-30, 2015. Yangon, Myanmar

Environmental Impact Assessment Procedures in Myanmar

U Myo Lwin
Director
Environmental Conservation Department
Ministry of Environmental Conservation and Forestry

Strategy for Environmental Safeguards

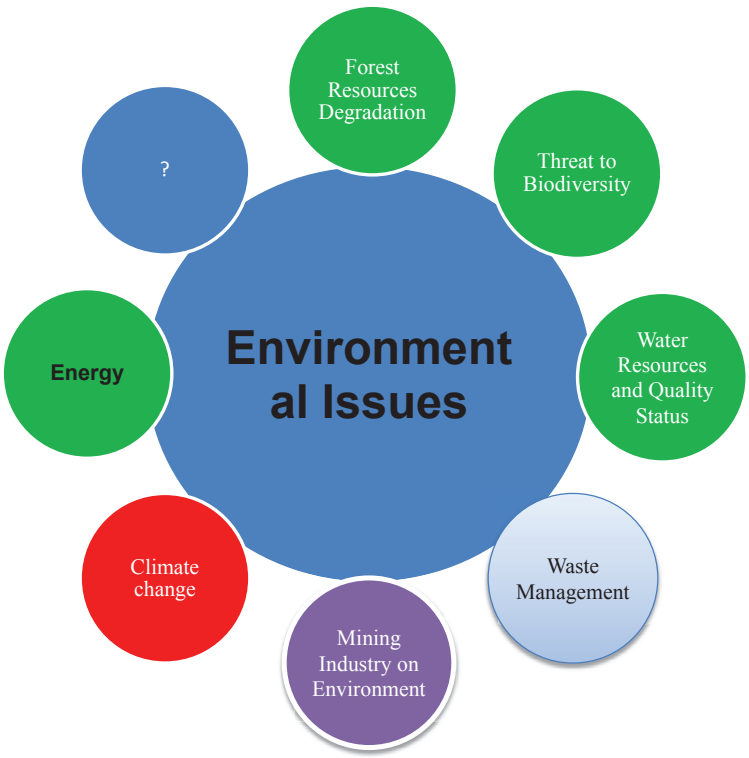
To work for **Economic Development in Parallel with Environmental Conservation**



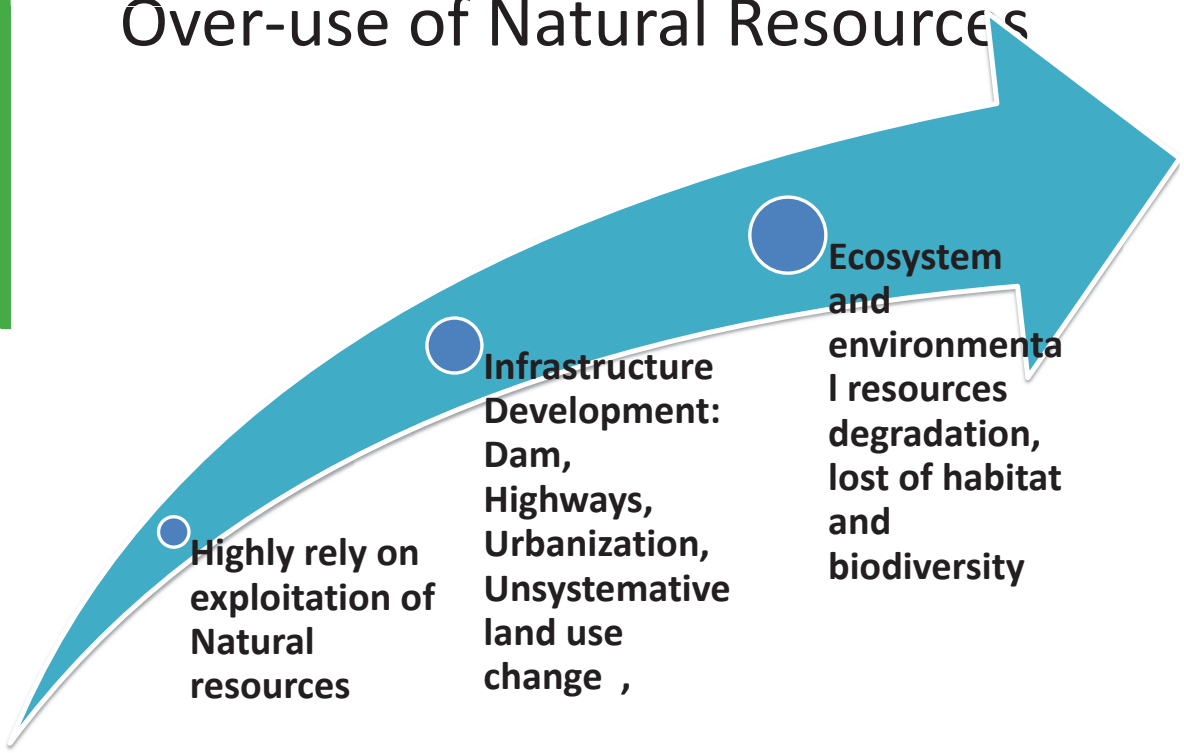
National Environmental Policy (1994)

- To achieve harmony and balance between socio-economic, natural resources and environment through the **integration of environmental considerations into the development process** enhancing the quality of the life of all its citizens.
- Environmental protection should always be the **primary objective in seeking development**

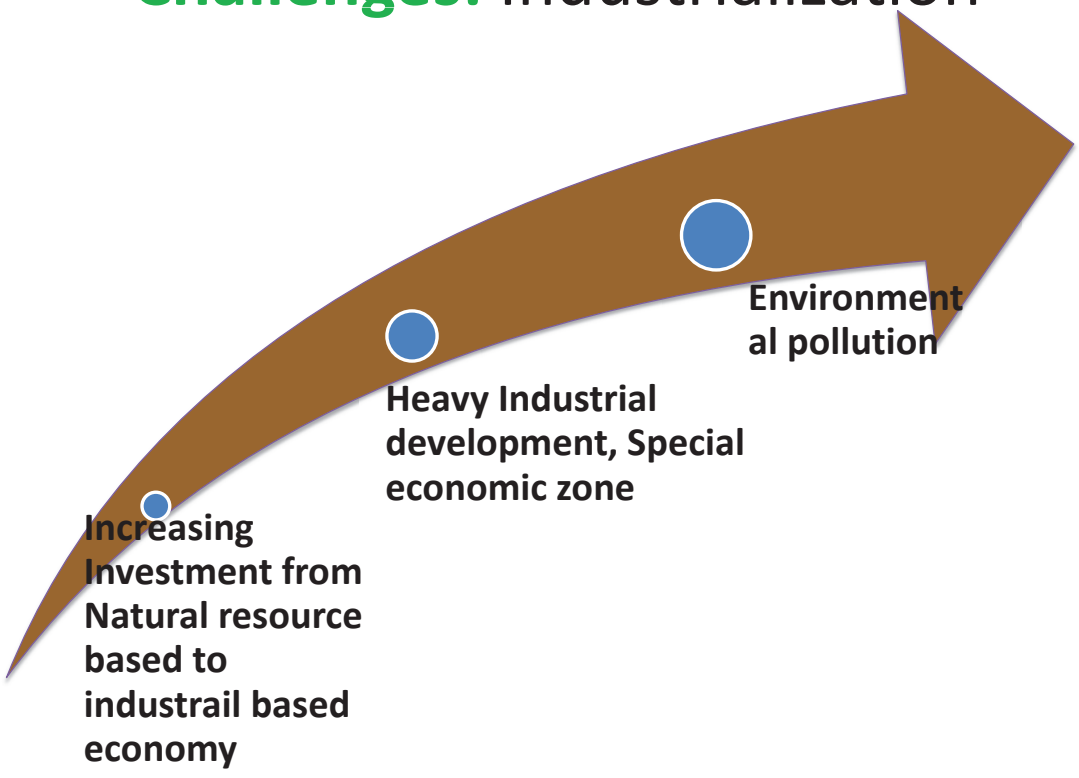
Priority Areas of environmental issues (EPA-2009)



Challenges :
Over-use of Natural Resources

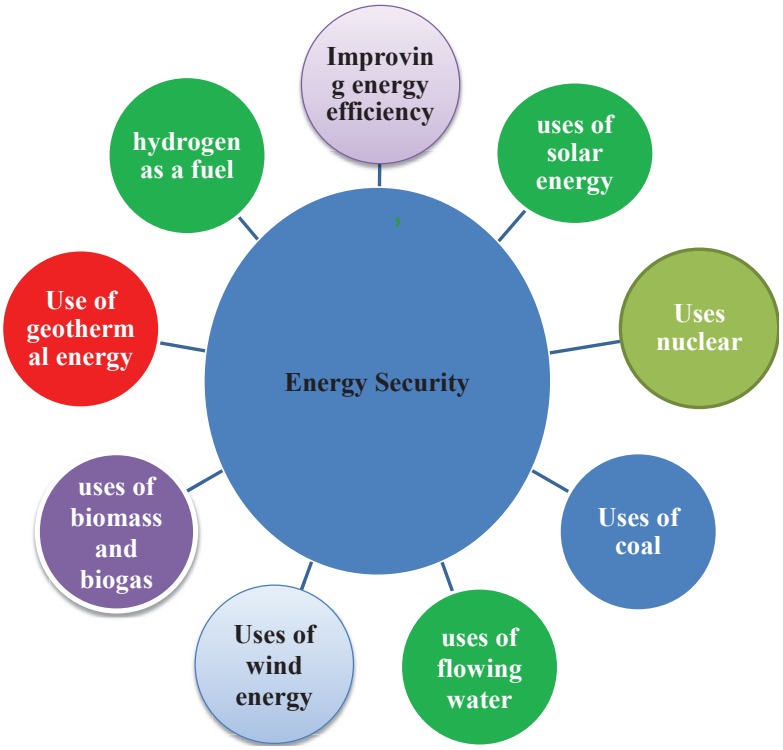


Challenges: Industrialization



Energy and Environment

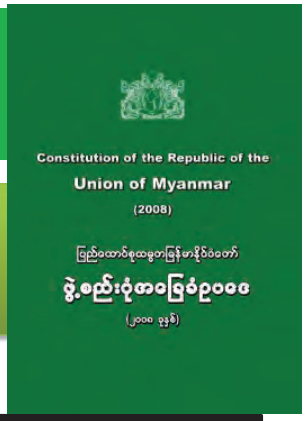
- Central role in human and Economic development
- Key aspect of sustainable development.
- Impacts of Energy use are: emissions, waste, land, and water
- Improve our technology for energy efficiency



Potential issues/ Impacts

- Damage to aquatic animal and marine ecosystem, mangrove ecosystem
- Soil and forest deterioration by deep seaport
- Pollution by oil containers
- Water pollution by Oil spilling
- Water quality declination
- Damage to coral ecosystem
- Air pollution
- Pollution by Waste
- Public health
- Social and cultural

State Constitution



Article 45

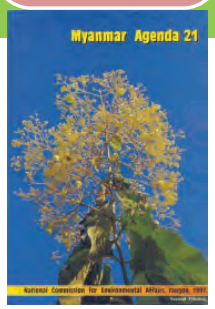
- The Union Shall protect and conserve natural environment.

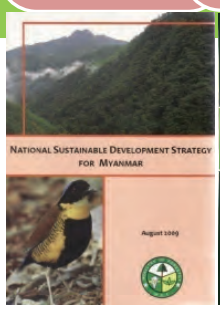
Article 390

- Every citizen has the duty to assist the Union in carrying out the following matters:
  - (a) preservation and safeguarding of culture heritage
  - (b) environmental conservation
  - (c) striving for development of human resources
  - (d) protection and preservation of public property.

Policy and Strategies Developed

- Environmental Policy 1994
- Myanmar Agenda-21 1997
- NSDS 2009
- Environmental Conservation Law 2012
- Environmental Conservation Rules 2014





Policy guidelines : Guidelines of Investment by MIC

Foreign Investment Rules:

34. In submitting the proposal for the capital intensive investment projects designated by the Commission and designated businesses which need to assess the environmental impact by the Ministry of Environmental Conservation and Forestry, **the environmental impact assessment and social impact assessment reports shall be attached together with the investment proposal.**

Initiating to set EIA systems in Myanmar

Legal Framework

- **Environmental Conservation Law, 2012**
- **Environmental Conservation Rules, 2014**
- **EIA Procedures (6th draft), 2014 (on finalizing)**
- **In connection with Investment Law and Rules which is main entrance of proposal for Large scale project or business or activity**

Environmental Conservation Law, 2012

The following provisions of Duties and Powers relating to the Env Conv. of the Ministry are stipulated in EC Law

Section 7

(m) To lay down and carry out a system of EIA and SIA as to whether or not a project or activity to be undertaken by any Government department, organization or person may cause a significant impact on the environment;

(o) To manage to cause the polluter to compensate for environmental impact, cause to contribute fund by the organizations which obtain benefit from the natural environmental service system, cause to contribute a part of the benefit from the businesses which explore, trade and use the natural resources in environmental conservation works;

Environmental Conservation Rules (2014)

54. The business, department, organization or person who would carry out categories of plan, business or activity stipulated under rule 52:

(a) shall carry out environmental impact assessment for his plan, business or activity;

(b) submit to the Ministry in advance by which organization or person, the environmental impact assessment is intended to be carried out;

(c) submit the environmental impact assessment report to the Ministry.

Requirements concerning organizations or persons undertaking EIA and IEE

•Any organization or person who wishes to prepare an EIA or IEE shall apply to register (work permit) with the Ministry.

•Such application shall include:

name and contact address/ profile of the organization or individual/ *as the case may be, profiles of its key personnel if the applicant is an organization, relevant experience of the organization and each of its key personnel in the field of environmental assessment/* academic credentials/ relevant certificates or accreditations/ references from clients for whom the organization has performed environmental assessment work previously/ and evidence of professional or other liability insurance covering the work and services to be performed by such organization or person.

The applicant for registration shall be required to make payment of any fees and charges that may be required by the Ministry in connection with the application submission. The registration shall be valid for a period of 3 years and the applicant shall renewal prior 3 months to the end of validation.

11. The Projects and/or activities that are constructed or under construction before the issuance of this Procedure and/or the Projects and/or activities that already exist or in respect of which pre-construction or construction has already commenced when this Procedure is issued and/or extending the existing project size, increased production, construction, renovation, installation or activities that intend to extend shall comply with the article 3 of this procedures.

IEE / EIA Process

Screening IEE or EIA or No EIA/IEE

IEE Process

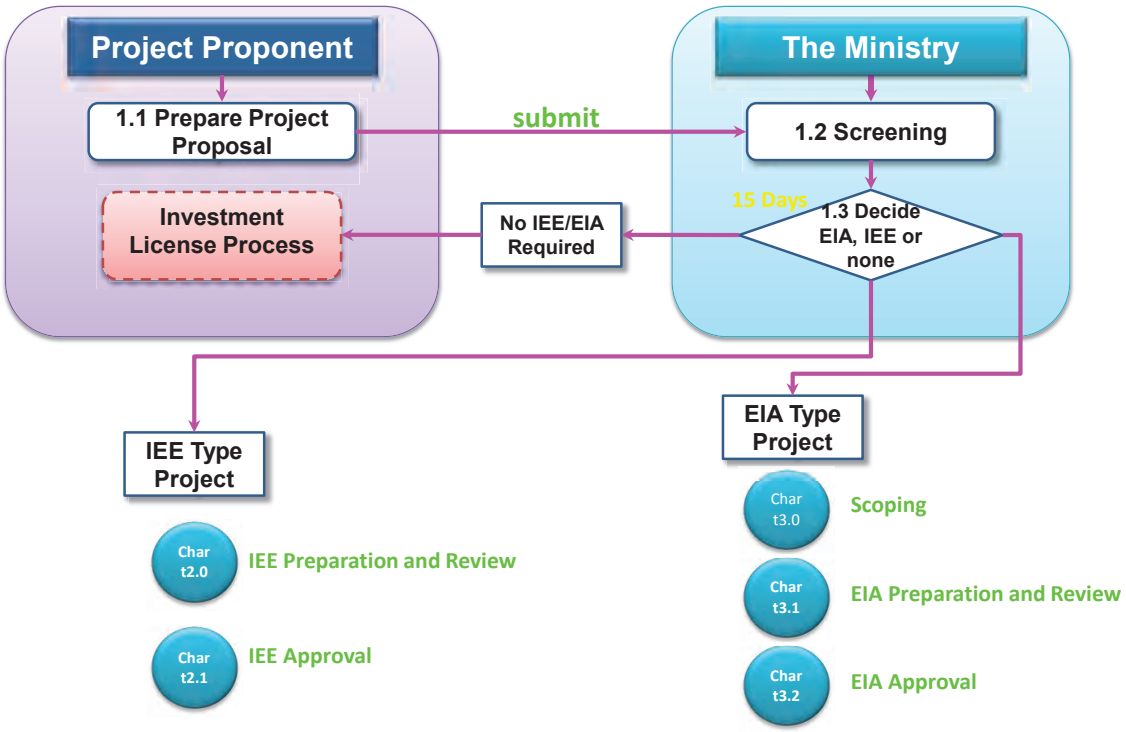
- **IEE preparation and Review**
- **IEE Approval**

EIA Process

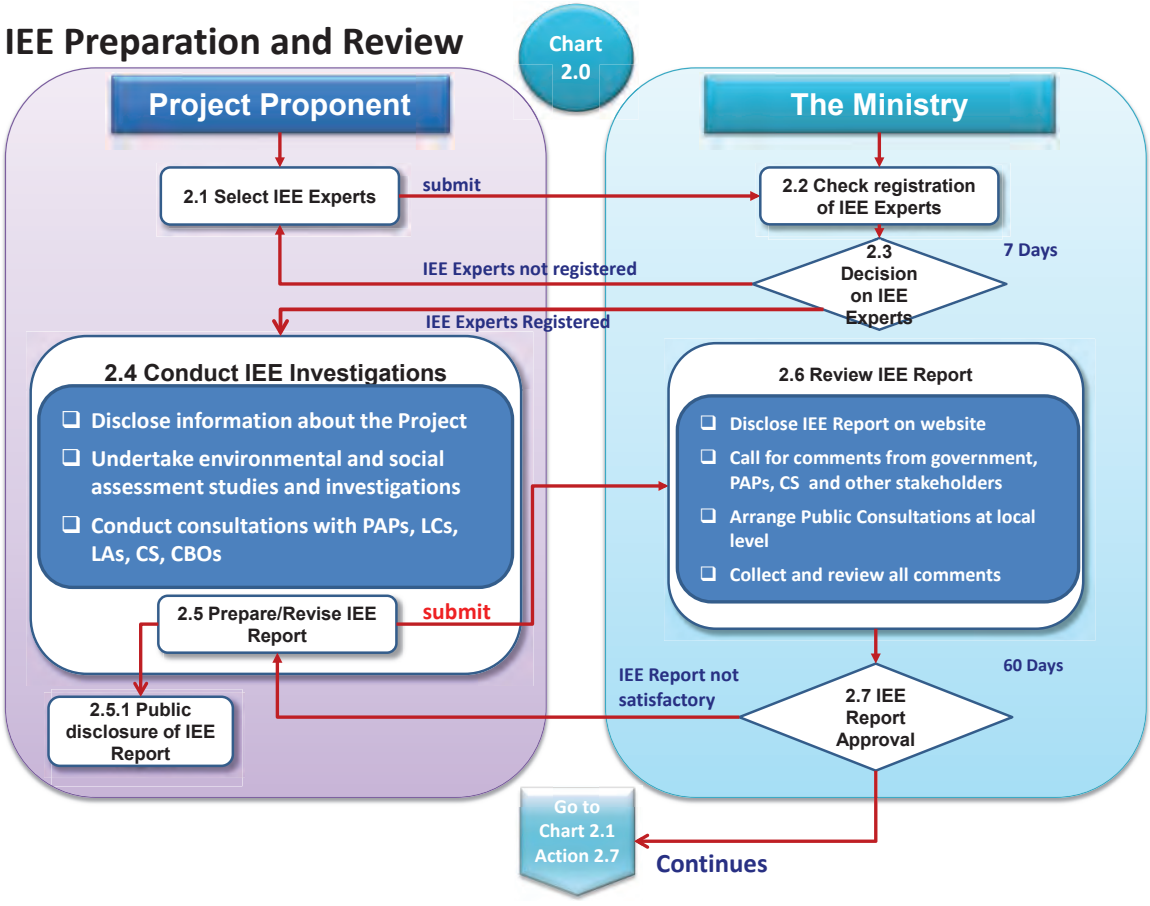
- **Scoping for EIA**
- **EIA preparation and Review**
- **EIA Approval**

