

Environmental and Social Management for Thaton Combined Cycle Gas Turbine (CCGT) Power Plant

**Abbreviated Resettlement Action Plan (ARAP) and
Environmental Management Plan (EMP)
of the water pipelines and transmission line**



FICHTNER

FICHTNER

Sarweystrasse 3 • 70191 Stuttgart

P.O. 10 14 54 • 70013 Stuttgart

Germany

Phone: +49 711 8995-0

Fax: +49 711 8995-459

www.fichtner.de

Please contact: **Hans Back**
Phone number: **0049 6227 35856-10**
E-mail: **hans.back@fichtner.de**

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Abbreviations and Acronyms

CCGT	Combined Cycle Gas Turbine
CEEC	China Energy Engineering Company
DLMS	Department of Land Management and Statistics, Thaton Township
e.g.	exempli gratia / for example
EMP	Environmental Management Plan
EPGE	Electric Power Generation Enterprise
FMB	Farmland Management Body
H&S	Health and Safety
IFC	International Finance Corporation
LCCC	Land and Crop Compensation Committee
MEPP	Myanmar Electric Power Project
MMIC	Myanmar International Consultants Co. Ltd.
MOEE	Ministry of Electricity and Energy
PAPs	Project Affected Persons
PP	Power Plant
PPE	Personal Protective Equipment
PS	Performance Standards

1. Introduction

1.1 Authorization

Electric Power Generation Enterprise (EPGE), Myanmar

as *Client*

appointed the cooperation of

FICHTNER GmbH and Co KG, Germany

as *Consultant*, and which subcontracted

Myanmar International Consultants Co. Ltd. (MMIC)

to perform the consulting services for the Project

Environmental and Social Management for Thaton Combined Cycle Gas Turbine (CCGT) Power Plant

The Lump Sum Contract, funded by a credit from the International Development Association (IDA), entered into force on the 24th of June 2016 after signing by both parties.

1.2 Objective and Background of the Assignment

Myanmar is facing large electricity shortages and blackouts in the power system. The power system experienced more than 15 blackouts in 2012. Thus the Government of Myanmar through the Ministry of Electricity and Energy (MOEE) has requested the World Bank's support in scaling-up gas fired power generation in order to rapidly reduce and eventually eliminate electricity shortages and improve reliability and quality of power supply in the country. In this sense, the Myanmar Electric Power Project (MEPP) has been launched. The main Project comprises the new construction of a Combined Cycle Gas Turbine (CCGT) Power Plant within the fenced area of the old facility.

1.3 Scope of Work

Associated with the new construction of the power plant are two water pipelines, one to serve the power plant with process and cooling water, and a second one to supply the staff housing area with additional drinking water. These two water pipelines are subject of this assignment.

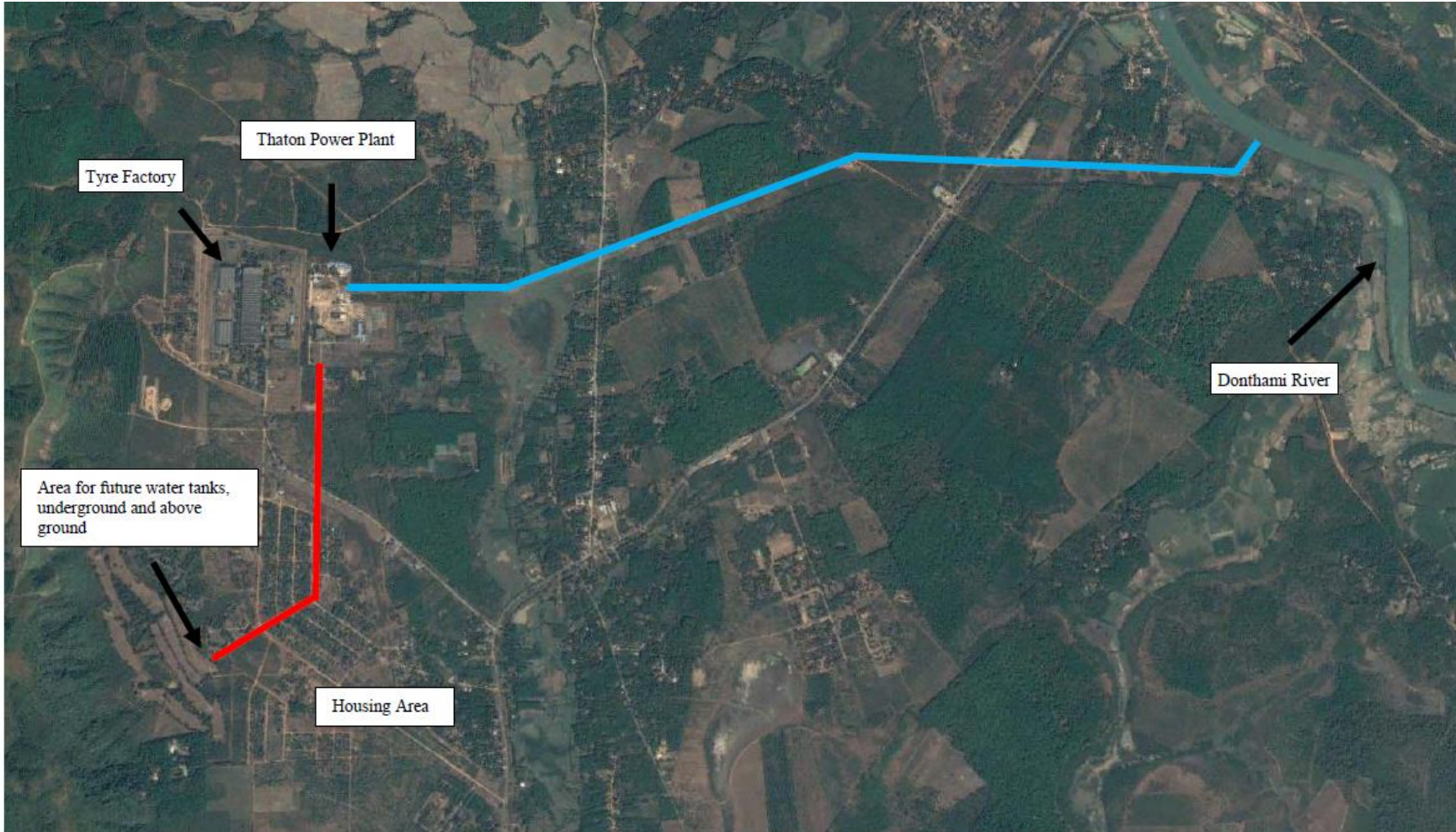
The old existing power plant gets its cooling and process water from the adjacent rubber plant which extracts the water from the Donthami River. In order to supply now the new power plant with water and in order to get more independent from the rubber plant factory a new water supply for Thaton Power Plant is under construction. This comprises an approx.

4.3 km long water pipeline, the installation of a floating pumping station on the Donthami river, a pump control station and a 6 kV transmission line running from the Power plant to the pumping station to serve the pumps with power.

In addition, it is planned to supply the existing housing area which is used by staff and employees of the Thaton Power Plant together with their families. This area suffers from a lack of potable water especially during the dry season, when water is only served twice a day for about 30 minutes.

Both water pipelines are shown in Figure 1-1 and Figure 1-2.

For both lines an **Abbreviated Resettlement Action Plan (ARAP)** and **Environmental Management Plan (EMP)** are presented in this report. The ARAP and EMP consider the respective national laws, standards and regulations, as well as the international standards (namely the World Bank O.P 4.12 and the IFC PS 5).



Blue line = water pipeline running from Donthami River to Thaton PP to supply power plant with process and cooling water
Red line = water pipeline to serve staff housing area with additional drinking water

Figure 1-1: Overview of both water pipelines

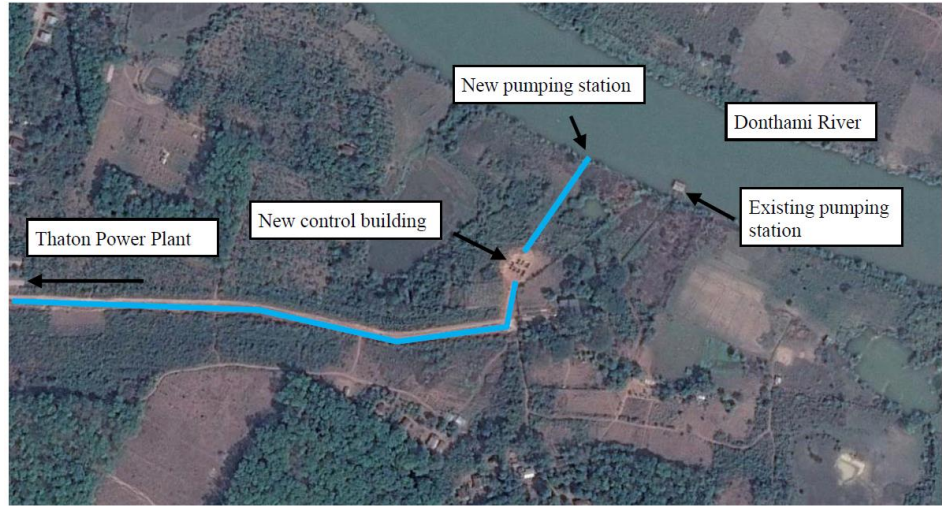


Figure 1-2: Detail of the water pipeline near the pumping station

2. Technical Description

This Section presents a brief description of the project components. For pictures of the site, please refer to Section 5 of this report.

2.1 Water Supply of the new Thaton Power Plant

At present, the process water and the cooling water for the existing Thaton Power Plant (PP) is delivered by the Tyre Factory located adjacent to the Thaton PP. The Tyre Factory extracts the water from the Donthami River for its own purposes, and to supply the Thaton PP. In order to run the existing pumping station, an overhead line (OHL) has been constructed, leading from the Thaton PP to the river.

In order to obtain water independently from the Tyre Factory, the new Thaton PP Project includes the construction of a new water pipeline running parallel to the existing one, a new floating pumping station at Donthami River, an own control building, and a new 6 kV OHL also owned by Thaton PP (EPGE).

The water available from the new pipeline system is estimated by CEEC at 400 tons a day; the daily water supply required for the power plant staff housing area is about 80 to 100 tons a day corresponding to about 5.000 l (5m³) water per day.

The length of the water pipeline to supply the Thaton PP with process and cooling water will be approx. 4.3 km. The starting point is the new pumping station floating on the Donthami River (Figure 5-11 and Figure 5-12). From there, the water is pumped via a steel pipeline to the control building (Figure 5-13 to Figure 5-1) and connected then to the pipeline running towards the power plant (Figure 5-1 to Figure 5-6). The needed working strip for laying down the pipeline is approximately 10 m.

In order to supply the new pumping station with power, a new 6 kV OHL will be constructed running parallel to the water pipeline (Figure 5-7 to Figure 5-10). The new OHL will mainly be lead between the old OHL and the new water pipeline.

2.2 Water Supply of the Housing Area

The drinking water pipeline to serve the housing area inhabited by the workers and employees of the existing PP together with their families will be laid down strictly along existing roads and tracks (Figure 5-18 to Figure 5-24). The total length will be approx. 1.6 km.

At the end of the pipeline two water tanks (one underground and one above ground) will be installed (Figure 5-25). Additionally, one intermediate tank (Figure 5-26) will be necessary. It is also planned to rehabilitate some household connections and to install some new connections.

3. Social Baseline Conditions and Assessment

3.1 Land Use

3.1.1 Water Supply of the new Thaton Power Plant

The corridor for the water pipeline and TL to the Thaton power plant passes by three villages (Duyinseik, Kyar Ban and Than Ban), one army regiment compound and some governmental lands. All three villages belong to the Duyinseik Village Tract (within Thaton Township) under the administration of a village administrator. The military compound belongs to the Ministry of Defense and other government lands belong to the Ministry of Industry.

No private land or other private assets are affected in the Kyar Ban section of the corridor, as it crosses an area of unoccupied land. In the Duyindeik section of the corridor however, one person uses abandoned land to grow dragon fruit trees, and other person uses land leased from the government to grow betel leave trees. There are also fruit and timber trees (cashew nut trees, teak and other hard wood trees, etc.) in the section of the corridor that crosses the military compound. In the Than Ban section, one person use land leased from the government to grow rubber and betel leave trees, another person grows rubber trees in partnership with the Tyre Plant on the land owned by the later. Also located in this section of the corridor is a plot of land with a small shed and a few trees (citrus, palm, etc.) owned by a third person. Other areas in the Than Ban section of the corridor are unoccupied land.

