

Executive Summary

The Aung Htet Myet Company Limited is a Myanmar Private Company Limited, a Family Business established under the National Investment Law and the Myanmar Company Act, whose registered office is situated at the No 47, Bayint Naung Road, Hlaing Township, Yangon Region and the existing Yangon Tyre factory of the company, since 2008, is situated In Shwe Pyi Thar Industrial Zone, in the same Yangon Region.

As to cope up with the progressive need of tyres for the rapidly increasing millions of automobiles in Myanmar, it is of the intension to expand a new tyre manufacturing factory and has arranged a contract with the Heavy Industries, Ministry of Industry, No(2) for the No 22, Heavy Industry (Bilin), situated in Bilin Township, Thaton District, Mon State, to convey the property of Land, Factory Building, machineries and equipment, for a long term lease of 70 years (initial 50 years plus two ten year extensions). It has already obtained MIC Permit of No – 294/1998-1999.

The Aung Htet Myet Co., Ltd. Has planned over 2,500 million kyats worth of investment for the Bilin factory on lease, for renovation, and alter for installation of modernized but environment friendly machinery and upgraded technology, to produce the radial tyres of international standards. The production target would be 300,000 nos with gradual increase pre annum, of which 80 percent of the tyres, is meant for domestic use to fulfill the needs of transport sector development and 20 percent is intended for export, to obtain the valuable earning of Foreign Exchange for the economic sector development of the country. The Vision is to be a Joint Venture with the renown tyre Companies, to get involved in Asia market and eventually in the World tyre market share.

Bilin Factory is selected, based on the facts that it's in the rubber plantation area, easy access to road and river transport and availability of the needed infrastructure and local work force. Pertaining to the cost of raw materials, 40 percent is of local purchase for Raw Rubber and Petroleum Spirit, and 60 percent is for import of synthetic rubber, chemicals and cords, bead wires and accessories.

The EIA and EMP for the factory were conducted by the Green Enviro Services Ltd. and 'Green Enviro Survey Team'. The recent study is based on the followings; Environment, Environmental impact, Environment performance for Prevention of air, water and soil pollution, and Socio-economic Impact on the community.

Impacts usually expected and accessed as part of this study are, if it implicated the loss of habitat and biodiversity, health and safety implications, increased traffic, increased noise levels, dust and gaseous emission, solid waste/waste water disposal, and visual impact. Following the assessment, it was found out that there will be no loss of habitat and biodiversity, being an already existing factory in the midst of a vast land of about 130 acres, away from residential areas, and regarding other impacts, none are regarded as having a significant impact to the extent that the intended activity cannot proceed, given that the follow-up studies, mitigations and recommendations proposed, be implemented and monitored.

The Environment Impact Assessment (EIA) concludes that the radial tyre manufacturing activity, as described in this Report, is expected to have a non-significant impact if it follows. Implementation of the proposed mitigation procedures, during both the renovation and operational phase, as mentioned in Environment Management Plan (EMP) of the study.

As for the Social Impact Assessment and mitigation, the Study Team met with the nearby community, the village authorities, and village elders of Win Pyan and Kyaut Yae Twin villages, for discussion. There seemed to be no community disappointment as the village community is optimistic that the study project, will definitely provide job opportunities of 500-750 accordingly in different phases, income generation during the Renovation and Operation phases, on job trainings, and also ambitious on upgraded village education level and health improvement. The Aung Htet Myet Co.,Ltd. Also planned for CSR with kyats 150

Lakhs per Year of allotted fund for Environment, to be used for developing of the education in the villages in vicinity and for supporting the area development.

The recent environment study is for Aung Htet Myet Co.,Ltd, which is optimistic on potential higher demand of tyres, as per the rapidly growing market of automobiles and for economic development in Myanmar.

The proposed project aims to manufacturing of high quality tyres, 80% for domestic use and 20% export to foreign country. The main purpose of this EMP report is to obey the rule and regulation of local and International Environmental Protection programs and harmonize with the environmental and describes the responsible person and his responsibility.

Policy, Legal and Institutional Framework

National laws and Regulations, International Guidelines are referred for Environmental Management Plan of the proposed project.

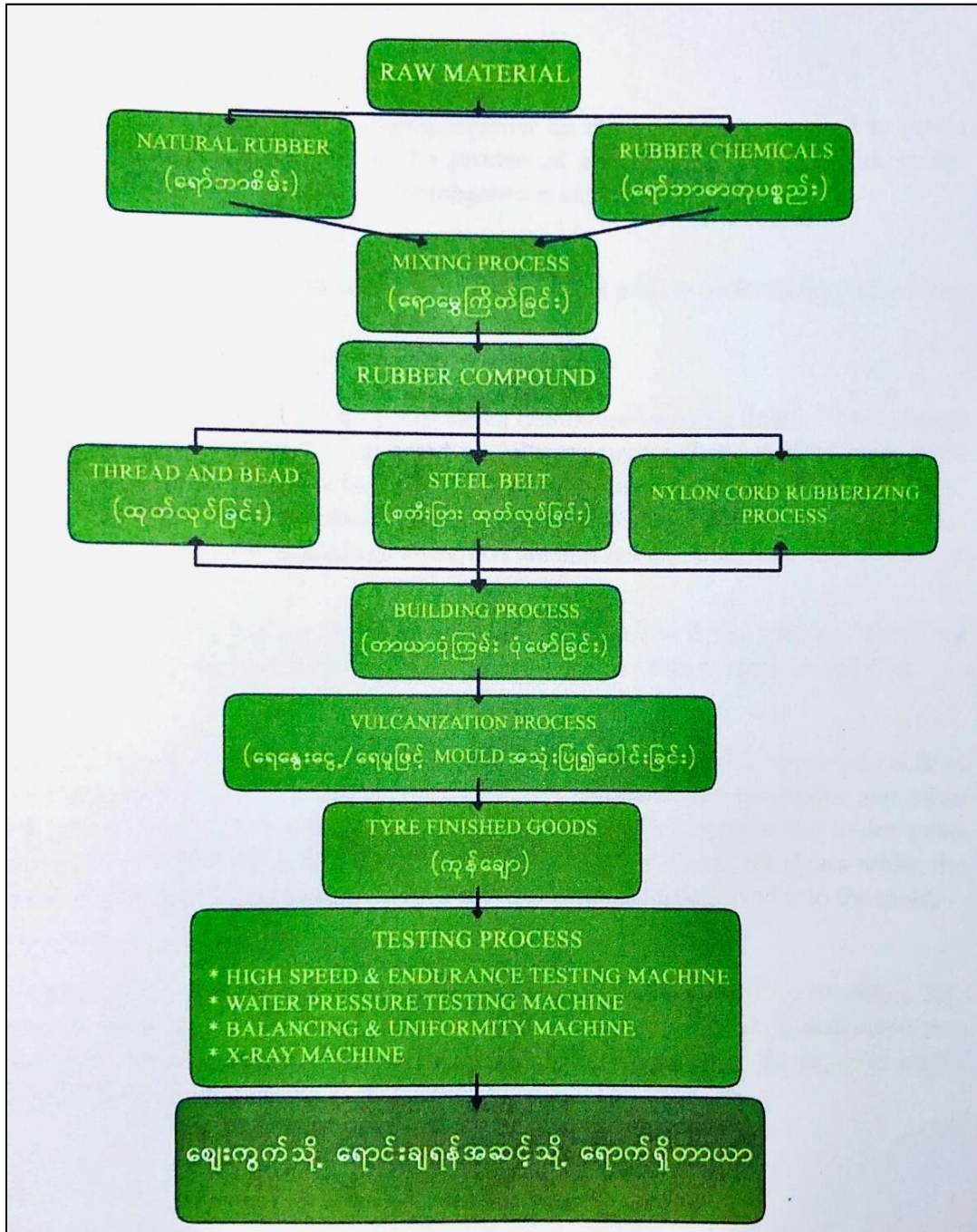
1. Environmental Conservation Law
The Pyidaungsu Hluttaw Law No.9/2012 (30 March, 2012)
2. Environmental Conservation Rule issued under the Environmental Conservation Law
Notification No.50/2014 (5 June 2014)
3. The Conservation of Water Resources and River Law, 2006
The State Peace and Development Council Law No.8/2006 (2 October, 2006)
4. The Protection of Wildlife and Conservation Natural Areas Law (1994)
The State law and Order Restoration Council Law No.6/94 (8 June, 1994)
5. The Law Amending the Canal Act (1988)
The State Peace and Development Council Law No.1/98 (9 February, 1998)
6. The Labour Organization Law
The Pyidaungsu Hluttaw Law No.7 (11 October, 2011)
7. The Law Amending the Leave and Holidays Act, 1951
The State Peace and Development Council Law No.6/2006 (30 May, 2006)
8. The Minimum Wage Law, 2013
The Pyidaungsu Hluttaw Law No.7/2013 (22 March, 2013)
9. Environmental Impact Assessment Procedure, 2015
10. National Environmental Quality (Emission) Guideline 2015
11. National Myanmar Environmental Policy 2019
12. Foreign Investment Law, 2012
13. Foreign Investment Rule, 2013
14. Myanmar Investment Rule, 2017
15. Myanmar Insurance Law, 1993
16. Payment of Wages Law 2016
17. The Export and Import Law 2012
18. The Prevention of Hazard from Chemical and Related Substances Law 2013 and Rules 2016
19. The Underground Water Act
20. Myanmar Fire Brigade Law 2015
21. Fire Safety Procedure
22. The Electricity Law 2014
23. Boiler Law 2015
24. The Social Security Law 2012
25. The Employment and Skill Development 2013
26. Public Health Law 1972
27. Prevention and Control of Communicable Disease Law 1995 Amendment 2011
28. Occupational Safety and Health Law 2019
29. The Law on Standardization

30. The Industrial Explosive Materials Law (2018)
31. The Motor Vehicles Law 2015
32. The Conservation of Water Resources and River Law 2006
33. The Commercial Tax Law 1990 Amended 2014
34. The Natural Disaster Management Law 2013

Project description

Type of proposed business	Manufacturing of high quality radial tyres
Type of investment	100% Myanmar Citizen Investment
Name of company	Aung Htet Myet Co., Ltd
System of Sale	80% local sale and 20% export
Production Year	2018
Total land area	129.79 Acres
Land Lease Year	long term lease of 70 years (initial 50 years plus two ten years extensions)
Address of proposed project	Plot-212, No 22, Heavy Industry (Bilin), Bilin Township, Thaton District, Mon State
Contact Number	U Khaing Myo Min 09-970100838, 09-679812652, 09-8626955

The proposed project is located at Thaton District, Mon State. The total area of project site is 129.79 Acres. Main structure is designed into production area for one building. Generator room, canteen and dormitory are separated by main factory building structure. The factory layout plan which is also can be seen in this report. Production is requiring of work for first year operation to 10 years operation. The main product of the Aung Htet Myet Co., Ltd factory is high quality radial tyres.



Process Flow Chart

Potential Environmental Impact and Mitigation Measure

Possible effects such as impacts on environmental resources, ecological resources, human and waste disposal due to construction, operation and decommissioning processes. Potential impacts for the proposed projects are normally differentiated into three categories, viz, construction phase, operation phase and decommissioning phase.

The relative important of each impact is assessed based on the understanding that general mitigation measures will be integrated into the baseline project. Therefore, when the general mitigation measures reduce impacts to the point of rendering them negligible they are excluded from further analysis. Once the significance of the impact is established as more than negligible, it is described and additional, specific mitigation measures may be proposed to allow optimal integration of the project into the environment.

Table 1 Environmental and Social Risk Assessment

Environmental Impact	Project Activities	Significant of Potential Impacts					Impact Significance
		M	D	E	P	SP	
Construction Phase; It is not assessed in this phase because of construction is already completed during EMP preparation.							
Operation Phase							
Air Pollution	<ul style="list-style-type: none"> Dust and GHGs emission from vehicles used for transporting raw materials and final products Particulate matters emission from the activities of production process Emission of smoke from (rice briquettes) and kitchen Emission from emergency diesel generator 	3	4	2	4	36	Moderate
Water Pollution	<ul style="list-style-type: none"> Sewage disposed of from the toilets Oil spill and grease leaks from transporting vehicles and machinery equipment used in operation phase 	2	4	2	3	24	Low
Soil contamination	<ul style="list-style-type: none"> Accidental spillage of oil used by vehicles operating 	1	4	1	2	12	Very low
Noise pollution	<ul style="list-style-type: none"> Generating noise from the production machinery Noise from the generating of the emergency generators 	3	4	1	4	32	Moderate
Fire Hazard	<ul style="list-style-type: none"> Poor electrical installations Waste disposed area Raw materials storage 	3	4	2	3	27	Moderate
Solid waste	<ul style="list-style-type: none"> Residual pieces of fabric scarps from the production lines Waste from packaging materials Waste from kitchen, dormitory and office 	3	4	1	4	32	Moderate

Liquid waste	<ul style="list-style-type: none"> Septic system and sewage Domestic liquid waste disposal from office, kitchen and dormitory 	2	4	2	4	32	Moderate
Hazardous waste	<ul style="list-style-type: none"> Engine oil leaks, spill at diesel storage and during fuel refueling Used oil and lubricant discharged from the maintenance of vehicles and machines 	2	4	1	2	14	Very low
Occupational health and safety (accidents, injuries)	<ul style="list-style-type: none"> Accidental cases cause by operating machines Electricity and emergency diesel generators. Unloading, mixing, cutting, pressing and packaging activities. Accidental cases of thermic fluid heater 	3	4	1	4	32	Moderate
Social-economic condition	<ul style="list-style-type: none"> Job opportunities for local people 	-	-	-	-	-	Positive impact
Decommissioning Phase							
Air pollution	<ul style="list-style-type: none"> Decommissioning of buildings and related materials 	3	1	1	4	20	Low
Water pollution	<ul style="list-style-type: none"> Sewage from decommissioning workers Demolition machinery equipment 	3	1	1	3	15	Low
Soil contamination	<ul style="list-style-type: none"> Decommissioning of buildings and related materials Transportation of demolished materials 	3	1	1	3	15	Low
Noise pollution	<ul style="list-style-type: none"> Decommission activities Transportation of demolished materials 	3	1	1	3	15	Low
Waste disposal	<ul style="list-style-type: none"> Sewage system Demolished debris such as bricks concrete materials 	3	1	1	3	12	Very Low
Hazardous waste	<ul style="list-style-type: none"> Used lubricants from decommissioning vehicles and machines 	3	1	1	3	12	Very Low
Occupational	<ul style="list-style-type: none"> Decommission 	3	1	2	3	18	Low

health and safety (accidents, injuries)	activities <ul style="list-style-type: none"> • Transportation of demolished materials 						
Social-economic condition	<ul style="list-style-type: none"> • Temporary job opportunities for local people 	-	-	-	-	-	Positive impact

According to the result of analysis, it can be concluded that most of the project activities have low significance on environment, in all phases. Project activities that can produce solid waste and liquid waste are moderate significance. Moreover, project activities that emit dust and GHGs and accidental cases are moderately significant. Fire hazard potential of the proposed project and noise pollution are highly significant. However, this can be prevented or mitigated a by using the following mitigation measures.

Conclusion & Recommendation

In conclusion, the environmental management practices, procedures and responsibilities are defined here in to get full compliance with the existing environmental policy, laws, rules and instructions of the Republic of the Union of Myanmar. All the feed backs, desired and needs of local public recorded in public consultation meetings are well addressed and incorporated in formulation of EIA. It has been figured out that the proposed caps factory is going to generate local employment opportunities and enhance capabilities and working skills of employees. Consequently, their socio-economic standard is expected to be improved and undertaking corporate social responsibilities (CSR) as recommended. The study further concluded that positive impacts would be immense benefit to the local community and national development as well.

This is recommended that

- All appropriate environmental management measure detailed in this report, together with any other environmental management commitments should be implemented throughout the entire life of the factory
- Workers should be provided proper training and it should be ensured that workers use PPE during factory operation area.
- Daily, monthly and annual action plan shall be formulated based on this EIA and practiced at operation level.
- Keep full records of environmental management activities and present to annual independent third party environment audit.
- Abide environmental policy, laws, rules and instructions of the Republic of the Union of Myanmar.

Finally, the proponent should follow the comments and suggestions made by ECD after reviewing this EIA report. Once concerned authorities approve EIA, effective implementation of EIA by the project proponent is essential. The proponent should abide environmental policy, laws, rules and instructions of the Union of Myanmar.

အကျဉ်းချုပ်အစီရင်ခံစာ

အောင်ထက်မြတ်ကုမ္ပဏီလီမိတက်သည်အမျိုးသားရင်းနှီးမြှုပ်နှံမှုဥပဒေနှင့်မြန်မာနိုင်ငံကုမ္ပဏီများဥပဒေအရ တည်ထောင်ထားသော မြန်မာပုဂ္ဂလိကကုမ္ပဏီလီမိတက်ဖြစ်ပြီး မှတ်ပုံတင်ရုံးသည် အမှတ်၄၇၊ လှိုင်မြို့နယ်၊ ဘုရင့်နောင်လမ်း၊ ရန်ကုန်တိုင်းဒေသကြီးတွင်တည်ရှိပါသည်။ Yangon Tyre စက်ရုံသည် ၂၀၀၈ခုနှစ်မှလုပ်ငန်းစတင်ကာ ရန်ကုန်တိုင်းဒေသကြီးရွှေပြည်သာစက်မှုဇုန်တွင် တည်ရှိပါသည်။

မြန်မာနိုင်ငံတွင် သန်းနှင့်ချီသောမော်တော်ကားအစီးရေလျင်မြန်စွာ တိုးလာနေသည့်အတွက် တာယာလိုအပ်ချက်အရ တာယာအသစ်ထုတ်လုပ်သည့် စက်ရုံကိုတိုးချဲ့ရန်စိတ်အားထက်သန်နေပြီး အမှတ်(၂)၊ အကြီးစားစက်မှုလုပ်ငန်း၊ စက်မှုဝန်ကြီးဌာန၊ မွန်ပြည်နယ်၊ သထုံခရိုင်၊ ဘီးလင်းမြို့နယ်ရှိ အမှတ်(၂၂)၊ အကြီးစားစက်မှုလုပ်ငန်း(ဘီးလင်း)မှမြေကွက်၊ စက်ရုံအဆောက်အဦ၊စက်ယန္တရားပစ္စည်းများကိုနှစ် ၇၀ နှစ်ရှည်အငှားချထားခြင်း(ကနဦးနှစ် ၅၀ နှင့် ၂နှစ်၊ ဆယ်နှစ်သက်တမ်းတိုးခြင်း)ဖြစ်ပါသည်။ ရင်းနှီးမြုပ်နှံမှုလိုင်စင်ကို ပါမစ်အမှတ်- ၂၉၄/၁၉၉၈-၁၉၉၉ ဖြင့် ရန်ကုန်တိုင်းဒေသကြီးရင်းနှီးမြုပ်နှံမှုကော်မတီမှရရှိပြီးဖြစ်ပါသည်။

Aung Htet Myet Co., Ltd သည်ဘီးလင်းစက်ရုံအားအငှားချထားရန်ကျပ်သန်း ၂၅၀၀ ကျော် တန်ဖိုးရင်းနှီးမြုပ်နှံရန်စီစဉ်ထားပြီး ခေတ်မီ၍ပတ်ဝန်းကျင်သဟဇာတဖြစ်သော စက်ယန္တရားများနှင့် အဆင့်မြင့်တင်ထားသော နည်းပညာများ တပ်ဆင်အသုံးပြုပြီး နိုင်ငံတကာစံချိန်စံညွှန်းမီ Radial တာယာများထုတ်လုပ်နိုင်ရေးရည်ရွယ်ထားပါသည်။ ထုတ်လုပ်သည့်တာယာများ၏ ၈၀ ရာခိုင်နှုန်းကို ပြည်တွင်းသယ်ယူပို့ဆောင်ရေးကဏ္ဍဖွံ့ဖြိုးတိုးတက်ရေး လိုအပ်ချက်ကို ဖြည့်ဆည်းပေးရန်အတွက် တစ်နှစ်ကြိုတင်တိုးမြှင့်ထုတ်လုပ်ရန်ရည်မှန်းထားပြီး ၂၀ ရာခိုင်နှုန်းကိုနိုင်ငံတော်၏ စီးပွားရေးကဏ္ဍ ဖွံ့ဖြိုးတိုးတက်စေရန်အတွက်ပြည်ပတင်ပို့ရန်ရည်ရွယ်ထားပါသည်။ Aung Htet Myet Co., Ltd ၏ မျှော်မှန်းချက်သည်အာရှဈေးကွက်တွင်ဖြန့်ချိရန်နှင့် နောက်ဆုံးတွင်ကမ္ဘာ့တာယာဈေးကွက်၌နာမည်ကြီးတာယာကုမ္ပဏီများနှင့် ဖက်စပ်လုပ်ကိုင်ရန်ဖြစ်ပါသည်။

ဘီးလင်းစက်ရုံသည် ရော်ဘာစိုက်ခင်းဧရိယာအတွင်း တည်ရှိပါသည်။ လမ်းနှင့်မြစ်ကြောင်း သွားလာရေးလွယ်ကူမှုနှင့်လိုအပ်သောအခြေခံအဆောက်အအုံနှင့် ဒေသဆိုင်ရာလုပ်သားအင်အားရရှိ နိုင်မှုစသည့်အချက်များအပေါ်အခြေခံ၍ရွေးချယ်ထားပါသည်။ ကုန်ကြမ်းစရိတ်နှင့်စပ်လျဉ်း၍ ၄၀ ရာခိုင်နှုန်းသည်ကုန်ကြမ်းရော်ဘာနှင့် Petroleum Spirit အတွက်ပြည်တွင်းမှဝယ်ယူပြီး၆၀ရာခိုင်နှုန်း သည် synthetic rubber, chemicals and cords, bead wires နှင့်ဆက်စပ်ပစ္စည်းများတင်သွင်း ရန်ဖြစ်ပါသည်။

စက်ရုံအတွက် Environmental Impact Assessment (EIA) နှင့် Environmental Management Plan (EMP) ကို Green Enviro Services Ltd နှင့် 'Green Enviro Survey Team' တို့မှ ပတ်ဝန်းကျင် ထိခိုက်မှု လေထုအရည်အသွေး၊ ရေအရည်အသွေးနှင့်မြေဆီလွှာညစ်ညမ်းမှုတားဆီးရေး၊ ရပ်ရွာလူထု အပေါ်လူမှုစီးပွား သက်ရောက်မှုစသည်တို့ကိုအခြေခံ၍ ကွင်းဆင်းဆောင်ရွက်ခဲ့ပါသည်။

ဤလေ့လာမှု၏တစ်စိတ်တစ်ပိုင်းအဖြစ် အများအားဖြင့်မျှော်လင့်ထားပြီးရရှိနိုင်သော အကျိုး သက်ရောက်မှုများမှာ နေရင်းဒေသနှင့်ဇီဝမျိုးစုံမျိုးကွဲများဆုံးရှုံးခြင်း၊ ကျန်းမာရေးနှင့်ဘေးကင်းရေး ဆိုင်ရာသက်ရောက်မှုများ၊ ယာဉ်အသွားအလာတိုးလာခြင်း၊ ဆူညံသံများတိုးလာခြင်း၊ ဖုန်မှုန့်နှင့် ဓာတ်ငွေ့ထုတ်လွှတ်မှုအစိုင်အခဲစွန့်ပစ်ပစ္စည်းများ/ရေဆိုးများစွန့်ပစ်ခြင်းနှင့်အမြင်အာရုံဆိုင်ရာသက် ရောက်မှုတို့ပါဝင်ပါသည်။အကဲဖြတ်ပြီးနောက်အိုးအိမ်နှင့်ဇီဝမျိုးစုံမျိုးကွဲများဆုံးရှုံးမည်မဟုတ်ကြောင်း တွေ့ရှိခဲ့ပြီး ဧကာ၃၀ခန့် ကျယ်ဝန်းသောမြေဧရိယာအလယ်တွင်ရှိပြီးသားစက်ရုံဖြစ်သဖြင့်လူနေ ရပ်ကွက်များနှင့်ဝေးကွာပြီးအခြားထိခိုက်မှုများမရှိပါ။ တာယာထုတ်လုပ်မှုလုပ်ငန်းသည် ဤအစီရင် ခံစာတွင်ဖော်ပြထားသည့်အတိုင်းလိုက်နာဆောင်ရွက်ပါက သိသာထင်ရှားသောဆိုးကျိုးသက်ရောက် မှုရှိမည်မဟုတ်ကြောင်းကောက်ချက်ချပါသည်။

လူမှုရေးထိခိုက်မှုအကဲဖြတ်ခြင်းနှင့်လျော့ပါးစေရေးအတွက် လေ့လာရေးအဖွဲ့သည် အနီးနားရှိရပ်ရွာ လူထု၊ ကျေးရွာအာဏာပိုင်များ၊ Win Pyan နှင့် Kyat Twin ကျေးရွာများမှ ကျေးရွာလူကြီးများနှင့် တွေ့ဆုံဆွေးနွေးခဲ့ပါသည်။ စီမံကိန်း၏အဆင့်အမျိုးမျိုးတွင် အလုပ်အကိုင်အခွင့်အလမ်းများ ၅၀၀ မှ ၇၅၀ အထိသေချာပေါက်ပေးစွမ်းနိုင်မည်ဖြစ်သဖြင့် ကျေးရွာလူထု စိတ်ပျက်မှုမရှိကြောင်း တွေ့ရှိရပါ

သည်။ ပြုပြင်မွမ်းမံခြင်းနှင့်လုပ်ငန်းဆောင်ရွက်မှုအဆင့်များအတွင်း အလုပ်အကိုင်သင်တန်းများပို့ချပေးခြင်းနှင့် ကျေးရွာပညာရေးအဆင့်အဆင့်မြှင့်တင်ခြင်း၊ ကျန်းမာရေးကဏ္ဍမြှင့်တင်ခြင်းတို့တွင်လည်း တိုးတက်လာစေရန်ကျေးရွာလူထုမှမျှော်လင့်ထားပါသည်။ Aung Htet Myet Co.,Ltd မှပတ်ဝန်းကျင်ထိန်းသိမ်းရေးအတွက် တစ်နှစ်လျှင်ကျပ်သိန်း ၁၅၀ ဖြင့် CSR လုပ်ငန်းများဆောင်ရွက်ရန်စီစဉ်ထားပြီး အနီးနားရှိကျေးရွာများတွင်ပညာရေးဖွံ့ဖြိုးတိုးတက်စေရန်နှင့် ဧရိယာဖွံ့ဖြိုးတိုးတက်ရေးအထောက်အကူပြုရန်လည်း စီစဉ်ထားပါသည်။ အဆိုပြုထားသောစီမံကိန်း၏ရည်ရွယ်ချက်သည် အရည်အသွေးကောင်းမွန်သောတာဝန်များကို ထုတ်လုပ်၍ ၈၀% မှာပြည်တွင်းအသုံးပြုရန် နှင့် ၂၀% မှာနိုင်ငံခြားသို့တင်ပို့ရန်ဖြစ်သည်။

