

1.5 ORIGINAL ATTENDANT LISTS IN PUBLIC  
CONSULTATION MEETING

**Confidential**

1.6 ORIGINAL COMMENT IN PUBLIC  
CONSULTATION MEETING

**Confidential**

**Appendix 4-2-1**

**Abbreviated Resettlement Action Plan**

**Republic of the Union of Myanmar**

**Preparatory Survey**

**on**

**National Power Transmission Network Development**

**Project Phase III**

**Final Report (2<sup>nd</sup> Draft)**

**Abbreviated Resettlement Action Plan**

**July 2020**

**Japan International Cooperation Agency  
(JICA)**

**TEPCO Power Grid, Inc.**

**Tokyo Electric Power Holdings  
Company, Inc.**

**NIPPON KOEI CO., LTD.**

**Tokyo Electric Power Services Co., Ltd.**

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## 1. Necessity of Land Acquisition and Resettlement

The Project requires permanent and temporary land acquisition, as described in the following table. The details of the land to be acquired and the amount of resettlement, therefore, will be studied.

The final decision on the route of the transmission line and the location of towers will be made by DPTSC in the Detailed Design Phase. The route to be studied is the one agreed between the JICA Study Team and DPTSC in the F/S Phase.

**Table 1.1-1 Permanent and Temporary Impacts due to the Project**

| Project Component                                    | Permanent Impacts  | Temporary Impacts (during construction work)   |
|--|--|--|
| Construction of New Substation                       | <ul style="list-style-type: none"> <li>● Acquisition of the land (stoppage of existing land use)</li> </ul>  | <ul style="list-style-type: none"> <li>● None (possibility of need for temporary access road construction)</li> </ul>  |
| Construction of New Transmission Line                | <ul style="list-style-type: none"> <li>● Occupation of the land at the 4 legs of a transmission tower</li> <li>● Land use regulations (height limit) within the ROW</li> </ul>   | <ul style="list-style-type: none"> <li>● Work area at the foot of the transmission towers</li> <li>● Access road to reach the tower site</li> <li>● Areas for storage, repairs and other purposes</li> </ul> |
| Construction of Transmission Line Using Existing ROW | <ul style="list-style-type: none"> <li>● Occupation of the land at the 4 legs of a new transmission tower may be necessary</li> <li>● Additional land use regulations (height limit) within the ROW may be necessary because of the increase in the voltage</li> </ul> | <ul style="list-style-type: none"> <li>● Land for similar purposes above may be necessary</li> </ul>   |
| Construction of underground transmission line        | (No land acquisition)  | <ul style="list-style-type: none"> <li>● Temporary use of storage, and repair yard</li> <li>● Temporary occupation of the work area</li> </ul>   |

Source: JICA Study Team

## 2. Legal Framework for Land Acquisition and Resettlement

### 2.1. Legal Framework of Republic of the Union of Myanmar

#### 2.1.1. Land Acquisition and Resettlement

##### (1) Legal Framework and the Essence of the Laws

The Land Acquisition Law 1894 was terminated when the new Land Acquisition, Resettlement and Rehabilitation Law (hereinafter, 'Land Acquisition Law 2019') (drafted by the Amyotha Hluttaw (House of Nationalities - a 224-seat upper house)) was enacted in August 2019. In the meeting with DPTSC on October 9, 2019, it was agreed that this Project will be implemented based on the Land Acquisition Law 2019.

The Land Acquisition Law 2019, in fact, states in Articles 2 (g), 45, and 67, that acquisition of Farm Land will still apply the Farm Land Law 2012. Most of the substations and the foundations for the transmission towers is currently used as rice paddies and it is assumed that the land is registered as Agricultural Land. For Agricultural Land, the Farm Land Law and Farm Land Rules (2012) will still be applied for the process of land acquisition and the price of land and crops.

The fourth, Vacant, Fallow and Virgin Land Law (VFV Law), defines the process and regulations when there is a proposal to use land classified as Vacant Land, Fallow Land, or Virgin Land. Since the Project is located in the Yangon Metropolitan area, it is assumed that the Project site is classified as VFV land. Once the site to be acquired is agreed between respective parties, land class and the law to be applied will be confirmed.

##### (2) Related Organizations

Communication and coordination with various authorities related to land acquisition and resettlement are the responsibility of General Administration Department, both Township and Region level. Land acquisition issues including the measurement and finalization of PAPs list involves Township Land Management Committee. DPTSC plays the role of initiator at every step in the implementation, however, none of the steps shown in the table can be finished without coordinating with other authorities. DPTSC also is responsible in securing the budget necessary for compensation and assistance. RAP implementing authorities at each steps of implementation are shown in Table 5.1.2.

Within DPTSC, staff from Project Manager-1 Office located in Yangon and Project Manager (Civil) Office located in Nay Pyi Taw, both under supervision of Power Transmission Projects (South) Office, will join the Township level Compensation Committee for determining the compensation amount and eligible PAPs.

#### 2.1.2. Land Use Regulation within the ROW

##### (1) Legal Framework

The essence of the land use regulations described in item c. below is published on the website of DPTSC.

## (2) Related Organizations

Communication and coordination with people to be affected are the responsibility of General Administration Department at Township level. DPTSC plays the role of project owner, and explains the project to affected people and secure the budget necessary for compensation and assistance.

## (3) Essence of the Regulations

Land use regulations will be applied on the land under the transmission line, as shown in the following table and figures, depending on the voltage. Within the ROW, low-height crops such as rice can be cultivated. Rubber trees, however, need to be cleared where the new ROW passes through the plantations.

**Table 2.1-1 Width of ROW**

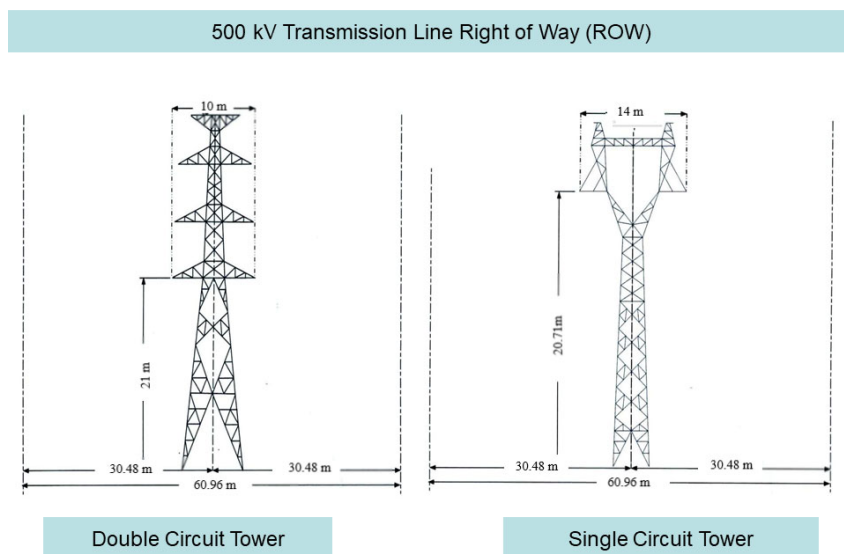
| kV  | One side | Both sides |
|-----|----------|------------|
| 230 | 22.86m   | 45.72m     |
| 500 | 30.48m   | 60.96m     |

Source: DPTSC Website <https://www.moec.gov.mm/mm/ignite/page/598> (Visited 2019.11.3)

In addition to setting the ROW, the minimum clearance distance between the overhead transmission line and ground/trees/buildings is determined.

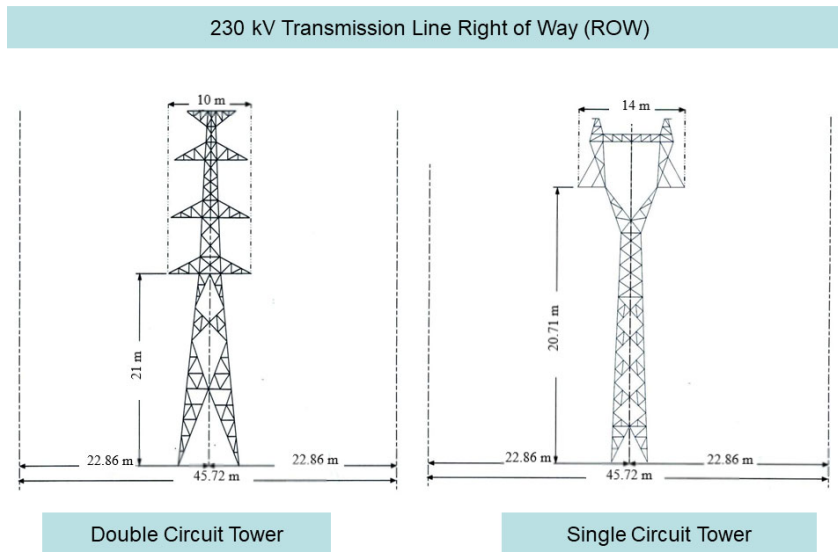
Minimum clearances between overhead transmission lines and ground, trees and buildings are shown in the following figures. Existing land use is expected to be continued in the ROW as long as the minimum clearance distance is secured.

Details on the land use restrictions in the planned ROW are being confirmed with DPTSC as of April 2020.



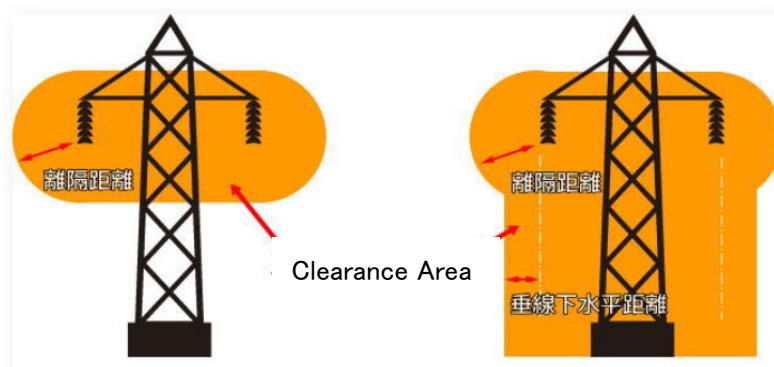
Source: DPTSC website <https://www.moec.gov.mm/mm/ignite/page/598> (Visited 2019.11.3)

**Figure 2.1-1 500 kV Transmission Tower and Width of ROW**



Source: DPTSC website <https://www.moe.gov.mm/mm/ignite/page/598> (Visited 2019.11.3)

**Figure 2.1-2 230 kV Transmission Tower and Width of ROW**



Source : [https://www.myhomedata.net/real\\_estate/important/electric-line.html](https://www.myhomedata.net/real_estate/important/electric-line.html)

**Figure 2.1-3 Illustrations of the Transmission Line and Clearance Distance**

**Table 2.1-2 Minimum Height of Overhead Power Line from the Ground**

| Content                                    | 500 kV |
|--|--------|
| Ground (Mountain or forest areas)          | 11.0 m |
| Ground (Paddy field)                       | 14.0 m |
| River crossing (Above highest water level) | 20.0 m |
| Road                                       | 15.0 m |
| Railway                                    | 16.0 m |
| Trees (Rubber plants etc.)                 | 7.0 m  |
| Distribution line (including poles)        | 8.0 m  |
| Transmission line (including towers) –     |        |
| 66 kV transmission line                    | 9.0 m  |
| 132 kV transmission line                   | 9.0 m  |
| 230 kV transmission line                   | 9.0 m  |
| Other                                      | 7.0 m  |

Source: National Power Transmission Network Development Project (Phase II)

| No | Content  | 230 kV        |
|----|--|---------------|
| 1  | The height of overhead power line where vehicles cannot go through.                  | 6.7 m (22ft)  |
| 2  | The height of overhead cable line parallel with any road, passage or village street. | 7.32 m (24ft) |
| 3  | The height of overhead cable line passing over any road, passage or village street.  | 7.01 m (23ft) |
| 4  | Passing over the railway track.  | 7.62 m (25ft) |

- a) The maximum distance must be (36.58 m) to pass over railway track.
- b) Must pass over the railway track perpendicularly.
- c) Medium voltage overhead power line passing should be horizontal and should not be within railway area.
- d) Electricity poles or towers should be constructed far from railway, and at least 1.5 times' its height.

Source: DPTSC website <https://www.moe.gov.mm/mm/ignite/page/598> (Visited 2019.10.9)

**Table 2.1-3 Minimum Clearances between Overhead Transmission Lines and Buildings**

| Sr. | Description         | 230kV           |
|-----|---------------------|-----------------|
| 1.  | Horizontal Distance | 15.24 m (50 ft) |
| 2.  | Vertical Distance   | 4.88 m (16 ft)  |

Source: DPTSC website <https://www.moe.gov.mm/mm/ignite/page/598> (Visited 2019.10.9)

## 2.2. JICA Guidelines

The Environmental Screening conducted prior to the Study categorized the Project as Category B because the Project does not belong to a sector, have characteristics, or include sensitive areas that are likely to have significant adverse impacts on the environment and society.

On February 2, 2020, the improvement of the existing Lhawga-Thaketa Transmission Line was newly added to the project scope. The JICA Study Team explained the definition of Categories to DPTSC, and it was well understood by DPTSC that minimization of resettlement is critical to implement not only the improvement project, but the Project as a whole.

## 2.3. Gap Analysis

A gap analysis and measures to fill the gaps between the Myanmar Land Acquisition Law 2019 and JICA Guidelines are described in the next table.

**Table 2.3-1 Gap Analysis and Measures to Fill the Gaps between the Myanmar Land Acquisition Law 2019 and JICA Guidelines**

| No. | JICA Guidelines   | Myanmar Land Acquisition Law 2019<br>(Informal translation by the JICA Study Team)  | Gaps Between Laws in Myanmar and JICA Guidelines  | Measures to Fill Gaps  |
|-----|---|---|---|--|
| 1.  | Involuntary resettlement and loss of means of livelihood are to be avoided when feasible by exploring all viable alternatives. (JICA Guidelines: JICA GL) | 48. While carrying out programmes, the Resettlement and Restoration Implementation Body shall:<br>(a) Make necessary arrangements to avoid adverse impact on livelihood activities, life, and environment of host communities, and land owners due to resettlement. | There is no significant difference.<br><br>The law talks about minimizing the negative impacts. JICA Guidelines require minimization of the | The Project examined alternatives to avoid or minimize resettlement and loss of livelihoods. |

| No. | JICA Guidelines   | Myanmar Land Acquisition Law 2019<br>(Informal translation by the JICA Study Team)  | Gaps Between Laws in Myanmar and JICA Guidelines   | Measures to Fill Gaps   |
|-----|---|---|--|---|
|     |   |   | resettlement and loss of livelihoods.  |   |
| 2.  | When population displacement is unavoidable, effective measures to minimize impact and to compensate for losses should be taken. (JICA GL)  | No description about minimization.<br><br>3. (p) Compensation means money paid to the land owner compensated for the land acquired and building on the acquired land and other immovable objects, crops on the acquired land;   | There is no significant difference.<br><br>No description to encourage minimization of the impact. | The Project examined alternatives to minimize negative impacts of resettlement and loss of livelihoods.   |
| 3.  | People who must be resettled involuntarily and people whose means of livelihood will be hindered or lost must be sufficiently compensated and supported, so that they can improve or at least restore their standard of living, income opportunities and production levels to pre-project levels. (JICA GL) | Following care for damages will be provided to all affected, not limited to the resettlers.<br>3.<br>(o) Cost of land acquisition includes the following cost ;<br>(1) Compensation and Damages;<br>(3) Cost related to administration and management;<br>(p) Compensation means money paid to the land owner compensated for the land acquired and building on the acquired land and other immovable objects, crops on the acquired land;<br>(q) Damages mean the money (or other support measures) provided to affected persons to compensate for the following damage/disturbance due to land acquisition;<br>(1) Living Costs and Meal Costs for land owner before resettlement;<br>(2) Loss of income due to termination/disruption of livelihood activities and jobs;<br>(r) Relocation Expenses includes the expenses incurred due to relocation or removed from the acquired land, as well as support provided for settling at the relocation site; | There is no difference.  | People who must be resettled involuntarily and people whose means of livelihood will be assisted for improving or restoring livelihood at least to pre-project level by cash assistance and job training that will be decided by township level Compensation Committee based on the need hearing during the stakeholder meetings in the implementation phase. |
| 4.  | Compensation must be based on the full replacement cost as much as possible. (JICA GL)  | 11.<br>(c) negotiation on the amounts for Resettlement and Restoration of Livelihoods to be paid by the department, organizations proposed to acquire land, based on the expert opinion and the requests of the affected persons, and IN ACCORDANCE WITH FULL REPLACEMENT COST of the affected land and/or assets;  | There is no difference.  | -   |
| 5.  | Compensation and other kinds of assistance must be provided prior to displacement. (JICA GL)  | 33. (d) When field survey is finished, data recorded shall be made public;<br>(e) The confirmed list of loss entitled to be compensated with Compensation and Damages and the amount of money to be provided, deadline for the request for the payment,   | There is no clear indication about timing of compensation payment in the Myanmar legal framework.  | DPTSC will disburse the compensation and assistance before the physical resettlement or taking of the land.   |



| No. | JICA Guidelines   | Myanmar Land Acquisition Law 2019<br>(Informal translation by the JICA Study Team)   | Gaps Between Laws in Myanmar and JICA Guidelines  | Measures to Fill Gaps  |
|-----|---|--|---|--|
|     |   | the person and the place the compensation request can be submitted, shall be made public:<br>34. Land Acquisition Implementation Body:<br>(1) Shall take the land in possession after carrying out activities under section 32 and 33;<br>46. (a) Once the process of taking land in possession and transferring land has begun, resettlement and restoration process of the head of the landowner household shall be implemented;   |   |  |
| 6.  | For projects that entail large-scale involuntary resettlement, resettlement action plans must be prepared and made available to the public. (JICA GL)   | 8. Department and organization under section 7 shall submit the proposal to acquire land for Public Purpose for any matter, to the Central Committee in accordance with the rules.<br>9. The proposal for land acquisition for Public Purpose shall attach the following necessary documents:<br>(e) Environmental impact assessment report and socio-economic impact assessment report ;<br>(f) RESETTLEMENT AND RESTORATION REHABILITATION PLAN/S to be implemented for land owners of the land to be acquired;  | There is no difference.<br>No matter the scale of the involuntary resettlement, resettlement plan must be prepared.   | The Project, in F/S stage, prepared the Resettlement Action Plan.<br><br>In the implementation phase, the plan will be revised for each component of the project, such as the substation and the transmission lines, based on the results of the Detailed Measurement Survey, population census survey, and socio-economic survey that will be implemented by DPTSC for each component.  |
| 7.  | In preparing a resettlement action plan, consultations must be held with the affected people and their communities based on sufficient information made available to them in advance. (JICA GL) | 18. (a) ( ) Moreover, copies of Notification of Intention to Acquire Land shall be placed on public noticeboards in the following places where the land is situated, for information of the general public, and if necessary, the Notification shall also be published in the local language:<br>21. Land Acquisition Implementation Body shall carry out the following duties<br>( ) after informing affected persons at least 7 days in advance about the process related to field survey of the land to be acquired and <u>seeking public opinion</u> about the purpose and condition of land acquisition;<br>(c) seek and accept written objections from affected persons and the public concerning the Purpose and situation of the land acquisition, and <u>may hold hearings or call for the submission of supporting documents</u> and if necessary undertake field surveys to | Provision of information and seeking public opinion are clearly stated.<br><br>Organizing consultation meeting with PAPs during the preparation of resettlement action plan is not included in the Myanmar legal framework. | DPTSC, together with other responsible authorities related to land acquisition, will hold consultation meetings with the affected people and their communities before the commencement of the Detailed Measurement Survey, and after the draft resettlement action plan is prepared.<br><br>Above meetings are additional to the gatherings and individual negotiations that are to be implemented during the land acquisition procedure in the standard Myanmar public work projects. |

| No. | JICA Guidelines  | Myanmar Land Acquisition Law 2019 (Informal translation by the JICA Study Team)   | Gaps Between Laws in Myanmar and JICA Guidelines   | Measures to Fill Gaps   |
|-----|--|---|--|---|
|     |  | investigate and resolve objections.   |  |   |
| 8.  | When consultations are held, explanations must be given in a form, manner, and language that are understandable to the affected people. (JICA GL)  | 18. (a) The Notification of Intention to Acquire Land shall be ( ) placed on public noticeboards in the following places where the land is situated, for information of the general public, and if necessary, the Notification shall also be published in the local language:   | There is no difference.  | The consultations will use Myanmar language in oral and written communications with assistance of visual images.  |
| 9.  | Appropriate participation of affected people must be promoted in planning, implementation, and monitoring of resettlement action plans. (JICA GL)  | Affected people will be surveyed by the Project Proponent, and by the Land Acquisition Implementation Body, three times in total, in the RAP planning phase.<br>(LA Law 9(f), 11(a), 21(d))<br>6. The Central Committee shall take the following duties:<br>(a) Adopting policies related to land acquisition, resettlement and rehabilitation and developing guidelines in accordance with those policies and <u>monitoring the implementation;</u>  | Participation of affected people through surveys in the planning phase is secured.<br><br>Participation of affected people in implementation and monitoring of resettlement action plan is not required by the LA Law. | By implementing the internal and external monitoring during the implementation phase of the project, affected people will participate as the interviewee.<br><br>In the planning and implementation phase, representative of affected people will be a member of the township-level compensation committee.   |
| 10. | Appropriate and accessible grievance mechanisms must be established for the affected people and their communities. (JICA GL)   | 41. If any affected person is not satisfied with the following matters, they shall request to the Land Acquisition Implementation Body by providing the reason that they would like to seek a court ruling:<br>(a) Regarding the size of the land for which Compensation and Damages are to be provided;<br>(b) Regarding the amount of Compensation and Damages being provided;<br>(c) Regarding the matter of which affected persons should be compensated or who has the right to receive such Compensation and Damages;<br>(d) Regarding the matter of who should be included in the allocation of Compensation and Damages or whether such allocation is little or too much. | The procedure of grievance in the Myanmar context is direct settlement at the court, which may not easy or accessible to PAPs.   | In the planning and implementation phase, DPTSC will establish site-based grievance redress team as well as Grievance Focal Person in village and township level to receive grievances in oral and written forms.<br><br>The grievance can be accepted either directly from the affected person or indirectly from other person such as village head. |
| 11. | Affected people are to be identified and recorded as early as possible in order to establish their eligibility through an initial baseline survey (including population census that serves as an eligibility cut-off date, asset inventory, and socioeconomic survey), preferably at the project identification stage, to prevent a subsequent influx of encroachers of others who wish to take advantage of | 32. After the Responsible Ministry issue the Notification to Acquire Land for Public Purpose and inform the public, the following shall be carried out by Land Acquisition Implementation Committee as necessary;<br>(a) Informing AGAIN to the public at the location where the land is situated, about the Notification to Acquire Land, if necessary, Notification in local language shall also be attached;   | There is no specific description of identifying affected people as early as possible in the national law.  | The locations and the site/ROW boundaries for the substation and the transmission lines are not yet decided by DPTSC/MOEE, or approved by the local authorities as of November 2020.<br><br>Once the locations and the site/ROW boundaries are decided and approved, DPTSC will implement the Detailed Measurement Survey as early as                 |

| No. | JICA Guidelines   | Myanmar Land Acquisition Law 2019<br>(Informal translation by the JICA Study Team)  | Gaps Between Laws in Myanmar and JICA Guidelines   | Measures to Fill Gaps  |
|-----|---|---|--|--|
|     | such benefits. (WB OP4.12 Annex A Para.6)   | (b) Doing field survey and recording the land to be acquired if necessary and calculating and issuing Compensation and Damages in accordance with the provisions under Chapter 8 of this law.   |  | possible, and declare the cut-off-date, to identify and record affected people and assets.   |
| 12. | Eligibility of benefits includes, the PAPs who have formal legal rights to land (including customary and traditional land rights recognized under law), the PAPs who don't have formal legal rights to land at the time of census but have a claim to such land or assets and the PAPs who have no recognizable legal right to the land they are occupying. (WB OP4.12 Para.15) | <p>3.</p> <p>(c) Land Owner means a person and his/her household who owns the land with strong evidence and who are entitled to demand compensation, damages and other entitlements bestowed by this law for being affected by land acquisition. The term also include following affected persons;</p> <p>(1) a person who is recorded in the land record in accordance with existing law as being the owner or person who has the right to possess or use land or a building or a part thereof;</p> <p>(2) a person who has been issued owner grant or lease grant in respect of that land according to existing law;</p> <p>(3) a person who has been declared or enrolled as the Land Owner under any order of Court or authority;</p> <p>(4) a person who is accepted by local group and recognized by relevant Region or State government as the owner <u>according to customary practices of ethnic nationalities, though there are no legal documents;</u></p> <p>(5) a person who genuinely <u>lives on or uses for economic purposes</u> such as cultivation the acquired land <u>for at least twelve consecutive years before acquiring the land</u> though there are no legal documents <u>and invest in the land for livelihood activities;</u></p> <p>(l) Affected persons mean land owner and person related to the acquired land who are affected by the land acquisition;</p> | No difference.   | DPTSC will identify all the person related to the acquired land who are affected by the land acquisition by the survey in the implementation phase.  |
| 13. | Preference should be given to land-based resettlement strategies for displaced persons whose livelihoods are land-based. (WB OP4.12 Para.11)  | 38. Land Acquisition Implementation Committee shall provide the replacement land or other form of compensation equivalent to the compensation money with the approval from Union Government after coming to an agreement with the landowner.  | There is no regulation requiring to give preference to land-based resettlement strategies. | DPTSC will find out the choice of the affected households.<br><br>When the affected households chose replacement land equivalent to the compensation money, DPTSC will coordinate with the Department of Agricultural Land Management and Statistics, which is a member of the township- |

| No. | JICA Guidelines  | Myanmar Land Acquisition Law 2019<br>(Informal translation by the JICA Study Team)   | Gaps Between Laws in Myanmar and JICA Guidelines  | Measures to Fill Gaps  |
|-----|--|--|---|--|
|     |  |  |   | level compensation committee.  |
| 14. | Provide support for the transition period (between displacement and livelihood restoration). (WB OP4.12 Para.6)  | 3. (r) Relocation Expenses includes the expenses incurred due to relocation or removed from the acquired land, as well as support provided for settling at the relocation site;<br>39. For the land being acquired, the Land Acquisition Implementation Body :<br>(d) Shall provide the following Compensation and Damages if there are perennial crops, seasonal crops, and livelihoods on the acquired land:<br>(1) 3 times of the market price based on the standing trees cultivated on the acquired land<br>(2) 3 times of the market price based on the yield amount per acre of seasonal crops<br>(3) Estimated loss in income due to the loss of livelihood and job opportunities. | There is no specific description about support between displacement and recover of original standard of living. | DPTSC will find out whether the amount of compensation and relocation assistance will be sufficient as the support between displacement and recover of original standard of living for each affected households.<br><br>When it is found that the amount of compensation and relocation assistance will not be sufficient, the affected households will be treated as Vulnerable and will be given additional support for the transition period. |
| 15. | Particular attention must be paid to the needs of the vulnerable groups among those displaced, especially those below the poverty line, landless, elderly, women and children, ethnic minorities etc. (WB OP4.12 Para.8) | 50. Resettlement and Restoration Implementation Body shall pay special attention to prevent potential harmful effects due to resettlement and restoration activities on vulnerable people including women, children, ethnic minorities and those entitled to own by customary practices.   | There is no difference.   | -  |

Source: JICA Study Team

## 2.4. The policy of land acquisition and resettlement for the Project

The policy of land acquisition and resettlement for the Project is summarized as follows.

I. The Government of Myanmar will use the Project Resettlement Policy (the Project Policy) for the Project specifically because existing national laws and regulations have not been designed to address involuntary resettlement according to international practice, including JICA's policy. The Project Policy is aimed at filling-in any gaps in what local laws and regulations cannot provide in order to help ensure that PAPs are able to rehabilitate themselves to at least their pre-project condition. This section discusses the principles of the Project Policy and the entitlements of the PAPs based on the type and degree of their losses. Where there are gaps between the Myanmar legal framework for resettlement and JICA's Policy on Involuntary Resettlement, practicable mutually agreeable approaches will be designed consistent with Government practices and JICA's Policy.

II. Land acquisition and involuntary resettlement will be avoided where feasible, or minimized, by identifying possible alternative project designs that have the least adverse impact on the communities

in the project area.

III. Where displacement of households is unavoidable, all PAPs (including communities) losing assets, livelihoods or resources will be fully compensated and assisted so that they can improve, or at least restore their former economic and social conditions.

IV. Compensation and rehabilitation support will be provided to any PAPs, that is, any person or household or business which on account of project implementation would have his, her or their;

: Standard of living adversely affected;

: Right, title or interest in any house, interest in, or right to use, any land (including premises, agricultural and grazing land, commercial properties, tenancy, or right in annual or perennial crops and trees or any other fixed or moveable assets, acquired or possessed, temporarily or permanently;

: Income earning opportunities, business, occupation, work or place of residence or habitat adversely affected temporarily or permanently; or

: Social and cultural activities and relationships affected or any other losses that may be identified during the process of resettlement planning.

V. All affected people will be eligible for compensation and rehabilitation assistance, irrespective of tenure status, social or economic standing and any such factors that may discriminate against achievement of the objectives outlined above. Lack of legal rights to the assets lost or adversely affected tenure status and social or economic status will not bar the PAPs from entitlements to such compensation and rehabilitation measures or resettlement objectives. All PAPs residing, working, doing business and/or cultivating land within the project impacted areas as of the date of the latest census and inventory of lost assets (IOL), are entitled to compensation for their lost assets (land and/or non-land assets), at replacement cost, if available and restoration of incomes and businesses, and will be provided with rehabilitation measures sufficient to assist them to improve or at least maintain their pre-project living standards, income-earning capacity and production levels.

VI. PAPs that lose only part of their physical assets will not be left with a portion that will be inadequate to sustain their current standard of living. The minimum size of remaining land and structures will be agreed during the resettlement planning process.

VII. People temporarily affected are to be considered PAPs and resettlement plans address the issue of temporary acquisition.

VIII. When a host community is affected by the development of a resettlement site in that community, the host community shall be involved in any resettlement planning and decision-making. All attempts shall be made to minimize the adverse impacts of resettlement upon host communities.

IX. The resettlement plans will be designed in accordance with Myanmar Land Acquisition Law 2019

and JICA's Policy on Involuntary Resettlement.

X. The Resettlement Plan will be translated into local languages and disclosed for the reference of PAPs as well as other interested groups.

XI. Payment for land and/or non-land assets will be based on the principle of replacement cost.

XII. Compensation for PAPs dependent on agricultural activities will be land-based wherever possible. Land-based strategies may include provision of replacement land, ensuring greater security of tenure, and upgrading livelihoods of people without legal land titles. If replacement land is not available, other strategies may be built around opportunities for re-training, skill development, wage employment, or self-employment, including access to credit. Solely cash compensation will be avoided as an option if possible, as this may not address losses that are not easily quantified, such as access to services and traditional rights, and may eventually lead to those populations being worse off than without the project.

XIII. Replacement lands, if the preferred option of PAPs, should be within the immediate vicinity of the affected lands wherever possible and be of comparable productive capacity and potential. As a second option, sites should be identified that minimize the social disruption of those affected; such lands should also have access to services and facilities similar to those available in the lands affected.

XIV. Resettlement assistance will be provided not only for immediate loss, but also for a transition period needed to restore livelihood and standards of living of PAPs. Such support could take the form of short-term jobs, subsistence support, salary maintenance, or similar arrangements.

XV. The resettlement plan must consider the needs of those most vulnerable to the adverse impacts of resettlement (including the poor, those without legal title to land, ethnic minorities, women, children, elderly and disabled) and ensure they are considered in resettlement planning and mitigation measures identified. Assistance should be provided to help them improve their socio-economic status.

XVI. PAPs will be involved in the process of developing and implementing resettlement plans.

XVII. PAPs and their communities will be consulted about the project, the rights and options available to them, and proposed mitigation measures for adverse effects, and to the extent possible be involved in the decisions that are made concerning their resettlement.

XVIII. Adequate budgetary support will be fully committed and made available to cover the costs of land acquisition (including compensation and income restoration measures) within the agreed implementation period. The funds for all resettlement activities will come from the Government.

XIX. Displacement does not occur before provision of compensation and of other assistance required for relocation. Sufficient civic infrastructure must be provided in resettlement site prior to relocation. Acquisition of assets, payment of compensation, and the resettlement and start of the livelihood rehabilitation activities of PAPs, will be completed prior to any construction activities, except when a

court of law orders so in expropriation cases. (Livelihood restoration measures must also be in place but not necessarily completed prior to construction activities, as these may be ongoing activities.)

XX. Organization and administrative arrangements for the effective preparation and implementation of the resettlement plan will be identified and in place prior to the commencement of the process; this will include the provision of adequate human resources for supervision, consultation, and monitoring of land acquisition and rehabilitation activities.

XXI. Appropriate reporting (including auditing and redress functions), monitoring and evaluation mechanisms, will be identified and set in place as part of the resettlement management system. An external monitoring group will be hired by the project and will evaluate the resettlement process and final outcome. Such groups may include qualified NGOs, research institutions or universities.

Cut-off-date of Eligibility: The cut-off-date of eligibility refers to the date prior to which the occupation or use of the project area makes residents/users of the same eligible to be categorized as PAPs and be eligible to Project entitlements. In the Project, the cut-off-date for titleholders will be the date of commencement of the Detailed Measurement Survey or the last date of the Detailed Measurement Survey. This date will be disclosed to each affected village by the relevant local governments and the villages will disclose to their populations. The establishment of the eligibility cut-off-date is intended to prevent the influx of ineligible non-residents who might take advantage of Project entitlements

Principle of Replacement Cost: All compensation for land and non-land assets owned by households/shop owners who meet the cut-off-date will be based on the principle of replacement cost. Replacement cost is the amount calculated before displacement which is needed to replace an affected asset without depreciation and without deduction for taxes and/or costs of transaction as follows:

- a. Productive Land (agricultural, aquaculture, garden and forest) based on actual current market prices that reflect recent landsales in the area, and in the absence of such recent sales, based on recent sales in comparable locations with comparable attributes and taxes or in the absence of such sales, based on productive value:
- b. Residential land based on actual current market prices that reflect recent land sales, and in the absence of such recent land sales, based on prices of recent sales in comparable locations with comparable attributes, fees and taxes.
- c. Existing local government regulations for compensation calculations for building, crops and trees will be used where ever available.
- d. Houses and other related structures based on actual current market prices of affected materials;
- e. Annual crops equivalent to three times of current market value of annual yield of crops, or lost harvest timing of crops for temporal impact, at the time of compensation.
- f. For perennial crops, cash compensation at replacement cost that should be in line with local

government regulations, if available, is equivalent to current market value given the type and age at the time of compensation, plus three times of current market value of annual yield, or lost harvest timing for temporal impact.

- g. For standing trees including timber trees cultivated on the acquired land, cash compensation at 3 times of the market price that should be in line with local government regulations, if available, for each type, age and relevant productive value at the time of compensation based on the diameter at breast height of each tree. (Act 2019 33 (a) 4)

Source: JICA Study Team



### 3. Location and Scale of Land Acquisition and Resettlement

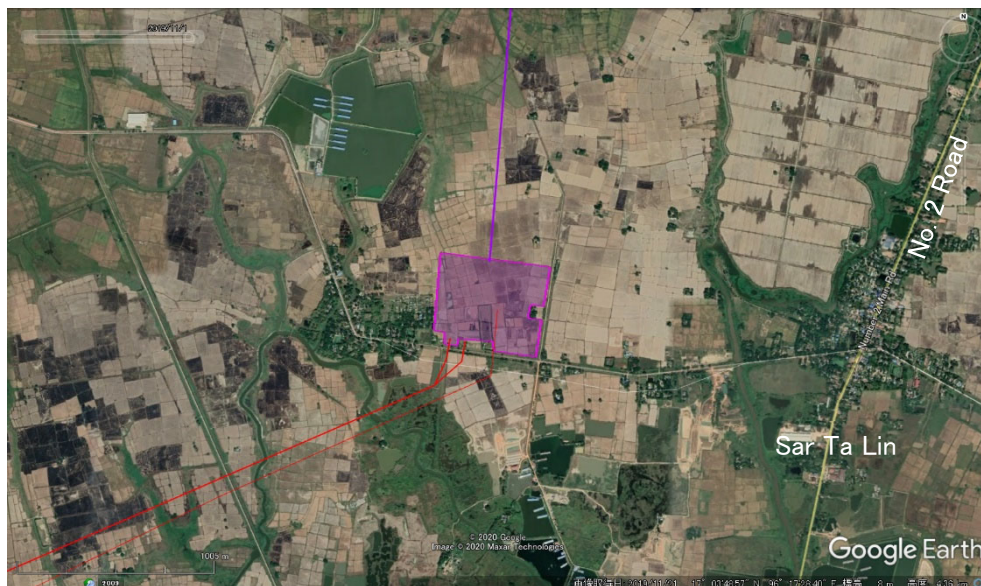
#### 3.1. New Construction of the 500 kV Sar Ta Lin Substation

Based on a request by DPTSC, 24.3 ha (60 acres) will be selected for the site for the new 500 kV substation. The existing land use of the site is irrigated rice paddy with 2 harvests per year. Houses surrounded by various trees are scattered in the matrix of the rice paddy. No temporary lease of land is planned for the substation.



Purple: Substation site  
Source: JICA Study Team

**Figure 3.1-1 500kV Sar Ta Lin Substation Site Close-up**



Source: JICA Study Team

**Figure 3.1-2 500kV Sar Ta Lin Substation Site and Surrounding Area**

### 3.2. New Construction and Improvement of Transmission Lines

#### 3.2.1. Transmission Lines

The Project contains 4 transmission line routes, as shown in Table 3.2-1. The Hlawga - Thaketa Line is improvement (voltage increase) work within already existing ROW. The other three lines are new constructions.