3.1.2 Water Supply of the Housing Area

The entire corridor for the water pipeline including the tank areas will be constructed on land that already belongs to the Ministry of Industry. Land acquisition is not required. The trenching will be done beside existing roads and tracks and can be conducted without affecting any private assets. Useful plants as bethel, rubber or fruit trees will not be touched by the lay down activities of the water pipeline.

This statement is valid for the pipeline, the water tanks and the needed additional household connections. The overall effect will be positive in providing more and reliable drinking water to the households living in the housing area concerned.

3.2 Census of PAP

Five households and one military establishment have been identified as affected in the three villages crossed by the pipeline. The list of affected persons was identified and established with the intervention of Village Administration staff and respective village heads (officially designated as Yar-Ein Hmu). It was as well supported by personnel of the Land Management and Statistic Department with the records and title documents maintained at their office.

3.2.1 Water Supply of the new Thaton Power Plant

All three villages crossed by the pipeline corridor have an agriculture-based economy and the main products are rubber, paddy and betel leaves. The population is divided in three main ethnic groups: Kayin, Paoh and Bamar.

The number of households affected by the pipeline corridor is two (2) in Duyeinseik village, and three (3) in Than Ban village. In addition, plantations from a military regiment are affected.

Duyeinseik village

The heads of the two households affected on the Duyeinseik section are actually sons-in-law of the same land owner (U Maung Pae) who were granted with the right of tilling. Both of them (by the name of U Soe Soe and U Soe Moe Lwin) earn their living with casual labor and betel leaves and fruit trees gardening. They live in separate households of average sizes (three to five members). The family members belong to Kayin and Bamar ethnic groups.

Military regiment

The land in the regimental compound belongs to the Ministry of Defense. Fruit and timber trees are grown by regimental workers as part of the programme for supporting the welfare of regimental families.

Than Ban

Three households are affected on the Than Ban section of the pipeline corridor. The number of the household members is 3, 5 and 7, respectively. They all belong to Kayin ethnic group.

The education level in the affected households is generally low, with one household achieving at a maximum the primary school level, and another the middle school level. However, there is one university graduate in the third household, who is working as a school teacher.

The livelihood of the three affected households depends mainly on casual labour and rubber plantation. Two households have low income (average 100,000 MMK per month) and have just enough income to pay for household expenses; sometimes the money falls short and the family has to borrow. A member of one household is working as a domestic migrant

worker in another township. The third household has about (5) acres of rubber plantation and is relatively better off.

3.2.2 Water Supply of the Housing Area

This additional water pipeline will cross the existing housing area but will follow already existing roads/tracks and can be laid down beside these tracks; no resettlement issues and no physical relocation will be needed. All land being crossed is governmental land (owned since more than 30 years by the Thaton Tyre Plant under the Ministry of Industry), and the land needed for the container/tanks is empty. Economical trees will not have to be felt.

There is a need for connecting the existing small ‘household pipelines’ with the containers/tanks and there is maybe a certain need for some rehabilitation of existing household pipelines. This can be done without affecting any private asset.

In summary, no persons are affected by the corridor of the pipeline that will connect to the workers housing area.

3.3 Property Survey

3.3.1 Water Supply of the new Thaton Power Plant

Cadastral survey maps ¹ from the township land revenue office have not been made available. The location of the land/assets affected by the project with indication of the respective affected household heads is shown in Figure 3-1 with the support of a satellite image. The property survey results are showed in the following paragraphs.

Duyinseik village

The land and plantation affected by the pipeline construction will include 0.38 acres of leased land and other land abandoned by the tyre plant (Ministry of Industry), 25 dragon fruit trees (1 year old), and two groves of bamboo plants.

Military regiment

Within the military regiment, only governmental land is affected. In this land, 50 cashew trees, 10 teak trees, 20 hard wood trees and 30 Pashu padauk trees are affected.

Than Ban

¹ Cadastral survey map – map or survey showing the extent, value, and ownership of land, especially for taxation.

U Hpo Hla has lost one small farm hut, 2 citrus trees, 5 palm trees and 3 other trees, in addition to the strip of land (10' x 180' or 0.041 acre) cleared for the water pipeline. He had no other plantation on the land at the time.

The second affected household head, U Hpa Lu, is co-owner of a rubber plantation in partnership with the Tyre Plant by paying an agreed sum so that he can work/manage the plantation. He does not own the land. The size of the plantation is about 12 acres and 39 rubber trees were felled down to make passage for the water pipeline and the 6.6 KV overhead transmission line. Due to the change of alignment of the transmission line, around 30 additional trees must be felled.

The third affected person in Than ban village is U Kun Zaw Win, who states to own a legal title on the land. He has about five (5) acres of rubber plantation which is of improved variety. The plants are 7 years old and have started producing sap. According to him, the plantation may produce for 20-25 years if unaffected. The initial size of the affected land is about 10'x 500' (0.11 acre), but more trees will be affected (ca. 40) due to the change of alignment of the transmission towers. The compensation for the additional land is expected to be rectified (please see Section 4.3.2). The initial amount of rubber trees affected is 32. Besides rubber trees, there are 200 betel leaf trees, a water well and bamboo groves on the affected list of assets. According to information provided to Fichtner, the land owner requested no payment for the water well and the bamboo grooves.

3.3.2 Water Supply of the Housing Area

No privately owned or used land or trees will be affected by the water pipeline that will supply the workers housing area.

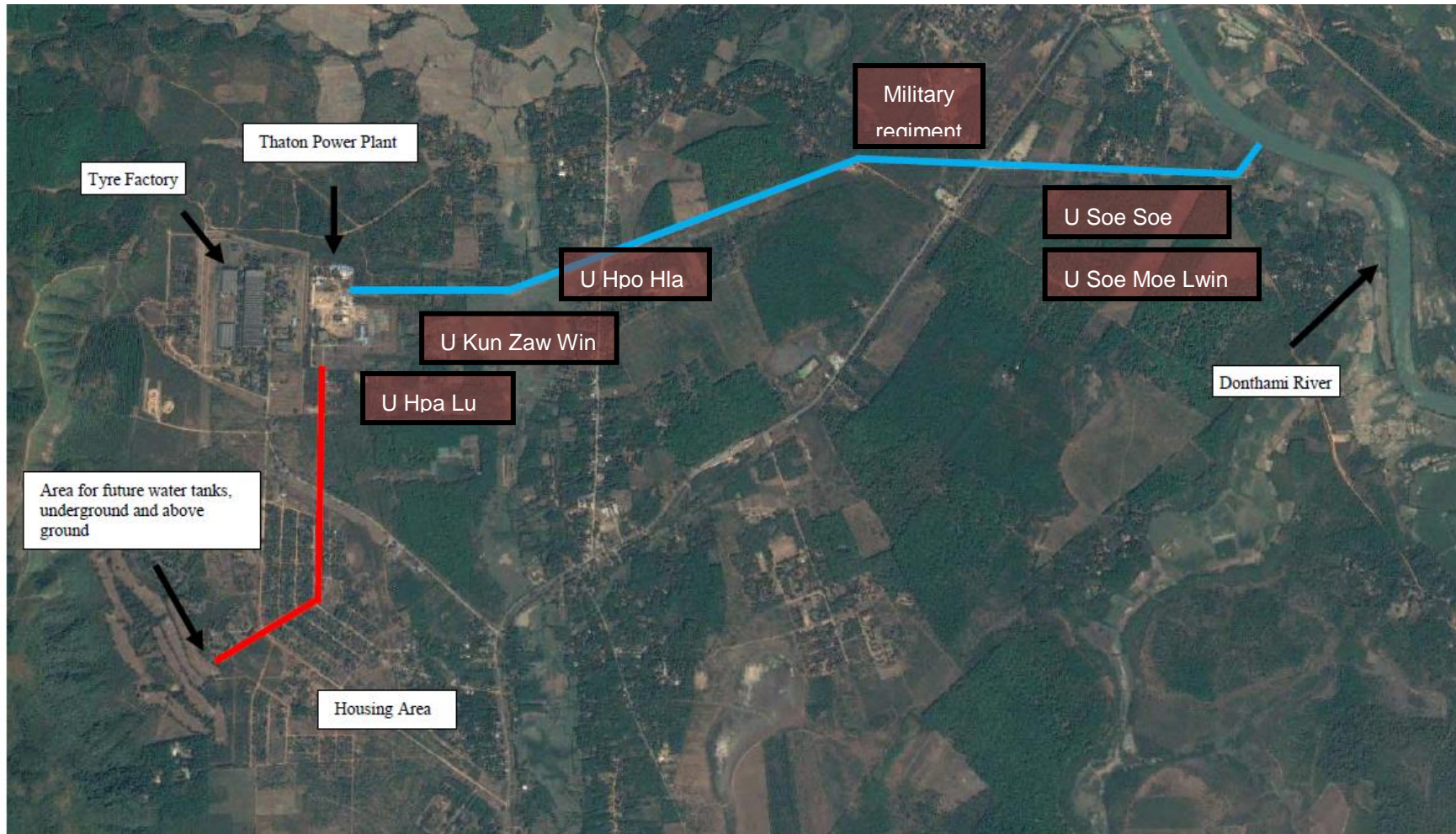


Figure 3-1: Overview of both water pipelines and the land/assets ownership

Blue line = water pipeline running from Donthami River to Thaton PP to supply power plant with process and cooling water
 Red line = water pipeline to serve staff housing area with additional drinking water

3.4 Valuation of Assets

Local knowledge and expert opinion was used to determine the productivity and prices of the land and agricultural crops affected by the pipeline and transmission line.

Any property further affected in the course of construction works will be settled on the basis of prices decided by the township Land and Crop Compensation Committee (see Section 4). For example, because of the alteration of the alignment of the power transmission line in a few places, additional land and trees may be affected beyond the number assessed in the valuation shown in this ARAP. So far, the number of additional trees to be felled mounts to ca. 70 (40 in the land owned by U Kun Zaw Win, and 30 in the land used by U Hpa Lu).

Betel leave plants

According to the experienced betel leave growers in the villages, an acre of betel leave plantation can accommodate 2,000 plants and betel leaves can be harvested every two weeks from the mature plant. The average productivity is 360 lbs (163 kg or 100 viss) per 700 plants (according to the local betel leave farmers). The price of betel leave ranges from 600 to 2,000 Kyats depending on the market demands.

Rubber plants

Regarding the rubber plants, it was assessed that one acre of land can accommodate 180 rubber trees, and that a rubber tree will need 7 years to mature. The price of the rubber plants was reported in recent journals to be 60,000 MMK for a 3-year old plant and 100,000 MMK for a 7 to 8 year old one (including the land it stands on). The productivity of rubber plants is estimated as follows: 70 rubber plants (of mature age) can produce in one tapping a slab of raw rubber (10 lbs or 4.5 kg) valued at 8,000 MMK.

Land

The prices of land will vary according to the type of land use (for example, land for rubber and other perennial crops against paddy land) and also on market demand. Standard prices listed by the Agriculture Department or accepted prices in preceding cases should also be referred for considering the prices of land.

A detailed list of affected persons and valuation of each affected asset is shown **Annex A2**.

4. Resettlement Management

Compensation will only be necessary for the area affected by the pipeline that will supply the Thaton PP. The drinking water pipeline for supply of the workers housings does not affect any people or assets.

The owners of rubber plantations will be able to continue production on their plantations as the loss of plants is estimated between 5-10% of the total. They are expected to maintain their livelihood as plantation owners with the remaining plants. It is learnt that so far the owners have no plan to grow new rubber plants to make up the loss.

The owners of betel plantations haven't lost the land and no need to find new land. Their plants were lost only during the construction period and also they have got compensation for losing plants. After construction has been completed, they will be able to resume the plantation on their land in the next season.

The military regiment will lose only a part of their income generating sources. The income is used to provide social welfare funds to the regiment.