ဥပဒေနှင့်မူဝါဒဆိုင်ရာအချက်အလက်များ

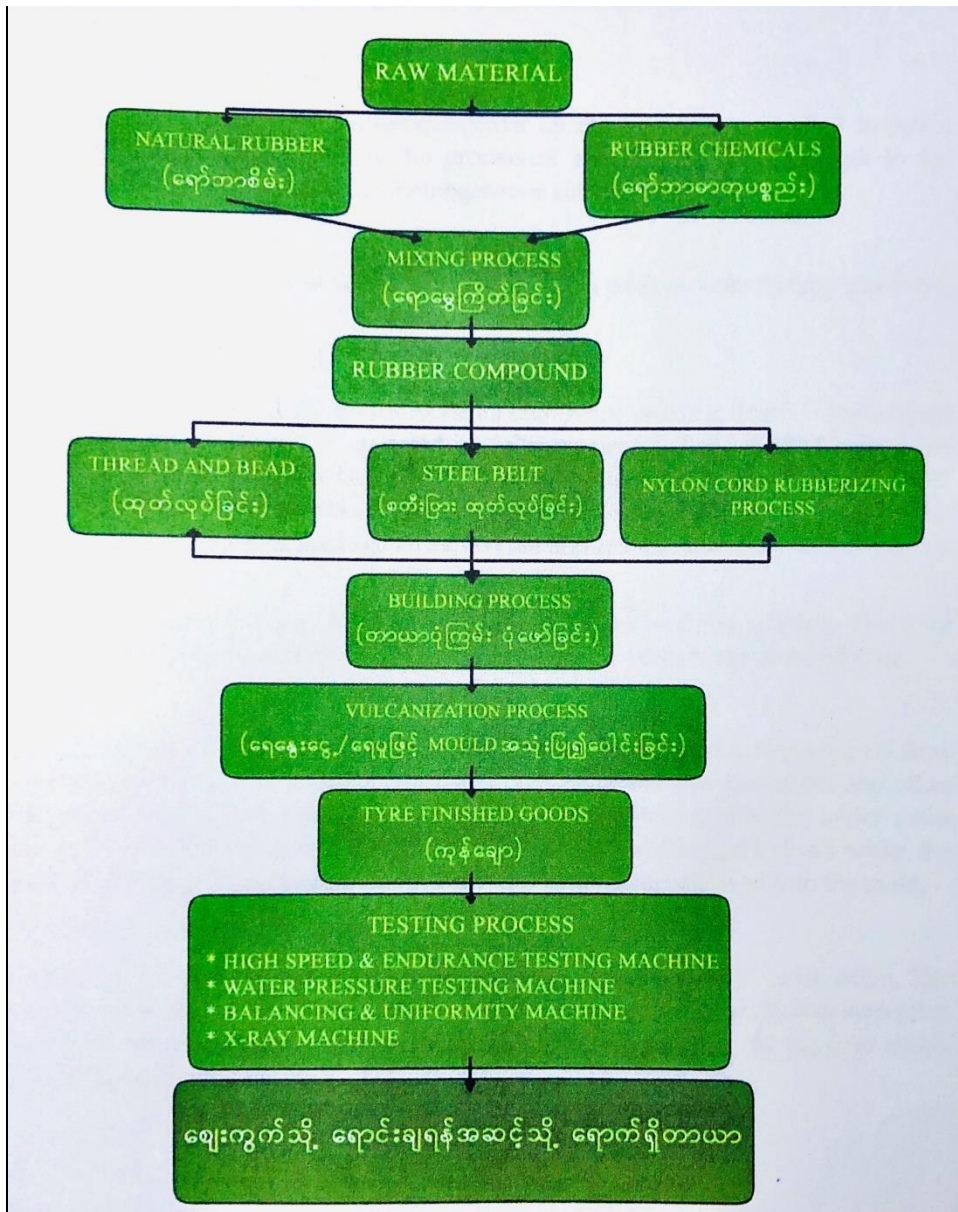
Environmental Impact Assessment(EIA)ရေးဆွဲခြင်း၏ရည်ရွယ်ချက်မှာနိုင်ငံတော်နှင့်နိုင်ငံတကာမှချမှတ်ထားသောပတ်ဝန်းကျင်ထိန်းသိမ်းရေးအစီအစဉ်များ၊စည်းမျဉ်းစည်းကမ်းများ၊ ဥပဒေနှင့်နည်းဥပဒေများကိုလိုက်နာပြီးပတ်ဝန်းကျင်နှင့်လိုက်ရောညီထွေရှိသောထိခိုက်မှုလျှော့ချရေးအစီအစဉ်များပြုလုပ်ရန်ဖြစ်ပါသည်။ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှုအစီအစဉ်အစီရင်ခံစာရေးသားပြုစုသူများ၏ကျွမ်းကျင်မှုနယ်ပယ်ဆိုင်ရာဖော်ပြချက်များကို ရေးသားဖော်ပြထားပါသည်။ ဥပဒေနှင့်နည်းဥပဒေအခန်းတွင် MONREC မှထုတ်ပြန်ထားသည့် ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်းဆိုင်ရာ လုပ်ထုံးလုပ်နည်းများ၊ အမျိုးသားပတ်ဝန်းကျင်ဆိုင်ရာအရည်အသွေး(ထုတ်လွှတ်မှု)လမ်းညွှန်ချက်များအပြင်စက်ရုံနှင့်ဆက်စပ်သက်ဆိုင်နေပြီးလိုက်နာရမည့်ဥပဒေနှင့်နည်းဥပဒေများ၊ဒေသတွင်းသို့မဟုတ်အပြည်ပြည်ဆိုင်ရာသဘာဝပတ်ဝန်းကျင်နှင့် လူမှုပတ်ဝန်းကျင်ဆိုင်ရာမူဝါဒများ၊ ဆက်စပ်နေသည့်နိုင်ငံတကာသဘောတူညီချက်များကို အကျဉ်းချုပ်ရေးသားဖော်ပြထားပါသည်။ စက်ရုံအတွင်းလိုက်နာဆောင်ရွက်ရမည့်စည်းမျဉ်းစည်းကမ်းများ၊ လုပ်ငန်းခွင်အန္တရာယ်ကင်းရှင်းရေးနှင့် ကျန်းမာရေးဆိုင်ရာအခြေခံစည်းမျဉ်းစည်းကမ်းများလည်းထည့်သွင်းဖော်ပြထားပါသည်။ Aung Htet Myet Co., Ltd ၏ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဆိုင်ရာကတိကဝတ်များအပြင်ပတ်ဝန်းကျင်ထိခိုက်မှုလျှော့ချရေးမူဝါဒများကိုလည်းထည့်သွင်းဖော်ပြထားပါသည်။

1. Environmental Conservation Law
The Pyidaungsu Hluttaw Law No.9/2012 (30 March, 2012)
2. Environmental Conservation Rule issued under the Environmental Conservation Law
Notification No.50/2014 (5 June 2014)
3. The Conservation of Water Resources and River Law, 2006
The State Peace and Development Council Law No.8/2006 (2 October, 2006)
4. The Protection of Wildlife and Conservation Natural Areas Law (1994)
The State law and Order Restoration Council Law No.6/94 (8 June, 1994)
5. The Law Amending the Canal Act (1988)
The State Peace and Development Council Law No.1/98 (9 February, 1998)
6. The Labour Organization Law
The Pyidaungsu Hluttaw Law No.7 (11 October, 2011)
7. The Law Amending the Leave and Holidays Act, 1951
The State Peace and Development Council Law No.6/2006 (30 May, 2006)
8. The Minimum Wage Law, 2013
The Pyidaungsu Hluttaw Law No.7/2013 (22 March, 2013)
9. Environmental Impact Assessment Procedure,2015
10. National Environmental Quality (Emission) Guideline 2015
11. National Myanmar Environmental Policy 2019

12. Foreign Investment Law, 2012
13. Foreign Investment Rule, 2013
14. Myanmar Investment Rule, 2017
15. Myanmar Insurance Law, 1993
16. Payment of Wages Law 2016
17. The Export and Import Law 2012
18. The Prevention of Hazard from Chemical and Related Substances Law 2013 and Rules 2016
19. The Underground Water Act
20. Myanmar Fire Brigade Law 2015
21. Fire Safety Procedure
22. The Electricity Law 2014
23. Boiler Law 2015
24. The Social Security Law 2012
25. The Employment and Skill Development 2013
26. Public Health Law 1972
27. Prevention and Control of Communicable Disease Law 1995 Amendment 2011
28. Occupational Safety and Health Law 2019
29. The Law on Standardization
30. The Industrial Explosive Materials Law (2018)
31. The Motor Vehicles Law 2015
32. The Conservation of Water Resources and River Law 2006
33. The Commercial Tax Law 1990 Amended 2014
34. The Natural Disaster Management Law 2013

အဆိုပြုထားသောစီမံကိန်း	အရည်အသွေးမြင့် Radial တာယာထုတ်လုပ်ခြင်းလုပ်ငန်း
ရင်းနှီးမြှုပ်နှံမှုပုံစံ	၁၀၀% နိုင်ငံသားရင်းနှီးမြှုပ်နှံမှု
ကုမ္ပဏီအမည်	Aung Htet Myet Co., Ltd
စုစုပေါင်းမြေကွက်ဧရိယာ	၁၂၉.၇၉ ဧက
ကုန်ပစ္စည်းစတင်ထုတ်လုပ်သည့်နှစ်	၂၀၀၈ ခုနှစ်
မြေနေရာပုံစံ	စက်မှုဇုန်မြေ
စီမံကိန်းတည်နေရာ	အမှတ်(၂၂)၊ အကြီးစားစက်ရုံ(ဘီးလင်း)၊ အမှတ်(၂) အကြီးစားစက်မှုလုပ်ငန်း၊ စက်မှုဝန်ကြီးဌာန၊ မွန်ပြည်နယ်၊ သထုံခရိုင်၊ ဘီးလင်းမြို့နယ်
ဖုန်းနံပါတ်	ဦးခိုင်မျိုးမင်း ၀၉-၉၇၀၁၀၀၈၃၈, ၀၉-၆၇၉၈၁၂၆၅၂, ၀၉-၈၆၂၆၉၅၅

အဆိုပြုလုပ်ငန်းအတွက်တည်နေရာနှင့်စက်ရုံအတွင်းပါရှိသည့်ရုံးခန်းအဆောင်များစားသောက်ဆောင်၊ စတုရန်းပုံပြင်ထိန်းသိမ်းရေးအခန်းအစရှိသည့်တို့ကိုသီးခြားဖော်ပြထားပါသည်။ထို့အပြင်ထုတ်လုပ်မှုနည်းလမ်းများ၊ လိုအပ်သည့်ကုန်ကြမ်းများ၊ နှစ်စဉ်ထွက်ကုန်များနှင့်စက်ပစ္စည်းများအားဖော်ပြထားပါသည်။ အဆိုပြုလုပ်ငန်းအတွက် လိုအပ်သည့်စွမ်းအင်နှင့်အသုံးပြုသည့်ပမာဏများကိုလည်းထည့်သွင်းဖော်ပြထားပါသည်။ ကျန်လုပ်ငန်းသုံးယာဉ်နှင့်ရုံးသုံးပစ္စည်းများကိုပြည်တွင်းမှဝယ်ယူအသုံးပြုပါသည်။ကုန်ထုတ်လုပ်ခြင်းလုပ်ငန်းမှာ Automatic Machine နှင့်လူ့စွမ်းအားကိုအသုံးပြုသောလုပ်ငန်းမျိုးဖြစ်ပါသည်။ ထုတ်လုပ်ပုံအဆင့်ဆင့်ကိုအောက်ဖော်ပြပါပုံပြဇယားတွင်ဖော်ပြထားပါသည်။



Process Flow Chart

ပတ်ဝန်းကျင်ထိခိုက်မှုနှင့် လျော့ချရေးအစီအစဉ်

စီမံကိန်းဆောင်ရွက်ချက်များကြောင့်ပတ်ဝန်းကျင်ဆိုင်ရာအရင်းအမြစ်များ၊ဂေဟဆိုင်ရာအရင်းအမြစ်များ၊ လူ့စွမ်းအားအရင်းအမြစ်များနှင့်စွန့်ပစ်ပစ္စည်းများစွန့်ပစ်ခြင်း စသည့်ဖြစ်လာနိုင်သည့်ထိခိုက်မှုများကိုခွဲခြားသတ်မှတ်ပြီး ၎င်းတို့၏ရလဒ်များကိုထိခိုက်မှုဆန်းစစ်သည့်နည်းလမ်းများကို အသုံးပြု၍ သတ်မှတ်ခဲ့ပါသည်။စီမံကိန်းအားထိခိုက်မှုများကိုအပိုင်းခွဲ၍သတ်မှတ်ထားပါသည်။ အမျိုးအစားမှာတည်ဆောက်သည့်ကာလ၊ လုပ်ငန်းလည်ပတ်သည့်ကာလနှင့် လုပ်ငန်းဖျက်သိမ်းမည့်ကာလများဖြစ်ပါသည်။ ပတ်ဝန်းကျင်ထိခိုက်မှုလျော့ပါးစေရေးနည်းလမ်းများကိုလည်း ထည့်သွင်းဖော်ပြထားပါသည်။

ပတ်ဝန်းကျင်လက္ခဏာ	လုပ်ငန်းလုပ်ဆောင်မှု	ထိခိုက်မှုအဆင့်	လျော့ချရေးနှင့်ထိန်းချုပ်မှု
တည်ဆောက်ရေးကာလ။ ။ ပတ်ဝန်းကျင်ထိခိုက်မှုလေ့လာချိန်တွင် စက်ရုံတည်ဆောက်ပြီး လုပ်ငန်းလည်ပတ်နေချိန်ဖြစ်သော်ကြောင့် ဤကာလကို ထည့်သွင်းမစဉ်းစားပါ။			
လုပ်ငန်းလည်ပတ်ခြင်းကာလ			
လေထုညစ်ညမ်းမှု	• သယ်ယူပို့ဆောင်ရေးသုံး	အသင့်တင့်	• မီးစက်တို့တွင်မီးခိုးခေါင်းတိုင်

	<p>မော်တော်ယာဉ်တို့ကြောင့် ဖုန်မှုန့်နှင့်ဖန်လုံအိမ်ဓာတ်ငွေ့ထွက်ခြင်း</p> <ul style="list-style-type: none"> • လုပ်ငန်းခွင်အတွင်းဖုန်မှုန့်ထွက်ခြင်း • မီးဖိုတိုမှမီးခိုးထွက်ခြင်း • အရေးပေါ်သုံးမီးစက်မှ စွန့်ထုတ်အခိုးအငွေ့ထွက်ခြင်း 		<p>တပ်ဆင်ခြင်းဖြင့်အခိုးအငွေ့ကြောင့်ပတ်ဝန်းကျင်ထိခိုက်မှုကို လျှော့ချခြင်း</p> <ul style="list-style-type: none"> • စက်ရုံအတွင်းနှင့်အနီးအနားတွင် သစ်ပင်ပန်းမံစိုက်ပျိုးခြင်းဖြင့်ကာဗွန်ထွက်ရှိမှုကိုလျှော့ချပေးခြင်း • NOx ထွက်ရှိမှုနည်းသော နည်းပညာဖြင့်စက်ပစ္စည်းများ သုံးခြင်း • စက်ပစ္စည်းများကိုပုံမှန်ပြုပြင် ထိန်းသိမ်းပေးခြင်း
ရေ	<ul style="list-style-type: none"> • မိလ္လာစွန့်ထုတ်ရေ • စက်ပစ္စည်းများ၊မော်တော်ယာဉ်များမှဆီယိုဖိတ်ကျခြင်း 	အနည်းငယ်	<ul style="list-style-type: none"> • လက်ရှိရေဆိုးစွန့်ပစ်မှုပုံစံဖြစ်သောမိလ္လာစနစ်ကိုပုံမှန်စစ်ဆေးပေးခြင်း • မိလ္လာကန်နှင့်မိလ္လာစနစ်ကိုလူဦးရေနှင့်ရရန်သင့်တင့်သည့်ပမာဏရှိရန်စိစစ်ထားခြင်း • ပုံမှန်သန့်ရှင်းရေးပြုလုပ်ပေးခြင်း • စက်ပစ္စည်းများကိုပုံမှန်ပြုပြင်ထိန်းသိမ်းပေးခြင်း
မြေဆီလွှာညစ်ညမ်းမှု	<ul style="list-style-type: none"> • မတော်တဆစက်ပစ္စည်းများ၊ မော်တော်ယာဉ်များမှ ဆီယိုဖိတ်ကျခြင်း 	အလွန်နည်း	<ul style="list-style-type: none"> • စက်ပစ္စည်းများကိုပုံမှန်ပြုပြင်ထိန်းသိမ်းပေးခြင်း • မတော်တဆမှုမဖြစ်စေရန် ထိန်းသိမ်းခြင်း
ဆူညံသံ	<ul style="list-style-type: none"> • မီးစက်၊လေမှုတ်စက်နှင့် မော်တော်ယာဉ်အသုံးပြုမှုကြောင့်ပတ်ဝန်းကျင်ဆူညံမှု 	အသင့်တင့်	<ul style="list-style-type: none"> • ဆူညံသံထွက်သောနေရာများကိုအကာအကွယ်ဖြင့်ထားရှိခြင်း • စက်ပစ္စည်းများကိုပုံမှန်ပြုပြင်ပေးခြင်း
မီးဘေးအန္တရာယ်	<ul style="list-style-type: none"> • ကုန်ကြမ်းသိုလှောင်မှုနှင့် လျှပ်စစ်သုံးစွဲမှုပေါ့လျော့ခြင်း 	အသင့်တင့်	<ul style="list-style-type: none"> • ကုန်ကြမ်းများအားသီးသန့်ထားရှိခြင်း • လျှပ်စစ်သုံးစွဲမှုများအား စနစ်တကျအသုံးပြုစေခြင်း
စွန့်ပစ်အမှိုက်	<ul style="list-style-type: none"> • ထုတ်လုပ်ရာတွင်ကျန်ရှိသောပိတ်စအပိုင်းအစများ၊မီးဖိုချောင်နှင့်ရုံးတွင်းစွန့်ပစ်ပစ္စည်းများ 	အသင့်တင့်	<ul style="list-style-type: none"> • စွန့်ပစ်အမှိုက်များအားပြန်လည်သုံးစွဲရန်နှင့်စွန့်ပစ်ရန်အဖြစ်သတ်မှတ်ပြီးသီးခြားစွန့်ပစ်စေခြင်း
စွန့်ပစ်အရည်	<ul style="list-style-type: none"> • နေအိမ်၊စားသောက်ဆောင်တို့မှစွန့်ထုတ်ရေ၊ မိလ္လာကန်စနစ် 	အသင့်တင့်	<ul style="list-style-type: none"> • စွန့်ပစ်အမှိုက်များအားပြန်လည်သုံးစွဲရန်နှင့်စွန့်ပစ်ရန်အဖြစ်သတ်မှတ်ပြီးသီးခြားစွန့်ပစ်စေခြင်း

အန္တရာယ်ရှိအမှိုက်	<ul style="list-style-type: none"> စက်များမှဆီယိုစိမ့်မှုများ၊မော်တော်ယာဉ်များပြုပြင်ထိန်းသိမ်းမှုမှထွက်ရှိသည့်အမှိုက်များ 	အလွန်နည်း	<ul style="list-style-type: none"> စက်သုံးဆီများအားစနစ်တကျအသုံးပြုစေခြင်း၊ စနစ်တကျသိုလှောင်ခြင်းနှင့်အန္တရာယ်ရှိပစ္စည်းများအားစနစ်တကျထားရှိစေခြင်း
လူမှုစီးပွားဘဝ	<ul style="list-style-type: none"> ဒေသခံပြည်သူများအတွက်အလုပ်အကိုင်အခွင့်အလမ်းများရရှိစေခြင်း 	အသင့်တင့်	
လုပ်ငန်းပိတ်သိမ်းခြင်းကာလ			
လေထုညစ်ညမ်းမှု	<ul style="list-style-type: none"> အဆောက်အဦများ ဖြိုချမှုများ ဖြိုချပစ္စည်းများသယ်ယူမှုများ 	အနည်းငယ်	<ul style="list-style-type: none"> NOx ထွက်ရှိမှုနည်းသော နည်းပညာဖြင့်စက်ပစ္စည်းများသုံးခြင်း၊ စက်ပစ္စည်းများကိုပုံမှန်ထိန်းသိမ်းပေးခြင်း၊
ရေ	<ul style="list-style-type: none"> ဖြိုမှုများ 	အနည်းငယ်	<ul style="list-style-type: none"> ပုံမှန်သန့်ရှင်းရေးပြုလုပ်ပေးခြင်း၊ စက်ပစ္စည်းများကိုပုံမှန်ပြုပြင်ထိန်းသိမ်းပေးခြင်း
မြေဆီလွှာညစ်ညမ်းမှု	<ul style="list-style-type: none"> အဆောက်အဦနှင့်ဆက်စပ်ပစ္စည်းများ ဖြိုချပစ္စည်းများသယ်ယူမှုများ 	အနည်းငယ်	<ul style="list-style-type: none"> မတော်တဆမှုမဖြစ်စေရန်ထိန်းသိမ်းခြင်း
အမှိုက်စွန့်ပစ်မှု	<ul style="list-style-type: none"> အဆောက်အဦများ ဖြိုချပစ္စည်းများသယ်ယူ မှုများ 	အလွန်နည်း	<ul style="list-style-type: none"> စွန့်ပစ်အမှိုက်များအားပြန်လည်သုံးစွဲရန်နှင့်စွန့်ပစ်ရန်အဖြစ်သတ်မှတ်ပြီးသီးခြားစွန့်ပစ်စေခြင်း
အန္တရာယ်ရှိအမှိုက်	<ul style="list-style-type: none"> စက်များမှဆီယိုစိမ့်မှုများ၊မော်တော်ယာဉ်များပြုပြင်ထိန်းသိမ်းမှုမှထွက်ရှိသည့်အမှိုက်များ ဖြိုချပစ္စည်းများသယ်ယူမှုများ 	အလွန်နည်း	<ul style="list-style-type: none"> စက်သုံးဆီများအားစနစ်တကျအသုံးပြုစေခြင်း၊ စနစ်တကျသိုလှောင်ခြင်းနှင့်အန္တရာယ်ရှိပစ္စည်းများအားစနစ်တကျထားရှိစေခြင်း
မတော်တဆထိခိုက်မှုများ	<ul style="list-style-type: none"> အဆောက်အဦများဖြိုချမှုများ ဖြိုချပစ္စည်းများသယ်ယူ မှုများ 	အနည်းငယ်	<ul style="list-style-type: none"> မတော်တဆမှုမဖြစ်စေရန်ထိန်းသိမ်းခြင်း
လူမှုစီးပွားဘဝ	<ul style="list-style-type: none"> ဒေသခံပြည်သူများအတွက်အလုပ်အကိုင် 		

အဆိုပြုလုပ်ငန်း၏ ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှုအတွက် Environmental Management System (EMS) စက်ဝိုင်းဖြင့်အစီအစဉ်တကျပြုလုပ်သွားမည်ဖြစ်ပါသည်။ အစီအစဉ်တွင်စက်ရုံကြောင့် ဖြစ်ပေါ်စေနိုင်သောပတ်ဝန်းကျင်နှင့်လူမှုဘဝအပေါ် ဆိုးကျိုးသက်ရောက်မှုများကိုလျော့ချရေး၊ စီမံခန့်ခွဲရေးနှင့်စောင့်ကြပ်ကြည့်ရှုရေးအစရှိသည့်အစီအစဉ်များပါဝင်ပါသည်။ အဆိုပါစက်ရုံ၏ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှုအစီအစဉ်ကိုရေရှည် ဖွံ့ဖြိုးတိုးတက်ကောင်းမွန်သောပတ်ဝန်းကျင်အဖြစ် အကောင်အထည်ဖော်ဆောင်ရွက်ရန်ဖြစ်ပါသည်။

နိဂုံးချုပ်

နိဂုံးချုပ်အားဖြင့် ယခုစီမံကိန်းသည် ဆောက်လုပ်ရေးကာလ၊ လုပ်ငန်းလည်ပတ်သည့်ကာလနှင့် လုပ်ငန်းဖျက်သိမ်းသည့် ကာလသုံးခုလုံးတွင်ဒေသခံပြည်သူများကို အလုပ်အကိုင်အခွင့်အလမ်းများ ဖန်တီးပေးနိုင်သည်။ ကာလသုံးခုလုံးတွင် ဖြစ်ပေါ်လာနိုင်သောထိခိုက်မှုများကို လျှော့ချနိုင်မည့် နည်းလမ်းများနှင့် ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှုအစီအစဉ်အား အကောင်အထည်ဖော်ခြင်းဖြင့်လျှော့ချနိုင် သည်။ပတ်ဝန်းကျင်စောင့်ကြပ်ကြည့်ရှုမှုအစီအစဉ်အားစီမံကိန်း၏ပတ်ဝန်းကျင်ဆိုင်ရာအရည်အသွေး ကိုစောင့်ကြပ်ကြည့်ရှုရန်မဖြစ်မနေအကောင်အထည်ဖော်ပေးရမည်။ စီမံကိန်းအကောင်အထည်ဖော် သူသည် ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဦးစီးဌာနမှယခုအစီရင်ခံစာအားစစ်ဆေးပြီးနောက် ပြန်လည်ပေး ပို့လာသောသဘောထားမှတ်ချက်နှင့် အကြံပြုချက်များကိုလိုက်နာရမည်။ ထို့ပြင်စီမံကိန်းအကောင် အထည်ဖော်သူသည်မြန်မာနိုင်ငံ၏ ပတ်ဝန်းကျင်နှင့်သက်ဆိုင်သောမူဝါဒများ၊ ဥပဒေများ၊ သတ်မှတ် ချက်များကိုလိုက်နာရန်လိုအပ်ပါသည်။

CHAPTER 1 – INTRODUCTION

According to the definition on the Environmental Law (EL) Chapter I, Environmental Impact Assessment means the process of studying the significant impact of a proposed project or business or activity on the physical, biological and socioeconomic environment, which is required as part of the decision making process.

The Objective of this EIA is to carry out a detailed evaluation of the environmental issues of the project. The EIA has to highlight the implications of the project to the environment and also to inform the public and interested parties the project objectives, needs and constraints. This Environmental Impact Assessment also makes constructive suggestions on improving the environmental performance of the project.

1.1 Project Background

National Environmental Conservation Committee (NECC) was reformed in April 2011 as the central organization for the national environmental management in Myanmar and Ministry of Environmental Conservation and Forestry (MOECAF) was upgraded in place of Ministry of Forestry in September 2011 as the focal and coordinating agency for the overall environmental management including community welfare, amenity loss or other environmental issues in Myanmar.

The Environmental Law (EL) enacted very recently in 2012, provides guidance to any industry on the desired standards for project location, design and establishment. In reaching the planning decisions for both project and neighboring land uses, the local government will also have regards to the requirements of the Environmental Law (EL). The industry will work with local authority to be aware of proposed developments around its project area within the Boundary buffer and Separation distances specified in the GMP.

A key element of the Environmental Law (EL) is an emphasis on on-giving environmental management and an Environmental Management Plan (EMP) is required to be submitted with every application for a new project.

1.1.1 Project Proponent Profile

This is the information of project proponent from the MIC’s registration that is describing in below Table 1.1 and 1.2.

Table 1.1 Information of Investor

Investor Name	U Kyaw Kyaw Sein
Citizenship	Myanmar
NRC No	5/MaYaNa (N) 063951

Table 1.2 Director List

No	Name of Shareholder	NRC No
1	U Maung Maung Htay	12/KaTaTa(N)006031
2	U Htin Kyaw Oo	12/YaKaNa(N)044029
3	U Phone Moe Khant	12/BaHaNa(N)098179
4	U Swan Htet	12/BaHaNa(N)102763
5	Daw Aye Aye Maw	5/MaYaNa(N)063952
6	Daw Khine Moe Pan Nu	12/BaHaNa(N)098178
7	Daw Moe Thet Htaa	12/BaHaNa(N)102934
8	Daw Nan Yadanar Win	7/PaKhaNa(N)000140
9	Daw Thida Aye	5/MaYaNa(N)063954

1.1.2 Investment Plan and Salient Features of the Project

The estimated authorized capital investment is Kyats 2,536.50 million (table 1.3). Organization chart of Aung Htet Myet Co., Ltd is presented in Figure 1.1.

Table 1.3 Salient Features of the Project

Type of Proposed Business	Manufacturing of high quality radial tyres
Type of Investment	100 % citizen investment
Name of Company	Aung Htet Myet Co., Ltd
System of Sale	80% local sale and 20% export
Production Year	2018
Land Lease Year	long term lease of 70 years (initial 50 years plus two ten years extensions)
Type of Land	Industrial Land
Address of proposed project	Plot-212, No 22, Heavy Industry (Bilin), Bilin Township, Thaton District, Mon State
Contact Number	U Khaing Myo Min 09-970100838, 09-679812652, 09-8626955

1.2 Project Description and Alternatives

Aung Htet Myet Co., Ltd is constructed 2014-2018 and started producing tyres in 2018 afterward. Raw materials import from USA, Korea, China, Malaysia, Vietnam, Thailand, Indonesia, Taiwan, Russia and Japan. Finish products export to Malaysia, Papuanewguinea, Yemen.