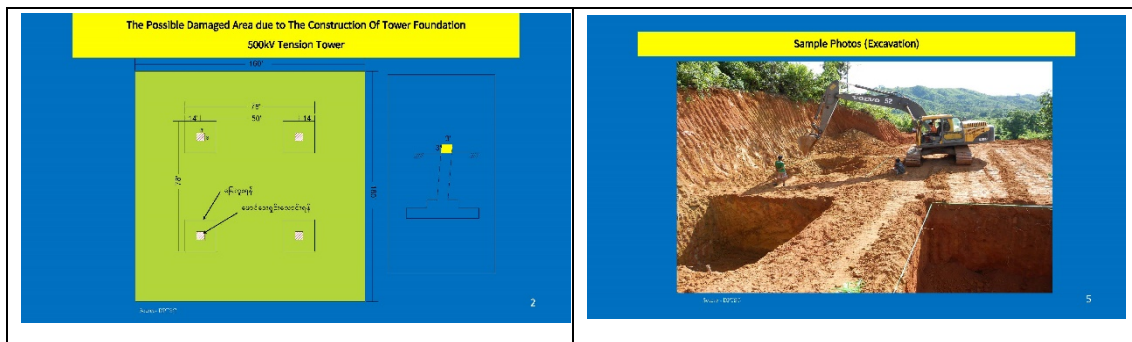
**Table 3.2-1 New Constructions and Improvement of Transmission Lines**

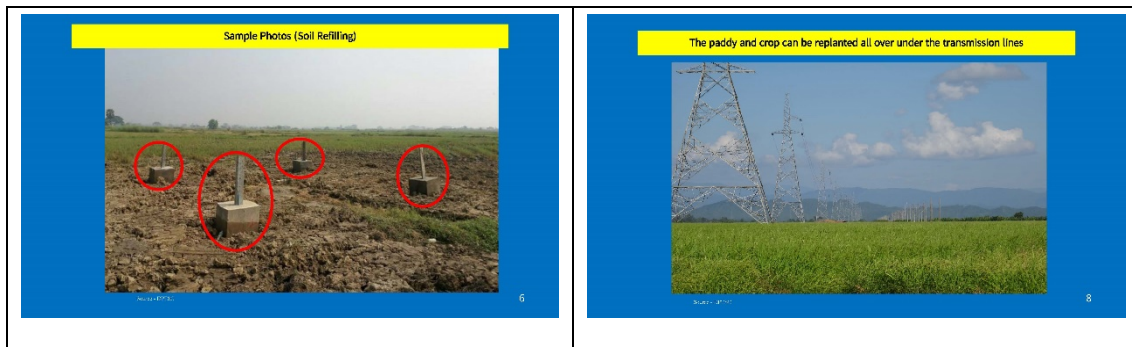
| No.   | Voltage | Start      | End        | Overhead |             | Under-ground     | Total    |
|-------|---------|------------|------------|----------|-------------|------------------|----------|
|       |         |            |            | New      | Improvement |                  |          |
| 1     | 500 kV  | Phayargyi  | Sar Ta Lin | 70.0 km  | -           | -                | 70.0 km  |
| 2     | 230 kV  | Sar Ta Lin | East Dagon | 18.0 km  | -           | -                | 18.0 km  |
| 3     | 230 kV  | Sar Ta Lin | Hlawga     | 16.9 km  | -           | 4.6 km<br>6.0 km | 27.5 km  |
| 4     | 230 kV  | Hlawga     | Thaketa    | -        | 18.0 km     | 5.7 km           | 23.7 km  |
| Total |         |            |            | 104.9 km | 18.0 km     | 16.3 km          | 139.2 km |

Source: JICA Study Team

Permanent impacts from the above transmission line work include the occupation of land for 4 foundation blocks per tower, and land use (height) limitations of the land within the ROW.

During the construction of the towers on farmland, relatively large excavations will be necessary as shown in the figure below. After finishing the base concrete work, however, 4 separated base blocks remain on the ground surface, and DPTSC has explained that the land owner can continue farming even under the tower after the completion of the work. With such conditions, DPTSC does not acquire ownership rights or farming rights for the land under the towers. DPTSC pays cash for a land lease during the construction work that is equivalent to the size of the loss of harvest caused by the land lease.





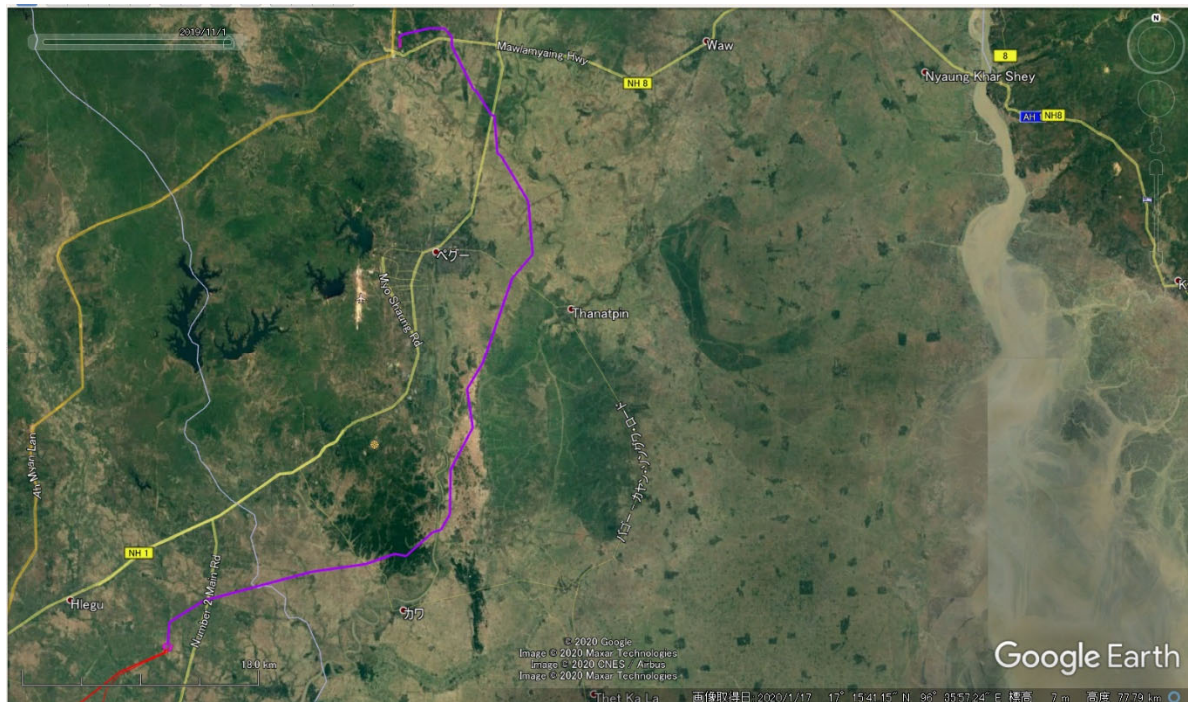
Source: DPTSC

**Figure 3.2-1 Land Occupation by DPTSC under the Transmission Towers**

Temporary land lease during the construction will be necessary for the access road between the towers (within ROW, width about 4m (14ft)), for the work areas around the tower foundations, and for the yard for stocks and machinery.

Underground transmission lines are planned for areas where the lines need to cross existing urban areas. Since the underground lines are planned to be under existing roads, no permanent acquisition of private land is necessary. Permanent facilities such as maintenance manholes will be set within the road ROW. Temporary land lease will be necessary with overhead transmission lines for storage.

The ROW where transmission line improvement work is planned is defined by a road and ditches on both side, and it is basically open land in between. Houses and shops are situated along the crossing road where the road crosses the ROW. The improvement work will consist of the removal of existing lines and towers, the construction of new, higher towers, and the stringing of the transmission lines. All this work, including temporary storage and work areas with tall cranes, will use the space within the ROW. Access to the ROW from the adjacent road may require the temporary lease of privately owned vacant land.



Source: JICA Study Team

**Figure 3.2-2 Route of the 500kV Transmission Line (Purple: Phayargyi SS to Sar Ta Lin SS)**



Source: JICA Study Team

**Figure 3.2-3 New 230kV Overhead Transmission Lines (Red)**



Source: JICA Study Team

**Figure 3.2-4 Existing 230kV Transmission Line (Orange: Overhead, Blue: New underground)**

### 3.2.2. Land Lease for Tower Foundations

The work area surrounding the base of the transmission line towers will be leased during the Construction Phase. The required land area totals 5.6 ha, as shown in the table below.

**Table 3.2-2 Estimated Size of Land Acquisition for Transmission Line Construction**

| No.   | Voltage | Start      | End        | Number of Towers | Side Length | Average Area per Tower | Total |
|-------|---------|------------|------------|------------------|-------------|------------------------|-------|
| 1     | 500 kV  | Phayargyi  | Sar Ta Lin | 152              | 15-20m      | 243m <sup>2</sup>      | 3.7ha |
| 2     | 230 kV  | Sar Ta Lin | East Dagon | 45               | 14-16m      | 207m <sup>2</sup>      | 0.9ha |
| 3     | 230 kV  | Sar Ta Lin | Hlawga     | 45               |             |                        | 1.0ha |
| 4     | 230 kV  | Hlawga     | Thaketa    | (51)*            |             |                        | -*    |
| Total |         |            |            | 242 (51)*        |             |                        | 5.6ha |

\*Located within existing ROW

Source: JICA Study Team

### 3.2.3. Temporary Lease of Land for the Access Road during the Construction Phase

To construct the overhead transmission lines, temporary access roads will be constructed within ROW with the width of 4m (14ft). The total area to be leased is estimated as 42.0ha.

**Table 3.2-3 Temporary Leases of Land for the Access Road during the Construction Phase**

| No. | Voltage | Start      | End        | Length  |             | Width of Access Road | Necessary Area |
|-----|---------|------------|------------|---------|-------------|----------------------|----------------|
|     |         |            |            | New     | Improvement |                      |                |
| 1   | 500 kV  | Phayargyi  | Sar Ta Lin | 70.0 km | -           | 4m                   | 28.0 ha        |
| 2   | 230 kV  | Sar Ta Lin | East Dagon | 18.0 km | -           |                      | 7.2 ha         |

| No.   | Voltage | Start      | End     | Length   |             | Width of Access Road | Necessary Area |
|-------|---------|------------|---------|----------|-------------|----------------------|----------------|
|       |         |            |         | New      | Improvement |                      |                |
| 3     | 230 kV  | Sar Ta Lin | Hlawga  | 16.9 km  | -           |                      | 6.8 ha         |
| 4     | 230 kV  | Hlawga     | Thaketa | -        | 18.0 km     |                      | -*             |
| Total |         |            |         | 104.9 km | 18.0 km     |                      | 42.0 ha        |

\*Located within existing ROW

Source: JICA Study Team

### 3.2.4. Area of New ROW

As shown in Table 3.2-4, the land use within ROW of the overhead transmission line will have a height limit restriction. The width of ROW is about 61m for the 500kV line and about 46m for 230kV lines. The total area to be newly affected is calculated as about 590ha.

**Table 3.2-4 Area of Newly Designated ROW**

| No.   | Voltage | Start      | End        | Length   | Width  | Area    |
|-------|---------|------------|------------|----------|--------|---------|
| 1     | 500 kV  | Phayargyi  | Sar Ta Lin | 70.0 km  | 60.96m | 426.7ha |
| 2     | 230 kV  | Sar Ta Lin | East Dagon | 18.0 km  | 45.72m | 82.3ha  |
| 3     | 230 kV  | Sar Ta Lin | Hlawga     | 16.9 km  |        | 77.3ha  |
| 4     | 230 kV  | Hlawga     | Thaketa    | -        |        | -       |
| Total |         |            |            | 104.9 km |        | 586.3ha |

-: Use already existing ROW

Source: JICA Study Team

## 3.3. Population Census

### 3.3.1. Sar Ta Lin Substation

Direct displacement of residents will not occur due to the new substation constructions because the site boundary is set to avoid any existing structures.

Since the satellite photo shows 81 lots of rice paddies surrounded by footpaths, the maximum number of land owner households to be affected at the site can be estimated as 81.

In the implementation phase of the Project, affected land owners will be identified, and population census for them will be done.

Since the rice paddies within the site receive irrigation water, it can be assumed that the paddies are covered by a regional, strategic farming plan or project. Therefore, it can be assumed that the land owners will be either legal owners or customary owners, and will not include illegal occupation.

Other Project Affected Peoples (PAPs) who will not be relocated by the Project, such as seasonal agricultural wage laborers or temporary agricultural wage laborers, will be identified and population census for them will be done in the implementation phase of the Project.

No temporary lease of land is planned for the construction of the substation.

**Table 3.3-1 Population Census of the PAPs from the Construction of the Sar Ta Lin Substation**

| Type of loss   | No of PAUs    |          |               | No of APs  |          |            |
|--|---------------|----------|---------------|------------|----------|------------|
|  | Legal         | Illegal  | Total         | Legal      | Illegal  | Total      |
| Required for physical displacement                                 |               |          |               |            |          |            |
| 1 HH (Structure owner on Gov. land)                                | 0             | 0        | 0             | 0          | 0        | 0          |
| 2 HH (Structure on Private land)                                   | 0             | 0        | 0             | 0          | 0        | 0          |
| 3 HH (Tenants)   | 0             | 0        | 0             | 0          | 0        | 0          |
| 4 CBEs (Structure owner on Gov. land)                              | 0             | 0        | 0             | 0          | 0        | 0          |
| 5 CBEs (Structure owner on Private land)                           | 0             | 0        | 0             | 0          | 0        | 0          |
| 6 CBEs (Tenants)   | 0             | 0        | 0             | 0          | 0        | 0          |
| 7 Community-owned structures including physical cultural resources | 0             | 0        | 0             | 0          | 0        | 0          |
| Sub-total  | 0             | 0        | 0             | 0          | 0        | 0          |
| Not required for physical displacement <sup>a</sup>                |               |          |               |            |          |            |
| 8 Land owners  | Max 81        | 0        | Max 81        | 371        | –        | 371        |
| 9 Wage earners   | b             | 0        | b             | b          | –        | b          |
| Sub-total  | Max 81        | 0        | Max 81        | 371        | –        | 371        |
| <b>Grand Total (1–9)</b>   | <b>Max 81</b> | <b>0</b> | <b>Max 81</b> | <b>371</b> | <b>0</b> | <b>371</b> |

HH: House-hold, CBEs: Commercial and Business Enterprises

a: The number is an estimation. The 81 lots of rice paddies surrounded by footpaths is estimated as the maximum number of land owner household. Number of affected persons is calculated by assuming that the average household size as 4.57 person per household.

b: Seasonal and temporal laborer to be affected will be identified in the next phase of the Project

Source: JICA Study Team

### 3.3.2. Transmission Lines

In total, 5.6 ha for construction of the towers, and 42.0 ha for the access road between the towers will be leased to construct the transmission lines. In addition, new ROW of about 590 ha will be subject to land use restrictions (height limit). DPTSC has a policy of avoiding not only affecting existing structures, but also affecting residential plots in the decision on tower locations. The proposed routes and ROWs were studied by the JICA Study Team and the JICA Study Team agreed that technically existing structures can be avoided. Therefore, no relocation of residents, businesses, or commercial entities is expected.

The size of the work areas for the tower base is 10 to 20 m square for a 500kV tower, and 14 to 16 m square for a 230kV tower. These areas are far smaller than the average size of one rice paddy in the Study Area. Therefore, it can be assumed that one land owner will be affected by the construction of one tower. The maximum number of land owners households to be affected by the 242 transmission towers was assumed as 242.

In the implementation phase of the Project, affected land owners, seasonal or temporary agricultural wage laborers, and businesses who will be affected by the temporal land lease and/or landuse restriction will be identified, and population census for them will be done.

**Table 3.3-2 Population Census of the PAPs from the Construction of the Transmission Lines**

| Type of loss  | No of PAUs |         |         | No of APs |         |       |
|---|------------|---------|---------|-----------|---------|-------|
|   | Legal      | Illegal | Total   | Legal     | Illegal | Total |
| Required for physical displacement  |            |         |         |           |         |       |
| 1 HH (Structure owner on Gov. land )  | 0          | 0       | 0       | 0         | 0       | 0     |
| 2 HH (Structure on Private land)  | 0          | 0       | 0       | 0         | 0       | 0     |
| 3 HH (Tenants)  | 0          | 0       | 0       | 0         | 0       | 0     |
| 4 CBEs (Structure owner on Gov. land)   | 0          | 0       | 0       | 0         | 0       | 0     |
| 5 CBEs (Structure owner on Private land)  | 0          | 0       | 0       | 0         | 0       | 0     |
| 6 CBEs (Tenants)  | 0          | 0       | 0       | 0         | 0       | 0     |
| 7 Community-owned structures including physical cultural resources                                  | 0          | 0       | 0       | 0         | 0       | 0     |
| Sub-total   | 0          | 0       | 0       | 0         | 0       | 0     |
| Not required for physical displacement (Land lease during construction for tower base) <sup>a</sup> |            |         |         |           |         |       |
| 8 Land owners   | Max 242    | b       | Max 242 | 1,106     | b       | 1,106 |
| 9 Wage earners  | b          | b       | b       | b         | b       | b     |
| Sub-total   | Max 242    | b       | Max 242 | 1,106     | b       | 1,106 |
| Grand Total(1-9)  | Max 242    | b       | Max 242 | 1,106     | b       | 1,106 |

HH: House-hold, CBEs: Commercial and Business Enterprises

a: The number is an estimation. The 81 lots of rice paddies surrounded by footpaths is estimated as the maximum number of land owner household. Number of affected persons is calculated by assuming that the average household size as 4.57 person per household.

b: Seasonal or temporary laborers to be affected will be identified in the next phase of the Project

Source: JICA Study Team

### 3.4. Land Survey and Asset Census

#### 3.4.1. Sar Ta Lin Substation

According to past and recent satellite photos, 25.0ha of land is currently used for rice paddies, or was used for rice paddies. The land type, therefore, is expected to be registered farm land. Official land type information needs to be obtained from the Hlegu Township Department of Agriculture, Land Management and Statistics in the implementation phase of the Project.

**Table 3.4-1 Land Area to be Affected by the Construction of the Sar Ta Lin Substation**

| No.   | Location       | Land Type  | Affected | Total   |
|-------|----------------|------------|----------|---------|
| 1     | Hlegu Township | Farm Land  | 25.0 ha  | 25.0 ha |
| 2     |                | Other land | a        |         |
| Total |                |            |          | 25.0 ha |

a: Need final confirmation by Hlegu Township Department of Agriculture Land Management and Statistics.

Source: JICA Study Team



**Table 3.4-2 Structures to be Affected by the Construction of the Sar Ta Lin Substation**

| No. | Location       | Type of Building     | Affected | Total |
|-----|----------------|----------------------|----------|-------|
| 1   | Hlegu Township | Residential Building | 0        | 0     |
| 2   | Hlegu Township | Shops                | 0        |       |
| 3   | Hlegu Township | Public Institution   | 0        |       |

Source: JICA Study Team

**Table 3.4-3 Trees and Crops to be Affected by the Construction of the Sar Ta Lin Substation**

| No.                | Location       | Type of Plants            | Area/Number |
|--------------------|----------------|---------------------------|-------------|
| Crop               |                |                           |             |
| 1                  | Hlegu Township | Rice (2 times per year*)  | 25.0 ha     |
| Perennials, trees* |                |                           |             |
| 2                  | Hlegu Township | Palm tree                 | 17          |
| 3                  |                | Banana                    | 560         |
| 4                  |                | Acacia tree (border tree) | 90          |

\*Estimated using satellite photos

Source: JICA Study Team

### 3.4.2. Transmission Lines

Land areas in townships affected by the lease of construction areas and access roads, as well as the ROW subject to land use restrictions, are shown in the following tables.

As the route maps show, the majority of the stretches of the lines pass farm land (mainly rice paddies) and some parts pass through wooded areas, including rubber plantations.

**Table 3.4-4 Land Area to be Affected by the Construction of the Transmission Lines**

| 500 kV Phayargyi Sar Ta Lin  |                      |             |      |               |   |                         |                      |
|------------------------------|----------------------|-------------|------|---------------|---|-------------------------|----------------------|
| District                     | Township             | Length (km) | %    | No. of towers | Work area (243m <sup>2</sup> /tower) (ha) | Access road (W=4m) (ha) | ROW (W=60.96m)       |
| Bago                         | Bago                 | 39.0        | 56%  | 85            | 2.1                                       | 15.6                    | 237.7                |
|                              | Thanatpin            | 14.1        | 20%  | 31            | 0.7                                       | 5.6                     | 86.0                 |
|                              | Kawa                 | 3.9         | 6%   | 8             | 0.2                                       | 1.6                     | 23.8                 |
| Northern Yangon              | Hlegu                | 13.0        | 19%  | 28            | 0.7                                       | 5.2                     | 79.2                 |
| Total                        |                      | 70.0        | 100% | 152           | 3.7                                       | 28.0                    | 426.7                |
| 230 kV Sar Ta Lin East Dagon |                      |             |      |               |   |                         |                      |
| District                     | Township             | Length (km) | %    | No. of towers | Work area (207m <sup>2</sup> /tower) (ha) | Access road (W=4m) (ha) | ROW (W=45.72 m) (ha) |
| Northern Yangon              | Hlegu                | 14.4        | 80%  | 36            | 0.7                                       | 5.8                     | 65.8                 |
| Eastern Yangon               | Dagon Myothit (East) | 3.6         | 20%  | 9             | 0.2                                       | 1.4                     | 16.5                 |
| Total                        |                      | 18.0        | 100% | 45            | 0.9                                       | 7.2                     | 82.3                 |
| 230 kV Sar Ta Lin Hlawga     |                      |             |      |               |   |                         |                      |
| District                     | Township             | Length (km) | %    | No. of towers | Work area (207m <sup>2</sup> /tower) (ha) | Access road (W=4m) (ha) | ROW (W=45.72 m) (ha) |
| Northern Yangon              | Hlegu                | 14.9        | 88%  | 40            | 0.8                                       | 6.0                     | 68.1                 |
|                              | Mingalardon          | 2.0         | 12%  | 5             | 0.1                                       | 0.8                     | 9.1                  |
| Total                        |                      | 16.9        | 100% | 45            | 0.9                                       | 6.8                     | 77.3                 |

Source: JICA Study Team

(Existing ROW)

| 230 kV          |                       | Hlawga      | Thaketa (Existing ROW) |               |
|-----------------|-----------------------|-------------|------------------------|---------------|
| District        | Township              | Length (km) | %                      | No. of towers |
| Northern Yangon | Mingalardon           | 3.4         | 19%                    | 10            |
|                 | North Okkalapa        | 1.5         | 8%                     | 4             |
| Eastern Yangon  | Dagon Myothit (North) | 7.9         | 44%                    | 22            |
|                 | Dagon Myothit (South) | 4.9         | 27%                    | 14            |
|                 | Thaketa               | 0.3         | 2%                     | 1             |
| Total           |                       | 18.0        | 100%                   | 51            |

Source: JICA Study Team

**Table 3.4-5 Impacts by Township**

| Length of Transmission Line |                       |       |        |                       |                            |              |
|-----------------------------|-----------------------|-------|--------|-----------------------|----------------------------|--------------|
| District                    | Township              | 500kV | Sar-ED | Sar-Hlawga (overhead) | Hlawga-Thake (east of NH3) | Total        |
| Bago                        | Bago                  | 39.0  |        |                       |                            | 39.0         |
|                             | Thanatpin             | 14.1  |        |                       |                            | 14.1         |
|                             | Kawa                  | 3.9   |        |                       |                            | 3.9          |
| Northern Yangon             | Hlegu                 | 13.0  | 14.4   | 14.9                  |                            | 42.3         |
|                             | Mingalardon           |       |        | 2.0                   | (3.4)                      | 2.0 (3.4)    |
| Eastern Yangon              | Dagon Myothit (East)  |       | 3.6    |                       |                            | 3.6          |
|                             | North Okkalapa        |       |        |                       | (1.5)                      | (1.5)        |
|                             | Dagon Myothit (North) |       |        |                       | (7.9)                      | (7.9)        |
|                             | Dagon Myothit (South) |       |        |                       | (4.9)                      | (4.9)        |
|                             | Thaketa               |       |        |                       | (0.3)                      | (0.3)        |
| Total                       |                       | 70.0  | 18.0   | 16.9                  | (18.0)                     | 104.9 (18.0) |

(): Within the existing ROW

| Number of Transmission Line Towers (Pylon) |                       |       |        |                       |                            |          |
|--|-----------------------|-------|--------|-----------------------|----------------------------|----------|
| District                                   | Township              | 500kV | Sar-ED | Sar-Hlawga (overhead) | Hlawga-Thake (east of NH3) | Total    |
| Bago                                       | Bago                  | 85    |        |                       |                            | 85       |
|  | Thanatpin             | 31    |        |                       |                            | 31       |
|  | Kawa                  | 8     |        |                       |                            | 8        |
| Northern Yangon                            | Hlegu                 | 28    | 36     | 40                    |                            | 104      |
|  | Mingalardon           |       |        | 5                     | (10)                       | 5 (10)   |
| Eastern Yangon                             | Dagon Myothit (East)  |       | 9      |                       |                            | 9        |
|  | North Okkalapa        |       |        |                       | (4)                        | (4)      |
|  | Dagon Myothit (North) |       |        |                       | (22)                       | (22)     |
|  | Dagon Myothit (South) |       |        |                       | (14)                       | (14)     |
|  | Thaketa               |       |        |                       | (1)                        | (1)      |
| Total                                      |                       | 152   | 45     | 45                    | (51)                       | 242 (51) |

(): Within the existing ROW

Source: JICA Study Team

**Table 3.4-6 Land Lease Area by Township (ha)**

| District | Township  | 500kV     |             | Sar-ED    |             | Sar-Hlawga (overhead) |             | Hlawga-Thake (east of NH3) |             | Total |
|----------|-----------|-----------|-------------|-----------|-------------|-----------------------|-------------|----------------------------|-------------|-------|
|          |           | Work area | Access road | Work area | Access road | Work area             | Access road | Work area                  | Access road |       |
| Bago     | Bago      | 2.1       | 15.6*       |           |             |                       |             |                            |             | 17.7  |
|          | Thanatpin | 0.7       | 5.6         |           |             |                       |             |                            |             | 6.4   |

|                 |                       | 500kV      |             | Sar-ED     |            | Sar-Hlawga (overhead) |            | Hlawga-Thake (east of NH3) |   | Total       |
|-----------------|-----------------------|------------|-------------|------------|------------|-----------------------|------------|----------------------------|---|-------------|
|                 |                       |            |             |            |            |                       |            |                            |   |             |
|                 | Kawa                  | 0.2        | 1.6         |            |            |                       |            |                            |   | 1.8         |
| Northern Yangon | Hlegu                 | 0.7        | 5.2         | 0.7        | 5.8        | 0.8                   | 6.0        |                            |   | 19.2        |
|                 | Mingalardon           |            |             |            |            | 0.1                   | 0.8        | -                          | - | 0.9         |
| Eastern Yangon  | Dagon Myothit (East)  |            |             | 0.2        | 1.4        |                       |            |                            |   | 1.6         |
|                 | North Okkalapa        |            |             |            |            |                       |            | -                          | - | -           |
|                 | Dagon Myothit (North) |            |             |            |            |                       |            | -                          | - | -           |
|                 | Dagon Myothit (South) |            |             |            |            |                       |            | -                          | - | -           |
|                 | Thaketa               |            |             |            |            |                       |            | -                          | - | -           |
| <b>Total</b>    |                       | <b>3.7</b> | <b>28.0</b> | <b>0.9</b> | <b>7.2</b> | <b>0.9</b>            | <b>6.8</b> |                            |   | <b>47.5</b> |

\*: 2.26ha of woodland is included

Source: JICA Study Team

**Table 3.4-7 New ROW Area by Township**

| District        | Township              | 500kV        | Sar-ED      | Sar-Hlawga (overhead) | Hlawga-Thake (east of NH3) | Total        |
|-----------------|-----------------------|--------------|-------------|-----------------------|----------------------------|--------------|
| Bago            | Bago                  | 237.7        |             |                       |                            | 237.7        |
|                 | Thanatpin             | 86.0         |             |                       |                            | 86.0         |
|                 | Kawa                  | 23.8         |             |                       |                            | 23.8         |
| Northern Yangon | Hlegu                 | 79.2         | 65.8        | 68.1                  |                            | 213.2        |
|                 | Mingalardon           |              |             | 9.1                   | -                          | 9.1          |
| Eastern Yangon  | Dagon Myothit (East)  |              | 16.5        |                       |                            | 16.5         |
|                 | North Okkalapa        |              |             |                       | -                          | -            |
|                 | Dagon Myothit (North) |              |             |                       | -                          | -            |
|                 | Dagon Myothit (South) |              |             |                       | -                          | -            |
|                 | Thaketa               |              |             |                       | -                          | -            |
| <b>Total</b>    |                       | <b>426.7</b> | <b>82.3</b> | <b>77.3</b>           | <b>-</b>                   | <b>586.3</b> |

Source: JICA Study Team

The 500 kV Transmission Line passes through rubber plantation at 2 locations, one at north of Payargi Substation, and the other at north of Tongyi Rail Station. The total length over the plantation is 5.65 km. The trees within the 60.96 m ROW will be permanently cleared. The land ownership will remain to the original owner, and the owner can use the land for cultivation of low-height crops.

The area of wooded ROW is calculated as 34.44 ha (= 5.65km x 60.96m). The field survey in May 2020 found that the density of rubber trees vary widely between 560/ha, 720/ha, and 930/ha. Taking the simple average of 737 trees/ha, the number of trees to be cleared within the new ROW was calculated as 25,383 (=34.44ha x 737 trees/ha).

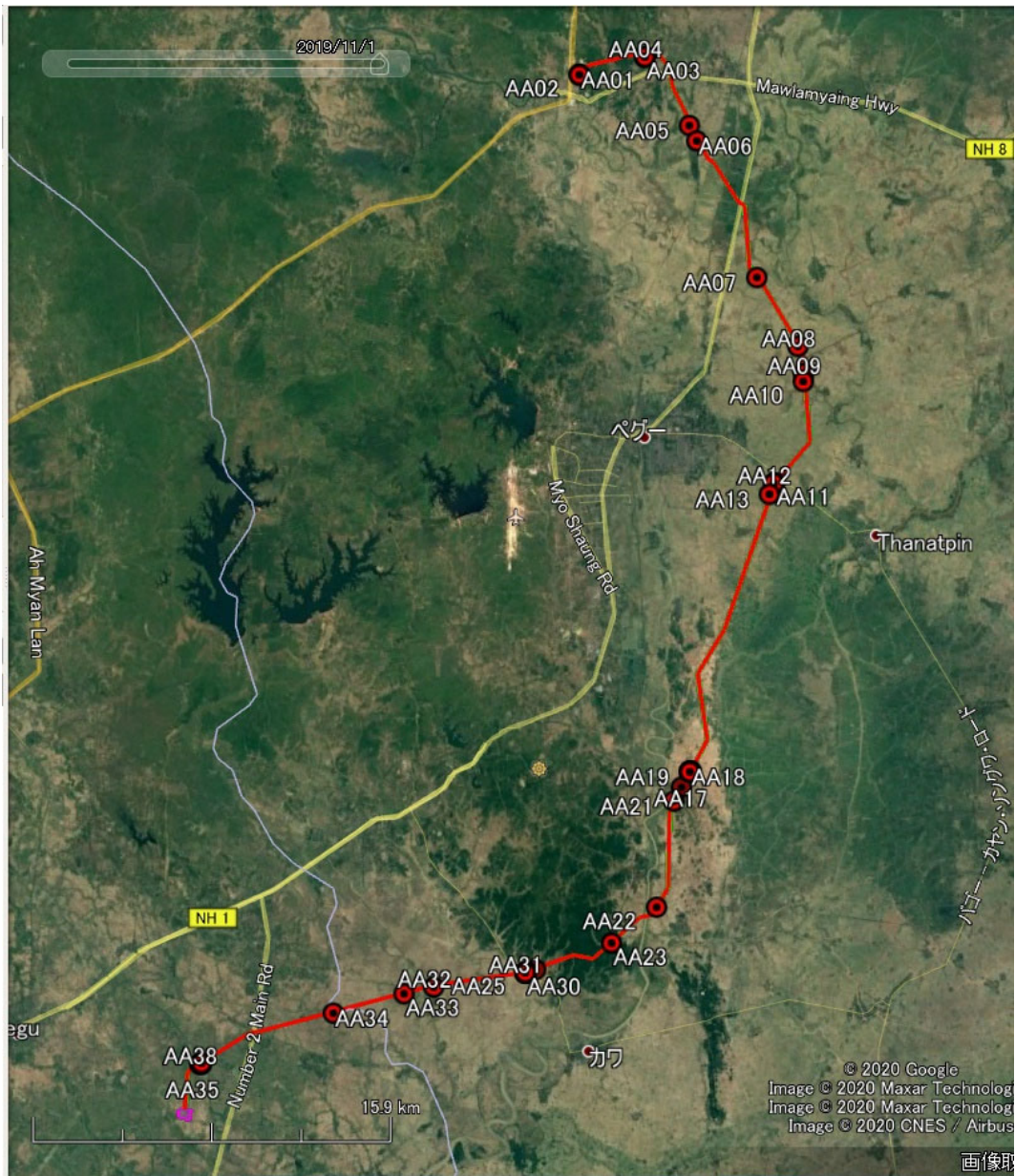
Detailed field survey of assets, jointly conducted by all respective parties, will be necessary to articulate the number of trees, types and annual yields in the implementation phase of the Project.

The results of structure count within ROWs based on satellite photos are shown in the table below. DPTSC and the JICA Study Team agreed about the policy on those structures, as follows: for the 500kV line, the towers and the route of the line will be adjusted in the next phase of the Project so that no structures will be on the ROW; for 230kV lines, construction work will be implemented keeping the existing structures as they are. With this policy, impact on private assets within the ROW is avoided.