It is important to highlight that no severe economic displacement has resulted from unemployment or lack of access to income generation resources due to the construction of the water pipe lines and transmission lines.

For reference, a normal procedure usually followed in implementing compensation is shown in **Annex A1**.

4.1 Applicable National Legislation

The **Farmland Law** (and its By-Laws) of 2012 provides methods for assessing the compensation amount for different types of assets including land, crops (paddy and other seasonal crops, as well as perennial crops), structures, etc., based on their current value. Industrial plantations are not separately covered in the law and by-laws.

There are several specific provisions in the Farmland Law and By-laws which every ministry or department is obliged to follow in a compensation process. One of the most significant provisions is concerned with the valuation of affected lands or crops. The valuation is based on current prices on the market, and its principles are summarized below:

Paragraph 67(a) of the Farmland Law – Compensation for Crops and Buildings:

1. For currently cultivated paddy and other seasonal crops - based on the average acre yield of specific crops, the current market value of crops multiplied by 3
2. For existing perennial plants - based on the current value of the plants, market value of the plants multiplied by 3;
3. For dwellings or structures existing on land that have been constructed or any other measures taken on land to enhance the value of land, current market value multiplied by 2.

Paragraph 67(b) of the Farmland Law – Compensation for Land:

4. If the land is used for non-profitable construction work or national security purpose in the long-term interest of the nation: current market value of land confiscated thereof;
5. If the land is used for conducting profitable businesses in the long-term interest of the nation: the sum agreed by the holder of tilling rights to the amount not causing him/her grievance (or) The sum not less than the market value assessed by the Compensation Committee (formed by Central Land Administration Committee) based on the specific types of business being conducted on the land.

The Farmland Law grants permission to any citizen over 18 years of age (and satisfying the farming family status as provided in the law) to apply for the right of establishing plantations on unused governmental farmland.

The MOEE carried out compensation processes in the course of implementing many construction projects in the past. A proven ministerial compensation process seems to have been developed and it is more or less followed by enterprises under the ministry in the projects implemented with ministerial budget.

4.2 Institutional/Organizational Framework

The Farmland Law and By-Law provide the legal base for establishment of the institutional/ organizational framework connected to the ARAP.

The laws specify the formation of a **Farmland Management Body (FMB)** at township, district, region/state and central levels in a hierarchical structure for implementation, supervision and coordination of compensation processes. Another important provision in the laws is that the Central Farmland Management Body is obliged to coordinate with concerned departments to make sure that affected land owners receive compensation without undue delay. However, the laws appear to be silent with other aspects of compensation process, thus allowing departments to establish their own ones as they deem relevant.

The CFMB is formed by the Union Government under the law and it consists of the Union Minister of Agriculture and Irrigation (Chairperson), the Deputy Minister of the same ministry (Deputy

Chairperson), the Director General of the Department of Land Management and Statistics (as Secretary), and heads of regional/state governments and departments concerned as members.

The CFMB is entrusted with the authorities for forming Farmland Management Bodies at regional/state, district, township and village and ward levels.

For the purpose of implementing the compensation process, the law provides the FMB at township level the power to review and determine the compensation amount, and afterwards submit this to the CFMB through district and regional/state levels for review and necessary action. For a compensation case, a specific Township **Land and Crop Compensation Committee (LCCC)** is usually formed with key members of FMB and personnel of relevant departments.

The LCCC is invested with the decision making power on the actual compensation package, including assessing the amount of compensation for different assets. The LCCC submits the cases to a central committee level through district and regional/state level committees. In case of dispute, the regional/state level committee is empowered to make a decision in accordance with the laws and by-laws. If necessary, the committee at central level will provide integration, coordination and supervisory measures for the cases.

The LCCP at township level in the current case of Thaton Power Plant Construction Project is formed with the following members:

1. Township Administrative Officer, General Administration Department, Thaton Township	Chairperson
2. Township Staff Officer, Department of Land Management and Statistics, Thaton Township (DLMS)	Member
3. Township Staff Officer, Department of Agriculture, Thaton Township (DoAg)	Member
4. Executive Officer, Township Development Committee, Thaton Township (TDC)	Member
5. Plant Manager, Thaton Power Plant, Thaton Township	Secretary

The formation of the township body was carried in an official letter issued by EPGE (with the endorsement of MoEE). The constitution of the township body shows a mix of technical expertise headed by an equal level Administrative Officer, who by virtue of his position, can have a slight leverage over others in making decisions. More importantly, the Township Administrative Officer also has supervising authorities over the village tract administrators who are instrumental in implementing the compensation process at the community level.

Also technical members on the township body are essential for providing technical advice and technical services. For example, DLMS will be able

to assist in conducting land survey, land size measurement, certification of land title and interpreting farm laws. DoAg will be able to advise on the value of crops and trees for assessing the compensation amount. TDC will be able to advise on the municipal laws, rules and regulations. The Secretary of the Township body, as the host, coordinates the activities of all departments to achieve collaboration.

Although not part of the LCCP, the **Village Tract Administrator** is also part of the institutional framework concerned with the compensation process, particularly at the level of the community and the individual affected persons. The Village Tract Administrator will keep PAPs informed of the progress of the process and chair the meeting where compensation money will be finally disbursed to the PAPs. The Village Tract Administrator will personally hand over the compensation money to individual PAP in the witness of township level authorities and personnel of departments concerned and the media.

EPGE and the Thaton Power Plant Management play a pivotal role and need to follow good practices for ensuring a transparent and accountable process.

The consultant team (Fichtner) supported the ARAP process by consulting with the PAPs and communities concerned to enable people to understand the process and how it will be implemented. To continue this process, **A Grievance Redressing Mechanism (Grievance Redressing Form** is shown in Annex A6) is already established between the community members and the plant's management. The means of accessing the GRM have been made accessible to all local stakeholders during the Public Consultation Sessions organized in May 2017 (see Public Consultation Report). In order to reinforce the possibility of presenting grievances, it is additionally suggested that a phone number of Thaton plant management is made available to the public by means of billboards and/posters placed in strategic locations (entrance to the construction site, village tract administration office, etc.). Any concern, question or complaint linked to Thaton Project can be sent to EPGE via from the community members of relevant village/ township. EPGE will reply answers for any grievances in a short period.

4.3 Resettlement and Restoration of Livelihood Measures

The water pipeline corridor will inflict damages on people's assets and livelihood wherever it passes through land occupied or used by local people. The impact are occupation of corridors of land (average 10 feet width) where rubber and betel leave plantations exist, felling or cutting of trees and plants, and demolishing of sheds of other farm huts to clear the passageway for the water pipelines and overhead transmission lines.

The construction work will remove some productive trees/plants and reduce part of income generating assets from the affected households, but it will not involve resettlement issues or physical relocation. Thus the package for compensation will basically focus on restoring the

productive assets for the affected households to the level existing at the time of damage.

Different approaches for assets valuation (crops in this case) for compensation purposes exist:

- Current market price valuation (crops in this case) - an asset with its current price on the market. It can take the actual market price as the value of the asset, or raise the value of the asset up to 2 or 3 times the market price in consideration for the owner who involuntarily loses his/her asset. This is the approach foreseen in the Farmland law and by-laws.
- Cost-based valuation (crops in this case) - the process to bring the asset to the current state. Applying this method to seven-year old rubber plants as an example would involve payment for the cost of seedlings procuring from the nursery or the cost for nursing the seedlings, plus the cost of agricultural inputs (fertilizer, pesticide, weed killer, etc) and labour (tending, watering, weeding, tapping), as well as other relevant costs (fuel costs for water pumping, depreciation of machines, etc.) for every year up until the 7th year. This is a rather conservative method, but it is known that the Department of Agriculture used this approach some years ago.
- Future productivity valuation - This valuation approach, not usually practiced in commercial businesses in Myanmar, is based on the assumption that the asset will continue to produce economic gains and bring in a continuous flow of income for a number of years if undisturbed by the project. This involves speculation for the future which is difficult to assess; there is the counter argument about the risk of natural hazards and human-made incidents which can damage the plantation and this uncertainty makes it difficult to justify the future valuation approach.

The law makers on farm land legislation in Myanmar seem to be inclined on the current market price approach.

Affected households who are using land owned or abandoned by government departments do not qualify for land compensation since they are not required to acquire the right of tilling the land nor to pay land taxes. For these cases, only lost assets are compensated for.

4.3.1 Guarantee Compensation Package

By the time of preparation of this ARAP, the affected persons have already been provided with a “preliminary” compensation (**guarantee compensation package**). The guarantee compensation package is shown in detail in **Annex A2** and summarized in Table 4-1. The reasoning beyond the need for this pre-payment is explained in the following paragraphs.

Table 4-1: Summary of the Guarantee Compensation Package already provided

Sr	Name of affected person	Village	Date	Total amount of compensation (MMK)
1	U Hpar Lu	Than Ban	27.12.16	585,000
2	U Kun Zaw Win	Than Ban	27.12.16	2,500,000
3	U Hpo Hla	Than Ban	25.01.17	700,000
4	Army regiment	Duyinseik	20.01.17	1,900,000
5	U Soe Soe	Duyinseik	09.12.16	500,000
6	U Soe Moe Lwin	Duyinseik	21.03.17	1,300,000
	Total			7,485,000

The ground works (clearing and digging) along the route of the water pipeline started in November 2016. Fichtner team members interviewed the affected persons at the time (December 2016) to assess the status of their land ownership or tenure, as well as the damage caused on their plantations and other assets. By that time, three affected persons were identified. The assessment of the impacts in the military regiment compound was made by personnel of Thaton Power Plant and CEEC.

At the same time, Fichtner undertook contacts with the governmental departments concerned and succeeded in getting the Land Administration and Statistics Department to send surveyors to assess the land and plants affected (December 2016). Fichtner also engaged with township departments concerned to speed up the resettlement process, including the creation of the Land and Crop Compensation Committee, which would be invested with power to make decision relating to compensation of land and crops. It is essential to have a decision from the Committee, as the compensation will be funded from the government budget that in this case will be that of the Ministry of Electricity and Energy (MoEE).

As the process to be implemented by the Township Land and Crop Compensation Committee was taking up time, the situation become time-pressing; the construction contractor (CEEC) was suffering losses for every day of delay, and EPGE was also keen in seeing the work moving forward.

Having the above into consideration, the Thaton Power Plant Management organized a meeting with the affected persons and CEEC and worked out an arrangement by which every affected person individually signed a compensation agreement with the power plant management. This compensation agreement foresaw an agreed sum of money for each type of asset (land, plants, etc.) lost by the affected person. Because the Township LCCC was not yet available at that stage, CEEC paid the agreed sums (shown in Table 4-1). This arrangement shall be interpreted not as a final settlement, but as an advance payment to affected persons to protect them against the loss. The arrangement was accepted by all parties concerned (affected persons, contractor, power

plant management and EPGE) as a reasonable course of action under the circumstance. Please see signed agreement letters in **Annex A3**.

When the Land and Crop Compensation Committee meets and decides on the compensation sum (the decisions may be submitted to a higher authority for review and approval), the village administrator will be informed and will request for a meeting with the affected persons to get their agreement. Then, the regional government will instruct the concerned department to disburse the money accordingly. The compensation money will be handed over at a ceremony witnessed by the concerned departments.

In this particular case, the guarantee money provided initially by CEEC will be settled from the amount of money received for compensation. If the sum approved by the government is larger than the one provided by CEEC, the individual affected persons will receive the surplus accordingly.

4.3.2 Status of payments

According to information shared with the Consultant, the township level Land and Crop Compensation Committee legalized/officially approved the guarantee compensation package. The **complete compensation package** was also calculated based on the guarantee compensation package.

The next steps are to obtain an approval to the complete compensation package at township level, and send it to the Mon State Level to approve it again.

4.4 Consultation of the Stakeholders

Consultation with affected landowners and management staff from EPGE and CEEC has been conducted by the Consultant to solicit their views on the compensation process.

PAPs

The PAPs have been consulted individually and by means of an open public consultation session (see respective Public Consultation Report, Fichtner, 2017). The landowners are generally not aware of the legislation applicable to the compensation process, but they are content to let the process be carried out by legitimate authorities and expect decisions that will satisfy their needs. The general view of the PAPs on the compensation process is that they will be compensated at current market prices for their lost land and crops, and that the process for payment will be simple and understood by them. The PAPs also mentioned that they trusted that the payment would be made before their land, crops or other assets would be affected (this was the case).