Appeal

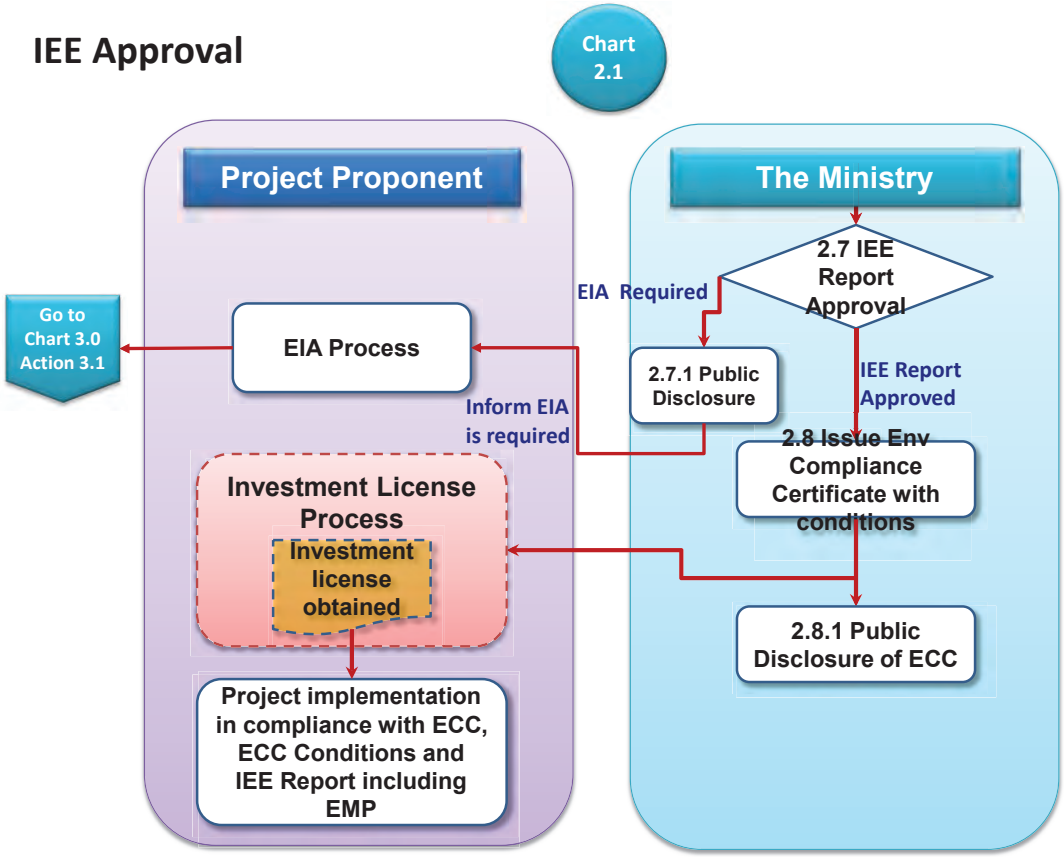
Screening



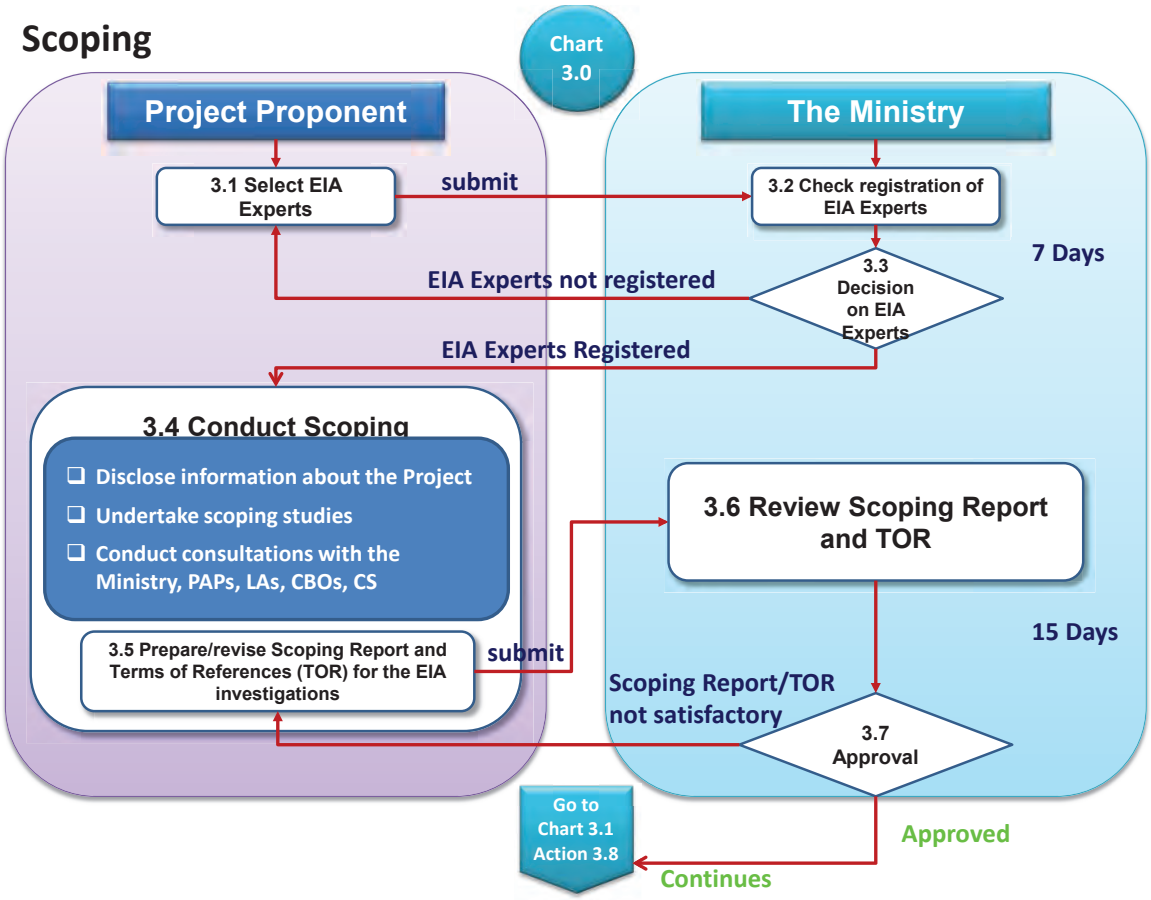
IEE Preparation and Review

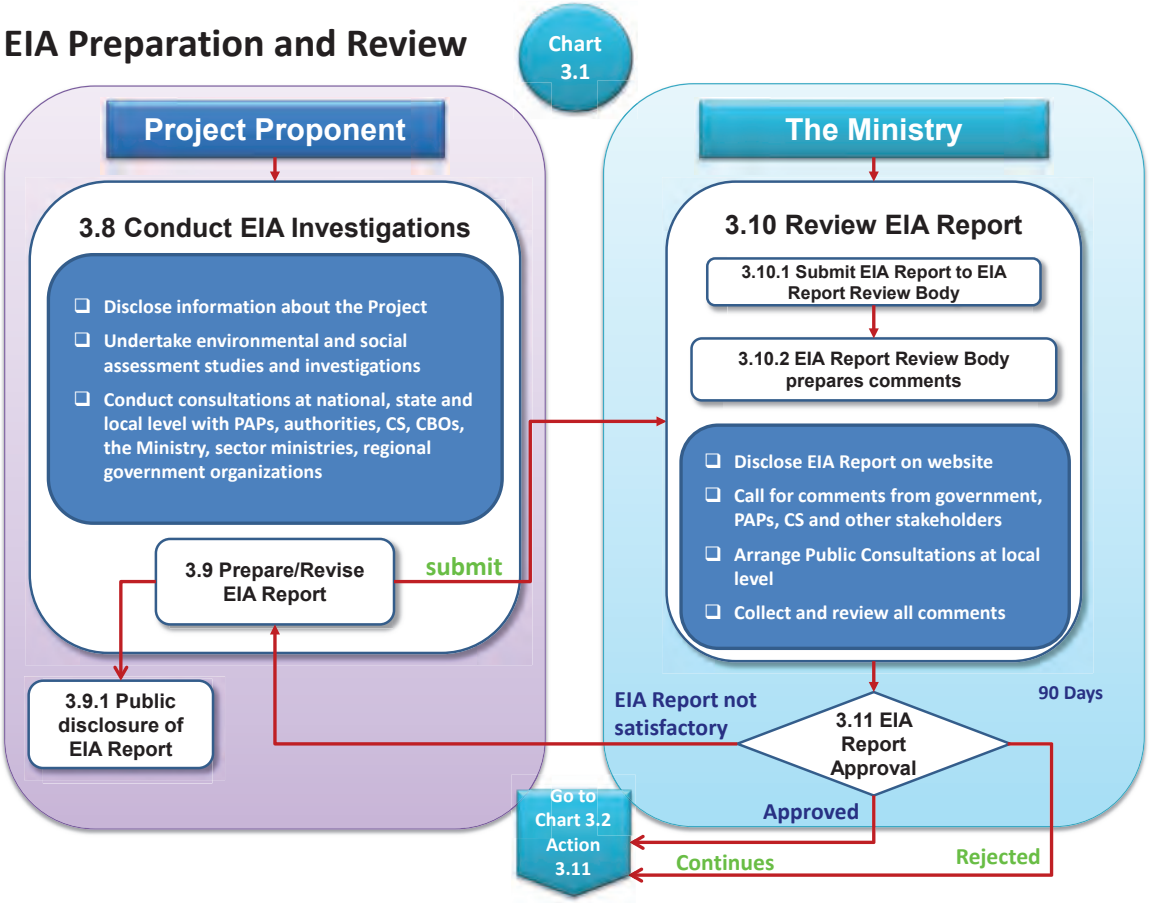


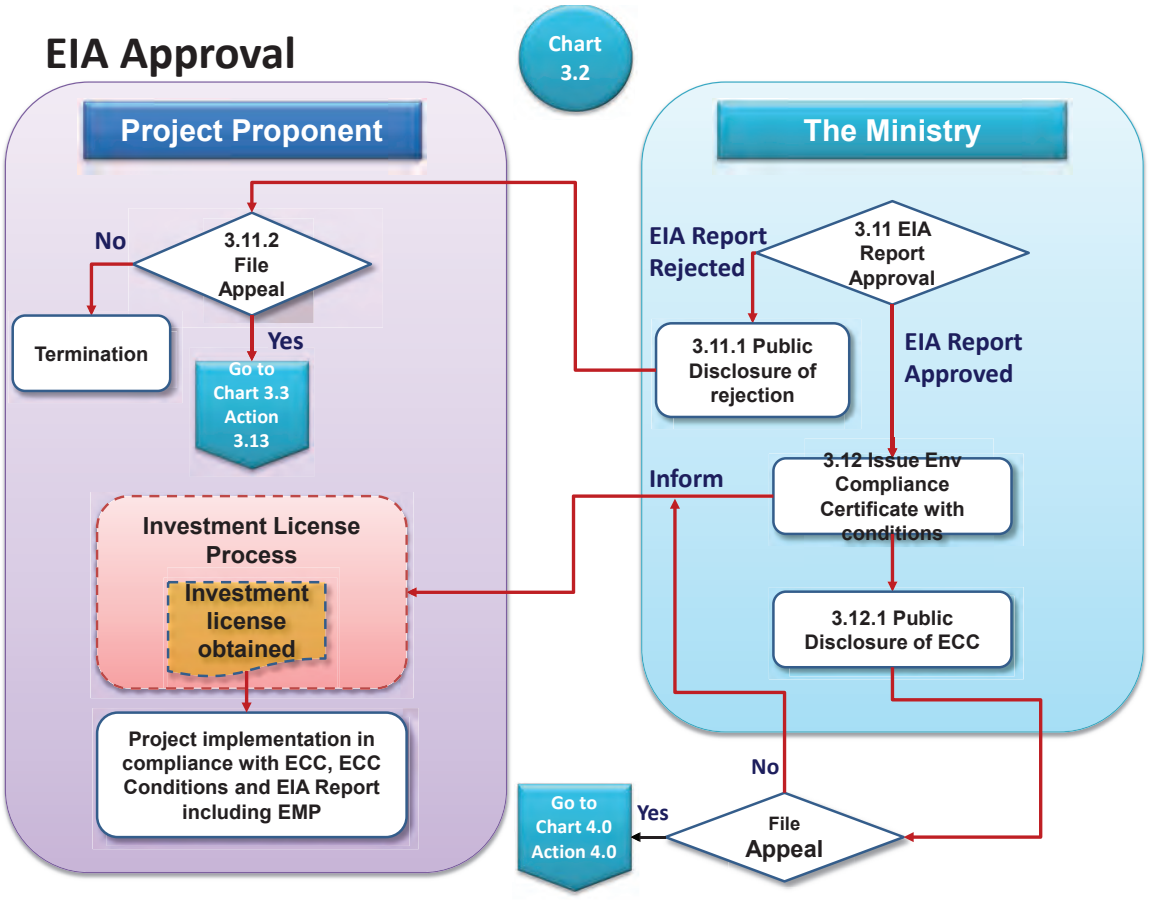
IEE Approval



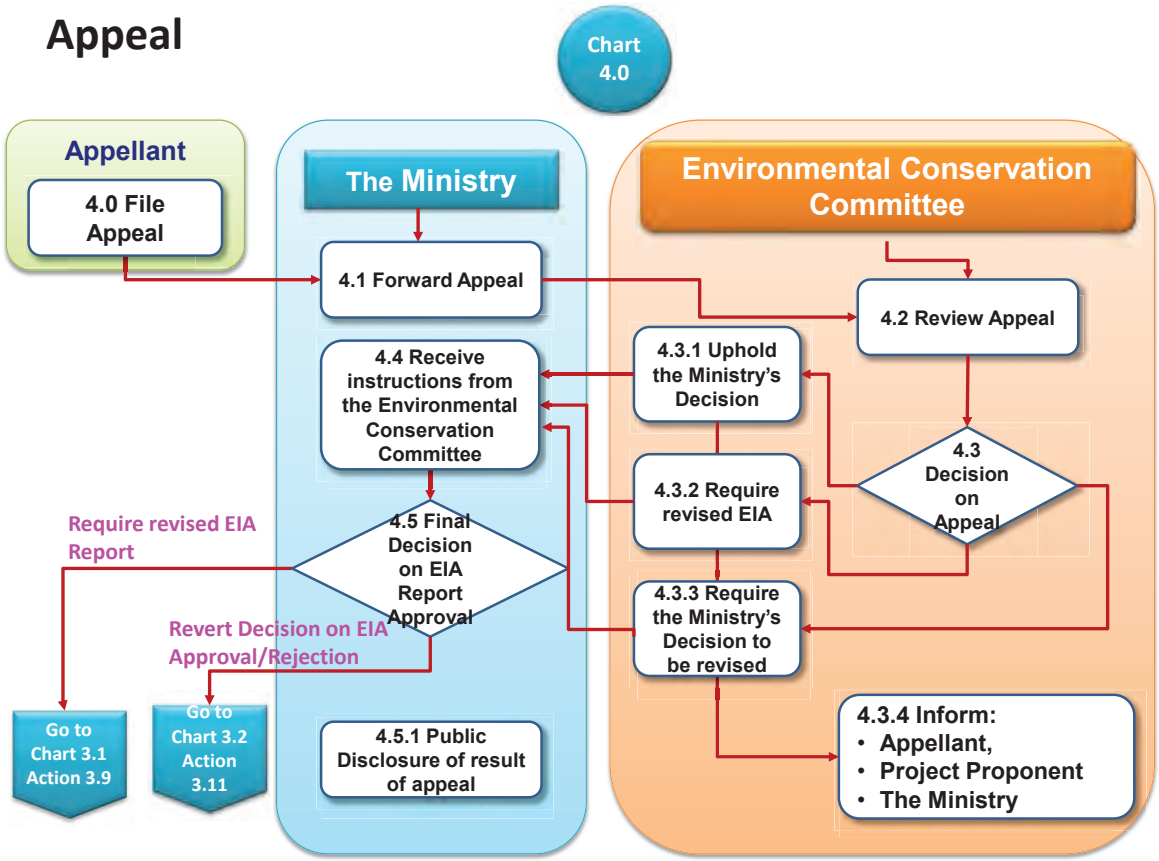
Scoping




EIA Preparation and Review
Chart 3.1
Project Proponent
The Ministry
3.8 Conduct EIA Investigations
Disclose information about the Project
Undertake environmental and social assessment studies and investigations
Conduct consultations at national, state and local level with PAPs, authorities, CS, CBOs, the Ministry, sector ministries, regional government organizations
3.9 Prepare/Revise EIA Report
submit
3.9.1 Public disclosure of EIA Report
3.10 Review EIA Report
3.10.1 Submit EIA Report to EIA Report Review Body
3.10.2 EIA Report Review Body prepares comments
Disclose EIA Report on website
Call for comments from government, PAPs, CS and other stakeholders
Arrange Public Consultations at local level
Collect and review all comments
90 Days
EIA Report not satisfactory
3.11 EIA Report Approval
Approved
Rejected
Continues
Go to Chart 3.2 Action 3.11


EIA Approval
Chart 3.2
Project Proponent
The Ministry
No
3.11.2 File Appeal
Yes
Termination
Go to Chart 3.3 Action 3.13
Investment License Process
Investment license obtained
Project implementation in compliance with ECC, ECC Conditions and EIA Report including EMP
EIA Report Rejected
3.11 EIA Report Approval
3.11.1 Public Disclosure of rejection
EIA Report Approved
Inform
3.12 Issue Env Compliance Certificate with conditions
3.12.1 Public Disclosure of ECC
No
Yes
File Appeal
Go to Chart 4.0 Action 4.0

Appeal



Time frame (IEE and EIA Process)

IEE/EIA Process	Duration	MIC Permission	duration
Screening Proposal (IEE/EIA/NON)	15 days	Screening Proposal	15 days
		MIC Permission	90 days
IEE Process			
1. IEE expert approval (Third party or not)	7 days		
2. Preparing IEE Report	?		
3. IEE Report approval	60 days		
EIA Process			
1. EIA expert approval (Third party or not)	7 days		
2. Developing Scoping Report and TOR	?		
3. Scoping report & TOR approval	15 days		
4. Investigation & Developing EIA Report	?		
5. EIA report approval	90 days		

No	Type of investment projects	Criteria for IEE Type Economic Activities	Criteria for EIA Type Economic Activities
	I. Energy Sector Development Project		
10	Oil and gas Transmission or Distribution Systems	< 10 km	≥ 10 km
11	Petroleum refineries or Natural Gas Refineries (include manufacturing of liquefied petroleum gas (LPG),	_	All sizes
12	Oil or Natural Gas Terminals	_	All sizes
13	Filling Stations (including LPG and CNG)	> 10 m3 fuel storage capacity (10000 Liters)	All activities where the IEE process yields a recommendation to do an EIA
14	Petroleum Depot or Liquid Gas Depot	Storage capacity Petroleum < 10,000 t Liquid gas < 2500 t	Storage capacity Petroleum ≥ 10,000 t Liquid gas ≥ 2500 t
18	Petroleum or Gas exploration by means of geophysical drill	All sizes	All activities where the IEE process yields a recommendation to do an EIA
19	Petroleum-based Organic Chemicals Manufacturing		All sizes
20	Natural Gas Processing Plants		All sizes
21	Natural Gas Liquefaction Plants		All sizes

No	Type of investment projects	Criteria for IEE Type Economic Activities	Criteria for EIA Type Economic Activities
	I. Energy Sector Development Project (Cont.)		
22	Onshore Oil and Gas Development (	Seismic exploration, test drilling and transportation activities with pre-permission (except for those where a full EIA is required)	All sizes (exploration and production drilling, development and production activities, transportation activities including pipelines, other facilities including pump stations, metering stations, pigging stations, compressor stations and storage facilities, ancillary and support operations and decommissioning)

No	Type of investment projects	Criteria for IEE Type Economic Activities	Criteria for EIA Type Economic Activities
	I. Energy Sector Development Project (Cont.)		
23	Offshore Oil and Gas	Seismic exploration, test drilling and transportation activities with pre-permission (except for those where a full EIA is required)	All sizes (exploration and production drilling, development and production activities, transportation activities including pipelines, other facilities including pump stations, metering stations, pigging stations, compressor stations and storage facilities, ancillary and support operations and decommissioning)

Towards Environmental Safeguards-

- EIA systems - initiated in first stage
- Environmental Protection measures - mainstreaming in National Development Planning – international cooperation is promoted
- EIA only covers to each development project which the measures to be taken for avoiding, preventing, mitigating, monitoring and compensating all Adverse Impacts resulting from the design, construction, implementation, operation, maintenance, decommissioning, closure and post closure or other aspects of the proposed Project or business or activity.

- to ensure Sustainable Development in Myanmar, Strategic Environmental Assessment -SEA needed to develop in the primary stage of decision-making process for national development planning, to develop environmentally sector wide / region wide / nation wide
- Therefore, we intend to improve EIA system and also set SEA in cooperation/ collaboration with national, regional and international organizations.

For More Information:

Environmental Conservation Department
Building No. 53, Nay Pyi Taw
Email: dg.ecd@moecaf.gov.mm
Phone: (95) 67 431490, 431491
Fax: (95) 67 431322
Website: www. ecd.gov.mm

Ministry of Environmental Conservation and Forestry
www.moecaf.gov.mm

Thank you
For your attention

第二次現地業務結果報告

ミャンマー国/全国基幹送変電設備整備事業（環境社会配慮）
【有償勘定技術支援】

現地業務工程

日にち	内容
2015.2.8（日）	ミャンマーへ移動
2015.2.9（月）	ネピドーへ移動 Myanmar Electric Power Enterprise (MEPE)へのヒアリング Environmental Conservation Department (ECD)へのヒアリング
2015.2.10（火）	MEPE へのヒアリング
2015.2.11（水）	MEPE へのヒアリング ECD へのヒアリング
2015.2.12（木）	ヤンゴンへ移動 E Guard（ローカルコン）との打合せ
2015.2.13（金）	報告書作成
2015.2.14（土）	報告書作成
2015.2.15（日）	報告書作成
2015.2.16（月）	JICA ミャンマー事務所との打合せ E Guard との打合せ ネピドーへ移動
2015.2.17（火）	MEPE へのヒアリング ヤンゴンへ移動 日本へ移動
2015.2.18（水）	日本へ帰着

打合せ記録

日時	2015 年 2 月 9 日　11:00 – 12:00
場所	MEPE, Nay Pyi Taw
参加者	Htain Lwin, MD, MEPE Ye Toe Thwin, Dy.CE, MEPE Kyi San Lyinn, SE, MEPE Aye Thiha, MD, E Guard Myat Mon Swe, Consultant, E Guard Maw Thet Zaw, Research Assistant, E Guard Maruyama Naoko, Consultant, ERM （敬称略）
打合せ内容	
1) 本調査の目的を説明 環境社会配慮の観点から用地取得等状況の確認するともに、変電所の場所が変更となるため IEE, A-RAP のアップデートを行うことが主な目的である 2) 変電所予定地 MD によるとパヤジーの用地取得は難航しており、3 月末までの取得は難しい。IEE, A-RAP の更新は場所が決まるまで待ってほしい。ラインタヤについては変電所の用地は変わらない。 3) 担当者 本調査のための担当者を紹介いただいた。 Ye Toe Thwin, Dy.CE 氏, 及び Kyi San Lyinn, SE, MEPE 氏	

日時	2015 年 2 月 9 日　13:30 – 14:30
場所	MEPE, Nay Pyi Taw
参加者	San Oo, Director, ECD Yi Yi Cho, Staff Officer, ECD Aung Aung Lay, ECD Aye Thiha, MD, E Guard Myat Mon Swe, Consultant, E Guard Maw Thet Zaw, Research Assistant, E Guard Maruyama Naoko, Consultant, ERM （敬称略）
打合せ内容	
1) Environmental Conservation Law および Environmental Conservation	

Rule に基づき本プロジェクトは EIA が必要であるが、National Project であり、IEE の作成が開始された時期を考慮すると IEE でもよい可能性がある。MEPE から ECD に協議を申し入れてほしい。Prior Permission も MEPE と ECD の協議となる。

2) EIA Guideline, EIA Instruction など様々な名称の文書が出来ているが、EIA Procedures と EIA Guideline が正式な書類である。EIA Instruction は見たことがない。EIA Guideline が発行されても遡及適用されることはない。
3) MEPE は今まで水力発電の EIA Approval を申請したことがあるが、230kV の送電線についての EIA Approval は今までない。