**Table 3.4-8 Structure Count within ROWs based on Satellite Photos and Handling Policy**

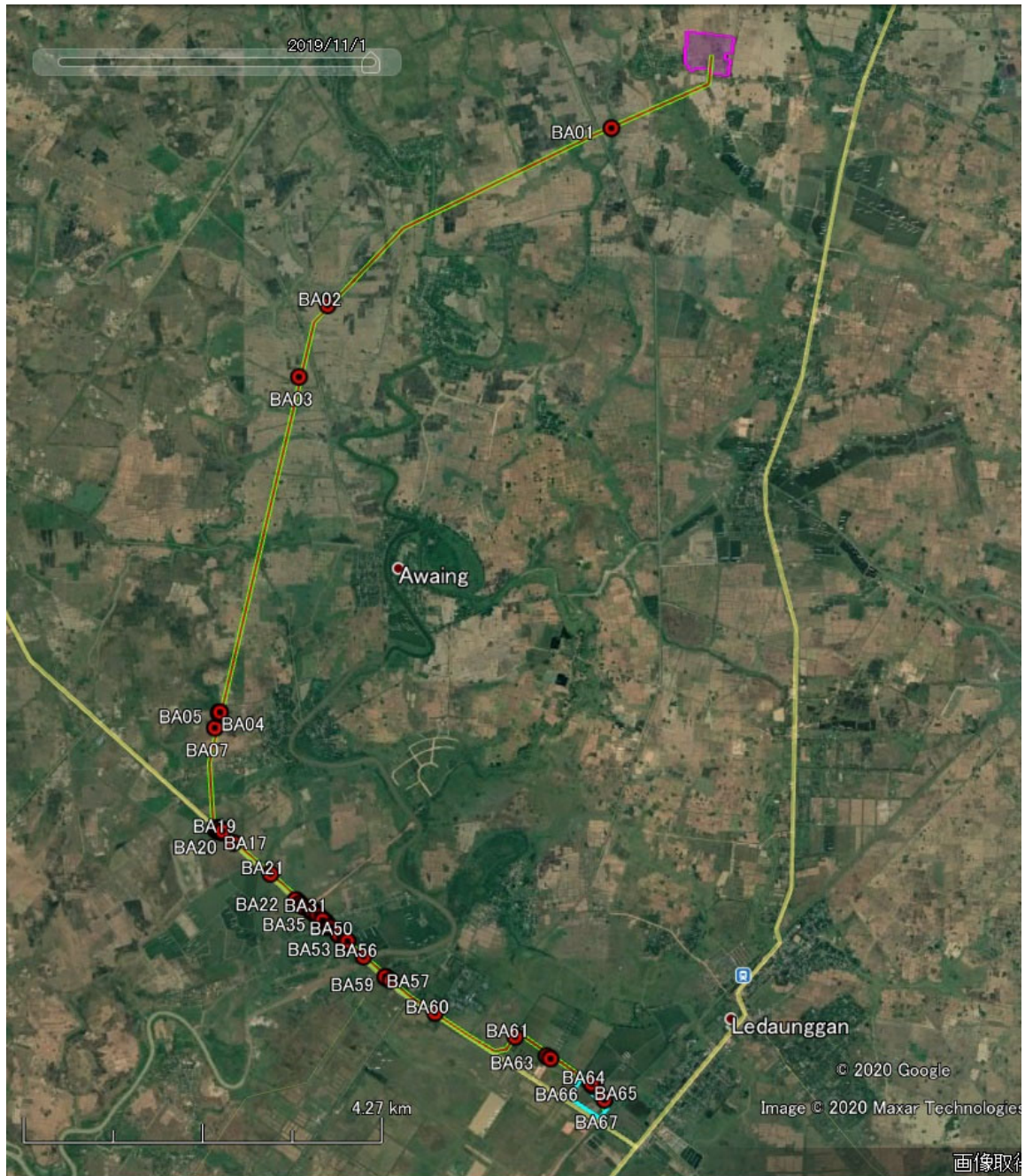
| No. | Voltage | Start      | End        | Overhead |          | Number of Structures               | DPTSC and the JICA Study Team Policy  |
|-----|---------|------------|------------|----------|----------|------------------------------------|---|
|     |         |            |            | New      | Existing |                                    |   |
| 1   | 500 kV  | Phayargi   | Sar Ta Lin | 70.0 km  | -        | 38                                 | Location of the towers and route will be adjusted so that no structures will be on the ROW  |
| 2   | 230 kV  | Sar Ta Lin | East Dagon | 18.0 km  | -        | 67<br>On No.7 Road: 60<br>Other: 7 | Location of the towers will be adjusted so that existing structures will not be affected during the construction, and will remain as-is after the construction  |
| 3   | 230 kV  | Sar Ta Lin | Hlawga     | 16.9 km  | -        | 6                                  | Location of the towers will be adjusted so that existing structures will not be affected during the construction, and will remain as-is after the construction  |
| 4   | 230 kV  | Hlawga     | Thaketa    | -        | 18.0 km  | 433                                | With the demolition of existing towers and lines, and with the construction of new towers and lines, construction methods and locations will be selected so that existing structures will not be affected during the construction, and will remain as-is after the construction |

Source: JICA Study Team



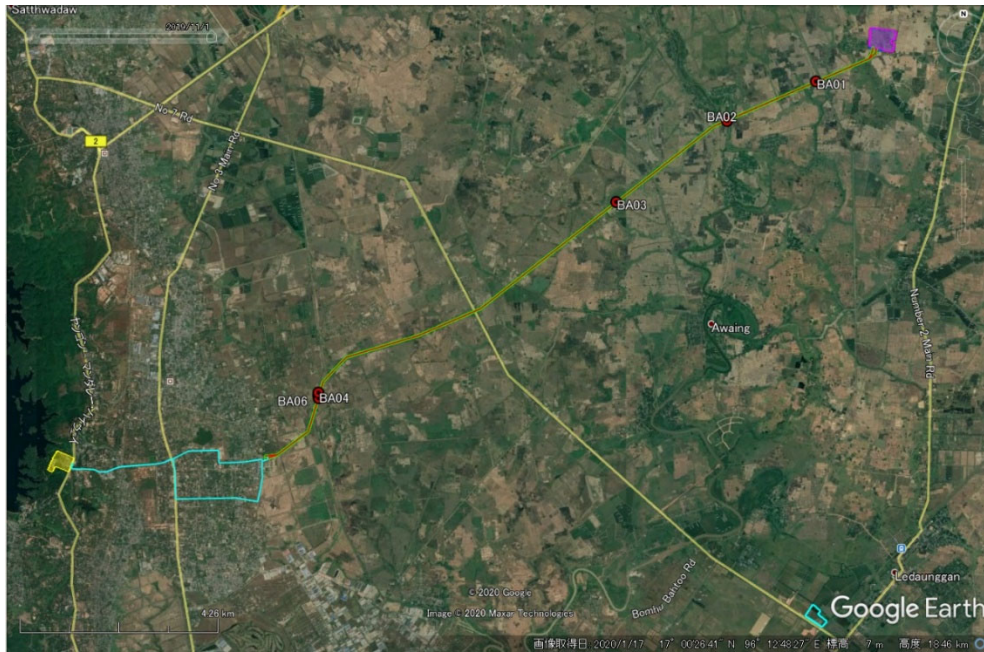
Source: JICA Study Team

**Figure 3.4-1 Existing Structures (AA01-AA38) and 500kV Transmission Line Route**



Source: JICA Study Team

**Figure 3.4-2 Existing Structures (BA01-BA67) and 230kV Transmission Line Route (Sar Ta Lin-East Dagon)**



Source: JICA Study Team

**Figure 3.4-3 Existing Structures (BA01-BA06) and 230kV Transmission Line Route (Sar Ta Lin-Hlawga)**



Source: JICA Study Team

**Figure 3.4-4 Existing Towers (HT), ROW (Green), and Structures (Red circles) along the 230kV Transmission Line (Hlawga-Thaketa)**

### 3.5. Livelihood and Living Conditions Survey

Literature survey results on the livelihood and living conditions in the area to be affected are summarized as follows. Identification of the Project Affected Persons and survey on their livelihood and living conditions will be done in the implementation phase of the Project.

The townships to be affected by the Project are listed in Table 3.5-1.

**Table 3.5-1 Planned Facilities and Townships to be Affected**

| Region | Township       | Sar Ta Lin Substation | 500kV TL | 230kV TL |
|--------|----------------|-----------------------|----------|----------|
| Bago   | Bago           |                       | X        |          |
|        | Thanatpin      |                       | X        |          |
|        | Kawa           |                       | X        |          |
| Yangon | Hlegu          | X                     | X        | X        |
|        | Mingalardon    |                       |          | X        |
|        | North Okkalapa |                       |          | X        |
|        | North Dagon    |                       |          | X        |
|        | South Dagon    |                       |          | X        |
|        | East Dagon     |                       |          | X        |
|        | Thaketa        |                       |          | X        |

Source: JICA Study Team

Land use in the affected townships are shown in Table 3.5-2. Kawa and Hlegu townships are mainly consisted of agriculture land. Southern townships, North Okkalapa, North Dagon, South Dagon, East Dagon, and Thaketa, are consisted of urban land use such as civil land.

**Table 3.5-2 Land Use in Affected Townships**

| Sr. No | Bago Region                             |         |           |         |
|--------|---|---------|-----------|---------|
|        | Township                                | Bago    | Thanatpin | Kawa    |
|        | Total Land Area (km <sup>2</sup> )      | 2,905.1 | 997.2     | 1,677.5 |
| 1      | Agriculture Land (%)                    | 28.62   | 65.13     | 48.21   |
|        | 1)Paddy Field                           | 14.59   | 63.67     | 47.23   |
|        | 2) Farmland                             | 0       | 0         | 0.00    |
|        | 3) Cultivated Land                      | 0.82    | 0.00      | 0.00    |
|        | 4) Garden Field                         | 13.20   | 1.46      | 0.98    |
|        | 5) Hill-side Cultivated Land            | 0.01    | 0         | 0.01    |
| 2      | Abandoned Land(%)                       | 0       | 0         | 0.10    |
|        | 1)Paddy Field                           | 0       | 0         | 0.10    |
|        | 2) Farmland                             | 0       | 0         | 0.00    |
|        | 3) Cultivated Land                      | 0       | 0         | 0.00    |
|        | 4) Garden Field                         | 0       | 0         | 0.00    |
|        | 5) Hill-side Cultivated Land            | 0       | 0         | 0       |
| 3      | Grazing ground (%)                      | 0.72    | 2.60      | 0.13    |
| 4      | Industrial Area (%)                     | 0.25    | 0.01      | 0.02    |
| 5      | Civil land and other types of land (%)  | 1.71    | 0.18      | 0.05    |
| 6      | Village Land (%)                        | 1.23    | 3.10      | 3.00    |
| 7      | Other (%)                               | 5.41    | 28.98     | 46.98   |
| 8      | Reserved forest/Natural Forest Area (%) | 55.14   | 5.53      | 0.00    |
| 9      | Wild Forest (%)                         | 0       | 0         | 0       |
| 10     | Wild Land (%)                           | 0.13    | 0.01      | 1.51    |
| 11     | Non-cultivated Land (%)                 | 8.19    | 0.82      | 0.00    |



| Sr. No    | Bago Region |        |           |      |
|-----------|-------------|--------|-----------|------|
|           | Township    | Bago   | Thanatpin | Kawa |
| Total (%) |             | 101.40 | 100       | 100  |

Source: Township Profiles, General Administration Department, 2019

| Sr. No | Yangon Region                           |              |              |                |              |              |              |              |
|--------|---|--------------|--------------|----------------|--------------|--------------|--------------|--------------|
|        | Township                                | Hlegu        | Mingalardon  | North Okkalapa | North Dagon  | South Dagon  | East Dagon   | Thaketa      |
|        | Total Land Area (km2)                   | 1,494.2      | 108.0        | 26.7           | 26.3         | 79.1         | 91.0         | 12.8         |
| 1      | Agriculture Land (%)                    | <b>40.88</b> | 16.06        | 0              | 0.77         | 27.31        | 8.14         | 0            |
|        | 1) Paddy Field                          | 22.46        | 10.64        | 0.00           | 0.77         | 27.31        | 8.14         | 0.00         |
|        | 2) Farmland                             | 0            | 0            | 0              | 0            | 0            | 0            | 0            |
|        | 3) Cultivated Land                      | 0            | 0            | 0              | 0            | 0            | 0            | 0            |
|        | 4) Garden Field                         | 18.36        | 5.42         | 0              | 0            | 0            | 0            | 0            |
|        | 5) Hill-side Cultivated Land            | 0.06         | 0.00         | 0              | 0            | 0            | 0            | 0            |
| 2      | Abandoned Land(%)                       | 3.43         | 0.20         | 0              | 0            | 0            | 5            | 0            |
|        | 1) Paddy Field                          | 2.82         | 0.00         | 0              | 0            | 0            | 0            | 0            |
|        | 2) Farmland                             | 0            | 0            | 0              | 0            | 0            | 0            | 0            |
|        | 3) Cultivated Land                      | 0            | 0            | 0              | 0            | 0            | 0            | 0            |
|        | 4) Garden Field                         | 0.60         | 0.20         | 0              | 0            | 0            | 0            | 0            |
|        | 5) Hill-side Cultivated Land            | 0.01         | 0            | 0              | 0            | 0            | 0            | 0            |
| 3      | Grazing ground (%)                      | 0.59         | 0            | 0              | 0            | 0            | 0            | 0            |
| 4      | Industrial Area (%)                     | 0.07         | 0.20         | 30.49          | 0.39         | 1.21         | 0.58         | 5.07         |
| 5      | Civil land and other types of land (%)  | 0.31         | 14.93        | <b>68.90</b>   | <b>98.84</b> | <b>59.00</b> | <b>65.05</b> | <b>90.76</b> |
| 6      | Village Land (%)                        | 1.16         | 12.86        | 0              | 0            | 0            | 2.14         | 0            |
| 7      | Other (%)                               | 28.65        | <b>28.21</b> | 0.61           | 0            | 0            | 19.47        | 4.18         |
| 8      | Reserved forest/Natural Forest Area (%) | 24.28        | 26.89        | 0              | 0            | 0            | 0            | 0            |
| 9      | Wild Forest (%)                         | 0            | 0            | 0              | 0            | 0            | 0            | 0            |
| 10     | Wild Land (%)                           | 0.62         | 0.65         | 0              | 0            | 0            | 0            | 0            |
| 11     | Non-cultivated Land (%)                 | 0            | 0            | 0              | 0            | 12.49        | 0            | 0            |
|        | Total                                   | 100          | 100          | 100            | 100          | 100          | 100          | 100          |

Source: Township Profiles, General Administration Department, 2019

Population and household numbers are shown in Table 3.5-3. Average household size is about 5 person. Population density is low in Bago, Thanatpin, Kawa, and Hlegu townships, and quite high in Thaketa and North Okalapa townships.

**Table 3.5-3 Number of House, Household and Population**

| Township  | House   | Household | Total Population | Average population per one house | Average Household Size | Population Density (per km2) |
|-----------|---------|-----------|------------------|----------------------------------|------------------------|------------------------------|
|           | a       | b         | c                | d=c/a                            | e=c/b                  | f                            |
| Bago      | 105,280 | 115,440   | 439,622          | 4.18                             | 3.81                   | 151                          |
| Thanatpin | 29,178  | 30,185    | 165,738          | 5.68                             | 5.49                   | 166                          |
| Kawa      | 46,242  | 47,967    | 217,604          | 4.71                             | 4.54                   | 130                          |
| Hlegu     | 48,633  | 51,563    | 239,458          | 4.92                             | 4.64                   | 160                          |

| Township       | House   | Household | Total Population | Average population per one house | Average Household Size | Population Density (per km <sup>2</sup> ) |
|----------------|---------|-----------|------------------|----------------------------------|------------------------|---|
|                | a       | b         | c                | d=c/a                            | e=c/b                  | f   |
| Mingalardon    | 47,699  | 57,380    | 263,798          | 5.53                             | 4.60                   | 2,443                                     |
| North Okkalapa | 46,303  | 65,669    | 289,928          | 6.26                             | 4.41                   | <b>10,847</b>                             |
| North Dagon    | 33,581  | 39,953    | 198,743          | 5.92                             | 4.97                   | 7,560                                     |
| South Dagon    | 56,949  | 59,725    | 325,886          | 5.72                             | 5.46                   | 4,120                                     |
| East Dagon     | 35,814  | 39,284    | 172,277          | 4.81                             | 4.39                   | 1,892                                     |
| Thaketa        | 32,589  | 45,806    | 215,696          | 6.62                             | 4.71                   | <b>16,893</b>                             |
| Total          | 482,268 | 552,972   | 2,528,750        | <b>5.24</b>                      | <b>4.57</b>            |   |

Source: Township Profiles, General Administration Department, 2019

Percentage of each 13 ethnic groups in Myanmar is shown in . Bamar makes the vast majority group in all the townships. In Thaketa and South Dagon, foreign population, who do not belong to those groups, makes around 10 per cent.

**Table 3.5-4 Ethnic Composition**

| Township       |            | Kachin | Kayar | Keyin  | Chin  | Mon   | Bamar         | Rakhine | Shan   | Pa O  | Palaung | Danu  | Taungyo | Kayan | Total   |
|----------------|------------|--------|-------|--------|-------|-------|---------------|---------|--------|-------|---------|-------|---------|-------|---------|
| Bago           | Population | 115    | 104   | 16,329 | 463   | 5,517 | 390,116       | 793     | 822    | 1,574 | 5,568   | 2,837 | 2,165   | 2,205 | 428,608 |
|                | %          | 0.03   | 0.03  | 3.66   | 0.11  | 1.26  | <b>88.73</b>  | 0.18    | 0.19   | 0.36  | 1.29    | 0.64  | 0.49    | 0.5   | 97.47   |
| Thanatpin      | Population | 5      | -     | 13     | -     | 30    | 159,412       | 2       | 4      | 1     | -       | -     | -       | -     | 159,467 |
|                | %          | 0.003  | -     | 0.008  | -     | 0.018 | <b>96.183</b> | 0.0012  | 0.0024 | 0     | -       | -     | -       | -     | 96.22   |
| Kawa           | Population | 1      | -     | 4,524  | -     | 22    | 208,592       | 19      | 6      | -     | -       | -     | -       | -     | 213,164 |
|                | %          | 0      | -     | 2      | -     | 0     | <b>95.8</b>   | 0       | 0      | -     | -       | -     | -       | -     | 97.80   |
| Hlegu          | Population | 36     | 2     | 12,231 | 600   | 239   | 222,421       | 388     | 125    | -     | -       | -     | -       | -     | 236,042 |
|                | %          | 0.01   | -     | 5.1    | 0.25  | 0.1   | <b>92.88</b>  | 0.16    | 0.05   | -     | -       | -     | -       | -     | 98.55   |
| Mingalardon    | Population | 519    | 221   | 3,839  | 2,352 | 1,642 | 247,899       | 3,126   | 504    | -     | -       | -     | -       | -     | 260,102 |
|                | %          | 0.19   | 0.08  | 1.45   | 0.89  | 0.62  | <b>94</b>     | 1.18    | 0.19   | -     | -       | -     | -       | -     | 96.60   |
| North Okkalapa | Population | 267    | 52    | 3,650  | 218   | 1,118 | 271,770       | 2,791   | 327    | -     | -       | -     | -       | -     | 280,193 |
|                | %          | 0.09   | 0.02  | 1.26   | 0.07  | 0.38  | <b>93.73</b>  | 0.96    | 0.11   | -     | -       | -     | -       | -     | 96.62   |
| North Dagon    | Population | 366    | 75    | 4,489  | 3,146 | 894   | 183,236       | 2,931   | 784    | -     | -       | -     | -       | -     | 195,920 |
|                | %          | 0.184  | 0.377 | 2.261  | 1.585 | 0.495 | <b>92.317</b> | 1.476   | 0.394  | -     | -       | -     | -       | -     | 99.09   |
| South Dagon    | Population | 824    | 35    | 3,474  | 709   | 765   | 287,146       | 4,600   | 208    | -     | -       | -     | -       | -     | 297,761 |
|                | %          | 0.25   | 0.01  | 1.07   | 0.22  | 0.24  | <b>88.11</b>  | 1.41    | 0.06   | -     | -       | -     | -       | -     | 91.37   |
| East Dagon     | Population | 107    | 18    | 2,004  | 1,236 | 370   | 162,140       | 2,588   | 310    | -     | -       | -     | -       | -     | 169,040 |
|                | %          | 0.06   | 0.01  | 1.16   | 0.72  | 0.21  | <b>94.12</b>  | 1.66    | 0.18   | -     | -       | -     | -       | -     | 98.12   |
| Thaketa        | Population | 792    | 706   | 1,807  | 840   | 1,886 | 174,889       | 5,436   | 861    | -     | -       | -     | -       | -     | 187,217 |
|                | %          | 0.37   | 0.33  | 0.84   | 0.39  | 0.87  | <b>81.08</b>  | 2.52    | 0.4    | -     | -       | -     | -       | -     | 86.60   |

Source: Township Profiles, General Administration Department, 2019

The number of workforce in various industries is shown in . In Hlegu township, workforce in both Livestock and Manual Labor consisted over 30 %. In Thanatpin township, 43.5 % of the workers are in the Fishery business. In South Dagon, 85.3 % of the workforce are the workers in Industries. In Mingalardon and North Dagon, more than 30 % of the workforce are the Government Staff.

**Table 3.5-5 Size of Workforce and Working Fields**

| Township  | Government Staff | Services | Agriculture  | Livestock    | Buying/Selling | Industries | Fishery      | Manual Labor | Other        | Total   |
|-----------|------------------|----------|--------------|--------------|----------------|------------|--------------|--------------|--------------|---------|
| Bago      | 7,803            | 18,517   | 37,632       | 2,670        | 20,830         | 36,478     | 0            | 21,029       | 120,774      | 265,733 |
|           | 2.9%             | 7.0%     | 14.2%        | 1.0%         | 7.8%           | 13.7%      | 0.0%         | 7.9%         | <b>45.4%</b> | 100.0%  |
| Thanatpin | 3,512            | 15       | 27,681       | 5,437        | 3,665          | 211        | 36,903       | 7,399        | 0            | 84,823  |
|           | 4.1%             | 0.0%     | <b>32.6%</b> | 6.4%         | 4.3%           | 0.2%       | <b>43.5%</b> | 8.7%         | 0.0%         | 100.0%  |
| Kawa      | 5,494            | 3        | 43,060       | 41,085       | 5,971          | 556        | 0            | 10,571       | 48,493       | 155,233 |
|           | 3.5%             | 0.0%     | <b>27.7%</b> | <b>26.5%</b> | 3.8%           | 0.4%       | 0.0%         | 6.8%         | <b>31.2%</b> | 100.0%  |
| Hlegu     | 4,260            | 3,598    | 26,404       | 46,210       | 486            | 1,732      | 170          | 48,132       | 17,859       | 148,851 |
|           | 2.9%             | 2.4%     | 17.7%        | <b>31.0%</b> | 0.3%           | 1.2%       | 0.1%         | <b>32.3%</b> | 12.0%        | 100.0%  |

| Township       | Government Staff | Services     | Agriculture | Livestock | Buying/Selling | Industries   | Fishery | Manual Labor | Other   | Total     |
|----------------|------------------|--------------|-------------|-----------|----------------|--------------|---------|--------------|---------|-----------|
| Mingalardon    | 40,732           | 6,100        | 2,841       | 153       | 25,000         | 7,300        | 15      | 22,000       | 25,000  | 129,141   |
|                | <b>31.5%</b>     | 4.7%         | 2.2%        | 0.1%      | 19.4%          | 5.7%         | 0.0%    | 17.0%        | 19.4%   | 100.0%    |
| North Okkalapa | 5,087            | 123,102      | 0           | 0         | 5,850          | 18,821       | 0       | 89,783       | 2,035   | 244,678   |
|                | 2.1%             | <b>50.3%</b> | 0.0%        | 0.0%      | 2.4%           | 7.7%         | 0.0%    | <b>36.7%</b> | 0.8%    | 100.0%    |
| North Dagon    | 39,195           | 26,130       | 3,920       | 9,146     | 19,598         | 16,985       | 0       | 9,146        | 6,533   | 130,653   |
|                | <b>30.0%</b>     | 20.0%        | 3.0%        | 7.0%      | 15.0%          | 13.0%        | 0.0%    | 7.0%         | 5.0%    | 100.0%    |
| South Dagon    | 2,940            | 0            | 70          | 460       | 12,029         | 182,605      | 10      | 9,279        | 6,792   | 214,185   |
|                | 1.4%             | 0.0%         | 0.0%        | 0.2%      | 5.6%           | <b>85.3%</b> | 0.0%    | 4.3%         | 3.2%    | 100.0%    |
| East Dagon     | 21,955           | 16,830       | 5,381       | 5,994     | 30,328         | 26,040       | 0       | 22,372       | 0       | 128,900   |
|                | 17.0%            | 13.1%        | 4.2%        | 4.7%      | <b>23.5%</b>   | <b>20.2%</b> | 0.0%    | 17.4%        | 0.0%    | 100.0%    |
| Taketa         | 12,250           | 39,455       | 0           | 0         | 30,503         | 7,145        | 0       | 50,495       | 23,358  | 163,206   |
|                | 7.5%             | <b>24.2%</b> | 0.0%        | 0.0%      | 18.7%          | 4.4%         | 0.0%    | <b>30.9%</b> | 14.3%   | 100.0%    |
| Total          | 143,228          | 233,750      | 146,989     | 111,155   | 154,260        | 280,888      | 37,098  | 290,206      | 250,844 | 1,534,750 |
|                | 9.3%             | 15.2%        | 9.6%        | 7.2%      | 10.1%          | 18.3%        | 2.4%    | 18.9%        | 16.3%   | 100.0%    |

Source: Township Profiles, General Administration Department, 2019

The number and ratio of unemployed workforce is shown in Table 3.5-6. The reason of high unemployed rate (19.54 %) in Mingalardon is not clear. North Dagon (8.01 %) and Hlegu (5.11) townships also showed relatively high unemployment ratio.

**Table 3.5-6 Size of Workforce and Unemployment Ratio**

| Region | Township       | Number of Person |           |            | Rate of Unemployed (%) |
|--------|----------------|------------------|-----------|------------|------------------------|
|        |                | Able To Work     | Employed  | Unemployed |                        |
| Bago   | Bago           | 276,844          | 265,733   | 11,111     | 4.01                   |
|        | Thanatpin      | 88,100           | 84,823    | 3,277      | 3.72                   |
|        | Kawa           | 161,488          | 155,233   | 6,255      | 3.87                   |
| Yangon | Hlegu          | 156,874          | 148,851   | 8,023      | 5.11                   |
|        | Mingalardon    | 129,141          | 103,909   | 25,232     | <b>19.54</b>           |
|        | North Okkalapa | 254,344          | 244,678   | 9,665      | 3.80                   |
|        | North Dagon    | 142,034          | 130,653   | 11,381     | <b>8.01</b>            |
|        | South Dagon    | 224,739          | 214,185   | 10,554     | 4.70                   |
|        | East Dagon     | 134,080          | 128,900   | 5,180      | 3.86                   |
|        | Thaketa        | 170,907          | 163,206   | 7,701      | 4.51                   |
| Total  |                | 1,738,551        | 1,640,171 | 98,379     | 5.66                   |

Source: Township Profiles, General Administration Department, 2019

Myanmar Government enacted the “Minimum Wage Law” in 2013, in which “Worker” means a person who earns living by wage obtained by carrying out the work of permanent work, temporary work using his physical or intellectual power by conclusion of employment agreement with employer to work at any commercial, production and service, agricultural and livestock breeding business.

On 2nd January 2018, the National Committee for Setting the Minimum Wage (“National Committee”) issued the Notification No.1/2018 to propose the new minimum wage for all employees who work in Myanmar to 600MMK/hour (4,800MMK/day with eight working hours). This proposed minimum wage does not apply to small businesses with less than ten (10) employees and family businesses, and to Civil service personnel.

Considering that if a person works 5 days a week for 52 weeks per year, the minimum wage per year can be calculated as 1,248,000 MMK per year.

Annual individual income in recent years is shown in Table 3.5-7. Looking at the Fiscal Year 2017 (Calendar 2017-2018) data, annual individual income was highest in Sough Dagon (about 6.7 million MMK), and lowest in North Dagon (about 0.8 million MMK). Simple average was about 2 million MMK per year. The number in Hlegu township, where the substation is planned, was low with about 1 million MMK per year per person.

**Table 3.5-7 Annual individual Income (MMK)**

| Region | Township       | 2016-2017 | 2017-2018        | 2018-2019 |
|--------|----------------|-----------|------------------|-----------|
| Bago   | Bago           | 2,224,431 | 2,532,554        | -         |
|        | Thanatpin      | 1,229,164 | 1,305,676        | 1,424,772 |
|        | Kawa           | 1,162,456 | <i>1,209,806</i> | -         |
| Yangon | Hlegu          | 966,166   | <i>1,099,779</i> | -         |
|        | Mingalardon    | 1,800,000 | 3,100,889        | 3,100,889 |
|        | North Okkalapa | 1,926,889 | 2,260,724        | 2,051,121 |
|        | North Dagon    | 913,511   | <i>802,831</i>   | -         |
|        | South Dagon    | 5,514,419 | <b>6,667,680</b> | -         |
|        | East Dagon     | 1,013,153 | <i>1,154,651</i> | -         |
|        | Thaketa        | 1,047,842 | <i>1,189,441</i> | -         |
|        | Average        | 1,779,803 | 2,132,403        | -         |

*Italic: Potentially lower than minimum wage income.*

Source: Township Profiles, General Administration Department, 2019

Occurrence and death of major infectious diseases in Fiscal 2018 is shown in Table 3.5-8. In Hlegu township, the number of Dysentery (waterborne) patients was the largest, followed by Diarrhea (mainly waterborne) and Tuberculosis (airborne). Tuberculosis caused 56 deaths in the Study Area.

**Table 3.5-8 Occurrence and Death of Major Infectious Diseases (2018-2019)**

| Township       | Type of Disease |     |          |     |                   |     |           |     |             |     |
|----------------|-----------------|-----|----------|-----|-------------------|-----|-----------|-----|-------------|-----|
|                | Malaria         |     | Diarrhea |     | Tuberculosis (TB) |     | Dysentery |     | Hepatitis B |     |
|                | Occur           | Die | Occur    | Die | Occur             | Die | Occur     | Die | Occur       | Die |
| Bago           | 14              | -   | 1,255    | -   | 315               | -   | 58        | -   | -           | -   |
| Thanatpin      | -               | -   | 1,001    | 1   | 241               | -   | 197       | -   | 10          | 1   |
| Kawa           | -               | -   | 1,779    | -   | 292               | 15  | 241       | -   | -           | -   |
| Hlegu          | 5               | -   | 683      | -   | 520               | 10  | 884       | -   | 11          | -   |
| Mingalardon    | -               | -   | 907      | -   | -                 | -   | 393       | -   | -           | -   |
| North Okkalapa | 4               | 1   | 46       | 1   | 768               | 13  | 6         | -   | -           | -   |
| North Dagon    | 1               | -   | 6        | -   | 228               | -   | -         | -   | -           | -   |
| South Dagon    | -               | -   | 130      | -   | 729               | 18  | 23        | -   | 5           | -   |
| East Dagon     | -               | -   | 232      | -   | -                 | -   | 54        | -   | -           | -   |
| Thaketa        | -               | -   | -        | -   | -                 | -   | -         | -   | -           | -   |
| Total          | 24              | 1   | 6,039    | 2   | 3,093             | 56  | 1,856     | 0   | 26          | 1   |

Source: Township Profiles, General Administration Department, 2019

Living condition of households by the Region is shown in Table 3.5-9. Bago Region has strong rural characters such as ownership of houses and source of energy and water. In Yangon Region,

however, houses are still built with wood floor and corrugated sheet roof. Drinking water is taken from Bottled/purifier water (34.4%), Tube well and borehole (25.5%), or Pool/pond/lake (18.8%).

**Table 3.5-9 Living Condition of Households (2014)**

| Region   | Bago         |              |              | Yangon         |              |              |
|--|--------------|--------------|--------------|----------------|--------------|--------------|
| <b>Ownership of housing unit (Tenure)</b>        |              |              |              |                |              |              |
| Owner  | <b>91.9%</b> |              |              | <b>64.5%</b>   |              |              |
| Renter   | 2.7%         |              |              | <b>24.5%</b>   |              |              |
| Provided free (individually)                     | 2.0%         |              |              | 3.4%           |              |              |
| Government quarters                              | 2.7%         |              |              | 4.9%           |              |              |
| Private company quarters                         | 0.4%         |              |              | 1.3%           |              |              |
| Other  | 0.3%         |              |              | 1.4%           |              |              |
| <b>Material for housing</b>                      |              |              |              |                |              |              |
|  | Wall         | Floor        | Roof         | Wall           | Floor        | Roof         |
| Dhani/Theke/In leaf                              | 3.6%         | –            | 39.3%        | 9.2%           | –            | 17.8%        |
| Bamboo   | <b>62.5%</b> | 25.8%        | 0.4%         | <b>31.8%</b>   | 15.6%        | 0.2%         |
| Earth  | 0.1%         | 1.6%         | –            | <0.1%          | 0.5%         | –            |
| Wood   | 23.5%        | <b>65.2%</b> | 0.1%         | 24.0%          | <b>52.0%</b> | 0.2%         |
| Corrugated sheet                                 | 0.1%         | –            | <b>58.9%</b> | 1.5%           | –            | <b>76.3%</b> |
| Tile/Brick/Concrete                              | 9.4%         | 6.7%         | 0.6%         | <b>32.0%</b>   | 30.7%        | 5.2%         |
| Other  | 0.8%         | 0.7%         | 0.7%         | 1.5%           | 1.2%         | 0.3%         |
| <b>Main source of energy for cooking</b>         |              |              |              |                |              |              |
| Electricity                                      | 9.4%         |              |              | <b>47.1%</b>   |              |              |
| LPG  | 0.1%         |              |              | 2.0%           |              |              |
| Kerosene   | 0.2%         |              |              | 0.1%           |              |              |
| Biogas   | 0.1%         |              |              | 0.5%           |              |              |
| Firewood   | <b>77.9%</b> |              |              | 26.2%          |              |              |
| Charcoal   | 9.0%         |              |              | 21.0%          |              |              |
| Coal   | 0.3%         |              |              | 0.4%           |              |              |
| Other  | 3.0%         |              |              | 2.6%           |              |              |
| <b>Main source of energy for lighting</b>        |              |              |              |                |              |              |
| Electricity                                      | <b>27.7%</b> |              |              | <b>69.3%</b>   |              |              |
| Kerosene   | 8.8%         |              |              | 5.7%           |              |              |
| Candle   | <b>28.9%</b> |              |              | 7.2%           |              |              |
| Battery  | <b>22.5%</b> |              |              | 11.8%          |              |              |
| Generator (private)                              | 4.5%         |              |              | 4.0%           |              |              |
| Water mill (private)                             | 0.1%         |              |              | Less than 0.1% |              |              |
| Solar system/energy                              | 6.4%         |              |              | 1.6%           |              |              |
| Other  | 1.1%         |              |              | 0.4%           |              |              |
| <b>Main source of drinking water</b>             |              |              |              |                |              |              |
| Tap water/piped                                  | 1.9%         |              |              | 13.3%          |              |              |
| Tube well, borehole                              | <b>49.7%</b> |              |              | <b>25.5%</b>   |              |              |
| Protected well/spring                            | 18.4%        |              |              | 4.1%           |              |              |
| Bottled/purifier water                           | 3.6%         |              |              | <b>34.4%</b>   |              |              |
| <i>TOTAL Improved</i>                            | <i>73.6%</i> |              |              | <i>77.3%</i>   |              |              |
| Unprotected well/spring                          | 3.9%         |              |              | 1.8%           |              |              |
| Pool/pond/lake                                   | <b>14.4%</b> |              |              | <b>18.8%</b>   |              |              |
| River/stream/canal                               | 5.3%         |              |              | 0.7%           |              |              |
| Waterfall/rainwater                              | 0.8%         |              |              | 0.3%           |              |              |
| Other  | 2.0%         |              |              | 1.1%           |              |              |
| <i>TOTAL Unimproved</i>                          | <i>26.4%</i> |              |              | <i>22.7%</i>   |              |              |
| <b>Main source of water for non-drinking use</b> |              |              |              |                |              |              |
| Tap water/piped                                  | 2.4%         |              |              | <b>24.4%</b>   |              |              |

| Region  | Bago         | Yangon         |
|---|--------------|----------------|
| Tube well, borehole                             | <b>55.2%</b> | <b>51.1%</b>   |
| Protected well/spring                           | <b>18.2%</b> | 4.3%           |
| Unprotected well/spring                         | 3.9%         | 1.9%           |
| Pool/pond/lake                                  | <b>11.4%</b> | <b>15.7%</b>   |
| River/stream/canal                              | 6.3%         | 1.5%           |
| Waterfall/rainwater                             | 0.5%         | Less than 0.1% |
| Bottled/purifier water                          | 0.1%         | 0.2%           |
| Other   | 2.0%         | 0.9%           |
| <b>Type of toilet</b>                           |              |                |
| Flush   | 0.8%         | 6.3%           |
| Water seal (Improved pit latrine)               | <b>73.8%</b> | <b>84.8%</b>   |
| <i>Total Improved Sanitation</i>                | <i>74.6%</i> | 91.1%          |
| Pit (Traditional pit latrine)                   | 7.9%         | 2.6%           |
| Bucket (Surface latrine)                        | 5.9%         | 2.7%           |
| Other   | 0.9%         | 0.3%           |
| None  | <b>10.7%</b> | 3.3%           |
| <b>Availability of communication amenities</b>  |              |                |
| Radio   | 38.0%        | 25.9%          |
| Television                                      | <b>45.3%</b> | <b>71.6%</b>   |
| Landline phone                                  | 3.8%         | 8.2%           |
| Mobile phone                                    | <b>26.2%</b> | <b>60.9%</b>   |
| Computer  | 1.4%         | 11.1%          |
| Internet at home                                | 3.9%         | 19.1%          |
| % with none of the items                        | <b>32.0%</b> | 17.8%          |
| % with all of the items                         | 0.2%         | 1.7%           |
| <b>Availability of Transportation equipment</b> |              |                |
| Car/Truck/Van                                   | 1.2%         | 7.8%           |
| Motorcycle/Moped                                | <b>34.3%</b> | 13.6%          |
| Bicycle   | <b>49.9%</b> | <b>46.2%</b>   |
| 4-Wheel tractor                                 | 1.9%         | 1.2%           |
| Canoe/Boat                                      | 3.8%         | 1.2%           |
| Motor boat                                      | 1.2%         | 1.0%           |
| Cart (bullock)                                  | <b>27.6%</b> | 4.8%           |

Source: The 2014 Myanmar Population and Housing Census: Bago Region, Yangon Region

### 3.6. Vulnerable Groups

#### 3.6.1. Sar Ta Lin Substation

No resettlement of residents or businesses is expected due to the construction of the substation.

Persons who will not be relocated but who will be affected by the land acquisition, such as tenant farmers, will be identified after the official Detailed Measurement Survey by DPTSC, in the implementation phase of the Project.

Literature surveys and field observations are in progress to ascertain the general conditions of the poor, minority groups and other groups of concern in the Hlegu Township.

#### 3.6.2. Transmission Lines

No resettlement of residents or businesses is expected due to the construction of the substation.

Persons who will not be relocated but who will be affected by the land acquisition and ROW setting, such as tenant farmers, will be identified after the finalization of the route, and after the official Detailed Measurement Survey by DPTSC, in the implementation phase of the Project.

Literature surveys and field observations are in progress to ascertain the general conditions of the poor, minority groups and other groups of concern in the townships where the lines pass through.

### 3.6.3. Literature survey results on Vulnerable Groups in the area to be affected

The definition of Vulnerable Groups includes followings: All households headed by woman, with disabled person, elderly person (over 60 years old) without support of younger family, and with income below poverty line.

The poverty line in 2017 was 1,590 MMK per adult equivalent per day (Table 3.6-1). Multiplied by 365, the annual income for one adult household is calculated as 580,350 MMK. Using the Adult Equivalence Scales shown in Table 3.6-2, the annual poverty line for a household with 2 adults and 2 children between 16 and 19 years old is calculated as 2,437,470 MMK, using the equation below.

$$\text{➤ } 1,590 \text{ MMK} \times (1.00 \times 2 + 1.10 \times 2) \times 365 = 2,437,470 \text{ MMK}$$

The ARAP Survey for the Project need to obtain age information of all the member of the households to be affected to understand the economic status of them.

**Table 3.6-1 Poverty Line and Headcount, 2017**

|   |               |           |
|---|---------------|-----------|
| Poverty Line per adult equivalent per day, 2017 |               | 1,590 MMK |
| Poverty headcount %, 2017                       | Bago Region   | 17.4 %    |
|   | Yangon Region | 13.7 %    |
|   | Union         | 24.8 %    |

Source: Report 03: Poverty Report, Myanmar Living Conditions Survey 2017, June 2019, World Bank

**Table 3.6-2 Adult Equivalence Scales**

| Age group       | Required calories | Adjusted for nonfood | Equivalent adult scale |
|-----------------|-------------------|----------------------|------------------------|
| <1 year old     | 850               | 1315                 | 0.55                   |
| 1–3 years old   | 1,260             | 1,602                | 0.67                   |
| 4–6 years old   | 1,670             | 1,889                | 0.79                   |
| 7–9 years old   | 1,800             | 1,980                | 0.83                   |
| 10–12 years old | 2,300             | 2,330                | 0.97                   |
| 13–15 years old | 2,550             | 2,505                | 1.04                   |
| 16–19 years old | 2,750             | 2,645                | 1.10                   |
| 20 and above    | 2,400             | 2,400                | 1.00                   |

Source: Ministry of Health and Sports; and CSO, UNDP, WB staff computations.