EPGE

EPGE consider the identification of PAP and measurement and documentation of the affected property/asset important for ensuring an accurate determination of the extent of losses for each household, and for lending the compensation payment in the hands of legitimate people. The value assessment of affected assets is the collective decision of the FABs at different levels, but EPGE has a say in the decision through its membership on the body. EPGE also sees the public consultation with affected population and other stakeholders as necessary for public information on the compensation process. Compensation amounts for different types of assets (houses, shops, land, crops, etc) are usually made known at the public events for the purpose of transparency. The enterprise follows up with disbursement of compensation money from governmental budget.

EPGE maintains the business principle of paying compensation first to affected persons before the starting of construction projects.

CEEC

CEEC followed the resettlement arrangements suggested by the Thaton Power Plant Management because the company is not familiar with the national law and wants to avoid acting contrary to the tradition and culture of the local population.

CEEC has interest in seeing the resettlement process go smoothly and without undue delays. The company's standard procedure is that the compensation (and resettlement, when applicable) process is completed before the construction work begins. CEEC wants to avoid a scenario where the construction schedule has come due, machinery and workforce are mobilized, but the compensation has not been completed and the works are therefore put on hold. CEEC shown that the company is

willing to help executing the compensation process by temporarily providing funds to pay the PAPs (see Section 4.2.1).

4.5 Monitoring and Evaluation

Monitoring and Evaluation arrangement comprise of continuous collection and analysis of information on implementation of the ARAP from the start to the completion. Monitoring focuses on the implementation process, including measuring the delivery of inputs, performance of activities, the process followed for implementing activities and the achievement of outputs against the targets and standards set out in the ARAP. Evaluation focuses on outcome or impact of the plan, i.e. whether the goals have been achieved and on analyzing problems and successes as a learning process aimed at finding ways to make the plan more successful.

Indicators are generally used in monitoring. They are formulated in measurable or observable terms to measure specific aspects of an event or condition. The following are types of indicators to be used in the ARAP:

Input Indicators – These indicators measure the human and other resources involved in the ARAP.

Activity Indicators – These indicators measure the progress of implementation of the resettlement activities. They include the standard list of activities required to be implemented in the ARAP.

Process Indicators – These indicators measure the level of people's participation in the process by which the resettlement activities are conducted.

Output indicators – These indicators show the changes occurred as a result of the resettlement activities.

Outcome Indicators – These indicators measure the effectiveness of the resettlement activities.

Impact Indicators – These indicators measure the level of achievement of the overall goals of the ARAP.

An ARAP Monitoring Framework is shown Table 4-2 for following-up implementation activities and reports.

A Completion Audit providing evidence for the finalization of the compensation payments shall be undertaken by EPGE until end of October 2017. The Completion Audit shall be undertaken in accordance with paragraph 24 of the World Bank's Operational Policy 4.12. The result of the audit shall be a brief (2 pages) report on the status of payments and the existence of any unsolved grievances.

Table 4-2: ARAP Monitoring Framework

Indicators	Status (04 September 2017)	Notes	Actions
Input indicators			
Inclusiveness of all Project Affected Persons (PAP) or Households on the official list	Implemented	See Section 4.2	None
Standard list of departments, organizations and committee(s), etc to be involved in the execution and management of the ARAP	Land and Crops Compensation Committee is formed	See Section 4.2	None
Legitimacy and competency of affected persons or officials or committees as per law provisions	Confirmed	See Sections 4.1 and 4.2	None
Official instructions and work procedures	Implemented	See Section 4.1	None
Sufficiency of financial budget and other resources mobilized by responsible departments or offices	In process	See Sections 4.1 and 4.5	Funds to be allocated in the current budget of the MoEE
Activity Indicators			
Implementation schedule of required activities	The ARAP presents a schedule	See Section 4.7 and Annex A4	Schedule to be approved/adapted by EPGE
Public consultation	Implemented	See Section 4.5 and Public Consultation Report	None
Consultation with PAPs	Implemented	See Section 4.5	None
Identification of PAPs	Implemented	See Section 3.2	None
Field survey on the affected land and other property	Official survey implemented by LMSD	See Section 3.3	None
Formation of Land and Crops	Implemented	See Section 4.2	None

Indicators	Status (04 September 2017)	Notes	Actions
Compensation Committee, and conducting of meetings			
Disbursement of compensation	Partly implemented	The land owners had been paid guarantee compensation money by the contractor to allow them to carry out the construction work on their lands. See Section 4.3.2	Final payment to be settled by the ministry
Process Indicators			
Process for Public disclosure of ARAP information	Implemented	See Section 4.5 and Public Consultation Report	None
Desired level of PAP's participation in the resettlement activities	Partly implemented	See Section 4.3	EPGE to continue consultation with PAPs during the application of the ARAP measures. Assure PAPs are made aware of their rights.
PAP Consultation process to enable them to fully understand their rights and obligations and enable them to consult legal authorities before making agreement	Implemented	See Section 4.5 and Public Consultation Report	None
Process to pass the decision of authorized committee to PAPs	Decision on complete compensation package pending at township level	See Section 4.3.2	EPGE to follow up the process of approval of the complete compensation package, including informing the PAPs about the decision of the LCCC.
Number of grievance cases reported and redressed	No grievance cases reported	-	EPGE to implement and maintain the grievance redress mechanism described in the Public Consultation Report

Indicators	Status (04 September 2017)	Notes	Actions
Output indicators			
List of PAPs established	Implemented	See Section 3.2	None
Committee meetings conducted	Implemented	See Section 4.2	EPGE to follow up the process of approval of the complete compensation package, including informing the PAPs about the decision of the LCCC.
Decisions made on compensation and resettlement issues	Decision on complete compensation package pending at township level	-	EPGE to follow up the process of approval of the complete compensation package, including informing the PAPs about the decision of the LCCC.
Outcome Indicators			
individual PAPs are compensated	Partly implemented	The land owners had been paid guarantee compensation money by the contractor to allow them to carry out the construction work on their lands. See Section 4.3.2	Final payment to be settled by the ministry
Total amount of compensation disbursed	Partly implemented	The land owners had been paid guarantee compensation money by the contractor to allow them to carry out the construction work on their lands. See Section 4.3.2	Final payment to be settled by the ministry
PAPs are satisfied with the ARAP	Unknown	-	EPGE to assess later on
Impact Indicators			
Restoration of livelihood among PAPs	Unknown	-	EPGE to assess later on
Productivity of PAPs' assets maintained	Unknown	-	EPGE to assess later on

Indicators	Status (04 September 2017)	Notes	Actions
adequately			
Project actions appreciated by community	Unknown	-	EPGE to assess later on
Community participation in project activities experienced	Unknown	-	EPGE to assess later on
Public relation between project and community enhanced	Unknown	-	EPGE to assess later on

4.6 Implementation Schedule

The implementation schedule of the current ARAP covers all resettlement activities from the preparation stage through implementation to the completion stage. The plan includes (1) the construction of the water pipeline and overhead transmission line from the Donthami River to the Power Plant (which is already undertaken), and (2) the construction of the water pipeline from the power plant to the staff housing area (which is in the planning stage).

As mentioned in the earlier paragraphs, the construction works (1) cut an average 10ft wide path through a few numbers of plantations and an army regiment compound. No physical relocation was required. A field survey was conducted before the cases were submitted to the Township Land and Crops Compensation Committee for decision on the complete compensation package. The decision needed to be approved by the Regional Government and handed down to the township and village tract administrative levels for action. In this case however, Thaton Power Plant Management will submit the decision to the EPGE and Ministry for review and approval. After the approval, the ministry will hand down the budget to Thaton Power Plant Management and it will inform Township Administrative Officer and Village Tract Administrator about the matter and ask them to organize village mass meetings to deliver the compensation money to individual PAPs in the witness of the village communities.

The construction works (2) will basically follow the existing route of the old pipeline (used by the nearby tyre plant to distribute water to power plant staff housing areas) which crosses the land owned by the tyre plant or Ministry of Industry. It is anticipated that no private land will be affected.

The implement schedule of the current ARAP includes a list of tasks and timing of their implementation resulting in delivery of expected outputs to affected households and eventually completion of all various forms of assistance. This schedule was coordinated with the schedule of the construction works.

The implementation schedule also took into consideration the farming and livelihood cycles of affected people and avoided scheduling key resettlement activities at times that may disrupt these cycles.

Resettlement and construction schedules were also linked to ensure that implementation of key activities in resettlement and project construction would not disrupt each other.

The ARAP implementation schedule is presented in **Annex A4**.

4.7 Costs and Budget

All costs of resettlement planning and implementation have been estimated and included in a detailed ARAP budget. The cost estimation was made based on the best information available at the time of preparing this ARAP, the census of PAPs, the census of lost assets and land, and the project's technical designs. It includes an estimation of the approximate value of the complete compensation package. The result is presented in a tabular form in **Annex A5**. A total of **10,504 USD** (or ca. 14,150,000 MMK) is foreseen.

5. Environmental Management Plan

This Section presents the description of the impacts on the environment brought up by the project. The measures suggested to manage these impacts are included in the form of an Environmental Management Plan.

5.1 Status of the Project (August 2017)

At the time of setting up this EMP, the status of the Project (end of August 2017) was:

- Laying down of the water pipeline from the Donthami River to the power plant site is fully completed;
- Installation of the water pipeline from the power plant site to the employer's housing area has not commenced yet. It was reported that the money for construction is already allocated to the Thaton Power Plant. This water pipeline is not part of the contract of CEEC, and it is still unknown who will perform the needed works for the time being;
- The floating pumping station in the Donthami River is ready for work and the civil works of the control building located nearby are finalized;
- The 6 kV power transmission line is constructed, all poles are erected, the conductors are strunged.
- Some rubber trees along the line corridor have still to be felled. Please refer to the previous sections for the status of the compensation payments.

5.2 Water Supply of the new Thaton Power Plant

The water pipeline from the Donthami River to the power plant uses the same corridor as the one defined for the 6 kV OHL. During Fichtner's site visit at the end of August 2017, all works concerning this water pipeline have been finalized. The excavated soil was used for refilling the trench. After refilling, the trench was covered again by vegetation, so that it was scarcely visible during the site visit.

The corridor follows an existing road, which is running through a military used land, crosses betel and rubber tree plantations and a pasture (completely flooded during the rainy season) before reaching the power plant side.

No paddy field or other agricultural land is touched by the water pipeline corridor.

The former vegetation along the water pipeline corridor is heavily influenced by human activities and no areas of specific ecological value were detected during the site visits undertaken by Fichtner between July 2016 and August 2017. The prevailing vegetation is very common and occurs very often in the investigation area. Consequently, no endangered plant or animal species exist along the water pipeline route.

The water pipeline touches some rubber and betel plantations belonging to four different owners/farmers. Beside these plantations, trees, some other agricultural trees such as citrus fruit trees, palm trees, teak trees, dragon fruit trees, etc. have to be cleared (see Section 3 and **Annex A2**).

The permit to cross the military area is available.

All resettlement needs are described and discussed in Sections 3 and 4 and are handled together with the corridor clearance for the 6 kV transmission line.

The pictures below provide an overview of the project area and components.