日時	2015 年 2 月 9 日　15:30 – 16:30
場所	MEPE, Nay Pyi Taw
参加者	Ye Toe Thwin, Dy.CE, MEPE Nyunt Wai, AE, PTP (South), MEPE Zaw Lwin, EE, PTP (South), MEPE Thi Han Htun, EE, PTP (South), MEPE Myo Min Tun, EE, PTP (South), MEPE Myat Mon Swe, Consultant, E Guard Maw Thet Zaw, Research Assistant, E Guard Naoko Maruyama, Consultant, ERM （敬称略）
打合せ内容	

1) EIA の承認について
ECD が MEPE と協議をすることを求めていることを報告。EE が MD に説明し、11 日までに回答を出すとのことである。
2) ステークホルダーミーティングについて
ステークホルダーミーティングはタングー以外では実施していない。土地価格にしては、土地の所有者、GAD と協議をして実施している。
（その後、Stakeholder meeting の資料が提供された際、メティラでも実施された記録を確認。）
3) 鉄塔の基礎の用地
鉄塔の基礎がいままで取得していない。JICA とは、基礎を買うことで合意したが、購入した場合、既存のプロジェクトの地権者から批判が起こらないか心配である。

日時	2015 年 2 月 10 日　10:30 – 17:30
場所	MEPE, Nay Pyi Taw
参加者	Myo Min Tun, EE, PTP　(South), MEPE Myat Mon Swe, Consultant, E Guard Maw Thet Zaw, Research Assistant, E Guard Naoko Maruyama, Consultant, ERM （敬称略）

打合せ内容

1) 環境社会配慮に関する情報の収集
事前に提出した質問状に基づき、環境社会配慮に関する情報の収集を行った。主な確認事項は以下の通りである。

1. パヤジーは前回のところを少し北に移動したところで交渉を始めている。用地を取得できる可能性は約 95%である。
2. ラインタヤは残り 1 箇所の用地の取得は困難であるため、東側の土地の購入を検討を始めたところである。地権者との協議はまだ始めていない。
3. IEE/EIA の approval については、ECD と MEPE で協議を行う予定である。
4. Stakeholder meeting については下表の通り実施をする予定であるが、MD の承認が必要である。（明日 MD へ説明予定）

	Env.	Social
Taungoo	End of Feb.	Done
Methila	End of Feb.	Done
Hlinataya	End of Feb.	Location determined by Mar. 7
Phayargi	End of Feb.	Location determined by Mar. 7
Transmission Line	End of Feb.	Need Detail Measurement Survey and Detail Design to be conduct to identify the affected people. →Once affected people is identified MEPE will

		conduct stakeholder consultation with affected people one by one

5. 鉄塔の基礎に関してはMEPEの他のプロジェクト同様用地を取得する予定はない。
   この点に関してはA-RAPのEntitle Matrix との異なるが、RAP作成時にMiss communicationがあった とのことである。
   MEPEは修正版Entitle Matrixを用意する。
   また、MEPEは鉄塔の基礎の地権者から用地を取得しないことの合意書を取得するとしている。
   （MEPEは本事業でのみ、鉄塔の基礎の用地を取得するといままでの事業の地権者から批判が来ることを懸念しているようである。）
6. Environment Social Officerは U Myo Min Tunが担当をする。Grievance Redress Systemはまだ設立されない。
7. ROWは60mである。

日時	2015年2月11日　11:00 – 12:00
場所	MEPE, Nay Pyi Taw
参加者	Htain Lwin, MD, MEPE Thein Hlaing, CE, MEPE Ye Toe Thwin, Dy.CE, MEPE Myat Mon Swe, Consultant, E Guard Maw Thet Zaw, Research Assistant, E Guard Naoko Maruyama, Consultant, ERM （敬称略）
打合せ内容	

1) 昨日までのヒアリングでの確認事項を MD へ説明

1. IEE/EIA の approval については、ECD と MEPE で協議を行う予定である。
   →(MD 回答) MEPE は ECD へ IEE の申請ができるよう手紙を用意する。
2. Grievance Redress System は設立されるべきであり、環境社会配慮の担当者はもっと必要である。
   →（MD 回答）Grievance Redress System を設立する。現在、環境社会配慮担当は U Myo Min Tun のみだが、いずれ増やしていく予定である。
3. Stakeholder meeting は JICA Appraisal 前に実施されなければならない。
   →（MD 回答）下表の通り、実施をするように尽力する。

	Env.	Social
Taungoo	End of Feb.	Done
Methila	End of Feb.	Done
Hlinataya	End of Feb.	Location determined by Mar. 7
Phayargi	End of Feb.	Location determined by Mar. 7
Transmission Line	End of Feb.	Need Detail Measurement Survey and Detail Design to be conduct to identify the affected people. →Once affected people is identified MEPE will conduct stakeholder consultation with affected people one by one

→→その後、U Myo Min Tun から土地の価格が上昇しないよう、土地の取得を完了してから、IEE に関する Stakeholder meeting を実施したいとの申し出があった。その際に話し合ったスケジュールは下表の通りである。

	Taungoo SS	Methila SS	Hlinataya SS	Phayargi SS	Transmission Line
Project area	Decided	Decided	Determine by Mar. 7	Determine by Mar. 7	Need Detail Measurement Survey and Detail Design to be conduct to identify the affected people.
Update IEE	Monitoring by Mar.7	Monitoring by Mar.7	By Mar.14	By Mar.14	By Mar.14
Update RAP	Monitoring by Mar.7	Monitoring by Mar.7	Until end of Mar.	Until end of Mar.	Until end of Mar.
Stakeholder Consultation (Env)	First week of Apr.	First week of Apr.	First week of Apr.	First week of Apr.	First week of Apr.

Stakeholder Consultation (Social)	Done	Done	By Mar. 7 (Simultaneously with Project area determination)	By Mar. 7 (Simultaneously with Project area determination)	Will consult one by one once the land owe is identified.
Apply for IEE Approval	After Mid. Apr.	After Mid. Apr.	After Mid. Apr.	After Mid. Apr.	After Mid. Apr.

4. 鉄塔の基礎の土地について
   →MD は法的権利がある地権者から用地を取得するとした。
5. データの収集について
   →現在、MEPE に依頼をしている以下の情報は次回訪問時（16 日または 17 日）に入手を出来る見込みである。

- Negotiation with ECD for IEE aproval
- Update Entitle Matrix
- Agreement from the land owner that they will not buy the land for tower foundation
- Alternative analysis
- Feedback of monitoring form and fill in the form
- ScheduleBudget of Compensation
- Commercial Trees estimation of compensation
- Confirmation of usage of PCB

日時	2015 年 2 月 11 日　13:30 – 14:30
場所	MEPE, Nay Pyi Taw
参加者	San Oo, Director, ECD Yi Yi Cho, Staff Officer, ECD Aung Aung Lay, ECD Aye Thiha, MD, E Guard Myat Mon Swe, Consultant, E Guard Maw Thet Zaw, Research Assistant, E Guard Naoko Maruyama, Consultant, ERM （敬称略）
打合せ内容	

1) MEPE が IEE を取得したい方針である旨を伝え、必要なレターについて確認。（その後、MEPE へ連絡。）

2) ミャンマーには Poverty Alleviation Initiatives に基づき、7 つの分野で有優先的に取り組んでいる
（http://www.themimu.info/sites/themimu.info/files/documents/Report_Myanmar_Agriculture_Environment_Assement_and_Road_Map_Apr2013.pdf）。本プロジェクトはそれに当てはまると考えられるため、緊急性が高いプロジェクトであれば、EIA ではなく、IEE で実施する可能性もある。これまでも Telcom の国家プロジェクトについては事業などについて同様の処置が取られてきた。
また IEE でよいか検討をする際には、IEE の作成を開始した時期（その時期、EIA Guideline 等の整備状況）等も考慮する。

Poverty Alleviation Initiatives Since 2010
Guidelines for Rural Development and Poverty Alleviation
1. Development of agricultural production sector
2. Development of rural productivity and cottage industries
3. Development of micro saving and credit enterprises
4. Development of rural cooperative tasks
5. Development of rural socioeconomy
6. Development of rural energy
7. Environmental conservation

日時	2015 年 2 月 11 日　15:00 – 15:30
場所	National Museum and Library, Nay Pyi Taw
参加者	Kaythi Htwe, National Museum and Library Myat Mon Swe, Consultant, E Guard Maw Thet Zaw, Research Assistant, E Guard Naoko Maruyama, Consultant, ERM （敬称略）
打合せ内容	

1) 文化財及び自然環境に関するデータを入手するために訪問。
文化財にしては Ministry of Culture の Web Site で入手可能である旨、紹介をいただきました。
自然環境に関するデータは図書館が来移転するため、図書館になかった。

来週ローカルコンが担当者に電話にて確認を行う。

日時	2015 年 2 月 12 日　14:30 – 16:00
場所	MEPE, Nay Pyi Taw
参加者	Myat Mon Swe, Consultant, E Guard Maw Thet Zaw, Research Assistant, E Guard Naoko Maruyama, Consultant, ERM （敬称略）
打合せ内容	

1) 作業についての確認

JICA HQ への報告の内容を共有し、来週の火曜の 9 時から MEPE との打合せが出来るように MEPE との調整を依頼。
また、下記追加質問を MEPE へ送信を依頼。

Additional Request

1. Please confirm that consultation with land owner will be done by Mar. 7. (Consultation with explanation of compensation but also covers the environmental impact of the project.) Please share the record once it is finished
2. Please share information of new Phayargi SS project site (size, shape) and its land owner (number of land owner , type of owner (farmer or government land))
3. Please share new layout of Hlinataya SS　(size, shape) and access road and its land owner (number of land owner, type of owner (farmer or government land)
4. When was ROW decided as 60m? Please let us know how it was decided.
5. Is there any land owner that the land will completely lost among affect peoples?

日時	2015 年 2 月 16 日　11:00 – 12 :30
場所	JICA ミャンマー事務所
参加者	Misaki Kawaguchi, Deputy Assistant Director, JICA, HQ Yuma Eguchi, JICA, HQ

	Kenji Kuronuma, Representative, JICA, Mi Mi Cho, Program Officer, JICA, Myat Mon Swe, Consultant, E Guard Naoko Maruyama, Consultant, ERM （敬称略）
打合せ内容	
1) MEPE の MD への報告結果を共有。 1. IEE の申請方式（4 つの変電所及び送電線の分け方）について、JICA としては MEPE の意向を優先する。 2. Grievance Redress System で GAD を含めるとよいのでは、との提案があった黒沼氏からあった。 →翌日、MEPE が共有 3. Stakeholder meeting 等 Appraisal まで必要であることを JICA HQ へ確認いただくこととなった。 →翌日、補償についての Stakeholder consultation が用地買収までに実施されるのであれば、IEE の Stakeholder meeting が 4 月、5 月くらいでもよいと思われるとの回答があった（地域部内での協議結果）。	

日時	2015 年 2 月 16 日　15:00 – 16:30
場所	MEPE, Nay Pyi Taw
参加者	Kyi San Lyinn, SE, MEPE Myo Min Htun, EE, MEPE Misaki Kawaguchi, Deputy Assistant Director, JICA, HQ Yuma Eguchi, JICA, HQ Maw Thet Zaw, Research Assistant, E Guard Myat Mon Swe, Consultant, E Guard Naoko Maruyama, Consultant, ERM （敬称略）
打合せ内容	
1) Information Request to MEPE 似基づき、データを収集。 1. パヤジー、ラインタヤ変電所の用地取得の進捗等を確認。 2. 鉄塔の基礎の土地については MD の打合せの際、購入するということだったが、担当者レベルでは再度用地は取得しないとの方針であるとの回答があった。	

添付資料 1：Collected Data 19022015 by E Guard

添付資料 2：Summary report of the activities by E Guard

添付資料 3：Letter to MEPE

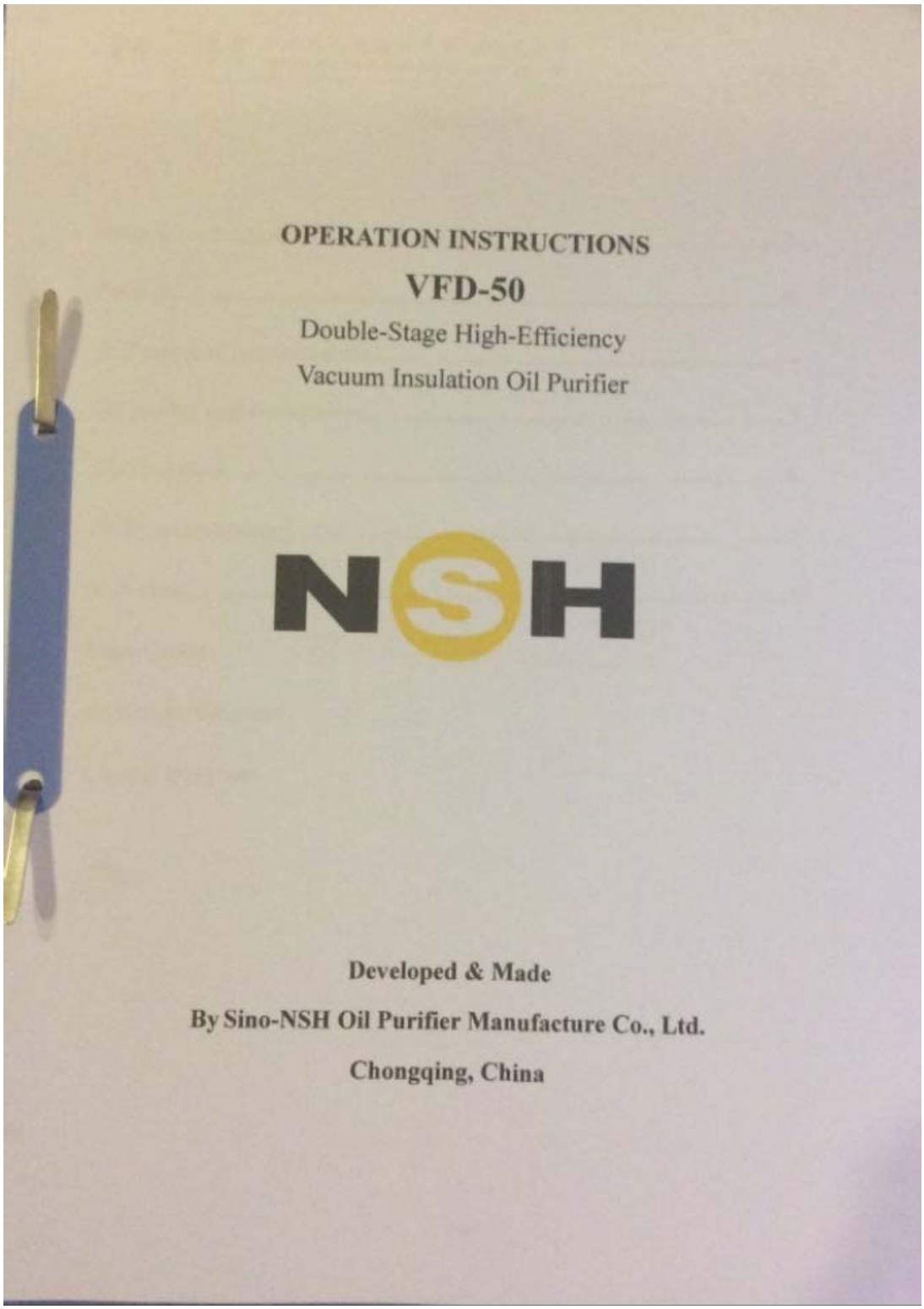
添付資料 4：Updated PMU

<table>
<tr><th>Priority</th><th>Due Date</th><th>To Do</th></tr>
<tr><td>1.</td><td>By Feb.20</td><td>Decide MEPE's the plan of IEE update (Letter to ECD is still in draft, but Ko Myo Min Tun will send the digital copy when Dy. Minister signs)

Plan A:Altogether
Plan B:4 substation and transmission line
Plan C: phase I &II as JICA's loan arrangement } Not yet decided, coz to wait IEE approval

Decide MEPE's plan of land acquisition of tower foundation (compensate or not.) No Compensation</td></tr>
<tr><td>2.</td><td>By Feb.20</td><td>Confirm the content of screening form and checklist with MEPE: not yet confirmed</td></tr>
<tr><td>3.</td><td>By Feb.20</td><td>Collect all data (or at least make an agreement to receive the remaining data by when, for example Feb.25.)
JICA HQ has already agreed with U Kyaw Thu, Dy. CE of MEPE has to give data not later than March 7, however after confirmation of revised map of two substations, they can provide data as follow;
(1) Revised Map with additional areas for two Substations
(2) Revised Map of Transmission Line according to the land acquisition
(3) Tentative schedule
(4) Budget Estimating for Land/crops compensation (discussed with U Zaw Win Naing, CE (Budget) – not yet confirmed
(5) RAP Monitoring Form
(6) Raised Grievance (Confirmed Focal Person of MEPE- U Myo Min Tun)</td></tr>
<tr><td>4.</td><td>By Feb.28</td><td>Update IEE (as much as providing of data on 7 March from MEPE)</td></tr>
<tr><td>5.</td><td>By Mar. 5</td><td>Translate evidence received from MEPE
List of evidence from MEPE:
1) Land/ Crops compensation: for the tower construction (in Taungoo Substation, Taungoo Township, on 31 October 2014 for Taungoo 500kV PTProject; 3 times of crops income
<table>
<tr><th>Crops</th><th>Unit</th><th>Yield/ Acre</th><th>Price/ unit (Kyat)</th></tr>
<tr><td>Rice</td><td>Tin</td><td>75</td><td>300,000</td></tr>
<tr><td>Peas and Beans</td><td>Tin</td><td>16</td><td>380,000</td></tr>
<tr><td>Sugarcane</td><td>Ton</td><td>20</td><td>600,000</td></tr>
<tr><td>Farm Land</td><td>Acre</td><td>-</td><td>1,400,000</td></tr>
</table>
2) Land/ Crops compensation: for the tower construction (in Myin Chan Township, on 10 December 2014 for (3.5)Miles temporary power transmission line; 1 times of crops income
<table>
<tr><th>Crops</th><th>Unit</th><th>Yield/ Acre</th><th>Price/ unit (Kyat)</th></tr>
<tr><td>Pigeon Pea</td><td>Tin</td><td>12</td><td>25,000</td></tr>
<tr><td>Chick pea</td><td>Tin</td><td>12</td><td>13,000</td></tr>
<tr><td>Cow Pea</td><td>Tin</td><td>8</td><td>14,000</td></tr>
<tr><td>Groundnut</td><td>Tin</td><td>45.5</td><td>8,500</td></tr>
<tr><td>Cereal</td><td>Tin</td><td>12.74</td><td>7,000</td></tr>
<tr><td>Tomato</td><td>Viss</td><td>200</td><td>600</td></tr>
<tr><td>Fallow Land</td><td>Acre</td><td>-</td><td>2,000,000</td></tr>
<tr><td>Palm Tree</td><td>plant</td><td>-</td><td>20,000</td></tr>
</table>
3) Land/ Crops compensation: for the tower construction (in Pyin Long Township, Shan State on 15 January 2015 for 230kV Blue Chaung (2) Shwe Town power transmission line; 1 times of crops income
<table>
<tr><th>Crops</th><th>Unit</th><th>Price/ unit (Kyat)</th></tr>
<tr><td>Banana</td><td>Plant</td><td>36,000</td></tr>
<tr><td>Turmeric</td><td>Acre</td><td>360,000</td></tr>
<tr><td>Djenkol Bean (Pithecolobium lobatum)</td><td>Plant</td><td>300,000</td></tr>
</table></td></tr>
<tr><td>6.</td><td>By Mar. 7</td><td>Update A-RAP (as much as providing of data on 7 March from MEPE)</td></tr>
</table>

Waste Management (Oil Purifier)



OPERATION INSTRUCTIONS

VFD-50

Double-Stage High-Efficiency

Vacuum Insulation Oil Purifier

NSH

Developed & Made

By Sino-NSH Oil Purifier Manufacture Co., Ltd.

Chongqing, China

I. Technical Specifications

Item		Unit	VFD-50
Flow Rate		L/H	3000
Working Vacuum Range		MPa	-0.08 ~ -0.099
Working Pressure		MPa	≤0.3
Maximum Vacuum Range		Pa	≤50
Working temperature		℃	20 ~ 80
Breakdown Voltage		kv	≥75
Impurity Size		um	≤5(no dissociated carbon)
wastage		tgδ	≤0.005
Surface tensility		mN/m	≥40
Water Content		PPM	≤5
Gas Content		%	≤0.1
Power Supply			380V /50Hz/3P
Working noise		dB(A)	≤72
Heating Power		kW	48
Total Power		kW	54
Inlet(Outlet) Diameter		mm	DN32
Weight		kg	1200
Dimension	Length	mm	1560
	Width	mm	1260
	Height	mm	1780 (except height of Tratler)

Confirmation of No Usage of PCB

2 Types of Transmission Oils (current use in MEPE)

(1) Hyvolt III

Ergon Europe MEA, Inc.

Hyvolt III

Certificate of Analysis

Customer:	Asia General Electric Co LTD	**P. O. No.:**	AGE/POR/114/2012	**Load Date:**	12/20/12
Destination:	MYANMAR	**Tank:**	1.06	**Load Time:**	15:45
Order/Lot No.:	L102814/1	**Cert No.:**	AD55255	**Inspection Time:**	16:55
Product Code:	8000390	**Carrier:**	TEMU 292776-0	**Compartment(s):**	1
Storage Location:	Antwerp, Belgium	**Volume:**	See Bill of Lading	**Report No.:**	GA-1251341-

TEST DESCRIPTION	METHOD	SPECIFICATION	INSPECTION
Viscosity, mm2/s at 40°C	ISO 3104	12.0 max.	9.6
Viscosity, mm2/s at -30°C	ISO 3104	1800 max.	876
Pour Point, °C	ISO 3016	-40 max.	-65
Water Content, mg/kg	IEC 60814	30 max.	**14**
Breakdown Voltage, kV	IEC 60156	30 min.	**72,5**
Density at 20°C, g/ml	ISO 12185	0.895 max.	0.872
DDF at 90°C	IEC 60247	0.005 max.	**0,001**
Appearance	ERTM-2	PASS	PASS
Acidity, mg KOH/g	IEC 62021-1	0.01 max.	0.01
Interfacial Tension, mN/m	ISO 6295	40 min.	49
Corrosive Sulfur	DIN 51353	NONCORROSIVE	NONCORROSIVE
Corrosive Sulfur	ASTM D 1275, B	NONCORROSIVE	NONCORROSIVE
Corrosive Sulfur	IEC 62535	NONCORROSIVE	NONCORROSIVE
Antioxidant Additive	IEC 60666	0.08 to 0.40	0.38
Oxidation Stability, 500 hr:	IEC 61125, C		
Total Acidity, mg KOH/g	IEC 61125, C	0.30 max.	0.02
Sludge, %	IEC 61125, C	0.05max.	0.01
DDF at 90°C	IEC 60247	0.050 max.	0.013
Flash Point, PMCC, °C	ISO 2719	135 min.	**139**
PCA Content, %	BS 2000 Part 346	3 max.	<3.0
PCB Content	IEC 61619	NOT DETECTED	NOT DETECTED

Test results in bold represent actual values. Other results represent tank certification data.