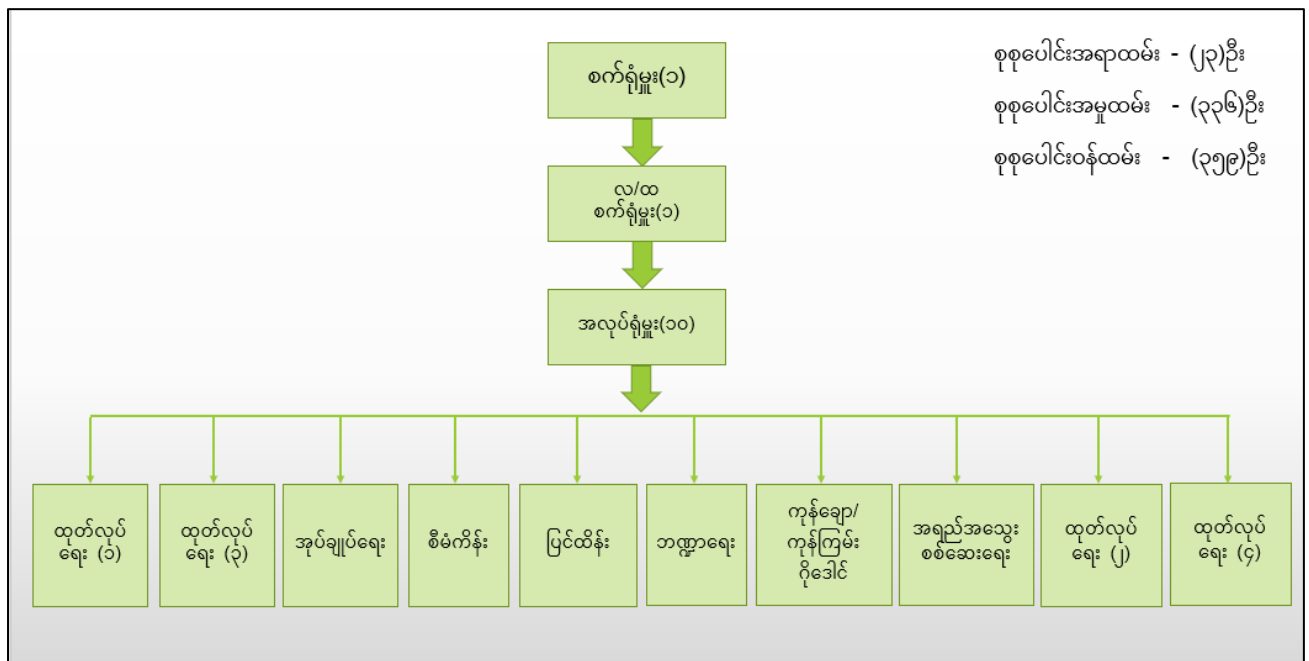


Figure 1.1 Organization Chart of Aung Htet Myet Co., Ltd

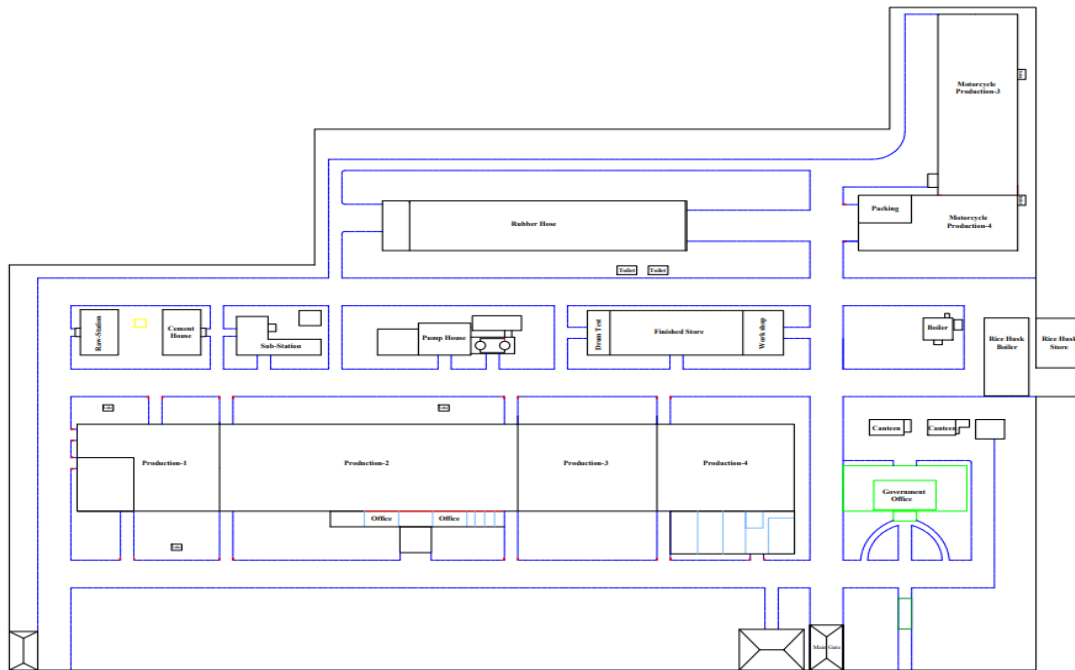


Figure 1.2 Factory Layout Plan

1.3 Scope

The purpose of the EIA is to provide information on the nature and extent of potential environmental and social impact arising from the construction and operation of the propose project and relative activities taking place concurrently. MIC recommended to the proposed manufacturing factory, to assess an EIA for the environmental consequences and to submit the EMP which the factory is going to follow in Manufacturing of Radial Tyre. This Report contains four (5) sections including this introductory section:

- (i) Introduction;
- (ii) Policy, Legal and Institutional Framework;
- (iii) Geographical Condition;
- (iv) Description of the proposed project;
- (v) Environmental Impact Assessment and Conclusions;

Project Team

Table 1.4 Lists of Advisors and Survey Team

Sr. No	Name	Designation	Responsibility
1.	Dr. Maung Aung MA (Development Studies) ISS, Holland Ph.D (Agriculture Economics) University of Washington, USA	Advisor, Ministry of Commerce	Advisor, Socio-Economic Expert
2.	U Tin Maung Shwe	- Consultant, Agriculture business & Rural Development (ARDC). - Advisor, Ministry of Agriculture & Irrigation. (Former Myanmar Academy of Agriculture, Forestry, Livestock & Fisheries)	Advisor, Agro-Business Expert
3.	Dr. Saw Plei Saw Ph.D, University of Putra, Malaysia	- President of Myanmar Veterinary Council; - Advisor, Ministry of Livestock,	Advisor, Livestock Expert

		Fisheries and Rural Development (Former Myanmar Academy of Agriculture, Forestry, Livestock & Fisheries) - Pro Rector of University of Veterinary Sciences (Retd.)	
4.	Dr. Than Htun	- Ex. National Project Manager, (FAO MM of United Nations) - Deputy Director General, (LBVD), (Retd.)	Advisor, Agro-Livestock Expert
5.	U Khin Maung Htaey B.E(Civil), M.Env.E, ASEAN Engr, F.MES, LWSE (YCDC), P.E Civil (Water Supply & Sanitation)	- National Counterpart (CQHP) - Chairman, Water Supply & Sanitation Technical Division - Chairman, MES Building Committee	Water Supply and Sanitation Expert
6.	Dr. Than Kyaw	- Visiting Professor, University of Keletan, Malaysia;	Advisor, Livestock Expert
		- Pro Rector, University of Veterinary Science. (Retd.)	
7.	Daw Khin Aye Kyu	- Professor, Department of Chemistry, Patheingyi University (Retd.)	Chemical Expert
8.	Daw Moe Pyar Han	Lecturer, Department of Botany, Yangon University. (Retd.)	Bio-terrestrial Expert. (Flora)
9.	Dr. Aye Aye Than	Lecturer, Department of Zoology, Yangon University	Bio-terrestrial Expert. (Fauna)
10.	Daw Htoo Htoo Ngwe B.A (Law): LL.B, LL.M	Director Office of Attorney General (Retd.)	Advisor, Legal Consultant
10.	U Nyunt Sein B.A (Law): LL.B	Advocate,	Advisor, Legal Consultant
11.	Dr. Wah Wah Han	- National Consultant & Country Coordinator (PREVENT), Family Health International (FHI 360), Emerging Pandemic Threats Program, USAID; - Deputy Director, Research & Disease Control, LBVD (Retd.) - Managing Director, Green Enviro Services Ltd.	Socio-economic Survey Team
12.	Daw Phyu Sin Maung	- Secretary General, MLRD Research Team. - CEO, Green Enviro Services Ltd.	Socio-economic Survey Team
13.	U Naing Lin Oo	- Program Manager, Agriculture Business & Rural Development Consultant (ARDC).	GIS Team
14.	U Nyi Nyi Htoo	Team Member, Surveyor.	GIS Team
15.	U Myo Min	Team Member, Surveyor. Electronic Services	GIS Team

2. POLICY, LEGAL AND INSTITUTIONAL FRAMEWORK

This section provides a brief summary of relevant national environmental legislations established by the MONREC and overview of current local and international environmental and social policies including related international or regional convention for the proposed project.

2.1 Myanmar Regulatory Framework

Myanmar has 24 ministries under the office of the President as of May 2016. The leading ministries in-charge of environmental and social considerations is the Environmental Conservation Department (ECD) of the MONREC that was reorganized Ministry of Environmental Conservation and Forestry (MOECAF) in April 2016.

2.1.1 Laws and Regulations Related to Environmental and Social Considerations

Requirements related to environmental and social impact management for development projects are described in Table 2-1.

Table 2.1 List of Myanmar’s Law Relating to Environment Management

Environmental Conservation Law The Pyidaungsu Hluttaw Law No.9/2012 (30 March, 2012)	
Chapter V Environmental Emergency	9. (a) If the Committee is aware that an event of environmental emergency has occurred or may occur in the entire Myanmar or any Region or State or any area, it shall immediately report to the Union Government so as to declare the occurrence of such event; (b) The Committee, Ministry and Department shall carry out necessary measures relating to the environmental emergency.
Environmental Conservation Rule issued under the Environmental Conservation Law Notification No.50/2014 (5 June 2014)	
Chapter XI Environmental Impact Assessment	51. The Ministry may assign duty to the Department for enabling to adopt and carry out the environmental impact assessment system. 52. The Ministry shall determine the categories of plan, business, service or activity which shall carry out environmental impact assessment. 53. The Ministry may, so as to scrutinize whether or not it is necessary to conduct environmental impact assessment, determine the proposed plans, businesses service or activities which do not include in stipulation under rule 52 as the categories which are required to conduct initial environmental examination. 54. The business, department, organization or person who would carry out categories of plan, business service or activity stipulated under rule 52: (a) shall conduct environmental impact assessment for his plan, business service or activity; (b) submit to the Ministry in advance by which organization person or third person, the environmental impact assessment is intended to be carried out; (c) submit the environmental impact assessment report to the Ministry.
The Conservation of Water Resources and River Law, 2006 The State Peace and Development Council Law No.8/2006 (2 October, 2006)	
Aims	The aims of this Law, consisting of VII Chapters, are as follows: to conserve and protect the water resources and rivers system for beneficial utilization by the public; to smooth and safety waterways navigation along rivers and creeks; to contribute to the development of State economy through improving water resources and river system; to protect environmental impact. This Law also establishes duties and powers of competent authorities entitled to manage and control all activities related to navigation, harbouring, conservation of

	rivers and creeks, including the implementation of prohibited activities carried out along the inland waters. Offences and penalties for illegal activities are appended to the text.
Chapter V Prohibitions 8.	No person shall: (a) carry out any act or channel shifting with the aim to ruin the water resources and rivers and creeks. (b) cause the wastage of water resources wilfully.
The Protection of Wildlife and Conservation Natural Areas Law (1994) The State law and Order Restoration Council Law No.6/94 (8 June, 1994)	
Chapter II Objectives 3.	The objectives of this Law are as follows :- (a) to implement the Government policy for wildlife protection; (b) to implement the Government policy for natural areas conservation; (c) to carry out in accordance with the International Conventions acceded by the State in respect of the protection and conservation of wildlife, ecosystems and migratory birds; (d) to protect endangered species of wildlife and their natural habitats; (e) to contribute for the development of research on natural science; (f) to protect wildlife by the establishment of zoological gardens and botanical gardens.
The Law Amending the Canal Act (1988) The State Peace and Development Council Law No.1/98 (9 February, 1998)	
	The State Peace and Development Council hereby enacts the following Law 1. This Law shall be called the Law Amending the Canal Act. 2. In section 75 of the Canal Act. the expression " not exceeding five hundred kyats, or to imprisonment for a term not exceeding three months or to both "shall be substituted by the expression not exceeding twenty thousand kyats or to imprisonment for a term not exceeding one year or to both."
The Labour Organization Law The Pyidaungsu Hluttaw Law No.7 (11 October, 2011)	
Chapter (2) Formation of labor organizations 7	(a) The executive committee of the basic labor organizations shall be formed with a minimum number of five members or more. (b) Township labor organization; Regional or state labor organizations and labor federations shall be formed with a minimum number of seven to a maximum of 15 executive members. (c) The All-Myanmar Labor Committee shall be formed with a minimum of 15 to a maximum of 35 executive members.
The Law Amending the Leave and Holidays Act, 1951 The State Peace and Development Council Law No.6/2006 (30 May, 2006)	
2. In the Leave and Holidays Act, 1951: (a) The expression "not exceeding four hundred kyats per month" contained in sub-section (4) of section 2 shall be deleted. (b) Sub-section (1) section 4 shall be substituted as follows: (1) Every employee who has completed a period of twelve months continuous service shall be granted earned leave with average wages or average pay for a period of ten consecutive days by his employer during the subsequent period of twelve months. (c) The expression "twenty-four-days" contained in sub-section (2) of section 4 shall be substituted by the expression "twenty days". 3. The expression "Inspector" contained in sections 12, 14, 15 and 16 of the Leave and Holidays	

<p>Act, 1951 shall be substituted respectively by the expression "Inspection Officer."</p> <p>4. The expression "or with fine not exceeding kyats five hundred" contained in sub-sections (1) and (2) of section 14 of the Leave and Holidays Act, 1951 shall be substituted respectively by the expression "or with fine not exceeding kyats fifty thousand".</p>	
<p>The Minimum Wage Law, 2013 The Pyidaungsu Hluttaw Law No.7/2013 (22 March, 2013)</p>	
<p>Chapter V The particulars to be based in Determining the Minimum Wag</p>	<p>The following particulars shall be based and considered in suggesting by the Union Committee, Region and State Committees after making study, scrutiny and calculation or, in determining the minimum wage by the National Committee, relating to the determination of minimum wage: (a) the needs of workers and their families; (b) existing salaries; (c) social security benefits; (d) living cost and changes of such living costs; (e) compatible living standard; (f) employment opportunities in conformity with the needs for State's economy and development of production; (g) gross domestic production value of the State and per capita income; (h) hazardous to health and harmful to work, nature of the work; (i) Other facts stipulated by the Ministry with the approval of the Union Government</p>
<p>Environmental Impact Assessment Procedure (December 2015)</p>	
<p>Objectives</p>	<p>The project proponent has to be liable for all adverse impacts caused by doing or emitting of project owner or contractor, sub-contractor, officer, employee, representative or consultant who is appointed or hired to perform on behalf of project owner, under sub-paragraph 102.</p> <p>The project proponent has to support after consulting with effected persons by project relevant government organization, government department and other related persons to resettlement and rehabilitation for livelihood until the effected persons by the project receiving the stable socio-economy which is not lower than the status in pre-project, under sub-paragraph (b) of paragraph 102.</p> <p>The project proponent has to fully implement all commitments of project and conditions included in EMP. Moreover, the project proponent has to be liable for contractor and sub-contractor who perform on behalf of him/her have to fully abide by the relevant laws, rules, this procedure EMP and all conditions, under paragraph 103.</p> <p>The project proponent has to be liable and fully & effectively implement all requirements included in ECC, relevant laws and rules, this procedure and standards under rule 104.</p> <p>The project proponent has to inform the completed information, after specifying the adverse impacts caused by the project, from time to time, under paragraph 105.</p> <p>The project proponent has to continuously monitor all adverse impacts in the pre-construction phrase, construction phrase, operation phrase, suspension phrase, closure phrase and post-closure phrase, moreover has to implement the EMP with abiding the all conditions included in ECC, relevant laws & rules and this procedure, under paragraph 106.</p> <p>The project proponent has to submit, as soon as possible, the</p>

	<p>failures of his or her responsibility other implementation, ECC or EMP. If dangerous impact caused by this failure or failure should be known by the Ministry the project proponent has to submit within 24 hours and other than this situation has to submit within 7 days from knowing it, under paragraph 107.</p> <p>The project proponent has to submit the monitoring report dually or prescribed time by Ministry in line with the schedule of EMP, under paragraph 108.</p> <p>The project proponent has to prepare the monitoring report in accord with the rule 109.</p> <p>The project proponent has to show this monitoring report in public place such as library, hall and website and office of project for the purpose to know this report by public within 10 days from the date which the report is submitted to the Ministry. Moreover, has to give the copy or this report by email or other way which agreed with the asked person, to any asked person or organization, under paragraph 110.</p> <p>The project proponent has to allow inspector to enter and inspect in working time and if it is needed by Ministry has to allow inspector to enter and inspect in the office and work place to this project in any time, under paragraph 113.</p> <p>The project proponent has to allow inspector to immediately enter and inspect in any time if it is emergency or failure to implement the requirement related to social or environment or caused to it, under paragraph 115.</p> <p>The project proponent has to allow inspector to inspect the contractor and sub0contractor who implement on behalf of project, under paragraph 117.</p>
<p>Screening: Section 23</p>	<p>a) The project proponent shall submit the Project Proposal to the Ministry for Screening</p> <p>b) The Ministry will send the Project Proposal to the Environmental Conservation Department to determine the need for environmental assessment.</p> <p>c) Following the preliminary Screening and verification that the Project Proposal contains all required documents and related materials, subject to Articles 8, 9, 10, 11, 26 and 27 the Department shall make a determination in accordance with Annex 1= Categorization of Economic Activities for Assessment Purposes', taking into account Article 28 in order to designate the Project as one of the following, and then submit it to the Ministry:</p> <p>i) An EIA Type Project, or</p> <p>ii) An IEE Type Project, or</p> <p>iii) A Non IEE or EIA Type, and therefore not required to</p>
<p>National Environmental Quality (Emission) Guidelines (NEQG) (December 2015)</p>	
<p>Objectives</p>	<p>To provide the basis for regulation and control of noise and vibration, air emissions, and liquid discharge from various sources in order to prevent pollution for purpose of protection of human and ecosystem health.</p>
<p>National Environmental Policy of Myanmar (2019)</p>	
<p>National Environmental Policy Vision & Mission</p>	<p>Vision A clean environment, with healthy and functioning ecosystem, that</p>

	<p>ensures includes development and wellbeing for all people in Myanmar.</p> <p>Mission To establish national environmental policy principle for guiding environmental protection and sustainable development and for mainstreaming environmental consideration into all policies, laws, regulation, plans, strategic, programs and projects in Myanmar.</p>
Foreign Investment Law, 2012	
Section 8	<p>(a) To support the primary objectives of the national economic development plan, and for business that cannot yet be run by the State and citizens or businesses that have insufficient funds and technology.</p> <p>(b) Development of employment activities</p> <p>(l) Protection and conservation of the environment.</p> <p>(q) Appearing the required modern services for the Unions and citizens.</p>
Section 17	<p>(a) To abide by the existing laws of the Republic of the Union of Myanmar.</p> <p>(b) To carry out the business by forming a company under the existing laws of Myanmar by the investor.</p> <p>(h) To carry out not to cause environmental pollution or damage in accord with existing laws in respect of investment business.</p> <p>(k) To carry out the systematic transfer of high technology relating to the business which are carried out by the investor to the relevant enterprises, departments or organizations in accord with the contract.</p>
Foreign Investment Law, 2013	
Rule 54	<p>The promoter or investor shall.</p> <p>(a) comply with Environmental Protection Law in dealing with environmental protection matters related to the business;</p> <p>(b) shall carry out socially responsible investment in the interest of the Union and its people;</p> <p>(c) shall co-operate with authorities for occasional or mandatory inspection;</p> <p>(d) shall exercise due diligence to be in conformity and harmony with norms and standards prescribed by relevant Union Ministry in conducting construction of factories, workshop, buildings and other activities;</p> <p>(e) shall enforce Safety and Health</p>
Myanmar Investment Rules 2017	
Rule 202	The project proponent has to comply with the conditions of the permit issued by the MIC and applicable laws when making the investment.
Rule 203	The project proponent has to fully assist while negotiating with the authority for settling the grievance of the local community which has been affected due to investment.
Rule 206	The project proponent has to submit the passport, export evidence or document of degree and profile to the MIC office for approval if decide to appoint a foreigner as senior management, technician expert or consultant according to subsection (a) of section 51 of

	Myanmar Investment Law.
Myanmar Insurance Law 1993	Section 15- If the project proponent uses the owned vehicles the project owner has to ensure the insurance for the injured person. Section 16 – The project proponent has to ensure insurance to compensate for general damages because the project may cause damages to the environment and injury to the public.
Payment of Wages Law 2016	
Section 3 & 4	The project proponent has to pay the wages in accord with section 1 and 4 of said law
Section 5	The project proponent has to submit with the agreements of employees & reasonable ground to the department if it is difficult to pay because of force majeure included in a natural disaster.
Section 7-13	The project proponent has to abide by the provisions of section 7 to 13 in the chapter (3) in respect of deduction from wages,
Section 14	The project proponent has to pay the overtime fees, prescribed by law, to the employees who work over working hours.
The Export and Import Law (2012)	
Objectives	The objectives of this law are as follow: a) To enable to implement the economic principles of the State successfully. b) To enable to lay down the policies relating to export and import that supports the development of the state. c) To cause the policies relating to export and import of the State and activities are to be in conformity with the national trade standards. d) To cause to be streamlined and speedy in carrying out the matters relating to export and import.
Prohibitions: Section 5	No persons shall export or import restricted, prohibited and banned goods.
Prohibitions: Section 6	Without obtaining license, no person shall export or import the specified goods which are to obtain permission.
Prohibitions: Section 5	A person who obtained any license shall not violate the conditions contained in the license.
The prevention of Hazard from Chemical and Related Substances Law, 2013	
<p>This law was enacted with the objectives of:</p> <ul style="list-style-type: none"> a. To protect from being damaged the natural environment resources and being hazardous any living beings by chemical and related substances; b. To supervise systemically in performing the chemical and related substances business with permission for being safety; c. To perform the system of obtaining information and to perform widely educative and research for using the chemical and related substance systematically; d. To perform the sustainable development for the occupational safety, health and environment conservation. <p>Regarding the chemical management and storage, currently, regulations governing chemical management are divided between various Acts, mostly dating from colonial times; hence the legislation is in many respects related to the British framework. The Factory Act and the Public Health Act contain the provisions for chemicals management and storage. Some chemicals are likely to require permits.</p>	

Underground Water Act	
<p>The underground water act enacted on the date of 21st June in 1930 whereas it is expedient to converse and protect underground sources of water supply in the Union of Burma. This act prohibits sinking of a tube for the purpose of obtaining underground water except under and in accordance with the terms of a license granted by the water officer. Township officer or sub-divisional officer had power to close a license tube after exercising jurisdiction over the local area concerned and the expense of such closure shall be recovered from the owner of the tube as if it were an arrear of land revenue.</p>	
Myanmar Fire Brigade Law (2015)	
<p>The Pyidaungsu Hluttaw enacted this law by Law No 11/2015 on the date of 17th march 2015 with the following objectives.</p> <p>(a)to take precautionary and preventive measures and loss of state own property, private property, cultural heritage and the live and property of public due to fire and other natural disasters</p> <p>(b)to organize fire brigade systemically and to train the fire brigade</p> <p>(c)to prevent from fire and to conduct release work when fire disaster, natural disaster, epidemic disease or any kind of certain danger occurs</p> <p>(d)to educate, organize and inside extensively so as to achieve public corporation</p> <p>(e)to participate if in need for national security, peace for the citizens and law and order</p>	
Section 8 Fire safety Procedures	
Rule 17	<p>The relevant Government Department or organization shall for the purpose of precaution and prevention obtain the approval of the Fire force Department before granting permission for the following cases.</p> <ol style="list-style-type: none"> a. Constructing three-storied and above buildings market and condominium buildings b. Operating hotel, motel, guest house enterprise c. Constructing factory, workshop storage facilities and warehouse d. Operating business expose to fire hazard by using in inflammable materials or explosive materials e. Producing and selling fire-extinguishing apparatuses f. Doing transport business, public utility vehicles train, airplane, helicopter, vessel, ship. Tonkin tug
Rule 18	<p>The relevant government department or organization shall obtain the opinion of the fire services department for the purpose of fire precaution and prevention when laying down plans for construction for town, village and downtown or village development plans</p>
The Electricity law 2014	
<p>In 2014, the new electricity law a comprehensive piece of legislation covering licensing a new regulatory commission, standards, inspection, tariff and restrictions replaced the electricity law of 1984. The electricity law divides projects into small (up to 10 MW), medium (between 10 MW to 30 MW) and large (upwards of 30MW), the states and regions can issues permits for small and medium power plants. In case these plants are not connected to the national grid, the Union Government Ministry is not the primary authority involved. The authorities have a legal right to use land for the purpose of power plants under the electricity law and have the right to expand and maintain their facilities. The law also provides that the authorities can build transmission lines in accordance with existing laws.</p>	
Boiler Law 2015	
Chapter 2 Objective	<p>The objectives of this law are as follows:</p> <p>(a)To obtain boilers in compliance with Myanmar Standards or International Standards</p>

	<p>(b)To prevent the country and citizens from hazards caused by boiler accidents</p> <p>(c)To use boilers sin compliance with Myanmar Standards or International Standards within the factory</p> <p>(d)To develop boiler technology and to produce experts capable of manufacturing, handling, repair and maintenance of boilers</p> <p>(e)To optimize the use of boilers through effective utilization of fuel energy</p> <p>(f)To reduce the environmental, social and health impacts through long-lasting use of boilers.</p>
Chapter 3 4.Within the permission of the Ministry, the inspector general can:	<p>(a)Notify the inspection methods and instructions according to the national or international standards for safe operations of boilers in line with this law, procedures and instructions</p> <p>(b)Only the results obtained from the prescribed boiler standards and inspection methods will be approved</p>
Chapter 4 Boiler Registration	<p>5.Anybody who would like to use a boiler in any kind of business should be registered</p> <p>6.Boiler should be manufactured according to Myanmar Standards or International Standards</p> <p>7.Those who would like to apply for boiler registration according to Section 5 should apply to the inspector with the application, documents and vouchers related to boiler</p> <p>8.If the application regarding registration of boiler according to Section 7, the Registration officer should conduct necessary inspection and submit results of the findings to the inspector General.</p> <p>9.The inspector general should assess and inspect the submission of the Registration Officer according to Section 8 and could allow or reject for registration of the boiler</p> <p>10.The inspector general shall define boiler size according to heated surface area in accordance with adopted procedures</p>
Chapter 13 Prohibitions	<p>59.According to Section 21, nobody must alter, change, deface, deform or make embossed registration unnoticeable illegitimately</p> <p>60.Nobody is allowed to repair a boiler without boiler repair certificate</p> <p>61.Nobody is allowed to maintain a boiler without boiler maintenance certificate</p> <p>62.Nobody must after safety relief value in order to exceed the allowable pressure due to his consent or direction given by the owner</p> <p>63.Nobody must manufacture boilers against Section 25, Subsection 25(a) and (b) enacted</p>
The Social Security Law 2012	
The Social Security Law enacted in 2012 was amended the social Security Act in 1954. It stipulates the formation and implementation of social security systems	
Section 53(a)	The employers and workers shall co-ordinate with the Social Security Board or insurance agency in respect of keeping plans for safety and health in order to prevent employment injury, contracting disease and decease owing to occupation and in addition to safety and educational work of the workers and accident at the establishment

The Employment and Skill Development (2013)	
This law enacted for safeguarding the right of workers or having skillful of workers and making peaceful workplace or obtaining the rights fairly, rightfully and quickly by setting the dispute of employer and worker justly. Employer shall conduct occupational training to enhance the skills of workers.	
Section 14	Employer shall conduct occupational training to enhance the skills of workers who are to be employed as well as workers who are presently employed in accordance with the requirements of the enterprise and the policy of the Skills Development Agency.
The Worker's Compensation Act 1923	It stipulates that employer is required to make payments to employees who become injured or who die in any accidents arising during and in consequence of their employment. Such compensation also must be made for diseases which arise as a direct consequence of employment such as carpal tunnel syndrome.
The payment of Wages Act 1936	The payment of Wages Act defines the payment obligation to the workers employed in the factories or railway administration. It stipulates the method of payment stating that the payment should be made in cash on a regular payday and allows legal action against delayed payment or un-agreeable deduction.
The Leave and Holidays Act 1951 partially revised in 2014	This act has been used as the basic framework for leaves and holidays for workers with minor amendment in 2006 and 2014. This defines the public holidays that every employee shall be granted with full payment. It also defines the rules of leaves for workers including medical leave, earned leave and maternity leave.
Public Health Law 1972	Chapter 2 Prevention of Public Health
Objectives	To ensure the public health include not only employees but also resident people and cooperation with the authorized person or organization of health department. This law focuses as follows The project owner has to cooperate with the authorized person or organization in line with the section 3 and 5 of said law. The project proponent has to abide by any instruction or stipulation for public health under the section 3 of said law. The project proponent has to allow any inspection, anytime, anywhere if it is needed under the section 5 of said law.
Prevention and Control of Communicable Disease Law 1995 (Amendment in 2011)	
Chapter 2 Prevention	4. When a Principal Epidemic Disease of a Modifiable Disease occurs; Immunization and other necessary measures shall be undertaken by the Department of Health in order to control the spread thereof; The public shall abide by measures undertaken by the Department of Health under sub-section (a).
Chapter 4 Environmental Sanitation	For prevention of the outbreak of Communicable Disease and effective control of Communicable Disease when it occurs, the public shall under the supervision and guidance of the Health Officer of the relevant area, undertaken the responsibility of carrying out the following environmental sanitation measures; Indoor, outdoor sanitation or inside the fence outside the fence sanitation; Well, ponds and drainage sanitation; Proper disposal refuse and destruction thereof by fire; Construction and use of sanitary latrines

	Other necessary environmental sanitation measures
Occupational Safety and Health Law 2019	
Purpose	To effectively implement measures related to safety and health in every industry and to set occupational safety and health standards
Section 26 Sub-section (e)	The project proponent has to provide adequate and relevant personal protective equipment to workers free of charge and make them wear it during work so as not to expose workers to any serious occupational diseases or hazards.
Section 26 Sub-section (1)	The project proponent has to arrange and display occupational safety and health instructions, warning signs, notices, posters and signboards.
Section 30 Sub-section (a)	The worker shall wear or use at all times any protective clothes, equipment and tools provided by the employer for the propose of safety and health.
Section 30 Sub-section (d)	The worker shall proper and systematic use any equipment and tools machines, any parts of the machines, vehicles, electricity and other substances being used at the workplace.
Section 30 Sub-section (e)	The worker shall take reasonable care for the safety and health of himself/ herself and of other persons who may be affected by his/her acts or omissions at work.
The law on Standardization	
Objectives	<p>The objectives of this law are as follow as</p> <ul style="list-style-type: none"> To enable to determine Myanmar Standard To enable to support export promotion by enhancing quality of production organizations and their product, production processes and services To enable to protect the consumers and user by guaranteeing imports and products are not lower than prescribed standard and safe from health hazards To enable to support protection of environment related to products, production process and services from import and conservation of natural resources To enable to protect manufacturing, distributing and importing the disqualified goods which do not meet the prescribed standard and those which are not safe and endangered to the environment To support on establishing the ASEAN Free Trade Area and to enable to reduce technical barriers to trade To facilitate technological transfer and innovation by using the standards for the development of national economic and social activities in accordance with the national development programme
Chapter 7 Taking action by Committee No 19	<p>The committee may if it is found out that holder of certificate of certification violate any term or condition contained in the relevant recommendation, pass any of the following administrative order.</p> <p>Warning</p> <p>Suspending the certificate of certification for limited period</p> <p>cancelling the certificate of certification</p>
The Industrial Explosive Materials Law (2018)	
Purpose	In order to systematically manufacture, import, transport, store and use explosives for occupational use.