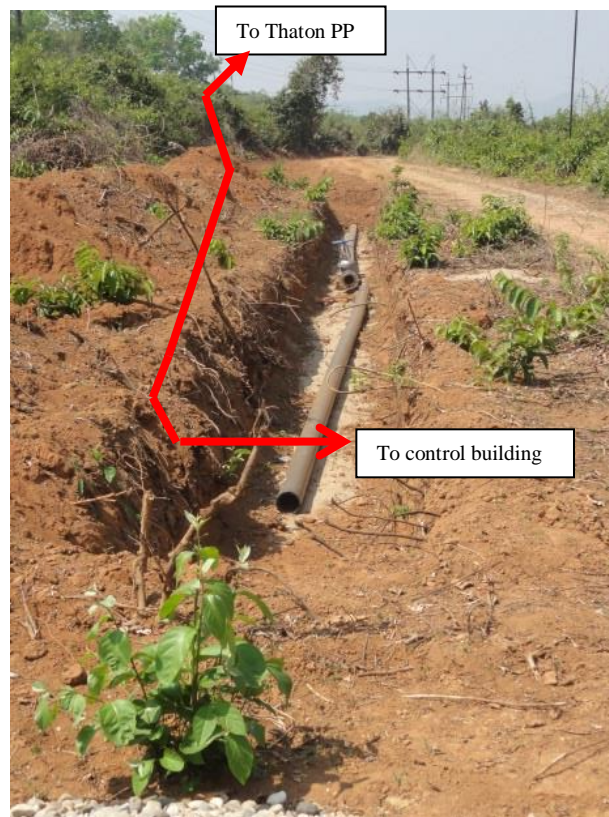


Figure 5-1: Starting point of water pipeline near the control building (February 2017)



Figure 5-2: Water pipeline running parallel to the track partly finished (February 2017)



Figure 5-3: Water pipeline running parallel to the track finished (February 2017)



Figure 5-4: Track to pumping station with new OHL (right side). The trench of the water pipeline is just barely visible (August 2017)



Figure 5-5: Water pipeline has to cross a road and will lead through a military camp (February 2017)



Figure 5-6: Water pipeline under construction (February 2017)

5.3 6 kV Overhead Transmission Line from the Power Plant Site to the Pumping Station

As mentioned in Section 2, the OHL uses the same corridor as the water pipeline. All construction works are finalized as already revealed during the site visit in May 2017. Regarding fauna and flora, the same applies as described in Section 5.2 for the water pipeline corridor.

Because of the low voltage level, electric or magnetic fields and/or corona effects can be considered negligible.

For clearance of the line corridor (together with the water pipeline), about 70 rubber trees and 200 betel trees have to be cut (beside some other agricultural trees as citrus fruit tree, palm tree, teak tree, dragon fruit tree etc.). Close to the power plant site there is still a need to cut about 70 additional rubber trees, because the corridor is not wide enough in this area. All resettlement needs in this respect, i.e., compensation payments, are discussed in Sections 3 and 4 of this report.



Figure 5-7: New water pipeline and new 6 kV OHL constructed between track and old OHL (May 2017)

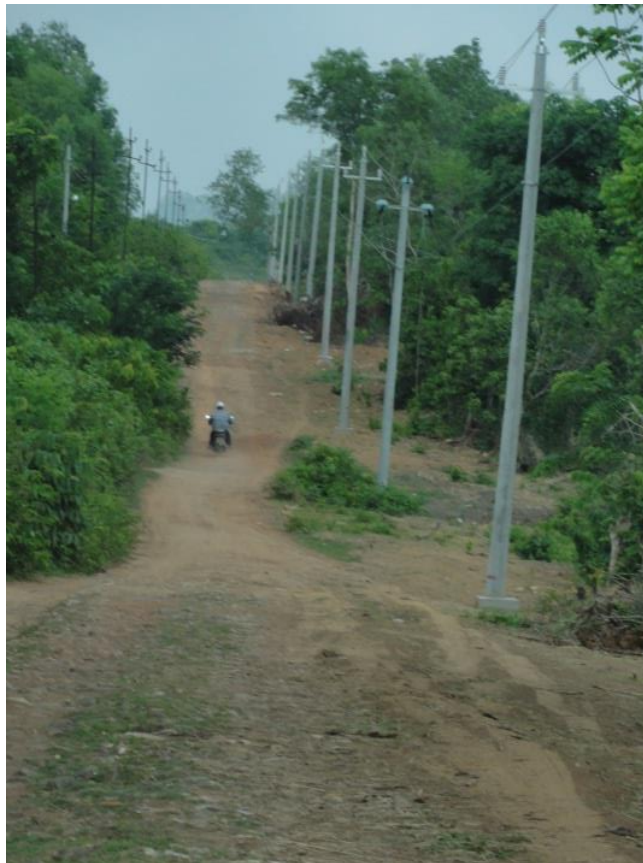


Figure 5-8: Finalized new OHL and water pipeline sections (May 2017)



Figure 5-9: OHL crossing a rubber plantation (May 2017)



Figure 5-10: Line section where more branches of rubber trees have to be cut (red crosses).

5.4 Floating Pumping Station and Control Building

The floating pumping station is located near the shore line within the Donthami River. The station is connected via a bridge to the control building (see Figure 5-11 to Figure 5-17) constructed on nearby land.

For the bridge and the control building, some common trees and shrubs had to be felled and cut, respectively. The area concerned is, however, intensively influenced by men and comprises only common habitats as can be found anywhere along the river. No endangered or rare plants and animals are expected to be found in the area of concern.

The land between the control building and the pumping station is covered with water in the rainy season.

In total, a maximum of about 1,200 m³ water a day will be extracted from the Donthami River for operation of the new power plant, including the small amount for drinking water supply to be sent to the housing area (about 30 m³ a day).

Unfortunately, no data about the amount of water flow during dry and rainy season of Donthami River are available. The following figures shall, however, give an idea how small the extracted amount of water is:

Near the Thaton town, the Donthami River is about 100 m wide in the dry season. Assuming that the average depth of the river is 2 m (a very low estimation), and the flow speed is 1 m per sec (very slow), the flow rate can be calculated as 200 m³ per second in the dry season. That would sum up to about 17 million m³ of water flowing per day. That means the extracted water will be much less than 0.01 % of the overall water available in the dry season. The percentage would be even lower during the rainy season. In addition, it is intended to close the old power plant, what will reduce the overall need of water for Thaton PP.

This consideration allows the reasonable assumption that the amount of water being extracted for the power plant operation will have only a very small influence on the water flow downstream, not affecting measurably any downstream habitats. The downstream water use will not be restricted by this amount of water extraction.



Figure 5-11: Location of the floating water pump (February 2017)



Figure 5-12: New floating pumping station (May 2017)



Figure 5-13: First pipe section from the pumping station to the control building (May 2017)

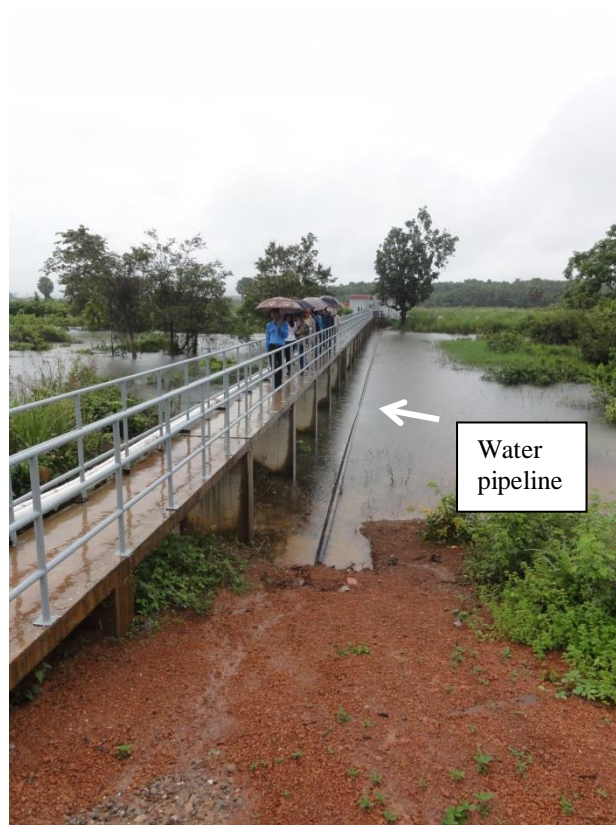


Figure 5-14: Access to pumping station during the rainy season (August 2017).



Figure 5-15: Pumping station with blocked and locked entrance (August 2017)



Figure 5-16: Control building (May 2017)



Figure 5-17: Control building (August 2017)

5.5 Water Supply of the Housing Area

The pipeline connecting to the workers housing area will strictly follow roads and tracks bearing some kind of ruderal grassland highly affected by human influences. Only in some sections smaller bushes have to be cleared (e.g. for the intermediate tank).

The area does not provide any habitats of medium or even high ecological value. Only very common plants are growing here. This affects also the occurrence of animals, which is restricted to common species. The influence of the construction of the water pipeline on flora and fauna can be assessed to be close to zero. Specific environmental mitigation or compensation measures will not be necessary.

All land that will be crossed by the water pipeline belongs to the Government. Private land is not touched.

It is intended to lay down the new water pipeline mostly beside roads and existing tracks. There is no need to cut any agricultural tree such as rubber or betel tree. Only small woods and bushes have to be cleared for the water pipeline corridor. The water pipeline will also not cross any areas used as gardens for private need. Agricultural land will not be crossed. There is no need for any resettlement action.

Some house connections have to and will be improved; some connections will be newly installed. This might affect some small areas around the houses used as gardens, but the impacts will be minimal and are restricted to the short construction period. Such works shall be announced in advance and agricultural plants, if any, shall be avoided. The small trench needed for the house connection shall be restored after having finished the work.

At present, during the dry season water is available only two times a day for about half an hour each time. After implementation of the new water pipeline a continuous water supply will be possible.



Figure 5-18: The water pipeline leaving the PP will run strictly parallel to the existing asphalted road



Figure 5-19: Water pipeline crossing a main road



Figure 5-20: Site visit of the future water pipeline running parallel to an existing road



Figure 5-21 Water pipeline crossing a road



Figure 5-22: Water pipeline to be built parallel to existing roads



Figure 5-23: Water pipeline to be built parallel to existing roads



Figure 5-24: Water pipeline to be built parallel to existing roads



Figure 5-25: Area for future water tanks, underground and above ground



Figure 5-26: Area for an intermediate tank above ground

5.6 EMP for the construction phase

As described previously, the works for laydown of the pipeline between the Donthami River and the PP, as well as those for installation of the transmission line have been completed. The issue of upmost concern during these works was related to payment of fair and timely compensation to the affected land and tree owners. As described in Sections 3 and 4, this was accomplished.

Table 5-1 presents the EMP for the remaining works, i.e., the construction of the pipeline to supply the workers housing area with drinking water. EPGE's HSE Department shall regularly monitor the implementation of the mitigation measures.

Table 5-1: EMP for the construction phase of the Thaton PP water pipelines

Mitigation and compensation measures to be applied during construction phase		
Environmental measures	Responsible Party	Budget for implementing (USD)
The construction contractor shall be responsible for safety of workers, e.g. by providing them with PPE (helmets, safety shoes etc.), and give training regarding safety issues, e.g. in using excavators, welding etc.	CC	The implementation of the very limited needed mitigation measures does not create any additional costs. All costs are included in the construction costs.
Keep the lay down areas for pipes and other construction material as small as possible.		
Keep the working strip for the water pipeline as small as technically possible.		
Refill the trench immediately after having finished lay down of the pipes with the original soil.		
Proper maintenance of construction machines. Changes of oil or refilling with oil and fuel shall be done only on asphalted or concreted places to avoid any soil contamination.		
Mark the area of the open trench with barrier tape.		
Works shall only be done during daylight. This increases safety for workers and reduces noise annoyance for the people living along the water pipeline corridor.		
During the dry season the working strip shall be watered regularly to avoid high amounts of dust generation.		
Implement a speed limit of 15 km along the actual working strip for trucks and other machinery.		
All wastes, e.g. paper, wood, plastic etc. shall be reused where possible or collected and taken to the landfill of Thaton municipality.	CC EPGE	
The workers shall be provided with sufficient drinking water.		
Provide portable toilets for the workers.		
Prior start of the excavation works inform people that might be affected. Especially when needed house connections shall be installed, the concerned household shall be informed where the pipeline has to be laid down to avoid conflict with any agricultural crops that might be cultivated in the garden.		
Agricultural plants, if any, shall be avoided. The small trench needed for the house connection shall be restored after having finished the work.		
Avoid felling of trees wherever possible. This especially applies to the storage tank sites.		

5.7 EMP for the operational phase

5.7.1 Mitigation and compensation measures

Specific mitigation or compensation measures are not required during operation of the water pipeline. Proper maintenance actions shall be conducted. In case of maintenance needs (e.g. digging out parts of the pipeline if broken), the same measures shall be applied as given for the construction.

5.7.2 Monitoring measures

The functioning of the water pipeline shall be checked regularly. In case of malfunctions the EPGE HSE Department shall be informed immediately. Appropriate repair measures shall then be performed on short notice.