Bosschaert J

Certified by Ergon Authorized Representative

(2) Nytro Libra

Nynas AB

PRODUCT DATA SHEET

Nytro Libra

NYNAS

Severely Hydrotreated Insulating Oil

Issuing date: 2008-03-03

Property	Unit	Test method IEC	Guaranteed data Min	Guaranteed data Max	Typical data
1. Physical					
Appearance		IEC 60296	Clear, free from sediment		complies
Density, 20°C	kg/dm³	ISO 12185		0,895	0,879
Viscosity, 40°C	mm²/s	ISO 3104		12,0	9,4
Viscosity, -30°C	mm²/s	ISO 3104		1800	1100
Pour point	°C	ISO 3016		-40	-57
2. Chemical					
Acidity	mg KOH/g	IEC 62021		0,01	<0,01
Corrosive sulphur		DIN 51353	non-corrosive		non-corrosive
Corrosive sulphur		ASTM D 1275 B	non-corrosive		non-corrosive
Corrosive sulphur		IEC 62535	non-corrosive		non-corrosive
Aromatic content	%	IEC 60590			11
Antioxidant, phenols	Wt %	IEC 60666	not detectable		not detectable
Water content	mg/kg	IEC 60814		30	<20
Furfural content	mg/kg	IEC 61198		0,1	<0,1
3. Electrical					
Dielectric dissipation factor (DDF) at 90°C		IEC 60247		0,005	<0,001
Interfacial tension	mN/m	ISO 6295	40		48
Breakdown voltage					
- Before treatment	kV	IEC 60156	30		40-60
- After treatment	kV		70		>70
4. Oxidation stability					
At 120°C, 164 h		IEC 61125 C			
Total acidity	mg KOH/g			1,2	0,25
Sludge	Wt %			0,8	0,08
DDF/90°C				0,500	0,080
6. Health, safety and environment					
Flash point, PM	°C	ISO 2719	135		148
DMSO extractable compounds	Wt %	IP 346		3	<3
PCB		IEC 61619	not detectable		not detectable

Nytro Libra is an uninhibited insulating oil, meeting IEC 60296 (03) General specifications.

Layout of tower with dimension

MITENG

Bolt requirement per cleat :

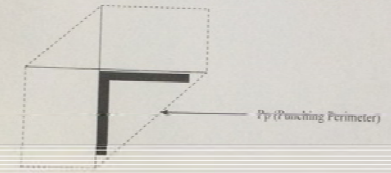
Bolt Type 8.8 M20, shear capacity : Sh = 152.81 kN

Bolts per cleat
NB = Fcl/Sh = 435.3/152.81 = 2.84
Accepted 4 pcs per cleat

Required Number of cleats

Ncl = Fu /Fcl = 1971.06/435.3 = 4.53, accepted 6 pcs

Panching capacity checking :



PC = Pp * La * v_{c2} >= Fu

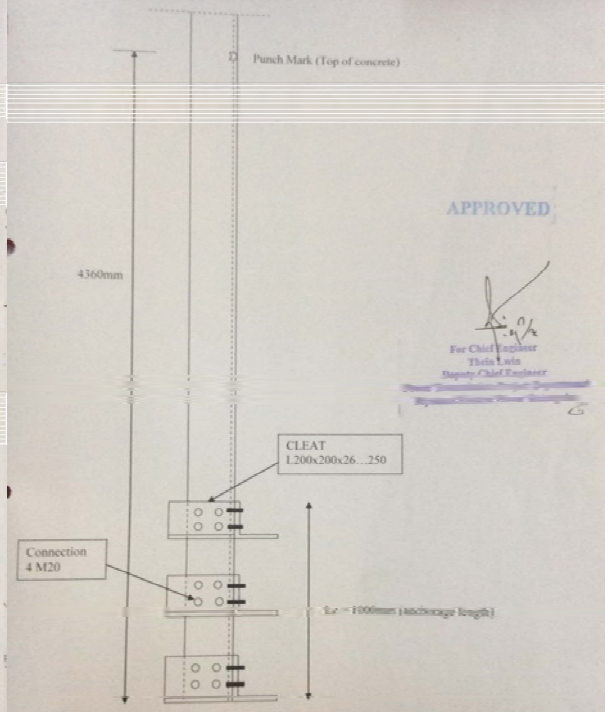
Pp = 2 *(250 + 200) + √2 * (200 + 250) = 1536mm

La = Fu /(Pp * v_{c2}) = 1971.06 * 10^3/(3526 * 1.417 = 905 mm

Accepted Anchorage Length : La = 1000mm

Rev 1
Page 3 of 4

MITENG

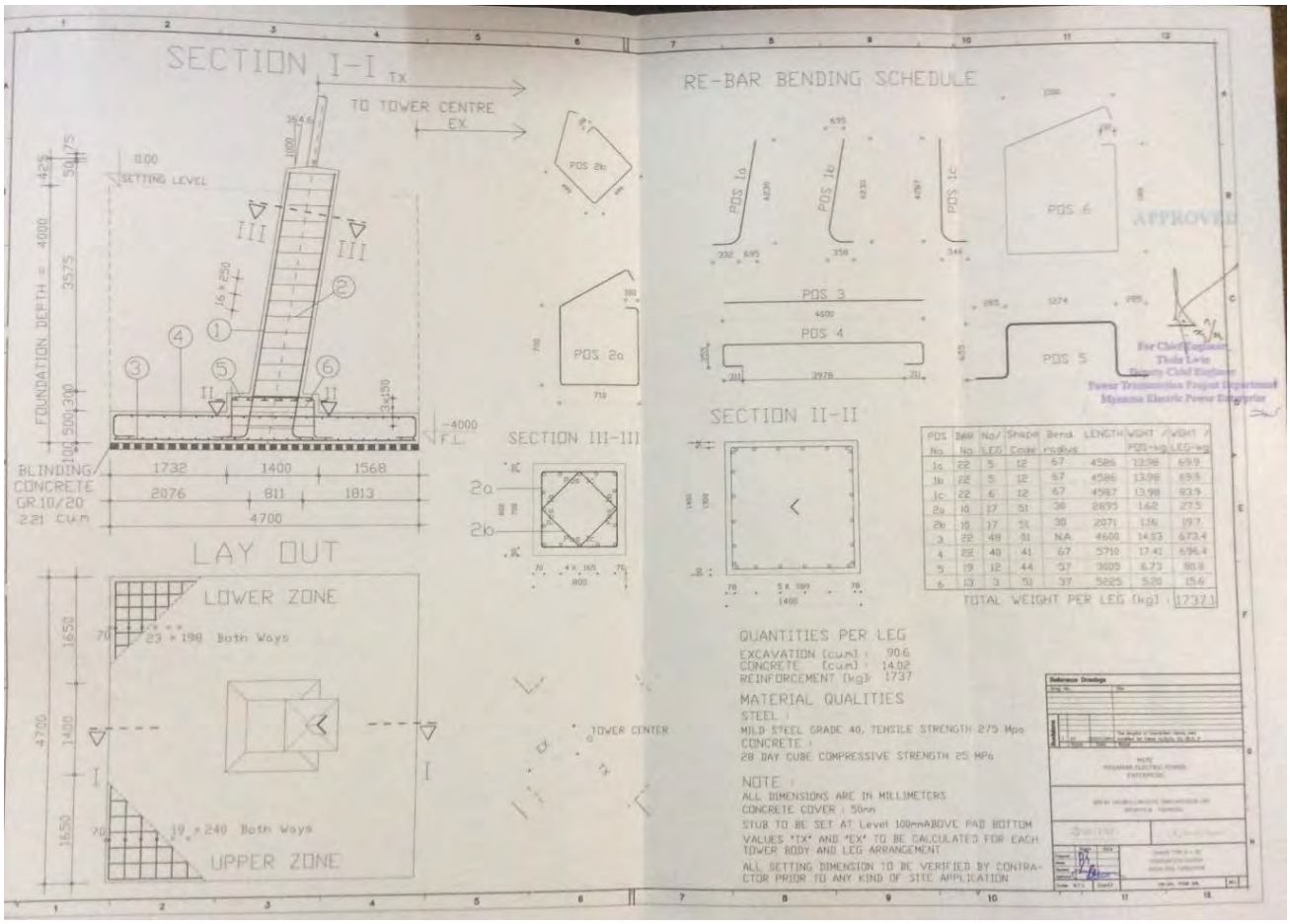


APPROVED

For Chief Engineer
Thein Lwin
Deputy Chief Engineer
Power Transmission Project Department
Myanma Electric Power Enterprise

Doc No: A/SD
Date: 30/07/2013

Rev 1
Page 4 of 4



POS No.	DIA No.	No/ LEG	Shape Code	Bend. radius	LENGTH	WGHT /POS-kg	WGHT /LEG-kg
1a	22	5	12	67	4586	13.98	69.9
1b	22	5	12	67	4586	13.98	69.9
1c	22	6	12	67	4587	13.98	83.9
2a	10	17	51	30	2695	1.62	27.5
2b	10	17	51	30	2971	1.16	19.7
3	22	48	51	NA	4600	14.53	673.4
4	22	40	41	67	5710	17.41	696.4
5	19	12	44	57	3605	8.73	80.8
6	13	3	51	37	5225	5.26	15.6

TOTAL WEIGHT PER LEG (kg) : 1737.1

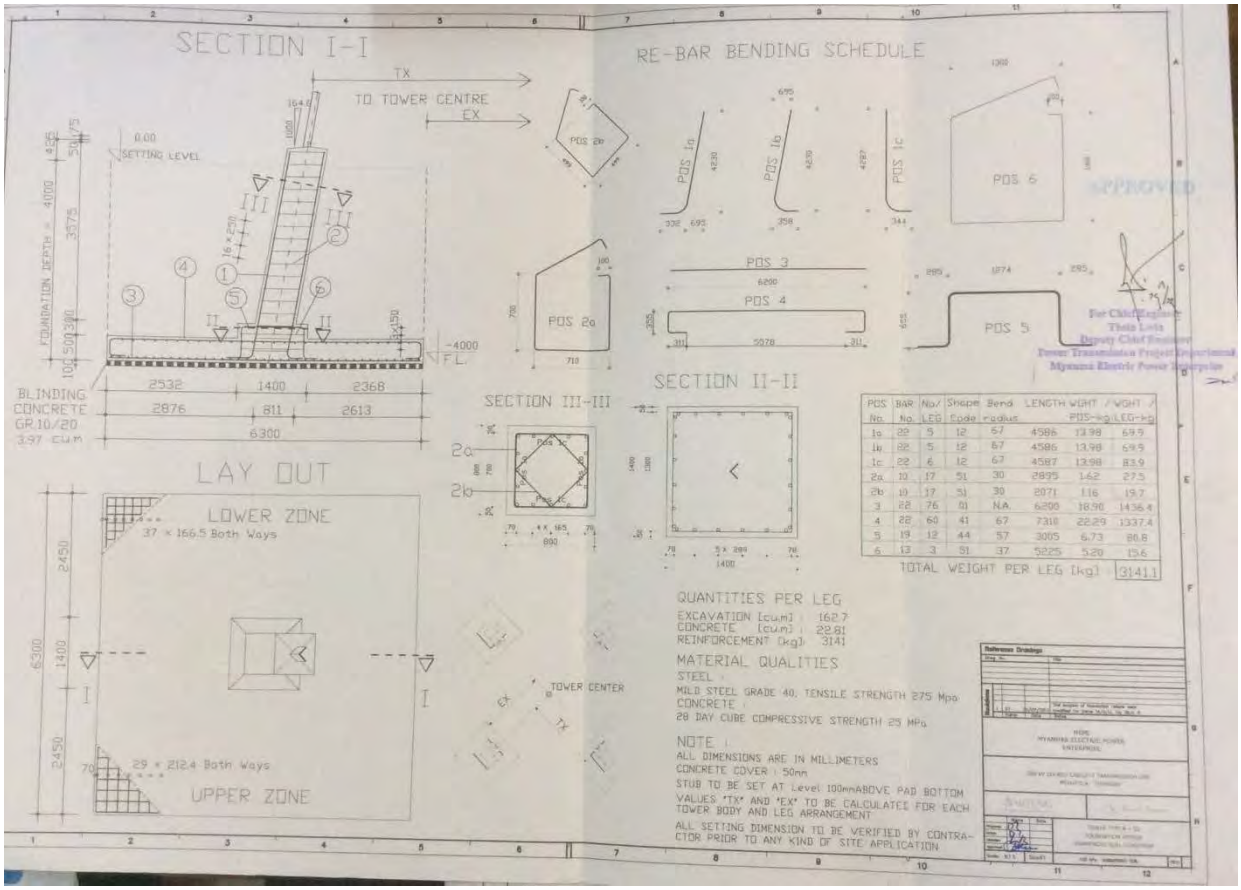
QUANTITIES PER LEG
EXCAVATION (cum) : 90.6
CONCRETE (cum) : 14.02
REINFORCEMENT (kg) : 1737

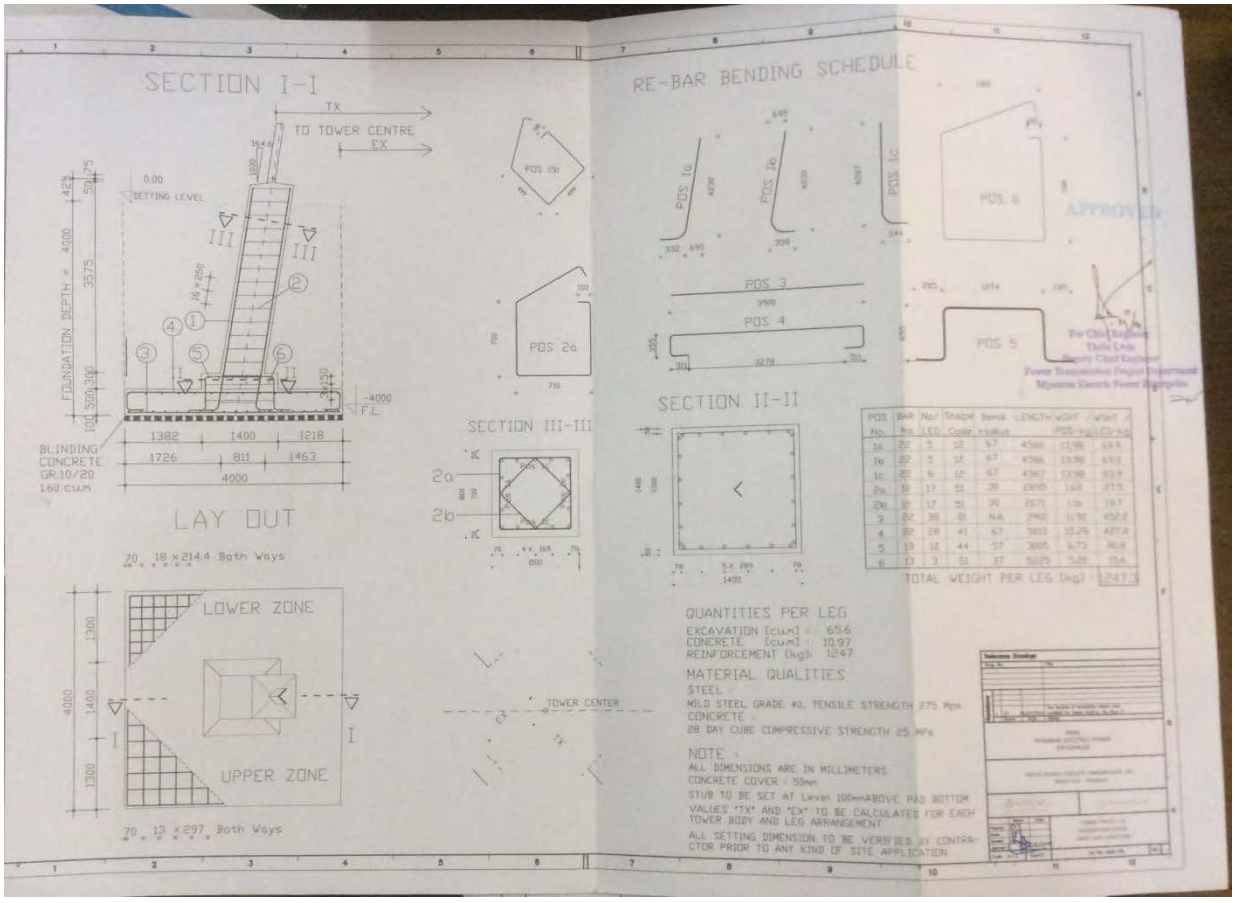
MATERIAL QUALITIES
STEEL :
MILD STEEL GRADE 40, TENSILE STRENGTH 275 Mpa
CONCRETE :
28 DAY CUBE COMPRESSIVE STRENGTH 25 MPa

NOTE :
ALL DIMENSIONS ARE IN MILLIMETERS
CONCRETE COVER : 50mm
STUB TO BE SET AT Level 100mmABOVE PAD BOTTOM
VALUES "TX" AND "EX" TO BE CALCULATED FOR EACH TOWER BODY AND LEG ARRANGEMENT
ALL SETTING DIMENSION TO BE VERIFIED BY CONTRACTOR PRIOR TO ANY KIND OF SITE APPLICATION

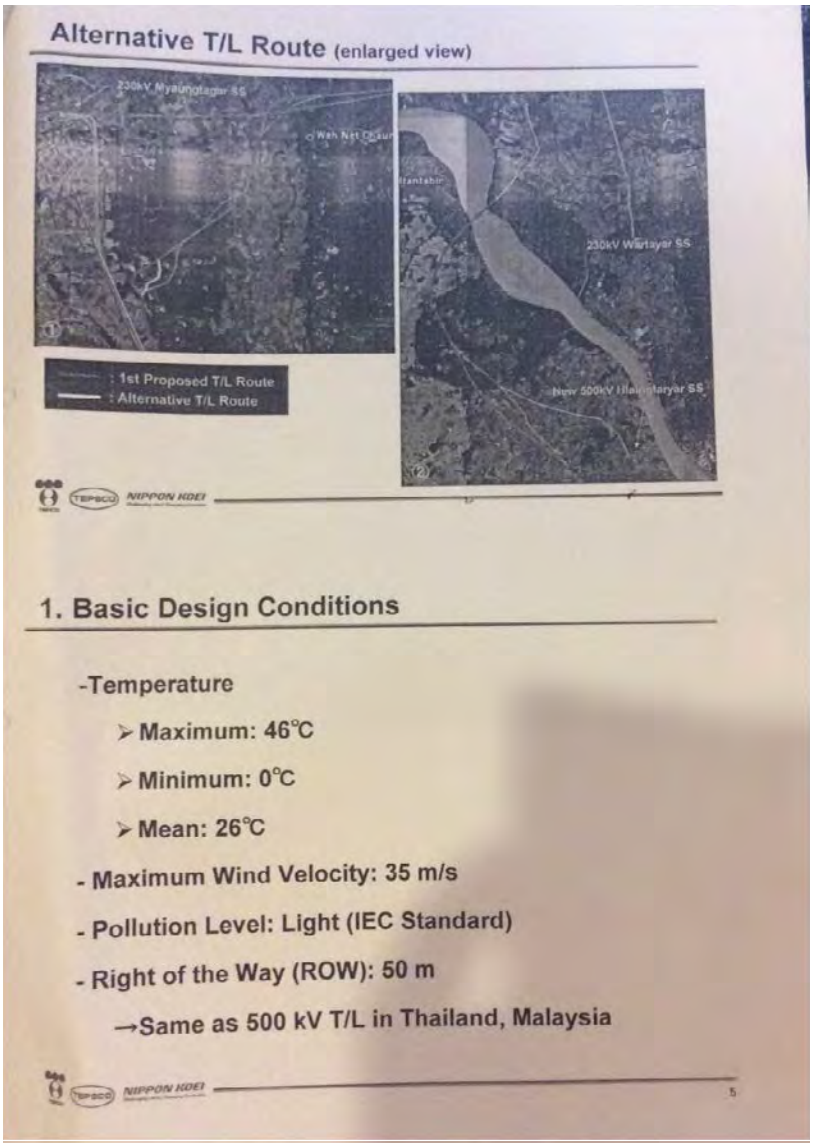
APPROVED

For Chief Engineer
Thein Lwin
Deputy Chief Engineer
Power Transmission Project Department
Myanma Electric Power Enterprise


SECTION I-I
TX
TO TOWER CENTRE
EX
SETTING LEVEL
FOUNDATION DEPTH = 4000
-4000 F.L.
BLINDING CONCRETE GR.10/20 3.97 CU.M
2532
1400
2368
2876
811
2613
6300
LAY OUT
LOWER ZONE
37 x 166.5 Both Ways
29 x 212.4 Both Ways
UPPER ZONE
SECTION III-III
SECTION II-II
TOWER CENTER
RE-BAR BENDING SCHEDULE
POS 1a
POS 1b
POS 1c
POS 2a
POS 2b
POS 3
POS 4
POS 5
POS 6
APPROVED
QUANTITIES PER LEG
EXCAVATION [cum] : 162.7
CONCRETE [cum] : 22.81
REINFORCEMENT [kg] : 3141
MATERIAL QUALITIES
STEEL :
MILD STEEL GRADE 40, TENSILE STRENGTH 275 Mpa
CONCRETE :
28 DAY CUBE COMPRESSIVE STRENGTH 25 MPa
NOTE :
ALL DIMENSIONS ARE IN MILLIMETERS
CONCRETE COVER : 50mm
STUB TO BE SET AT Level 100mmABOVE PAD BOTTOM
VALUES "TX" AND "EX" TO BE CALCULATED FOR EACH TOWER BODY AND LEG ARRANGEMENT
ALL SETTING DIMENSION TO BE VERIFIED BY CONTRACTOR PRIOR TO ANY KIND OF SITE APPLICATION
TOTAL WEIGHT PER LEG [kg] : 3141.1