	To ensure that the work place where ammunition and related equipment are used is safe and secure. In order to systematically supervise the production and use of occupational explosive materials.
Chapter 7 Prohibitions 18	Any licensee or permission holder shall not refuse inspection of the Chief Inspector or an inspector.
19 b	destroy industrial explosive materials without approval of the Executive Committee of Defence Service Council under section 8
19 c	Fail to act in accordance with the rules, regulations, by-laws, notifications, orders and directives issued under this Law.
The Motor Vehicles Law 2015	
Objectives	When the constructions periods and if it is needed in operation and production period for all vehicles The project proponent has to promise to abide by the nearly all provisions of said law and rules, especially the provisions related to air pollution, noise pollution and life safety
The Conservation of Water Resources and Rivers Law 2006	
Aims	The aims of this law are as follows, (a)to conserve protect the water resources and rivers system for beneficial utilization by the public (b)to smooth and safety waterways navigation along economy through improving water resources and river system (c) to contribute to the development of state economy through improving water resources and river system (d) to protect environmental impact
Chapter (5) Prohibitions No 8	No person shall (a)carry put any act or channel shifting with the aim to ruin the water resources and rivers and creeks (b)cause the wastage of water resources willfully
No 10	No person shall anchor the vessels where vessels are prohibited from anchoring in the rivers and creeks
No 11 (a)	No person shall dispose of engine oil, chemicals, poisonous material and other materials which any cause environmental damage, or dispose of explosive from the bank or from a vessel which is plying, vessel which has berthed, anchored, standard or sunk.
No 12	No person shall carry out growing garden, digging, filling, silt trapping, closing pond, dyke building or erecting spur in the river-creek boundary, bank boundary and waterfront boundary without the permission of the relevant government department and organization
No 15	No person shall carry out the construction of switch back, dockyard, wet dockyard, water tight dockyard, building of jetty, pier, landing stage or vessel landing drainage in the river-creek boundary and water front boundary without the permission of the Directorate.
The Commercial Tax Law 1990 Amended 2014	
Chapter 5 Registration and Intimation of Commencement of Enterprise 11 (b)	Any person who commences operation of a goods production enterprise or service enterprise shall furnish letter of intimidation on the commencement of the operations such to the relevant Township Revenue Officer as stipulated by regulations.
Chapter 6	Any person who has taxable proceed of sale or receipt from service

Monthly payment of Tax and Sending of Three-Monthly Return 12(a)	within a year, shall pay due monthly tax within ten days after the end of the relevant month. Moreover, a three-monthly return shall be furnished to the relevant Township Revenue Officer within one month after the end of relevant three-month.
12(b)	The Township Revenue Officer may intimate any person to pay due monthly tax and send three-monthly return if there is cause to consider that he has taxable proceeds of sale or receipt from service within a year.
12(c)	If it is failed to pay tax under sub-section (a) or (b), or if there is cause to consider that the tax paid is less than the tax payable, the Township Revenue Officer may base on the information received, estimate and claim the tax payable or the additional tax payable.
12 (e)	The tax payable on goods imported under sub-section (c) of section 4 of the law shall be collected together with the customs duties by the Customs Department in accord with the manner of collecting customs duties.

The Natural Disaster Management Law 2013

The objectives of this Law are as follow:

- (a) to implement natural disaster management programmes systematically and expeditiously in order to reduce disaster risks
- (b) to form the National Committee and Local Bodies in order to implement natural disaster management programmes systematically and expeditiously
- (c) to coordinate with domestic and foreign government departments and organizations, social organizations, other non-government organizations or international organizations and foreign regional organizations in carrying out natural disaster management activities
- (d) to conserve and restore the environment affected by natural disasters
- (e) to provide health, education, social and livelihood programmes in order to bring about better living conditions for victims

2.2 Commitment of Aung Htet Myet Co., Ltd

Aung Htet Myet Co., Ltd has made the commitments and responsible for the preservation of the environment at and around the area of project site. In addition to this, it shall carry out as per instructions made by Ministry of MONREC in which to conduct an EIA which describe the measure to be taken for preventing, mitigation and monitoring significant environment impacts resulting from the implementation and operation of proposed project or business or activity has to be prepared and submitted and to perform activities in accordance with this EMP and be abided by the environment policy, Environmental Conservation Law and other environmental related rules and procedures.

- Monitoring the factory area operations according to Environmental Impact Assessment (EIA).
- Submitting environmental monitoring reports to ECD
- Planning and implementation of CSR activities
- To set up welfare plan such as staff medical checkup, training program and public talk for getting knowledge, risk prevention, bonus and social security service
- To carry out fire safety assessment and ensure adequate and appropriate fire safety measures for employees

CHAPTER 3 – GEOGRAPHICAL CONDITION

3.1 Physical Environment

3.1.1 Locality (Situation) of Bilin Township

Bilin is a town of Thaton District in the Mon State of South-East Myanmar. Bilin at present, is situated at N17°10'-17°15' and E97 °15' and 30 feet above sea level. It is 123 miles distant far from Yangon Township.

Bordering Township are Pharpon Township, Kayin State in the East, Kyaik Hto Township in the West, Thaton Township in the South, Shwe Kyin Township, Bago Division in the North.

The terrain level is a good plain surrounded by forests and hilly slopes. So the area is sheltered by the forests. The Bilin stream is 22 miles long, flowing from North to South. The Thae Phyu stream is 20 miles long, flowing from East to West and flow into Sittaung outfall. The Highest Mountain is Maelan Mountain, which is 860 feet above sea level.

Table 3.1 Area of Bilin Township

Sr.	Township	Sub-Township	Area (Square Miles)	City	Area (Square Miles)
1	Bilin	-	835.2	Bilin	2.14

Data Source: Township Administration

Table 3.2 Organization of Bilin Township

Sr.	Township	Township	Sub-Township	Wards	Village-Tract	Villages
1	Bilin	1	-	5	50	210

Data Source: Township Administration

Bilin Township has no sub-township but it has 5nos. of wards in urban area, 50nos. of village tracts, and 210nos. of villages.

The Factory of Aung Htet Myet Co.,Ltd. is situated at the at No 22, Heavy Industry (Bilin), Bilin Township, Thaton District, Mon State.

Table 3.3 Location of Bilin Township

Sr.	Township	Location				Above Sea Level (Feet)
		North Latitude		East Longitude		
		From	To	From	To	
1	Bilin	17 degree 10 minutes	17 degree 15 minutes	97 degree 08 minutes	97 degree 15 minutes	30

Data Source: Township Administration

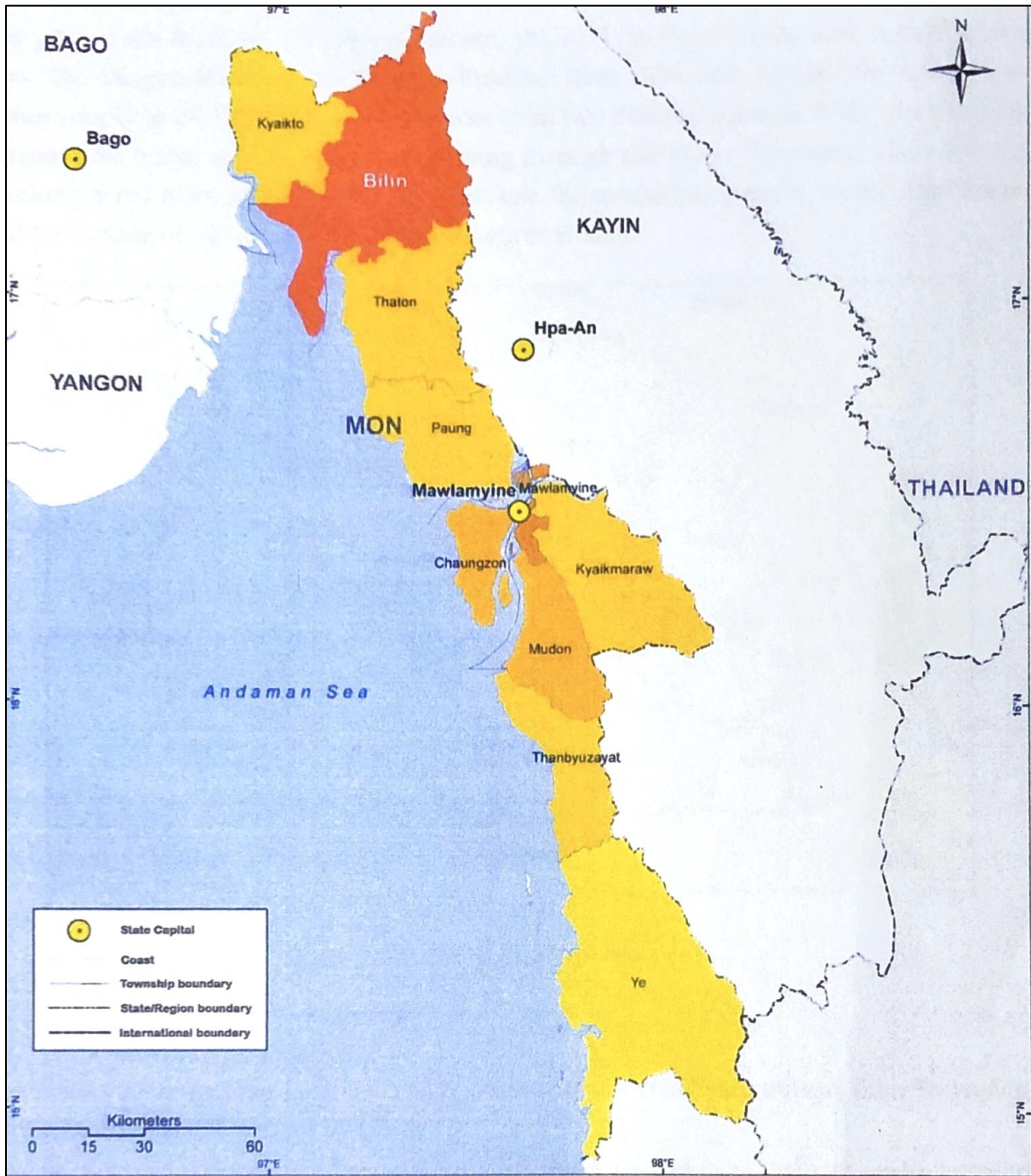


Figure 3.1 Geographical Condition of Bilin Township

Table 3.4 Border Township of Bilin Township

Sr.	Township	Border			
		East	West	South	North
1	Bilin	Kayin State Pharpon Township	Kyaik Hto Township	Thaton township	Bago division Shwekyin township

Data Source: Township Administration

3.1.2 Services Infrastructure

The project site is on No 22, Heavy Industry (Bilin), Win Pyan Village and of easy access from the Yangon-Mawlamyine Road, a little far from Bilin and Kyiaik Hto Townships. Water supply to the Bilin Tyre Factory comes from two different sources. Water for drinking is from tube wells, and supplied after passing through the Water Treatment plant into the drinking water plant and Water for domestic use, for production process, factory operations and for cooling or cleaning, is from Bilin stream or rivulet.

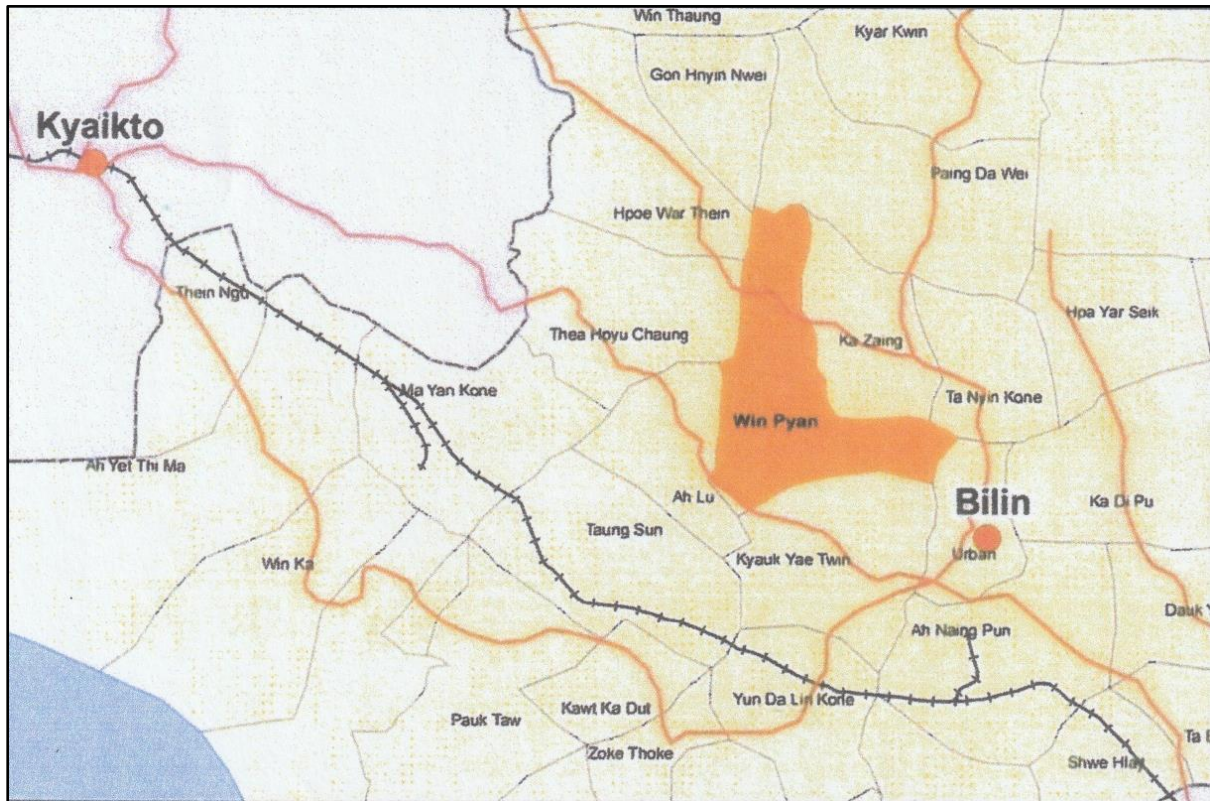


Figure 3.2 Location Map of Win Pyan Village

3.2 Socio-economic Environment

3.2.1 Population Characteristics

The factory of Aung Htet Myet Co.,Ltd is situated in the Win Pyant village, Bilin Township, a little far from downtown of Bilin City.

Demographic aspect data is taken only from the Bilin Township in the project site location, assuming that the impact (if any may occur) would not reach other townships further from the zone.

The total population of Bilin Township is 181,528 with an annual population increases of 85.6%. Over half of the total population (30%), is of working age.

Table 3.5 Population of Bilin Township

Sr	Particular	Over 18 Years			Under 18 Years			Grand Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
1	Town	5992	6836	12828	2576	2751	5327	8568	9587	18155
2	Village	51280	56337	107617	28118	27638	55756	79398	83975	163373
Grand Total		57272	63173	120445	30694	30385	61083	87966	93562	181528

Data Source: Township Administration

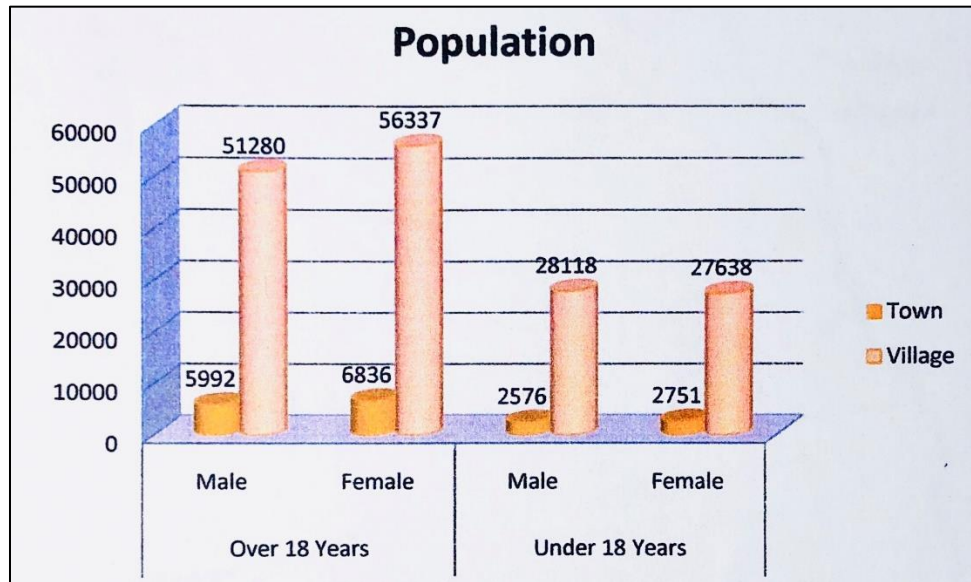


Table 3.6 Population Progress and Ratio of Male and Female

No.	2014	2015	Progress	Progress Rate	Male/Female ratio		
					Male	Female	Ratio
1.	155501	181528	26027	85.66%	87966	93562	1:1.06

Data Source: Township Administration

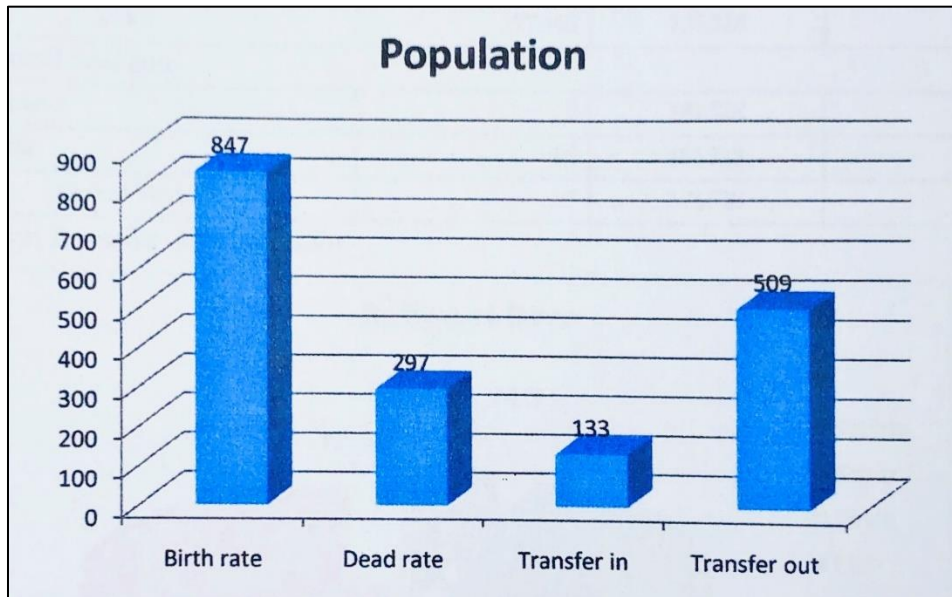
Table 3.7 Lists of Population (Birth / Dead / Transfer in and out)

No.	Population	Birth rate	Dead rate	Transfer in	Transfer out	Current Population
1	180954	847	297	133	509	181582

Data Source: Township Administration



Figure 3.3 Map of Bilin Township



3.2.2 Household Size

Table 3.8 Household Sizes of Bilin Township

No.	Particulars	Households	Houses	Wards	Village Tract	Villages
1	Urban	3423	3508	5		
2	Rural	31945	34029		50	210
Total		35368	37537	5	50	210

Data Source: Township Administration

3.2.3 Housing Conditions

Most of the houses in Bilin Township are either permanent buildings of Brick Nogging buildings or wooden houses or few Bamboo houses.

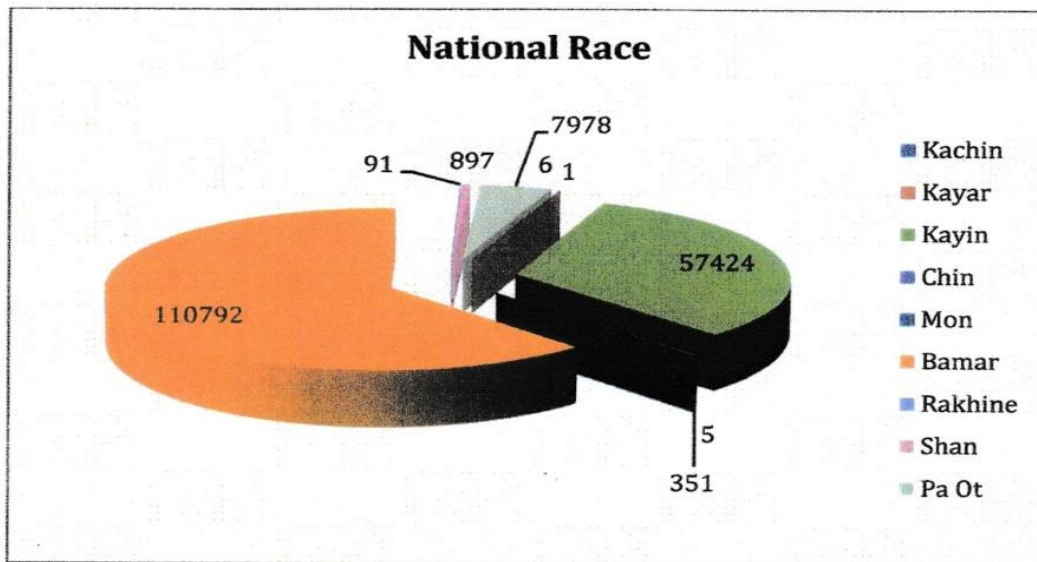
3.2.4 National Races and Non National citizens in Bilin Township

Bamar language is the principal and official language and others such as Chin, Kachin, Shan, Mon and especially Kayin language are also used.

Table 3.9 National races residing in Bilin Township

No.	National races	Population	Total	% of Population
1	Kachin	6	181528	0.003
2	Kayar	1	181528	0.0006
3	Kayin	57424	181528	0.3163
4	Chin	5	181528	0.0028
5	Mon	351	181528	0.1934
6	Bamar	110792	181528	61.0331
7	Rakhine	91	181528	0.0501
8	Shan	897	181528	0.4941
9	Pa Ot	7978	181528	4.3949
Total		177545	181528	97.81
Non-national residents				
1	Chinese	1	181528	0.00055
2	India	16	181528	0.0088
Grand Total		17	181528	0.00936

Data Source: Township Administration



3.2.5 Religions and Religious places

Bilin Township is a place where multi religions cherish and Buddhist majority and other religions minorities thrive together in good harmony, participating in each other’s religious affairs together.

Table 3.10 Religion of the Bilin Township

No.	Township	Buddhist	Christian	Hinduism	Islam	Deity	Others	Total
1	Bilin	178828	273	392	2035	-	-	181528

Data Source: Township Administration

Table 3.11 Religion of the Bilin Township

No.	Image of Buddha	Pagoda		Monastery Monks	Monastery Nuns	Temple
1.	9	9	-	385	49	5

Data Source: Township Administration

Table 3.12 Monks and Nuns in Bilin Township

No.	Monks	Postulant/novices	Nuns
1	2152	1321	376

Data Source: Township Administration

Table 3.13 Famous Pagoda and Image of Buddha at Bilin Township

No.	Name	Location
1.	Kyaik Htee Saung	Zote Thote
2.	Kay Lar Tha	Taung Gyi
3.	Mae Lan San Taw	Mae Lan
4.	Ku Thi Nar Yone San Taw	Ka Zine

Data Source: Township Administration

Table 3.14 Famous Temples at Bilin Township

No.	Temples Name	Monk Name	Location
1.	Kyaik Htee Saung	U Pyin Nyar Di Pa	Zote Thote
2.	Kay Lar Tha	Kay Lar Tha Sayar Taw	Taung Gyi
3.	Mae Lan San Taw	Mae Lan Sa Yar Taw	Mae Lan
4.	Ku Thi Nar Yone San Taw	Ku Thi Nar Yone Sa Yar Taw	Ka Zine

Data Source: Township Administration

Table 3.15 Others Religious Buildings in Bilin Township

No.	Christian		Islam		Hinduism		Chinese	
	Town	Village	Town	Village	Town	Village	Town	Village
1	2	1	1	4	1	4	-	1

Data Source: Township Administration

3.2.6 Education Level

Population by education level, based on the demography data of Bilin Township in the year 2014-2015, is mentioned in Table (17). From monasteries and pre-schools and up to the University level, the average teacher-student ratio in Bilin township is 1:26 which is a fairly good indicator as of Myanmar Standard, but it seems necessary to enforce some more teachers in the Primary schools and Teaching monasteries. The result of the Matriculation Examination is within an average of 41.28% in 2013-2014 which is fairly good for a newly built Industrial Township.

Table 3.16 Population by Education Level of Bilin Township

No.	Type of School	Total in No	No of Teachers	No of Students	Ratio
1	University	-	-	-	-
2	Sate High Schools	8	307	8669	1:28
3	State Middle Schools	10	226	5846	1:25
4	State Primary Schools	154	741	20064	1:27
5	Pre-Schools	11	13	284	1:21
6	Teaching Monasteries	12	85	1714	1:20
Total		195	1372	36577	1:26

Data Source: Township Administration



Figure 3.4 Map of Bilin City Allotment

Table 3.17 State High Schools at Bilin Township

No.	Name of school	Place	Distance (Acre)	No. of Teacher	No. of Student	Ratio
1	Bilin	Bo YaZar	7.83	60	1503	1:25
2	Taung Soon	Taung Soon	2.25	54	1686	1:31
3	Zoat Thote	Zoat Thote	10.25	45	1394	1:31
4	Shwe Hlay	Shwe Hlay	2.10	34	858	1:25
5	Ngar Bat Chaung	Ma Yan Kone	4.32	26	760	1:29
6	Ah Luu Lay	Ah Luu	1.50	30	572	1:19
7	Lay Kay	Lay Kay	10.00	26	654	1:25
8	Kin Ywar	Kin Ywar	6.12	32	1244	1:39
Total				307	8669	1:28

Data Source: Township Administration

Table 3.18 State Middle Schools at Bilin Township

No.	Name of school	Place	Distance (Acre)	No. of Teacher	No. of Student	Ratio
1	Sub-High School (Kan Thar Yar)	Kan Thar Yar	3.26	30	1066	1:36
2	Sub-High School (Daut Yat)	Daut Yat	6.5	29	677	1:23
3	Sub-High School (Ka Zine)	Ka Zine	4.10	23	683	1:30
4	Sub-Middle School (Hnin Pa Lae)	Hnin Pa Lae	3.32	27	597	1:22
5	Sub-Middle School (Kawt Ka dout)	Kawt Ka dout	9.0	32	693	1:22
6	Thae phyu chaung	Thae phyu chaung	2.4	19	409	1:22
7	Late Khone Gyi	Late Khone	3.6	26	583	1:24
8	Win Ka	Win Ka	3.58	16	304	1:19
9	Mu Thin	Mu Thin	2.18	11	440	1:40
10	Sin Inn	Sin Inn	2.3	15	394	1:26
Total				226	5846	1:25

Data Source: Township Administration

Table 3.19 State Primary Schools at Bilin Township

No.	No. of School	No. of Teacher	No. of Students	Ratio
1	154	741	20064	1:27

Data Source: Township Administration

Table 3.20 Pre-Schools at Bilin Township

No.	Name	No. of Teacher	No. of Students	Ratio
1	High (Bilin)	1	20	1:20
2	No.2 Primary (Bilin)	1	15	1:15
3	Primary (Shwe In Don)	1	22	1:22
4	Primary (Inn Wine Kone)	1	29	1:29
5	Primary (Inn Phyar)	1	24	1:24
6	No.2 Primary (Taung Soon)	1	41	1:41
7	Sub-High (Kawt Ka Dout)	1	35	1:35
8	High (Shwe Hlay)	1	25	1:25
9	Middle (Late Khone Gyi)	1	22	1:22

10	High (Lay Kay)	2	25	1:12
11	Primary (North Shwe Hlay)	2	26	1:13
Total		13	284	1:21

Data Source: Township Administration

Table 3.21 School at Monasteries at Bilin Township

No.	Name	No. of Teacher	No. of Student	Ratio
1	Paut Taw Pa Ra Hi Ta	19	524	1:28
2	Thaw Ka Myaung	16	240	1:15
3	Myin Thar Htay Ya War Da	9	176	1:20
4	Kan Taw Oo Dama Thu Ka	2	101	1:50
5	Aung Baw Di Min Ga Lar	5	69	1:14
6	Way Lu Won	5	40	1:8
7	Myot Oo	10	114	1:11
8	Ah Hone Wa	2	44	1:22
9	Inn Wine Khone	2	43	1:22
10	Aung Baw Di Man Daing	5	135	1:27
11	Nyaung Thar Yar	6	165	1:28
12	Thit To Kyun	4	63	1:16
Total		85	1714	1:20

Data Source: Township Administration

Table 3.22 Enrollment Rate of School Age Children in Bilin Township

No.	5 Years old Children			Enrollment			Enrollment %
	Boy	Girl	Total	Boy	Girl	Total	
1	3534	3055	6589	3528	3048	6575	99.80

Data Source: Township Administration

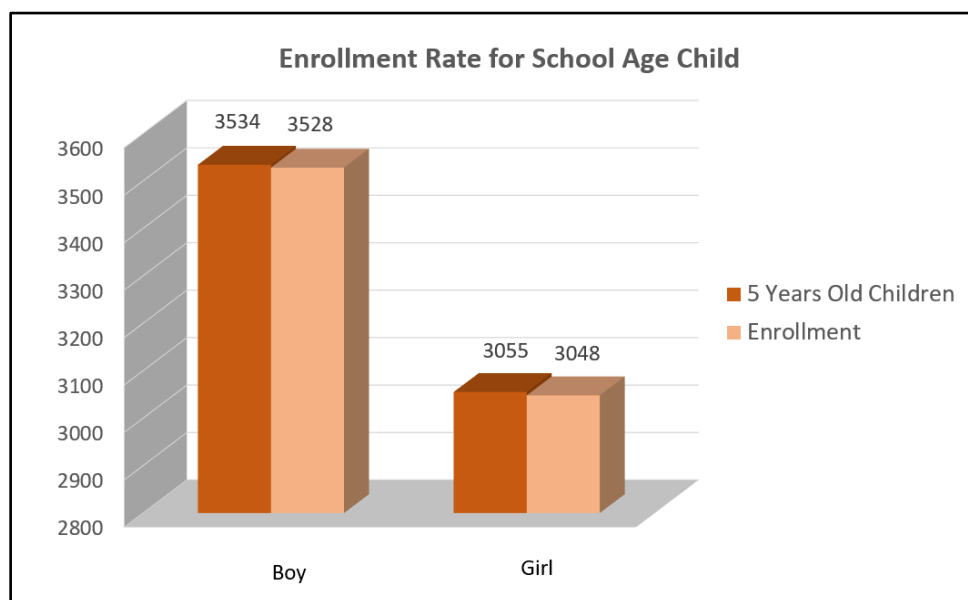


Table 3.23 The Rate of Passing Matriculation at Bilin Township

No	2013-2014 Year				2014-2015 Year			
	Enroll	Sit exam	Pass	%	Enroll	Sit exam	Pass	%
1	1438	1325	547	41.28	1808	1508	NA	NA

Data Source: Township Administration

Table 3.24 Literacy rate at Bilin Township

No	Population	Literacy %
1	181528	98%

Data Source: Township Administration

Table 3.25 Libraries at Bilin Township

No	Government	Educational	Informational	Monasteries	Others	Total
1	1	18	1	34	17	71

Data Source: Township Administration

The Bilin Township has a good number of libraries, total in 71 nos, which reveals a good sign of a learning society.