6. Summary and Recommendations

A summary of the main conclusions of the ARAP and the EMP, as well as some recommendations is presented in this Section.

6.1 ARAP

Five households and one military establishment have been identified as affected in the villages crossed by the pipeline that will supply water to the new Thaton Power Plant and the transmission line. The corridor follows an existing road, which is running through a military used land, crosses betel, rubber tree and other plantations and a pasture (completely flooded during the rainy season), before reaching the power plant side. Only economical impacts are caused by the Project, i.e., there is no need for physical resettlement of houses or other buildings. No economical impacts are expected from the construction of the pipeline that will supply water to the workers housing area.

By the time of preparation of this ARAP, the affected persons have already been identified and provided with a “preliminary” compensation (guarantee compensation package) of 7,485,000 MMK. This package has been agreed with by the competent agencies (in this case, the LCCP). Because there is a need to remove additional trees, a complete compensation package containing the additional compensation to be provided is under approval at the township level. No trees have been yet felled - the contractor CEEC assures that this will only be undertaken after the people receive the complete compensation.

The main recommendations at this stage are:

- EPGE shall implement a grievance redressing mechanism, whose details have been provided in the Public Consultation Report (Fichtner, 2017). The mechanism will allow the PAPs to place any grievances related to the compensation process, as well as the construction and operation of the Project. So far, no grievance has been registered.
- The full compensation package shall be approved and disclosed to the PAPs to obtain their agreement.
- EPGE shall assure that all PAPs are aware of their rights and obligations during the compensation process.
- EPGE shall undertake the monitoring of the ARAP process following the monitoring framework shown in Section 4.5 of this report. This implies not only monitoring during the compensation process, but also afterwards. The objective is to assess if the PAPs recovered the livelihood as they had before the project, or even if this is improved.

6.2 EMP

Based on four site visits since July 2016, it can be stated that the already existing line corridor (water pipeline to Thaton PP and transmission line) and the erection of the pumping station with control building do not interfere with any area of specific ecological value. The vegetation along the corridor and nearby the Donthami River is very common anywhere in the region. The entire area is intensively influenced by human activities, and a specific fauna and flora does not occur in the investigation area.

Compensation measures for agricultural trees which had to be cut are implemented and covered in the Abbreviated Resettlement Action Plan provided in this report.

For the water pipeline running from the Thaton PP to the housing area, still to be built, the environmental, ecological and social impacts are even less significant. A table with mitigation measures has been developed.

All needed works create only negligible impacts on the environment. But they imply indirect benefits regarding power supply for the country and will improve additionally the water supply situation for the housing areas of the Thaton PP staff and their families. Table 6-1 summarizes the extent of impacts of the water pipelines, power transmission line and water extraction from the Donthami River.

Table 6-1: Summary of the environmental impacts of the project

Issue	Impact assessment	Mitigation measure/remark
Land acquisition	■	Most land is governmental land
Agricultural plants	■	Compensation is paid
Fauna and Flora	■	Reduce working strip, lay down areas to a minimum etc. Area is only of very low ecological value bearing only common species which can be found anywhere in the area.
Impact of water extraction from Donthami River on limnic fauna, flora and on people living downstream	○ / ■	Water extraction is much less than 0.01 % of the total Donthami River flow in the dry season.

Power supply	++	-
Drinking water supply	+	-

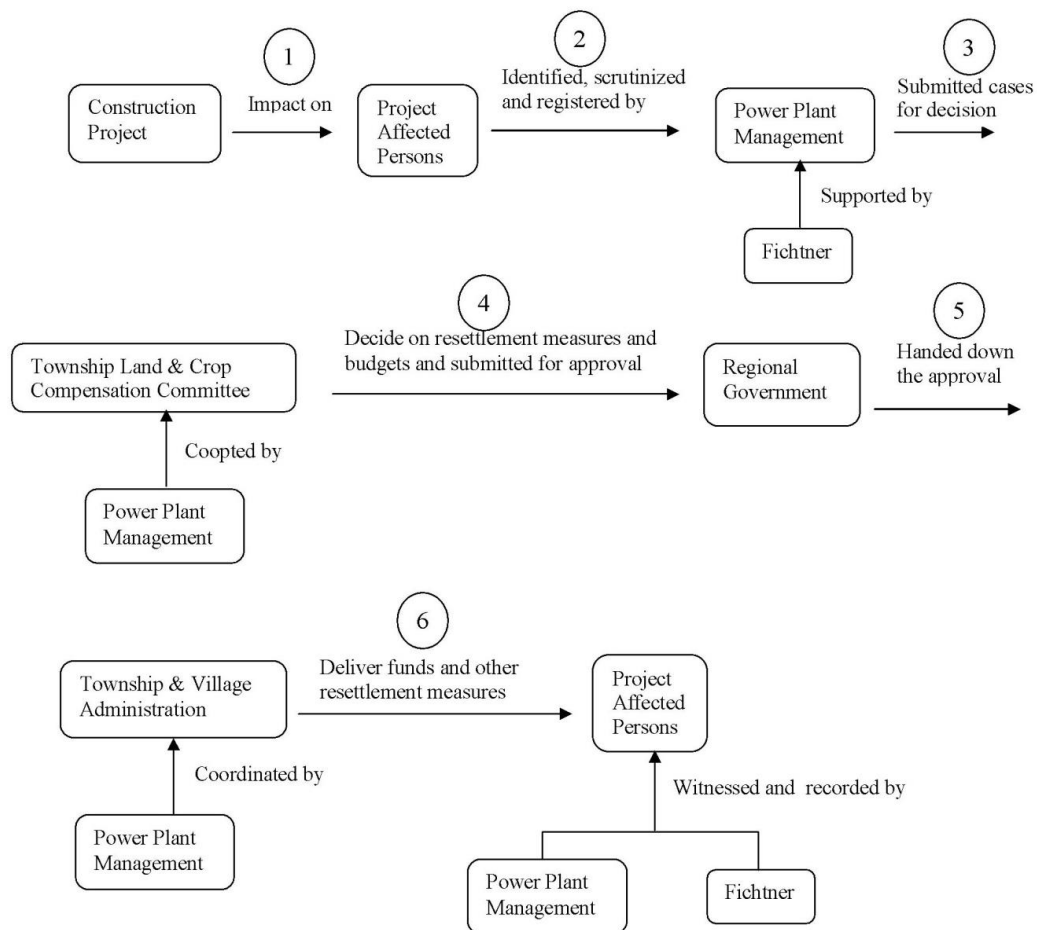
Extent of impact:

■■■	=	high
■■	=	medium
■	=	low
○	=	nil
+	=	locally positive
++	=	regionally/nationally positive

It is recommended that EPGE, via its HSE Department, makes a regular supervision of the remaining construction works (fell of additional trees, and pipeline to the workers housing area).

7. Annexes

7.1 Annex A1: Normal Procedure for Implementing Compensation Activities



7.2 Annex A2: Guarantee Compensation Payment - detailed calculation

#	Name of Affected Person/ Organization	Village	Heading of the Agreement	Date	Land Type	Ownership Status	Affected Properties & Value		
							Type of Property	Qty	Value [MMK]
1	U Hpar Lu	Than Ban	Mutual Agreement for compensation of land and crop value	27.12.16	Land owned by Ministry of Industry	User. Partnership with Ministry of Industry for rubber plantation	Government land	Not entitled to compensation	0
							Rubber trees	39	585,000
							Total		585,000
2	U Kun Zaw Win (son of U Tin Win)	Than Ban	Mutual Agreement for compensation of land and crop value	27.12.17	Grant Land (leased land)	Granted rights of tilling by the government (in his father name)	Land area	(500'x10') or 0.11 acre	940,000
							Rubber Trees	32	960,000
							Betel leave Plants	200	600,000
							Total		2,500,000
3	U Hpo Hla	Than Ban	Mutual Agreement for compensation of land and	25.1.17	Grant Land (leased land)	Granted rights of tilling by the government	Land area (for water pipeline & transmissio	(180'x10') or 0.041 acre	Total value of land & trees

#	Name of Affected Person/ Organization	Village	Heading of the Agreement	Date	Land Type	Ownership Status	Affected Properties & Value		
							Type of Property	Qty	Value [MMK]
			crop value				n towers		shown below
							Farm Hut	1	
							Citrus fruit trees	2	
							Palm trees	5	
							other trees	3	
							Total		
							Type of Property	Qty	Value
4	Military (Infantry Regiment 24)	Du Yin Seik	Mutual Agreement for payment of rehabilitation cost of damaged trees	20.1.17	Land owned by military (Defence Ministry)	Land owner.	Government land	Not entitled to compensation	0
							Cashew trees	50	750,000
							Teak Trees	10	300,000
							Hard wood trees	20	400,000
							Malaysia <i>padauk</i>	30	450,000
							Total		1,900,000

#	Name of Affected Person/ Organization	Village	Heading of the Agreement	Date	Land Type	Ownership Status	Affected Properties & Value		
							Type of Property	Qty	Value [MMK]
4	U Soe Soe (son-in-law of U Maung Pae)	Du Yin Seik	Mutual Agreement for compensation of land and crop value	9.12.16	Land abandoned by Ministry of Industry	User. Using land abandoned by Ministry of Industry	Land area	discarded land, no need for compensation	0
							Dragon fruit tree (1 yr old)	25	Total value below
							Bamboo groves	2	
							Total		500,000
6	U Soe Moe Lwin (son-in-law of U Maung Pae)	Du Yin Seik (river side land taken by the pump house)	Mutual Agreement for compensation of land (no crops)	21.3.17	Grant Land	Granted rights of tilling by the government (in his father-in-law name)	Land area	0.38	1,300,000
Grand Total: 7,485,000 MMK (app. 5,500 USD as of 07.09.2017)									

7.3 Annex A3: Signed agreement letters for the Guarantee Compensation Payment



နှစ်ဦးသဘောတူ သစ်ပင်ပျက်စီးမှုအတွက် ပြန်လည်စိုက်ပျိုးစရိတ်ထုတ်ပေးခြင်းကတ်စာချုပ်

ရက်စွဲ ၊ ၂၀၁၂.၂၀၁၇


သစ်ပင်ပြန်လည်စိုက်ပျိုးစရိတ်ပေးအပ်သူ	ဦးသန်းစိုး
နေရပ်	မှတ်ပုံတင်အမှတ်-၆/ထဝန(နိုင်)၀၀၀၂၃၃
သစ်ပင်ပြန်လည်စိုက်ပျိုးစရိတ်လက်ခံသူ	လှိုင်စစ်ဇော်အားပေးစက်ရုံ
နေရပ်	ဒူးရင်းဆိပ်ကျေးရွာ - သထုံမြို့
စက်ရုံရေပိုက်လိုင်းနှင့် 6.6 KV ဓာတ်အား	ဗိုလ်မှူးသော်စင်နိုင်
လိုင်းအတွက်အသုံးပြုမည့်မြေ	မြန်တမ်းဝင်အမှတ် (ကြည်း ၃၃၀၆၂)
ပျက်စီးသွားသည့်သစ်ပင်များ	ခလရ(၂၄) ဒူးရင်းဆိပ်ကျေးရွာ-သထုံမြို့
	ခလရ(၂၄)တပ်မြေအတွင်းမှ အလျား(၂၀၀၀)ပေ
	အနံ(၁၀)ပေ (၀.၄၅၉)ဧက
	သီဟိုဠ် (၅၀) ပင် ၊ ကျွန်း(၁၀)ပင် ပျဉ်းကတိုး(၂၀)ပင်
	မလေးရှားပိတောက်(၃၀)ပင်