SECTION I-I
TX
TO TOWER CENTRE
EX
SETTING LEVEL
FOUNDATION DEPTH = 4000
-4000 F.L.
BLINDING CONCRETE GR.10/20 1.60 CU.M
1382
1400
1218
1726
811
1463
4000
LAY OUT
70 x 18 x 214.4 Both Ways
LOWER ZONE
UPPER ZONE
70 x 13 x 297 Both Ways
SECTION III-III
SECTION II-II
TOWER CENTER
RE-BAR BENDING SCHEDULE
POS 1a
POS 1b
POS 1c
POS 2a
POS 2b
POS 3
POS 4
POS 5
POS 6
APPROVED
QUANTITIES PER LEG
EXCAVATION [cum] : 65.6
CONCRETE [cum] : 10.97
REINFORCEMENT [kg] : 1247
MATERIAL QUALITIES
STEEL :
MILD STEEL GRADE 40, TENSILE STRENGTH 275 Mpa
CONCRETE :
28 DAY CUBE COMPRESSIVE STRENGTH 25 MPa
NOTE :
ALL DIMENSIONS ARE IN MILLIMETERS
CONCRETE COVER : 50mm
STUB TO BE SET AT Level 100mmABOVE PAD BOTTOM
VALUES "TX" AND "EX" TO BE CALCULATED FOR EACH TOWER BODY AND LEG ARRANGEMENT
ALL SETTING DIMENSION TO BE VERIFIED BY CONTRACTOR PRIOR TO ANY KIND OF SITE APPLICATION
TOTAL WEIGHT PER LEG [kg] : 1247.3

ROW



Update of Entitle Matrix

Entitlement: one time of current Market Price for all compensations

500kV, Power Transmission Project

Summary report of the activities of ERM and E Guard 9th February 2015 according to JICA's TORs by E Guard

Team Leader: Maruyama Naoko, ERM

Member: Myat Mon Swe and Myo Thet Tin, E Guard

Report Date: 17th February, 2015

Date	References	Activities	Result
9-2-2015 (Morning)	Base on JICA's TORs (I) + Additional JICA's TORs for E Guard	**Meeting: at MEPE HQ, NPT** 1) U Htain Lwin, MD, MEPE 2) U Ye Toe Thwin, Dy.CE, MEPE 3) U Kyi San Lyinn, SE, MEPE 4) Ms. Maruyama Naoko, Consultant, ERM, Japan 5) U Aye Thiha, MD, E Guard 6) Daw Myat Mon Swe, Consultant, E Guard 7) Ma Maw Thet Zaw, Research Assistant, E Guard	1) Explanation about the requirement of IEE approval from ECD and request for the cooperation with MEPE to held stakeholder meetings for two Substations (HTY and PG) and TL between those substations before IEE appraisal as IEE's procedure by U Aye Thiha. 2) Explanation overview of the consultation of the project Phase II and data collection for not only the technical aspect but also the environmental and social consideration for the updating of IEE Appraisal and A-RAP by Ms. Ms. Maruyama Naoko 3) Following key points were discussed; - Confirmation of IEE or EIA with ECD - Land design confirmation for two substations - Time confirmation to held stakeholder meeting - Documents for land acquisition and compensation agreements between land owners and MEPE 4) MD's comments are following; - Dy. CE and officials concern of MEPE will cooperate with ERM and E Guard for the data collection. - Stakeholder meeting for social and environmental need to be held after confirmation of land acquisition, but the identification of new location for two substation will be taken long time as hard task to negotiate with farmers who want to be get more land price. - So MD confirmed that the negotiation of new land acquisition is not possible to be finished end of March 2015 as JICA's Schedule.
9-2-2015 (Afternoon)	Base on JICA's TORs (I) + Additional JICA's TORs for E Guard	**Meeting: at ECD, HQ, NPT** 1) Dr. San Oo, Director, ECD 2) Daw Yi Yi Cho, Staff Officer 3) U Aung Aung Lay, ECD 4) Ms. Maruyama Naoko, Consultant, ERM, Japan 5) U Aye Thiha, MD, E Guard 6) Daw Myat Mon Swe, Consultant, E Guard 7) Ma Maw Thet Zaw, Research Assistant E Guard	**Main discussion: Confirmation of Project Category for IEE approval for 500kV, PTL[1] Project.** 1) According to the categorization of JICA, as Category B, IEE was prepared for this project since 2012, before the issue of ECD Rule and regulation, so that it is need to be confirmed EIA or IEE before IEE appraisal explained by Ms. M. Naoko. 2) Dr. San Oo explained that this project must be done EIA according to the project categorization of ECD, otherwise, he advised that MEPE need to negotiate with MOCEF through ministry level to confirm EIA or IEE has to done. 3) Because of this project is involved within the strategic procedure of (7) Road Maps of National development as priorities for rural electricity supply and the reduction of poverty elevation etc., and IEE approval will be possible to allow to have loan soon.

[1] PTL: Power Transmission Line

Date	References	Activities	Result
9-2-2015 (Evening)	Base on JICA's TORs (I) + Additional JICA's TORs for E Guard	**Meeting: at MEPE HQ, NPT** 1) U Ye Toe Thwin, Dy.CE, MEPE 2) U Nyunt Wai, AE, PTP[2] (South), MEPE (Ph. 095151969) 3) U Zaw Lwin, EE, PTP[3] (South), MEPE (Ph: 09448548388) 4) U Thi Han Htun, EE, PTP[4] (South), MEPE (Ph: 098302928) 5) U Myo Min Tun, EE, PTP[5] (South), MEPE (Ph: 09977253746) 6) Ms. Maruyama Naoko, Consultant, ERM, Japan 7) Daw Myat Mon Swe, Consultant, E Guard 8) Ma Maw Thet Zaw, Research Assistant, E Guard	**Data Collection:** 1) Procedure for the application to ECD for EIA or IEE approval. 2) Land compensation procedure with GAD and Land Use Department of MOAI[6] 3) Confirmation of land acquisition for two substations and access road. - Additional land will be negotiated 350L/Acre (300 m X 400m) for HTY Substation where has not yet ownership confirmed. (The list of land owners and land compensation are as the same of previous report.) - Additional land will be negotiated around 20 Acres (130L/acre and two owners~ Farmers) move to north from land already acquired (60 Acres by U Kyar Ni + other 9 Owners ~ Farmers) for PG Substation. - Access road expansion for HTY Substation has already negotiated (350 L/ 0.9 acre owned by 2 owners ~ Farmers) 4) Documents' requested; - Update Entitle Matrix - Agreement from the Land owner no compensation for tower foundation area of PTL. - Alternative analysis of substations' area and PTL. - Fill in the monitoring form - Working Schedule of MEPE for the project - Budget of Compensation for Land, crops and cutting trees - Norm of Compensation for crop fees and cut trees - Waste management plan and usage of PCB. - Plan of Stakeholder meeting for social for HTY, PG and PTL and Environmental for 4 Substations and PTL. - Grievance Focal Person for Monitoring plan
10-2-2015 (Morning& Afternoon)	Base on JICA's TORs (I) + Additional JICA's TORs for E Guard	**Meeting: at MEPE HQ, NPT** 1) U Myo Min Tun, EE, PTP[7] (South), MEPE (Ph: 09977253746) 2) Ms. Maruyama Naoko, Consultant, ERM, Japan 3) Daw Myat Mon Swe, Consultant, E Guard 4) Ma Maw Thet Zaw, Research Assistant, E Guard	1) Data Collection to update IEE appraisal and RAP 2) Preparation for the application to ECD for EIA or IEE approval. **Note:** received documents; - Agreement plan for Stakeholder meeting (Attached) - Public Consultation meeting minuets of Tanug Oo and Meikhtilar Substations. - Land compensation documents for land already acquired for (4) substations - Update of MEPE Organization Chat
11-2-2015 (Morning)	Base on JICA's TORs (I) + Additional	**Meeting: at MEPE HQ, NPT** 1) U Htain Lwin, MD, MEPE	1) Agreement for the negotiation with ECD for IEE approval and budget allowance for additional land going to be negotiated for HTY and PG Substations by MD.

[2] Power Transmission Line Projects Department
[3] Power Transmission Line Projects Department
[4] Power Transmission Line Projects Department
[5] Power Transmission Line Projects Department
[6] Ministry of Agriculture and Irrigation.
[7] Power Transmission Line Projects Department

Date	References	Activities	Result
	JICA's TORs for E Guard	2) U Thein Hlaing, CE, MEPE (Ph: 09 8603020) 3) U Ye Toe Thwin, Dy.CE, MEPE 4) Ms. Maruyama Naoko, Consultant, ERM, Japan 5) Daw Myat Mon Swe, Consultant, E Guard 6) Ma Maw Thet Zaw, Research Assistant, E Guard	
11-2-2015 (Morning)	Base on JICA's TORs (I) + Additional JICA's TORs for E Guard	**Meeting: at ECD, HQ, NPT** 1) Dr. San Oo, Director, ECD 2) Ms. Maruyama Naoko, Consultant, ERM, Japan 3) Daw Myat Mon Swe, Consultant, E Guard 4) Ma Maw Thet Zaw, Research Assistant E Guard	1) Reconfirmation for the Procedure of the application to ECD for EIA or IEE approval.
11-2-2015 (Afternoon)	Base on JICA's TORs (I) + Additional JICA's TORs for E Guard	Visit to**:** ✓ Department of Archaeology, National Museum and Library, **(**Dr. Kaythi Htwe Ph: 09798288986) ✓ The Department of Historical Research**, (**Daw Thaung Thaung Nu, Ph: 095153365) 1) Ms. Maruyama Naoko, Consultant, ERM, Japan 2) Daw Myat Mon Swe, Consultant, E Guard 3) Ma Maw Thet Zaw, Research Assistant E Guard	1) Data collection for Bird Routine and Cultural Heritage in the around area of HTY and PG substations.
15-2-2015 (Evening)	Base on JICA's TORs (I) + Additional JICA's TORs for E Guard	**Meeting: at E Guard Office, Yangon** 1) Ms. Maruyama Naoko, Consultant, ERM, Japan 2) Daw Myat Mon Swe, Consultant, E Guard 3) U Myo Thet Tin, Consultant, E Guard 4) Ma Maw Thet Zaw, Research Assistant, E Guard	1) Preparation for the RAP and External Monitoring Form to be reported and data collection from MEPE.
16.2.2015 (Morning)	Base on JICA's TORs (I) + Additional JICA's TORs	**Meeting: at JICA Myanmar Office, Yangon** 1) Ms. Misaki Kawaguchi, Deputy Assistant Director, JICA, HQ	1) Activities report to JICA Myanmar office and JICA HQ 2) Negotiation for the Budget expansion for E Guard (Accommodation and transportation for Data collection and social survey for additional land acquisition) **Comments By JICA Team:**

Date	References	Activities	Result
	for E Guard	2) Mr. Eguchi Yuma, JICA, HQ 3) Mr. Kuronuma Kenji, Representative, JICA, 4) Daw Mi Mi Cho, Program Officer, JICA, 5) Ms. Maruyama Naoko, Consultant, ERM, 6) Daw Myat Mon Swe, Consultant, E Guard	1) Double Check for YCDC ROW[8] and landownership through GAD for sub road expansion (11ft wide now) at HTY Substation 2) Social impact analysis will be required if there has land acquisition to avoid the conflict with residential along the road and their satisfaction of people for land compensation as well. 3) Contract of E Guard for the additional social survey due to the changes of sites will be charged more on the E Guard's perspective increase on first of March by the quantity of site survey. JICA Myanmar supported the format of activities report for E Guard which must be summited to JICA through Ms. Maruyama Naoko's properly check. 4) Check list and Screening report for the project must be followed by JICA Outlines issued already. 5) IEE approval for this project is needed to be confirmed by ECD whether it will be effective after come out of new regulations soon.
16.2.2015 (Evening)	Base on JICA's TORs (I) + Additional JICA's TORs for E Guard	**Meeting: at E Guard Office, Yangon** 1) Ms. Maruyama Naoko, Consultant, ERM, Japan 2) Daw Myat Mon Swe, Consultant, E Guard 3) U Myo Thet Tin, Consultant, E Guard 4) Ma Maw Thet Zaw, Research Assistant, E Guard	1) Preparation for the Data Collection from MEPE
17-2-2015	Base on JICA's TORs (I) + Additional JICA's TORs for E Guard	**Meeting: at MEPE HQ, NPT** 1) U Kyi San Lyinn, SE, MEPE 2) U Myo Min Htun, EE, MEPE 3) Ms. Kawaguchi Misaki, Deputy Assistant Director, JICA, HQ 4) Mr. Eguchi Yuma, JICA, HQ 5) Ms. Maruyama Naoko, Consultant, ERM, Japan 6) Daw Myat Mon Swe, Consultant, E Guard 7) Ma Maw Thet Zaw, Research Assistant, E Guard	1) Cooperated for the application to ECD for EIA or IEE approval. 2) Data Collection from MEPE as follow; ✓ Estimated Area of Tower Foundation as follow; a) $4m^2$ per each leg b) 625 m^2 to 1600 m^2 for complete foundation depend on the type of tower, towers' height and soil structure and its strength ✓ Land compensation for Tower Foundation is still not clear. (Due to the procedure of old PTL projects, no compensation for Tower Foundation will be paid by MEPE, but need to be confirmed) ✓ Confirmation for the appointment with MD at 11:00AM for 18 February 2015. **Note:** received documents; ✓ PowerPoint for the construction of tower for 500kv PTL. ✓ Copy of Budget permission letter from CE to MD for the new land acquisition

[8] Right of way

500kV, Power Transmission Project

Summary report of the activities of ERM and E Guard 30th January 2015 according to JICA's TORs by E Guard

Team Leader: Maruyama Naoko , ERM

Member: Myat Mon Swe and Myo Thet Tin, E Guard

Report Date: 2nd February, 2015

Date	References	Activities	Result
30-1-2015 (Morning)	Base on JICA's TORs (I) + Additional JICA's TORs for E Guard	Meeting: Mr. Kuronuma Kenji, Representative, JICA, Daw Mi Mi Cho, Program Officer, JICA, Ms. Maruyama Naoko, Consultant, ERM, U Aye Thiha, MD, E Guard, Daw Myat Mon Swe, Consultant, E Guard and U Myo Thet Tin, Consultant, E Guard at JICA Office (HQ)	1) Explanation about the current situation of the project by Mr. Kuronuma Kenji. 2) Ms. M. Naoko reported the information of field survey in HTY and Htan Ta Pin to JICA. 3) According to the discussion for the fees for E Guard will be up if there is any change of PG Substation area which is not yet confirmed and transportation charges for the trip to NPT[9] have to be cost self for E Guard for part of original issue according to the budget limitation. 4) The main personal in charge for MEPE to collection for substation is **Mr. Myo Min Tun** as JICA said, but the alternative persons have to find out to contact. 5) As ERM and E Guard request, JICA will support to issue the letter to U Thein Hlaing, Chief Engineer MEPE combine with specific information for the inquiry to collect information which is necessary for the project on 2nd Feb and in which date of dead line should be included to meet schedule. 6) For the EIA approval, Mr. Kuronuma Kenji has explained that the issue of ECD for the projects between national and private sectors is different in the criteria. Most of all national projects have some specific rules and regulation, and different strategic procedure by their authority and only ECD's procedures are covered for private sectors' investment.
30-1-2015 (Afternoon)		Meeting with U Myo Lwin, Director, ECD[10] (Yangon) Ph: with Ms. Maruyama Naoko, Consultant, ERM, Daw Myat Mon Swe, Consultant, E Guard and U Myo Thet Tin, Consultant, E Guard at ECD office (Yangon)	1) Confirmation of Project Category for EIA approval which is already for IEE preparation by JICA for 500kV, PTL[11] Project. 2) U Myo Lwin explained that this project must be done EIA according to the EIA procedure by project categorization, however, MEPE has to apply ECD with project description to identify IEE or EIA as well. 3) Gap analysis of the ECD rules and regulation with JICA EC Guideline and the project categorization issued by ECD for the 8 draft is need to be analysis as update. ***Note:*** The PPT presented in the seminar of 5th Myanmar Oils and Gas Seminar and Exhibition on 29, 30 January by U Myo Lwin " EIA procedure in Myanmar" and IEE/EIA project categorization in Myanmar Language (8 draft) and its translation as attached.

[9] NPT: Nay Pyi Taw

[10] ECD: Environmental Conservation Dept.

[11] PTL: Power Transmission Line

500kV, Power Transmission Project

Summary report of the activities of ERM and E Guard on 28th and 29th January 2015 according to JICA's TORs by E Guard

Team Leader: Maruyama Naoko , ERM

Member: Myat Mon Swe and Myo Thet Tin, E Guard

Report Date: 29th January 2015

Date	References	Activities	Result
28.01.2015	Discussion with ERM[12] at E Guard's Office	Things to do for 500kV Power Transmission Project	1) Preparing call letter/ appointment letter to Chief Engineer, Power Transmission Plan Dept., MEPE[13] (Nay Pyi Taw) for the preparation of supplementary survey information related to Environmental and Social point of view and RAP Monitoring Plan. 2) Schedule for Primary survey a) Primary survey of HTY[14] Substation on 29th January 2015, b) Base on the discussion with JICA and ERM on 30th January, Primary survey of PG[15] Substation on 2nd February 2015 , meeting with MEPE in Nay Pyi Taw on 4th February to collect data/documents will be done for the preparation of stakeholder meeting for two substations of HTY and PG (Phase II), and confirmation of Phase I by summarized issues and recommendation. c) Data collection for contact Dept/ Organization and persons in charge (U Thet Paing Myo, Project Manager, Power Transmission Plan Dept, MEPE, North Dagon.-Ph: 098601031) and U Wanna Soe, Planning Manager, Nay Pyi Taw Substation II, Nay Pyi Taw (Ph: 098610429/ 067-435155
29.01.2015	Base on JICA's TORs (I) + Additional JICA's TORs for E Guard	Interview with GAD of Hlaing Thayar, Htan Ta Pin Township and MEPE (Yangon) to confirm the compensation including price survey and Environmental Impact of waste of transformer.	
		1) Interview with U Tin Maung Maung Oo, EE[16] (Ph: 09798346234) , U Tun Tun Naing, EE from Power Transmission Plan Dept, MEPE, North Dagon.	1) For EC, the transmission line installed in high of tower 21 to 28 m up than previous high 8m. 2) Using Oil Purifier Plant for reuse of low grade organic oil for transformer. Note: Layout Section of Transformer is received.
		2) U Thuya Zaw, EE, Hlaing Thayar Primary Substation, Hlaing Thayar	Analysis of Environmental Impact of Transformer/ Oil Purifier (1200 l/hr), Sino-NSH (China) and its specification which is a typical using machine for oil purification in Myanmar. 1) No use of PCB[17] 2) Using organic oil (NYNAS made in Sweden) 3) Using IFC[18] standard for EC[19]. 4) Basement of transformer is graveled.

[12] ERM: Environmental Recourses Management,
[13] MEPE: Myanmar Electrical Power Enterprise,
[14] HTY: Hlaing Thayar,
[15] PG: Phayar Gyi,
[16] EE: Executive Engineer,
[17] PCB: Polychlorinated biphenyl
[18] IFC: International Finance Corporation,
[19] EC: Environmental Conservation

Date	References	Activities	Result
			5) Oil pitch is using. 6) Well drainage system is installed, but water discharges directly to Htoo Stream without Wastewater management. Note: Image of Oil Purifier (1200 l/hr) and its specification, Skeleton Diagram of Hlaing Thayar Primary Substation are received.
		3) U Aung Win Naing, Deputy Township Officer, GAD, Hlaing Thayar	1) To confirm the location of the 500kV HTY Substation which is in Htan Ta Pin Township. 2) Inquire of Contact person in charge of GAD, Htan Ta Pin Township
		4) U Philip Win, Deputy Township Officer, GAD, Htan Ta Pin Township	1) Procedure of Compensating (MEPE + GAD + Housing Dept.+ Land Use Dept.+ Land Owner agreement) 2) Current market price of land near the project area of Htan Ta Pin is 500 L/acre for paddy field which is valued as a second standard. 3) Contact Information of the person in charge of Compensating and the area availability for expend road assess is ok.
		5) U Win Zaw Oo, Head of Date Kong Village Ward, GAD, Pauk Tan Village, Htan Ta Pin Township Ph: 092506720020, 0973149579 and U Myat Soe, BC, Ph: 09254261545	1) The land of the projected area owned by 7 persons of 6 households has been compensated with the price 62 L/ acre since last year. (U Myo Myint, Daw Yi, Daw Than Than Swe, U Tint Lwin, U Myo Zaw, Daw Cho Cho Win and U Kyi Win.) 2) One owner (U Myo San) of land (9 acre) who didn't want to sell his land by current market price of 350L/acre. So that there is no dealing with MEPE up to date. 3) 90% of projected area has already bounded. 4) For the expend of road access from 3.5 to 6 meter, some area owned by Ministry of Transportation is being under discussion, and 0.9 acre from two private owners (U Kyaw Yin and Daw Tin Ohn) have already agreed to have the compensating price for their land with 350 L for those total land area. 5) The copies of the Evidence of Land Compensating contracts between land owners and MEPE will have to get from MEPE, U Wana Soe, Planning Manager (Civil, Southern Part), No(2), substation, Nay Pyi Taw, and U Myo Tin, EE of Same Dept inquiry through proper channel with JICA's letter to U Thein Hlaing, Chief Engineer, Power Transmission Plan Dept., Nay Pyi Taw. Ph: 067-410210 6) There are no cultural heritages within 10 km and no residents nearby the projected area. 7) Some of the small ponds of rainy water collection for drinking water and irrigation water for summer paddy fields are nearby. 8) There are no socio-economic impacts for the effected people by the selling of their parts of land (paddy fields), because they have existing residents in Pauk Tan Villages and they sold only a part of their own land of paddy filed. That's why they could set up huge another business with this compensated money and their living standard is higher than previous. 9) No need RAP for HTY Substation. 10) For the biodiversity issue, its survey has not being done because of the project is not yet confirmed whether IRR or EIA has to be done.

Ref. No.: JICA(MY) 2 - 03004
Date : 3 February 2015

U Htein Lwin
Managing Director
Myanma Electric Power Enterprise (MEPE)
Ministry of Electric Power (MoEP)

Dear U Htein Lwin,

Subject: Request for information and support for supplementary Survey for the "Environmental and Social Considerations" under the formulation of the National Power Transmission Network Development Project Phase II

First and foremost, I would like to mention my appreciation to you and your responsible officials for the cooperation and supports extended to the Fact Finding mission for the formulation of the National Power Transmission Network Development Project Phase II from 19 to 27 January, 2015.

As you may be fully aware, JICA Experts (comprised of TEPCO/TEPSCO/Nippon Koei) prepared the Initial Environmental Examination (IEE) and Abbreviated Resettlement Action Plan (A-RAP) for the whole project for National Power Transmission Network Development Project. As for Phase II, I would like to inform you that JICA Head Office is planning to update the said exiting IEE and A-RAP, mainly because the project sites for two substations need to be changed. In this regard, JICA has assigned Environmental Resources Management ERM Japan Ltd. to Myanmar from late January to End of April 2015 in order to conduct a supplementary survey to update the existing IEE and A-RAP for the said Project. E-Guard Environmental Services Company Limited (E-Guard) will work together with ERM Japan at this supplementary survey as local consultant.