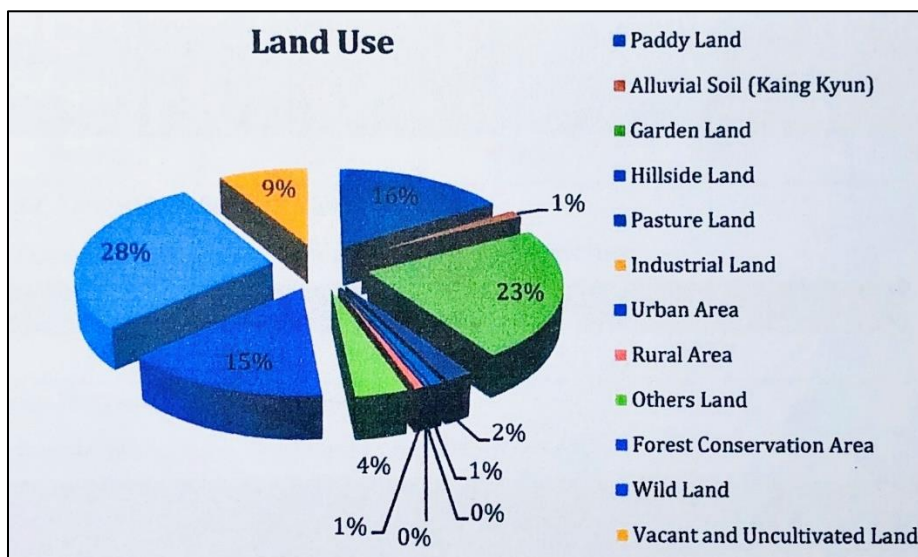
3.2.7 Land Use

Total Land area is 21,103 acres, 39.38% is urban area and 0.66% is rural area in the Bilin Township.

Table 3.26 Land Use of Bilin Township

No.	Land Category	Area (Acre)
1.	Total Net Arable Lands	228034
	A) Paddy Land	86434
	C) Alluvial Soil (Kaing Kyun)	7023
	D) Garden Land	123449
	E) Hillside Land	11128
2.	Pasture Land	5083
3.	Industrial Land	236
4.	Urban Area	1385
5.	Rural Area	3727
6.	Others Land	20720
7.	Forest Conservation Area	79570
8.	Wild Land	150269
9.	Vacant and Uncultivated Land	45507
Total		534531

Data Source: Township Administration



3.2.8 Economy

Bilin Township is located at Mon state and just fairly developed, though it is a central point for Business. Main business is agribusiness and trading.

It is located on Yangon-Mawlamyaing highway road, that it is good for transportation and communications. Main product is Rubber Teak, Bamboo, Taung htan and seasonal fruits such as durian, mangosteen, coconut, rambutan etc. trading to the big cities.

(1) Agriculture Sector
Table 3.27 Major Crops of Bilin Township

No.	Name	2014-2015 Estimated Acreage		Year 2014-2015			
				Plant	Harvest	Rate	Production (in bushels)
1	Paddy	Summer	7204	6922	-	-	-
		Rainy	106281	106281	106281	71.16	7562956
2	Peanut	Summer	596	596	596	52.87	31509
		Rainy	7665	12443	12443	61.99	771342
3	Sesame	Rainy	511	511	511	9.35	4778
		Winter	738	760	760	17.52	13315
4	Sunflower	-	74	109	109	22.34	2435
5	Black gram	-	451	1064	1064	16.34	17386
6	Green gram	Winter	14885	14145	14145	16.18	228866
7	Sugar Cane	-	2000	303	47	17.02	800
8	Corn		1131				

Data Source: Township Administration

Table 3.28 Planting Situation for Long Terms Crop

No.	Crop Names	Plant (Acre)	Harvest (Acre)	Production (Viss)	Total Production (Viss)
1.	Rubber	24207	13571	621.37	8432555

Data Source: Township Administration

Table 3.29 List of Plough, Rake, Cattle and Buffalo for Cultivation

No.	Plough	Rake	Number of Cattle/ Buffalo
1	9370	6015	10994

Data Source: Township Administration

Table 3.30 Production of Rice, Sufficient in the Bilin Township

No.	Subject	Unit	2013-2014	2014-2015 Estimated	Remark
1.	Population	Person	153549	181528	
2.	Consumption (person per year)				
	- Rural	bushel	15	15	
	- Urban	bushel	12	12	
3.	Requirement (Rice)	bushel	222176	2666148	
4.	Total Cultivation (Acre)	Acre	11108	116333	
	- Production rate	bushel	72.33	72.81	
	- Production bushel	bushel	8035295	8470206	
5.	Cultivated acre for next year	Acre	116333	113521	
6.	Omit Amount	bushel	3022017	3456459	
7.	Used Amount	bushel	3022017	3456459	

8.	Surplus	bushel	5013278	5013747	
9.	For Consumption	bushel	222176	2666148	
10.	Sufficiency	%	265.89	245.05	

Data Source: Township Administration

Table 3.31 Production of Edible Oil, Sufficient in the Bilin Township

No.	Subject	Unit	2013-2014	2014-2015 Estimated	Remark
1.	Population	Person	183549	181528	
2.	Consumption (person per year)	Viss	6	6	
	Oil Requirement	Ton	1504.15	1778.23	
	Production rate	bushel	905324	567250	
3.	Waste and Others	bushel	89975	70444	
4.	Omit Amount	Acre	80917	78420	
	Used Amount	Metric/Ton	1504.18	1778.23	
	Requirement	Metric/Ton	966.92	167.52	
5.	Sufficiency	%	166.28	99.15	

Data Source: Township Administration

(2) Livestock Sector

Table 3.32 Animal husbandry in Bilin Township (in no. of heads, population)

No.	Year	Buffalo	Cattle	Pig	Goat/Sheep	Chicken	Duck	Turkey/Goose
1	2013-14	18738	35985	22946	9993	460845	56451	6120
2	2014-15	19101	37026	24797	10851	520439	61801	6365
Total		37839	73011	47743	20844	981284	118252	12485

Data Source: Township Administration

Table 3.33 Meat Production of Bilin Township (in viss)

No.	Year	Beef	Pork	Mutton	Chicken	Duck	Turkey/Goose
1	2013-14	422748	774264	52922	1491309	176171	24695
2	2014-15	434150	101916	55292	1742658	193435	24786
Total		856898	1576180	108214			

Data Source: Township Administration

Table 3.34 Eggs Production of Bilin Township (in nos.)

No.	Year	Chicken egg	Duck egg	Quail egg
1	2013-14	17468308	2437069	-
2	2014-15	18924389	2527331	-

Data Source: Township Administration

Table 3.35 Milk Production of Bilin Township

No.	Year	Dairy	Milk Production (Viss)
1	2013-14	5152	2592773
2	2014-15	5150	2594718

Data Source: Township Administration

Table 3.36 Fish/Prawn Production of Bilin Township

No.	Year	Fish			Prawn		
		Quantity (Pond)	Acre	Production (Viss)	Quantity (Pond)	Acre	Production (Viss)
1	2013-14	8	23.87	-	-	-	-
2	2014-15	8	23.87	-	-	-	-

Data Source: Township Administration

(3) Forest Sector

Table 3.37 Forests in Bilin Township

No.	Name	Area (Acre)	Trees
1.	Don Da Mi forest reservation	20669.55	Ironwood, gum-kino, Hardwood, Eugenia, large tree and others
2.	Kya Khat Stream forest reservation	20046.00	
3.	Bilin forest reservation	513.59	
4.	Thae Phyu Chaung protection area	38028.37	
5.	Kay Lar Tha environmental conservation area	5596.063	
6.	Outside of Forest reservation	245141	
Total		329994.573	

Data Source: Township Administration

Table 3.38 Product of Forest in Bilin Township

No.	Types	Unit	Production
1.	Fire Wood	Cube Ton	2886
2.	Charcoal	Cube Ton	1560
3.	Bamboo	Number(Thousand)	2297
4.	Rattan	Number(Thousand)	65
6.	Bark	Viss	7825
7.	Taung Htan	byit(Thousand)	2530
9.	Cardamom	Viss	63
10.	Honey	Viss	515
11.	Nipa palm		

Data Source: Township Administration

(4) Industrial Sector

There is no industrial zone in Bilin Township except some public and private factories and small scale home business.

Table 3.39 Factories in Bilin Township

No.	Name	Types	Public	Private	Labours
1.	No.22 Heavy Factory	Tyre	1		496
2.	Sugar Factory	Sugar		Rental	94
3.	No.3, Spirits Factory	Alcohol/Spirits		Private	135
Total		3	1	2	725

Data Source: Township Administration

Table 3.40 Small Scale Home Business

No.	Types	Quantity	Labours
1.	Pot	1	256
2.	Map	1	362
3.	Snack	1	3
4.	Mont Tee	3	12
5.	Smith	3	9
6.	Solder	3	10
Total		14	652

Data Source: Township Administration

3.2.9 Livelihood

In the study area, the principal livelihood of its people is found to be farmers, traders and Industrial workers. Population by types of livelihoods in 2015 can be seen in Table (3.41).

Table 3.41 Livelihood and Population by Occupation in Bilin Township

No.	Types	Population
1.	Government employer	2667
2.	Services	1015
3.	Agricultural	55712
4.	Animal husbandry	8309
5.	Trading	10030
6.	Industrial	5978
7.	Fishery	325
8.	Odd jobs	12508
9.	Others	7800
Total		104344

Data Source: Township Administration

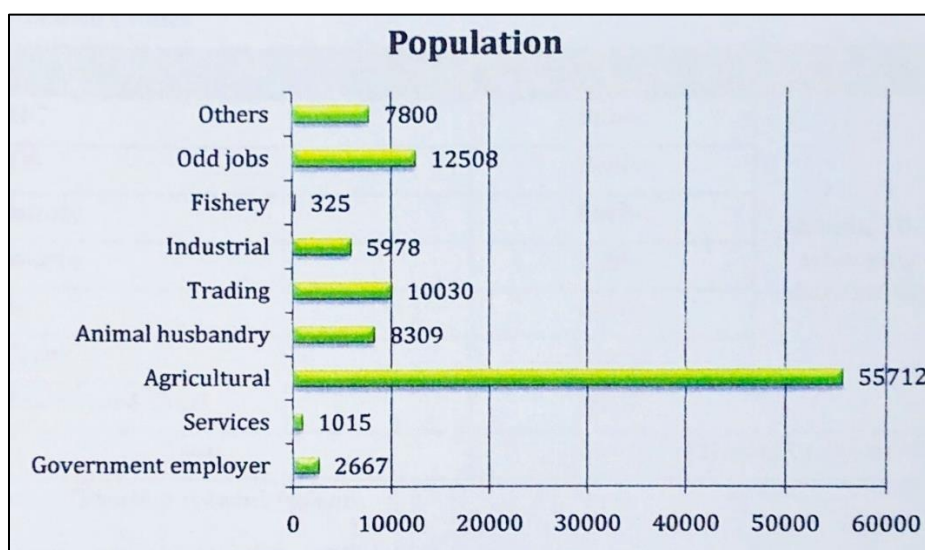


Table 3.42 Labour status in Bilin Township

No.	Population available to work	Workers in jobs	No of Unemployment	Unemployment %
1.	120112	105997	14115	7.79%

Data Source: Township Administration

Table 3.43 Per Capita Income of Bilin Township

Sr.	Year	Per Capita Income
1	2012-2013	587,129
2	2013-2014	641,165
3	2014-2015	738,132

Data Source: Township Administration

3.2.10 Health Condition

The health condition of the people in the study area that covers Bilin Township is gathered through the study of patterns of disease, environmental sanitation and information from health staff in health facility.

Table 3.44 Hospitals

No.	Name	Public/Private	No. of Bedded
1	Bilin	Public	25
2	Taung Soon	Public	16
3	Shwe In Done	Public	16
4	Zote Thot	Public	16
Total			73

Data Source: Township Administration

Table 3.45 Health Clinics

No.	Name	Public / Private	Diseases of Cure
1	RHC	Public	Malaria, TB, Tetanus, whopping cough, diarrhea, diphtheria
2	RHS	Public	
3	Leprosy	Public	
4	Malaria	Public	
5	TB	Public	
6	Clinics	Public	
7	Maternal and Child	Public	
Total		Gov (6), Private (1), Total (7)	

Data Source: Township Administration

Table 3.46 Village Health Department / Sub Department

No	Name	Sub-Dept	Remark
1	Win Ka	Pyaing Dan lay	
2		Ngar Bat Chaung	
3		King Ywar	
4		Nyaung Thar Yar	
5	Shwe Hlay	Hnin Pa Lal	
6		Daut Yat	
7		Nyaung Pa Lin	
8		Kyaut Yay Twin	
9	Yin Own	Ka Zine	
10		Pyine Da Wal	
11		Ah Lu	
12		Tha Pyay Ni	
13	Nat Kyi	Nyaung Htaunt	
14		Pi Ti	
15		Ah Suu Chaung	
16		Mae Pa Lin	
17		Mae Nga Than (Bal Lin not)	
18	Lay Kay	Win Tar Pan	
19		Pyin Ma Pin State	
20		Myit Kyo	
21		Daw Zan Gyi	
22	Ah Win Kyi	Naung Ga Tote	
23		Ma Yan Gone	
24		Ka Di Pu	
25		Nouth Tha Htay Gone	
26	Zout Thot	Mu Thin	
27		Zwel Ka Lar	
28		Zout Ka Li	

29		Zout Thot	
30	Taung Soon	Nyaung Thar Yar	
31		Ka Yin Su	
32		Yun Da Lin Kone	
33		Paut Taw	
34		Taung Soon	

Data Source: Township Administration

Table 3.47 Health Care

No	Population	Care by Doctor		Care by Nurse		Care by Mid-wife	
		No. of Doc	Doc: Patient %	No. of Nurse	Nurse: Patient %	No. of (MW)	Mw: Patient %
1	181528	8	1:22691	81	1:2241	9	1:1026

Data Source: Township Administration

Table 3.48 The Diseases Most encountered

No	Types of Diseases									
	Malaria		Diarrhea		TB		Dysentery		Hepatitis	
	Infected	Dead	Infected	Dead	Infected	Dead	Infected	Dead	Infected	Dead
1	284	-	2180	-	556	2	684	-	29	-

Data Source: Township Administration

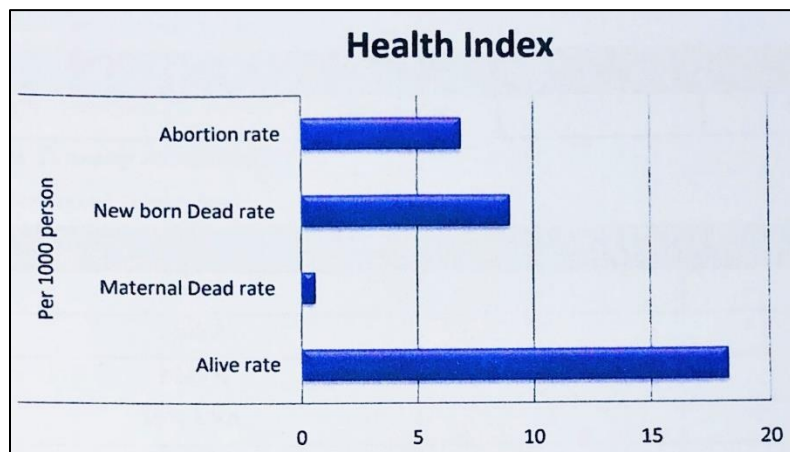
Table 3.49 Health Index

No	No. of Mother	No. of Children	Per 1000 person			
			Alive rate	Maternal Dead rate	Dead rate of New born	Abortion rate
1	2	89	18.25	0.6	9	6.9

Data Source: Township Administration

According to the information from health workers, it is known that common diseases among the residents are

- 🌿 Seasonal Influenza and common cold
 - 🌿 Occasional Diarrhea, Cough, Respiratory Infection and other hygiene problems.
- In general, public awareness of the importance of health is noted as good.



3.2.11 Water Source

Bilin Township mainly use from well, tube well, lake and ravine for drinking water.

Table 3.50 Sources of Drinking Water

No	Location	Types and Measure					No. of House for Benefit
		Lake	Well	Tube-well	Ravine	River	
1	Kyaut Lone Gyi				1		373
2	Win Tar Pan		1		1		382
3	Shwe Kyi		1				60
4	Payar Ywar		1				127
5	Kyar Kwin		1				224
6	Tha Pyay Kone	1					50
7	Yun Da Lin Kone	1					701
8	Naung Ga Tote			1			146
9	Yay Twin Phyu			1			36
Total		2	4	2	2	-	2145

Data Source: Township Administration

3.2.12 Electricity Supply

Table 3.51 Electricity Utilization

No	Require amount (KW)	Receive amount (KW)	Using amount (KW)	Lack/Surplus amount (KW)
1	3500	4000	3000	Surplus

Data Source: Township Administration

Table 3.52 Sub-Electric Power Station

No	Name	Government	Private	Amount (KW)
1	Bilin	Government		4000

Data Source: Township Administration

Table 3.53 Number of Transformer

No	Type of Transformer	Unit	Amount (KW)
1	2-MVA	1	1600
2	5-MVA	1	4000
3	4-MVA	1	3200
4	1600-KVA	2	2560
5	800-KVA	4	2560
6	500-KVA	1	400
7	315-KVA	15	3780
8	250-KVA	1	200
9	200-KVA	11	1760
10	160-KVA	8	1024
11	100-KVA	17	1360
12	50-KVA	11	440
Total		80	11884

Data Source: Township Administration

3.2.13 Transport and Road Access

Table 3.54 Airway Transport

No	Airport/Helicopter	Location	Remark
1	Kha La Ya (8)	Kan Thar Yar	
2	Kha Ma Ya (3)	Pyine Da Wal	

3	Kyite Htee Saung	Zout Thot	
Total		3	

Data Source: Township Administration

Table 3.55 Sea Route Transport

No	Name	Town		Distance (Mile)	No. of the port	
		From	To		Port	Others
1	Bilin-NatGyi	Bilin	Nat Gyi	21		1
2	Bilin-Thae Phyu Chaung	Bilin	Thae Phyu Chaung	11		1
Total				32		2

Data Source: Township Administration

Table 3.56 Rail Way and Rail Way Stations

No.	Name	Town			No. of Stations	
		From	To	Distance	Big	Small
1	Bilin – Yangon	Hnin Pa Lae	Ma Yan Kone	13.53	1	
2	Bilin – Maw La Myine	Hnin Pa Lae	Ta Bat Swe	4.00	1	
Total				17.53	2	

Data Source: Township Administration

Table 3.57 Car Road

No.	Name	Town		Distance (Mile)
		From	To	
1	Bilin–Yangon	Bilin	Thae Phyu Chaung	11
2	Bilin–Mawlamyaing	Bilin	Ka Zine	14.2

Data Source: Township Administration

Table 3.58 The Roads Connect Town to Town

No.	Name	Distance (Mile-furlong)	Types			Remark
			Bitumen	Smooth Rock	Hard	
1	Bilin–Mawlamyaing	76	76			
2	Bilin–Yangon	126	126			
3	Bilin-Natkyi-Pharpon	32.5	25.30	8.20		
Total		234.50	226.30	8.20		

Data Source: Township Administration

3.2.14 Economic and Social Facilities

Table 3.59 Bank Facilities

No.	Town	No. of Bank	Government	Private	Total
1	Bilin	3	1	2	3

Data Source: Township Administration

Table 3.60 Shops

No.	Types of Shop	Quantity
1	Stores	20
2	Gold	10
3	Electric	3
4	Phone and Accessary	4
5	Medicine	6
6	Restaurant	15

7	Tea Shop	35
8	Hard-ware	7
9	Agricultural	2
10	Construction	2
11	Rice	5
12	Clothes	1
13	Paraphernalia for Buddhist Ordination/Novitiation Shop	2
Total		112

Data Source: Township Administration

3.2.15 Communication

Table 3.61 Post and Telecommunication

No	Town	Post office	Telegraph	No. of Telephone				Manual Phone	Internet
				Auto Phone	IP Star	Cord Less	Mobile		
1	Bilin	3	2	701			29527	15862	
Total		3	2	701			29527	15862	

Data Source: Township Administration

3.3 Biophysical Environment

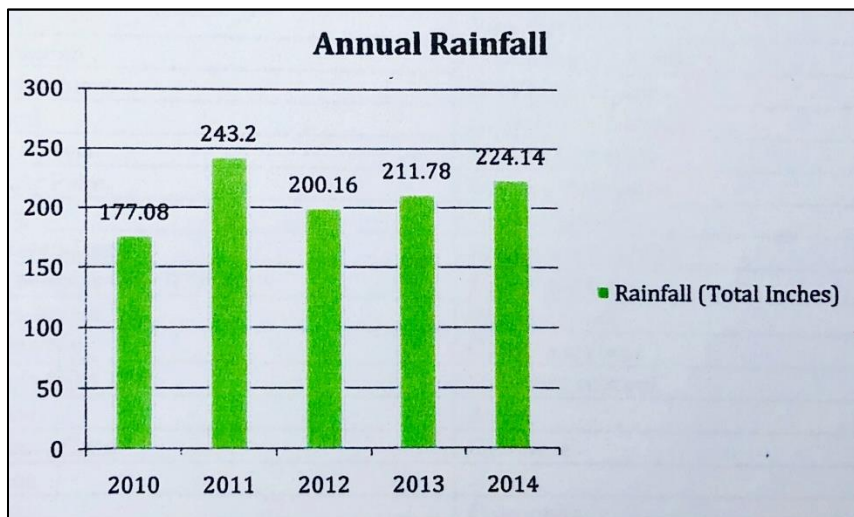
3.3.1 Climate

Bilin Township has three seasons in a year with an average rainfall of 224.14 inches for about 147 days, the highest and lowest average temperature is 40°C and 14°C.

Table 3.62 Weather Condition of Bilin Township

No.	Year	Rainfall		Temperature	
		Days	Total (Inch)	Summer (C)	Winter (C)
				MAX	MIN
1	2010	138	177.08	39.7	16.0
2	2011	159	243.20	37.0	14.4
3	2012	161	200.16	38.2	13.0
4	2013	144	211.78	39.2	14.2
5	2014	147	224.14	40.0	14.0

Data Source: Township Administration



3.3.2 Fauna and Flora

Plants and animals (Flora and Fauna) found around project locations comprise of terrestrial biota and aquatic biota, as presented in the following Table 3.63.

Table 3.63 Types of Biota found around Bilin Township

No	Name of Biota	Scientific Name
I.	Terrestrial Biota	
1.	Flora	
	Bamboo	Bambusa sp
	Banana	Musa Paradisiaca
	Banyan	Ficus benjamina
	Bastard myrobalan	Terminellia bellerica
	Bastard sandal wood	Mansonia gagei
	Bay Leaf	Cinnamomum inunctum
	Coconut	Coco nifera
	Drum Stick	Moringa oleifera
	Durian	Durio zibethinus
	Elephant Grass	Eleusine indica
	Freater galangal	Alpinia galangal
	Gantkaw	Mesua ferrea
	Guava	Psidium quajava
	Jackfruit	Artocarpus integra
	Mango	Mangifera indica
	Mangosteen	Garcinia mangostana
	Neem	Azadirachta indica
	Nipa palm	Nipa fruticans
	Noni	Morinda angustifolia
	Papaya	Carica papaya
	Padauk	Pterocarpus metrocarpus
	Plum	Zizyphus jujube
	Rambutan	Nephelium mutabile
	Rubber plant	Hevea brasiliensis
	Santol	Sandoricum indicum
	Star Flower	Minmusops elengi
	Toddy Palm	Borassus flabellifer
	Teak	Tectona grandis
	Ironwood tree	Pterocarpus indicus
	Large timber tree (Thit Yar)	Shorea obtuse
	Large timber tree	Shorea robusta
	Ya Ma Nay	Gmelina arborea
	Ebony (Yin Tite)	Dalbergia cultrate
	Nhaw	Adina
	Rattan/Cane	Calameae
2.	Fauna	
	Beetle	Coleoptera
	Butterfly	Lepidoptera
	Centipede	Cermatia forceps
	Chameleon	Caloted jabatus
	Cricket	Anisomorpha femorata
	Dove	Colombia livia
	Dragonfly	Ordonata
	Gacko	Hemidactylus turcicus
	Goat	Capra falcorenii
	Grasshopper	Orthopera
	Lizard	Mabouya multifaciata
	Rat	Rattus rattus
	Scorpion	Vijovis spinigreus

	Snake	Vipera russeli
	Sparrow	Lonhura leucosgasstroides
	Toad	Bufo melanotictus
	Tiger	Panthera tigris
	Leopard	Panthera pardus
	Sambur	Rusa unicolor
	Bear	Ursidae
	Wind Boar	Sus scrofa
	Woodpecker	Dinopium species
	Deer	Cervidae
	Raccon	Procyon lotor
	Rabbit	Leporidae
	Pheasant	Phasianus colchicus
	Peafowl	Pavo cristatus
	Plover	Charadriine
II.	Aquatic Biota	
1.	Flora	
	Asparagus	Asparagus officinalis
	Nipah palm	Nipa Fruticans
	Reed	Saccharum spontaneum
	Water Crest	Ipomoea aquatic
	Water Hyacinth	Eichhomia crassipes
2.	Fauna	
	Catfish	Clarias batracus
	Eel	Pterocarpus albus
	Frog	Bufo sp
	Mollusks	Mollusca (Gastropoda)
	Shellfish	Bivalvea
	Snail	Gastropoda
	Perch Fish	Trichogaster sp
	Prawn	Parapenaeopsis Sculptilis

Data Source: Township Administration

CHAPTER 4 – DESCRIPTION OF THE PROPOSED PROJECT

Aung Htet Myet Company Limited is a 100% Myanmar Citizen Investment Company, a Family Business, established under the National Investment Law and the Myanmar Company Act, whose registered office is situated at the No 47, Bayint Naung Road, Hlaing Township, Yangon Region and the existing Yangon Tyre factory of the company, since 20018, is situated in Shwe Pyi Thar Industrial Zone, in the same Yangon Region.

As to cope up with the progressive need of tyres for the rapidly increasing millions of automobiles in Myanmar, it is of the intension to expand a new tyre manufacturing factory and has arranged a contract with the Heavy Industries, Ministry of Industry, No (2) for the No 22, Heavy Industry (Bilin), situated in Bilin Township, Thaton District, Mon State, to convey the property of Land, Factory Building, machineries and equipment, for a long term lease of 70 years (initial 50 years plus two ten year extensions). It has already obtained MIC Permit of No – 294/1998-1999; renewed date is 21 December 2013 to 31 July 2018.