Note: A weight of 0.3 is given to non-food, while a 0.7 weight is given to food

Source: Report 03: Poverty Report, Myanmar Living Conditions Survey 2017, June 2019, World Bank

Annual income when worked with the minimum wage is calculated as 1,248,000 MMK. Six townships among the all townships to be affected by the Project showed lower average annual individual income compared to the above income level (Table 3.5-7). The most probable negative

impact of the Project on the vulnerable groups, therefore, will be the worsened poverty condition caused by the decrease or loss of income. Based on this assumption, mitigation measures for the short term were proposed including cash compensation of the three times of the annual agriculture income, and for the long term including livelihood rehabilitation and assistances such as agricultural technical assistance and opportunity for employment as staff of DPTSC.

When removal of residential structure is required or the livelihood can not be continued with remaining productive assets because of public projects, the project owner authority in Myanmar, including DPTSC, usually hire one person from the affected household and bring the household in the staff housing as standard mitigation measure of compensation for the loss of housing and income.

In other word, DPTSC does not have experience of other types of additional assistance for the vulnerable groups.

Framework Resettlement Action Plan for Twente Canal Improvement Project, Myanmar, July 2019, is one of the recent good example of the assistances for the vulnerable groups in Yangon Metropolitan Area. In this project, Department of Water Resources and Improvement of River Systems (DWIR) planned to provide cash assistance equivalent to the minimum wage for one month for the households that belong to the vulnerable groups. In addition to this, additional minimum wage for one month is planned to be provided for the households when the household head is a woman, or when the household income is below poverty line. The framework also planned to provide assistance in finding relocation houses and livelihood rehabilitation assistance such as vocational training for the vulnerable groups.

In the Project, also, it is desirable to provide cash compensation equivalent to 30 days of minimum wage as mitigation measure for possible worsening of poverty conditions of the vulnerable groups.

Final mitigation measures will be decided based on the results of livelihood and living conditions survey, and of the stakeholder meetings that will be done in the implementation phase of the Project.



## 4. Compensation and Assistance Measures

The JICA Study Team presented the entitlement matrix for Phase I/II of the Project to DPTSC on March 5, 2020. DPTSC agreed on the contents with a few minor changes. (Table 4.1-1) The market price survey method and results, as well as the calculation of compensation prices based on the survey results, are explained in Chapter 8.

In Myanmar, the final decision on the compensation and assistance (selection of entitled persons, content and size of the compensation, etc.) will be decided by the land acquisition implementation committee, of which the Project Owner is a member.

**Table 4.1-1 Entitlement Matrix for the Project**

| No. | Type of Loss                                       | Entitled Persons  | Entitlement  | Implementation Issues/Guidelines  | Responsible Organization  |
|-----|--|---|--|---|---|
| 1.  | Fixed Assets                                       |   |  |   |   |
| 1.1 | Loss of residential land                           | Person who obtained land use certificate and person who does not have the land use certificate but certified current land ownership by the Settlement and Land Record Department (SLRD) concerned   | Cash compensation at replacement price following the JICA Guidelines, calculated based on the current market price of the residential area of that area  | Compensation amount is calculated by Township Farmland Management Committee and approved by YRG | Decision: Township Farmland Management Committee, Township/YRG<br>Implementation: DPTSC     |
| 1.2 | Loss of arable land from permanent land occupation | Person who obtained land use certificate, person who does not have the land use certificate but recorded during population census survey and person who does not have the land use certificate but certified current land ownership by the SLRD concerned | Cash compensation at replacement price following the JICA Guidelines, calculated based on the current market price of the farmland of that area  | Compensation amount is calculated by Township Farmland Management Committee and approved by YRG | Decision: Township Farmland Management Committee, Township/YRG<br>Implementation: DPTSC     |
| 1.3 | Temporal loss of land during construction phase    | Owner of the land (Person who obtained land use certificate and person who does not have the land use certificate but certified current land ownership by the SLRD concerned)   | Cash compensation for the loss of income generated from the land during temporary land acquisition (see 2.1)   | Compensation amount is calculated by Township Farmland Management Committee and approved by YRG | Decision: Township Farmland Management Committee, Township/YRG<br>Implementation: DPTSC     |
| 1.4 | Loss of structure within SS site                   | Those who own the structure   | Cash payments for structure (or structure repair for partial loss) at full replacement cost (for materials, labour and contract fee, transportation at current market price), WITHOUT deduction for depreciation or salvageable materials, WITH ownership registration fee, ownership transfer tax, and any other governmental process cost if required. | Compensation amount is calculated by Township Farmland Management Committee and approved by YRG | Decision: Township Farmland Management Committee, Township/YRG<br><br>Implementation: DPTSC |
| 1.5 | Loss of structure                                  | Those who own the structure   | Cash payments for structure (or structure  | Compensation amount is calculated by  | Decision: Township  |

| No. | Type of Loss   | Entitled Persons   | Entitlement   | Implementation Issues/Guidelines  | Responsible Organization   |
|-----|--|--|---|---|--|
|     | within TL ROW  |  | repair for partial loss) at full replacement cost (for materials, labour and contract fee, transportation at current market price), WITHOUT deduction for depreciation or salvageable materials, WITH ownership registration fee, ownership transfer tax, and any other governmental process cost if required.  | Township Farmland Management Committee and approved by YRG  | Farmland Management Committee, Township/YRG<br><br>Implementation: DPTSC                               |
| 1.6 | Permanent loss of standing crops/ tress within SS site             | To be assisted as a part of loss of income sources (2.1, 2.2)                          | (Refer to 2.1, 2.2)   | (Refer to 2.1, 2.2)   | (Refer to 2.1, 2.2)  |
| 1.7 | Permanent Loss of standing crops/trees within TL ROW               | To be assisted as a part of loss of income sources (2.1, 2.2)                          | (Refer to 2.1, 2.2)   | (Refer to 2.1, 2.2)   | (Refer to 2.1, 2.2)  |
| 2   | <b>Loss of Income Source</b>                                       |  |   |   |  |
| 2.1 | Loss of income from standing crops/trees within SS site and TL ROW | Those who own and cultivate crops and trees  | Crops: Three times of current market price of the yield, multiplied by the number of lost harvest timing<br><br>Trees: Market price of the same size tree, and, <u>three times of current market price of the yield.</u> multiplied by the number of lost harvest timing  | Compensation amount is calculated based on yield amount recorded in Township Farmland Management Body at DMS.<br>To the extent possible, affected households will be allowed to harvest their annual and perennial crops prior to construction. | Decision: Township Farmland Management Committee, Township/YRG<br><br>Implementation : DPTSC           |
| 2.2 | Loss of income from termination of farm labor contract             | Those who provide labor on farmland in exchange for cash, food, and accommodation      | * Cash compensation equivalent for the labor fee, food and accommodation expense for the remaining contract term, or for the transition period, whichever is longer.<br>* Assistance by the employer and/or Department of Agriculture in finding alternative employment opportunity in the same production period or the next production period.<br><br>* Livelihood rehabilitation and assistance (4.1). | To the extent possible, affected households will be allowed to finish the contract term prior to commencement of the construction.  | Decision: Township Farmland Management Committee, Township/YRG<br><br>Implementation : DPTSC, employer |
| 2.3 | Loss of income from termination                                    | * Those who own businesses that need to be closed because of the Project. (i.e. street | * Coordination and negotiation will be done to avoid temporal closure   | Compensation amount is calculated by Township Farmland  | Decision: Township Farmland  |

| No. | Type of Loss   | Entitled Persons  | Entitlement  | Implementation Issues/Guidelines   | Responsible Organization  |
|-----|--|---|--|--|---|
|     | of business activities (permanent or temporal)   | vendors whose regular operations are located within the transmission line ROW)<br>* Those who work at the businesses that need to be closed because of the Project.                     | or permanent termination of the businesses by providing alternate locations for the business.<br>* In case temporal closure is found not avoidable, the business income and wage income during the temporal closure will be compensated.<br>* In case permanent termination is found not avoidable, the business income and wage income will be compensated.<br>Entitled persons will be asked to raise their requests for the assistances, such as the number of months to be covered by income compensation, during the consultation in the implementation phase.<br>Relocation assistance will be provided as described in 3.2 when eligible.<br>Livelihood rehabilitation assistances will also be provided as described in 4.1. | Management Committee and approved by YRG   | Management Committee, Township/YRG<br><br>Implementation: DPTSC, employer                               |
| 3   | Relocation   |   |  |  |   |
| 3.1 | Loss of residential structure and land resulting physical relocation   | Relocating households, either legal residents or residents without legal basis  | New land and similar infrastructure plus necessary relocation cost (including option of hiring one person per household as DPTSC staff and providing staff housing for the household)  | -  | Decision: Township Farmland Management Committee, Township/YRG<br><br>Implementation: DPTSC             |
| 3.2 | Loss of productive assets with remaining assets not sufficient to support the livelihood (economic relocation) | Affected households, either legal residents or residents without legal basis.<br>Affected businesses.   | New land and similar infrastructure plus necessary relocation cost (including option of hiring one person per household as DPTSC staff and providing staff housing for the household)  | -  | Decision: Township Farmland Management Committee, Township/YRG<br><br>Implementation: DPTSC             |
| 4   | Livelihood Rehabilitation and Assistance   |   |  |  |   |
| 4.1 | Loss of productive assets  | Those whose livelihoods are to be affected by the Project, including land owner, business owner and employee, and agriculture laborer, either with or without legal rights or contracts | Entitled persons will be asked to raise their requests for the assistances during the consultation in the implementation phase.<br><br>Following assistances were proposed in past cases of public projects in   | DPTSC have not provided this type of assistance yet. Assistance will be decided by Township Farmland Management Committee and approved by YRG. | Decision: Township Farmland Management Committee, Township/YRG<br><br>Implementation: service providing |

| No. | Type of Loss                  | Entitled Persons   | Entitlement   | Implementation Issues/Guidelines   | Responsible Organization  |
|-----|-------------------------------|--|---|--|---|
|     |                               |  | Yangon Region <sup>x</sup> which may also be applicable for the Project:<br>* agriculture technical advice<br>* vocational trainings in the fields other than farming<br>* job opportunities in the construction works of the substation as skilled or unskilled labor<br><br>For business owners and employees, in addition to above, cash compensation for loss of income, desirably equal to or more than 30 days of minimum wage, will be negotiated during the consultation in the implementation phase. | Implementation body and preparation of budget for the assistance will be discussed and negotiated among the authorities consisting the Compensation Committee at township level.   | authorities, DPTSC  |
| 5   | Assistance for the Vulnerable |  |   |  |   |
| 5.1 | Vulnerable Groups             | All households affected by substation construction belonging to following groups; headed by woman, with disabled person, elderly person (over 60 years old) without support of younger family, poor household (below poverty line of 2017) | One-time cash assistance (lump-sum) per person, desirably equal to or more than 30 days of minimum wage.<br>Other types of assistance needs, such as job training, will be discussed during the consultation in the implementation phase.   | DPTSC have not paid this type of assistance yet. Assistance amount will be calculated by Township Farmland Management Committee and approved by YRG, and may be paid under “crop compensation” or “land compensation.” Implementation body and preparation of budget for other types of assistance will be discussed and negotiated among the authorities consisting the Compensation Committee at township level. | Decision: Township Farmland Management Committee, Township/YRG<br><br>Implementation: DPTSC |

Source: JICA Study Team

In most cases, the relocation assistances provided by public projects are to relocate the affected households to the workers compound of the project owner institution, and provide one post per household to work in the institution.

According to the Framework Resettlement Action Plan for Twente Canal Improvement Project, Myanmar, July 2019, Department of Water Resources and Improvement of River Systems (DWIR), Ministry of Transport and Communication, if family of the PAPs has socially vulnerable persons including the disabled, cash assistance equivalent to 1 month of minimum wage will be provided. Furthermore, female-headed household or household below poverty line will be categorized as

vulnerable person and will be eligible to receive cash assistance equivalent to 1 month of minimum wage as an additional assistance. The entire vulnerable person in the PAPs will have a consultation support in finding new relocation destination and livelihood restoration assistance such as vocation training programs or income restoration or improvement programs including vocational training.

Although DPTSC does not have previous cases that paid such additional assistances to the Vulnerable Group, it is recommended that DPTSC give their best to follow the good example to maximize the value of the Project and minimize the negative impacts of the Project.

## 5. Implementation Structure

The implementation structure described in the ARAP for Phase I/II of the Project is shown in Table 5.1-1. Although the table mentions the Environmental and Social Staff in the Project Management Unit of MOEE, neither MOEE nor DPTSC have staff specializing in environmental and social issues. Project Managers are the persons in charge of such issues.

RAP implementing authorities at each steps of implementation are summarized in Table 5.1-2. Communication and coordination with various authorities are the responsibility of General Administration Department, both Township and Region level. Land acquisition issues including the measurement and finalization of PAPs list involves Township Land Management Committee. DPTSC plays the role of initiator at every step in the implementation, none of the steps shown in the table can be finished without coordinating with other authorities.

**Table 5.1-1 Implementation Structure for Land Acquisition and Resettlement**

| Institution  | Roles and Responsibilities   |
|--|--|
| <b>Pre-Construction Phase</b>  |  |
| Compensation Committee at township level   | <ul style="list-style-type: none"> <li>- Set compensation standards/assistance</li> <li>- Members: DPTSC/MOEE*, Regional Government (Yangon and Bago) (land records department, police officers, agriculture and irrigation department, conservation environment and forestry department), YCDC, Officer of GAD</li> </ul> |
| Administration Department in MOEE, Nay Pyi Taw   | <ul style="list-style-type: none"> <li>- Review and approve the ARAP report as Project Owner</li> <li>- Finalize compensation price with affected people and disburse compensation/assistance to project affected peoples</li> </ul>   |
| Environmental and Social Staff* in Project Management Unit of MOEE                                   | <ul style="list-style-type: none"> <li>- Implement ARAP Survey and formulate the report</li> <li>- Monitor compensation procedure based on resettlement action plan</li> </ul>   |
| ECD, Nay Pyi Taw   | <ul style="list-style-type: none"> <li>- Review and approve the ARAP report</li> </ul>   |
| <b>Construction Phase</b>  |  |
| Environmental and Social Staff in Project Management Unit in Project Manager-1 Office (Yangon), MOEE | <ul style="list-style-type: none"> <li>- Consultation desk for project affected peoples</li> </ul>   |

\*: Staff from Project Manager-1 Office located in Yangon and staff from Project Manager (Civil) Office located in Nay Pyi Taw, both under supervision of Power Transmission Projects (South) Office

Source: Resettlement Action Plan for National Power Transmission Network Development Project, January 2014

**Table 5.1-2 RAP Implementing Authorities**

|   | DPTSC     | GAD                                  | TLMC            | Contractor/<br>CMC           | ECD               |
|---|-----------|--------------------------------------|-----------------|------------------------------|-------------------|
| Role and Authority  | Proponent | Local communication and coordination | Land management | Survey and service provision | Review & approval |
| 1. Public Consultation  | X         | X                                    | X               |                              |                   |
| 2. Implementation of Detailed Measurement Survey                              |           |                                      |                 |                              |                   |
| 3. Setting and announcing the cut-off date                                    |           |                                      |                 |                              |                   |
| 4. Implementation of Population and Asset Census, Socio-Economic Survey       | X         | X                                    | X               | X                            |                   |
| 5. Finalization of PAPs List  |           |                                      |                 |                              |                   |
| 6. Explanation and agreement of ROW landowners about the land use restriction |           |                                      |                 |                              |                   |
| 7. Approval of RAP  | X         |                                      |                 |                              | X                 |
| 8. Payment of compensation and moving/ livelihood assistances                 | X         | X                                    |                 |                              |                   |
| 9. Implementation of livelihood rehabilitation program, if necessary          | X         | X                                    |                 | X                            |                   |
| 10. Physical relocation of residents/ occupants                               |           |                                      |                 |                              |                   |
| 11. Land registration under MOEE  | X         | X                                    |                 |                              |                   |

NOTE: GAD = General Administration Department  
 TLMC = Township Land Management Committee  
 CMC = Construction management consultant  
 ECD = Environmental Conservation Department

Source: JICA Study Team

## 6. Grievance Redress Mechanism

The grievance redress mechanism described in the ARAP for Phase I/II of the Project is shown in Table 3.6-1. Similar mechanism will handle grievances caused by the Project. Grievance focal person in DPTSC will receive the complaints from the PAPs. DPTSC will work with contractor representative and authorities concerned at local and township level in the Redress Team and the Management Committee.

**Table 3.6-1 Grievance Redress Mechanism for Land Acquisition and Resettlement**

|                                       |  |
|---------------------------------------|--|
| Grievance Focal Person (GFC)          | <ul style="list-style-type: none"> <li>● Grievance focal person, DPTSC, shall be appointed by Project Management Unit to implement the Grievance Redress procedure effectively. The person nominated for the role should have sound and broad experience within the social region and have acted within such a role previously.</li> <li>● The roles shall function as the primary resources for interface on issues relevant to RAP.</li> <li>● GFC will receive the complaints in verbal or written form from the PAP through site construction team or village head, or through PAP himself. The complaint shall be recorded and registered accordingly and the message delivered to the Site Grievance Redress Team promptly.</li> </ul> |
| Site Grievance Redress Team (SGRT)    | <ul style="list-style-type: none"> <li>● Site-based grievance redress team shall be established and headed by DPTSC site manager, contractor representative and authorities concerned at local and township level.</li> <li>● SGRT will review any complaint or concern and find a solution to ease their degree, which will be agreed and accepted by the PAP. SGRT shall address the issue within (14) days. At this stage, as many issues as possible shall be resolved locally.</li> <li>● If the case is not addressed to the satisfaction of PAP within the given time frame, SGRT shall submit the issue to Grievance Redress Committee for further review.</li> </ul>  |
| Grievance Management Committee (GRMC) | <ul style="list-style-type: none"> <li>● GRMC is the highest authority for making a final decision within project-specific Grievance Redress System on the issues which SGRT cannot address alone. GRMC is headed by Senior Official of DPTSC with the members of relevant government bodies.</li> </ul>   |
| Unsolved Issues                       | <ul style="list-style-type: none"> <li>● If the case is still not resolved by GRMC, PAP can proceed through judicial system, such as appealing to the court for final resolution, starting from township level jurisdiction.</li> </ul>  |

Source: Resettlement Action Plan for National Power Transmission Network Development Project, January 2014



## 7. Implementation Schedule

### 7.1. Implementation Schedule

The steps for implementation of the Phase I/II of the Project, with modification of place names for Phase III is shown in Table 7.1-1. The Detailed Measurement Survey will be started by DPTSC at Step 5, with official declaration of the Cut-Off-Date, and official listing of the PAPs.

Besides the above, conversion of agricultural land to other uses will require a different course to the steps shown in Table 7.1-2. The process needs to be finished between Step 2 and Step 4 in Table 7.1-1.

The implementation schedule of those activities are shown in Table 7.2-1, together with the Project Implementation Schedule. DPTSC is expected to start the Detailed Measurement Survey (DMS) for the planned sites for Substation and the Transmission Line Towers starting from January 2021. Development of ARAP, approval by MOEE and ECD, and submission to JICA by DPTSC/MOEE are expected to be implemented by the end of September 2021, i.e. the end of Myanmar fiscal year 2020. Then the Compensation Committee will be formed, the affected persons will negotiate with the Committee, and the disbursement of the compensation will be started well before the commencement of site clearance works, which is planned from July 2023.

**Table 7.1-1 Steps for Implementation of Land Acquisition and Resettlement**

|     |  |
|-----|--|
| 1.  | Detailed design of SS and TL, Decision on and start of the land acquisition process between DPTSC/ MOEE and respective authorities   |
| 2.  | Application for agricultural land conversion   |
| 3.  | Setting up of implementation team for ARAP in DPTSC/MOEE (Project Management Office)   |
| 4.  | Obtaining the approval on conversion for the proposed project land from the land records department at relevant township   |
| 5.  | DPTSC conducts Detailed Measurement Survey (DMS) for the planned sites for Substations and Transmission Line Towers  |
| 6.  | Start or end date of the DMS is set as the cut-off-date for each location  |
| 7.  | Conduct land survey. Identification of PAPs.   |
| 8.  | Conduct stakeholder meetings, implement population and asset census.   |
| 9.  | DPTSC/MOEE draft compensation price for the land consulting with relevant village heads and affected peoples.  |
| 10. | Development of ARAP, and submission to JICA by DPTSC/MOEE  |
| 11. | The project owner makes a request to the general administration department at relevant township to organize a Compensation Committee in order to scrutinize the drafted compensation price.<br>Formed of Compensation Committee with following members and tasks<br>-Members: DPTSC/MOEE, Regional Government (Yangon and Bago) (land records department, police officers, agriculture and irrigation department, conservation environment and forestry department), YCDC, Officer of GAD<br>-Task: Estimation of and decision on offer amount for Compensation rate |
| 12. | Confirmation survey of PAPs and assets with cut-off-date by the Compensation Committee, if required.   |
| 13. | The compensation price is finalized at compensation committee  |
| 14. | Negotiation with PAPs, obtaining agreement on compensation and assistance with them and arrangement of payment procedures  |
| 15. | If affected person is not satisfied with the compensation price, he/she can appeal to the compensation committee to reconsider the price.  |
| 16. | In the implementation phase, the Compensation Committee or its deputy, or DPTSC/MOEE will disburse the compensation and assistance before the physical resettlement or taking of the land.   |
| 17. | In the implementation phase, the implementation team for ARAP in DPTSC/MOEE will monitor the progress of resettlement and land acquisition   |

Source: Modified from Resettlement Action Plan for National Power Transmission Network Development Project, January 2014

**Table 7.1-2 Steps for Conversion of Agricultural Land**

| Step No.   | Procedures  | Department Concerned                                   | Process   | Further Action   | Time Taken  |
|--|---|--|---|--|---|
| 1.   | <i>Application with Form -14</i>  | Township Land Records Department (TLRD)                | Open the dossier for using farmland for other means on the application  | Scrutinizing the requirements as listed in Article 84 of the Rules   | Within 30 days starting from the acceptance date of application             |
| 2.   | <i>Submitting the application to Township Farmland Management Committee with comments given by TLRD</i>   | Township Farmland Management Committee (TFMC)          | Scrutinizing the requirements as listed in Article 86 of the Rules  | The application shall be submitted to Region/State Farmland Management Committee through the District Farmland Management Committee with the comments  | Within 15 days starting from the acceptance date of the application in TLRD |
| 3.   | If the application to use farmland for other means is for Paddy land (Le)   | Region/State Farmland Management Committee (R/S - FMC) | Scrutinizing the application  | Continued Submission of the application to Central Farmland Management Committee with the comments given by the Region/State Farmland Management Committee   | Within 30 days  |
| 4.   | If the application to use farmland for other means is for land other than Paddy land  | Region/State Farmland Management Committee             | Scrutinizing the application which has been passed step by step   | Continued submission of the application to Region/State Government with comments given by Region/State Farmland Management Committee   | Within 30 days  |
| 5.   | <i>Issuing Form – 15</i> Approved Permit shall be issued for Paddy lands (Le) which are to be used by other means   | Central Farmland Management Committee (CFMC)           | If the application meets with the requirements, approval shall be issued regarding Article 87 (a)   | -  | -   |
| 6.   | <i>Issuing Form – 15 A</i> Approved Permit shall be issued for land other than Paddy lands which are to be used by other means  | Region/State Farmland Management Committee             | If the application meets with the requirements, approval shall be issued regarding Article 87 (b)   | -  | -   |
| Total time taken for the whole application process until the approval for the use of farmland by other means |   |  |   |  | <i>Sub-total</i><br><i>105 days</i>   |
| 7.   | <i>Form – 16</i> Inspection Report on conditions of implementation for the farmlands granted for other means. The report is to be submitted every 6-months to Central Farmland Management Committee | Region/State Farmland Management Committee             | Field inspections shall be done by DFMC and TFMC for the farmland granted by other means. The inspection reports with photo documents shall be presented to R/S-FMC | If the DFMC and TFMC find that the lands granted have not yet started to be utilized by other means or the proposed project has not yet been implemented within 6 months from the date of approval, the case shall be opened as a separate dossier. The report shall then be submitted with photo evidence to Region/State Farmland Management Committee |   |
| 8.   | Presenting the case to Central Farmland Management Committee for necessary actions to be taken  | CFMC   | Upon receiving the case, CFMC shall analyze and scrutinize the case   | After scrutinizing the case, the necessary actions shall be taken as shown in Article 93.  |   |
| 9.   | Confiscate the land   | Central Farmland Management Committee (CFMC)           | CFMC shall confiscate the land as it is revoked under rule (93) (a) or the land will be revoked by Region/State Government as it is notified under sub rule (b).    | -  |   |

Source: Resettlement Action Plan for National Power Transmission Network Development Project, January 2014

## **7.2. RAP Survey TOR in Implementation Phase**

The RAP Survey shall be implemented by DPTSC along with the Detailed Measurement Survey so that the survey requirements of the JICA Guidelines are fully satisfied and the survey results are reported to JICA.

The draft survey TOR and interview questionnaire are shown in Chapter 11 and Chapter 12 respectively.

**Table 7.2-1 Implementation schedule for the Project and the ARAP**

|   | Fiscal year 2020 |    |    |   |   |   |   |   |   |   |   |   | Fiscal year 2021 |    |    |   |   |   |   |   |   |   |   |   | Fiscal year 2022 |    |    |   |   |   |   |   |   |   |   |   | Fiscal year 2023 |    |    |   |   |   |   |   |   |   |   |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|---|------------------|----|----|---|---|---|---|---|---|---|---|---|------------------|----|----|---|---|---|---|---|---|---|---|---|------------------|----|----|---|---|---|---|---|---|---|---|---|------------------|----|----|---|---|---|---|---|---|---|---|---|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
|   | Calendar month   |    |    |   |   |   |   |   |   |   |   |   | Calendar month   |    |    |   |   |   |   |   |   |   |   |   | Calendar month   |    |    |   |   |   |   |   |   |   |   |   | Calendar month   |    |    |   |   |   |   |   |   |   |   |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|   | 10               | 11 | 12 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10               | 11 | 12 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10               | 11 | 12 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10               | 11 | 12 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| A Procurement of consultant   |                  |    |    |   |   |   |   |   |   |   |   |   |                  |    |    |   |   |   |   |   |   |   |   |   |                  |    |    |   |   |   |   |   |   |   |   |   |                  |    |    |   |   |   |   |   |   |   |   |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| B Consulting service Basic design   |                  |    |    |   |   |   |   |   |   |   |   |   |                  |    |    |   |   |   |   |   |   |   |   |   |                  |    |    |   |   |   |   |   |   |   |   |   |                  |    |    |   |   |   |   |   |   |   |   |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| C Tender assistance Preparation of bid documents  |                  |    |    |   |   |   |   |   |   |   |   |   |                  |    |    |   |   |   |   |   |   |   |   |   |                  |    |    |   |   |   |   |   |   |   |   |   |                  |    |    |   |   |   |   |   |   |   |   |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| D Construction supervision Site survey  |                  |    |    |   |   |   |   |   |   |   |   |   |                  |    |    |   |   |   |   |   |   |   |   |   |                  |    |    |   |   |   |   |   |   |   |   |   |                  |    |    |   |   |   |   |   |   |   |   |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| E Cleaning of ROW/<br>Construction of access roads  |                  |    |    |   |   |   |   |   |   |   |   |   |                  |    |    |   |   |   |   |   |   |   |   |   |                  |    |    |   |   |   |   |   |   |   |   |   |                  |    |    |   |   |   |   |   |   |   |   |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 1. Detailed design of SS and TL, Decision and start of the land acquisition process between DPTSC/ MOEE and respective authorities  |                  |    |    |   |   |   |   |   |   |   |   |   |                  |    |    |   |   |   |   |   |   |   |   |   |                  |    |    |   |   |   |   |   |   |   |   |   |                  |    |    |   |   |   |   |   |   |   |   |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 2. Application for agriculture land conversion  |                  |    |    |   |   |   |   |   |   |   |   |   |                  |    |    |   |   |   |   |   |   |   |   |   |                  |    |    |   |   |   |   |   |   |   |   |   |                  |    |    |   |   |   |   |   |   |   |   |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 3. Setting up of implementation team for ARAP in DPTSC/MOEE (Project Management Office)   |                  |    |    |   |   |   |   |   |   |   |   |   |                  |    |    |   |   |   |   |   |   |   |   |   |                  |    |    |   |   |   |   |   |   |   |   |   |                  |    |    |   |   |   |   |   |   |   |   |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4. Obtaining the approval of conversion for the proposed project land from the land record department at relevant township  |                  |    |    |   |   |   |   |   |   |   |   |   |                  |    |    |   |   |   |   |   |   |   |   |   |                  |    |    |   |   |   |   |   |   |   |   |   |                  |    |    |   |   |   |   |   |   |   |   |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 5. DPTSC conduct Detailed Measurement Survey (DMS) for the planned sites for Substation and the Transmission Line Towers  |                  |    |    |   |   |   |   |   |   |   |   |   |                  |    |    |   |   |   |   |   |   |   |   |   |                  |    |    |   |   |   |   |   |   |   |   |   |                  |    |    |   |   |   |   |   |   |   |   |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 6. Start or end date of the DMS is set as the cut-off-date for each location  |                  |    |    |   |   |   |   |   |   |   |   |   |                  |    |    |   |   |   |   |   |   |   |   |   |                  |    |    |   |   |   |   |   |   |   |   |   |                  |    |    |   |   |   |   |   |   |   |   |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 7. Conduct land survey, Identification of PAPs.   |                  |    |    |   |   |   |   |   |   |   |   |   |                  |    |    |   |   |   |   |   |   |   |   |   |                  |    |    |   |   |   |   |   |   |   |   |   |                  |    |    |   |   |   |   |   |   |   |   |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 8. Conduct stakeholder meetings, implement population and asset census.   |                  |    |    |   |   |   |   |   |   |   |   |   |                  |    |    |   |   |   |   |   |   |   |   |   |                  |    |    |   |   |   |   |   |   |   |   |   |                  |    |    |   |   |   |   |   |   |   |   |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 9. DPTSC/MOEE draft compensation price for the land in consulting with relevant village heads and affected peoples.   |                  |    |    |   |   |   |   |   |   |   |   |   |                  |    |    |   |   |   |   |   |   |   |   |   |                  |    |    |   |   |   |   |   |   |   |   |   |                  |    |    |   |   |   |   |   |   |   |   |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 10. Development of ARAP, approval by MOEE and ECD, and submission to JICA by DPTSC/MOEE   |                  |    |    |   |   |   |   |   |   |   |   |   |                  |    |    |   |   |   |   |   |   |   |   |   |                  |    |    |   |   |   |   |   |   |   |   |   |                  |    |    |   |   |   |   |   |   |   |   |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 11. The project owner makes a request general administration department at relevant township for organizing a Compensation Committee in order to scrutinize the drafted compensation price.<br><b>Forming of Compensation Committee</b> |                  |    |    |   |   |   |   |   |   |   |   |   |                  |    |    |   |   |   |   |   |   |   |   |   |                  |    |    |   |   |   |   |   |   |   |   |   |                  |    |    |   |   |   |   |   |   |   |   |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 12. Confirmation survey of PAPs and assets with cut-off-date by the Compensation Committee, if required.  |                  |    |    |   |   |   |   |   |   |   |   |   |                  |    |    |   |   |   |   |   |   |   |   |   |                  |    |    |   |   |   |   |   |   |   |   |   |                  |    |    |   |   |   |   |   |   |   |   |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 13. The compensation price is finalized at compensation committee   |                  |    |    |   |   |   |   |   |   |   |   |   |                  |    |    |   |   |   |   |   |   |   |   |   |                  |    |    |   |   |   |   |   |   |   |   |   |                  |    |    |   |   |   |   |   |   |   |   |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 14. Negotiation with PAPs, obtaining agreement of compensation and assistance with them and arrangement of payment procedure  |                  |    |    |   |   |   |   |   |   |   |   |   |                  |    |    |   |   |   |   |   |   |   |   |   |                  |    |    |   |   |   |   |   |   |   |   |   |                  |    |    |   |   |   |   |   |   |   |   |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 15. In case affected people is not satisfied the compensation price, he/she can appeal to the compensation committee to reconsider the price.   |                  |    |    |   |   |   |   |   |   |   |   |   |                  |    |    |   |   |   |   |   |   |   |   |   |                  |    |    |   |   |   |   |   |   |   |   |   |                  |    |    |   |   |   |   |   |   |   |   |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 16. In the implementation phase, the 【Compensation Committee or its deputy】 or 【DPTSC/MOEE】 will <b>disburse the compensation and assistance</b> before the physical resettlement or taking of the land.                                |                  |    |    |   |   |   |   |   |   |   |   |   |                  |    |    |   |   |   |   |   |   |   |   |   |                  |    |    |   |   |   |   |   |   |   |   |   |                  |    |    |   |   |   |   |   |   |   |   |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 17. In the implementation phase, the implementation team for ARAP in DPTSC/MOEE will monitor the progress of resettlement and land acquisition  |                  |    |    |   |   |   |   |   |   |   |   |   |                  |    |    |   |   |   |   |   |   |   |   |   |                  |    |    |   |   |   |   |   |   |   |   |   |                  |    |    |   |   |   |   |   |   |   |   |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

Source: JICA Study Team

## 8. Funding and Budget

### 8.1. Funding

DPTSC has annual funding for land acquisition and related costs. The money is dispensed on a first come first served basis. Therefore, if the project becomes ready to pay the compensation late in a fiscal year, the payment may need to wait for the start of the next fiscal year, which is October.

### 8.2. Market Price Survey

The results of the market price survey for the land and crops in the Project area are shown in Table 8.2-1. The survey was conducted by interviewing the local residents near the substation and the transmission lines (see Table 3.4-2), and the highest price obtained was selected.

The land price for cultivation at Sar Ta Lin Village, Hlegu Township in Table 8.2-1 gives 30 million MMK per acre. In the field surveys in November 2019 and February 2020, DPTSC staff asked the price for rice paddies at a few places, including Sar Ta Lin Village. The answers during the field survey were between 1,000,000MMK/acre and 1,500,000MMK/acre. For the calculation of the compensation budget, the price from the Market Price Survey is used.