In order to carry out their services to update IEE and A-RAP, Ms. Naoko Maruyama, Consultant of ERM Japan, and local consultants would like to have a kick-off meeting with you and your responsible officials, **preferably on 9th February 2015 (Monday)** at your office in Nay Pyi Taw. Furthermore, consultant team including E-Guard would like to request your kind assistance to have bilateral meetings with your officials concerned and information and supporting data/ documents.

JICA Myanmar Office
Room 701, 7th Floor, Sakura Tower, 339 Bogyoke Aung San Street, Kyauktada Township, Yangon
Tel.: 95 1 255473 ~ 6, Fax. : 95 1 255477
URL:http://www.jica.go.jp/myanmar/index.html

In this regard, I would like to request your kind assistance on the following items to the consultant team so as to enable them to conduct survey successfully.

(i) Assignment of counterpart personnel
(ii) Acceptance of bilateral meetings and appointment requests
(iii) Provision of necessary data/ information and
(iv) Answer to the Questionnaires for the survey including the ones attached herewith

<Attachment-1>: Information Request, <Attachment-2>: RAP Monitoring Form and <Attachment-3>: RAP Implementation Schedule are herewith attached for your actions.

Consultant team will soon contact to your office in order to confirm the available date for the meetings requested. **We would be grateful if you could send us your explanations/answers** in writing together with supporting data/documents in English for the attached Information Request at your earliest convenience via e-mail to Ms. Misaki Kawaguchi (Kawaguchi.Misaki@jica.go.jp), Ms. Naoko Maruyama (naoko.maruyama@erm.com) and Daw Myat Mon Swe, Local Consultant, (09-420111902) <myatmonswe@eguardservices.com>.

Your kind cooperation is highly appreciated in advance.

Yours sincerely

Masahiko TANAKA
Chief Representative
JICA Myanmar Office

(Attachments)
Attachment 1: Information Request
Attachment 2: RAP Monitoring Form
Attachment 3: RAP Implementation Schedule

C.C.: (1) Head of Office, Ministry of Electric Power
(2) Director General
Department of Electric Power, Ministry of Electric Power
(3) Chief Engineer
Power Transmission Projects Department
Myanma Electric Power Enterprise, Ministry of Electric Power

Attachment 1

2015/02/2

Naoko Maruyama, ERM Japan
JICA Mission Team

Purpose of this Study

Purpose of this Study is to carry out the supplementary survey to prepare for the JICA appraisal mission of 500 kV Phase II Project. Study will exam latest information related to environment and social consideration and may provide recommendation, if any.

Information Requested (Environment and Social Consideration)

General

1. Inform the progress of IEE/ EIA approval.

Social

2. Letter which explains agreement was acquired for the remaining land in Hlaingthayar Sub Station project area.
3. Planned route and width of access road to Hlaingthayar Sub Station. (Will any land acquisition is required?)
4. Please inform current situation about land acquisition of Phayargi Sub Station project area.
5. Please confirm there is no cultural heritage registered under law in each project component written below.
   - Sub Station – Meikhiila, Taungoo, Hlaingthayar and Phayargi
   - Transmission line – Meikhiila- Taungoo and Hlaingthayar-Phayargi
6. Please check the attached RAP monitoring form (Attachment 2) and provide us comment, if any. (Is it feasible to fill in?)
7. Please fill in **I. Internal and External Monitoring Form** in attached RAP monitoring form (Attachment 2) for each project component written below.
   - Sub Station – Meikhiila. Taungoo, Hlaingthayar and Phayargi
   - Transmission line- Meikhiila- Taungoo and Hlaingthayar-Phayargi
8. Please file in Attachment 3 regarding RAP schedule

   - Sub Station – Meikhiila. Taungoo, Hlaingthayar and Phayargi

- Transmission line- Meikhiila- Taungoo and Hlaingthayar-Phayargi

9. Please submit a scan data of agreement for compensation (for land acquisitions please include the size of land, price, plot # and map with plot #.).
10. Please share organization chart of Grievance Redness system each organization's role, method it was informed to the stakeholders and record of usage, if any.
11. Please inform responsible organization for budget, source of budget and secured amount of budget for land acquisition and involuntary resettlement in MEPE.
12. Please share organization chart with each organization's role for each project component written below. Please share the result of monitoring, if any.
    - Sub Station – Meikhiila. Taungoo, Hlaingthayar and Phayargi
    - Transmission line- Meikhiila- Taungoo and Hlaingthayar-Phayargi
13. Please inform if there is any Resettlement Work Plan established by GAD regarding this project.
14. Please share the list of land price issued by GAD.

Attachment 2

RAP Monitoring Form (draft)

I. Internal and External Monitoring Form

Monitoring Period: *Month,Year*

Location: Township_____, Village_____

Project Proponent:_____Substation, _____Transmission Line

1. Status of Land Acquisition / Resettlement and Income restoration programs

	Unit	Date Conducted	Total Affected Number	Compensated/ Assisted Number	Progress in %	Progress in narrative	Expected Date of Completion	Remarks
1. Land Acquisition / Resettlement								
1-1. Consultation with stakeholders	Participants (Persons)							
1-2 Agreement	Households							
1-3 Compensation payment	-							
1-3-1. Payment of the compensation for land/assets	Households							
1-3-2. Payment of loss of income source	Households							
1-3-3. Payment of the relocation assistance	Households							
1-3-4. Payment of the assistance for vulnerable	Households							
1-3-5. Relocation of physically displaced household	Households							
1-4. Land acquisition	Ha							
2.Income restoration programs (IRP) To be set in D/D as appropriate								
2-1. Preliminary								

Survey								
2-1. Stakeholder Consultations								
2-1. Programs development								
2.2 Training/referral provided								
2-2-1. Name of training	%							
	Participants (Persons)							
2-3. Employment of local people	%							
	Participants (Persons)							
2-4 Impact Monitoring(Income)								

2. Raised Grievance

	Issues	Raised by	Applied Measures (include current situation)	Responsible Party for Taking Measures
1				
2				
3				

3. Other Issues found at Monitoring

	Issues	Raised/ Found by	Applied Measures (include current situation)	Responsible Party for Taking Measures
1				
2				
3				

II. External Monitoring Report

The external monitoring will be carried out before commencement of construction. The report of the external monitoring expert(s) should include following items:

1. Introduction: covering project background, scope of resettlement impacts

- Project Background. Brief background, area traversed by the project
- Scope of land acquisition and resettlement impacts, a summary table to show scope of resettlement impacts: number of total affected households, vulnerable households.

2. Methodology used: explaining methods applied for external monitoring such as individual/group meetings with officials and AHs; surveys; desk review (internal monitoring reports, meeting notes/memorandum of understanding; resettlement audit

3. Progress of implementing land acquisition and resettlement including any deviations from the provisions of the plan: covering disbursement of assistance amount, moving to relocation site

Items	Findings	Recommendation
1. Land Acquisition	*Was the time frame and budget sufficient to meet objectives?*	
2. Payment of the compensation for land/assets	*Were compensation payments sufficient to replace lost land/ assets?*	
3. Payment of loss of income source	*Were payments sufficient to cover loss of income?*	
4. Payment of the relocation assistance	*Did transfer payments cover the costs?*	
5. Payment of the assistance for vulnerable	*Have vulnerable groups been provided income earning or other assistance?*	
6. Relocation		
7. Training/Referral provided		
8. Employment of local people	*Do jobs provided restore pre-project income levels and living standards?*	
9. Grievance redress mechanism	*Do APHs know about grievance procedures and conflict resolution procedures?*	
10. Information disclosure/ public consultation	*How much do APs know about resettlement procedures and*	

	entitlements? Do APs know their entitlements?	
11. Impact Monitoring	*Do PAPs recover the income at least to the pre-project level.*	

4. Capability of relevant entities: analyzing capability of each entity involved in resettlement and income restoration program

5. Identification of problem issues and recommended solutions: examining outstanding issues found from internal monitoring report, record of grievance redress, interview to relevant parties and PAHs, a Required Action and providing recommendation to solve identified issues

Outstanding Issues (PAHs' request and complaints)	Required Action	Timing	Responsible Group	Remarks

6. Recommendation

7. List of persons met (including, name of organization, date and venue of meeting. If PAP (state address), questionnaires used (if applicable), photos, maps.

8. Reference document

Organization Chart of Project Management Unit for National Power Transmission Network Development Project (Phase I)

Pre Construction Stage

Project Director
U Thein Hlaing
Chief Engineer of Power Transmission Projects Department (PTPD), MEPE
(1-person-part time)

Procurement

U Aye Kyaw
General Manager
Material Planning Dept.

U Nay Myo Than
Director
Material Planning Dept.

Project Implementation Department

Dy. Project Director
U Kyaw Thu
Deputy Chief Engineer
Power Transmission Projects Dept.
(1-person-part time)

Project Manager
U Zaw Win Naing
Superintendent Eng.
Power Transmission Projects Dept.
(1-person-partl time)

Dy. Project Manager
U Ye Min Tun
Executive Eng.
Power Transmission Projects Dept.
(1-person-part time)

Assist. Executive Eng.
U Nay Lynn
Power Transmission Projects Dept.
(2-person-part time)
*He also in charge of the
Environmental and Social Consideration Issues

Project Planning Department

Dy. Project Director
U Ye Toe Thwin
Deputy Chief Engineer of PTPD
(1-person-part time)

Project Manager
U Kyi San Lin
Superintendent Eng.
PTPD
(1-person-partl time)

Dy. Project Manager
U Myo Min Tun
Executive Eng.
PTPD
(1-person-part time)

Civil Department

Dy. Project Director
U Thein Lwin
Deputy Chief Engineer of PTPD
(1-person-part time)

Project Manager
U Kyaw Naing Win
Superintendent Eng.
PTPD
(1-person-partl time)

Dy. Project Manager
U Myint Maung
Executive Eng.
PTPD
(1-person-part time)

Finance

Daw Zaw Zaw Than
General Manager
Finance Dept.

Daw Aye Aye Myint
Director
Finance Dept.

Organization Chart of Project Management Unit for National Power Transmission Network Development Project (Phase I)

During Construction Stage

Project Director
U Thein Hlaing
Chief Engineer of Power Transmission Projects Department (PTPD), MEPE
(1-person-part time)

Power Transmission Projects Department (PTPD)
is in charge of all of implementation procedure of the Project

Procurement

U Aye Kyaw
General Manager
Material Planning Dept.

U Nay Myo Than
Director
Material Planning Dept.

Project Implementation Department

Dy. Project Director
U Kyaw Thu
DyCE, PTPD.
(1-person-part time)

In charge of Meikhtila SS

Dy. Project Director
U Min Naing
DyCE, PTPD
(1-person-part time)

Project Manager
U Thein Lwin
SE, PTPD
(1-person-part time)

Dy. Project Manager
U Soe Moe Naing
EE, PTPD
(1-person-part time)

U Aung Zaw Min
Assist. Eng., PTPD
(1-person-full time)**
Resident Engineer in Meikhtila SS (Project Site)

In charge of Taungoo SS

Dy. Project Director
U Soe Win
DyCE, PTPD
(1-person-part time)

Project Manager
U Than Shwe
SE, PTPD
(1-person-part time)

Dy. Project Manager
U Nyi Nyi Lwin
EE, PTPD
(1-person-part time)

U Aung San Oo
Assist. Eng., PTPD
(1-person-full time)**
Resident Engineer in Taungoo SS (Project Site)

Project Planning Department

Dy. Project Director
U Ye Toe Thwin
Deputy Chief Engineer of PTPD
(1-person-part time)

Project Manager
U Kyi San Lin
Superintendent Eng. PTPD
(1-person-part time)

Dy. Project Manager
U Myo Min Tun
Executive Eng.
PTPD
(1-person-part time)

Civil Department

Dy. Project Director
U Thein Lwin
Deputy Chief Engineer of PTPD
(1-person-part time)

Project Manager
U Kyaw Naing Win
Superintendent Eng.
PTPD
(1-person-part

Dy. Project Manager
U Myint Maung
Executive Eng.
PTPD
(1-person-part time)

Finance

Daw Zaw Zaw Than
General Manager
Finance Dept.

Daw Aye Aye Myint
Director
Finance Dept.

** **Assisntant Engineer of PTPD**:
He is not only in charge of the **Environmental and Social Consideration Issues,** also as a focal point of **Grievance Redress Mechanism** for each substation.

第三次現地業務結果報告

ミャンマー国/全国基幹送変電設備整備事業（環境社会配慮）
【有償勘定技術支援】

現地業務工程

日にち	内容
2015.3.23（月）	ミャンマーへ移動
2015.3.24（火）	E Guard との打合せ ネピドーへ移動 JICA との打合せ
2015.3.25（水）	JICA 及び E Guard との打合せ Myanmar Electric Power Enterprise (MEPE)へのヒアリング
2015.3.26（木）	Environmental Conservation Department (ECD)へのヒアリング MEPE へのヒアリング
2015.3.27（金）	MEPE へのヒアリング ヤンゴンへ移動 日本へ移動
2015.3.28（土）	日本へ帰着

打合せ記録

日時	2015 年 3 月 24 日　11:00 – 15:00
場所	E Guard, Yangon
参加者	Myat Mon Swe, Consultant, E Guard Naoko Maruyama, Consultant, ERM （敬称略）
打合せ内容	
1)　情報の収集状況及び、今回収集すべき内容について確認を行った。	

日時	2015 年 3 月 24 日　19:30 – 20:30
場所	Tingaha Hotel , Nay Pyi Taw
参加者	Misaki Kawaguchi, Deputy Assistant Director, JICA HQ Yuma Eguchi, JICA HQ Naoko Maruyama, Consultant, ERM （敬称略）
打合せ内容	
1)　情報の収集状況及び、今回収集すべき内容について確認を行った。	

日時	2015 年 3 月 25 日　8:30 – 9:00
場所	Tingaha Hotel , Nay Pyi Taw
参加者	Misaki Kawaguchi, Deputy Assistant Director, JICA HQ Yuma Eguchi, JICA HQ Aye Thiha, MD, E Guard Myat Mon Swe, Consultant, E Guard Naoko Maruyama, Consultant, ERM （敬称略）
打合せ内容	
1)　情報の収集状況及び、今回収集すべき内容について確認を行った。	

日時	2015 年 3 月 25 日　10:00 – 17:30
場所	MEPE, Nay Pyi Taw
参加者	Misaki Kawaguchi, Deputy Assistant Director, JICA, HQ Yuma Eguchi, JICA, HQ Kyi San Lyinn, SE, MEPE Myo Min Tun, EE, PTPD (South), MEPE Myat Mon Swe, Consultant, E Guard Naoko Maruyama, Consultant, ERM （敬称略）
打合せ内容	
1) 環境社会配慮に関する情報の収集 MEPE へ事前に提出した質問状に基づき、環境社会配慮に関する情報の収集を行った。（参照：添付資料 1）	

日時	2015 年 3 月 26 日　11:00 – 12:00
場所	ECD, Nay Pyi Taw
参加者	San Oo, Director, ECD Myat Mon Swe, Consultant, E Guard Maruyama Naoko, Consultant, ERM （敬称略）
打合せ内容	
1) IEE に関するレター及び今後の予定について確認 Ministry of Electric Power (MoEP)より本事業に関して EIA ではなく IEE を実施する旨を依頼するレターが Ministry of Environment Conservation and Forestry (MoECaF)へ提出された。MoECaF 大臣の確認を通過し、現在は Union Cabinet からの承認を待っているところである。およそ 2-4 週間で承認され、その後 1 週間で結果が MoEP へ行く予定である。 ECD によると EIA ではなく、IEE を実施することは EIA Guideline が発行されても有効とのことである。 2) IEE の申請のスコープについて 4 つの変電所、送電線についてどのように IEE の許可を申請するかは、MoEP が Regional Cabinet へ確認する必要があるとのことである。 （参照：添付資料 2）	

日時	2015 年 3 月 26 日　13:00 – 17:30 2015 年 3 月 27 日　 9:30 – 12:00
場所	MEPE, Nay Pyi Taw
参加者	Myo Min Tun, EE, PTPD (South), MEPE Myat Mon Swe, Consultant, E Guard Naoko Maruyama, Consultant, ERM （敬称略）

打合せ内容

1) 環境社会配慮に関する情報の収集

事前に提出した質問状に基づき、環境社会配慮に関する情報の収集を行った。収集状況は以下の通りである。

Time- bound Action Plan に基づくもの	Target Date	Current Status
Result of Stakeholder Meeting	2015/3/31	2015/3/31 E Guard より提出予定
Compensation Price of Phayargri SS	2015/3/31 →金額の確定は Regional Office 承認後（5 月末頃）	MEPE, GAD, 及び PAPs で合意した価格の情報は入手済（参照：添付資料 3）。ただし、Regional Office による価格承認（5 月末頃）を持って価格は確定するとのことである。
Screening Form 及び Check List→入手済み	2015 年 4 月初め	入手済み（参照：添付資料 4,5）
Environment Monitoring Form 及び RAP Monitoring Form	2015 年 4 月初め	入手済み（参照：添付資料 6,7）（RAP Monitoring Form はパヤジーSS について入力を行った。）
Entitle Matrix	2015 年 4 月初め →MEPE 内での鉄塔に関する土地の方針決定後、提出（2015 年 4 月初めの見込み）	現時点では、鉄塔の用地取得の補償はしない方針のため、土地と同等の補償を Livelihood Restoration として提供できるか MEPE 内で検討中。また、SS については、用地取得による補償が十分であるため、穀物の補償は行わないというのが MEPE の方針である（小作人はいないとのことである）。
IEE に関する MOECAF	2015 年 4 月初め→	Union Cabinet での決済に時間

からの回答→	2015/4/10 頃	を要しており、2015/4/10 頃となる予定である。
Land Acquisition Progress and Result	2015 年 4 月末 →MEPE より一度 JICA へ状況を報告予定。	プロセスに関しては MEPE が確認をし、若干の修正を行った（参照 : 添付資料 8）。Regional Government による価格承認（5 月末頃）まではあまり動きはない見込みである。

その他	Current Status
ECD による IEE の承認プロセス	ECD よりヒアリング済み。
Grievance Redness System	2015 年 4 月末までに設立する予定である。
Resettlement Policy　IV. A-RAP の公開	Stakeholder Meeting 及び Consultation の際に実施されているが、A-RAP にある Resettlement Policy の IV. The Resettlement Plan will be translated into local languages and disclosed for the reference of PAPs as well as other interested groups は未完である。MEPE は A-RAP の Executive Summary を Village Track の事務所に 2015 年 5 月中旬まで置く予定である。
送電線の ROW	50m であることを MEPE に確認。
送電線の鉄塔の土地の補償金額	MEPE により提供された試算は以下のとおりである。 Tower Base の面積＝188,350m2= 約 46 acre （IEE　表 1.5 ＋25m＊25m　3 鉄塔） 46.5 acre＊400L/acre=18,600L Kyat
ラインタヤ SS のアクセス道路	Pauk Tan Ywer Road は 20feet （約 6m）の道路で整備される予定である。これは YCDC の ROW 内であり、YCDC と MEPE は補償なしで道路を拡張することに合意済みである。
パヤジーSS のアクセス道路	MEPE が Baw Net Gyi High Way と平行に走る道路を拡張し、アクセス道路として利用する。この道路現在は政府が所有をしているが、政府とと MEPE は補償なしで道路を拡張することに合意済みである。（農村開発の目的も兼ねるため）
IEE と A-RAP の更新	MEPE は IEE と RAP の更新完了後、内容を

	確認することを合意した。

添付資料 1：Letter to MEPE
添付資料 2：ECD approval Process
添付資料 3：Compensation Price of Phayargri SS
添付資料 4：Screening Form
添付資料 5：Environment Checklist
添付資料 6：Environment Monitoring Form
添付資料 7：RAP Monitoring Form
添付資料 8：Land Acquisition Process

Request for meeting and information for Supplementary Survey for
National Power Transmission Network Development Project Phase II formulation
-Environmental and Social Considerations-

We appreciate MEPE's continuous support to the Survey. JICA team will conduct the last visit to Myanmar from 24 to 26 of March, 2015 for this survey. In order to colllected all nesseary infromation and complete the survey, we would like to have a meeting with you and your responsible officials, preferably on **25th March (Wed.) and 26th March (Thu.)** at your office.

We highly appreciate it you could prepare explanations and answer to below questions before our discussion, i.e. 25th March (Wed.).