The Aung Htet Myet Co.,Ltd. has planned over 2,500 million kyats worth of investment for the Bilin factory on lease, for renovation, and later for installation of modernized but environment friendly machinery and upgraded technology, to produce the radial tyres of International standards. The production target would be 300,000 nos. with gradual increase per annum, of which 80 percent of the tyres, is meant for domestic use to fulfill the needs and 20 percent is intended for export, to obtain the valuable earning of Foreign Exchange for the economic sector development of the country. The Vision is to be a Joint Venture with the renown Tyre Companies, to get involved in Asia market and eventually in the World Tyre market share.

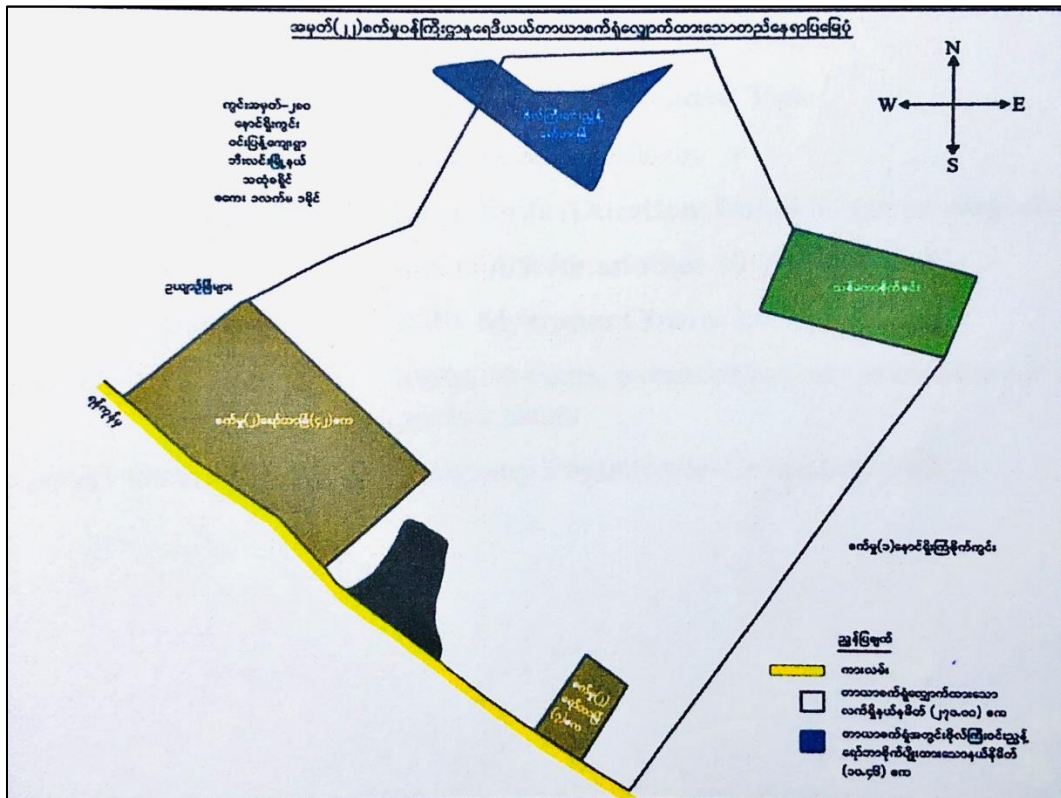


Figure 4.1 Factory Location Map of Aung Htet Myet Company Limited

4.1 General Information of Proposed Company

Name of Company: Aung Htet Myet Co.,Ltd.
 Head Office Address: No (47), Bayint Naung Main Road, Hlaing Township, Yangon Region

List of Shareholders:	1. U Kyaw Kyaw Sein 2. U Maung Maung Htay 3. Daw Aye Aye Maw 4. U Htin Kyaw Oo 5. Daw Thida @ Daw Thida Aye
Appointed Directors:	1. U Kyaw Kyaw Sein (Managing Director) 2. U Maung Maung Htay (Director) 3. Daw Aye Aye Maw (Director) 4. U Htin Kyaw Oo (Director) 5. Daw Thida @ Daw Thida Aye (Director)
Location of Business:	No 22, Heavy Industry (Bilin), Bilin Township, Thaton District, Mon State.
System of Sales:	80% Local Sale and 20% Export
Type of Business:	Manufacturing of Radial Tyre
Investment:	Kyats 2,536.50 million
Status of Business Area:	Lease Basis (Duration: Initial 50 years, extendable and renewable for another 10 years 2 times)
Status of Capital:	100% Myanmar Citizen Investment
Duration:	Initial 50 years, extendable and renewable for another 10 years 2 times
Business Permit:	Company Registration Certificate (MIC)

Table 4.1 Permits that Have been Obtained

No	Type of Permit	Number and Issued Date	Granted by	Term of Validity (year)
1.	Company Registration Certificate	No – 294/1998-1999; 24 July 2013	Ministry of National Planning and Economic Development, Directorate of Investment & Company Administration	5 years (From 1 August 2013 to 31 July 2018)

Data Source: Aung Htet Myet Co.,Ltd.

(Copies of the above permits are provided in the attachments.)

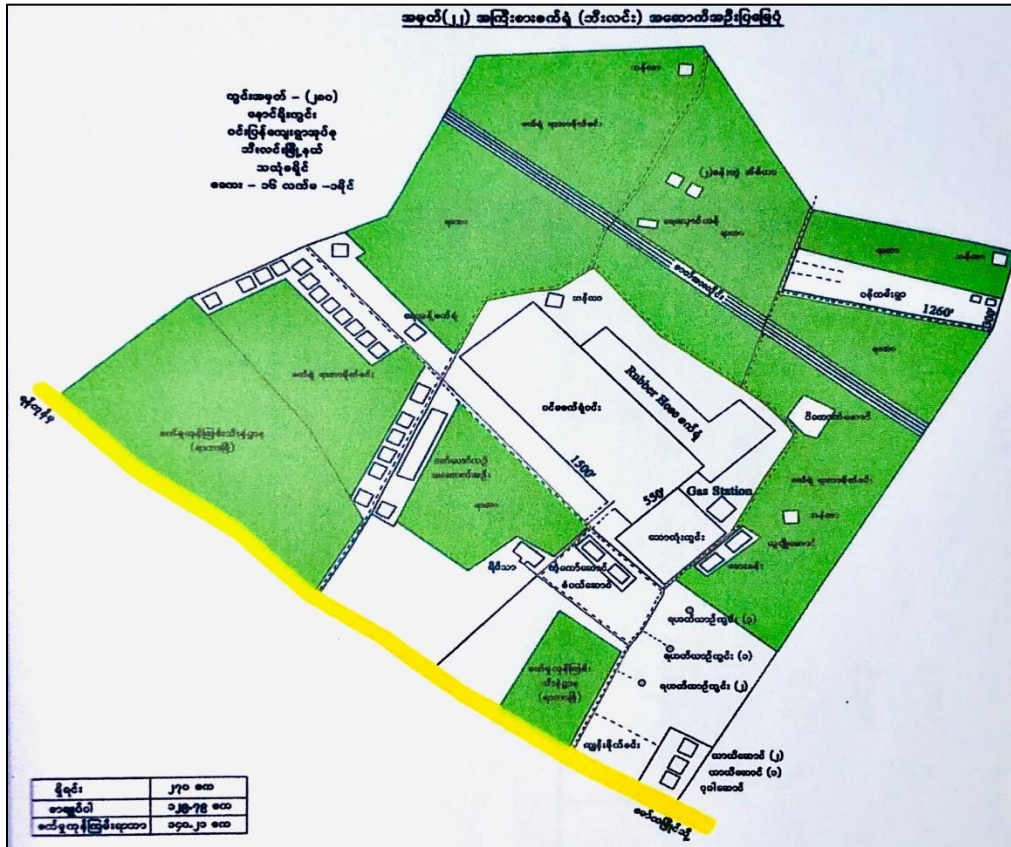
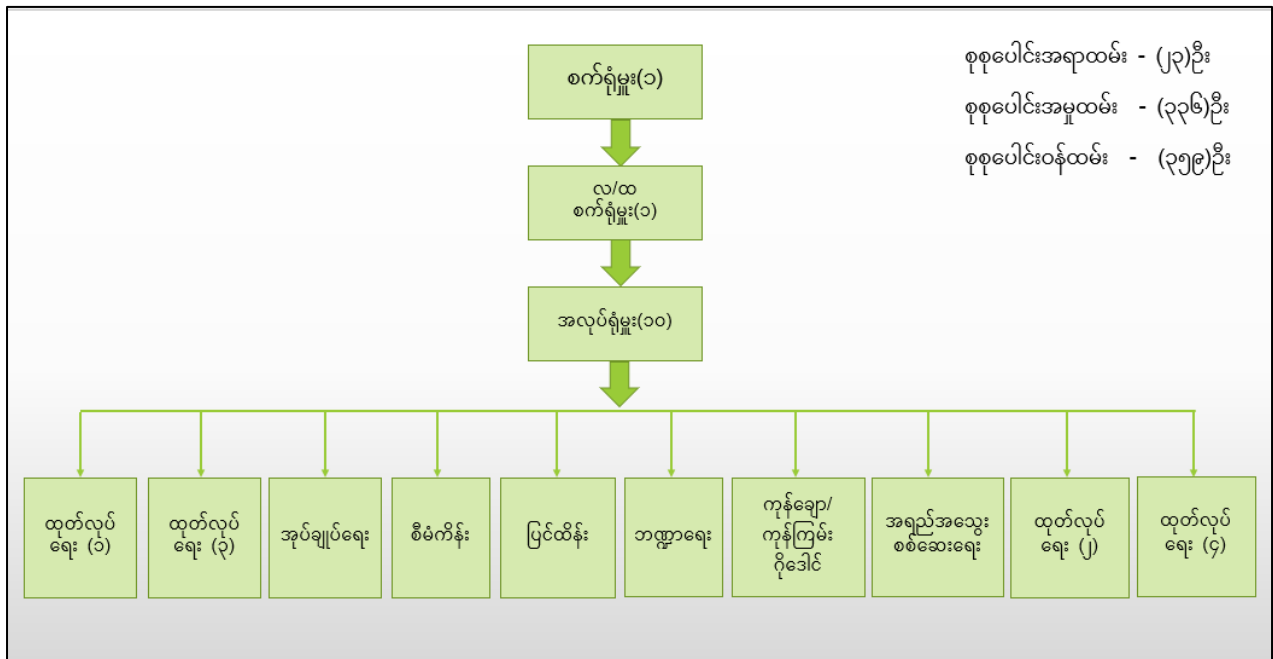


Figure 4.2 Map of Building Allocation of Tyre Factory

4.2 Organizational Structure



4.3 Site Location

The Location of the Aung Htet Myet Co.,Ltd. and the Project site on study for Environmental Impact Assessment (EIA) is at No 22, Heavy Industry (Bilin), Bilin township, Thaton District, Mon State, Myanmar.

4.4 Land Use

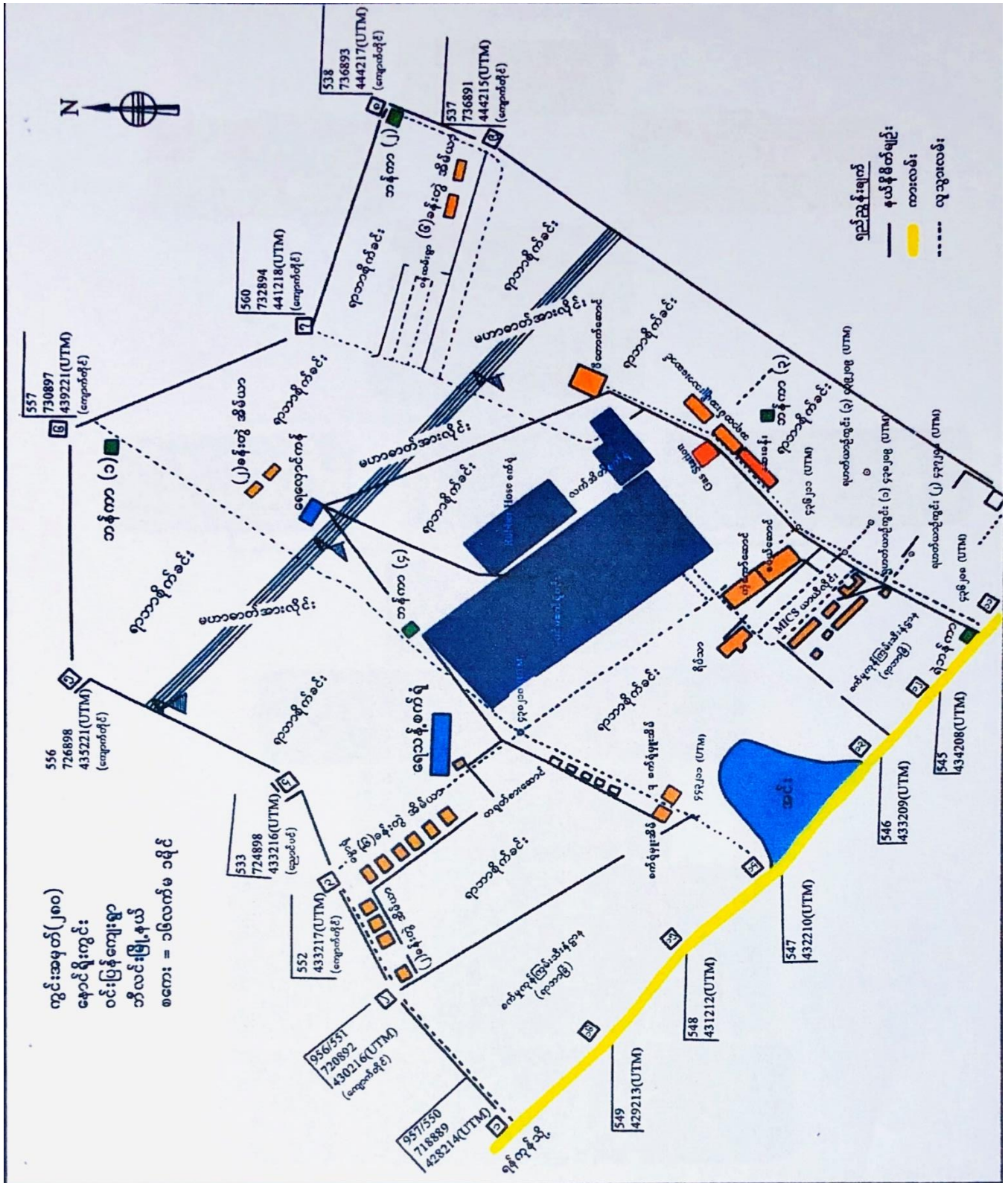
Table 4.2 Land Use of Factory Area

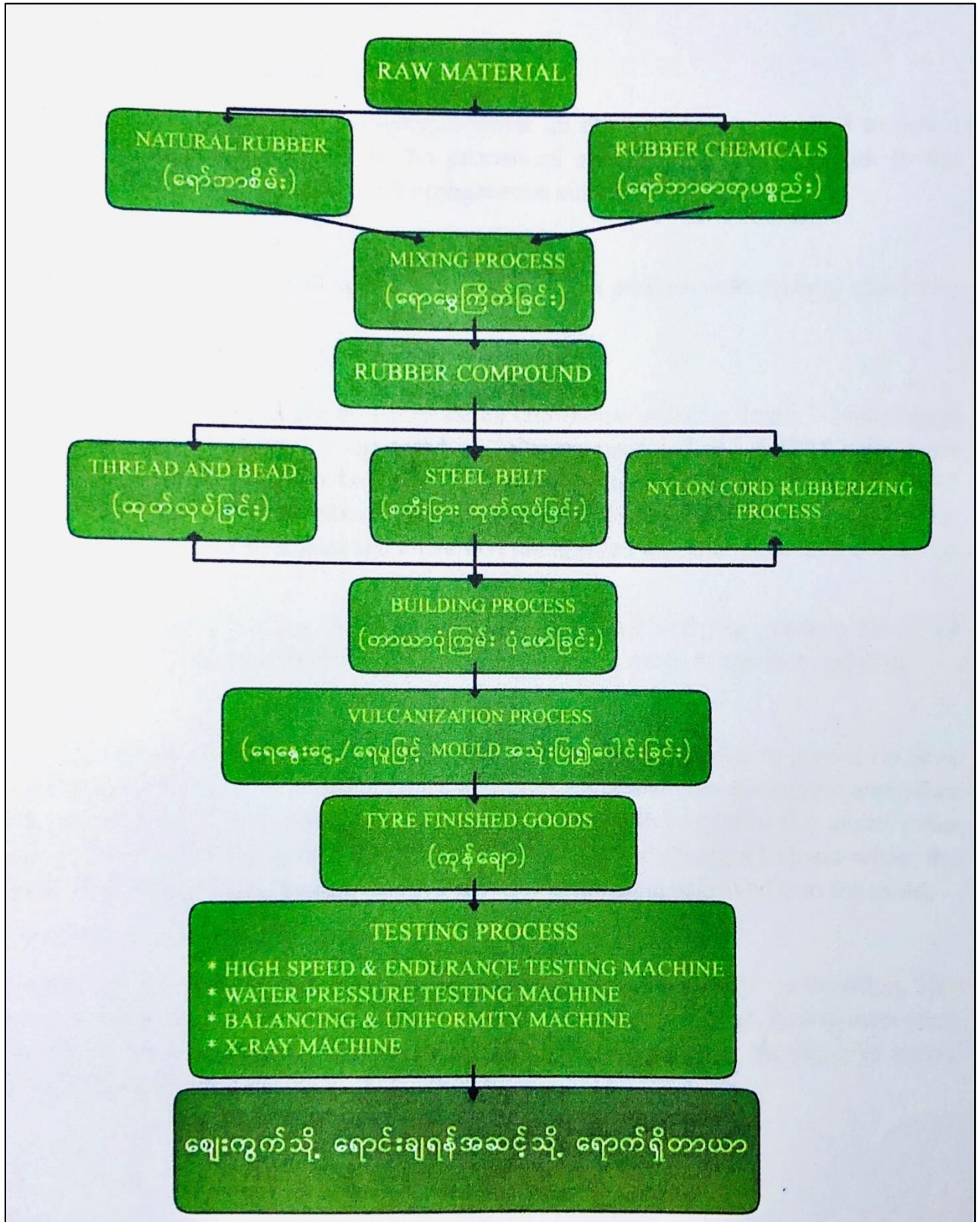
No.	Land Use	Area sqft	Remark
1.	Road	108,000 ft ²	
2.	Main Building/Factory	170,130	
3.	Warehouse	39,950	
4.	Drainage	15,000	
5.	Guest House, Staff Quarter	52,528	
6.	Rest room	6,450	
7.	Maintenance	32,000	
8.	Store	39,950	
9.	Security guard	1,200	
10.	Wastewater treatment	1,443	
11.	Generators room	2,080	
12.	Canteen	2,880	
13.	Changing room	3,225	
14.	Laboratory	6,000	
15.	Office	6,000	
16.	Car Packing	5,062	

Data Source: Aung Htet Myet Co.,Ltd.

4.5 Land Status

Location	⇒	Location Map and Factory Layout Plan Attached Plot-212, No 22, Heavy Industry (Bilin), Bilin Township, Thaton District, Mon State.
Type of Land	⇒	Industrial Land
Area	⇒	(129.79)Acre
Arrangement	⇒	Lease basis (150,000 pcs/year)
Cover Area		525260.13 Sq m
Uncover Area		- Sq m
Total Area		525260.13 Sq m





Production Process of Radial Tyres

4.6 Production Process

Tyre Manufacturing Process

Tyre plants are traditionally divided into four to five departments that perform special operations, usually act as independent factories within a factory. Large tire makers may set up independent factories on a single site, or cluster the factories locally across a region. Aung Htet Myet Co.,Ltd. set up a single factory with four production units. The common general steps are;

1. Compound Preparation
2. Component Making
3. Green Tyre Building
4. Tyre Curing
5. Quality Test

1. Compounding Preparation

Compounding is the operation of bringing together all the ingredients required to mix a batch of rubber compound. Mixing is the process of applying mechanical work to the ingredients in order to blend them into a homogeneous substance.

- Inspecting the raw materials arriving at the factory for compliance with the specified quality
- Plasticization of natural rubber (to cut long molecular chains, grinding time 3 minutes)
- First-stage mixing (mixing and grinding of the remaining materials except the fertilizer and the softened rubber, grinding time 3 minutes)
- Second-stage mixing (first-stage grinding of rubber compounds mixed with feed additives)
- Quality control of rubber compounds (Viscosity Test, Curing Time)
- Stockpiling of rubber compounds according to specified type
- The main types of rubber compounds produced are tread compound, sidewall compound, rubberizing compound, bead compound and bead apex compound

2. Component Making

Components fall into six classes based on manufacturing process: fabric rubberizing, tread extrusion, bead preparation, inner liner, steel belt rubberizing and fabric cutting.

- **Fabric Rubberizing**

Check whether the types of cotton to be used are in accordance with the specified quality, limited water content, The binding force that can make the yarn long Cotton adhesion control stage Cotton is heated to (110°C) through drying drums to release the water vapor trapped in the cotton.(80°C) heating up to 80°C, coating both sides of the yarn with rubber compound to obtain a specified thickness (measurement to obtain a specified thickness according to the specified type of yarn and checking the bond between the yarn and the rubber compound). Cooling by passing the panels on cooling drums filled with cold water; Punching holes to prevent air from entering the pits; 200 meter rolls are made inside the liner so that the panels do not stick to each other. Send the produced plates to the laboratory and check the specified thickness measurement. Measuring and testing the bond strength of cotton and rubber; The type of cotton used to produce the plait rolls, Labels are hung according to the specified thickness and placed systematically on the shelves.

- **Tread Extrusion**

Select specific types of rubber compounds for tire tread and sidewalls. Select the Die to make the tire and the side for the size of the tire to be produced and install it on the Head of the Triplex Extruder. (80°C) into the Triplex Extruder, which sets 3 types of rubber compounds, namely flower compounds, Insert shoulder compound and base cushion compound and squeeze out the sculpting and side compound. Add the lip compound and the base cushion compound. Cooling is done by spraying water inside the cooling line (to prevent shrinkage). Cut to length according to tire type. The meat and side meat are checked according to the specified weight and length according to the type. Quality flowers and sides are placed individually on tiered shelves.

- **Bead Preparation**

Bead Wires of Ø (0.96) mm to be used for making iron earrings are checked for compliance with the specified quality. Bead Wires are inserted into reels. Bead Wire Inlet Die is inserted into the holes in the specified number of plants and installed inside the Extruder. (80°C) put the specified rubber compound into the Extruder, squeeze it out and coat the rubber compound on the Bead Wire. The rubber compound-coated bead wires coming out of the extruder are made to a specified thickness and a specified width by the Bead Wire Inlet Die. It is cooled by passing through the cooling drum which contains cold water. Bead Wire Winding Machine produces a set number of layers with a set diameter. set width It is checked whether there is a specified thickness. The tapes are neatly arranged in rows of shelves.

- **Inner Liner**

We select two specific rubber compound types to make the Inner Liner. Two types of rubber compound that can prevent air leakage and strong adhesive rubber compound are inserted into the extruder which is heated up to 80°C and squeezed out. The rubber compound sheets squeezed out from the extruder are inserted into the Four roll calender which is heated to 80°C to obtain the specified thickness and width. The specified thickness and specified width are checked. It passes through the cooling drum where cold water is installed and cools. The inner liners are placed inside the liners so that they do not stick to each other.

- **Steel Belt Rubberizing and Cutting**

Ø (0.3) mm twisted steel wire to be used in the production of steel belt is checked for the specified quality. The chains are inserted into the holes of the Inlet Die according to the set number of plants and installed in the Extruder. Put the specified rubber compound into the extruder heated to 80°C, squeeze it out and coat the steel wires with the rubber compound. Steel wire coated with rubber compound from the outlet die is made to obtain the specified width and thickness. It is cooled by passing over the cooling drums where cold water is installed. Rubber compound covered chain fibers are checked for adhesion/non-adhesion of steel wire and rubber compound. The specified width and specified thickness are checked. Steel wire coated with rubber compound is cut with a shear cutter according to the specified width and the specified angle degree (24°-27°); The slices that are cut according to the specifications are placed in a liner so that they don't stick to each other, and are placed in an orderly manner with a drum.

- **Fabric Cutting**

Select the specific thread type and thickness to be used, and set the width with a cutter. Cut the ply according to the specified degree (90). The cut Ply sheets are placed 10mm apart from each other. In order not to stick to each other, they are inserted into the intermediate cloth (Liner) and made into rolls.

3. Green Tire building

Building the First Phase

- Filtering and selecting the components to be used
- First, wrapping the Inner Liner on the Building Drum of the First Stage Building Machine
- Wrapping Second Ply according to tire type
- Making the ply air tight with a hand-turned roller
- Installation of eardrums
- Roller pressure grinding to keep air out of the ply and stick to each other
- Sidewall adhesion
- Pressure grinding with a Roller to prevent air from entering and sticking to the Sidewall and Ply
- Inspect and repair if necessary
- The first stage is built and the green tires are placed on the shelf in an orderly manner

Building the Second Phase

- Filtering and selecting the components to be used;
- First, wrapping the Steel Belt on the Building Drum of the Second Stage Building Machine
- Wearing the Cap Belt
- Installation of flowers
- Press and grind with a Roller to prevent air and stick to each other
- Integral assembly with first grade built green tire
- Press and grind with a Roller to prevent air and stick to each other
- Check whether there is air leakage and sticking in the material parts and repair if necessary
- Proper placement of green tires on racks

4. Tyre Curing

Curing is the process of applying pressure to the green tire in a mold, to give it its final shape, applying heat energy to stimulate the chemical reaction between the rubber and other materials. In this process the green tire is automatically transferred onto the lower mold bead seat, a rubber bladder is inserted into the green tire, and the mold closes while the bladder inflates, taking on the tread pattern and sidewall lettering engraved into the mold.

- Properly placing the green tire in the Bladder in a tire mold that has a specific flower pattern heated up to 165°C.
- Adding steam with temperature (180°C) and pressure (0.7Mpa) into the hot water bag (Bladder) and making the green tire in the required shape.
- Making the rubber compound to flow smoothly with steam at temperature (180°C) and pressure (1.2Mpa) into the bladder.

- Add hot water at a temperature (175°C) and pressure (2.5Mpa) into the bladder, increase the pressure, and shape the tire with the pattern of the tire pattern made in the tire mold.
- In average compounding time (30) minutes, the rubber compounds are cured and the tire is obtained.
- Vacuum into the bladder and remove the tire

5. Quality Test

After the tire has cured, tests for Tire uniformity measurement on force variation, Tire balance measurement, X-ray inspection to analyze the steel cord structure, Visual inspection by human eyes for numerous visual defects such as incomplete mold fill, exposed cords, blisters, blemishes, etc. and other QC tests are conducted. Visual inspection of released tires for defects as specified by experts.

X-Ray Test

Tires that come together are nylon cords that are inserted into the tire. Conduct X-Ray Test to see if the steel wire and bead wire are correct according to the set position. If it is not in the specified position, it must be removed separately.

Uniformity and Balancing Test

After the X-Ray Test, all good tires are checked with the Uniformity and Balancing Test Machine to see if the balancing and uniformity of the tire is good. The machine checks the Balancing and Uniformity and prints the specified markings. According to these marks, the specified quality levels are defined and the tire grades are classified. Tires with bad balancing and uniformity are discarded separately.

High Speed & Endurance Test

Manufactured tires are driven at a specified load and speed and the tire's endurance is checked. Tires are tested at least once a month with the High Speed & Endurance Test Machine according to the type of tire. The test method is for Endurance Test, the tire is driven for 4 hours at the first level Speed (80Km/hr) with (85%) of maximum load. As the second stage, driving for (6) hours with (90%) of maximum load. In the third step, driving at (100%) of maximum load for (24) hours. The total driving time is 34 consecutive hours. The purpose of this test is to check the durability of the tire. The test load set for high speed test is (100%) of maximum load (140-180Km./hr) and driving test for (1) hour. It is tested for resistance to heat generation and safety performance. Tested at least once a month according to the type of tire.

Bead Unseating Test

When installing an inflated tire on the rim, it is pressure tested to determine the resistance of the tire to the seat position and the tire coming off the road bends.

Tyre Strength Test

The tread surface of the inflated tire is tested for the tire's strength by piercing it to a depth of (1000) mm with a steel rod of Ø(19)mm with a pressure of (2600) in-lbs. It tests the tire's resistance to sharp spikes while driving and the tire's ability to go through an obstacle.

Static Load Test

It is a test of pressure and endurance beyond the maximum load that an inflated tire can withstand. It is a test of resistance to the use of loads greater than the allowable load.

Water Pressure Test

After installing the tire and tire on the disc wheel, water is injected into the tire with a water pressure tester with a pressure of seven times the maximum inflation pressure, and the resistance of the sidewall and rim of the tire is tested. During driving, the tire air pressure increases and the sidewall and rim area of the tire is tested for the shear resistance. After conducting the tests as described above, it is necessary to send good quality tires to the finished product warehouse and store them properly.

4.6.1 Type and Capacity of Production

The Aung Htet Myet Co., Ltd plan to produce Radial Tyre and the production target would be 300,000 nos. with gradual increase per annum.