**Table 8.2-1 Market Price Survey for Land and Crops**

| No. | Area/Location (Geographic)   | Google Earth ID | Land Price for Cultivation (MMK/Acre) | Land Price for Residential purpose (MMK/Sq. Ft) | Paddy Price (MMK/Tin) | Bean Price (MMK/Tin) | Yield Rate of Paddy (Tin/Acre) | Yield Rate of Bean (Tin/Acre) |
|-----|--|-----------------|---------------------------------------|---|-----------------------|----------------------|--------------------------------|-------------------------------|
| 1   | For 500KV TL (From Payagyi Substation to New Substation)           |                 |                                       |   |                       |                      |                                |                               |
| 1.A | Win Ga Baw Village, Bago Township                                  | MS-01           | 30,000,000                            | 16,000  | 6000                  | 45,000 (Black gram)  | 100                            | 40                            |
| 1.B | Ma Yin Lay Aing Su Village, Bago Township                          | MS-02           | 30,000,000                            | 5,000   | 6000                  | 60,000 (Mung bean)   | 100                            | 10                            |
| 1.C | Kamarnat Village, Bago Township                                    | MS-03           | 20,000,000                            | 50,000  | 6000                  | 60,000 (Mung bean)   | 100                            | 10                            |
| 1.D | Hton Gyi Village, Bago Township                                    | MS-04           | 25,000,000                            | 16,000  | 6000                  | 60,000 (Mung bean)   | 100                            | 10                            |
| 1.E | Inn-daing Village, Hlegu Township                                  | MS-05           | 20,000,000                            | 32,000  | 6000                  | -                    | 100                            | -                             |
| 2.  | For Sar Ta Lin Substation  |                 |                                       |   |                       |                      |                                |                               |
| 2.A | Sar Ta Lin Village, Hlegu Township                                 | MS-06           | 30,000,000                            | 25,000  | 6000                  | 60,000 (Mung bean)   | 100                            | 10                            |
| 3.  | For 230KV TL (From Sar Ta Lin Substation to East Dagon Substation) |                 |                                       |   |                       |                      |                                |                               |
| 3.A | Sar Ta Lin Village, Hlegu Township                                 | MS-06           | 30,000,000                            | 25,000  | 6000                  | 60,000 (Mung bean)   | 100                            | 10                            |
| 3.B | Lay Daung Kan Village Tract, East Dagon Township                   | MS-07           | 60,000,000                            | 32,000  | 6000                  | 60,000 (Mung bean)   | 100                            | 15                            |
| 4   | For 230KV TL (From Sar Ta Lin Substation to Hlawga Substation)     |                 |                                       |   |                       |                      |                                |                               |
| 4.A | Ngwe Nanthar Kone Village, Hlegu Township                          | MS-08           | 30,000,000                            | 50,000  | 6000                  | -                    | 100                            | -                             |
| 4.B | Shwe Nanthar Village,  | MS-09           | 20,000,000                            | 58,000  | 6000                  | -                    | 100                            | -                             |

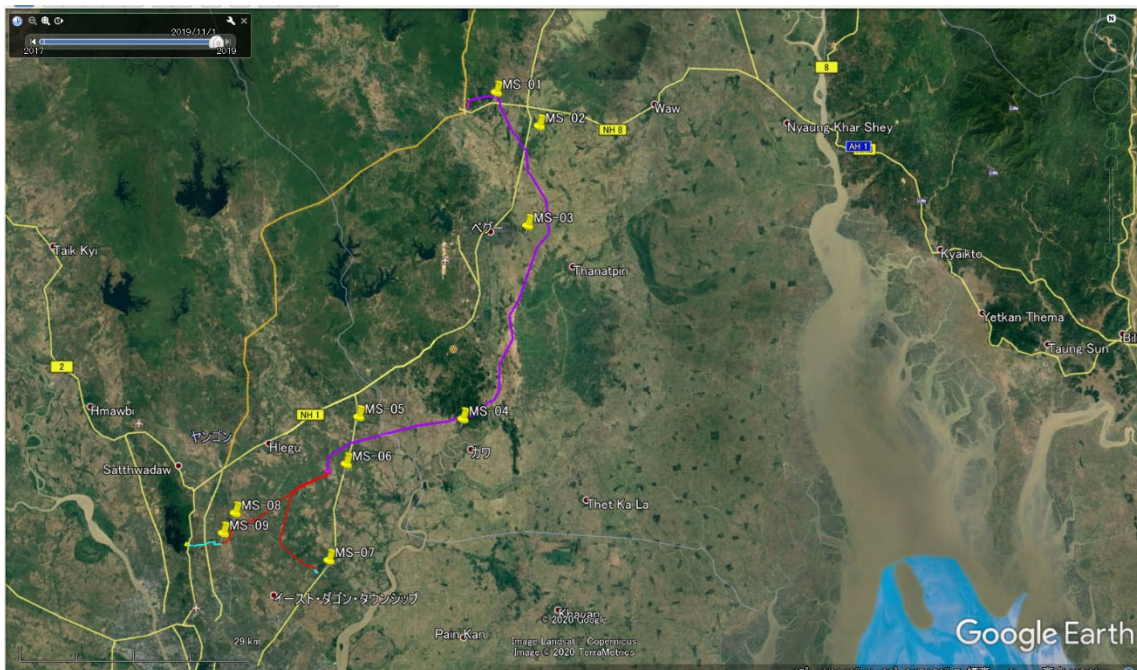
| No. | Area/Location (Geographic) | Google Earth ID | Land Price for Cultivation (MMK/Acre) | Land Price for Residential purpose (MMK/Sq. Ft) | Paddy Price (MMK/Tin) | Bean Price (MMK/Tin) | Yield Rate of Paddy (Tin/Acre) | Yield Rate of Bean (Tin/Acre) |
|-----|----------------------------|-----------------|---------------------------------------|---|-----------------------|----------------------|--------------------------------|-------------------------------|
|     | Mingalardon Township       |                 |                                       |   |                       |                      |                                |                               |

- Note:
1. "Tin" is the volume measured by a standard basket. (1 Tin = ~22kg for paddy; ~30kg for beans)
  2. Price of land is the maximum price and it depends on the accessibility of this land (e.g., the closer to the highway road, the higher the price)
  3. Price of crop is the maximum price and selling price from farmer to merchant
  4. Yield rate of paddy is for summer. Yield Rate during rainy season is lower than during summer

| No | Location       | Type of Plants                | Market Price                                       |
|----|----------------|-------------------------------|--|
|    |                |                               | Price per one unit (MMK)                           |
| 1  | Hlegu Township | Palm tree                     | 120,000  |
| 2  |                | Banana                        | 20,000   |
| 3  |                | Acacia tree (border tree)     | 15,000   |
| 4  | Near MS-04     | Rubber                        | 50,000   |
| 5  | Sample price   | <i>Rubber (latex) coagula</i> | <i>14,300 per tree per year (650MMK per pound)</i> |
| 6  |                | <i>Mango</i>                  | <i>700</i>   |
| 7  |                | <i>Persimmons</i>             | <i>700</i>   |
| 8  |                | <i>Teak</i>                   | <i>Defined by Forest Department</i>                |

- Note:
1. Number of target trees must be confirmed by joint inspection by the owner and respective authorities.
  2. As the price of "Palm" tree is not available in the Hlegu area, the market price from the Central Myanmar area is referred to.

Source: JICA Study Team



Source: JICA Study Team

**Figure 8.2-1 Locations of Market Price Survey (Yellow pins) and Planned Facilities**

### 8.3. Budget for the Substation

Using the results of the Market Price Survey shown in Table 8.2-1, the land price for the Substation, including the stamp duty and registration fee, was calculated as 1,937 million MMK (Table 8.3-1), and the crop compensation was calculated as 237.07 million MMK (Table 8.3-2).

**Table 8.3-1 Budget for Land Acquisition for the Substation**

| No. | Location       | Land Type | Affected Area |      | Unit Price<br>MMK/acre | Land Price<br>MMK | Stamp Duty<br>4%<br>MMK | Registration<br>Fee 0.5%<br>MMK | Grand Total<br>MMK |
|-----|----------------|-----------|---------------|------|------------------------|-------------------|-------------------------|---------------------------------|--------------------|
|     |                |           | ha            | acre |                        |                   |                         |                                 |                    |
|     |                |           | a             | b    | c                      | d=b x c           | e= d x 0.04             | f= d x 0.005                    | g=d+e+f            |
| 1   | Hlegu Township | Farm Land | 25.0          | 61.8 | 30 million             | 1,854 million     | 74.16 million           | 9.27 million                    | 1,937 million      |

Source: JICA Study Team

**Table 8.3-2 Budget for Crop Compensation for the Substation**

| No.               | Location         | Type of Plants             | Area/Number |              | Unit Price<br>MMK/acre or tree                                 | Total Price<br>MMK |
|-------------------|------------------|----------------------------|-------------|--------------|--|--------------------|
| Crop              |                  |                            |             |              |  |                    |
| 1                 | Hlegu Township   | Rice<br>(2 times per year) | 25.0<br>ha  | 61.8<br>acre | 3 times x 6,000 MMK x 100 tin x 2<br>harvests =<br>3.6 million | 222.48<br>million  |
| Perennials, trees |                  |                            |             |              |  |                    |
| 2                 | Hlegu Township   | Palm tree                  | 17*         |              | 120,000  | 2.04 million       |
| 3                 |                  | Banana                     | 560*        |              | 20,000   | 11.20 million      |
| 4                 |                  | Acacia tree (border tree)  | 90*         |              | 15,000   | 1.35 million       |
|                   | Necessary budget |                            |             |              |  | 237.07 million     |

\*Counted from satellite photo. Final count on site is necessary. For loss of fruit products, three years of lost income will be added to the tree compensation price.

Source: JICA Study Team

#### 8.4. Budget for the Transmission Lines

The total area necessary to lease for the construction of the transmission towers (base and access road) is 47.5ha (Table 3.4-6), or 117.3 acres.

From the Market Price Survey shown in Table 8.2-1, the prices of paddy rice (6,000MMK/Tin) and yield rate (100 Tin/acre) are constant throughout the affected area. The Entitlement Policy is to provide compensation three times of market price. (Table 4.1-1 2.1 )

Assuming that there are 2 harvests lost during the Construction Phase, the total budget for the land lease can be calculated as 422.28 million MMK, applying the equation below.

$$\text{➤ } 3 \text{ times} \times (117.3 \text{ acres} \times 6,000\text{MMK/Tin} \times 100\text{Tin/acre} \times 2 \text{ harvests}) = 422.28 \text{ million MMK}$$

The 500 kV Transmission Line passes through rubber plantation at 2 locations, one at north of Payargi Substation, and the other at north of Tongyi Rail Station. The total length over the plantation is 5.65 km. The trees within the 60.96 m ROW will be permanently cleared. The land ownership will remain to the original owner, and the owner can use the land for cultivation of low-height crops. The area of wooded ROW is calculated as 34.44 ha (= 5.65km x 60.96m). The field survey in May 2020 found that the density of rubber trees vary widely between 560/ha, 720/ha, and 930/ha. Taking the simple average of 737 trees/ha, the budget for the compensation of rubber trees that will be affected by the new setting of ROW can be calculated as 1,269 million MMK, applying the equation below. In addition, three years of product yield will be compensated. The compensation for the lost yield is calculated as 1,088.90 million MMK.

The necessary budget will vary largely depending on the density of the trees. Detailed field survey of assets will be necessary to articulate the budget for the compensation of the rubber plantation.

- Tree compensation: 34.44 ha x 737 trees/ha x 50,000MMK/tree = 1,269.114 million MMK
- Product compensation: 34.44 ha x 737 trees/ha x 14,300MMK/tree/year x 3 years = 1,088.90 million MMK

#### (4) Budget for livelihood rehabilitation and assistances

The households whose livelihoods are to be affected by the Project will be interviewed in the consultation in the implementation phase about the needs for the livelihood rehabilitation and assistances. DPTSC, together with the member authorities of the compensation committee, will coordinate the needs and will implement the sought activities for the households.

Following assistances were proposed in past cases of public projects in Yangon Regionx which may also be applicable for the Project:

- \* Agriculture technical advice
- \* Vocational trainings in the fields other than farming
- \* Job opportunities in the construction works of the substation as skilled or unskilled labor

As shown in the table below, these assistances are either provided for free, or the cost is already included in the project budget. Additional budget, therefore, is not necessary for implementation of these livelihood rehabilitation and assistances.

|   |   |
|---|---|
| * Agriculture technical advice  | Free technical advice for rice farming, vegetable farming, fruit growing, timber, rubber, fish culture, animal husbandary and others are provided by staff of Ministry of Agriculture |
| * Vocational trainings in the fields other than farming                                       | Free vocational trainings for agricultural product processing and for other industry are provided by NGOs and private companies in Yangon Metro Area                                  |
| * Job opportunities in the construction works of the substation as skilled or unskilled labor | Bost for labor is included in the construction cost of the Project  |

Source: JICA Study Team

#### (5) Budget for the ARAP Survey

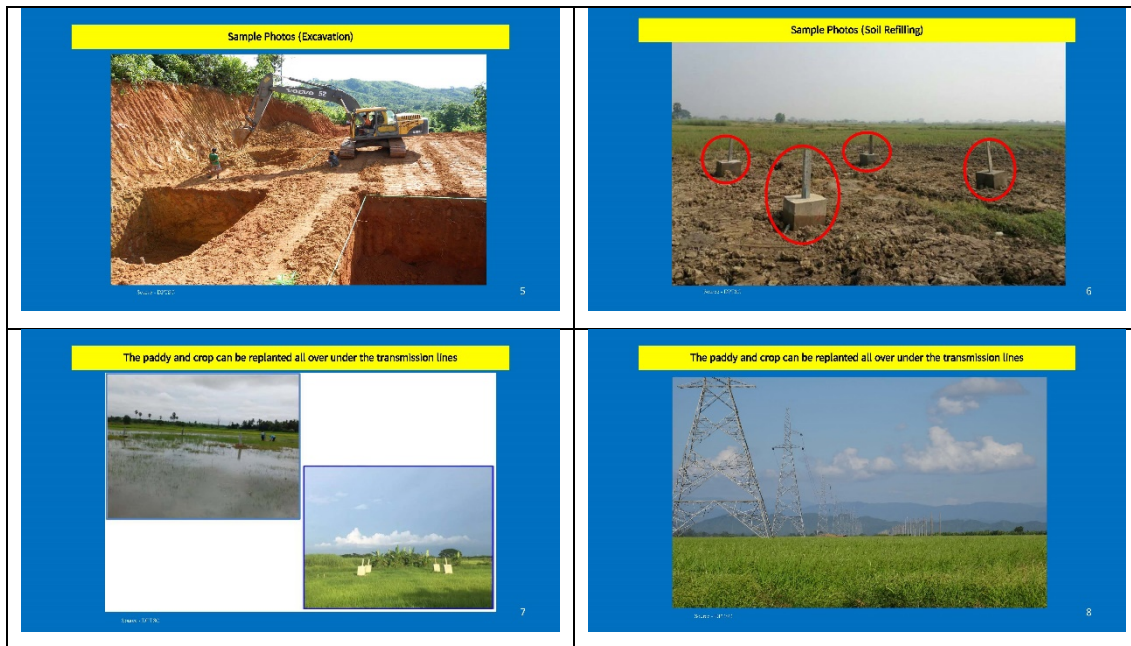
The ARAP survey will require a team of at least 4 persons with following roles and specialities: Team Leader/Principal Consultant (Social), GIS Expert, Social Expert, and Surveyor. The cost for the survey is estimated as 32,350 USD, or 44,014,763 MMK (1USD=1,360.58MMK, 06 July 2020), before commercial tax. The draft terms of reference is shown in Chapter 11.

#### (6) Budget for the External Monitoring of ARAP Implementation

The external monitoring of ARAP implementation will require a team to conduct survey and produce the report quarterly, i.e. 4 times a year, during and after the relocation. The total necessary cost for the monitoring is estimated as 20,000 USD, or 27,211,600 MMK (1USD=1,360.58MMK, 06 July 2020), before commercial tax. The draft terms of reference is shown in 10.2.







Source: Slides were prepared by DPTSC, and were translated by JICA Study Team

**Figure 9.1-1 Meeting Material on Land Acquisition Prepared by DPTSC**

## 9.2. Stakeholder Meetings

It is necessary to conduct stakeholder consultations at least once during the IEE study in order to comply with the EIAP in Myanmar. The first stakeholder meeting was conducted as a preliminary discussion individually from February to March 2020. After that, the project proponent (DPTSC/MOEE) and the JICA Study Team informed the communities and stakeholders of each Township and District. In contrast, it was conducted in March 2020.

### 9.2.1. 1<sup>st</sup> Stakeholder Meeting

There are ten townships totally/partially overlapped of the Project area. Based on the recommendation from concerned General Administration Departments in Yangon and Bago Regions, specifications of methodology and approach such as notification, venue, date, time, and participant of all the meetings were decided in the consultation. Interview of specific, recent, local condition was also implemented during the meeting to support the design of the Project as well as the design of the Stakeholder Meeting.

**Table 9.2-1 Summary of the 1st Stakeholder Meetings**

| Meeting   | Date and Time   | Venue  | Attendants  | Discussion results for the 2 <sup>nd</sup> Meeting Contents   |
|---|---|--|---|---|
| 1 <sup>st</sup><br>Yangon<br>Northern<br>District | Tuesday, 18<br>February<br>2020, 9:30 am  | General<br>Administration<br>Department, Northern<br>Yangon District | District level:<br>1person<br>JICA Study Team:<br>2persons  | 20 March at Hlegu Township of<br>Northern District<br>13 wards/villages<br><br>13 March at Mingalardon Township<br>of Northern District<br>5 wards/villages |
| 2 <sup>nd</sup><br>Eastern<br>District            | Tuesday, 18<br>February<br>2020, 1:30 pm<br><br>Monday, 3<br>March 2020,<br>1:30 pm | General<br>Administration<br>Department, Eastern<br>Yangon District  | District level:<br>1person<br>JICA Study Team: 2<br>persons<br>District level:<br>1person<br>MOEE : 2persons<br>JICA Study Team: 2<br>persons | 1 March<br>North Dagon Township (7 wards)<br>South Dagon Township (3 wards)<br>North Okkalapa Township (1 ward)<br>Thaketa Township (1 ward)                |
| 3 <sup>rd</sup>                                   | Thursday,   | General<br>Administration  | Township level:<br>1person  | 20 March<br>13 wards/villages   |

| Meeting                              | Date and Time                       | Venue   | Attendants  | Discussion results for the 2 <sup>nd</sup> Meeting Contents   |
|--------------------------------------|-------------------------------------|---|---|---|
| Hlegu Township                       | 20 February 2020, 10:30 am          | Department, Hlegu Township                              | MOEE : 2persons<br>JICA Study Team: 3persons                              |   |
| 4 <sup>th</sup> Mingalardon Township | Thursday, 20 February 2020, 1:30 pm | General Administration Department, Mingalardon Township | Township level: 4 persons<br>MOEE : 2 persons<br>JICA Team : 3 persons    | 13 March<br>5 wards/villages  |
| 5 <sup>th</sup> Bago District        | Wednesday, 4 March 2020, 11:00 am   | General Administration Department, Bago District        | Township level: 1 person<br>MOEE: 1 person<br>JICA Study Team: 4 persons  | 18, March<br>Bago District (14 villages)<br>Kawa Township (1 village)<br>Thanapin Township (6 villages) |
| 6 <sup>th</sup> Thanatpin Township   | Thursday, 5 March 2020, 11:30 am    | General Administration Department, Thanatpin Township   | Township level: 2 persons<br>MOEE: 1 person<br>JICA Study Team: 2 persons |   |
| 7 <sup>th</sup> Kawa Township        | Thursday, 5 March 2020, 1:30 pm     | General Administration Department, Kawa Township        | Township level: 1 person<br>MOEE: 1 person<br>JICA Study Team: 2 persons  |   |
| 8 <sup>th</sup> East Dagon Township  | Friday, 6 March 2020                | General Administration Department, East Dagon Township  | Township level: 1person<br>JICA Study Team: 2 persons                     | 16 March<br>8 wards   |

Source: JICA study team

## 9.2.2. 2nd Stakeholder Meeting

### (1) Methodology for Public Consultation for IEE

The methodology of the Public Consultation Meetings for IEE (2<sup>nd</sup> Stakeholder Meeting) is described in the following Table.

**Table 9.2-2 Summary of Public Consultation Meetings for the draft IEE Report**

| Timing                                  | Methodology and Special Considerations   |
|---|--|
| Draft IEE stage: planned for March 2020 | <p><b>【Method and No. of Meetings】</b><br/>1 meeting is planned for one day, which will be organized in order to ensure the participation of the stakeholders in the public sector as well as the local residents.</p> <p><b>【Venue】</b><br/>Related Township General Administration Department (Mingalardon, Hlegu, Dagon Myothit (East) and Bago, North Okkala, South Dagon, North Dagon, Thaketa).</p> <p><b>【Agenda】</b><br/>Draft IEE on the Department of Power Transmission and System Control (DPTSC).<br/>Baseline survey results and impact assessment results<br/>Proposed environmental mitigation measures and environmental monitoring plan<br/>IEE study schedule</p> <p><b>【Expected Participants &amp; Invitation Method】</b><br/>Local government bodies in and around the related townships.<br/>Local residents in the project area.<br/>Project Proponent and related government organizations<br/>Any interested individuals and parties<br/>The invitation/notice for the meeting will be posted in each village for one week in advance.</p> <p><b>【Language Used】</b><br/>The presentation and handout will be in the Myanmar Language. The explanation will also be provided in the Myanmar Language.</p> <p><b>【Special Considerations for Socially Vulnerable Groups】</b><br/>Feedback forms will be provided to the participants so that the people who hesitate to speak out in public can share their views and comments in written form.<br/>Assistants will be available to fill out the form in case the participant requires assistance in writing/reading.</p> |

| Timing | Methodology and Special Considerations   |
|--------|--|
|        | Female assistants will be available for female participants who need any assistance. |

Source: JICA study team

The public consultation meeting is held over five sessions to cover all of the project areas of influence, as described in Table 9.2-3 Detailed Information for Stakeholder Meetings.

**Table 9.2-3 Detailed Information for Stakeholder Meetings**

|                |   |
|----------------|---|
| Time and Date  | Mingalardon Township: Friday, 13 March 2020, 10:00 am to 12:00 pm<br>East Dagon Township: Monday, 16 March 2020, 10:00 am to 12:00 pm<br>Bago Region: Wednesday, 18 March 2020, 10:00 am to 12:00 pm<br>Yangon Eastern District: Thursday, 19 March 2020, 4:00 pm to 5:00 pm<br>Hlegu Township: Friday, 20 March 2020, 10:00 am to 12:00 pm   |
| Venue          | Mingalardon Township: Administration Office, Thingangyungyi Village, Mingalardon Township, Yangon<br>East Dagon Township: General Administration Department, Dagon Myothit (East) Township, Yangon<br>Bago Region: General Administration Department, Bago District, Bago<br>Yangon Eastern District: General Administration Department, Eastern Yangon District, Yangon<br>Hlegu Township: General Administration Department, Hlegu Township, Yangon |
| Attendees      | Mingalardon Township: 33 persons<br>East Dagon Township: 29 persons<br>Bago Region: 54 persons<br>Yangon Eastern District: 17 persons<br>Hlegu Township: 34 persons<br>Total: 167 persons   |
| Agenda         | Explanation of the Project Description<br>Explanation of JICA's Policy<br>Explanation of Results of IEE Study<br>Question and Answer session  |
| Language used  | In the local language (Myanmar language)  |
| Feedback Sheet | In total, 38 comments during five PCM sessions and disclosure were submitted.   |

Source: JICA study team

Questions/comments from participants and explanations/responses from DPTSC/JICA study team during the stakeholder meetings are shown in Table 9.2-4 Questions/Comments and Explanations/Responses from Public Consultation Meetings.

**Table 9.2-4 Questions/Comments and Explanations/Responses from Public Consultation Meetings**

| No.                         | Question/Comment   | Explanation and Response   |
|-----------------------------|--|--|
| <b>Mingalardon Township</b> |  |  |
| 1.                          | Mr. Zaw Lin (Township Administrator, Administration Department, Mingalardon Township)<br>Comments – Show the exact list of PAPs, present on the route of the transmission lines and how the overhead and underground transmission lines will pass through, and check the 2019 Law for land acquisition.  | Mr. Nyunt Wai (Executive Engineer, DPTSC)<br>Answer - Presented on ROW; will be less or no impact as this project is long-term and will apply updated techniques to reduce major impacts as much as possible.  |
| 2.                          | Mr. Phone Thet Khaing (Sub-Assistant Engineer, YCDC),<br>Mr. Aunh Htut Linn (Assistant Engineer, YCDC)<br>Question 1 - Will the transmission line from Hlegu to Dagon Township (Dagon Myothit (East)) pass through No. 7 Main Road?<br>Question 2 - There is a water supply system near the project. Will it be affected?<br>Question 3 - Informed of the location of water distribution pipeline. Check the Law for land acquisition (2019). Discussed how many | Mr. Nyunt Wai (Executive Engineer, DPTSC)<br>Answer 1 - It will not pass through the No. 7 main road but go along the road.<br>Answer 2 - Underground transmission line will pass through Bo-Chan Street to the substation. The team have been doing surveys. Requested YCDC to approve DPTSC's letter. Monopole transmission towers will be used at Thaketa substation.<br>Answer 3 - Presented on Law (2012) on Land Acquisition. DPTSC will discuss the losses and complaints. They will give compensation for crop |

| No.                                  | Question/Comment   | Explanation and Response  |
|--------------------------------------|--|---|
|                                      | transmission lines there will be. Can YCDC join the transmission lines from Hlegu?<br>Question 4 - Will there be any damage due to transmission tower construction?  | losses. 30 ft square will be used for 230kV, and 50 ft square will be used for 500kV. They will use 120 ft temporarily for the construction yard to store the construction materials.<br>Answer 4 - Compensation will be paid for any losses, according to the Department of Agriculture, Land Management and Statistics. They will use updated techniques to reduce losses.  |
| 3.                                   | Mr. Thet Khaing Oo (Hundred Household Head, Pyan Lei Nay Yar Cha Htar Ye Ward)<br>Question - Which area will be included in this project? Will the transmission line be underground or overhead?   | Mr. Nyunt Wai (Executive Engineer, DPTSC)<br>Answer - Monopole transmission towers or super slim (towers) towers will be used to upgrade the 230 kV Hlawga-Thaketa transmission line but underground transmission lines will be used instead of monopole towers along the Bo-chan Road near the Hlawga Substation because of the presence of a crowded residential area near the current transmission line.   |
| 4.                                   | Mrs. Tin New Ni (YCDC)<br>Question - Can the transmission lines and towers be combined?<br>When will the project be implemented?<br>Comments - Any suggestion for Pyin Ma Pin Line? If the current gas pipe route will not be used, new routes would be. If new underground transmission lines are constructed under the Bo-chan Road, there might be underground gas pipelines under the road. The transmission towers from Pyin-Ma Pin are currently generating noise.   | Mr. Nyunt Wai (Executive Engineer, DPTSC)<br>Answer - YESC is trying to combine transmission lines as much as they can. In Mandalay, there are combined transmission towers (4 in 1). The proposed transmission line will be from Dagon Township (East) to Zay Kabar (Bo-Chan).The noise is generated from Pyin Ma Bin as the transmission lines are suffering overloaded capacity. The proposed project will include a 2 circuit system for better current capacity to solve the overload problem at Pyin Ma Bin. It may take over 5 years to implement this project.  |
| <b>Dagom Myothit (East) Township</b> |  |   |
| 1.                                   | Mr. Zaw Min Htike (GAD)<br>Comment 1 - Although almost all the lands are owned by township development committee, there is still farmland worked by farmers. So it would be necessary to negotiate with both TDC and the local people. One issue in this township is that even though YCDC own the land for implementing projects, some land is still not utilized. Therefore, the original farmers cultivate their lands again. The legal owner is YCDC and the original farmers are currently working it. Therefore, discussions should be undertaken with all of them. ROW of Transmission line (200 ft.) from Sar Ta Lin Village to Dagom Myothit (East) should be clear in design.<br>Comment 2 - There are also other projects (especially industrial zone development plan) related to this township so DPTSC needs to consider a long term plan over about 30 years. YCDC has those long-term plans and this should be discussed with them.<br>Comment 3 - It is better to plan the design after field study because some data from Google Earth cannot provide exact information. | Mr. Nyunt Wai (Assistant Director, DPTSC, MOEE)<br>The suggestions are very useful for the project. There are many projects in MOEE which are facing many difficulties due to land issues. Therefore, we will carefully consider all your suggestions for the project. Yes, we will follow your suggestions.  |
| 2.                                   | Mr. Nay La<br>(Water Distribution Department, Township Development Committee)<br>Comment 1 - There are also gas lines and water distribution lines. Therefore, it is necessary to negotiate with the respective authorities or departments. Most of the data can be obtained from the Township Development Committee.  | Mr. Nyunt Wai (DPTSC, MOEE)<br>Answer 1 - We also face many difficulties whereby the data are not relevant to the ground conditions. But we will always meet and discuss with related departments. For design, we proposed to use Slim Towers with double circuits, which can increase the cost, but they only need a small land area or size and reduce the amount of land acquisition issues. But it is difficult to use Slim Towers in Mingalardon Township. Therefore, we will put 6 circuits in an underground tunnel. After passing through the tunnel, we will use Mono towers. Therefore, I also wish to suggest that YCDC invite and discuss matters with MOEE when implementing the new industrial zones. Then we will discuss including enough |

| No.                  | Question/Comment  | Explanation and Response   |
|----------------------|---|--|
|                      |   | space for transmission lines in the future. We do not get data for gas pipelines. We also carried out detailed survey designs along Bo Chan Road.<br>Comment 1 - Due to problems in land acquisition, the projects have to be delayed.<br>Comment 2 - Existing transmission lines of Hlawga-Thaketa need to be upgraded. Slim towers are planned to be used with bored pile although it might be expensive.<br>Comment 3 - If government is planning to develop an industrial zone in this Dagon Myothit (East) Area, the electricity will be essential for everyone. So, please do cooperate with us. |
| 3.                   | Mr. Linn Htet Ko (District GAD)<br>I wish to include land owner list and related government list in the presentation. It should include project initial time and finishing time. How should GAD and related departments like YCDC/YESC provide support for this project? There cannot be land issues in Yangon Area. Since the project is a National level project, there should be discussions at the Central level. Sometimes, following JICA guidelines exactly in our country may create difficulties. Therefore, international standards and guidelines should be relevant to our country's conditions.<br>Question 1 - Is there any project schedule which includes start and end date of the project?<br>Question 2 - How can GAD and other related departments be involved in the project?<br>Comment 1 - It would be better to include departments and land owners related to project in power point presentation so that it is easier to understand each party's responsibilities.<br>Comment 2 - The project includes cutting trees and replantation. Therefore, the project owner should discuss this with Forestry Department. There can be disagreements in usage of agricultural lands in Kawa and Thanatpin Townships. For slide 46, Ministry of Forestry has regulations on which kind of trees can be cut and where to replant them. Therefore, before starting the project, please make sure to negotiate with the Ministry of Forestry. | Mr. NAKANO Hiroshi (JICA Study Team)<br>Answer 1 - As it is only the feasibility stage, the project schedule has not been fixed. The only information we can give for now is that target timing of the loan agreement is in August. Design stage may take about 1 year. So, we still do not have a project schedule.<br>Answer 2 - Our team could not decide how GAD can be involved. DPTSC will discuss this with related departments.  |
| 4.                   | Mr. Than Hlaing (No. 1 Ward Administrator)<br>Comment 1 - There were two fatal incidents due to electric shock in my ward: one was at a dumping site and the other occurred while undertaking electricity repairs. To avoid such situations, please provide us with more information in advance so that we can give precautions to the public.  | Mr. Nyunt Wai (DPTSC, MOEE)<br>Answer (DPTSC) Trees like bamboo, for which height cannot be controlled, will need to be cut. However, those which can be controlled will be remain the same. So, I believe if everyone follows the respective laws and rules, the number of accidents will be reduced.   |
| 5.                   | Mr. Aung Ko Ko (EE, YESC)<br>If the transmission line will pass through No. 7 Road, I wish the line to be installed in the area located within the project operated by Zayyar Premier Company. If No. 7 Road is expanded by a future project, the transmission line will need to be removed again.  | Mr. Nyunt Wai (Assistant Director, DPTSC, MOEE)<br>Currently, water pipelines exist along No. 7 Road. We will discuss with YCDC on the transmission line area. We will place the towers after negotiations with them.  |
| <b>Bago District</b> |   |  |
| 1.                   | Mr. Kyi Swe (Administrator, Oe Bo Village Tract)<br>Question - If the transmission line passes through a village track, will DPTSC give compensation?   | Mr. Soe Naing Win (Assistant Director, DPTSC)<br>Answer - When DPTSC does surveys, there is a surveyor to be followed. During construction of the tower, there will be access road, so DPTSC will give compensation for damaged crops until the construction ends. The compensation's value may be decided via Department of Agriculture, Land Management and Statistics rules through step-by-step negotiations.  |

| No.                            | Question/Comment   | Explanation and Response  |
|--------------------------------|--|---|
|                                |  | Dr. Phyo Thu Aung (MKI)<br>Answer - According to MOEE Law, there is no compensation for land acquisition in any village tract development project.  |
| 2.                             | Mr. Kyaw San Aung (Deputy Township Administrator, Ka Wa Township)<br>Question - Will DPTSC give compensation for Land Acquisition surrounding the tower?<br>Communications operator gave compensation for land acquisition annually.<br>Comments (Deputy Administrator, Ka Wa Township) - DPTSC should consider making PCM for severely affected people because it is unable to construct any buildings and unable to plant any crops. | Mr. Soe Naing Win (Assistant Director, DPTSC)<br>Answer - There will not be compensation for land used for substation, but DPTSC will give crop compensation of three times' the current market price in every season because there are many towers in Myanmar. So, the government can't give compensation for every piece of land used.<br>Dr. Phyo Thu Aung (MKI)<br>Answer - This is just the process of implementing IEE report. After loan is agreed, there will be detailed design, the list of actual affected persons will be released and Public Consultation Meeting will be held.  |
| 3.                             | Mr. Kyaw Thet (Department of Public Health)<br>Comments - Noise and Vibrations at Hlegu-Dar Pein should be measured every three months and should be inspected monthly. Water quality should also be tested twice in every rainy season.   | Dr. Phyo Thu Aung (MKI)<br>Answer - There are no standard rules or regulations for monitoring frequency but DPTSC will follow these comments.   |
| 4.                             | Mr. Tin Win Htut (Officer, Department of Fisheries)<br>Question - There are many fish ponds under towers, so will they be affected due to electricity?   | Mr. Soe Naing Win (Assistant Director, DPTSC)<br>Answer (DPTSC, MOEE) - There are transmission lines above fish ponds in Ayeyarwady Region and no issues have occurred up to now. There may not be an effect on these but after negotiation with the village tract, DPTSC will avoid these areas if possible.<br>Mr. NAKANO Hiroshi (JICA Study Team)<br>Answer - Sufficient insulators will be fixed at towers, so there will be no electricity danger for fish ponds. If an uneducated person touches a tower, it might result in electrocution. DPTSC will follow the MOEE's Laws and JICA's international laws to lessen or eliminate the impacts. According to MOEE's rules, towers must be built a sufficient distance from houses. Moreover, there are households under the Hlawga-Thaketa 230kV transmission line. So, the technicians from both MOEE and JICA will improve that line by applying updated techniques. |
| 5.                             | Mrs. Pa Pa Win (Assistant Director, Planning Department, Thanatpin Township)<br>Question - Will there be any danger if people work under transmission line?  | Mr. Soe Naing Win (Assistant Director, DPTSC)<br>Answer - There will be no danger after the tower construction has been completed. 75 feet square is required for 230kV transmission for ROW. Lightning conductors will be fixed on the top of towers for safety.   |
| 6.                             | Mr. Nay Min (Deputy Staff Officer, Department of Forestry)<br>Comments - Sub-group composition should include the members from relevant departments. According to his experience, compensation processes were very complicated and it was hard to deal with Project-Affected Persons (PAPs).   | Dr. Phyo Thu Aung (MKI)<br>Answer - This is just the stage to implement the IEE report. After the loan is approved, which could take 1 year, the detailed designs will be published. Then, DPTSC will cooperate with other departments to implement this project, and affected people will be recorded and compensated. The cut-off date will be specified and surveys will be undertaken.  |
| 7.                             | Mr. Maung Soe (Kan Ni Village Tract Administrator, Kawa Township)<br>Comments - The transmission line in Kawa Township is broken. So please implement the projects in a safe way to create less damage. The relevant organizations should discuss the Land Acquisition with local people in detail.  | Mr. Soe Naing Win (Assistant Director, DPTSC)<br>Answer - If the transmission line is broken, there is no current in it so no electric hazard is expected. Therefore, we don't need to be afraid of that condition.<br>Dr. Phyo Thu Aung (MKI)<br>Answer - MKI submitted IEE (Draft), and JICA gave comments, including on the routes for bird migration. MKI has been considering JICA's comments to put in IEE (Draft).   |
| <b>Eastern Yangon District</b> |  |   |
| 1.                             | Mr. Soe Lin Htike (Thaketa Township Administrator)   | Dr. Phyo Thu Aung (Myanmar Koei LTD)<br>Answer 1 - The old transmission line will be upgraded with a new line. Therefore, the location and length of the  |

| No.                   | Question/Comment  | Explanation and Response   |
|-----------------------|---|--|
|                       | Comment 1 - There are transmission lines in No. (9) Ward of Thaketa. So, it would be better to get detailed information on how the project affects that area.<br>Comment 2 - Even after the agreement between Myanmar Government and JICA, there might be difficulties when it comes to ground surveys and negotiations with local people.<br>Question 1 - Are transmission line towers new? Where would they be placed?<br>Question 2 - How many third parties are involved in this project?   | line is the same. We will upgrade the current tower area. In other areas which are far from the main road, the project will construct approach lanes.<br>Mr. Thura Aung (General Manager, Resource and Environment Myanmar Co., Ltd.)<br>The leading organization for IEE Study is Myanmar Koei International Co., Ltd. and we (REM) take the responsibility for social considerations and RAP framework. When we discussed this with DPTSC, they did not want to share the project information with local people as it is at the feasibility stage and they worried that rumors would spread and the project would not work out as planned. However, they agreed to have a stakeholder meeting at this feasibility stage. |
| 2.                    | Mr. Tint Zaw (North Okkalapa Township Administrator)<br>Question 1 - Has DPTSC informed parliament members about the project?<br>Question 2 - What are these feedback forms for?  | Dr. Phyo Thu Aung (Myanmar Koei LTD)<br>Answer 1 - DPTSC invited one parliament member in Hlegu Township.<br>Answer 2 - These feedback forms are for Township Administrator, Ward Administrator and Local people who are interested in the project.  |
| 3.                    | Mr. Ye Aung (Dagon Myo Thit (South) Township Administrator)<br>Comment 1 - There will not be many issues in Eastern Yangon District since it is an old transmission line area.<br>Mr. Kyaw Moe (Dagon Myo Thit (North))<br>Comment 1 - If the project is carried out after signing MOU, there will be many problems to be solved at ground level. The project should discuss matters with communities first. Moreover, impact of transmission line is high on farmers especially during rainy season.   | Dr. Phyo Thu Aung (Environmental Expert, Myanmar Koei International Co., Ltd.)<br>The project is just at the study phase for loan agreement. The government has budget limitations. During meeting with MOEE in Naypyitaw, they said that they do not wish to survey villages/wards because some areas are a sensitive area for survey. Moreover, the design is not confirmed yet.   |
| 4.                    | All Township Administrators<br>We can give suggestions after giving information to the community. We wish the project members to meet related government departments and the public as well. We will support the project 100 percent as electricity is essential for the sake of our country and people.  | Mr. Thura Aung (General Manager, Resource and Environment Myanmar Co., Ltd.)<br>The project is at the initial stage and the design may be changed. If IEE study is not sufficient for this project, the developer will carry out EIA study according to ECD comments.  |
| <b>Hlegu Township</b> |   |  |
| 1.                    | Mr. Win Aung (Deputy Township Administrator, General Administration Department (Hlegu))<br>Question - Ask Land Acquisition about the area which will be passed through for 230kV and 500kV. How many towers will be in Hlegu Township and how big will the area used be?<br>Comments 1 - Should consider the area which will be used in Hlegu Township.<br>Comments 2 - The project should consider people who cannot live under ROW of 500 kV Transmission line. Compensation for substation area as well as for transmission line should be considered. Number of towers, distance between each tower and their locations should be considered. We found that other transmission lines are sagging in some areas. | Dr. Phyo Thu Aung (Environmental Expert, Myanmar Koei International Co., Ltd.)<br>Answer - DPTSC needs site survey to know about the numbers of towers in Hlegu Township. After the MOU, detailed designs will be published. JICA will provide support financially, but this is the draft stage. There are households under 230kV Hlawga-Thaketa but an improvement of this line will be included in this project. Moreover, JICA will call tender for techniques as the adviser. So, many technicians will be included. JICA will also inspect the construction using International Guidelines. It is certain that the proposed project will be better than the previous projects.  |
| 2.                    | Mr. Aung Aung (Village Administrator, Sar Ta Lin Village Tract)<br>Comment - Since this is the loan acquisition phase, we cannot give suggestions for our village. When the project starts, our village will cooperate with the project by negotiating with land owners and community.  | -  |



| No. | Question/Comment   | Explanation and Response   |
|-----|--|--|
|     | Mr. Bo Bo Myint Aung, U Mya Aung (Township Development Committee)<br>Comment - The vertical right of way can be changed when villages are developed and ground level is changed due to the development.  |  |
| 3.  | Mr. Min Zaw (Township Engineer, Electricity Supply Cooperation)<br>Comment 1 - Since ground clearance is changing as time passes, the project should consider carefully the height of the towers with some percentage added onto the current ground level.<br>Comment 2 - Hlegu has limitations in electricity. The township will be developed in the near future with many development projects. The village administrators cannot discuss the project today because they did not see the detailed design or transmission line routes, but when the project starts, Hlegu Township will cooperate to ensure the success of the project. | Dr. Phyo Thu Aung (Environmental Expert, Myanmar Koei International Co., Ltd.)<br>Answer 1 - Yes, the Ministry will install the towers at a height of at least 30 ft. But in some places, the ground clearance of the tower will decrease due to the upgrading of the road.<br>Answer 2 - According to PCMs in other townships, there are suggestions for the cooperation of related government departments, township administrators, ward/village heads and so on. Moreover, stakeholders also suggested that meeting with current development project owners and proposed development project owners was also necessary.<br>Mr. Hla Ko Oo (Assistant Engineer, DPTSC)<br>Answer - According to MOEE law, there is no compensation for land acquisition in any village tract development project. |
| 4.  | Mr. Bo Bo Myint Aung, Mr. Mya Aung (YCDC)<br>Comment - There is a 66kV transmission line from Hlawga but the villagers can't accept this, so the route might be changed. If DPTSC shows the affected area in detail, the leaders from the village tracts can discuss this with each other.   | Dr. Phyo Thu Aung (Environmental Expert, Myanmar Koei International Co., Ltd.)<br>Answer - Some proposed areas are under private companies and DPTSC expects to get MOU with the current government. Once the detailed designs are out, it will be possible to conduct a site survey.  |
| 5.  | Mr. Win Aung (Deputy Township Administrator, General Administration Department (Hlegu))<br>Comments - If DPTSC shows the detailed design, the administrators from village tracts can discuss this in more detail. In Htan-Ta-Bin, once the towers were constructed the contractors could not pay compensation and they still haven't been able to negotiate this. The value of the land will increase.   | Dr. Phyo Thu Aung (Environmental Expert, Myanmar Koei International Co., Ltd.)<br>Answer - DPTSC will negotiate with public construction enterprises and ROW is rarely allowed.  |
| 6.  | Mr. Win Aung (Deputy Township administrator, General Administration Department)<br>Comments - Plantation will be needed in exact areas.  |  |

Source: JICA study team

### 9.3. Written Comments Received After the Consultation and the Public Disclosure

The Executive Summary in the Myanmar language of the draft IEE report was disclosed for review and comments as shown in Table 9.3-1. The final IEE will be available for public viewing on the website of MOEE.