(၁) အထက်ပါသစ်ပင်ပြန်လည်စိုက်ပျိုးစရိတ်ပေးအပ်သည့်သစ်ပင်များသည် ခလရ(၂၄) တပ်ပိုင်မြေ အတွင်းဖြစ်ပြီး ၊ လှိုင်စစ်ဇော်အားပေးစက်ရုံအသစ် တည်ဆောက်ရာ၌ 6.6 KV ဓာတ်အားလိုင်းနှင့် ရေပိုက်လိုင်း သွယ်တန်းရာတွင် ပျက်စီးသွားသည့် သီဟိုဠ်ပင်(၅၀)ပင် နှုန်း (၁၅၀၀၀) ကျပ်အတွက် (၇၅၀၀၀) ၊ ကျွန်း(၁၀) ပင် နှုန်း(၃၀၀၀၀) ကျပ်အတွက် (၃၀၀၀၀) ကျပ် ၊ ပျဉ်းကတိုးပင်(၂၀)ပင် နှုန်း (၂၀၀၀၀) ကျပ်အတွက် (၄၀၀၀၀) ကျပ် ၊ မလေးရှားပိတောက် (၃၀) ပင်အတွက် နှုန်း (၁၅၀၀၀)ကျပ်အတွက် (၄၅၀၀၀) ကျပ် စုစုပေါင်း (၁၉၀၀၀၀) ကျပ်တိတိကို (၂၀၁၂.၂၀၁၇) ရက်နေ့တွင် စက်ရုံမှူးဦးသန်းစိုး မှပေးအပ်ရာ တပ်ရင်းမှူး ဗိုလ်မှူး သော်စင်နိုင်မှ (၁၉၀၀၀၀)(တစ်ဆယ့်ကိုးသိန်း) ကျပ်တိတိကို လက်ခံရရှိပါကြောင်း ကတိပြုလက်မှတ်ရေးထိုးပါသည်။

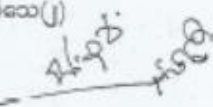
သစ်ပင်စိုက်ပျိုးစရိတ်ပေးအပ်သူ

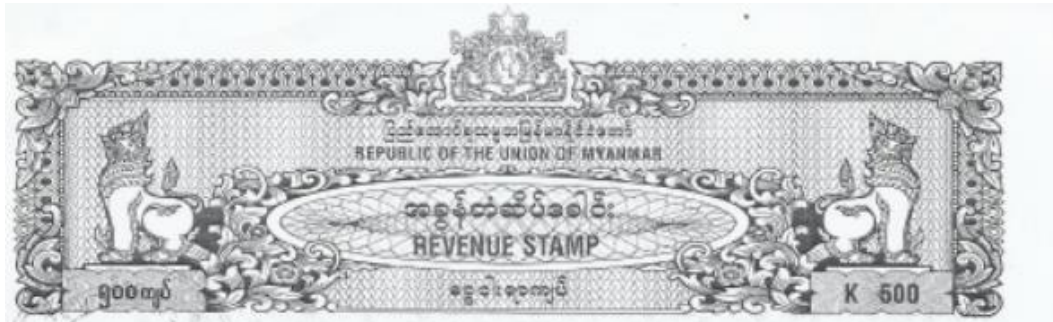
သစ်ပင်စိုက်ပျိုးစရိတ်လက်ခံသူ


ဦးသန်းစိုး ၊ ၆/ထဝန(နိုင်) ၀၀၀၂၃၃


ဗိုလ်မှူးသော်စင်နိုင်(ကြည်း -၃၃၀၆၂)

သက်သေ(၁)

ဦးထလင်းဆန်း ၊ ၁၄/လမန(နိုင်) ၀၀၁၁၉၀

သက်သေ(၂)

ဗိုလ်ကြီး ဝင်းစိုး (ကြည်း ၃၆၇၆၄)



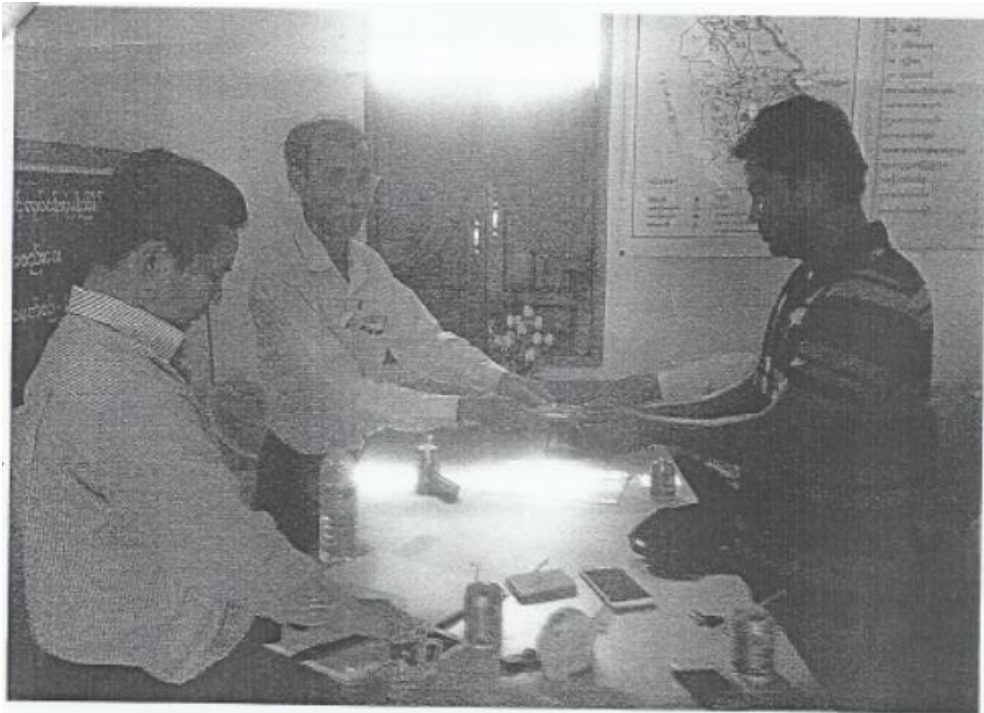
ရှစ်ဦးသင်္ဘောတို့ ရွေးကောက်ပွဲလက်မှတ်စာရွက် အကောင်အထည်ဖော်
 ၇၀၅ ခု ၀၇.၃.၂၀၁၇

- ရွေးကောက်ပွဲစာရွက်စာတမ်းထုတ်ပြန်ရေးဦးစီးဌာန၊ ဝန်ကြီးဌာန (အပေါင်း)၊ ဝန်ကြီးဌာန၊ ဝန်ကြီးဌာန၊ ဝန်ကြီးဌာန
- ရွေးကောက်ပွဲစာရွက်စာတမ်းထုတ်ပြန်ရေးဦးစီးဌာန၊ ဝန်ကြီးဌာန (အပေါင်း)၊ ဝန်ကြီးဌာန၊ ဝန်ကြီးဌာန၊ ဝန်ကြီးဌာန
- ရွေးကောက်ပွဲစာရွက်စာတမ်းထုတ်ပြန်ရေးဦးစီးဌာန၊ ဝန်ကြီးဌာန (အပေါင်း)၊ ဝန်ကြီးဌာန၊ ဝန်ကြီးဌာန၊ ဝန်ကြီးဌာန

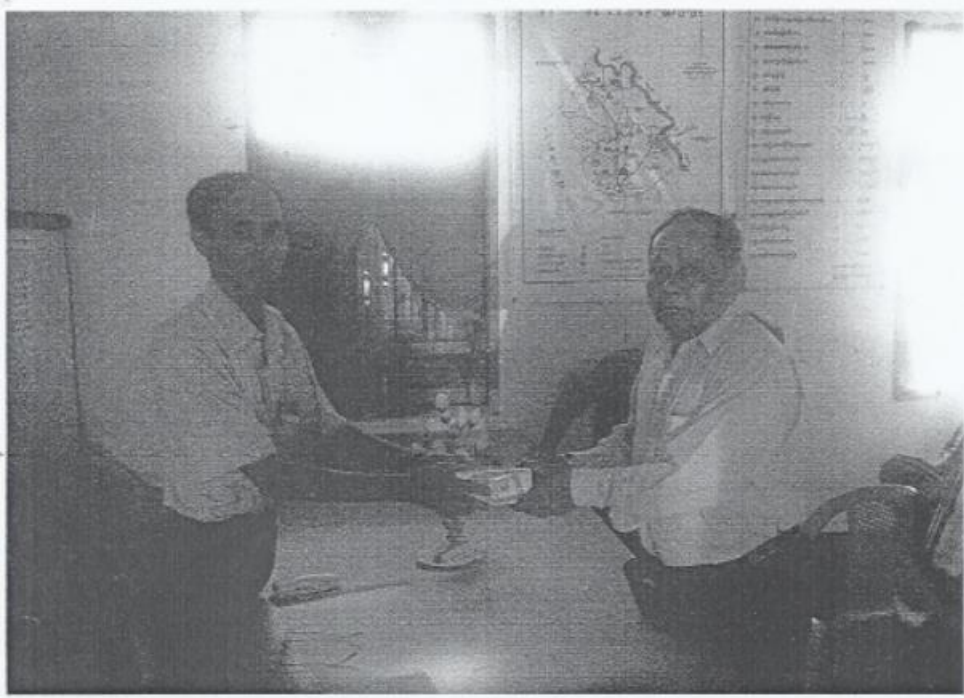
၁။ ရွေးကောက်ပွဲစာရွက်စာတမ်းထုတ်ပြန်ရေးဦးစီးဌာန၊ ဝန်ကြီးဌာန (အပေါင်း)၊ ဝန်ကြီးဌာန၊ ဝန်ကြီးဌာန၊ ဝန်ကြီးဌာန
 ၂။ ရွေးကောက်ပွဲစာရွက်စာတမ်းထုတ်ပြန်ရေးဦးစီးဌာန၊ ဝန်ကြီးဌာန (အပေါင်း)၊ ဝန်ကြီးဌာန၊ ဝန်ကြီးဌာန၊ ဝန်ကြီးဌာန

၃။ ရွေးကောက်ပွဲစာရွက်စာတမ်းထုတ်ပြန်ရေးဦးစီးဌာန၊ ဝန်ကြီးဌာန (အပေါင်း)၊ ဝန်ကြီးဌာန၊ ဝန်ကြီးဌာန၊ ဝန်ကြီးဌာန
 ၄။ ရွေးကောက်ပွဲစာရွက်စာတမ်းထုတ်ပြန်ရေးဦးစီးဌာန၊ ဝန်ကြီးဌာန (အပေါင်း)၊ ဝန်ကြီးဌာန၊ ဝန်ကြီးဌာန၊ ဝန်ကြီးဌာန

ရွေးကောက်ပွဲစာရွက်စာတမ်းထုတ်ပြန်ရေးဦးစီးဌာန၊ ဝန်ကြီးဌာန (အပေါင်း)၊ ဝန်ကြီးဌာန၊ ဝန်ကြီးဌာန၊ ဝန်ကြီးဌာန
 ရွေးကောက်ပွဲစာရွက်စာတမ်းထုတ်ပြန်ရေးဦးစီးဌာန၊ ဝန်ကြီးဌာန (အပေါင်း)၊ ဝန်ကြီးဌာန၊ ဝန်ကြီးဌာန၊ ဝန်ကြီးဌာန







7.4 Annex A4: ARAP Implementation Schedule

Tasks	Responsible	Months						
		1	2	3	4	5	6	7
Preparation of Draft ARAP	EPGE (via Consultant)	█						
Site survey for construction work	Contractor	█						
Mobilizing the help of Village Tract Administrator for the ARAP	EPGE (supported by the Consultant)	█						
Community consultation regarding the ARAP	EPGE (supported by the Consultant)	█						
Identification, rectification and registering of affected persons	EPGE (supported by the Consultant)	█						
Field survey of affected land and other assets and socio-economic survey of affected households	EPGE (supported by the Consultant)	█						
Completing the draft ARAP	Consultant	█						
Approval of Draft ARAP	EPGE		█					
Set a cut-off date and give notification to the PAPs	EPGE (supported by the Consultant)		█					
Notification of entitlement to affected persons conducted	EPGE (supported by the Consultant)		█					
Preparation of construction designs and lay out plans	Contractor		█					
Securing the agreement of entitlements from affected persons	EPGE		█					
Consultation with affected persons to establish the value of land and other assets as basics for assessment of loss	EPGE (supported by the Consultant)		█					
Formation of Township Land & Crop Compensation Committee	EPGE (supported by the Consultant)	█	█					
Preparation and submitting of cases to Township Land & Crop Compensation Committee (TLCCC)	EPGE (supported by the Consultant)			█				
Meeting of TLCCC for decision making	Township committee			█	█			
Submitting of committee decisions to the union ministry for review and approval	Regional Government				█			
Approved funds allocated from the union ministry budget	Regional Government				█			
Funds handed down to township and village tract administrative offices	Regional Budget Department					█		
Disbursement of compensation to affected persons	Township and village authorities					█		
Construction of water pipeline and overhead transmission line (to avoid framing seasons)	Contractor					█	█	█
Receiving & redressing grievances reports from affected persons	EPGE					█	█	█