Table 4.3 Type and Capacity of Production

No.	Particular	A/U	Year(1)	Year(2)	Year(3)	Year(4)	Year(5)	Year(6-10)
1	<u>Production</u>							
	(1) Radial Tyre	Pcs	300000	350000	400000	450000	500000	550000
2	<u>Local Sale</u>							
	(1) Radial Tyre	Pcs	300000	350000	320000	360000	400000	440000
3	<u>Export</u>							
	(1) Radial Tyre	Pcs	-	-	80000	90000	100000	110000
4	<u>Price for Local Sale</u>							
	(1) Radial Tyre	Ks/pcs	25000	26000	27000	28000	28500	28500
5	<u>Price for Export</u>							
	(1) Radial Tyre	US\$/pcs	-	-	27.00	28.00	28.50	28.50

Data Source: Aung Htet Myet Co.,Ltd.

4.6.2 The Factory Operating Hours

The Proposed Company will assign the workers as follows;

- In 1 (one) day : (8) working hours.
- In 1 (one) week : (6) working days.

4.6.3 Number of Working Shifts

Table 4.4 Working Shifts of Proposed Company

Monday To Friday (Office Staff)		
7:00 am – 11:00 am	(4) hours	working
11:00 am – 12:00 pm	(1) hours	for Lunch and Rest
12:00 pm – 4:00 pm	(4) hours	working
Saturday	Whole day off	
Sunday	Whole day off	
Monday to Saturday (Factory Staff)		

Shift 1		
7:00 am – 11:00 am	(4) hours	working
11:00 am – 11:40 pm	(40) minus	for Lunch and Rest
11:40 pm – 3:00 pm	(3) hours (20) minus	working
Shift 2		
3:00 pm – 6:00 pm	(3) hours	working
6:00 pm – 6:40 pm	(40) minus	for Lunch and Rest
6:40 pm – 11:00 pm	(4) hours (20) minus	working
Shift 3		
11:00 pm – 2:00 am	(3) hours	working
2:00 am – 2:40 am	(40) minus	for Lunch and Rest
2:40 am – 7:00 am	(4) hours (20) minus	working
Sunday	Whole day off	

Data Source: Aung Htet Myet Co.,Ltd.

4.7 Types of Production Equipment and Machines

Table 4.5 Machine and equipment list (Production 1)

Sr. No	Position No	Machine Nomenclature	A/U	Opening Balance Qty	Ground Qty	Difference (+/-)	Remark		
							S	R	U
1	0.0 Level	Rubber Sheeting Mill	Nos	3	3		3		
2		2 (XKY-660), 1 (XKY-610)							
3		Batch Off Unit	No	1	1		1		
4		Weight Bridge	Nos	2	2		2		
5		Cargo Elevator	No	1	1		1		
6		Compound Conveyor	Nos	2	2		2		
7		Bench Drill	-	-	-		-		
8		Rotary Sander	No	1	1		1		
9	5.5 Level	Fitter's Bench	No	1	1		1		
10		Internal Mixer	No	1	1		1		
11	7.2 Level	Bale Cutter	No	1	1		1		
12		Cracker	No	1	1		1		
13		Rubber Weighing System (Polymer Scale)	No	1	1		1		
14	14.4 Level	Automatic Oil Weighing System	No	1	1		1		
15		Hand Chain Hoist (10T)	Nos	2	2		2		
16		Automatic Carbon Black and Powder Weighing System	No	1	1		1		
17		Disc Grinder	No	1	1		1		
18	26.58 Level	Electric Hoist	No	1	1		1		
19		Wing Grinder	No	1	1		1		
20		Tank Equipment	Nos	2	2	(+1)	2		
21		Cement House (103)							
		Cement Agitator	Nos	3	3		3		
		Raw Material Warehouse (301)							

22	Carbon Black air Conveying System	No	1	1	1		
	Electric Hoist	No	1	1	1		

S-Serviceable, R-Repairable, U-Unserviceable

Data Source: Aung Htet Myet Co.,Ltd.

Table 4.6 Machine and Equipment List (Production 2)

Sr. No	Position No	Machine Nomenclature	A/U	Opening Balance Qty	Ground Qty	Difference (+/-)	Remark		
							S	R	U
1	Column 1-18	Warm-up Mill (XKY-660)	Nos	3	3				
2		2 (XKY-660), 1 (XKY-610)				3			
3		Let-off device	Nos	11	11		1		
4		Splicing device	No	1	1			1	
5		Traction device	Nos	2	2		2		
6		Centering device	Nos	4	4		4		
7		Accumulator	Nos	4	4		4		
8		Heating device	Nos	2	2		1	1	
9		Tension device	Nos	2	2		2		
10		Four roll calendar	No	1	1		1		
11		Cooling device	Nos	2	2		2		
12		Pricking device	No	1	1		1		
13		Liner let-off device	Nos	2	2		2		
14		Wind-up device	Nos	2	2		2		
15		Feed conveyor	No	1	1		1		
16		Overhead crane 1T	No	2	2		2		
17		Crane 1T	Nos	4	4		3	1	
18		Feeding conveyor	Nos	2	2		2		
19		Ø150 Cold feed extruder Z4-280-21	Nos	2	2		2		
20		Strip conveyor	Nos	2	2		2		
21		Double two roll calendar	No	1	1		1		
22		Take away conveyor device	No	1	1		1		
23		Cooling device	Nos	3	3		3		
24		Wind up device	No	1	1		1		
25		Temperature control unit	Nos	3	3		3		
26		Whiler crane (1 ton) BZD 1-3.5 x 3.5 A3	Nos	3	3		3		
27		Cord Roll Storage Shelf	No	1	1		1		
28		Pin type cold-feed extruder 1(Ø200mm)Z4-280-32,	Nos	3	3		3		
29		1(Ø120mm)Z4-225-11,							
30		1(Ø90mm)Z4-180-41,							
31		Top-machine motor	No	1	1		1		
		Mid-machine motor	No	1	1		1		
		Down-machine motor	No	1	1		1		
		Feeding conveyor	Nos	3	3		3		
		1 for Ø90mm Extruder							
		1 for Ø120mm Extruder							
		1 for Ø200mm Extruder							

32	Temperature control unit	No	1	1	1		
33	Die preheating box	No	1	1	1		
34	Hydraulic Station	No	1	1	1		
35	Electric Cabinet	No	1	1	1		
36	Shrinkage Roller train	No	1	1	1		
37	Continuous scale	No	1	1	1		
38	Spray cooling line	No	1	1	1		
39	Ascending conveyor	No	1	1	1		
40	Upper cooling line conveyor	No	1	1	1		
41	Lower cooling line conveyor	No	1	1	1		
42	Going-down conveyor	No	1	1	1		
43	Cutting device	No	1	1	1		
44	Quick Separation	No	1	1	1		
45	Electric blower	Set	1	1	1		
46	Check Scale	Set	1	1	1		
47	Water-circulation system	Set	1	1	1		
48	Wire pre-heater	Nos	1	1	1		
49	Ø65 Extruder	No	1	1	1		
50	Temperature control device	No	1	1	1		
51	Cool Water Tank	No	1	1	1		
52	Electrical Control Device (SIEMENS S7-300) (SIEMENS 10"OP 270) MITSUBSHI SIEMENS 6 RA 70 MITSUBSHI FR-A 740 SCHNEIDER Germany TRUCK American Raytek	No	1	1	1		
53	Control of winding diameter	No	1	1	1		
54	Filler Application	No	1	2	2		
55	Reducer	No	1	1	1		
56	Slitting Device	No	1	1	1		
57	Wind up Device (Arm-6Nos)	No	1	1	1		
58	Centering Device	No	1	1	1		
59	Multiple-blade Slitter	No	1	1	1		
60	Wind up (Arm-20Nos)	No	1	1	1		
61	Re-roll Machine (XDZ-1600) (XDZ-1000)	No	2	2	1	1	
			103	104			

S-Serviceable, R-Repairable, U-Unserviceable

Data Source: Aung Htet Myet Co.,Ltd.

Table 4.7 Machine and Equipment List (Production 3)

Sr. No	Position No	Machine Nomenclature	A/U	Opening Balance Qty	Ground Qty	Difference (+/-)	Remark		
							S	R	U
1	Production 3	Whiler Crane BZ01-3.5 x 3.5	No.	1	1		1		
2		A3 TS 2410682-2010	No.	1	1		1		
3		Electric Hoist Mono Rail Crane	No.	1	1		1		
4		Textile Fabric Cutter (Cutting max - 1500mm Cutting angle-0 (Cutting Unit 0-45)	No.	1	1		1		
		Tyre Building Machine (First Stage)	Nos	5	5				
		12", 13", 14", (LCY 1216-YT)	Nos	3	3		3		

5	15", 16(LCY 1216-YT) Tyre Building Machine (Second Stage)	Nos	2	2			2
		Nos	4	4			
6	13", 14" 15" (LCE 1216-YT) 16" (LCE 1216-YT) Steel Belt Extrusion Line BTXJT-90x140 Z-180-41 TZ-2212-200J BCWK-4 UPS-25-80 YP-5040-4 BSH-140 4P-11 A 24 DNC 80-280-PPV-A YP-50-1.5-4 YP-50-1.5-4	Nos	3	3		3	
		Nos	1	1			1
		Set	1	1		1	
7	Green Tyre Roller Conveyor	Nos	4	4		4	
8	Cord Roll Storage Shelf	No.	1	1		1	
9	Creel Stand	No.	1	1		1	
10	Air Condition Unit	Nos	2	2		1	1

S-Serviceable, R-Repairable, U-Unserviceable

Data Source: Aung Htet Myet Co.,Ltd.

Table 4.8 Machine and Equipment List (Production 4)

Sr. No	Position No	Machine Nomenclature	A/U	Opening Balance Qty	Ground Qty	Difference (+/-)	Remark		
							S	R	U
1	Production 4	Curing Press (42") LL-B 1050	Nos	8	8		6	2	
2		Curing Press (45") LL-B 1145B	Nos	2	2		2		
3		Curing Press (48") LL-B 1220	No	1	1		1		
4		Bladder Curing Press LLA-500	No	1	1		1		
5		Tyre Trimming Machine LXJ-800	No	1	1		1		
6		Mold Cleaning Machine SS-10	No	1	1		1		
7		Bladder Building Machine LCJ 1218-YT	No	1	1		1		
8		Whirler Crane BZ 00.5-3x3A ³	No	1	1		1		
9		Horizontal Auoclave SX09-679	No	1	1		1		
10		Rubber Belt Conveyor	Nos	4	4		4		
11		Climbing Belt Conveyor	No	1	1		1		
12		Electric Hoist	No	1	1		1		
13		Tyre Repairing Machine WRET-01	Nos	4	4		4		
14		Packing Making Machine LGD 900	Nos	2	2		1	1	
				29	29		26	3	

S-Serviceable, R-Repairable, U-Unserviceable

Data Source: Aung Htet Myet Co.,Ltd.

Table 4.9 List of Machine and Equipment

Sr. No	Position No	Machine Nomenclature	A/U	Opening Balance Qty	Groun d Qty	Differenc e (+/-)	Remark		
							S	R	U
		Mixing Department							
1		Internal Mixer	No	1	1		1		
2		Up Stream Equipment	No	1	1		1		
3		Rubber Sheeting Mill	No	1	1		1		
4		Batch off Unit	No	1	1		1		
5		Open Mill φ 400	No	1	1		1		
6		Rubber Strainer	No	1	1		1		
7		Bucket Elevator	No	1	1		1		
8		Oil Weighing	Set	1	1		1		
9		Bale Cutter	No	1	1		1		
10		Electric Hoist 1 Ton	No	1	1		1		
11		Quick Check Equipment	Set	1	1		1		
		Rubber Hose Workshop							
		Open Mill φ 450	No	1	1		1		
12		Three Roll Calendar	Set	1	1		1		
13		Extruder φ 90	No	1	1		1		
14		Extruder φ 120	No	1	1		1		
15		Autoclave φ 2600x4600	No	1	1		1		
16		Autoclave φ 900x22000	No	1	1		1		
17		Single Beam Crane 5T (2 Nos)	Nos	2	2		2		
18		Vertical Bias Cutter	No	1	1		1		
19		Winding Machine	No	1	1		1		
20		Braider (2 Nos)	Nos	2	2		2		
21		Braider Refrigerator (2 Nos)	Nos	2	2		2		
22		Package Plastic Extruder	No	1	2	(+1)	2		
23		Hose Wrapping & Unwrapping Machine (2 Nos)	Nos	2	2		2		
24		Plastic Stripper	No	1	1		1		
25		Tear Cloth Machine	No	1	1		1		
26		Three Roll Building Machine	Set	1	1		1		
27		House Building & Wrapping Machine	No	1	1		1		
28		Hose Depoling & Burst Pressure Testing Machine	No	1	1		1		
29		Packer	No	1	1		1		
30		Pulse Tester	No	1	1		1		
31		Blasting Tester	No	1	1		1		
32		Plastic Grinder	No	1	1		1		
33		Wrapper Spooling Machine	No	1	1		1		
34		Coil Machine	No	1	1		1		
35		Hydraulic Crimping Machine	No	1	1		1		
36		Inkjet	No	1	1		1		

S-Serviceable, R-Repairable, U-Unserviceable

Data Source: Aung Htet Myet Co.,Ltd.

Table 4.10 Machine List of Laboratory, R & D Office (Physical Test)

Sr. No	Position No	Machine Nomenclature	A/U	Openin g Balanc e Qty	Groun d Qty	Differenc e (+/-)	Remark		
							S	R	U
	Physical Test								
1		Moonen Viscometer GOTECH	No	1	1		1		
2		Moving Die Rheometer GOTECH	No	1	1		1		
3		Electronic Tensile Strength Taster	No	1	1		1		
4		Cutter	Nos	2	2		2		
5		Rubber Hardness Tester	No	1	1		1		
6		Thickness Gauge	No	1	1		1		
7		Weight	Set	1	1		11		
8		Small Open Mill	No	1	1		1		
9		Day Light Press	No	1	1		1		
10		Petroleum Freezing Point Tester	No	1	1		1		
11		Ash/Volatile Tester	No	1	1		1		
12		Sheeting Grinding Machine		1	1		1		
13		Compound Strength Test Machine (D & G Rotor less Cure Meter)	No	1	2	(+1)		1	
14		Compound Folding Machine (Rubber Fatigue Tester)	No	1	1		1		
15		Steel Wire Torsion Machine	No	1	1		1		
16		Electrically Heated Vacuum Day Oven	No	1	1		1		
17		Infrared Drying Oven	No	1	1		1		
18		Wear Apparatus	No	1	1		1		
19		Biological Microscope	No	1	1		1		
20		Softing Point Tester	No	1	1		1		
21		Fixed Load compression heat Built-up Tester	No	1	1		1		

S-Serviceable, R-Repairable, U-Unserviceable

Data Source: Aung Htet Myet Co.,Ltd.

Table 4.11 Machine List of Laboratory, R & D Office (Chemical Test)

Position No	Machine Nomenclature	A/U	Openin g Balanc e Qty	Groun d Qty	Differenc e (+/-)	Remark		
						S	R	U
Chemical Test								
	PH meter S 25, 2 D-2A	Nos	2	2		2		
	Melting Point Tester (WRS-1B)	No.	1	1		1		
	Electronic Centrifuge (1min/1000r) LD4-2A	No.	1	1		1		
	Kang Oscillator (1min/240 th)	No.	1	1		1		
	Electrically Heated Thermostatic Water Bath Kettle (0C-120C)	No.	1	1		1		
	Column Pan Balance (0-200 g) HC-TP	No.	1	1		1		

11-5							
Electronic Counter Scale (0~3000g, 0~1510g)YP~3001	No.	1	1			1	
Electronic Precision Balance (0~210) AL 204~1C	No.	1	1			1	
Electronic Heater Hot Plate 380C/300W	No.	1	1			1	
Engler Viscometer (WNE-1A)	No.	1	1			1	
Magnetic Force Mixer (TWCL)	No.	1	1			1	
Electric Heater/Distiller (TT-98-II)	No.	1	1			1	
Box Type Resistance furnace (1200 C) (5KW)	Nos	2	2			2	
Open flash Point Tester (SYD-3536)	Set	1	1			1	
Electrically Heated Blower Drying Oven 300C, 3.6KW (101-3A)	No.	1	1			1	
Electrically Heated Thermostatic Drying Oven 300C, 3KW(202-2A)	No.	1	1			1	
Movement of Petroleum Products (SYD-265D-1) Viscosity Measuring Device	No.	1	1			1	
Hot Plate 1000 W 220 W AC, 2000W 220W AC	No.	1	2		(+1)	1	
Carbon Black Specific Surface Area Tester (TBY-10)	No.	1	1			1	
Burret, Pipet, Conical Flask, Measuring Cylinder, Beaker, Flat Bottle, Funnel, Glass Ware	Lot	1	1			1	
Porcelain Crucible, Volatile Crucible	Lot	1	1			1	
Digital Abbe Refractometer (WAY- 2S)	No.	1	1			1	
Ariline Point Tester (SYD-262)	No.	1	1			1	
Infrared Spectrometer (FIIR-920)	No.	1	1			1	

S-Serviceable, R-Repairable, U-Unserviceable

Data Source: Aung Htet Myet Co.,Ltd.

Table 4.12 Machine List of Indoor Test

Sr. No	Position No	Machine Nomenclature	A/U	Opening Balance Qty	Ground Qty	Difference (+/-)	Remark		
							S	R	U
1	Indoor	High Speed & Endurance Testing M/C	No.	1	1		1		
2		Bead Unseating Testing, Strength Testing, Static Load Testing M/C	No.	1	1		1		
3		Water Pressure Testing M/C	No.	1	1		1		
4		Tyre Section Cutting M/C	No.	1	1		1		
5		Sheeting Grinding M/C	No.	1	1		1		
6		X-Ray M/C	No.	1	1		1		
7		Balancing & Uniformity M/C	No.	1	1		1		

S-Serviceable, R-Repairable, U-Unserviceable

Data Source: Aung Htet Myet Co.,Ltd.

Table 4.13 Machine List of Quick Check

Sr. No	Position No	Machine Nomenclature	A/U	Opening Balance Qty	Ground Qty	Difference (+/-)	Remark		
							S	R	U
1	Mixing	Automatic Viscometer	Nos	2	1	(-1)	1		
2	Quick Check	Rotorless Curemeter	No.	2	1	(-1)	1		
3		Electronic Tensile Test Machine	No.	1	1		1		
4		Daylight Press	Nos	2	2		2		
5		Durometer	No.	1	1		1		
6		Gravimeter	Set	1	1		1		
7		Electric Balance	No.	1	1		1		
8		Open Mill (Cement Hous)	No.	1	1		1		
9		Compound Sample Cutter	Nos	2	2		2		
10		Thickness Guage	No	1	1		1		

S-Serviceable, R-Repairable, U-Unserviceable

Data Source: Aung Htet Myet Co.,Ltd.

Table 4.14 Machine List Substation

Sr. No	Position No	Machine Nomenclature	A/U	Opening Balance Qty	Ground Qty	Difference (+/-)	Remark		
							S	R	U
1		Transformer (Ynd 11)	No	1	1		1		
2		Diesel Generator (500 KW) R 500 GFZB	Nos	2	2		2		
3		Diesel Generator (1000 KW)	Nos	2	2		2		

S-Serviceable, R-Repairable, U-Unserviceable

Data Source: Aung Htet Myet Co.,Ltd.

Table 4.15 Machine List Water Pump House

Sr. No	Position No	Machine Nomenclature	A/U	Opening Balance Qty	Ground Qty	Difference (+/-)	Remark		
							S	R	U
1	Planning	Low Temperature Product (SLZW 125-200) Recirculation Water Pump 380V, 37KW, 50HZ, 2945rpm, 68A, Type-1/2-200L2-2	Nos	3	3		3		
2		Cooling Water Pump (SLZWD 200-315) 380V, 85A, 50HZ, 1475rpm, 322kg, Type-1/2-225M-4	Nos	2	2		2		
3		Production and Line Water Pump (SLZW 100-200) 380V, 35A, 50HZ, 2935rpm, 18.5 KW, Type-1/2-160L2	Nos	2	2		2		
4		Fire Production Water Pump (SLZWD 150-400) 380V, 50HZ, 85 A, 1475rpm,	Nos	2	2		2		

5	45KW, 322kg, Type-1/2-225M-4 Water Supply Pump (SLZW 100-125)	Nos	2	2		2		
6	Automation Fill Water and Keep (SN 00-125) Pressure Tank (0.55Mpa), 400kg) 328.8 Y/H, 60V, 1.0Mpa, 1417KG, 78.6m ² , 1.3Mpa, 150.c	No	1	1		1		
7	Fill Water Pump (N-1.5 KW)	Nos	2	2		2		
8	Fill Water Tank	No	1	1		1		
9	Cooling Water Tank	No	1	1		1		
10	Economy Water Full (ZELZ-20) Automation Filter	No	1	1		1		
11	Full Automation Equipment for Water Treatment (ZX-2HD 10-10) 250mm, 200T/H AC 380V, Type-2x-ZHD-0-1.0	Nos	2	2		2		
12	Tabulate Heat Exchange Device (328.8T/H, 60V, 1.0Mpa, 1417kg)	Nos	2	2		2		
13	Cooling Tower	Nos	2	2		2		

S-Serviceable, R-Repairable, U-Unserviceable

Data Source: Aung Htet Myet Co.,Ltd.

Table 4.16 Machine List (Planning)

Sr. No	Position No	Machine Nomenclature	A/U	Opening Balance Qty	Ground Qty	Difference (+/-)	Remark		
							S	R	U
1	Planning	Wind Oil Injected Screw Air Compressor (LS20S-175HAC USLL) (132KW, 229.m ³ / min, 1185/125 Psig 8.0/8.5Bar)	Nos	4	4		4		
2		Ai Refrigeratual Compressed Air Direr SDL-30V-30M3/Min (30m ³ /min, 30Nm ³ /min, 0.8Mpa, 380V, 50Hz, 4.16Kw, 420Kg, Type-SLAD 30NF)	Nos	4	4		4		
3		Accumulator Pot (Air Tank) C-2, V-2 M3 465kg, 2m ³ , 100.c, 1.1Mpa, 1.0Mpa, 1.375Mpa	Nos	4	4		4		
4		Waste Oil Collector (Waste Oil Retainer) CR-603.3 V-1M3/Min(1m ³ /min, Type SLFS-1.0,<80.C)	No	1	1		1		
5		Filter Gate (Grade-2) (Filter and Accessories) 30m ³ /min, 80kg, 0.003m ³ , 1.0Mpa, 100C	Nos	4	4		4		

S-Serviceable, R-Repairable, U-Unserviceable

Data Source: Aung Htet Myet Co.,Ltd.

Table 4.17 Machine List of Refrigeration Station

Sr. No	Position No	Machine Nomenclature	A/U	Opening Balance Qty	Ground Qty	Difference (+/-)	Remark		
							S	R	U
1	Planning	YS Screw Cold Water Unit (N-194 KW) 199Kw, 176m3/h, 209m3/h, 895Kg, 45m2, 1.4/1.0Mpa, 38.C	NO	1	1		1		
2		SLZD Slow Speed of Revolution Low Noise Centrifugal Pump (N-22KW)	Nos	2	2		2		
3		SLZD Slow Speed of Revolution Low Noise Centrifugal Pump (N-18.5KW)	Nos	2	2		2		
4		Soft Water Box	No	1	1		1		
5		GCQ-T Level to Enter Draining Water Clean Like Exhaust Water Filter GCQ-T250, 180-1.0 MPA	No	1	1		1		
6		GCQ-T Level to Enter Draining Water Clean Like Exhaust Water Filter GCQ-T250, 180-1.0 MPA Type-GCE-T, 250mm, 200t/h, 220V	No	1	1		1		
7		Steading Pressure and Making up Water Equipment 9-16T/H, 60.C, 1.0Mpa, 950Kg	No	1	1		1		

S-Serviceable, R-Repairable, U-Unserviceable

Data Source: Aung Htet Myet Co.,Ltd.

Table 4.18 Machine List of Boiler House

Sr. No	Position No	Machine Nomenclature	A/U	Opening Balance Qty	Ground Qty	Difference (+/-)	Remark		
							S	R	U
1		Gas Fired Boiler WNS-6-1.6-Q	Nos	2	2		2		
2		Economizer (650Ø)	Nos	2	2		2		
3		Continuous Blow down Expander (650Ø)mm	No	1	1		1		
4		Tri-Sodium Phosphate Doser	No	1	1		1		
5		Steam Distributor (Ø400x3070)	No	1	1		1		
6		The Low Position Thermal deaerator (RDGN-10)	No	1	1		1		
7		Deaerator Water Pump N-1.5 KW	No	2	2		2		

8	Boiler Feed Pump (DG-6-25X8, N11KW)	Nos	2	2	2		
9	Steam Driven Pump (2QS-9/17)	No	1	1	1		
10	Softened Water Tank	No	1	1	1		
11	Softened Water Pump (N-3KW)	Nos	2	2	2		
12	Full Automaticity Na-ion	Set	1	1	1		
13	Samping Cooler	Nos	2	2	2		

S-Serviceable, R-Repairable, U-Unserviceable

Data Source: Aung Htet Myet Co.,Ltd.

Table 4.19 Machine List of Energy House

Sr. No	Position No	Machine Nomenclature	A/U	Opening Balance Qty	Ground Qty	Difference (+/-)	Remark		
							S	R	U
1		Dearating Heater (5500kg, 5470kg, 530cmx2170cm, 240cm)	No	1	1		1		
2		Hot Water Circulation (Type-280M-0, 50Hz, 90Kw, 166A, 380V, 2960r/min, 590kg)	Nos	2	2		2		
3		Pressure Hot Water Recycling Tank (2680kg/2620kg, 548cmx208cm, 205cm)	No	1	1		1		
4		Suppkementary Hot Water Pump Type-1/200L, 1-2, 3kw, 50HZ, 56.9A, 2950r/min, 380V, 222kg	Nos	2	2		2		
5		Normal Pressure Hot Water Recycling Tank 2680Kg, 2620kg, 548cmx208cm, 205cm	No	1	1		1		
6		Hot Water Recycling Pump (Type-1/32S2-2 50Hz, 7.5Kw, 15A, 65Kg, 308V, 2950r/min, 1205m3/h, 75m, 705Kw, DG 12-25x3	Nos	2	2		2		
7		Low Pressure Water Tank (2550Kg, 12.7m3, 90.C)	No	1	1		1		
8		Low Pressure Water Pump (Type-28M-2, 50Hz, 45Kw, 166A, 380V, 290Kg, 2970r/min	Nos	2	2		2		
9		Condensate Recovery Device (380V, 50Hz, 5.5Kw, 950Kg, 0.9Mpa, 1.32Mpa, 185.C)	No	1	1		1		
10		Condensate Recovery Pump (Type-1/32S1-2, 50Hz, 5.5Kw, 11.1A, 380V, 64 Kg)	No	1	2	(+1)	2		

11		Drain Pump (3.0Kw)	Nos	2	2		2		
12		Simple Cooler	No	1	1		1		
13		Electric Single Span Hanging Crane	No	1	1		1		

S-Serviceable, R-Repairable, U-Unserviceable

Data Source: Aung Htet Myet Co.,Ltd.

Table 4.20 Machine List of Maintenance Workshop

Sr. No	Position No	Machine Nomenclature	A/U	Opening Balance Qty	Ground Qty	Difference (+/-)	Remark		
							S	R	U
1		Horizontal Boring & Milling Machine (T x 619)	No	1	1		1		
2		Shaping Machine (BC.6063)	No	1	1		1		
3		Vertical Kmee-Type Milling Machine (X 5025 B)	No	1	1		1		
4		Universal Milling Machine (57-3C)	No	1	1		1		
5		Bench Grinding Machine (S3S-T200)	No	1	1		1		
6		Lathe Machine (CE 6140 (400x1500))	No	1	1		1		
7		Lathe Machine (CE 6140 (400x2300))	No	1	1		1		
8		Lathe Machine (CE 6266 (600x2300))	No	1	1		1		
9		Bench Drilling Machine (ZQ-4125)	Nos	2	2		2		
10		Horizontal Hack Sawing Machine (G-7025B)	No	1	1		1		
11		Radial Drilling Machine (Rocker Arm) (ZQ-3040 x 10/20)	No	1	1		1		
12		Surface Grinding Machine (M 7135 A-2)	No	1	1		1		
13		Welding Machine (B x 1.315-3)	Nos	3	3		3		
14		Electric Single Beam Hanging (3Tonns)	No	1	1		1		
15		Bench	No	1	1		1		
16		Vice (8" x 6")	Nos	2	2		2		

S-Serviceable, R-Repairable, U-Unserviceable

Data Source: Aung Htet Myet Co.,Ltd.

Table 4.21 Machine List of Raw Material Warehouse

Sr. No	Position No	Machine Nomenclature	A/U	Opening Balance Qty	Ground Qty	Difference (+/-)	Remark		
							S	R	U
1		Oil Tank	No	1	1		1		
2		Oil Feeder	No	1	1		1		

S-Serviceable, R-Repairable, U-Unserviceable

Data Source: Aung Htet Myet Co.,Ltd.