An executive Summary of the IEE report translated into the Myanmar language was prepared and disclosed together with a feedback form for each invitee during the stakeholder meetings. The disclosure duration was 7 weekdays starting from the date of holding the stakeholder meetings. The disclosure duration for each township is shown in Table 9.3-2.

**Table 9.3-1 Public Disclosure for the IEE**

| Stage                                   | Methodology and Special Considerations  |
|---|---|
| Draft IEE stage: planned for March 2020 | <p><b>【Announcement Method】</b><br/>Public disclosure will be announced 5 days before the public consultation meeting and 7 days after the public consultation meeting. (In total, about 10 days.)<br/>Disclosure period, and comment submission method will be described in the disclosure places.<br/>The draft IEE report will be available on the MOEE official website.</p> <p><b>【Disclosure Places】</b><br/>Related Township General Administration Department (Mingalardon, Hlegu, Dagon Myothit (East) and Bago, North Okkala, South Dagon, North Dagon, Thaketa).<br/>Village Tract Offices/Ward Offices in the Project area.</p> <p><b>【Disclosure Period】</b><br/>About 10 working days (to exclude National Holidays, Saturdays and Sundays)</p> <p><b>【Comment Submission Method】</b><br/>Comments can be submitted with the comment form provided at the disclosure places or by e-mail, either in the Myanmar Language or the English language.</p> |

Source: JICA study team

**Table 9.3-2 Disclosure Duration for draft IEE report Executive Summary**

| Target Area             | Disclosure Duration |
|-------------------------|---------------------|
| Mingalardon Township    | 13-23 March 2020    |
| East Dagon Township     | 16-24 March 2020    |
| Bago Region             | 18-26 March 2020    |
| Yangon Eastern District | 19-30 March 2020    |
| Hlegu Township          | 20-31 March 2020    |

Source: JICA study team

Several comments in the PCM sessions and 26 written comments in feedback forms during the PD were received. Comments are shown in Table 9.3-3, Table 9.3-4, Table 9.3-5, and Table 9.3-6. There were no special written comments from Yangon Eastern District.

**Table 9.3-3 Feedback from Mingalardon Township at Stakeholder Meeting and Public Disclosure**

| No. | Name            | Township                                  | Comment/Suggestion  |
|-----|-----------------|---|---|
| 1   | U Aung Myat Lin | Thingangyungyi Village, Mingalardon       | The consultations and meetings with the local people should be carried out four to five times rather than just one time.  |
| 2   | U Thet Khine Oo | Pyanlalnayyarchahatryay Ward, Mingalardon | There should be properly detailed explanations concerning the houses within the rehabilitation ward, and those located within the project area, and concerning measures for the compensation. |
| 3   | U Hout Soh Khai | Mingalardon                               | There should be effective compensation schemes to lessen the potential impacts on the communities within and around the project area.   |
| 4   | Daw Si Si Than  | Shwe Nanthar Ywama Village, Mingalardon   | If the project will be good for the country, it is fully encouraged. It would be better if the project does not have negative impacts on the communities as well.                             |
| 5   | U Zaw Min Htwe  | Thingangyungyi Village, Mingalardon       | There should be no impact on the houses during project implementation.  |
| 6   | U Aung Htay     | Thingangyungyi Village, Mingalardon       | There should be no impact on the houses and public health should be considered.   |

Source: JICA study team

**Table 9.3-4 Feedback from East Dagon Township at Stakeholder Meeting and Public Disclosure**

| No. | Name             | Township                       | Comment/Suggestion   |
|-----|------------------|--------------------------------|--|
| 1   | U Kyaw Win Naing | 125 Ward, Dagon Myothit (East) | The consultations and meetings with the local people should be carried out four to five times rather than just one time. |

Source: JICA study team

**Table 9.3-5 Feedback from Bago Region at Stakeholder Meeting and Public Disclosure**

| No. | Name              | Township  | Comment/Suggestion  |
|-----|-------------------|---|---|
| 1   | U Nyi Nyi Htwe    | General Administration Department, Bago                               | There should be more effective measures to make the respective farmers aware of and understand the compensation for their lands and gardens due to the project. There can be problems in signing MoUs on loans without taking these measures.<br>The land compensation should be reconsidered by the Ministry concerned. According to 2012 Farmland Law, the farmers holding the Land Use Certificate (Form 7) are supposed to be the owners of their agricultural land.  |
| 2   | U Kyaw Zin Nyunt  | Township Development Committee, Bago                                  | It is known that cultivation can be carried out under the 500KV transmission towers. However, cultivation should not be done alone in this area since there can be dangers of electrical hazards.<br>The area of the transmission line (41' x 31') is not a large one when it comes to the villages.<br>After the project is implemented, there should be transparent negotiations and discussions.   |
| 3   | U Nay Lin         | Forest Department, Bago   | There should be transparency in conducting field surveys for compensation with the local people before the actual implementation of the project so as to avoid unnecessary disputes.  |
| 4   | U Aung Swe Lin    | Bago  | The current 230-KV transmission lines do not have clear-cut ground clearance in some places, and there are some cables falling off just above the ground. In order to avoid such incidents, there should be strict line span distances between the transmission towers.   |
| 5   | Daw Htay Htay Win | Myanmar Maternal and Child Welfare Association, Bago                  | Sometimes, especially in winter, transformers in the city can malfunction and make noises that can cause local people and the monks living around there to become nervous and worried. In some cases, the electricity can even go off. Thus, it would be best to avoid such cases happening after this project.<br><u>We are very grateful to you for upgrading the transmission lines.</u>   |
| 6   | Daw Ei Ei Khin    | Myanmar Women's Affair Federation, Bago                               | There can be problems concerning land. Since this project is intended to aid the development of the country, it would be better if the government also takes responsibility in solving such problems.<br>There should be awareness raising activities and training by the organizations concerned so that the local people will be more engaged, interested and willing to support the project. In doing this, the non-governmental organizations should also contribute. |
| 7   | U Maung Maung Aye | Kanni Village, Bago   | There should be effective measures concerning the environmental impacts of the project and the compensation for the affected communities.<br>The system of the electrical transmission line should be safe enough to avoid the possible risks for the local people.<br>Since this project can bring advantages to our country, there is no objection to it.   |
| 8   | U Khin Tun        | Shwe Tan Village, Bago  | The compensation should be provided not only for the affected crops in the land near the transmission towers but also for the affected land and crops along the transmission line.  |
| 9   | U Aung Thu Oo     | Aut See Tee (East) Village, Bago                                      | The project will be successful if there is strong collaboration among the government, the ministries concerned, the public and JICA.  |
| 10  | U Nyunt Aung      | Department, of Agricultural Land Management and Statistics, Thanatpin | The project area should be away from the residences of the local communities as well as extensive village areas.<br>Concerning the compensation for crops, although the seasonal crops can be re-cultivated, the long-term crops cannot be cultivated again. Thus, for those long-term crops, compensation for the costs of cultivating them and for a further two- or three-year period should be provided.  |
| 11  | Dr. Aye Aye Aung  | Livestock Breeding and Veterinary Department, Thanatpin               | Since there are measures to replant trees, there should also be measures for the pond providing drinking water for animals located near the power station.<br>In the awareness raising workshops, information and knowledge on the routes of wild birds should be included.   |
| 12  | U Hla Min Ko      | Thanatpin   | There should be consultations with the local communities living around the project area.<br>It would be more feasible if there are measures on compensation or the annual rents for the land for the transmission towers.   |

| No. | Name              | Township   | Comment/Suggestion   |
|-----|-------------------|--|--|
|     |                   |  | There should be awareness raising activities for the communities around the project area on the measures taken for the potential risks of electrical hazards.  |
| 13  | Daw Kyu Kyu Myint | Department of Agriculture, Thanatpin                             | There should be open discussions about the project implementation with the farmers working the land.   |
| 14  | U Wai Naing Hein  | Department of Fisheries, Thanatpin                               | The Department of Fisheries would like to suggest that the transmission lines should not be placed in fishing ponds since it can cause electrical hazards. Thus, there should be consideration of this fact.   |
| 15  | U Saw Myint       | Forest Department, Thanatpin                                     | The Initial Environmental Evaluation for the project (phase-3) should be carried out after conducting the field survey and awareness-raising activities with the departments concerned and village tracts, with training provided for the local communities.   |
| 16  | U Kyaw Thet       | Department of Public Health, Thanatpin                           | There should be regular monitoring on noise pollution once a month. The drains should be cleaned before and after the rainy season. There should be measures for the safety and security of the local population.  |
| 17  | U Kyaw San Aung   | General Administration Department, Kawa                          | The 500-KV transmission line will pass through the Na Be Village Tract, Kawa Township. Thus, the construction of the transmission towers and the installation of the transmission line will be carried out across these areas. We are informed that compensation will be provided only for the affected crops at 3 times that of the current price, but not for the land. The telecom operators pay annual rents for the land where their transmission towers are placed. If the compensation or the annual rents for the land for constructing the transmission towers are not provided, there could be complaints since it is not in accordance with the government's Land Acquisition Policy. |
| 18  | U Kyaw Lwin       | Department, of Agricultural Land Management and Statistics, Kawa | It is said that compensation of three times' the current price will be paid for the crops cultivated on the land where the transmission line passes through. It would be better if there is specification of widths for both sides in installing the transmission line. For conducting the initial evaluation, prior information should be given, with all the departments concerned included. The compensation for land and crops should be reported to the Township Farm Land Management Committee in order to be more reliable and effective.   |
| 19  | U Maung Soe       | Nabebin Village, Kawa  | During construction of the towers, there should be measures to create the minimum impacts on the local farmers, the natural environment and the local people. There should also be proper compensation schemes. There should be transparent and open negotiations with the local farmers with more consideration of their interests.   |

Source: JICA study team

**Table 9.3-6 Feedback from Hlegu Township at Stakeholder Meeting and Public Disclosure**

| No. | Name          | Area                            | Comment/Suggestion   |
|-----|---------------|---------------------------------|--|
| 1.  | U Aung Zaw    | Sar Ta Lin Village Tract, Hlegu | This project should be implemented because it will support the energy sector of the country. Safe operations in the environmental and social sectors and mitigation of negative health impacts should be systematically and sufficiently carried out.                                  |
| 2.  | U Si Thu Win  | Sar Ta Lin Village Tract, Hlegu | We fully agree with the construction of the 500kV transmission line in Hlegu Township. It is crucial for development of the township. It can support the energy sector of the country, too. The project should be carefully implemented by emphasizing negative environmental impacts. |
| 3.  | U Zin Min Tun | Sar Ta Lin Village Tract, Hlegu | No disagreement on the project because it will not impact biodiversity sensitive areas or Yangon's Cultural Heritage Infrastructure. The project contractor should follow related mitigation measures within project area.   |
| 4.  | U Myint Thein | Inn Taing Village Tract, Hlegu  | The project is fully encouraged because it is very important for implementing the country's projects and development of the country's economy.   |

| No. | Name            | Area                             | Comment/Suggestion  |
|-----|-----------------|----------------------------------|---|
| 5.  | U Paw San       | Inn Taing Village Tract, Hlegu   | We fully welcome the project since it can develop the Villages/Wards, factories and living standards of Hlegu Township. But the project can have some negative impacts on the environment and people. Therefore, technicians and professionals should work together to reduce negative impacts.   |
| 6.  | U Aye Thaug     | Inn Taing Village Tract, Hlegu   | We are in full agreement regarding the project because it will support the electricity needs of the county. The project should understand people's worries about the dangers and should explain the protection systems for transmission lines. Law Pi Ta Transmission Line has fallen to the ground due to ground filling. Therefore, traffic and local people face electricity dangers during the rainy season. Maintenance for such issues should be included in the project.   |
| 7.  | U Myint Win     | Alan Gapo Village Tract, Hlegu   | The project will develop some villages in Hlegu Township. The compensation for affected farmers should be given by negotiating with related persons. Technicians and professionals should work together to reduce negative impacts on the environment. I am ready to help ensure the success of the project.  |
| 8.  | U Nyan Tun      | Alan Gapo Village Tract, Hlegu   | The project will improve the economy of Hlegu Township and living standards of the people. Compensation for affected owners of farms and gardens should be given by negotiating with township representatives, village representatives and related government persons. It is very important because 75% of the main livelihood of people in rural areas comes from farming. Technicians and professionals should work together to mitigate negative impacts on the environment. I am ready to help ensure the success of the project. |
| 9.  | U Zaw Win Tun   | Alan Gapo Village Tract, Hlegu   | The project will improve the economy of Hlegu Township and living standards of the people. Impacted owners of farms and gardens should be given compensation negotiating with Township representatives, village representatives and related government persons. It is very important because 75% of the main livelihood of people in rural areas comes from farming. Technicians and professionals should work together to mitigate negative impacts on the environment. I am ready to help ensure the success of the project.        |
| 10. | U Myint Ngwe    | Shan Te Gyi Village Tract, Hlegu | Yangon has limitations in electricity and thus the 500kV transmission line should be installed. The project can have few negative impacts on the environment, but it can provide many positive impacts.   |
| 11. | U Myint Naing   | Shan Te Gyi Village Tract, Hlegu | The 500kV transmission line project should be implemented at the earliest opportunity to reinforce the power supply in the township, minimizing negative impacts and using modern technologies.   |
| 12. | U Than Lin Aung | Shan Te Gyi Village Tract, Hlegu | Even though the 500kV transmission line project may impact the environment, it should be implemented because the people in ward, village and township can get a sufficient electricity supply.  |

Source: JICA study team

## 10. Monitoring Structure and Monitoring Forms by Implementation Body

### 10.1. Internal Monitoring

Regarding to the monitoring structure, internal monitoring will be implemented by DPTSC. DPTSC will report the results to MOEE, and MOEE will report to JICA.

Monitoring forms provided by the JICA Study Team, Table 10.1-1, was accepted by DPTSC in May 2020. Since the internal monitoring is to be implemented by DPTSC using regular personnel expenses, no specific budget will be necessary.

**Table 10.1-1 Monitoring Formats during ARAP Implementation**

#### 1. Public Consultation [Monitored by: DPTSC]

| No | Date<br>DDMMYY | Location | SS          | TL          | TL                             | Number<br>of<br>Attendants | Record of Discussions                  |
|----|----------------|----------|-------------|-------------|--------------------------------|----------------------------|--|
|    |                |          | Acquisition | Acquisition | ROW<br>Land use<br>restriction |                            |  |
| 1  |                |          |             |             |                                |                            | [Agenda]<br><br>[Comments and Answers] |
| 2  |                |          |             |             |                                |                            | [Agenda]<br><br>[Comments and Answers] |

#### 2. Progress of Implementation [Monitored by: DPTSC]

| Activity  | Quantity | Unit      | Progress (Number)                      |                              |       | Progress (%)                           |                              | Planned<br>finish<br>date | Implementing<br>and<br>Responsible<br>Institution                           |
|---|----------|-----------|--|------------------------------|-------|--|------------------------------|---------------------------|---|
|   |          |           | Before<br>this<br>reportin<br>g period | This<br>reportin<br>g period | Total | Before<br>this<br>reportin<br>g period | This<br>reportin<br>g period |                           |   |
|   | a        |           | b                                      | c                            | d=b+c | e=b/a                                  | f=d/a                        | DDMMYY                    |   |
| 1. Procurement of consultant/ NGO/ Implementation staff                 |          | M/M       |  |                              |       |  |                              |                           | [Implement]<br>DPTSC<br>[Responsible]<br>DPTSC/ JICA                        |
| 2. Implementation of Detailed Measurement Survey                        |          | Township  |  |                              |       |  |                              |                           | [Implement]<br>DPTSC<br>[Responsible]<br>DPTSC/ GAD/<br>TLMC/<br>Contractor |
| 3. Setting and announcing the cut-off date                              |          | Township  |  |                              |       |  |                              |                           | [Implement]<br>DPTSC<br>[Responsible]<br>DPTSC/ GAD/<br>TLMC/<br>Contractor |
| 4. Implementation of Population and Asset Census, Socio-Economic Survey |          |           |  |                              |       |  |                              |                           | [Implement]<br>DPTSC<br>[Responsible]<br>DPTSC/ GAD/<br>TLMC/<br>Contractor |
| Township 1:   |          | Household |  |                              |       |  |                              |                           |   |
| Township 2:   |          | Household |  |                              |       |  |                              |                           |   |

| Activity  | Quantity | Unit      | Progress (Number)            |                       |       | Progress (%)                 |                       | Planned finish date | Implementing and Responsible Institution                  |
|---|----------|-----------|------------------------------|-----------------------|-------|------------------------------|-----------------------|---------------------|---|
|   |          |           | Before this reporting period | This reporting period | Total | Before this reporting period | This reporting period |                     |   |
|   | a        |           | b                            | c                     | d=b+c | e=b/a                        | f=d/a                 | DDMMYY              |   |
| 5. Approval of RAP  |          |           | Date of approval: DDMMYY     |                       |       |                              |                       |                     | [Implement] DPTSC<br>[Responsible] DPTSC/ ECD             |
| 6. Finalization of PAPs List  |          | Township  |                              |                       |       |                              |                       |                     | [Implement] DPTSC<br>[Responsible] GAD/ TLMC/ DPTSC       |
| 7. Explanation and agreement of ROW landowners about the land use restriction |          |           |                              |                       |       |                              |                       |                     | [Implement] DPTSC<br>[Responsible] DPTSC/ GAD/ TLMC       |
| Township 1:   |          | Household |                              |                       |       |                              |                       |                     |   |
| Township 2:   |          | Household |                              |                       |       |                              |                       |                     |   |
| 8. Payment of compensation and moving/ livelihood assistances                 |          |           |                              |                       |       |                              |                       |                     | [Implement] DPTSC<br>[Responsible] DPTSC/ GAD             |
| Township 1:   |          | Household |                              |                       |       |                              |                       |                     |   |
| Township 2:   |          | Household |                              |                       |       |                              |                       |                     |   |
| 9. Implementation of livelihood rehabilitation program, if necessary          |          |           |                              |                       |       |                              |                       |                     | [Implement] DPTSC<br>[Responsible] DPTSC/ GAD/ Contractor |
| Township 1:   |          | Household |                              |                       |       |                              |                       |                     |   |
| Township 2:   |          | Household |                              |                       |       |                              |                       |                     |   |
| 10. Negotiation and agreement of resettlement options                         |          |           |                              |                       |       |                              |                       |                     | [Implement] DPTSC<br>[Responsible] DPTSC/ GAD             |
| 11. Preparation of relocation houses  |          |           |                              |                       |       |                              |                       |                     | [Implement] DPTSC<br>[Responsible] DPTSC                  |
| 12. Physical relocation of residents/ occupants                               |          |           |                              |                       |       |                              |                       |                     | [Implement] DPTSC<br>[Responsible] DPTSC/ GAD/ Contractor |
| Township 1:   |          | Household |                              |                       |       |                              |                       |                     |   |
| Township 2:   |          | Household |                              |                       |       |                              |                       |                     |   |
| 13. Land registration under MOEE  |          |           |                              |                       |       |                              |                       |                     | [Implement] DPTSC<br>[Responsible] DPTSC/ GAD             |
| Township 1:   |          | ha        |                              |                       |       |                              |                       |                     |   |
| Township 2:   |          | ha        |                              |                       |       |                              |                       |                     |   |

NOTE: GAD = General Administration Department



TEPCO

NIPPON KOEI  
Challenging mind, Changing dynamics



TLMC = Township Land Management Committee  
ECD = Environmental Conservation Department



### 3. Record of Grievances [Grievance received by: DPTSC, Monitored by: DPTSC]

| Issues                                  | Number received in the reporting period | Number not resolved |
|---|---|---------------------|
| 1. Refusal for survey                   |   |                     |
| 2. Refusal to sell                      |   |                     |
| 3. Refusal of offered price/ assistance |   |                     |
| 4. Refusal to relocate                  |   |                     |
| 5. Other (specify)                      |   |                     |

### 4. Other progress and concerns

### 5. End of Monitoring Activities:

- Either one of the following timings that takes the longest period:
  - 1) Until the end of the Land registration under MOEE;
  - 2) Until all the grievances are resolved;
  - 3) Until 2 years after the end of the Construction Phase of the Project;
  - 4) If livelihood rehabilitation program is implemented, till submission of the monitoring report after the end of the program.
- After the above, all the grievances will have been received and resolved by the Regional Project Management Offices, DPTSC.

End.

Source: JICA Study Team

## 10.2. External Monitoring

External monitoring should be carried out by an independent monitoring agency to provide an independent view on the achievement of the RAP. The external monitoring will focus on the outcomes and results of compensation and livelihood support such as the changes in living standards and livelihoods of the PAPs, the effectiveness, impact and sustainability of entitlements, the need for further mitigation measures if any, and to learn strategic lessons for future policy formulation and planning.

The external monitoring can adopt some of the following indicators:

1. Full payment to be made to all affected persons sufficiently before land acquisition.
2. Completion of land acquisition before the construction starts.
3. Public consultation and awareness of compensation policy.
4. The operation of the mechanisms for grievance redress, and the speed of grievance redress will be monitored.
5. The level of satisfaction of PAPs with various aspects of the livelihood support program will be monitored and recorded.
6. Throughout the implementation process, the trends of living standards will be observed and surveyed. Any potential problems in the restoration of living standards will be reported, and recommendation for further adjustment of the plan.

The following activities are the standard functions of the external monitors:

1. Verification of internal monitoring reports, by field check of the following:
  - a. payment of compensation including its levels and timing
  - b. livelihood restoration
  - c. satisfaction of PAPs towards the RAP implementation

2. Interview random samples of PAPs to assess their knowledge and concerns regarding the compensation process, their entitlements and rehabilitation measures.
3. Check the type of grievance issues and the functioning of grievance redress mechanisms by reviewing processing of appeals at all levels and interviewing aggrieved PAPs.
4. Survey the standards of living of PAPs to assess whether they have been improved or maintained.
5. Advise Project management regarding possible improvements in the implementation of the RAP.

Following table is the suggested monitoring framework for the land acquisition, compensation and resettlement.

**Table 10.2-1 Outline of External Monitoring of ARAP Implementation**

| Stage             | Major Objectives  | Monitoring Item  | Frequency      | Implementation Organization                                | Budget (USD) |
|-------------------|---|--|----------------|--|--------------|
| During relocation | Examination of procedure and effectiveness of resettlement work plan  | <ul style="list-style-type: none"> <li>● Contents and process of preparing resettlement work plan</li> <li>● Effectiveness of relocation</li> <li>● Effectiveness of grievance redress mechanism</li> <li>● Necessity of further measures</li> </ul> | 4 times a year | External monitoring experts<br>Individual or firms or NGOs | 10,000       |
| After relocation  | <ul style="list-style-type: none"> <li>● Examination of procedure and effectiveness of resettlement work plan</li> <li>● Income and livelihood restoration and other assistance program (food security, vocational training)</li> </ul> | <ul style="list-style-type: none"> <li>● Contents and process of preparing resettlement work plan</li> <li>● Effectiveness of relocation</li> <li>● Effectiveness of grievance redress mechanism</li> <li>● Necessity of further measures</li> </ul> | 4 times a year | External monitoring experts<br>Individual or firms or NGOs | 10,000       |

Source: JICA Study Team

## 11. Draft TOR for ARAP Study

Updated 2021.1.6

### SCOPE OF WORK AND TECHNICAL SPECIFICATION FOR LAND ACQUISITION AND RESETTLEMENT ACTION PLAN STUDY FOR THE PLANNED SUBSTATION IN MYANMARNATIONAL POWER TRANSMISSION NETWORK DEVELOPMENT PROJECT (PHASE III) PRELIMINARY SURVEY

#### 1. GENERAL DESCRIPTION OF THE PROJECT

(Most updated information must be referred)

##### 1.1 Location

##### 1.2 Scope of the engineering work

##### 1.3 Typical permanent and temporal impacts related to land acquisition and resettlement

**Table**            **Project Components and Typically Expected Impacts Related to Land Acquisition and Resettlement**

**Figure**    **Location Map as of MM DD YYYY**

#### 2. GUIDELINES, LAWS AND REGULATIONS TO BE FOLLOWED

The Survey and reporting shall be undertaken in accordance with the following guidelines, laws and regulations.

- 1) Guidelines for Environmental and Social Considerations, Japan International Cooperation Agency (JICA), April 2010
- 2) World Bank Operational Policies, OP 4.01 (January 1999) and Involuntary Resettlement Policy, OP 4.12 (December 2001)
- 3) Relevant Laws, Guidelines, Regulations, etc. of the Government of Republic of the Union of Myanmar

#### 3. NUMERICAL UNITS

Metric System will be used in the Study. When necessary, numbers in Yard and Pound system may be added after the number in Metric System.

#### 4. SCOPE OF THE STUDY

Scope of work shall cover all the following necessary works and other required by the JICA Study Team.

## (1) Preparation

| Phase       | Work Target  | Method   |
|-------------|--|--|
| Preparation | 1. Types of land and land ownership, leasehold, land price, etc. in Myanmar  | Review the collected data and conduct additional survey when there are better, more up-to-date information |
|             | 2. Types of jobs, occupations listed in the workforce statistics in the Project Area   |  |
|             | 3. Types of farmers: landholder, lease holder, no official lease contract, etc.  |  |
|             | 4. Poverty line and household size of the Project Area: daily income (per person, per household), minimum wage per day per person depending on industry (Agriculture, non-agriculture), skill (skilled, unskilled), and area (Region, urban, rural), inflation rate since the determination of the poverty line and minimum wage |  |
|             | 5. Definition of Vulnerable Group in the Project Area: Religion, gender of household head, disability, elderly household, immigrant, etc.  |  |
|             | 6. Urban plan, land use plan: Regional Office, etc.  |  |

## (2) Literature and Field Survey

### 1) Land Survey

- DPTSC letter be issued for requesting land and ownership information to local Land Registration Offices
- Visit respective office(s) to collect Blueprint Map and Land Owner Information.
- Overlay the Blueprint Map with the site boundary to calculate the size of the area to be affected per land parcel
- Produce summary table of the land survey in the format as follows

| a          | b        | c          | d         | e                                  | f                               | g = e - f                        | h = f / e x 100 |
|------------|----------|------------|-----------|------------------------------------|---------------------------------|----------------------------------|-----------------|
| Serial No. | Plot No. | Owner Name | Land type | Area of the plot (m <sup>2</sup> ) | Affected area (m <sup>2</sup> ) | Remaining area (m <sup>2</sup> ) | Affected %      |
| 1          |          |            |           |                                    |                                 |                                  |                 |
| 2          |          |            |           |                                    |                                 |                                  |                 |
| 3          |          |            |           |                                    |                                 |                                  |                 |
| 4          |          |            |           |                                    |                                 |                                  |                 |

## (3) Abbreviated Resettlement Action Plan

- (1) The necessity of land acquisition, resettlement including economic relocation, and cut of tree and crops
- (2) Survey results of population census for all project affected persons and inventory of loss survey for all assets physically displaced
- (3) Survey results of livelihood and income survey for more than 20 percent of all project affected persons
  - ※ Population and Asset Census Survey is implemented using the attached questionnaire
- (4) Eligibility for compensation and income restoration program
- (5) Compensation procedures for lost assets at replacement costs, based on the replacement cost study
- (6) Income restoration Program, based on the survey results of income restoration needs, to improve their livelihoods or restore them, in real terms, to pre-displacement levels
- (7) Formulation of Entitlement matrix

- (8) Public consultation
- (9) Institutional responsibility for implementation and procedures for grievance redress
- (10) The identification of agencies responsible for implementing land acquisition and resettlement (implementation agency, local governments, consultants, NGOs, etc.) and their responsibilities
- (11) Implementation schedule, in which displacement will start after compensation.
- (12) Cost and Budget
- (13) Monitoring system of Implementation agency and Monitoring form
- (14) The way to assist vulnerable groups

※Crafting the strategy to secure the participation of project affected persons during the design and implementation of resettlement activities, with due consideration given to vulnerable groups and host community. It is desirable that this strategy includes stakeholder analysis, public consultation on initial design alternatives, project explanations to individual households through socio-economic surveys, interviews with key individuals, focus group discussions with vulnerable groups, public consultation on the draft of resettlement action plan including compensation policies, distribution of resettlement information booklet, and implementation/monitoring system that ensures the participation of displaced persons. In addition, when stakeholder meeting is held, the minutes will be prepared, and It should be described that how the opinions obtained will be reflected in the resettlement action plan.

### (3) Post Survey, RAP preparation and Reporting

| Phase                                      | Work Target   | Method   |
|--|---|--|
| Post-Survey                                | 7. Market price survey: How much does it cost to replace the assets to be lost: Market survey and survey of Governmental unit price                                   | Survey at markets, interview with authorities  |
|  | 8. Survey of NGOs and institutions that provides livelihood rehabilitation training   | Study of sample projects, interviews   |
|  | 9. Comparison of Entitlement Matrixes in recent Energy projects   | Study of sample projects   |
|  | 10. Identification of necessity and number of residential relocation, necessity of provision of relocation housing sites  | Discussion with DPTSC  |
| Resettlement Action Plan (RAP) preparation | 11. Formation of Entitlement Policy   | Discussion with DPTSC  |
|  | 12. Calculation of budget   | Discussion with DPTSC  |
|  | 13. Implementation plan: Schedule, institutional arrangement and responsibilities, grievance redress mechanism (how to receive and solve complaints), monitoring plan | Discussion with DPTSC  |
|  | 14. Second public consultation: at le1 time 1 location per Township to be affected  | Design of meetings, advertisement, preparation of materials, preparation of venue, preparation for the record, implementation, reporting |
| Final reporting                            | 15. Report preparation  | Discussion with JICA Study Team  |

## 6. DESIGN OF PUBLIC CONSULTATION

## 6.1 Location

The public consultation shall be conducted at least in every Township to be affected by the Projects. The Townships expected to be affected in the Feasibility Study Phase are listed below. Most updated information must be referred for actual design of public consultation.

| District        | Township              | Transmission Line |        |                       |                            | Substation |
|-----------------|-----------------------|-------------------|--------|-----------------------|----------------------------|------------|
|                 |                       | 500kV             | Sar-ED | Sar-Hlawga (overhead) | Hlawga-Thake (east of NH3) |            |
| Bago            | Bago                  | X                 |        |                       |                            |            |
|                 | Thanatpin             | X                 |        |                       |                            |            |
|                 | Kawa                  | X                 |        |                       |                            |            |
| Northern Yangon | Hlegu                 | X                 | X      | X                     |                            | X          |
|                 | Mingalardon           |                   |        | X                     | (X)                        |            |
| Eastern Yangon  | Dagon Myothit (East)  |                   | X      |                       |                            |            |
|                 | North Okkalapa        |                   |        |                       | (X)                        |            |
|                 | Dagon Myothit (North) |                   |        |                       | (X)                        |            |
|                 | Dagon Myothit (South) |                   |        |                       | (X)                        |            |
|                 | Thaketa               |                   |        |                       | (X)                        |            |

(X): Planned on existing ROW

## 6.2 Timing and objectives

The public consultation will be held twice in the Study. The timing and objectives are described in Table 4.

**Table 4 Timing and Objectives of Public Consultation**

|                     | Timing                       | Objectives  |
|---------------------|------------------------------|---|
| First Consultation  | Before start of field survey | <ul style="list-style-type: none"> <li>* Disseminate information on the Project(including result of alternatives assessment) and survey</li> <li>* Obtain opinions, comments and suggestions on the Project and the Survey</li> <li>* Obtain local, updated information on land and settlement issues that may affect the Project and the RAP</li> </ul>  |
| Second Consultation | After drafting the RAP       | <ul style="list-style-type: none"> <li>* Disseminate updated information on the Project</li> <li>* Disseminate the survey result</li> <li>* Disseminate the draft RAP including,                             <ul style="list-style-type: none"> <li>-Result of socio-economic study</li> <li>-Compensation policy for loss</li> <li>-Income restoration program</li> <li>-Entitlement matrix</li> <li>-Relocation site and basic infrastructure</li> </ul> </li> <li>* Obtain opinions and comments on the Project, survey results and the draft RAP</li> </ul> |

## 6.3 Measures to prevent the spread of novel coronavirus (COVID-19)

Summarize any orders or guidelines, national, regional, and local levels, implemented in the target area during the design and implementation of the stakeholder meetings.

Based on above restrictions, plan the meetings in the manner to prevent the spread of COVID-19. Prevention measures may include, but not limited to, limiting the number of attendants in small group, distancing the chairs, and securing good ventilation or holding the meeting outdoor under shade.

Record all the permissions to hold the meetings obtained from the local authorities.

#### 6.4 Attendants to be invited

For the RAP preparation, the project affected persons in every township to be affected by the project, both for the substation and the transmission lines, who are identified through social economic survey at least following parties must be invited to the consultation meetings.

1. Residents, businesses, and shops
2. Land owners of the SS site, including absentee land owners
3. Owners of other structure, crop, trees
4. Lease holders, either legal or customary, and seasonable or temporal workers of the farming land, including aquaculture land
5. Utility and infrastructure owners and/or managers to be affected by the Project
6. Village chiefs and other important persons in the local community

In addition, it is recommended to invite representatives from NGOs and other social groups active in the Project area.

#### 6.5 Method of invitation

Stakeholder meetings should be notified in a way that all the affected people could reach the information. Following measures, for example, are recommended and are desirable to be taken as feasible and appropriate: publication in newspaper; announcement in other media such as radio, TV, website, SNS; posting at village office, bus stops, schools, temples; handing out invitation at each building to be affected.

When the Project affects land owned by absentee land owners (land owners living outside of the affected townships), measures must be taken to invite them to the meetings.

#### 6.6 Selection and preparation of venue

The venue for the public consultation must be close to the location of the majority of the local population. Also, the location must be selected so that the general public can easily recognize and access to the location by foot, by public transportation, and by other means.

The venue and staff must be prepared so that the attendants with movement difficulties can be comfortably accommodated during the meeting.

#### 6.7 Record of basic information of the meeting

Basic information of the meeting, including, but not limited to, the items listed below will be recorded for each meeting.

1. Date of the announcement to public
2. Method of announcement (notice board posting, oral dissemination by village head, announcement using a speaker car, notice on newspaper or other mass media, etc.)
3. Date of the meeting
4. Meeting venue
5. Method of meeting (public gathering, individual interview, focus group meeting, etc.)
6. Language of meeting
7. Method taken for information access of the PAPs and general public who belong to socially vulnerable groups (assistance for access to the meeting venue, securing seats, additional information dissemination for people with moving difficulty, etc.)