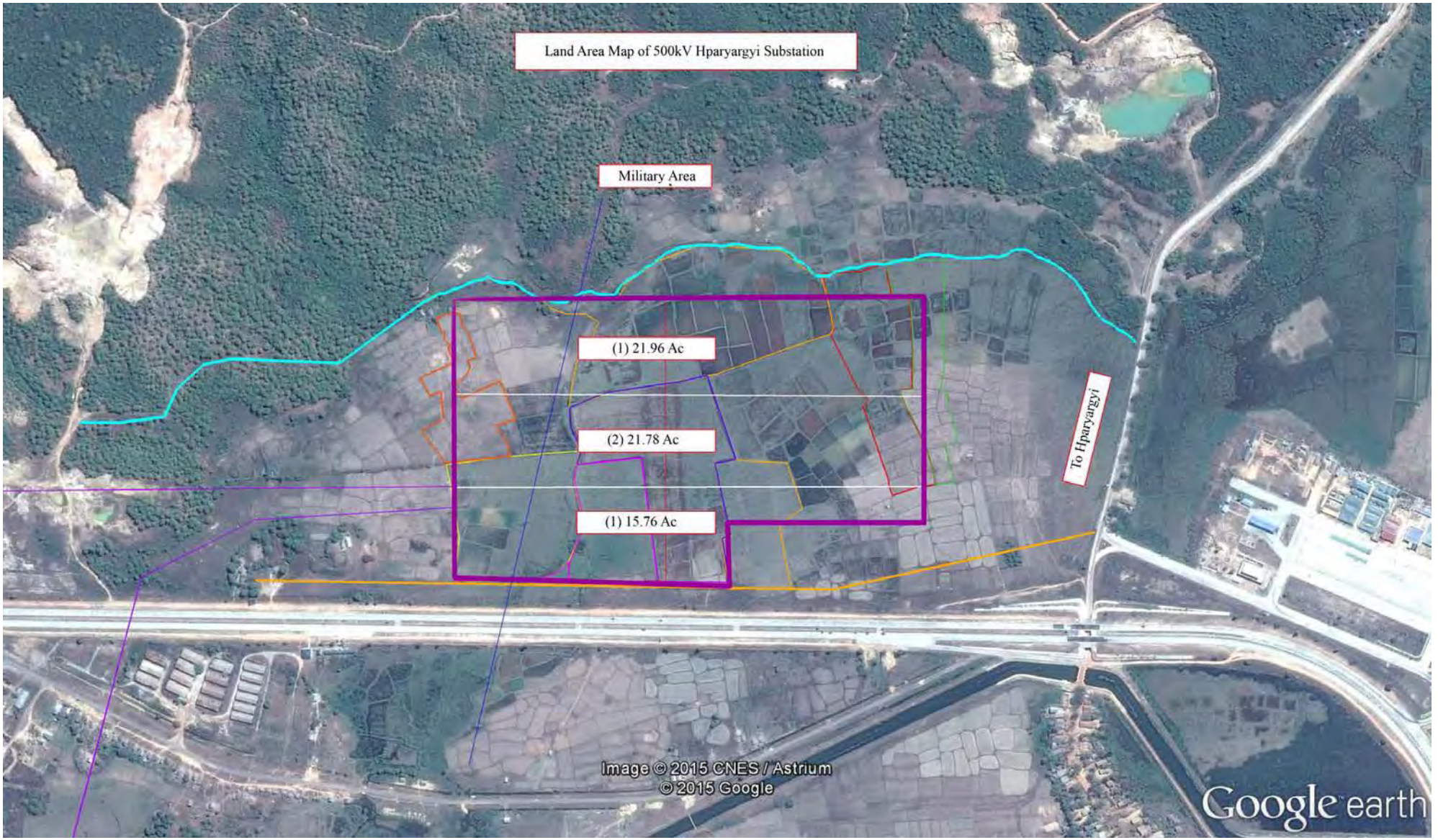
1. Below documents have been made or updated during our survey. Please check each document in Annex. If there is anything MEPE should modify, please let us know. If there aren't any comments from MEPE by **March 26, 2015 (Thursday)**, we will consider that MEPE agreed to the content.
   - Attachment 1. Environmental Checklist
   - Attachment 2. Entitlement Matrix
   - Attachment 3. Environmental Monitoring Form
   - Attachment 4. RAP Monitoring Form
   - Attachment 5. Grievance Redness System
   - Attachment 6. MEPE's land acquisition process.
   - Attachment 7. Section 7 of IEE
2. Please confirm there in no people in the project affect area who only cultivate the land and do not own the land.
3. Budget of RAP. (Please see Attachment 8.)
   - Please provide latest Budget of RAP.
   - Please inform the how the budget for compensation of commercial Trees is estimated.
4. MEPE's implementation of resettlement policy (Please see Attachment 9.)
5. Please review and fill in table in Attachment 10 to summarize information of stakeholder meeting.
6. Please review and fill in the information of compensation in Attachment 11.
7. Please inform the progress of Negotiation with ECD for IEE approval (Please confirm MEPE can apply for IEE approval even after the EIA Procedure is published.)
8. Please inform the YCDC's ROW of Pauk Tan Ywer Road.
9. Please provide if any of below inform is available.
   - Filled in RAP monitoring Form
   - Alternative analysis of location of transmission line and substations.

添付資料 2 ECD approval Process

Process	Progress
1. MEPE's Managing Director submit application letter to MoEP Minster to conduct IEE instead of EIA.	Finished
2. Ministry of Electric Power (MoEP)'s Minster submits the application letter to MoECaF Minister.	
3. Ministry of Environment Conservation and Forestry (MoECaF)'s Minister passes the application letter to Environment Conservation Department (ECD) Director General (DG).	
4. ECD DG reviews the application letter	
5. MoECaF Minister reviews the application letter based on ECD DG's decision.	
6. Union Cabinet review the application letter based on MoECaF's decision.	
7. Union Cabinet (UC) issues an approval.	Submitted to UC on the week of Mar.16. Expected to 2 to 4 weeks for approval.
8. Final decision will be sent to MoEP from MoECaF.	Expected to finish in 1week from item7).
9. MEPE consult with UC the scope of IEE (4 sub-stations and transmission line) by letter.	TBD

Negotiated Land Price for Hparyargyi Substation

NOTE	Remark	Negotiated land Price MMK (Lakh)
1	First (440)Ft distance inland area by BawNatGyi Highway	250
2	Second (440)Ft distance inland area by BawNatGyi Highway	170
3	Third (440)Ft distance inland area by BawNatGyi Highway	90



添付資料 4 Screening Form

Screening Form

Name of Project：National Power Transmission Network Development Project Phase II

Name of Project Execution Organization：Myanmar Electric Power Enterprise (MEPE)

Name of Borrower：　Ministry of Finance

Please provide the name, department, job title, and contact details for the person who is responsible for filling out this form.

Name：U Thein Hlaing, U Myo Min Tun

Department and title：Power Transmission Projects Department, Chief Engineer, and Executive Engineer

Name of Company or Organization：Myanmar Electric Power Enterprise (MEPE)

Telephone number：95-67-410210, 95-67-410065

Fax number：95-67-410211

E-Mail address：utheinhlaing3@gmail.com, komyomin528@gmail.com

Date：Feb.27, 2015

Signature：

Questions

Q1. Please provide the address of the project site.

Address of the project site:
Transmission line: Bago Township, Bago Region,
Hlegu, Hmawbi and Htantabin townships, Yangon Region.
Hpayargyi Sub Station: Taungoo Township, Bago Region
Hlaingthayar Sub Station: Htantabin townships, Yangon Region

Q2. Please provide brief explanation of the project.

Phase II Project is consisted with two sub stations (Hpayargyi and Hlaingthayar) and 94 km transmission line which connect two substations. This project covers section from Hpayargyi (Bago Region) – Hlaingthayar (Yangon Region) of 500 kV Phase II Project.

Q3. Will JBIC loan be applied to a new project or an executing project? In case of executing project, please inform the presence of strong claims by local residents.

■ New Project
□ Executing Project (with Claim)
□ Executing Project (without Claim)
□ Others (Please specify)

Q4. In case of this project, is it necessary to execute Environmental Impact Assessment (EIA) based on the laws or regulations? If necessary, please inform the progress of EIA.

□ Required (Completed)
□ Required (Under execution or under planning)
□ Not Required
■ Others (IEE is expected to be required. Currently under discussion with ECD.)

Q5. In case that EIA is already completed, pleases inform whether EIA report is already approved based on the environmental assessment system or not. If EIA report is already approved, please provide the date and name of authorities of the approval.

□ Approved (without condition)
□ Approved (conditional)
□ Under approval process
■ Others (Expected to apply for IEE in 2015.)

Date of Approval :
Name of Authorities :

Q6. If environmental permit(s) other than EIA is required, please provide the name of required permit(s). Have you obtained required permit(s)?

□ Obtained
□ Required, but not obtained yet
■ Not required
□ Others (Please specify)

Name(s) of required permit(s) :

Q7. Will the loan be used for the undertaking that cannot specify the project at this stage (e.g. export or lease of machinery that has no relation with specific project, or Two Step Loan that cannot specify the project at the time of loan agreement)?

(Yes / No)

If you answered “Yes”, it is not necessary to reply to the following questions.
If you answered “No”, please reply to the following questions.

Q8. Are there any environmentally sensitive area shown below in and around project site?

(Yes / No)

If you answered “Yes”, please select applicable items by marking, and reply to following questions.
If you answered “No”, please reply to questions 9 and after.

- ☐ (1) National parks, protected areas designated by government (coastal areas, wetlands, habitats of minorities or indigenous populations, heritage sites, etc.)
  (Moeyungyi wetland bird sanctuary which is also a IBA and Ramsar site is located approximately 5 mile (8km) east from Hpayargyi SS)
- ☐ (2) Primeval forests, tropical natural forests
- ☐ (3) Ecologically important habitats (coral reefs, mangrove, tidal flats, etc.)
- ☐ (4) Habitats of endangered species of which protection is required under local laws and international agreements.
- ☐ (5) Areas that have risks of large scale increase in soil salinity or soil erosion
- ☐ (6) Desertification areas
- ☐ (7) Areas with special values from archaeological, historical and/or cultural viewpoints
- ☐ (8) Habitats of minorities, indigenous populations, nomadic people with traditional life style, or areas with special social value

Q9. Does the project involve following elements?

(Yes / No)

If you answered “Yes”, please describe the scale of applicable elements, and reply to the questions 10 and after.
If you answered “No”, please reply to questions 11 and after.

- ☐ （1） Involuntary resettlement (Number of resettlers:)
- ☐ （2） Pumping of groundwater (Scale: ton/year)
- ☐ （3） Land reclamation and/or development (Scale: ha)
- ☐ （4） Deforestation (Scale: ha)

Q10. Please reply to this question only in case that the project involves some of the above (1) to (4) elements. In the country where the project is planned, are there any regulations on a scale of the elements asked in question 9? If the country has such regulation, please answer whether the project satisfies the regulation or not.

☐ Regulation is applicable (☐ satisfied ☐ not satisfied) ■ No regulation
☐ Others (Please specify)

Please reply to questions 11 and after.

Q11. Will JICA share in the project be equal or less than 5% of the total project cost, or the total amount of JBIC loan equal or less than SDR 10 million?

(Yes / No)

If you answered “Yes”, it is not necessary to reply to the following questions.
If you answered “No”, please reply to questions 12 and after.

Q12. Does the project belong to either of the sectors that impact on the environment is deemed immaterial or is not anticipated under normal conditions (e.g. maintenance of the existing facilities, non-expansionary renovation project, acquisition of rights or interest without additional plant investment)?

(Yes / No)

If you answered "Yes", it is not necessary to reply to following questions.
If you answered "No", please reply to the questions 13 and after.

Q13. Does the project belong to the following sectors?

(Yes / No)

If you answered "Yes", please specify the sector by marking, and reply to questions 14 and after.
If you answered "No", it is not necessary to reply to the following questions.

- ☐ (1) Hydro power plant, Dam or water reservoir
- ☐ (2) Thermal power plant
- ☐ (3) Mines
- ☐ (4) Development of oil and gas
- ☐ (5) Pipeline
- ☐ (6) Steel industry (with large scale furnace)
- ☐ (7) No-ferrous metal refining
- ☐ (8) Petrochemical (including manufacturing of raw materials and petrochemical complex)
- ☐ (9) Terminal of oil, gas and chemicals
- ☐ (10) Petroleum refining
- ☐ (11) Paper and pulp
- ☐ (12) Manufacturing and/or transportation of hazardous substances (specified by international agreement)
- ☐ (13) Road, railway or bride
- ☐ (14) Airport
- ☐ (15) Port
- ☐ (16) Waste material processing or treatment
- ☐ (17) Treatment of sewage and/or waste water that includes hazardous substances or executed at environmentally sensitive area
- ☐ (18) Power transmission and/or distribution lines (including large scale involuntary resettlement, large scale deforestation or submarine cable)
- ☐ (19) Tourism (Construction of hotel, etc.)
- ☐ (20) Forestry or tree planting
- ☐ (21) Agriculture (large scale project and/or project including irrigation)

Q14. Please provide information on the scale of the project (project area, area of plants and buildings, production capacity, amounts of power generation, etc.) Further, pleased explain whether an execution of EIA is required on account of the large scale of the project in the country where the project is implemented.

Category	Environmental Item	Main Check Items	Yes: Y No: N	Confirmation of Environmental Considerations (Reasons, Mitigation Measures)
1 Permits and Explanation	(1) EIA and Environmental Permits	(a) Have EIA reports been already prepared in official process? (b) Have EIA reports been approved by authorities of the host country's government? (c) Have EIA reports been unconditionally approved? If conditions are imposed on the approval of EIA reports, are the conditions satisfied? (d) In addition to the above approvals, have other required environmental permits been obtained from the appropriate regulatory authorities of the host country's government?	(a) - (b) - (c) - (d) N	(a)(b) (c) MEPE will apply for IEE approval based on the agreement Environmentall Conservation Department (ECD, Ministry of Conservation and Forestry) and papply to MoCAF. (d) There is no other required environmental permit.
	(2) Explanation to the Local Stakeholders	(a) Have contents of the project and the potential impacts been adequately explained to the Local stakeholders based on appropriate procedures, including information disclosure? Is understanding obtained from the Local stakeholders? (b) Have the comment from the stakeholders (such as local residents) been reflected to the project design?	(a) N (b) -	(a) As for the proposed substation site at Hlaintharyar and Hpayargyi contents of the project and the potential impacts were explained when proceeding the official process of acquiring land. Stakeholder consultation with Project Affecct People of tranmission line will be condcted durring after the detail measurement survey and detail design. The stakeholders meetings of IEE on the affected area (4 substation and transmission line route) will be held at 4 townships inviting relevant authorities at township level. (b) After conducting the stakeholders meeting, the comments from the meeting will be incorporated into the project design.
	(3) Examination of Alternatives	(a) Have alternative plans of the project been examined with social and environmental considerations?	(a) Y	(a) Alternatives including without plan were examined as follows, Without project case: Generated electricity from hydropower plants in northern region will not be distributed to the southern region. Similarly, generated electricity from thermal power plants in southern region will not be distributed to the northern region. Consequently, potential electricity users are not able to afford electricity from grid connection but have to rely on the electricity from diesel generator, which is more costly. Project design: Location of substations as well as that of transmission line were selected among many alternatives in order to avoid or minimize natural and/or social environmental impacts, such as resettlement and vulnable people.

Category	Environmental Item	Main Check Items	Yes: Y No: N	Confirmation of Environmental Considerations (Reasons, Mitigation Measures)
2 Pollution Control	(1) Water Quality	(a) Is there any possibility that soil runoff from the bare lands resulting from earthmoving activities, such as cutting and filling will cause water quality degradation in downstream water areas? If the water quality degradation is anticipated, are adequate measures considered?	(a) Y	(a) There are possibilities that construction works such as excavation and concrete mixing would degraded water quality during construction phase. Also, discharged water from contractor's employees' camp/office would cause water pollution. Monitoring water quality around construction sites as well as constructor's employees' camp/office will be one of the monitoring items in an environmental management plan (EMP), which will be prepared together with IEE report. Provisions on managing water quality such as sediment traps, silt traps would be applied as appropriate. Provisions on soil erosion such as management of excavated soil will be also applied as appropriate.
3 Natural Environment	(1) Protected Areas	(a) Is the project site located in protected areas designated by the country's laws or international treaties and conventions? Is there a possibility that the project will affect the protected areas?	(a) N	(a) There is no protected area confirmed in project area.
	(2) Ecosystem	(a) Does the project site encompass primeval forests, tropical rain forests, ecologically valuable habitats (e.g., coral reefs, mangroves, or tidal flats)? (b) Does the project site encompass the protected habitats of endangered species designated by the country's laws or international treaties and conventions? (c) If significant ecological impacts are anticipated, are adequate protection measures taken to reduce the impacts on the ecosystem? (d) Are adequate measures taken to prevent disruption of migration routes and habitat fragmentation of wildlife and livestock? (e) Is there any possibility that the project will cause the negative impacts, such as destruction of forest, poaching, desertification, reduction in wetland areas, and disturbance of ecosystem due to introduction of exotic (non-native invasive) species and pests? Are adequate measures for preventing such impacts considered? (f) In cases where the project site is located in undeveloped areas, is there any possibility that the new development will result in extensive loss of natural environments?	(a) N (b) N (c) - (d) - (e) N (f) N	(a) No primeval forests, tropical rain forests or ecologically valuable habitats area confirmed in project area. (b) There is no protected habitats of endangered species confirmed in project area. (c)(d) Moeyungyi wetland is Wetland Wildlife Sanctuary, Important Bird and Biodiversity Areas (IBAs) and Ramsar site located approximately 8km east of Hpayargyi Substation Shinpin Kyetthauk Wildlife Sanctuary (still in the proposed list) is about 12 km to the south-west of Taungoo Substation and Hlawga Wildlife Sanctuary situated in Yangon Region about 8 km to the east of nearest proposed transmission line. Owing to the nature of work activities and distance, it is unlikely to have effect on the protected area. However part of project area is within extant area of some threaten birds is protected area. As mitigation measure, bird strike will be be monitored and bird flight diverters will be installed with the area of 10km from protected area. There is no distribution of habitat fragmentation of wildlife and livestock confirmed in project area. (e) There is no possibility that project will cause the negative impacts due to introduction of exotic species and pests. (f) The project is located already developed areas such as agricultural land, commercial tree plantation or vacant land.

Category	Environmental Item	Main Check Items	Yes: Y No: N	Confirmation of Environmental Considerations (Reasons, Mitigation Measures)
3 Natural Environment	(3) Topography and Geology	(a) Is there any soft ground on the route of power transmission and distribution lines that may cause slope failures or landslides? Are adequate measures considered to prevent slope failures or landslides, where needed? (b) Is there any possibility that civil works, such as cutting and filling will cause slope failures or landslides? Are adequate measures considered to prevent slope failures or landslides? (c) Is there a possibility that soil runoff will result from cut and fill areas, waste soil disposal sites, and borrow sites? Are adequate measures taken to prevent soil runoff?	(a) N (b) N (c) Y	(a) The project area is located in flat area thus slope failure or landslides is not expected. (b) There is no significant cutting and filling works planned except for the proposed substation land at Hlaintharyar where the cutting works needs to be done. However, the area is not steep thus slope failures or landslides are not expected due to the cutting works. Filling might be required for Payagi SS. Appropriate measure will be taken to minimize impact in EMMP. (c) There is a possibility of soil runoff at the construction sites of substation and tower base during construction phase. Counter-measures such as limit the height of piled up soil and designate the place for piled up soil will be applied against soil runoff.

Category	Environmental Item	Main Check Items	Yes: Y No: N	Confirmation of Environmental Considerations (Reasons, Mitigation Measures)
4 Social Environment	(1) Resettlement	(a) Is involuntary resettlement caused by project implementation? If involuntary resettlement is caused, are efforts made to minimize the impacts caused by the resettlement? (b) Is adequate explanation on compensation and resettlement assistance given to affected people prior to resettlement? (c) Is the resettlement plan, including compensation with full replacement costs, restoration of livelihoods and living standards developed based on socioeconomic studies on resettlement? (d) Are the compensations going to be paid prior to the resettlement? (e) Are the compensation policies prepared in document? (f) Does the resettlement plan pay particular attention to vulnerable groups or people, including women, children, the elderly, people below the poverty line, ethnic minorities, and indigenous peoples? (g) Are agreements with the affected people obtained prior to resettlement? (h) Is the organizational framework established to properly implement resettlement? Are the capacity and budget secured to implement the plan? (i) Are any plans developed to monitor the impacts of resettlement? (j) Is the grievance redress mechanism established?	(a) N (b) Y (c) Y (d) Y (e) Y (f) Y (g) Y (h) Y (i) Y (j) Y	(a)There is no resettlement. Land for project area will be acquired. (b)Compensation will be set and paid in comply with the legislations such as agricultural law and agricultural rules. Explanation on compensation and land acquistion has been give to PAPs indivuallly. For tranmissiom line, explanation on compensation and land acquistion has been give to PAP will be carried out during conducting detailed measurement survey and detail design. Stakeholder meeting to will be given toDuring conducting IEE, to explaing the contents of the project and the potential impacts and the comments from the meeting will be incorporated into the project design. (c) Land acquistion and conpensation for loss of income source are based on market price. (d) The finalization of compensation price and assistance will be made at compensation committee, which will be organized with MEPE, GAD and Village Track and paid before construction. (e) The compensation policies were addressed in a resettlement action plan (RAP) (f) The vulnerable were identified in conducting IEE and MEPE aviod vulnerable people for project area including transmission line. For transmission line, MEPE will identified again during detailed design phase when the location of the projects will be finalized. (g) With the price set by compensation committee, MEPE will negotiate and make agreement with affected peoples prior to construction. (h) The environmental and social staff/unit will be responsible for proper implementation of compensation and other assistances. The budget regarding compensation, assistances and monitoring will be secured as a part of project cost and secured by MEPE's budget. (i) Monitoring of land acquisition process is planned in the RAP and carried out monthly basis.
	(2) Living and Livelihood	(a) Is there a possibility that the project will adversely affect the living conditions of inhabitants? Are adequate measures considered to reduce the impacts, if necessary? (b) Is there a possibility that diseases, including infectious diseases, such as HIV will be brought due to immigration of workers associated with the project? Are adequate considerations given to public health, if necessary? (c) Is there any possibility that installation of structures, such as power line towers will cause a radio interference? If any significant radio interference is anticipated, are adequate measures considered? (d) Are the compensations for transmission wires given in accordance with the domestic law?	(a) N (b) Y (c) - (d) Y	(a) Adversely affect on the living conditions of inhabitants due to land acquisition is predicted. Compensation shall be managed based on the RAP and duly monitored. (b) Inflow of construction contractor's employees camp to local community will raise risks on communicable diseases. The instruction on basic health care including communicable diseases will be given to the employees throughout construction phase. (c) Significant radio interference is not anticipated since the transmission line route is to be constructed in agricultural land and commercial forest land and not near residential area. (d) Compensations within the transmission right of way will be calculated and disbursed based on domestic law such as land act and agricultural

Category	Environmental Item	Main Check Items	Yes: Y No: N	Confirmation of Environmental Considerations (Reasons, Mitigation Measures)
4 Social Environment	(3) Heritage	(a) Is there a possibility that the project will damage the local archeological, historical, cultural, and religious heritage? Are adequate measures considered to protect these sites in accordance with the country's laws?	(a) N	(a) No archeological, historical, cultural or religious heritage is confirmed in project area. When any objects possibly related to historical, cultural or religious heritage will be discovered during construction phase, construction contractor will report to the relevant authority and wait for further instruction.
	(4) Landscape	(a) Is there a possibility that the project will adversely affect the local landscape? Are necessary measures taken?	(a) N	(a) Construction of substations as well as transmission towers will change the original landscape. The location of the substations and transmission lines are either in agricultural area or forest land and away from residential area. Consequently, the project will not adversely affect the local landscape.
	(5) Ethnic Minorities and Indigenous Peoples	(a) Are considerations given to reduce impacts on the culture and lifestyle of ethnic minorities and indigenous peoples? (b) Are all of the rights of ethnic minorities and indigenous peoples in relation to land and resources respected?	(a) - (b) -	(a) (b) Based on the IEE result, the ethnic minorities residing in project area have a long association with the local area and the minority groups have generally been absorbed into the mainstream Burmese-speaking society. Consequently there is no specific consideration necessary for ethnic minorities in project area.
	(6) Working Conditions	(a) Is the project proponent not violating any laws and ordinances associated with the working conditions of the country which the project proponent should observe in the project? (b) Are tangible safety considerations in place for individuals involved in the project, such as the installation of safety equipment which prevents industrial accidents, and management of hazardous materials? (c) Are intangible measures being planned and implemented for individuals involved in the project, such as the establishment of a safety and health program, and safety training (including traffic safety and public health) for workers etc.? (d) Are appropriate measures taken to ensure that security guards involved in the project not to violate safety of other individuals involved, or	(a) N (b) Y (c) Y (d) Y	(a) (b) (c) Working conditions will be in complied with Myanmar's legislations. Safety measures will be incorporated into the EMMP and to be monitored throughout project planning, construction and operation phases. (d) Security guards as well as any construction employees involved in the project will be instructed safety of other individuals involved or local residents before starting their work. Construction constructor will be responsible for implementing the instruction. Implementation of the instruction regarding safety will be addressed in EMMP.
	(1) Impacts during Construction	(a) Are adequate measures considered to reduce impacts during construction (e.g., noise, vibrations, turbid water, dust, exhaust gases, and wastes)? (b) If construction activities adversely affect the natural environment (ecosystem), are adequate measures considered to reduce impacts? (c) If construction activities adversely affect the social environment, are adequate measures considered to reduce impacts?	(a) Y (b) Y (c) Y	(a) Counter measures pertaining negative impacts such as noise, vibrations, turbid water, dust, waste, accidents are to be considered and addressed in EMMP. (b) (c) Based on EMMP, the impacts from construction activities will be mitigated and the mitigation measures will be monitored throughout the construction phase.