Tasks	Responsible	Months						
		1	2	3	4	5	6	7
Counseling with affected persons	EPGE (supported by the Consultant)							
Monitoring and Evaluation (on-going)	EPGE (supported by the Consultant)							

7.5 Annex A5: ARAP Implementation Budget

Items	Cost USD	Basis for calculation	Timing	Source of Funds	Channel of distribution
Operations	1,800				
Remuneration	700	Daily allowances for staff seconded from power plant and village tract administrative office	Month 1 to 7	EPGE	MoEE
Office costs	100	Stationery, supplies and communications	Month 1 to 7	EPGE	MoEE
Transportation costs	350	Hiring cost of vehicles	Month 1 to 7	EPGE	MoEE
Consulting services	500	Preparatory work for RAP including mapping, census and survey, community consultation, counseling, monitoring & evaluation system, etc	Month 1&2		
Others	150	Meetings, travel allowances, etc.	Month 1 to 7	EPGE	MoEE
Compensation	8,000	<i>Estimated approximate Complete Compensation Package</i>			
Compensation for land owners/users for plantation land	3,000	The sum agreed by the holder of tilling rights to the amount not causing him/her grievance (or) The sum not less than the market value assessed by the Compensation Committee (formed by Central Land Administration Committee) based on the specific types of business being conducted on the land	Month 4	MoEE	MoEE
Compensation for lost crop production for owners/users	3,000	For paddy and other seasonal crops - Based on average acre yield of specific crop, the current market value of crops multiplied by 3 For perennial plants- Based on the current value of the plants, assessed market value of the plants multiplied by 3	Month 4	MoEE	MoEE
Compensation for dwellings and structures	500	Modification or other actions inflicted to the dwellings or structures for the purpose of improving the land, current market	Month 4	MoEE	MoEE

Items	Cost USD	Basis for calculation	Timing	Source of Funds	Channel of distribution
		value of dwellings or structures multiplied by 2			
Compensation for trees	1,500	Current market value of specific varieties of trees.	Month 4	MoEE	MoEE
Compensation for house plot	n.a	n.a	n.a	n.a	n.a
Compensation for loss of business	n.a	n.a	n.a	n.a	n.a
Compensation for moving/disturbance	n.a	n.a	n.a	n.a	n.a
Land Acquisition and resettlement site plan					
Land acquisition	n.a	n.a	n.a	n.a	n.a
Site planning	n.a	n.a	n.a	n.a	n.a
Community Infrastructure	n.a	n.a	n.a	n.a	n.a
Monitoring and Evaluation	600				
RAP monitoring	400	Monthly monitoring for 4 rounds @ 100 USD per round	Month 1, 3, 5	EPGE	MoEE
RAP evaluation	200	Final Evaluation	Month 6	EPGE	MoEE
Totals					
Sub-total of all items	10,400				
Contingency (10%)	104				
Grand Total	10,504 USD (appr. 14,150,000 MMK as of 07.09.2017)				

7.6 Annex A6: Grievance Redressing Mechanism

Environmental and Social Management for Thaton Combined Cycle Gas Turbine (CCGT)Power Plant

Setting the Grievance Redress Mechanism (GRM) in Practice

This Memo provides a description of the GRM proposed the Project , and makes recommendations on how to apply it in compliance with the World Bank safeguard requirements.

1. How to formalize a grievance ?

1.1 Grievance forms (see attachment)

In case of any concern , question or compliant linked to the construction and operation of the new CCGT Power Plant in Thaton , people can fill in a grievance forms at several entities , namely :

- Village Tract Administration ' s office :
 - U Kyaw Htun Oo, Village Tract Administrator , Kyar Ban Village
- Village Leaders :
 - U Hpa Lu ,Than Ban
 - U Hpo Pe, Inn Shey
 - U Maung Oo,Nyaung Wyne
 - U Saw Naung , Chair Person , Kyar Ban Village Electrification Committee

- Ethic Leaders:
 - U Aung Nyunt ,Pa-oh Ethnic Leader , Pa-oh Su
 - U Shwe Chit , Kayin Ethnic Leader ,Kayin Su
 - U Nyan Thein , Kayin Literature & Culture , Kayin Su Committee
- The old power plant administrative office:
 - Branch Clerk, Administration Section, Thaton Power Plant

If a person is not skilled in writing , another person e.g. a relative , the ethnic leader or village administrator shall be allowed to fill in the form for that person.

1.2 Direct phone number

In alternative to the usage of grievance forms,or as an additional measure , a direct contact number of Thaton Plant Management shall be provided to the citizens for placing grievances.The phone number can be shown in billboards /posters.

(see section 4)

2. What can EPGE do?

- Firstly , formally communicate with the entities listed above and introduce them to the objective of the GRM (which is allowing the people to place their grievances regarding the project in a formal way and assuring everyone will receive an answer);
- Obtain the agreement of the entities to participate in the GRM;
- Print 50 copies of these forms;
- Distribute the grievance forms through the aboves listed entities /locations;

2.2 Monitor the GRM

EPGE can actively monitor the GRM by contacting the entities once per month to be sure whether a grievance has been placed or not.

2.3 Answer to the grievances

It is suggested that EPGE provides an answer to any grievances received in a short period of time in the form selected by the citizen that placed the grievance.

The GRM shall treat all grievances the same way , that is , not allowing nor promoting discrimination based on age, gender ,income level ,ethnicity ,religion or others.

All grievances shall be treated confidentially by EPGE.

2.4. Register of grievances and answers

It is recommended that EPGE keeps a dedicated register for the grievances received and the answers provided , with indication of dates of reception and answer.

3. What can entities do?

The entities are suggested to:

- Provide grievance forms and a pen in locations where the people can have easy access to.
- Write a small instruction stating that people can fill out the forms in case of any complain related to the project.

4. Additional communication measures

EPGE will install billboards or simple paper posters in strategic places within the villages to inform the people that a GRM is available . Strategic places are for example:

- The entrance to the construction site(fence);
- Village Tract Administration Office;

These billboards /postsers shall contain the following information:

New Thaton Combined Cycle Power Plant

EPGE is building a new power plant in the compound of Old Thaton Power Plant that is situated near Kyar Ban Village , Thaton-Hpa-an Highway. In case you feel the need to place any concern, question or complaint linked to the construction and operation of this project ,please fill in this form and send to EPGE via from village tract administration office/Thaton Plant Management, etc. EPGE will provide an answer to you in a short period.

Contact number: Thaton Plant Management 09- 250344932/09-43005879

5. Flexibility of the GRM

GRM is a flexibility instrument . This means that the way the GRM is applied and managed can be changed based on any feedback received from the communtites , and on “lessons learnt” from its application . In the future it may be proved to be more advantageous to place the grievance forms in different locations , or to provide a different platform grievances, etc. The GRM shall then be adjusted

Grievance Redressing Form

Gender :				
Title or Occupation :				
Name: (Please do not fill this field if you would like to remain anonymous)				
Please mark how you wish to be contacted	<input type="checkbox"/> Post	<input type="checkbox"/> Telephone	<input type="checkbox"/> E-mail	<input type="checkbox"/> Others
	<input type="checkbox"/> Personally			
	Address:	Contact number:	E-mail Address:	Please specify:
Preferred language for communication	<input type="checkbox"/> Myanmar	<input type="checkbox"/> Others		
		Please specify:		
Description of incident or Grievance (What happened? Where did it happen? Who did it happen to? What is the result of the problem?)				
Date of Incident / Grievance:				
<input type="checkbox"/> One time incident /grievance?			Date:	
<input type="checkbox"/> Happened more than once?			How many times?	
<input type="checkbox"/> On-going (currently experiencing problem)				
Do you have suggestions on how to solve the problem?				
I requested you not to disclose my identity to third parties without my previous written consent				
Signature : (Please do not fill this field if you would like to remain anonymous)				

Location :

Date :

**သထုံခါတ်ဇွေ့သုံးခါတ်အားပေးစက်ရုံအသစ်တည်ဆောက်ခြင်းလုပ်ငန်းနှင့်ပတ်သက်ပြီး
တိုင်ကြားရန်သတ်မှတ်သည့်ပုံစံ**

အမျိုးသား () (သို့) အမျိုးသမီး () (သင့်လျော်ရာတွက်လယ်တွင် ✓ ဖြည့်ပါ)				
အလုပ်အကိုင်/ရာထူး				
အမည် - (ဖြည့်စွက်သူကအမည်မဖော်လိုပါကအမည်ဖြည့်စွက်ရန်မလိုပါ။)				
သင့်အားမည်သို့ ဆက်သွယ်စေလို သည်ကို တစ်ခတ်ပါ သက်ဆိုင် ရာတွက်လုပ်ငန်း ဖြည့်စွက်ပေးပါ	<input type="checkbox"/> ကတိုက်မှ တဆင့် <input type="checkbox"/> လူကိုယ်တိုင်	<input type="checkbox"/> တယ်လီဖုန်း ဖြင့် <input type="checkbox"/> တယ်လီဖုန်း နယ်တီ	<input type="checkbox"/> အီးမေးလ် အင်တာနက် စာပို့စနစ် ဖြင့် <input type="checkbox"/> အီးမေး လိပ်စာ	<input type="checkbox"/> အခြားမည်သို့ ဖြင့် <input type="checkbox"/> အခြားဆက်သွယ်မှုမည့် နည်းလမ်း ကိုဖော်ပြပါ။
ဆက်သွယ် ရာတွင် အသုံးပြုလိုသည့် ဘာသာစကား	<input type="checkbox"/> မြန်မာဘာသာ စကား	<input type="checkbox"/> အခြားဘာသာစကား <input type="checkbox"/> အခြားဘာသာစကားကိုဖော်ပြပါ။		
ထိစိုက်နှစ်မှာသည့်အဖြစ်အပျက်ကိုအောက်ပါတွက်လုပ်တွင်ရှင်း လင်းဖော်ပြပါ။ (ဘာဖြစ်ခဲ့သလဲ၊ ဘယ်မှာဖြစ် ခဲ့သလဲ၊ ဘယ်သူအပေါ်ဖြစ်ပျက်ခဲ့သလဲ၊ ဖြစ်ပျက်သည့်ပြဿနာ၏ အကျိုးဆက်ကဘာလဲ၊ စသဖြင့်ဖော်ပြပါရန်)				

ခြစ်ပျက်သည်အနွှဲ	
<input type="checkbox"/> တစ်ကြိမ်တစ်ခါသာခြစ်ခဲ့သည်အဖြစ်အပျက်ဖြစ်သည်	အနွှဲ
<input type="checkbox"/> တစ်ကြိမ်ထက်ပိုမာခြစ်ခဲ့သည်အဖြစ်အပျက်ဖြစ်သည်	ဘယ်နှစ်ကြိမ်ဖြစ်ခဲ့သလဲ
<input type="checkbox"/> လက်ရှိတွေ့ကြုံခံစားနေရသည့်အဖြစ်အပျက်ဖြစ်သည်	
<p>ခြစ်ပျက်သည်ကိုစွဲအတွက်သင့် တွင် ပြေစွမ်းရန်နည်းလမ်းအကြံပြုချက်ပေးပါသလော့ (အောက်ပါတွက်လစ်တွစ်ရှင်းလင်းရေးအားဖော်ပါ)</p>	
<input type="checkbox"/> ကျွန်ုပ်တို့အဖြစ်ရေးအားအားသည့်သဘောတူညီချက်မရှိပဲ ကျွန်ုပ် အမည်ကိုအခြားသူအား ဖော်ပြခြင်းမပြုရန် ပေးထားရန်ပါသည်။	
<p>လက်မှတ်ရေးထိုးရန်</p> <p>(သင့်အမည်ကိုမသိစေလိုပါက လက်မှတ်ရေးထိုးရန်မလိုအပ်ပါ)</p>	
<p>မနုဇာ</p>	
<p>အနွှဲ</p>	