#### 6.8 Record of attendants

Attendants will be counted by their gender and attribution, and summarized in the table form as shown in **Table 5**.

If possible and suitable, names, affiliations (position and/or belonging organizations), and location of residence of the attendants will be recorded at the reception of the Consultation.

**Table 5 Summary Table of Attendants**

|                                   | Male | Female | Total |
|-----------------------------------|------|--------|-------|
| General public (Total)            |      |        |       |
| (Breakdown) PAPs                  |      |        |       |
| Other                             |      |        |       |
| Media                             |      |        |       |
| Government (Total)                |      |        |       |
| (Breakdown by the level) National |      |        |       |
| Regional                          |      |        |       |
| Township                          |      |        |       |
| Village/Ward                      |      |        |       |
| Academic                          |      |        |       |
| NGO and Intl. Agencies            |      |        |       |
| Project Owner (DPTSC)             |      |        |       |
| JICA Team                         |      |        |       |
| Other (specify)                   |      |        |       |
| Total                             |      |        |       |

## 6.9 Record of Discussion

Record the outline of the information dissemination of the Project together with all the meeting materials such as slides and handouts.

The comments, opinions, suggestions raised from the attendants and answers given will be recorded in the format shown in **Table 6**.

Every person who raised their voice must be recorded.

After the meetings, the opinions and suggestions obtained in the Public Consultations will be taken into the project design or construction plan. The changes will be noted in the RAP report.

**Table 6 Format for Record of Discussion**

| No | Mr./Ms./Name (village, organization, etc.) | Question/ Comment | Answer (Name and position) |
|----|--|-------------------|----------------------------|
| 1  |  |                   |                            |
| 2  |  |                   |                            |
| 3  |  |                   |                            |

## 7. SCHEDULE OF WORK

(Suitable schedule must be proposed and agreed between the related parties.)

## 8. TABLE OF CONTENTS OF RAP REPORT

Final reporting must at least contain the information described in **Table 8**.

JICA Study Team may request partial submission of information during the Study period.

**Table 8 Table of Contents of RAP Report**

| Table of Contents           | Descriptions           |
|-----------------------------|------------------------|
| <b>0. Executive Summary</b> | - Project introduction |



| Table of Contents  | Descriptions  |
|--|---|
|  | - Summary of each following chapter   |
| <b>1. Project Introduction</b>   | Briefly describe the project including; <ul style="list-style-type: none"> <li>- Project background</li> <li>- Aim of the Resettlement Action Plan (RAP)</li> <li>- Policy, Principles of Resettlement Action Plan (RAP)</li> <li>- Scope of RAP</li> </ul>   |
| <b>2. Methodology of RAP Preparation</b>   | Describe the following items: <ul style="list-style-type: none"> <li>- Definitions of the term</li> <li>- Methodology (Land Survey, Population Census, Asset Census, Socio-economic Survey to identify impacts)</li> </ul>  |
| <b>3. Project Impacts and Assessment</b>   | Describe quantitatively in categories as below; <ul style="list-style-type: none"> <li>-Population census survey</li> <li>-Inventory of Loss Survey</li> <li>- Loss of Private Assets (Land, Trees, Structures)</li> <li>- Loss of Public Assets (Public land, Public and community trees)</li> <li>- Temporary Use of Land</li> <li>- Impact Assessment (Affected population/private land/private trees/private structure, Vulnerable household)</li> </ul> Describe qualitatively in categories as below; <ul style="list-style-type: none"> <li>- Associated Social Issues and Action during Construction (Campsite management, health and safety measures, wage rate, temporary acquisition of assets, child labor use, public health)</li> </ul>     |
| <b>4. Livelihood and income survey</b>   | Describe the <u>quantitative results</u> of Socio-economic Survey in categories as below <ul style="list-style-type: none"> <li>- Demography of the Study Area (Household/Population Distribution of the Study Area)</li> <li>- Age Category of Project Affected Population</li> <li>- Ethnic Compositions of Affected Household</li> <li>- Educational Status of Affected Population</li> <li>- Occupational Status of Affected Population</li> <li>- Distribution of Households by Land Holding Size</li> <li>- Annual Household Income, Income Range of Affected Household</li> <li>- Income by Different Sources</li> </ul>   |
| <b>5. Public Consultation</b>  | Describe in categories as below; <ul style="list-style-type: none"> <li>-The day, the place, and the participants of Public Consultation</li> <li>- Types of Consulted Persons (Stakeholders Consulted)</li> <li>- Methods of Public Consultation</li> <li>- Meeting materials (slides, handouts, etc.)</li> <li>- Scope of Consultations</li> <li>- Issues Raised in Public Consultation and Feedback from the Consultations (Measures to Resolve the Issues)</li> <li>- The result of reflecting the opinions in Public Consultation on ARAP</li> <li>- Minutes of Public Consultation(attachment of ARAP)</li> <li>- Project design or construction plan changed based on the opinions and suggestions obtained in the Public Consultations</li> </ul> |
| <b>6. Legal Framework</b>  | Describe the main contents of applicable following items; <ul style="list-style-type: none"> <li>- Legal Acts, Applicable Policies, Legislations and Guidelines in Myanmar and JICA GL</li> <li>-The Gap analysis between Law in Myanmar and JICA GL</li> <li>-The land acquisition and resettlement policy of the project</li> </ul>   |
| <b>7. Description of compensation and other resettlement assistance to be provided</b> | Describe applicable policy/measure for the following each item; <ul style="list-style-type: none"> <li>- Compensation for loss</li> <li>- Relocation Needs and Approach</li> <li>- Support Allowance</li> <li>- Income Restoration Program</li> </ul>   |

| Table of Contents                    | Descriptions   |
|--------------------------------------|--|
|                                      | <ul style="list-style-type: none"> <li>- Other Available Assistancess</li> <li>- Policy on Temporary Use of Land</li> </ul> Tabulate the following items as Entitlement Matrix (Framework) in each type of loss; <ul style="list-style-type: none"> <li>-Type of loss, Entitled Persons (Entitlement Unit), Description of each Entitlement (Compensation and Assistance), Implementation Measures/Issues/Guidelines, Responsible Organization</li> </ul>                        |
| <b>8. Implementation Arrangement</b> | Describe the following items; <ul style="list-style-type: none"> <li>- Organization Framework (Central level and Project Level as Organization Chart) for RAP Implementation</li> <li>- Grievance Redress Mechanism (Describe the step by step process for registering and addressing grievances</li> <li>- Implementation Schedule for each task of RAP</li> </ul>  |
| <b>9. Cost and Budget</b>            | Describe quantitatively in categories as below; <ul style="list-style-type: none"> <li>- Cost Estimation of Compensation including land, structure, crops, and trees, and so on.</li> <li>- Cost Estimation for Relocation</li> <li>- Cost for Income Restoration program</li> <li>- Cost for management including Monitoring RAP Implementation</li> <li>- Total Cost Estimate</li> <li>- Financial resource of the cost</li> <li>- Result of replacement cost study</li> </ul> |
| <b>10. Monitoring and Evaluation</b> | Describe the following items for “Framework for Internal Monitoring” and “External Monitoring” <ul style="list-style-type: none"> <li>-Type of Monitoring, Indicators, Issue, Procedure, Timing, Responsibility,</li> <li>-Monitoring form</li> </ul>  |

## 12. Preliminary Draft of Questionnaire for Population and Asset Census

### INVENTORY OF LOSSES AND SOCIOECONOMIC SURVEY OF AHs

**INSTRUCTION:** *To be accomplished for all persons/households and organizations/institution with affected assets (e.g., land, houses, shops, waiting sheds, and trees) located within the construction area.*

Survey Code of AP/AH:           

#### I. Location of the affected asset of the affected person (AP), affected household (AH), or organization

##### A. Location of affected asset(s):

|                      |  |
|----------------------|--|
| <b>Township:</b>     |  |
| <b>Ward:</b>         |  |
| <b>Tower number:</b> |  |
| <b>GPS ID:</b>       |  |

##### B. Name\* of Occupant/Owner of the Affected Asset(s):

**\*NOTE:**

If a single-person household, write the name of the AP;  
 if an AH, write the name of the head of the AH;  
 if an institution or organization, write the name of the institution or organization. A person who lives alone by himself/herself is considered a single-person household.

## II. Affected Asset Census

### A.1 Land:

| Classification* of affected land | Total area (m <sup>2</sup> ) of Land | Area (m <sup>2</sup> ) of the land to be acquired permanently | Area (m <sup>2</sup> ) of the land to be affected temporarily** | Type of Land Certificate with the Land Owner*** |
|----------------------------------|--------------------------------------|---|---|---|
|                                  |                                      |   |   |   |

\***Classification:** According to what is written in the land certificate, it could be agricultural, residential, commercial, etc.<sup>1</sup>

\*\***Affected temporarily:** After construction, the land will be returned to its owner.

\*\*\***Type of land certificate:** Could be Freehold, Gay-an, La Na 39, etc.

#### A.1.1 Land Tenure

i. The occupant is land owner

i.-2 Type of proof: a. None b. Form-7, c. Form-105, d. Tax receipt, e. Contract,

f. La Na 39, g. Land grant, h. Land permit, i. Land license\_\_

ii. The occupant is land renter      Monthly rent \_\_\_\_\_

ii.-2 Owner information      Name \_\_\_\_\_

Location of residence \_\_\_\_\_

### B.1 Main structures\*

| Type or use of the affected main structure** | Structure Classification<br><br>Describe materials and floors if no classification | Total area (m <sup>2</sup> ) of the Structure | Area (m <sup>2</sup> ) of the affected portion of the structure<br><br>If the structure is affected entirely, then the total area is indicated here | State whether the structure will have to be acquired/affected PARTIALLY or TOTALLY |
|--|--|---|---|--|
|  |  |   |   |  |

\***Main structures:** Regardless of structural condition and construction materials used, these are buildings that are fixed on the ground with at least four posts, with roof, and used as residence, shop or place of commerce, residence and shop at the same time, etc.

\*\* **Use of main structure:** Examples are "house", "shop", "house-shop".

<sup>1</sup> Vacant land/Fallow land, Virgin land, Freehold land, Grant land, Agricultural land, Garden land, Grazing land, Culturable land/Fallow land/Waste land, Forest land, Town land, Village land, Cantonments, Monastery.

**B.2 Tenure status over the affected main structures:**

- a. Owner
- b. Tenant/ Renter
- c. Occupying WITH permission of owner
- d. Occupying WITHOUT permission of owner
- e. Caretaker hired by the owner (not paying rent)

**B.3 If the affected house/store/building does not belong to the AP/AH:**

|  |                                       |
|--|---------------------------------------|
| <b>1. Name of owner of affected main structure</b>           |                                       |
| <b>2. Address of owner of affected main structure</b>        | U/Daw _____                           |
| <b>3. Monthly Rent</b>                                       | a. Not paying    b. Paying Kyat _____ |
| <b>4. Does the tenant AH own a house/building elsewhere?</b> | a. No<br>b. Yes, location: _____      |

**C. Secondary structures\*:**

|          | <b>Type or use of the affected main structure**</b> | <b>Structure Classification</b><br><br>Describe materials and floors if no classification | <b>Total area (m<sup>2</sup>) of the Structure</b> | <b>Area (m<sup>2</sup>) of the affected portion of the structure</b><br><br>If the structure is affected entirely, then the total area is indicated here |
|----------|---|---|--|--|
| <b>1</b> |   |   |  |  |
| <b>2</b> |   |   |  |  |
| <b>3</b> |   |   |  |  |

*\*Secondary structures: Structures that are not moveable and not part of the main structures, such as fence, driveway, waiting sheds, farm sheds, irrigation canal, etc.*

**D.1 Type and area/number of rice paddies and vegetables, crops:**

|              | Type | Area<br>(ha or<br>m2) | Number | Month<br>of harvest | For<br>own<br>use | For<br>market | For<br>both<br>use |
|--------------|------|-----------------------|--------|---------------------|-------------------|---------------|--------------------|
| 1            |      |                       |        |                     |                   |               |                    |
| 2            |      |                       |        |                     |                   |               |                    |
| 3            |      |                       |        |                     |                   |               |                    |
| 4            |      |                       |        |                     |                   |               |                    |
| 5            |      |                       |        |                     |                   |               |                    |
| <b>Total</b> |      |                       |        |                     |                   |               |                    |

**D.2 Ownership of the affected rice, vegetables, crops:**

- a. Interviewee is the Owner
- b. Interviewee is the worker (landless farmer)

**E.1 Type and number (count) of animals:**

|              | Type of<br>animal | Young | Peak<br>production | Old | Total |
|--------------|-------------------|-------|--------------------|-----|-------|
| 1            |                   |       |                    |     |       |
| 2            |                   |       |                    |     |       |
| 3            |                   |       |                    |     |       |
| 4            |                   |       |                    |     |       |
| 5            |                   |       |                    |     |       |
| <b>Total</b> |                   |       |                    |     |       |

**E.2 Ownership of the affected animals:**

- a. Interviewee is the Owner
- b. Interviewee is the caretaker/worker

**F.1 Type and number (count) of perennials:**

|              | Type of<br>perennial | Young and<br>not yet<br>bearing fruit | Bearing fruit<br>(within age of<br>peak<br>production) | Bearing<br>fruit (old) | Total |
|--------------|----------------------|---------------------------------------|--|------------------------|-------|
| 1            |                      |                                       |  |                        |       |
| 2            |                      |                                       |  |                        |       |
| 3            |                      |                                       |  |                        |       |
| 4            |                      |                                       |  |                        |       |
| 5            |                      |                                       |  |                        |       |
| <b>Total</b> |                      |                                       |  |                        |       |

**F.2 Ownership of the affected perennials:**

- a. Interviewee is the Owner
- b. Interviewee is the caretaker/worker

**G.1 Count of timber trees of commercial value:**

|              | Type of tree | Young | Mature | Total |
|--------------|--------------|-------|--------|-------|
| 1            |              |       |        |       |
| 2            |              |       |        |       |
| 3            |              |       |        |       |
| 4            |              |       |        |       |
| 5            |              |       |        |       |
| <b>Total</b> |              |       |        |       |

**G.2 Ownership of the affected timber trees:**

- a. Interviewee is the Owner
- b. Interviewee is the caretaker/worker

**H. Loss of business and income:**

|   |   |              |              |  |
|---|---|--------------|--------------|--|
| 1 | <b>Nature of Business*</b>  |              |              |  |
| 2 | <b>Number of years operating at the location</b>                            |              |              |  |
| 3 | <b>Number of workers/employees</b>  |              |              |  |
| 4 | <b>Occupant is the business owner</b>                                       | a. Yes       | b. No        |  |
| 5 | <b>Net Monthly Business Income</b>  | (Kyat)       |              |  |
| 6 | <b>Official proof of income</b>   | a. None      | b. Yes Type: |  |
| 7 | <b>Duration of Disruption in Business Operation (Check appropriate box)</b> | a. Permanent | b. Temporary |  |

\***Examples of business:** motor vehicle repair shop, grocery store, eatery, etc.

\*\***Permanent:** No more space to re-organize the business. Therefore, it will stop operation permanently even after construction.

### III. Population Census and Socioeconomic Survey for Resident and Tenant HH

#### A. Basic information about the head of the AH

|  |                    |             |                             |                                 |            |
|--|--------------------|-------------|-----------------------------|---------------------------------|------------|
| <b>1. Name:</b>  |                    |             |                             |                                 |            |
| <b>2. Home address:</b>                                  | Ward:              |             | Township:                   |                                 |            |
| <b>3. Gender:</b>  | a. Male            | b. Female   |                             |                                 |            |
| <b>4. Age:</b>   |                    |             |                             |                                 |            |
| <b>5. Physical condition:</b>                            | a. Normal          | b. Disabled |                             |                                 |            |
| <b>6. Civil status:</b>                                  | a. Single          | b. Married  |                             |                                 |            |
| <b>7. Religion:</b>                                      |                    |             |                             |                                 |            |
| <b>8. Ethnic affiliation:</b>                            | a. Bamar/Burman    | b. Shan     | c. Rakhine                  | d. Karen                        | e. Chinese |
|  | f. Mon             | g. Indian   | h. Other (specify)          |                                 |            |
| <b>9. Educational attainment:</b>                        |                    |             |                             |                                 |            |
| <b>10. Main livelihood activity of the head of AH:</b>   | a. _____ (specify) |             | b. No work/looking for work | c. Retired/not looking for work |            |
| <b>11. Number of years residing in the same location</b> |                    |             |                             |                                 |            |

#### B. Socioeconomic information on the AH

##### 1. Number of persons presently living with the household:

|   |   |   |   |   |   |   |   |   |    |                 |
|---|---|---|---|---|---|---|---|---|----|-----------------|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | Other (specify) |
|---|---|---|---|---|---|---|---|---|----|-----------------|



**2. Basic information on persons *presently and actually* living with the AH:**

| Household member | Relationship with head of AH | Age | Gender | Educational attainment | Livelihood activity* |
|------------------|------------------------------|-----|--------|------------------------|----------------------|
| 1                | Head of AH                   |     |        |                        |                      |
| 2                |                              |     |        |                        |                      |
| 3                |                              |     |        |                        |                      |
| 4                |                              |     |        |                        |                      |
| 5                |                              |     |        |                        |                      |
| 6                |                              |     |        |                        |                      |
| 7                |                              |     |        |                        |                      |
| 8                |                              |     |        |                        |                      |
| 9                |                              |     |        |                        |                      |
| 10               |                              |     |        |                        |                      |

\*: Circle the main source of income

|  |                               |
|--|-------------------------------|
| <b>3. Average monthly income of the AH</b><br>(combined from all members): | <b>Kyat</b> _____             |
| <b>4. Average monthly savings:</b>   | a. <b>Kyat</b> _      b. None |

**5. Please estimate how much of the average monthly income of the AH goes to the following expense items (in Kyats):**

|                                |                   |                                |
|--------------------------------|-------------------|--------------------------------|
| a. Food: _                     | b. Clothing: _    | c. Health: _                   |
| d. House maintenance: _        | e. Education: _   | f. Savings/investment: _       |
| g. House rent                  | h. Transportation | i. Electricity (incl. battery) |
| j. Fuel (wood, charcoal, etc.) | k. Water          | l. Communication               |

**6. Health concerns:**

**a. Most common ailments (not-serious) that afflicted members of the AH the past one year:**

|      |       |        |
|------|-------|--------|
| i. _ | ii. _ | iii. _ |
|------|-------|--------|

**b. Serious (acute) and chronic ailments of members of the AH the past year:**

|      |       |        |
|------|-------|--------|
| i. _ | ii. _ | iii. _ |
|------|-------|--------|

**c. For serious and chronic ailments that afflicted members of the AH the past year, did you go to a doctor, medical clinic, or hospital?**

i. Yes

ii. No      Why not? \_\_\_\_\_

**d. Where is the nearest medical clinic or hospital located from where you live?**

- i. Same village/ward of the AH
- ii. In another village/ward in the same township
- iii. In the district/town center

**7. Sanitation concerns:****a. Source(s) of water for drinking:**

- i. Ground well belonging to the AH
- ii. Pump well belonging to the AH
- iii. Piped water from public provider
- iv. Public/neighbor's open well
- v. Public/neighbor's pump
- vi. River/canal
- vii. Buy from retailers
- viii. Other (specify) \_\_\_\_\_

**b. Source(s) of water for washing:**

- i. Ground well belonging to the AH
- ii. Pump well belonging to the AH
- iii. Piped water from public provider
- iv. Public/neighbor's open well
- v. Public/neighbor's pump
- vi. River/canal
- vii. Buy from retailers
- viii. Other (specify)

**c. Toilet facility used by the AH:**

- i. Simple water sealed (use pail for flushing)
- ii. Water sealed with flushing mechanism
- iii. Open pit
- iv. Closed pit
- v. None

**d. Bathing facility used by the AH:**

- i. Enclosed bathroom in the house
- ii. Open bathing area beside the house
- iii. River/canal

**e. Garbage disposal practice:**

- i. Burry by the AH
- ii. Collected by local government
- iii. Burn by the AH
- iv. Throw indiscriminately anywhere

**8. Main fuel/power used for lighting:**

- i. Electricity from public provider
- ii. Kerosene
- iii. Rechargeable battery
- iv. Own generator
- v. Own solar panel
- vii. Neighbor's generator or solar panel
- viii. Other \_\_\_\_\_

**9. Main fuel/power used for cooking:**

- i. Electricity
- ii. Charcoal
- iii. LPG
- iv. Wood
- v. Other \_\_\_\_\_

**10. Ownership of home appliances:**

- i. Television
- ii. Refrigerator
- iii. Radio/cassette recorder
- iv. Telephone/cellphone
- v. DVD/CD player
- vi. Oven/stove
- vii. Electric fan
- viii. Computer
- ix. Air conditioner
- v. Others (specify) \_\_\_\_\_

**11. Ownership of transportation**

- i. Car
  - ii. Pick-up
  - iii. Truck
  - iv. Motorcycle
-

v. Bicycle

vi. Tricycle

vii. Other (specify) \_\_\_\_\_

viii. None

**Go to V.**

#### **IV. Question for Business/Commerce**

##### **1. Type of Business**

##### **2. Number of Years Operating on site**

##### **3. Strength of this location for your business**

##### **4. Land/Structure Ownership**

##### **5. Number of Employees**

##### **6. Average amount of income (per month, per year)**

##### **6-2. Type of proof of income**

##### **7. Total investment on site**

**Go to V.**

#### **V. Reconstruction option of AH losing entire house and/or store (This section **WILL NOT** be filled-up if the affected asset belongs to an organization or institution):**

1. Build on the remaining area of land outside of the COI
2. Build on land of another person outside of the COI
3. Relocate on another land owned by the AH unaffected by the project
4. Nowhere to go (landless informal setter)

#### **VI. Public Participation and perception about the Project (This section **WILL NOT** be filled-up if the affected asset belongs to an organization or institution):**

1. Are you aware of the proposed construction of the power transmission line that is partly located in your village/ward?
  - a. Yes

Where or how did you learn about the proposed construction of the power transmission line? \_

b. No

2. What are your positive and/or negative views, if any, about the proposed power transmission line that is partly located in your village/ward?

a. Positive: \_

b. Negative: \_

**VI. Grievance redress** (This section **WILL NOT** be filled-up if the affected asset belongs to an organization or institution):

1. If you have any complaint or concern regarding any aspect related to the proposed construction of the power transmission line that is partly located in your village/ward, such as accuracy of the inventory of your affected assets; amount or level of compensation for your affected assets; construction activities of the civil works contractor; etc.

a. To whom do you think your complaint or concern should be brought to?

—

b. In what way should you bring forward your complaint or concern?

b.1 Verbal    b.2 Written

2. In the event that you are not satisfied with the action taken by the person or office where you first brought your complaint or concern, to whom do you want to bring your complaint or concern next for appropriate action?

—

\_\_\_\_\_  
Name and Signature of head of AH or a representative  
AH

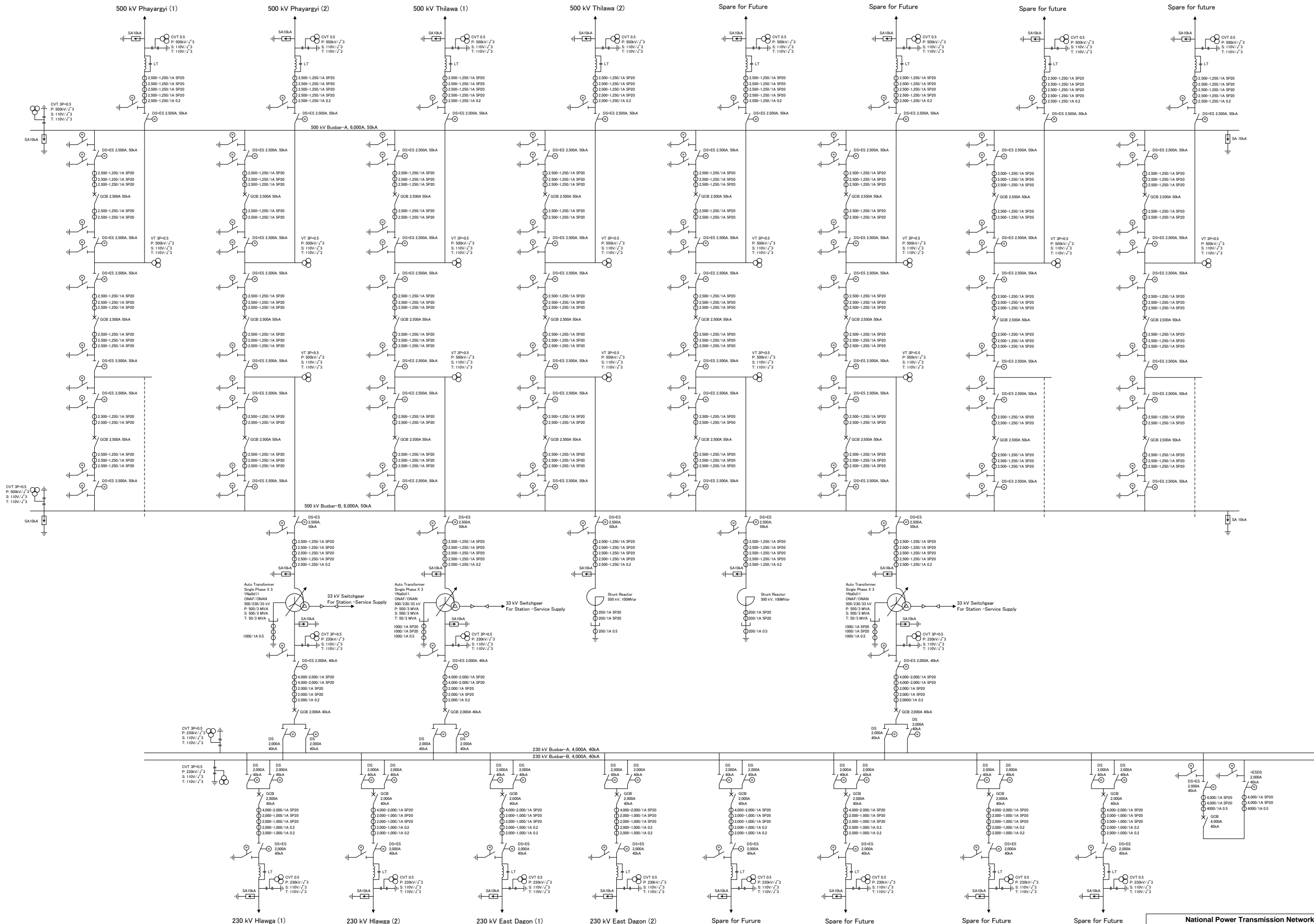
\_\_\_\_\_  
Relationship of representative with the

\_\_\_\_\_  
Name and Signature of Enumerator

\_\_\_\_\_  
Date accomplished: \_\_\_\_\_


**Appendix 6-4-1**

**Single Line Diagram of New 500 kV Substation**



For Reference Only

**National Power Transmission Network Development Project (Phase III)**  
**Preliminary Survey in The Republic of Myanmar**



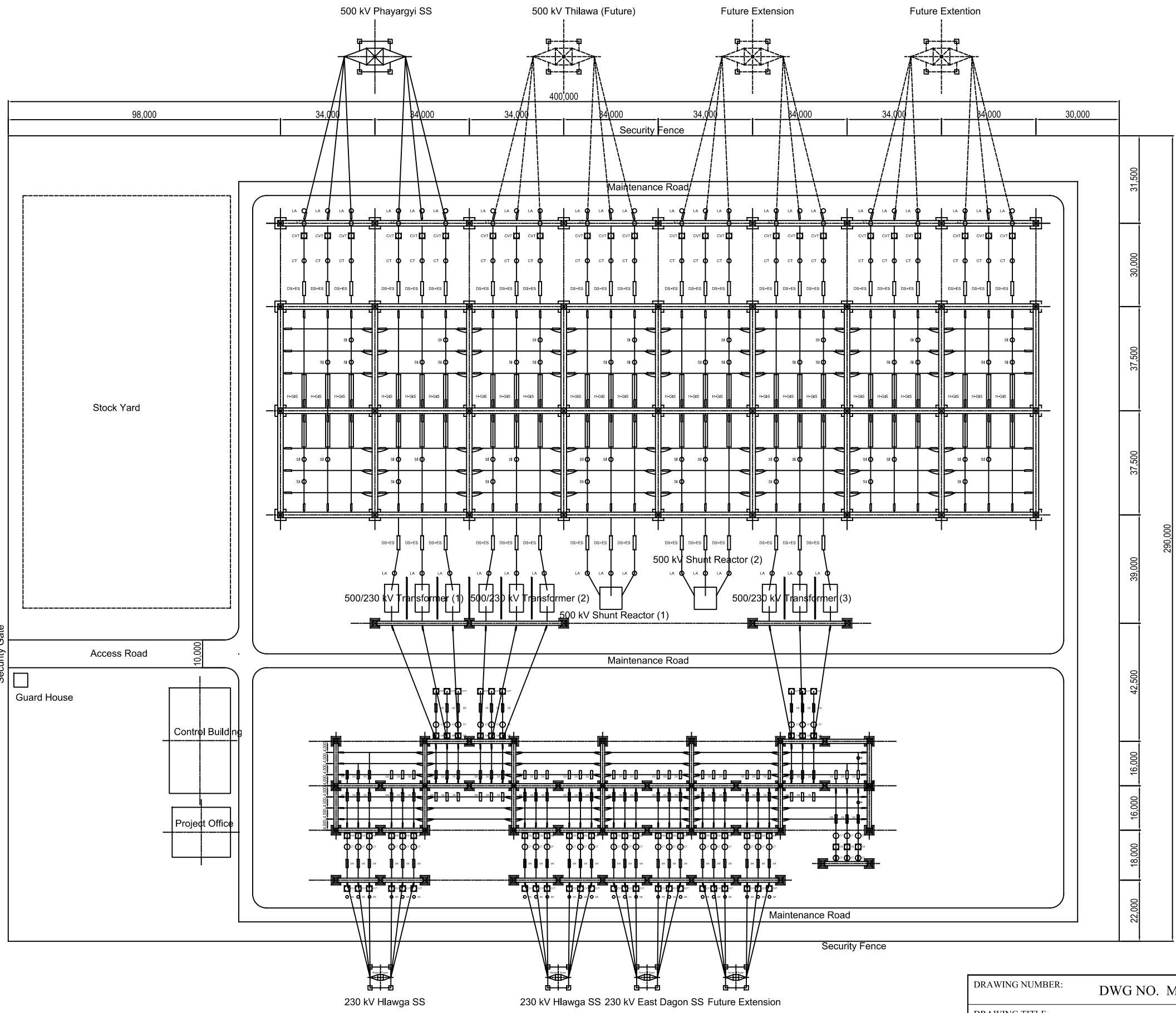
**New 500 kV Substation  
Single Line Diagram**

|             |                   |             |
|-------------|-------------------|-------------|
| Drawing No. | MY-TLP3-NS-SLD-01 | Page 1 of 1 |
|-------------|-------------------|-------------|

**Appendix 6-4-2**

**Layout of New 500 kV Substation**

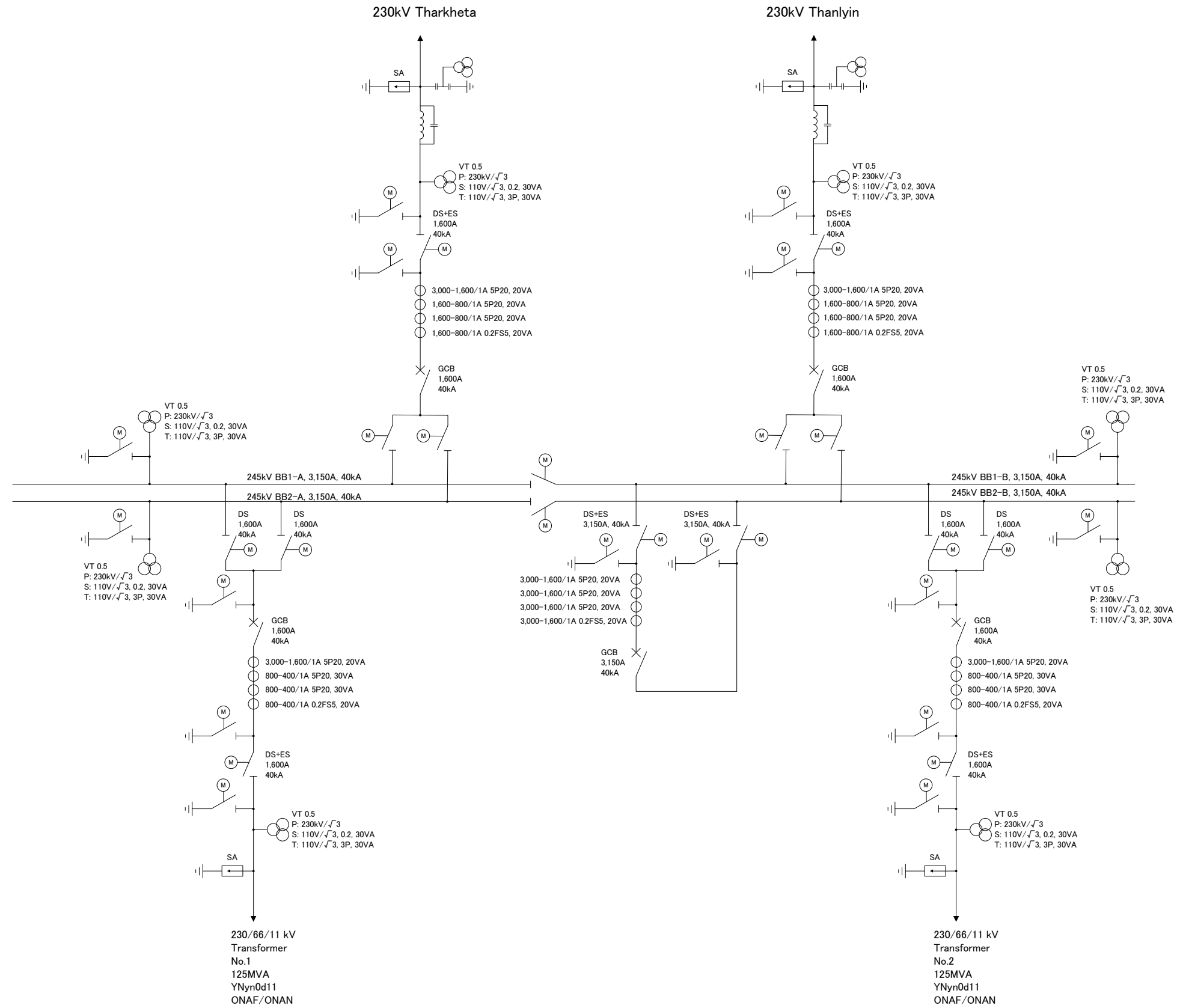




|  |  |  |
|--|--|--|
| DRAWING NUMBER:  |  | DWG NO. MY-TLP3-ST-LYT_01                    |
| DRAWING TITLE:   |  | Layout Drawing: Sar Ta Lin 500 kV Substation |
| National Power Transmission Network Development Project (Phase III) Preliminary Survey in The Republic of the Union of Myanmar |  | PREPARED BY:                                 |
|  |  | MR. TOKUNAGA                                 |
|  |  | SHEET NO:                                    |
|  |  | DATE: APRIL, 2020                            |