Category	Environmental Item	Main Check Items	Yes: Y No: N	Confirmation of Environmental Considerations (Reasons, Mitigation Measures)
5 Others	(2) Monitoring	(a) Does the proponent develop and implement monitoring program for the environmental items that are considered to have potential impacts? (b) What are the items, methods and frequencies of the monitoring program? (c) Does the proponent establish an adequate monitoring framework (organization, personnel, equipment, and adequate budget to sustain the monitoring framework)? (d) Are any regulatory requirements pertaining to the monitoring report system identified, such as the format and frequency of reports from the proponent to the regulatory authorities?	(a) Y (b) Y (c) Y (d) Y	(a) (b) In order to avoid and/or minimize the potential impacts identified in the course of conducting IEE, counter-measures and monitong prepared in EMMP. (c) The EMMP included adequate monitoring framework. (d) The environmental assessment rules, which supposedly included requirements on monitoring report system, is to report every 6 months to ECD.The format and frequency of reports will be prepared in comply with the regulatory authorities' requirements.
6 Note	Reference to Checklist of Other Sectors	(a) Where necessary, pertinent items described in the Road checklist should also be checked (e.g., projects including installation of electric transmission lines and/or electric distribution facilities).	(a) -	(a) It is necessary to develop temporally access road to the transmission line construction site. The counter-measures to minimize the negative impact on natural and social environment such as limit to develop land for access road, permit the construction activities only in designated area and compensate any damages due to developing access roads are to be addressed in the EMMP and duly monitored during construction phase.
	Note on Using Environmental Checklist	(a) If necessary, the impacts to transboundary or global issues should be confirmed, (e.g., the project includes factors that may cause problems, such as transboundary waste treatment, acid rain, destruction of the ozone layer, or global warming).	(a) -	(a) There is no impacts to transboundary or global issues due to the project.

1) Regarding the term “Country’s Standards” mentioned in the above table, in the event that environmental standards in the country where the project is located diverge significantly from international standards, appropriate environmental considerations are required to be made.
In cases where local environmental regulations are yet to be established in some areas, considerations should be made based on comparisons with appropriate standards of other countries (including Japan's experience).
2) Environmental checklist provides general environmental items to be checked. It may be necessary to add or delete an item taking into account the characteristics of the project and the particular circumstances of the country and locality in which it is located.

添付資料 6 Environmental Monitoring Form

MONITORING FORM

-If environmental reviews indicate the need of monitoring by JICA, JICA undertakes monitoring for necessary items that are decided by environmental reviews. JICA undertakes monitoring based on regular reports including measured data submitted by the project proponent. When necessary, the project proponent should refer to the following monitoring form for submitting reports.

-When monitoring plans including monitoring items, frequencies and methods are decided, project phase or project life cycle (such as construction phase and operation phase) should be considered.

1. Responses/Actions to Comments and Guidance from Government Authorities and the Public

Monitoring item	**Monitoring results during report period**
Responses/Actions to Comments and Guidance from Government Authorities	

2. Mitigation Measures

[Construction Phase]

- Air Quality（Emission Gas / Ambient Air Quality）

Monitoring item	**Measurement point**	**Frequency**	**Monitoring result during report period**
Sprinkle water to control dust	Access road near village	Monthly	
Vehicle inspection check-up	Construction site	Monthly	

*Monitored and recorded the result by constructor daily and the record inspected by Environmental and Social Unit (ESU) monthly

- Water Quality（Effluent/Wastewater/Ambient Water Quality）

Monitoring item	**Measurement point**	**Frequency**	**Monitoring result during report period**
Contamination of oil in watercourse	Construction site	Monthly*	

*Implement visual inspection by ESU

- Waste

Monitoring item	**Measurement point**	**Frequency**	**Monitoring result during report period**
Construct hygienic human waste disposal systems such as a dig hole or install septic tank	Worker's Camp	Monthly*	
	Construction site		
-Install garbage bins at the site -Make arrangement to dispose of recyclable waste such as paper, cans, tins, bottles, and cardboard -Dispose of non-recyclable waste such as vegetable waste at a dig hole or designated place	Worker's camp	Monthly*	
	Construction site		
Disposed of Construction waste such as waste soil, at designated place	Construction site	Monthly	
Types of the waste, amount, disposal method	Construction	Monthly	

*Implement visual inspection by ESU

**as for polythene, either to be recycled or disposed of at a hole depends on the availability of local collector

- Noise

Item	Unit	Measured Value (Mean)	Measured Value (Max)	International Standard	Remarks (measurement point, frequency)
Noise level*	db			55db (6:00-22:00) 45db (22:00-6:00)	At the nearest residential area of construction site, Monthly

*World Bank Environmental Health and Safety Guidelines

3. Natural Environment

Monitoring item	Measurement point	Frequency	Monitoring result during report period
No hunting, collecting timbers, forest resource extraction, introduce of exotic species, use of herbicide	Worker's Camp	Monthly	
	Access Road (existing road to the ROW)		
	Construction site		
Restoration of the site	Worker's Camp	On completion of construction activities	
	Access Road (existing road to the ROW)		
	Construction site		

*Implement visual inspection by ESU

4. Social Environment

- Summary of completed land acquisition and compensation

No.	Affected Items	Unit	Township			Notes
			Total affected number	Compensated number	% of compensation	
1	Districts	No.				
2	Villages	No.				
3	Villagers	Person				
4	Agricultural land	m^2				
5	Paddy field land	m^2				
6	Residential land	m^2				
7	Forest land	m^2				
8	Graveyards	m^2				
9	House	No.				
10	Rice storage	No.				
11	Hut in paddy field	No.				
12	Animal shed	No.				
13	Fish pond	No.				
14	Rubber tree	No.				
15	Teak wood	No.				
16	Eucalyptus	No.				
17	Mango tree	No.				
18	Jack fruit	No.				
19	Tamarind	No.				
20	Coconut	No.				
21	Banana tree	No.				
22	Sugarcane	No.				
23	Pinapple	No.				
24	Papaya tree	No.				
25	Other vegetation	No.				
26						
27						
28						
29						

- Existing Social Infrastructures and Services

Monitoring item	Measurement point	Frequency	Monitoring result during report period
Restoration of public or private roads, bridges damaged by the Contractor	Construction site (all)	Monthly	

*Visual inspection by ESU

- Communal Diseases

Monitoring item	Measurement point	Frequency	Monitoring result during report period
Health Awareness Program on sexually transmitted diseases and HIV/AIDS	Worker's camp	Whenever open new camp site	

*Inspect the frequency and content of the program by ESU

- Health and Safety

Monitoring item	Measurement point	Frequency	Monitoring result during report period
Basic first aid training for foreman and work crew leaders to be certified within 3 months of the appointments	Confirm the certificate	Every 6 months	
Provide personal protective equipments for all working forces	Construction site	Monthly*	
Provide firefighting equipment	Construction site	Every 6 months	

* Implement by the Contractor daily and carry out visual inspection by MEPE monthly

-Accident

Monitoring item	Measurement point	Frequency	Monitoring result during report period
Share information on safety drive and traffic regulations	Construction site	Every 6 months	

- Material for reclaim fill

Monitoring item	Measurement point	Frequency	Monitoring result during report period
Permit of the supplier of reclaim fill material.	Construction site	Before purchasing material	

[Operation Phase]

- Soil Contamination

Monitoring item	Measurement point	Frequency	Monitoring result during report period
Oil leakage	Substation	Monthly	

- Waste

Monitoring item	Measurement point	Frequency	Monitoring result during report period
- Designate a place to storage industrial waste including waste transformer oil (concrete floor with shed and sign) -Make arrangement to dispose of recyclable waste such as paper, cans, tins, bottles, and cardboard -Dispose of non-recyclable waste such as vegetable waste at a dig hole or designated place*	Sub Station	Monthly*	
Types of the waste, amount, disposal method	Substation	Monthly	

*as for polythene, either to be recycled or disposed of at a hole depends on the availability of local collector

- Natural Environment

Monitoring item	Measurement point	Frequency	Monitoring result during report period
Number of bird strike	Transmission Line	Monthly	
	Substation		

- Accidents

Monitoring item	Measurement point	Frequency	Monitoring result during report period
Maintenance of security fence around substations and warning sign at each tower	Substation and Transmission Tower	Every 6 months	

添付資料 7 RAP Monitoring Form

RAP Monitoring Form (draft)

I. Internal and External Monitoring Form

Monitoring Period: from May, 2015-

Location: Township_____, Town_____, Village_____

Project Component _____

	Unit	Total Affected Number	Compensated/ Assisted Number	Progress in %	Progress in narrative	Expected Date of Completion	Remarks
1. Land Acquisition / Resettlement							
1-1. Consultation with stakeholders	Households (Persons)						
1-2 Agreement	Households						
1-3 Compensation payment							
1-3-1. Payment of the compensation for land/assets	Households						
1-3-2. Payment of loss of income source	Households						
1-3-3. Payment of the relocation assistance	Households						
1-3-4. Payment of the assistance for vulnerable	Households						
1-3-5. Relocation of physically displaced household	Households						
1-4. Land acquisition	Acre						
2.Income restoration programs (IRP) To be set in D/D as appropriate							
2-1. Preliminary Survey							
2-1. Stakeholder Consultations							
2-1. Programs development							
2.2 Training/referral provided							
2-2-1. Name of training	%						
	Participants (Persons)						
2-3. Employment of local people	%						
	Persons						
2-4 Impact Monitoring(Income)							

Raised Grievance

	Issues	Raised by	Applied Measures (include current situation)	Responsible Party for Taking Measures
1				
2				
3				

Other Issues found at Monitoring

	Issues	Raised/ Found by	Applied Measures (include current situation)	Responsible Party for Taking Measures
1				
2				
3				

II. External Monitoring Report

The external monitoring will be carried out before commencement of construction. The report of the external monitoring expert(s) should include following items:

1. Introduction: covering project background, scope of resettlement impacts

- Project Background. Brief background, area traversed by the project
- Scope of land acquisition and resettlement impacts, a summary table to show scope of resettlement impacts: number of total affected households, vulnerable households.

2. Methodology used: explaining methods applied for external monitoring such as individual/group meetings with officials and PAPs (Project Affected Persons); surveys; desk review (internal monitoring reports, meeting notes/memorandum of understanding; resettlement audit

3. Progress of implementing land acquisition and resettlement including any deviations from the provisions of the plan: covering disbursement of assistance amount, moving to relocation site

Items	Findings	Recommendation
1. Land Acquisition	*Was the time frame and budget sufficient to meet objectives?*	
2. Payment of the compensation for land/assets	*Were compensation payments sufficient to replace lost land/ assets?*	
3. Payment of loss of income source	*Were payments sufficient to cover loss of income?*	
4. Payment of the relocation assistance	*Did transfer payments cover the costs?*	
5. Payment of the assistance for vulnerable	*Have vulnerable groups been provided income earning or other assistance?*	
6. Relocation		
7. Training/Referral provided		
8. Employment of local people	*Do jobs provided restore pre-project income levels and living standards?*	
9. Grievance redress mechanism	*Do PAPs know about grievance procedures and conflict resolution procedures?*	
10. Information disclosure/ public consultation	*How much do PAPs know about resettlement procedures and entitlements? Do APs know their entitlements?*	
11. Impact Monitoring	*Do PAPs recover the income at least to the pre-project level?*	

4. Capability of relevant entities: analyzing capability of each entity involved in resettlement and income restoration program

5. Identification of problem issues and recommended solutions: examining outstanding issues found from internal monitoring report, record of grievance redress, interview to relevant parties and PAPs, a Required Action and providing recommendation to solve identified issues

Outstanding Issues (PAPs' request and complaints)	Required Action	Timing	Responsible Group	Remarks

6. Recommendation

7. List of persons met (including, name of organization, date and venue of meeting. If PAP (state address), questionnaires used (if applicable), photos, maps.

8. Reference document

添付資料 8　Land Acquisition Process in MEPE

Process		Progress
1)	Chief Engineer (CE) of Power Transmission Project Department (PTPD) instructs Project Director to conduct survey for land acquisition.	Finished
2)	Project Director conducts field survey and identify owner of the land.	
3)	CE of PTPD applies for the permission to buy additional land for the project to Managing Director (MD).	
4)	Compensation Committee determines the price of land.	
5)	Land procurement team will be assigned to buy the land.	
6)	MEPE apply for approval from the Regional Government of compensation price.	Applied in March, 2015. Expected to be approved by end of May, 2015.
7)	Land procurement team acquires the land from the land owner via consultation and report to Project Director.	Expected to finish within one month after 6).
8)	Project Director reports land acquisition to the CE of PTPD.	
9)	CE of PTPD report land acquisition to the MD of MEPE.	
10)	Project Director submits photo record of contracts of compensation to General Manager (Administration).	
11)	MD of MEPE Report finishing compensation to Minister of Ministry of Electric Power.	

第四次現地業務結果報告

ミャンマー国/全国基幹送変電設備整備事業（環境社会配慮）
【有償勘定技術支援】

現地業務工程

日にち	内容
2015.6.23（火）	ミャンマーへ移動
2015.6.24（水）	E Guard との打合せ Hlegu へ移動 Hlegu でステークホルダーミーティング（SHM）を開催 Hmawbi へ移動 Hmawbi で SHM を開催 ヤンゴンへ移動
2015.6.25（木）	Htantapin へ移動 Htantapin で SHM を開催 Bago へ移動
2015.6.26（金）	Bago で SHM を開催 ヤンゴンへ移動
2015.6.27（土）	レポート作成
2015.6.28（日）	ネピドーへ移動 E Guard との打合せ
2015.6.29（月）	MEPE へのヒアリング ヤンゴンへ移動 日本へ移動
2015.6.30（火）	日本へ帰着

打合せ記録

日時	2015 年 6 月 24 日　7:00 – 7:30
場所	E Guard, Yangon
参加者	Myat Mon Swe, Consultant, E Guard Naoko Maruyama, Consultant, ERM （敬称略）
打合せ内容	
1)　SHM の内容、収集すべき情報などについて確認を行った。	

日時	2015 年 6 月 24 日　10:00 – 12:00
場所	Hlegu General Administration Department (GAD) Office , Hlegu
参加者	Aye Thiha, MD, E Guard Myat Mon Swe, Consultant, E Guard Naoko Maruyama, Consultant, ERM 他 （敬称略）
打合せ内容	
1)　全国基幹送変電設備整備事業の IEE の送電線に係る部分の SHM を実施。 SHM のサマリーは別添資料 1 を参照。	

日時	2015 年 6 月 24 日　16:00 – 18:00
場所	Hmawbi GAD Office , Hlegu
参加者	Myat Mon Swe, Consultant, E Guard Naoko Maruyama, Consultant, ERM 他 （敬称略）
打合せ内容	
1)　全国基幹送変電設備整備事業の IEE の送電線に係る部分の SHM を実施。 SHM のサマリーは別添資料 1 を参照。	

日時	2015 年 6 月 25 日　10:00 – 12:00
場所	Htantapin GAD Office , Hlegu
参加者	Myat Mon Swe, Consultant, E Guard Naoko Maruyama, Consultant, ERM 他

	（敬称略）
打合せ内容	
1) 全国基幹送変電設備整備事業の IEE の送電線に係る部分の SHM を実施。 SHM のサマリーは別添資料 1 を参照。	

日時	2015 年 6 月 26 日　10:00 – 12:00
場所	Thri Hanthar Hall, Bago
参加者	Myat Mon Swe, Consultant, E Guard Naoko Maruyama, Consultant, ERM 他 （敬称略）
打合せ内容	
1) 全国基幹送変電設備整備事業の IEE の送電線に係る部分の SHM を実施。 SHM のサマリーは別添資料 1 を参照。	

日時	2015 年 6 月 28 日　13:00 – 15:30
場所	Royal Ace Hotel, Nay Pyi Taw
参加者	Myat Mon Swe, Consultant, E Guard Naoko Maruyama, Consultant, ERM （敬称略）
打合せ内容	
1) 成果品に関して、今後の作業およびスケジュールについて確認を行った。	

日時	2015 年 6 月 29 日　14:00 – 16:00
場所	MEPE, Nay Pyi Taw
参加者	Thein Hlaing, CE, MEPE Kyi San Lyinn, SE, MEPE Myo Min Tun, EE, PTPD (South), MEPE Yuma Eguchi, JICA, HQ Mi Mi Cho, JICA Myanmar Office Myat Mon Swe, Consultant, E Guard Naoko Maruyama, Consultant, ERM （敬称略）
打合せ内容	

1) 環境社会配慮に関する情報の収集

MEPE へ事前に送信した質問に基づき、環境社会配慮に関する情報の収集を行った。

1. 用地取得の進捗について	依然として土地の価格について、Regional Government からの承認を待っている状態である。 Bago Region（Hpayargyi SS）では土地の価格について話し合う補償委員会が組織されたが、Yangon Region（Hlaingthayar SS）ではまだである。MEPE によると、時間がかかることも予想されるが、2015 年 9 月末には承認される予定とのことである。
2. Grievance Mechanism の設置状況について	4 月末までに設置の予定だったが、まだ設置されていない。MEPE は 9 月末までに変電所のある 4 つの村に苦情処理システムを設立する予定である。
3. 送電線の鉄塔の補償について	送電線の鉄塔の補償について MEPE の考えを再確認した。 （参照：添付資料 2）
4. Monitoring cost の更新 (IEE 8.4 & RAP 8.2)	人件費などが上昇していることを受け、見直しの検討を行った。 →帰国報告会で今回は Monitoring cost を更新をしないこととした。 • 人件費 180→200USD • 運転手 20→60 USD • 車代 100 USD（変更なし） • モニタリングの月数 30、32 ヶ月→変更予定（54 ヶ月、または、SS40 ヶ月と TL36 ヶ月、確認中）
5. IEE 許認可への申請の予定を確認	MEPE は 7 月末に IEE の申請を行う予定である。そのため、phase1 の変電所 2 箇所での IEE に関する SHM を 7 月の第 2 週に実施する予定である。 MEPEとしては、こちらの情報も今回の成果

	品の中にいれたい。そのため、成果品の提出を 7 月 21 日に変更をしたい。また、これらのSHMの実施に当たり、JICAから支援が得られるか確認をしたいとのことである。 →JICA は残り SHM について支援が可能か検討をする。支援が可能な場合には、履行期間の延長を含めたスケジュールについて検討をする。（変更は E Guard のみの予定。）
6. 本業務の今後のスケジュールについて	7 月 8 日（水）：ドラフト提出 7 月 14 日（火）：JICA 様／MEPE 様からのコメント *7 月 17 日（金）：Appendix 6: Record of Stakeholder Meeting を除く最終版の確定* *7 月 22 日（水）：Appendix 6 を含めた成果品の提出*

添付資料 1：Summary of SHM
添付資料 2：MEPE's Idea of Compensation for Tower

添付資料 1

Summary of Stakeholder Meeting held in June, 2015

	Hlegu	Hmawbi	Htantapin	Bago
Planning of SHM (Target group, number of meeting held, and the reason for it.)	Stakeholders' meetings in terms of environment in order to finalize IEE were conducted. The invitees was villagers/village leaders from the villages, through which the route alignment of the 500kV T/L is most likely passing and may be affected in terms of environmental aspects.			
Date and time of SHM	24-6-2015 (Wed) 10:00 to 12:00 AM	24-6-2015 (Wed) 4:00 to 6:00 PM	25-6-2015 (Thur) 10:00 to 12:00 AM	26-6-2015 (Fri) 10:00 to 12:00 AM
Place	Hlegu General Administration Department (GAD) Office	Hmawbi GAD Office	Htantapin GAD Office	Thri Hanthar Hall
Method (Meeting or individual interview)	Meeting			
Considerations taken to vulnerable	There were no vulnerable people in the invited stakeholders. Invitees from War Pa Taw village in Hmawbi township was not able to come to the meeting due to heavy rain. Meeting minutes will be send for information sharing.			
Way of notification	Invitation letter from MEPE was send to GAD and distribute to Regional government officials[1], village head and village people/			
Number of participants (number of people, affiliation, gender, etc.)	37 people Village head and village people	34 people Village head and village people	51 people Village head and village people	58 people Regional government officials, village head and village people
	Attendant list will be prepared.			
Content of	1. Opening Ceremony.			

[1] Bago GAD request to invite Regional Government to the stakeholder meeting.

consultation,	2. Opening Remark. 3. Presentation of Project planning 4. Presentation of IEE 5. Recommendation and suggestion by Attendances persons. 6. Closing Remark 7. Closing Ceremony.
Comments from participants and response from the project proponent, how it is reflected to the project	Q1. Question about safety (there were 20 cases of electricity shock in Hlegu township.) →A1. MEPE will consider putting a fence in the tower foundation. Q2.Will there be a compensation for the area of tower? →A2. MEPE was not been compensating the tower foundation. But will consult inside MEPE. Htantapin and Bago was the 2nd SHM after the one for SS. So they understand about the project and welcome it.
Meeting Minutes of consultation	Meeting minutes will be prepared.
Further consultation is carried out the plan	After the detail design and detail measurement survey, stakeholder meeting with the PAPs is planned to be conducted.

添付資料 2

MEPE's Idea of Compensation for Tower

	Residence	Planation	Seasonal Corp
Land	Market price cash compensation for the area of tower.	If owner agree to sell, market price cash compensation for the area of tower. If owner do not want to sell, no compensation.	None
Corps/ Asset	1 time replacement cost for structure. *	3 times of market price for the area of tower.*	1 time market price for area of 150m x 150m.*
Ownership	MEPE	If owner agree to sell, ownership will move to MEPE. If owner do not want to sell, ownership will remain to original land owner.	Original land owner

*: Same for area affect by construction, i.e. access road.