**Appendix 6-4-3**

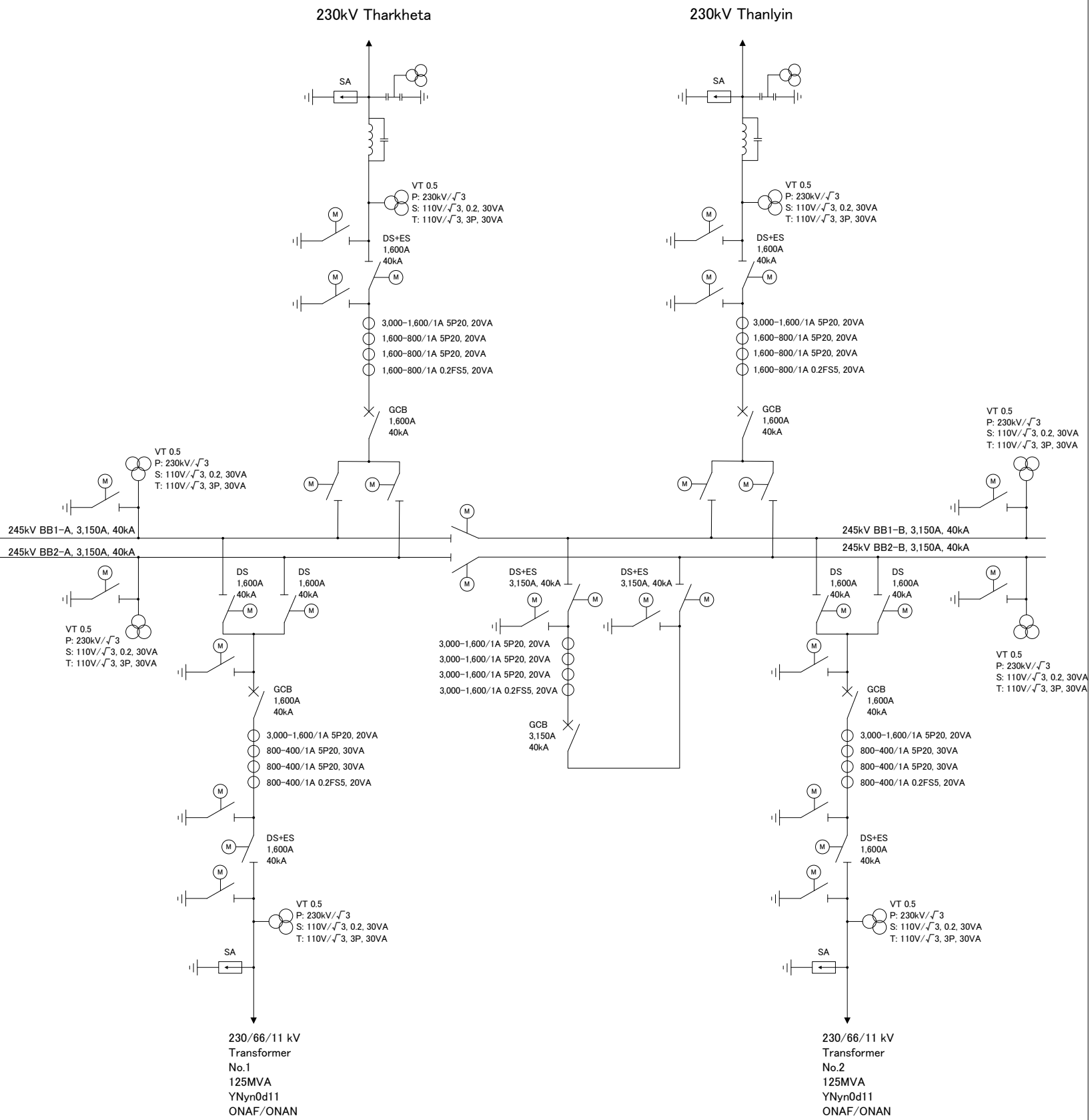
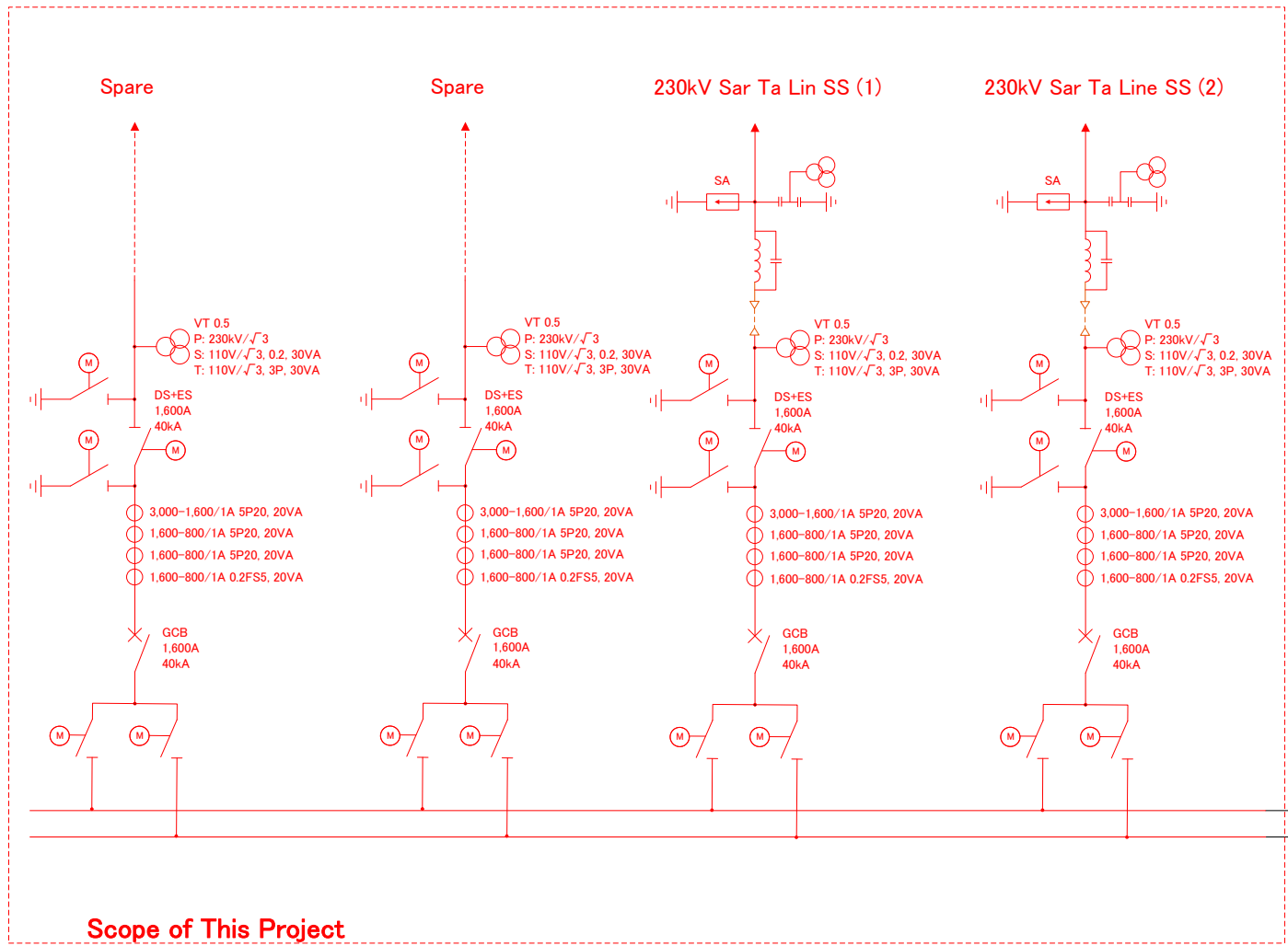
**Single Line Diagram of East Dagon Substation (Existing)**



For Reference Only

**Appendix 6-4-4**

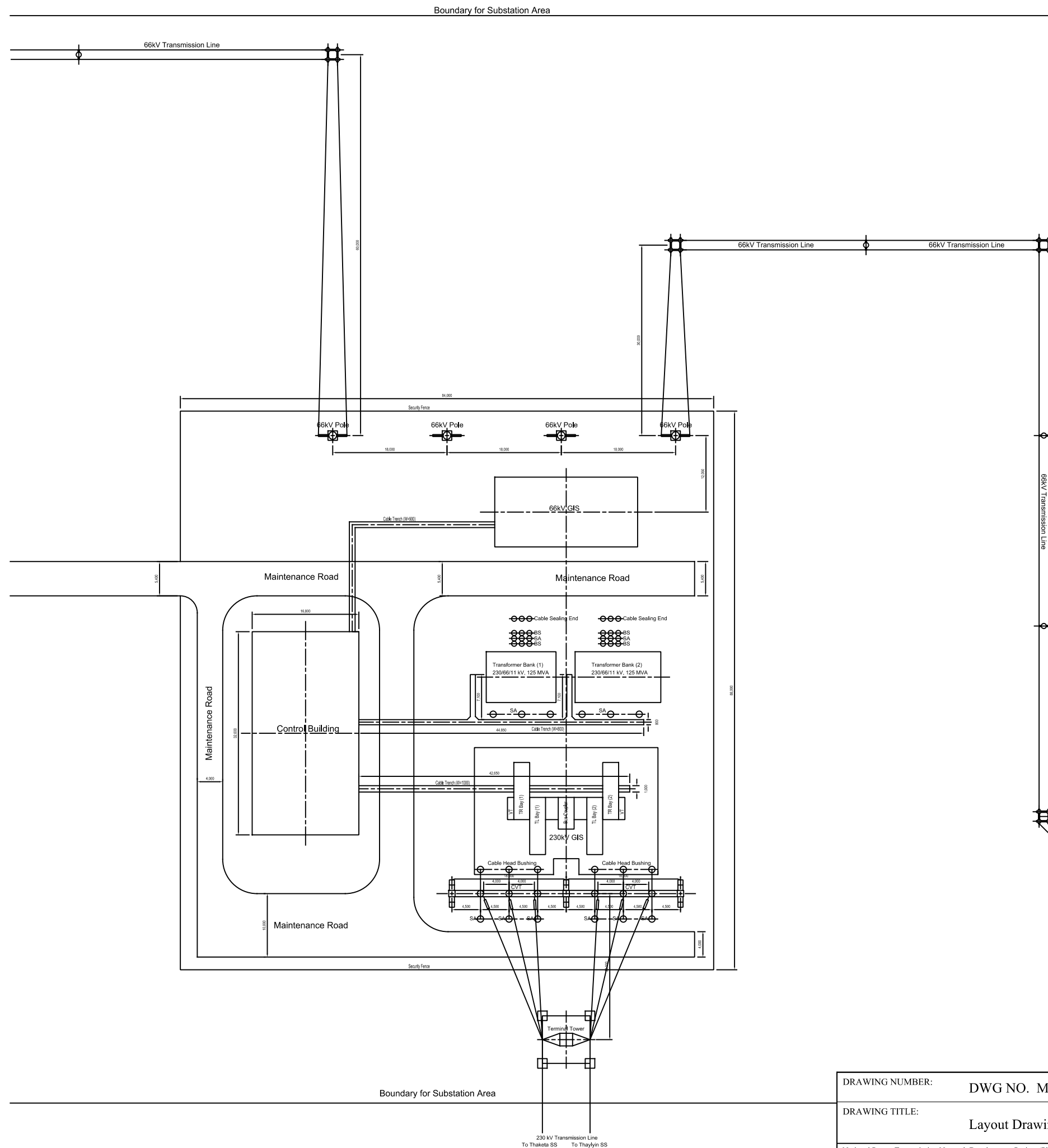
**Single Line Diagram of East Dagon Substation (After Project)**



For Reference Only

**Appendix 6-4-5**

**Layout of East Dagon Substation (Existing)**

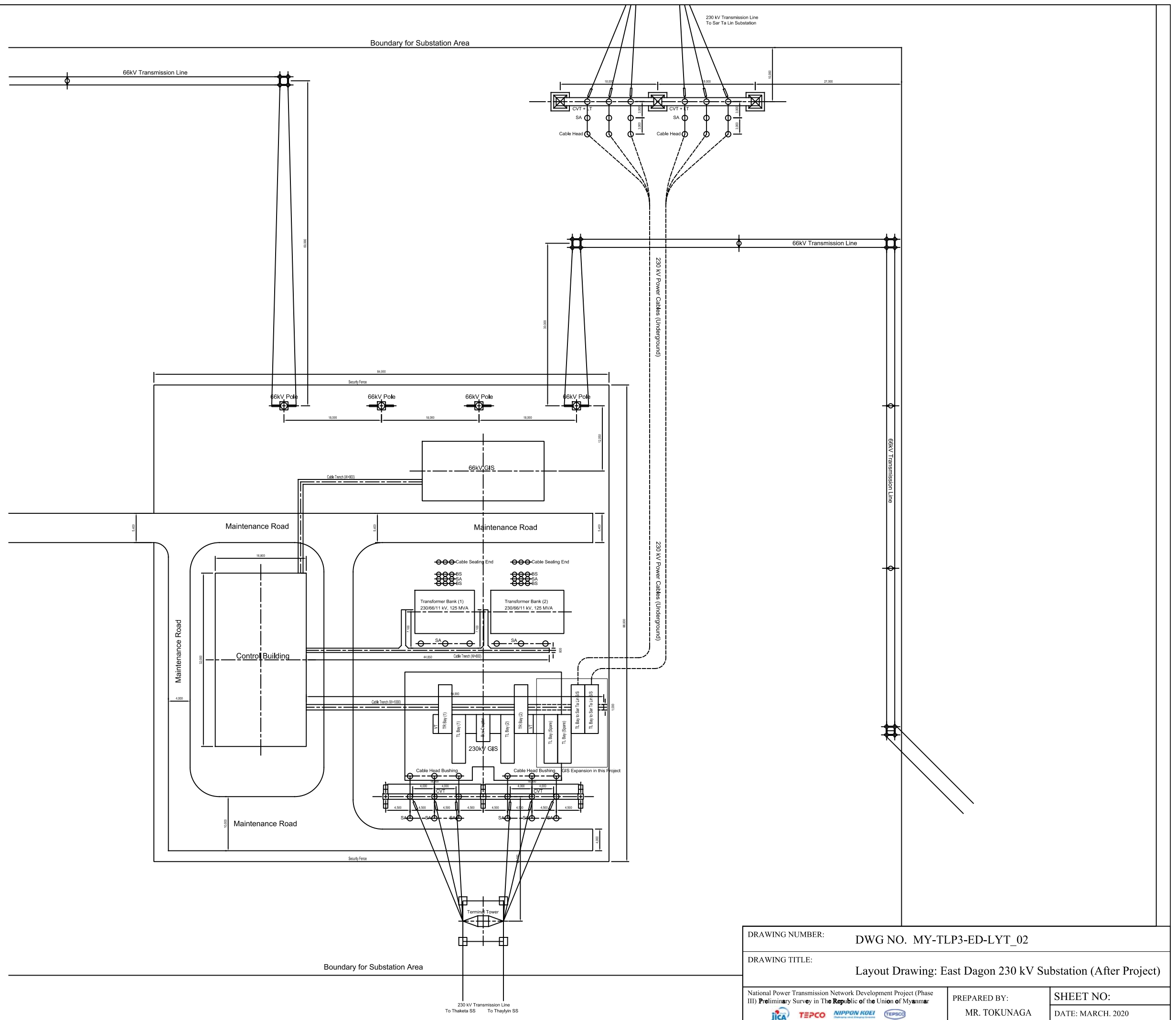


|  |   |                                |
|--|---|--------------------------------|
| DRAWING NUMBER:  | DWG NO. MY-TLP3-ED-LYT_01                                     |                                |
| DRAWING TITLE:   | Layout Drawing: East Dagon 230 kV Substation (Before Project) |                                |
| National Power Transmission Network Development Project (Phase III) Preliminary Survey in The Republic of the Union of Myanmar | PREPARED BY:<br>MR. TOKUNAGA                                  | SHEET NO:<br>DATE: MARCH, 2020 |
|  |   |                                |

**Appendix 6-4-6**

**Layout of East Dagon Substation (After Project)**

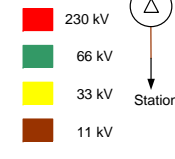
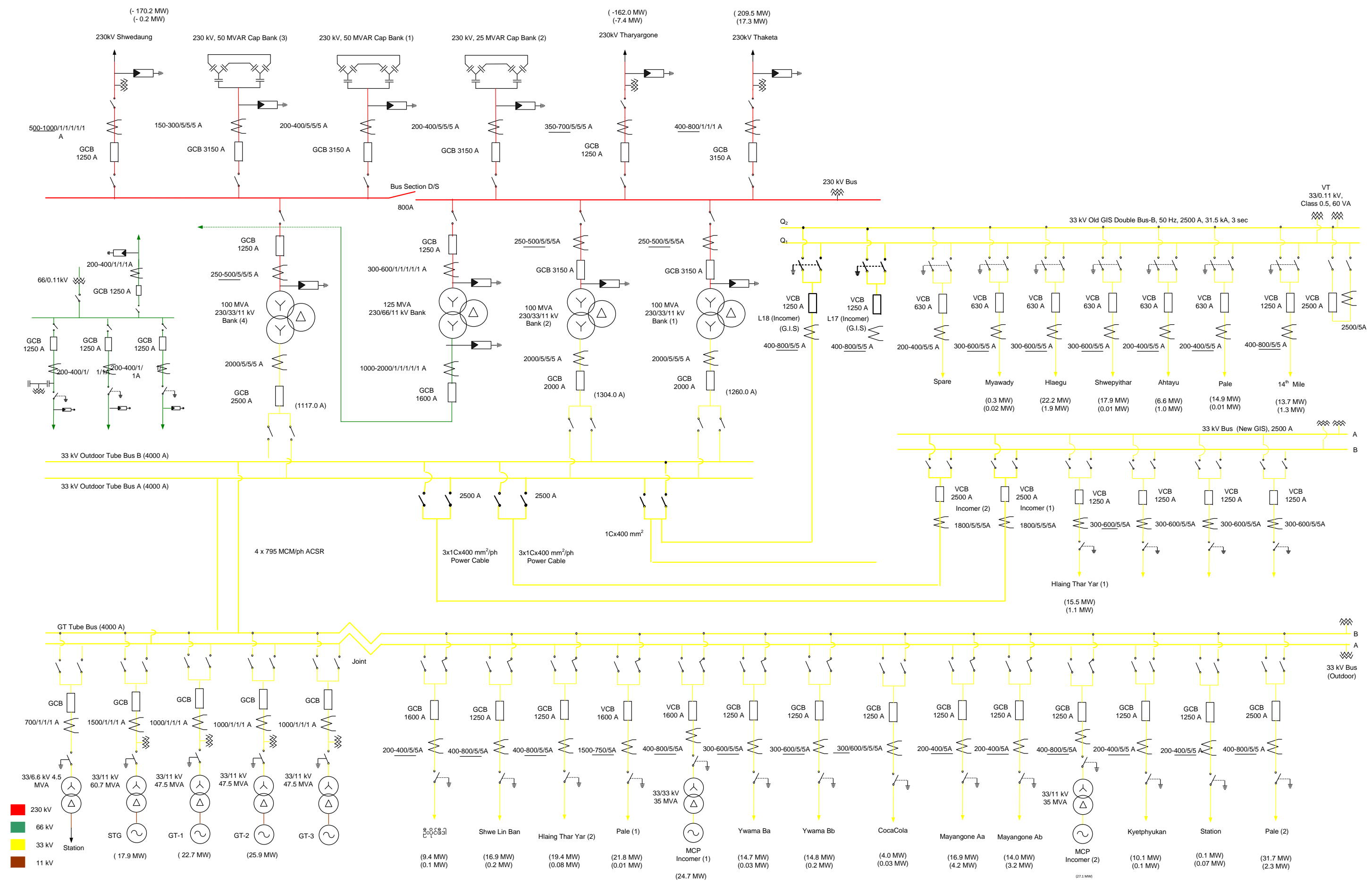




|  |  |
|--|--|
| DRAWING NUMBER:  | DWG NO. MY-TLP3-ED-LYT_02                                    |
| DRAWING TITLE:   | Layout Drawing: East Dagon 230 kV Substation (After Project) |
| National Power Transmission Network Development Project (Phase III) Preliminary Survey in The Republic of the Union of Myanmar | PREPARED BY:<br>MR. TOKUNAGA                                 |
|  | SHEET NO:<br>DATE: MARCH, 2020                               |

**Appendix 6-4-7**

**Single Line Diagram of Hlawga Substation (Existing)**



For Reference Only

National Power Transmission Network Development Project (Phase III)  
 Preliminary Survey in The Republic of the Union of Myanmar

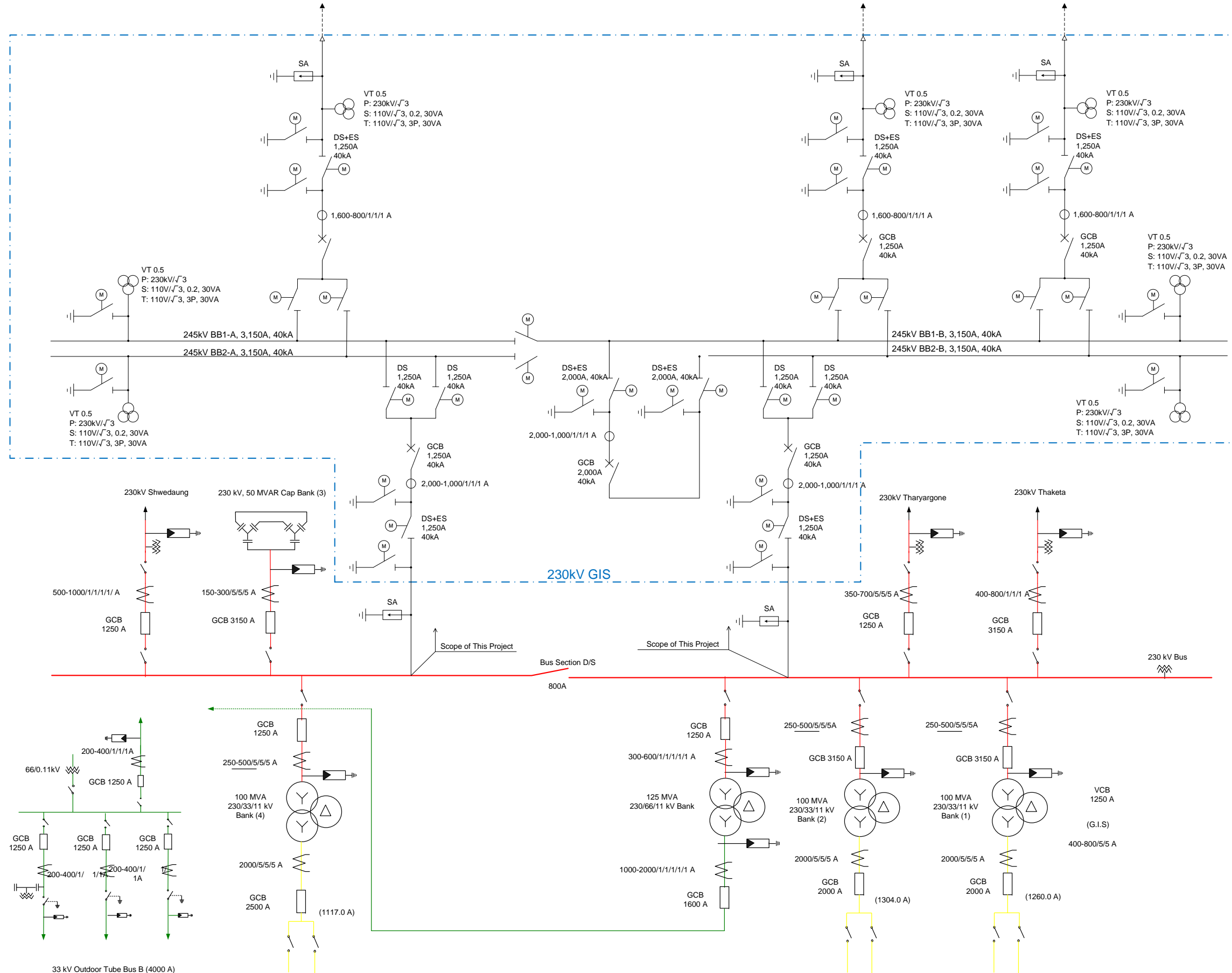
**Hlawga Substation**  
 Single Line Diagram (Existing as of Sep. 2019)

|             |                   |             |
|-------------|-------------------|-------------|
| Drawing No. | MY-TLP3-HG-SLD-01 | Page 1 of 1 |
|-------------|-------------------|-------------|

230kV New 500kV SS (1)

230kV New 500kV SS (1)

Spare for Future

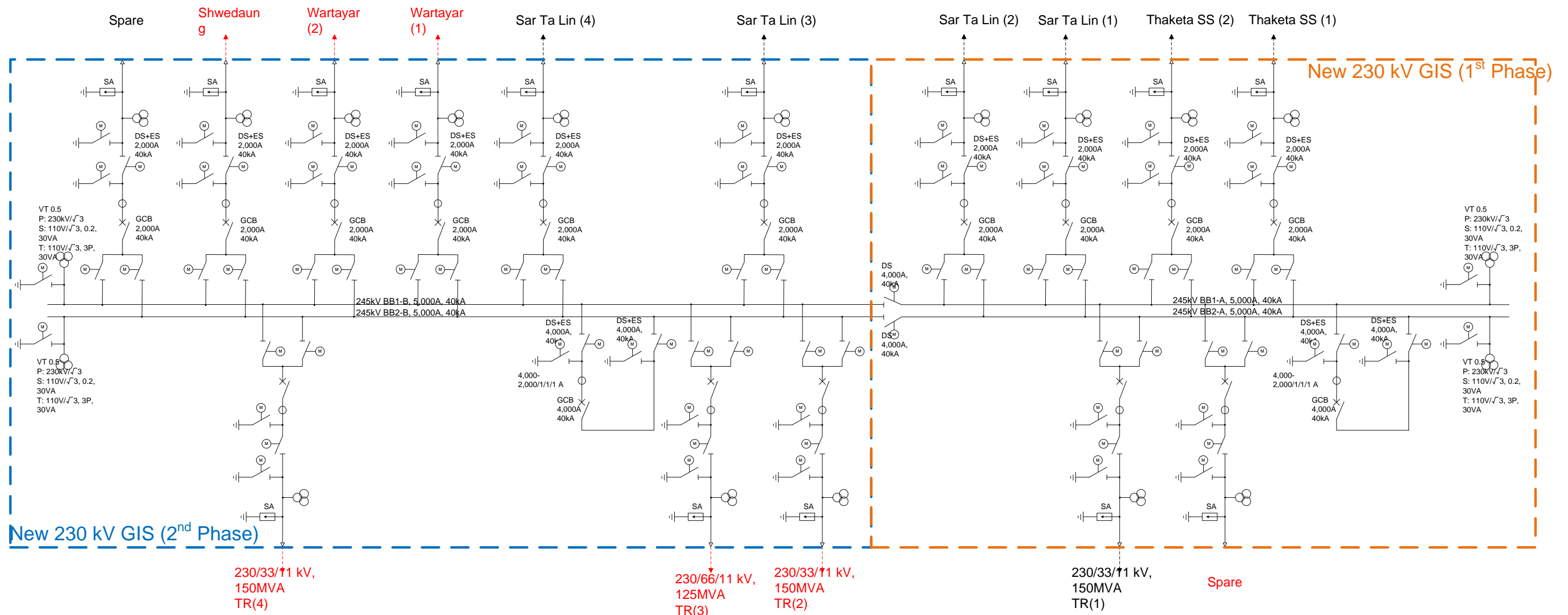


33 kV Switchgear (Same as Existing)

For Reference Only

**Appendix 6-4-8**

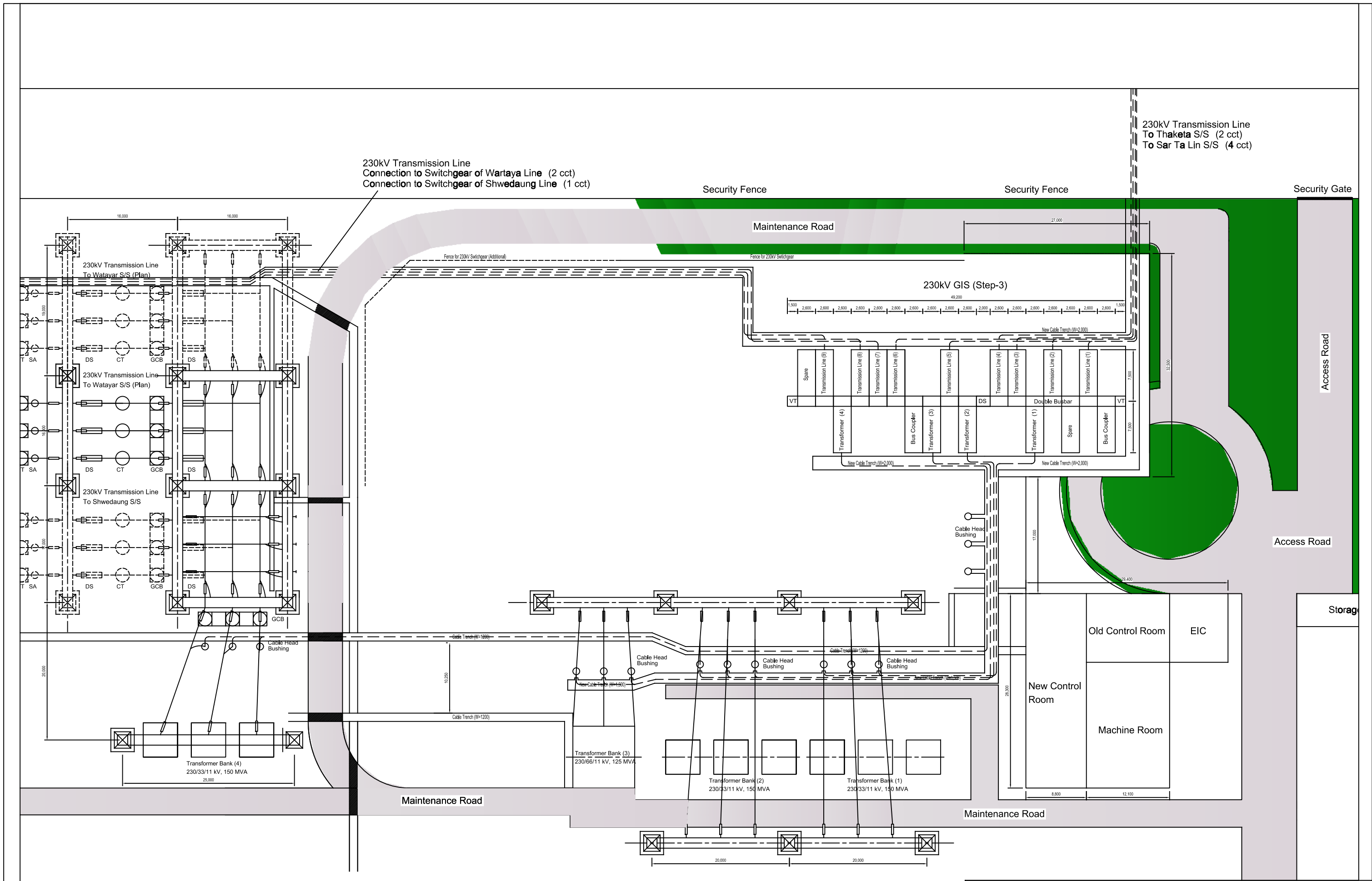
**Single Line Diagram of Hlawga Substation (After Project)**



For Reference Only

**Appendix 6-4-9**

**Layout of Hlawga Substation (After Project)**



230kV Transmission Line  
To Thaketa S/S (2 cct)  
To Sar Ta Lin S/S (4 cct)

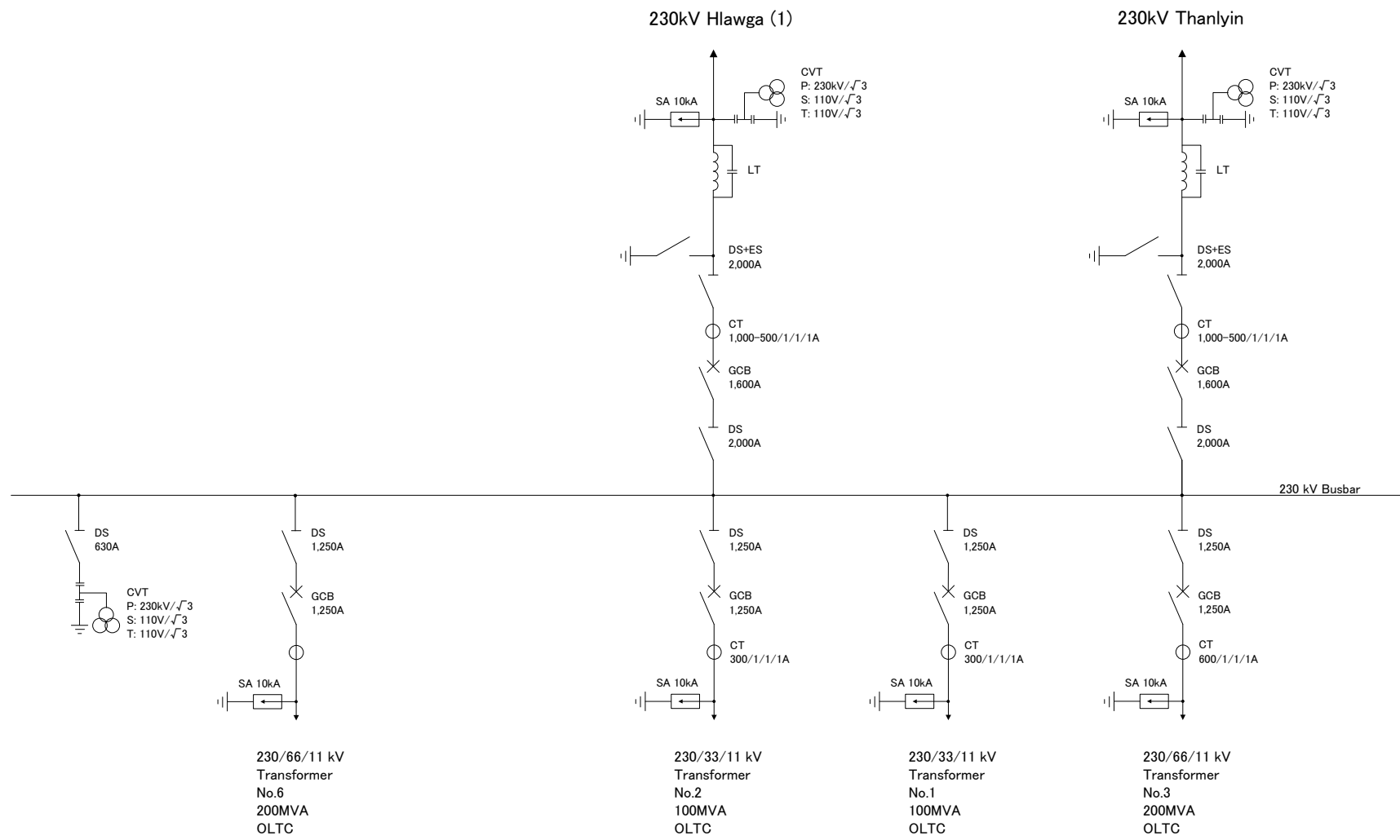
230kV Transmission Line  
Connection to Switchgear of Wartaya Line (2 cct)  
Connection to Switchgear of Shwedaung Line (1 cct)

|  |  |
|--|--|
| DRAWING NUMBER:  | DWG NO. MY-TLP3-HG-LYT_05                                    |
| DRAWING TITLE:   | Layout Drawing: Hlawga 230 kV Substation (Step-4 in Project) |
| National Power Transmission Network Development Project (Phase III) Preliminary Survey in The Republic of the Union of Myanmar | PREPARED BY:<br>MR. TOKUNAGA                                 |
|  | SHEET NO:<br>DATE: JANUARY, 2020                             |



**Appendix 6-4-10**

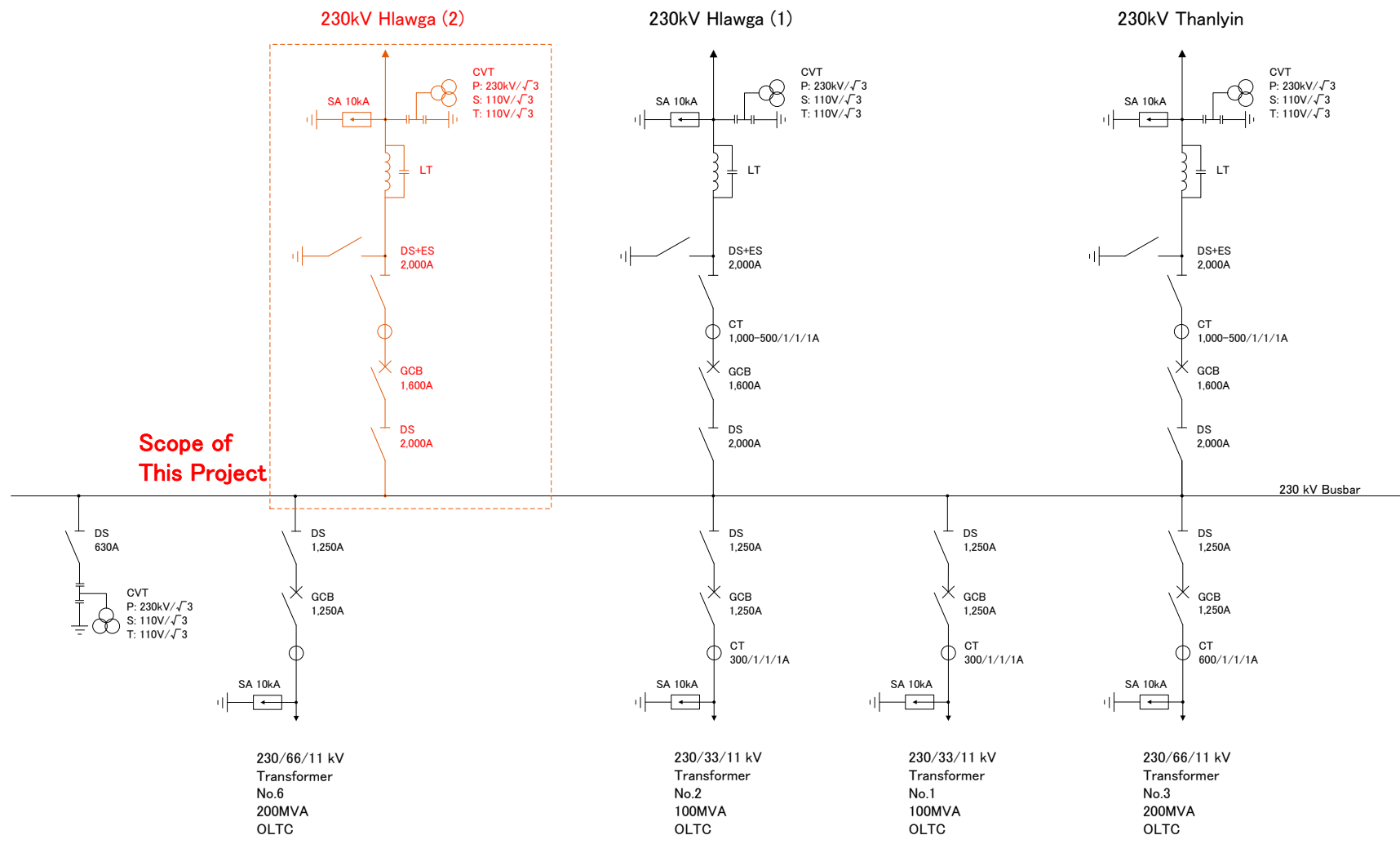
**Single Line Diagram of Thaketa Substation (Existing)**



For Reference Only

**Appendix 6-4-11**

**Single Line Diagram of Thaketa Substation (After Project)**



For Reference Only