Figure 4.3 Boilers



Figure 4.4 Compound Mixing



Figure 4.5 Fabric Rubberizing



Figure 4.6 Tread & Sidewall Extrusion



Figure 4.7 Bead Preparation

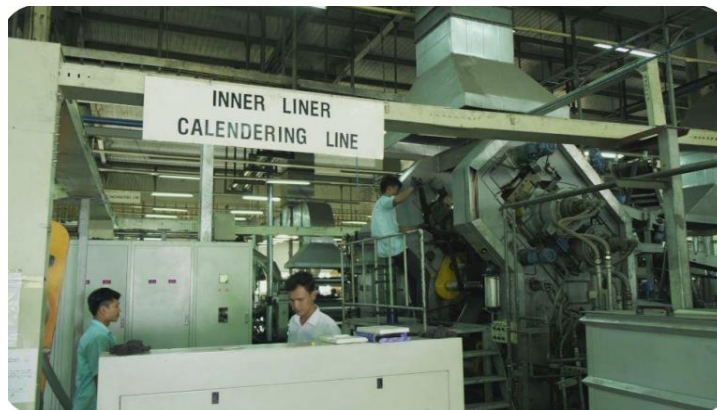


Figure 4.8 Inner Liner



Figure 4.9 Steel Belt Rubberizing and Cutting



Figure 4.10 Fabric Cutting





Figure 4.11 Green Tyre Building



Figure 4.12 Tyre Curing



Figure 4.13 Quality Test Machines



Figure 4.14 X-Ray Test & Uniformity and Balance Machine



Figure 4.15 High Speed & Endurance Test Machine

4.8 Raw Material and Supporting Materials

Table 4.22 Raw Material Requirements for One Unit

No.	Particular	Radial Tyre (KG)
1	Synthetic Rubber BR/SBR/CIIR	2.557
2	Carbon Black N339/351/660/375/220/330/550	2.683
3	Silica	0.060
4	Aromatic Oil/Paraffic Oil	0.457
5	Peptizer	0.003
6	Resin/Adhesive Promoter	0.197
7	Stearic Acid	0.057
8	Zinc Oxide	0.143
9	Anti-oxidizer agent RD/6PPD	0.127
10	Rubber Wax	0.013
11	Cobolt-Boro-Neodecanoate	0.003
12	Accelerator TBBS/NS/MBTS/DM	0.047
13	Insoluble Sulphur / Ground Sulphur	0.103
14	Anti-Scorch Agent CTP/PVI	0.007
15	Accelerator H-80/HMT	0.007
16	Homogenizing dispersing agent T-78/PL 60	0.003
17	Plasticizer	0.003
18	Polyester Type Cord DSP 1000?1500	0.383
19	Steel Cord	0.600
20	Nylon Tyre Cord	0.103
21	Bead Wire	0.417
TOTAL		7.993

Data Source: Aung Htet Myet Co.,Ltd.

Table 4.23 Annual Raw Material Requirement (To be Imported)

No.	Particular	Radial Type			
		Year 1	Year 2	Year 3	Year 4-10
1	Synthetic Rubber BR/SBR/CIIR	773000	902000	1031000	1159000
2	Carbon Black N339/351/660/375/220/330/550	805000	939000	1073000	1207000
3	Silica	18000	21000	24000	27000
4	Aromatic Oil/Paraffic Oil	137000	159000	182000	204000
5	Peptizer	1000	1000	2000	2000
6	Resin/Adhesive Promoter	59000	68000	78000	87000
7	Stearic Acid	17000	20000	23000	26000
8	Zinc Oxide	43000	51000	58000	65000
9	Anti-oxidizer agent RD/6PPD	38000	44000	50000	56000
10	Rubber Wax	4000	5000	6000	6000
11	Cobolt-Boro-Neodecanoate	1000	2000	2000	2000
12	Accelerator TBBS/NS/MBTS/DM	14000	17000	19000	21000
13	Insoluble Sulphur/Ground Sulphur	31000	37000	42000	47000
14	Anti-Scorch Agent CTP/PVI	2000	2000	3000	3000
15	Accelerator H-80/HMT	2000	2000	2000	3000
16	Homogenizing dispersing agent T-78/PL60	1000	1000	1000	1000
17	Plasticizer	1000	1000	1000	1000
18	Polyester Tyre Cord DSP 1000/1500	115000	134000	154000	173000
19	Steel Cord	180000	210000	240000	271000
20	Nylon Tyre Cord	31000	37000	42000	47000
21	Bead Wire	125000	146000	167000	188000

Data Source: Aung Htet Myet Co.,Ltd.

Table 4.24 Annual Raw Material Requirement Local Purchase)

No.	Particular	A/U	Unit Price (Kyat)	Year(1)		Year(2)		Year(3)		Year(4-10)	
				Qty	Kyat(000)	Qty	Kyat(000)	Qty	Kyat(000)	Qty	Kyat(000)
1	Raw Rubber	KG	1975.54	541589	1069931	632307	1249148	725747	1433742	811930	1604000
2	Petroleum Spirit (36/106)	Gallon	5000	36000	180000	36000	180000	36000	180000	36000	180000
	TOTAL				1249931		1429148		1613742		1784000

Data Source: Aung Htet Myet Co., Ltd.

4.9 Manpower

Table 4.25 Local Employment Schedule

Sr. No.	Post Title	No. of Staff	Salary/ Month					Salary/Year							
			Year (1)	Year (2)	Year (3)	Year (4)	Year (5)	Year (5-10)	Year (1)	Year (2)	Year (3)	Year (4)	Year (5)	Year (6-10)	
1	General Manager	1	230	230	240	240	240	250	2760	2760	2880	2880	2880	3000	3000
2	Deputy General Manager	1	210	210	220	220	220	230	2520	2520	2640	2640	2640	2760	2760
3	Assistant General Manager	6	190	190	200	200	200	210	13680	13680	14400	14400	14400	15120	15120
4	Manager	12	170	170	180	180	180	190	24480	24480	25920	25920	25920	27360	27360
5	Assistant Manager	9	150	150	160	160	160	170	16200	16200	17280	17280	17280	18360	18360
6	Division-in-charge	160	110	110	120	120	120	130	211200	211200	230400	230400	230400	249600	249600
7	Section-in-charge	52	104	104	114	114	114	124	64896	64896	71136	71136	71136	77376	77376
8	Technician Grade (3)	59	98	98	103	103	103	113	69384	69384	72924	72924	72924	80004	80004
9	Technician Grade (4)	42	92	92	97	97	97	102	46368	46368	48888	48888	48888	51408	51408
10	Technician Grade (5)	37	91	91	96	96	96	101	40404	40404	42624	42624	42624	44844	44844
11	General Worker	70	90	90	95	95	95	100	75600	75600	79800	79800	79800	84000	84000
12	Sweeper	1	90	90	95	95	95	100	1080	1080	1140	1140	1140	1200	1200
	TOTAL	450							568572	568572	610032	610032	610032	655032	655032

Data Source: Aung Htet Myet Co., Ltd.



Figure 4.16 Photos of Finished Products

Table 4.26 Production of Radial Tyres

No.	Size	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec	Total
1	145 R12 C	1998	2046	1974	930	2259	2517	2080	2371	1150	1144	1363	1460	21292
2	155 R12 C	1475	1512	1456	684	1669	1864	1545	881	977	1076	1282	1370	15791
3	5.00 R12								880	954	1045	1243	1331	5453
4	165/80 R 13	1168	1197	1156	547	1320	1472	1219	817	940	1258	1496	1599	14189
5	165 R 13 C	1122	1153	1113	526	1273	1419	1172	816	822	1044	1243	1327	13030
6	185/70 R 14 (Premier Taxi)	1604	1643	1586	746	1820	2032	1679	957	827	822	981	1051	15748
7	185 R 14 C								957	801	797	949	1016	4520
8	195 R 14 C	880	901	870	410	991	1103	914	1300	1003	997	1186	1270	11825

9	195 R 15 C	1065	1093	1054	497	1207	1343	1113	1100	506	503	597	638	10716
10	205/70 R 15 C	1026	1048	1011	476	1156	1290	1068	525	339	337	400	428	9104
11	205/65 R 15								525	352	349	416	444	2086
12	P265/70 R 16	543	558	540	198	620	691	572						
13	205/75 R 16								600	524	405	520	548	2597
14	215/75 R 16								600	814	412	463	489	13787
15	4.00-8 (YT-713)	1138	1166	1128	534	1292	1438	1192	1971	2475	2479	3240	3023	18470
Total		12019	12317	11888	5548	13607	15169	12554	14300	12484	12668	15379	15994	34854

Table 4.27 Production of Motorcycle Tyres

No	Size	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec	Total
1	2.25-17 60/100-17	6449	7088	7407	4768	7791	7673	5382	5110	2973	3937	5343	5970	69891
2	2.50-17 70/90-17 70/100-17	22273	24495	25621	16479	26933	26605	18931	17979	11636	12759	13744	15246	232701
3	2.75-17 80/90-17	18852	20742	21733	13984	22859	22518	15789	14993	7419	6269	6003	6780	177941
Total		47574	52325	54761	35231	57583	56796	40102	38082	22028	22965	25090	27996	480533

Table 4.28 Foreign Technician

Sr No.	Designation	No. of Person	Period
1	Foreign Technician	2	Part Time
TOTAL		2	

Data Source: Aung Htet Myet Co.,Ltd.

4.10 Electricity Utilization

Table 4.29 Energy Utilization

No.	Particular	A/U	Qty	Price (Kyat)	Value (Kyats)
1	Electricity	Unit	1,800,000	100	180,000,000
TOTAL					180,000,000

Data Source: Aung Htet Myet Co.,Ltd.

4.11 Water Utilization

Table 4.30 Water Utilization

Type of Source	Usage Capacity	Source
Beelin Stream	3,000,000 gallon per year	Creek

Data Source: Aung Htet Myet Co.,Ltd.

4.12 Water Treatment Plan

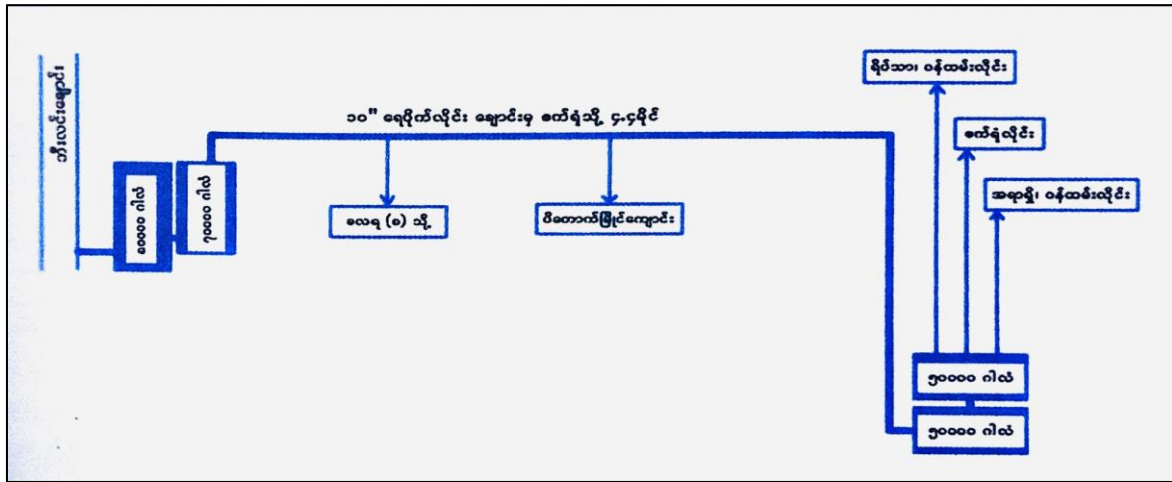


Figure 4.17 Water Source of Tyre Factory

Water for domestic use, for production process, factory operations, cooling or cleaning, is from Bilin stream or rivulet. Water was pumped up into two water reservoirs of 80,000 and 70,000 gallons each, the former for the direct stream water to be sedimented, filtered or decanted into the latter reservoir, from which it was pumped up hill to another two water reservoirs of 50,000 and 50,000 gallons each, with the same treatment as in the river blank below. The decanted water from the second reservoir uphill, water supply is let by gradient downhill in to the factory compound.

4.13 Waste Management Plan

Liquid waste

Massive Liquid waste in bulk is unlikely in the tyre production plant. Water for cooling is recycled and added up where ever necessary to reach a required limit. There are two Boilers each with a capacity of 6 tons, each one needs about 10,000 gallons of water but the water is changed only once a year when there is boiler inspection and overhaul and being non-hazardous in nature, just let into the drain, from which it spread and sink into the plantations area. Wastewater or the typical sanitation water from the plant is usually suggested to be treated with the waste management and pumped or conveyed to the sewerage system of town.

Solid waste

The solid waste produced from the study plant could only be some solid waste materials as packaging materials but they are not an issue as all the rejected or cut materials are reused or recycled in the process or sold out for other use. Finished tyres are sent directly to Yangon Tyres factory in Yangon for packaging.

For disposing waste from factory, the Aung Htet Myet Co.,Ltd. will coordinate with township city development committee, and disposing will be made under guidance of these respective authorities.

4.14 Fuel Usage

Table 4.31 Fuel Utilization

No	Particular	A/U	Qty	Price (Kyat)	Value (Kyat)(000)
1	Diesel	Gallon	60000	4000	240000
2	Lubricant	Gallon	5000	15000	75000
TOTAL					315000

Data Source: Aung Htet Myet Co.,Ltd.

4.15 Schedule of Project Activities

Table 4.32 Schedule of Project Activities of Proposed Company

Types of Activities		Time Schedule
1.	Preparation	October 2014
2.	Land Acquisition	November 2014
3.	Factory Renovation	After MIC permit
4.	Machine Installation	Not yet
5.	Trial	January 2015
6.	Commercial production	Not yet

Data Source: Aung Htet Myet Co.,Ltd.

4.16 Fire Prevention Plan

The Company has set up its Fire Prevention plan as follows:

For the prevention of fire hazards,

- 🌿 The construction of factory building with RC (reinforced concrete)
- 🌿 Serviced, certificated and appropriate Firefighting equipment and modern fire extinguishers to be adequate in numbers and easily accessible at every building, expiry dates (if any) should be regularly checked.
- 🌿 Sand bags and sand pits with essential shovels pick axes, hooks and flats ready at hand in every sub-section of the factory.
- 🌿 There will be some underground tanks for keeping the important raw material petroleum spirit strictly following the guidelines of MOGE.
- 🌿 All the fuel, Diesel and petrochemicals are to be kept and stored, away from fire prone facilities and equipped with specific fire extinguishers for emergency use.
- 🌿 All water reservoirs and tanks, in and around the factory compound, are filled up every day and connected with emergency fire hoses to all important units in the factory compound.
- 🌿 Emergency pumps and fire hoses ready at “stand by position”.
- 🌿 Routine removal and cleaning of waste material in and around the factory.
- 🌿 Flammable by-products or Wastes are to be kept at a specific site, in a concrete tank for disposal.
- 🌿 Emergency Fire exits in every building, marked with iridescent stickers to be easily seen.
- 🌿 Smoking is strictly restricted, either in the factory or in the premises of the factory. No Smoking started from the gate, cigarette, cheroot, lighters and matches are not allowed at the gate and prohibited in work.
- 🌿 Regular check on electrical safety. All the wires, switches and electrical appliances are to be checked regularly by electricians for safety and integrity and in case of any defect observed, to be repaired or changed immediately.
- 🌿 The factory owned one fire engine car with 1,600 gallon Bowser and one water bowser car are filled up daily and prepared ready for emergency any time.
- 🌿 Planned to request the Fire department of Bilin, to conduct the trainings and Awareness talks on Prevention and safety from Fire, not only for the staff but also the community in the vicinity as well.

4.17 Employee Welfare Plan

Employee Welfare Plan of Aung Htet Myet Co.,Ltd. is as follows.

1. Staff Quarters

Staff housing in the compound, is provided for the employees, as the nature of work in tyre production, in full swing, needs to be operated round the clock, with 3 shifts of work assignments.

2. Staff Transportation

Transport ferry is arranged for shift by shift, for all employees who do not stay on staff housing but outside the factory compound,

3. Uniform

All employees are supplied with factory uniforms, free of charge.

4. Meal

Meals (lunch or dinner) and snacks are provided for employees in each work shift accordingly. Those who are from distant places and staying in the hostels of the factory are provided three meals a day, irrespective of the work shift.

5. Canteen

One canteen is arranged for all employees to rest and relax for a while, with Skynet TV.

6. Changing room

Separate changing rooms for male and female workers are arranged at the factory gate to change the uniforms. Another changing room is provided for employees who need to handle the messy steps of work in the process e.g. mixing room, though automatic, needs some manual adjustment.

7. Washing rooms

Wash rooms will be provided separately; 6 nos for men and 9 nos for women. Toilets will be provided separately; 8 nos for men and 14 nos for women

8. Rest room

Two large Halls would be prepared appropriately as to be used as changing room as well as for a rest & relaxation in time of need, One hall each for both men and women workers.

9. Recreation

A library is set up for all staff, Sports square especially for spectakraw or Myanmar traditional (Chin Lone) for those interested and TV with skynet program are provided. On some religious days such as Full moon days of Waso, Thadingyut, Tazaungmone and Tabaung, religious rituals and ceremonies with Sanghas, contributions and donations by the company including all staff and family members. On specific National gazette holidays, like Independence Day, Union Day or Armed Forces Day, some recreational fun activities and sports are arranged for all staff and family members as well.

10. Health Care

An infirmary is set up within the factory compound and stocked with appropriate medicines. Two Health Assistants and three Qualified nurses are hired by the company for 24 hour duty, that in emergency cases employees could be treated free of charge.

The First Aid kits and emergency medical boxes are supplied sufficiently in all work sites for the minor cuts or ailment.

Some employees who hold social security cards, on their request or consent, are sent to social security clinics in Bilin, Thaton or Yangon by the factory's transport arrangement.

In addition, water purifier is installed for staff drinking water. Appropriate sanitation facilities will be installed in the factory and regular disinfection work is to be carried out.

11. Risk Prevention

Evacuation Plan in case of emergency, would be drafted, explained and made known to all employees so that in case of emergency namely earthquake, fire and other natural or manmade disasters, injury or death could be avoided.

12. Overtime fees

It is given on hourly basis at the rate following the existing labour law of the country.

13. Bonus

Based on the performance of the company, annual bonus will be declared and paid out to each employee before the Myanmar New Year (Water festival). The amount of bonus will be in accordance with the amount of profit earned by the company.

14. Incentives

Besides annual bonus, Incentives are paid to workers nominated or selected for No absent & full-attendance at monthly basis

The year round routine incentives, extra to salaries are for which, each worker is entitled to his/her own skill in due assignment done, by the production.

15. All the above mentioned employee benefits are the usual practices of the company and furthermore, based on the labour law of the country, other benefits such as leave (sick leave, annual leave etc.) are included in the Employee's welfare plan accordingly.

4.18 Corporate Social Responsibility (CSR)

The Management of Aung Htet Myet Co.,Ltd. has planned more or less, kyats 150 lakhs per year will be used for CSR in the employees and the surrounding community as follows:

1. Free Contribution of Water Supply to a nunnery and one army compound, branched out from the pipe that supplies the whole factory from the water source of Bilin stream.
2. An infirmary set up for the employees in the factory compound is also taking care of the health support to the community in the nearby villages and plantations.
3. Donation and support of stationery, school uniforms and other necessities, for the teachers and students of the schools around the factory, as well as the school children of workers.
4. Support the welfare of the employees and community with CSR fund.
5. Support the orphanage in the nearby village.
6. Plan to fulfill the request form nearby villages on electricity and road access and repair when available.

4.19 Planning Budget for Environmental Management

Aung Htet Myet Co.,Ltd. has set up a policy of utilizing about the kyat 10 Lakhs per month of the profit income on implementing the environment related management works, including the Environment Management Committee and/or the appointed Environment Manager/Officer who could also be one of the factory staff with responsibility to take care of the EMP activities in the factory compound.

CHAPTER 5 – ENVIRONMENTAL IMPACT ASSESSMENT (EIA)

The Aung Htet Myet Company Limited is a Myanmar Private Company Limited, whose registered office is situated at the No 47, Bayint Naung Road, Hlaing Township, Yangon Region and since 2008, has started tyre production at the existing Yangon Tyre factory of the company, in Shwe Pyi Thar Industrial Zone, in Yangon Region. The Aung Htet Myet Co.,Ltd., is of the intention to expand a new tyre manufacturing factory, to fulfill the rapid progressive need of tyres, for the soaring numbers of motor vehicles of in millions in Myanmar.

It has managed a contract with the Heavy Industries, Ministry of Industry, No (2) for the No 22, Heavy Industry (Bilin), situated in Bilin Township, Thaton District, Mon State, to convey the property of Land, Factory Building, machineries and equipment, for a long term lease of 70 years (initial 50 years plus two ten year extension).

The Aung Htet Myet Company Limited is to produce the radial tyres of International standards, on the existing factory in Bilin on lease, for renovation, and later for installation of modernized and environment friendly machinery and upgraded technology.

Bilin Factory is selected, based on the facts that it’s in the rubber plantation area for the availability of the principal raw material, easy access to road and river transport and availability of the needed infrastructure and local work force. Local employee of about 600-750 numbers will be needed in different phases.

5.1 Initial Condition

Water and soil testing were done on the study site and surroundings as well as the ground water. During the operations phase, it can be checked occasionally but the factory management or environment authorities concerned if there are hazardous residues in water or soil resulting from the spill if any, from the manufacture procedures of the factory.

5.1.1 Water Quality

The water sample from the project sites was sent in May 2015 for water quality testing at the ISO TECH Laboratory. The results are obtained as follow:

Table 5.1 Water Quality Examination of Factory Area (Drainage Water)
Results of Water Analysis WHO Drinking Water
Guideline (Geneva - 1933)

			<u>(Geneva - 1933)</u>
pH	6.5		6.5 - 8.5
Colour (True)		TCU	15 TCU
Turbidity		NTU	5 NTU
Conductivity	121	micro S/cm	
Total Hardness	520	mg/l as CaCO ³	500mg/l as CaCO ³
Calcium Hardness		mg/l as CaCO ³	
Magnesium Hardness		mg/l as CaCO ³	
Total Alkalinity	52	mg/l as CaCO ³	
Phenolphthalein Alkalinity		mg/l as CaCO ³	
Carbonate (CaCO ³)		mg/l as CaCO ³	
Bicarbonate (HCO ³)		mg/l as CaCO ³	
Iron	0.46	mg/l	0.3mg/l
Chloride (as CL)	7	mg/l	250 mg/l
Sodium chloride (as NaCL)		mg/l	
Sulphate (as SO ₄)		mg/l	200 mg/l
Total Solids		mg/l	1500 mg/l
Suspended Solids	12	mg/l	
Dissolved Solids	243	mg/l	1000 mg/l

Manganese	mg/l	0.05 mg/l
Phosphate	mg/l	
Phenolphthalein Acidity	mg/l	
Methyl Orange Acidity	mg/l	
Salinity	ppt	

Data Source: ISO TECH Laboratory

(Copies of the Water Test Data are provided in the attachments.)

Table 5.2 Water Quality Examination of Factory Area (Filter Water)

Results of Water Analysis

WHO Drinking Water

Guideline

(Geneva - 1933)

pH	6.6		6.5 - 8.5
Colour (True)	Nil	TCU	15 TCU
Turbidity	19	NTU	5 NTU
Conductivity	129	micro S/cm	
Total Hardness	54	mg/l as CaCO ³	500mg/l as CaCO ³
Calcium Hardness	38	mg/l as CaCO ³	
Magnesium Hardness	16	mg/l as CaCO ³	
Total Alkalinity	64	mg/l as CaCO ³	
Phenolphthalein Alkalinity	Nil	mg/l as CaCO ³	
Carbonate (CaCO ³)	Nil	mg/l as CaCO ³	
Bicarbonate (HCO ³)	64	mg/l as CaCO ³	
Iron	0.35	mg/l	0.3mg/l
Chloride (as CL)	3	mg/l	250 mg/l
Sodium chloride (as NaCL)	5	mg/l	
Sulphate (as SO ₄)	Nil	mg/l	200 mg/l
Total Solids	89	mg/l	1500 mg/l
Suspended Solids	25	mg/l	
Dissolved Solids	64	mg/l	1000 mg/l
Manganese	Nil	mg/l	0.05 mg/l
Phosphate	Nil	mg/l	
Phenolphthalein Acidity	3	mg/l	
Methyl Orange Acidity	Nil	mg/l	
Salinity	0.1	ppt	

Data Source: ISO TECH Laboratory

(Copies of the Water Test Data are provided in the attachments.)

5.1.2 Soil Quality

The soil sample from the project site was sent in May 2015 for soil testing at the Land Use Division of the Department of Agriculture, Ministry of Agriculture and Irrigation. The results are obtained as follow:

Table 5.3 Soil Quality Examination of Factory Area (a)

Sr No.	Sample	pH Soil : Water 1:2.5	Organic Carbon	Water Soluble	
				SO ₄	CI
1.	YT 352	Moderately alkaline	Medium	Not detected	Low
2.	YT 355	Moderately acid	High	Not detected	Low

3.	YT 361	Moderately acid	High	Not detected	Low
4.	YT 362	Strongly acid	High	Not detected	Low
5.	YT 363	Moderately acid	High	Not detected	Low

Data Source: Land Use Division of Department of Agriculture, Ministry of Agriculture and Irrigation

(Copies of the Soil Test Data are provided in the attachments.)

Table 5.4 Soil Quality Examination of Factory Area (b)




Sr. No.	Sample Plot	Moisture %	pH Soil : Water 1:2.5	Organic Carbon %	Humus %	Fe ppm	Exchangeable Cations	Water Soluble meq/100gm	
							Meq/ 100 gm	SO4	Cl
1.	YT 352	1.23	8.29	3.22	5.55	24.00	Not detected	Not detected	0.38
2.	YT 355	4.80	5.32	4.98	8.59	12.00	Not detected	Not detected	0.61
3.	YT 361	6.21	5.30	7.39	12.74	9.00	Not detected	Not detected	0.46
4.	YT 362	9.21	4.72	4.72	8.14	6.00	0.05	Not detected	0.30
5.	YT 363	6.18	5.30	6.11	10.54	10.00	0.03	Not detected	0.49

Data Source: Land Use Division of Department of Agriculture, Ministry of Agriculture and Irrigation

(Copies of the Soil Test Data are provided in the attachments.)

5.2 Potential Impact Assessment

The potential Environmental Impact Assessment (EIA) falls into 3 phases;

-  Pre-Construction and Construction Phase
-  Operation Phase
-  Decommissioning Phase

Normally, the Green Enviro Team had to deal with the Pre-Construction and Construction Phase of the study projects, but in this study, as th Aung Htet Myet Co. Ltd., is to expand a new tyre manufacturing factory at the existing Tyre factory (Bilin), including the property of land, factory Building, machineries and equipment, for a long term lease from the Ministry of Industry (2), that the team needs to deal, only with Operation Phase and Demolition phase expect for Renovation and installation of new machines

5.2.1 Pre-Construction and Construction Phase

Construction-related Impact on environment included noise, wastes, air pollution and water pollution etc. The larger the establishment construction, the more the impact to environment. Besides, there would be some impact on quality of life due to inconvenience caused to public as a result of construction activities. Bilin tyre factory under study is on the lease of the existing factory of Heavy Industries, that there will be no Pre-Construction or Construction Phase. There will be some renovations but no construction within one and a half years, as mentioned in the proposal.

Air Pollution

Air quality impacts are likely form general construction activities of land clearing, trenching, laying of pipes, construction of foundations and superstructures, handling and transport of construction and demolition materials, and from wind erosion of open sites and stock pile areas.

The other air pollution is dust arising from construction, ground or soil disturbance, from movement of vehicles on poorly surfaced or damaged access roads. Dust is a

nuisance problem to the users and residents around the project area and dust levels from vehicles sometimes may even obscure the vision significantly temporarily.

The potential for the generation of dust during the construction process can be minimized by planning the Good Management Plan.

The significance assigned to this impact for the construction period was considered to be nil (negative) as there will be no construction but may be low possibly by the renovation, if any and low to (negative) with mitigation, as all the planned improvements will be undertaken on the existing plant site,

Noise Pollution

Noise Pollution will occur from operation of construction equipment including earth digging and handling, from vehicles and powered mechanical equipment which can generate significant noise and vibration and also from some labour with hand tool methods to construct the subproject works. No blasting is anticipated. The cumulative effects from several machines can be significant.

The significance assigned to this impact for the construction phase is considered to be very low (negative) with or without mitigation and only possible by the renovation, if any.

Water Pollution

Water quality impacts may occur from runoff, waste and sewage generated from construction activities and from a contractor's camp erected on site, for the duration of the construction phase, uncontrolled disposal of waste by construction workers, the unmanaged disposal of solid and liquid wastes into watercourses and natural drains.

The possibility of oil and fuel spillages, either from trucks, construction machinery, or by improper storage of hazardous substance, renders pollution and impact on ground and surface water, by means of improper sewage and waste water management.

The significance assigned to this impact for the construction phase is considered to be very low (negative), as this will only be for the duration of the construction (renovation) activities and with mitigation measures in place, it can be limited.

Terrestrial Ecology Impacts – Flora, Fauna and Ecosystem Values

The construction activities or change of land use will permanently change the present landscape with some implications for the existing biotopes of various animals and the vegetation areas (if present on site), that will have to be removed for construction to take place and will be susceptible to soil erosion. The only mitigation program is to replant as much greeneries and flora, as possible that the industry could provide room for rehabilitation of the environment. As for Fauna-Biotope and ecosystem, it is high impact, for it irreparably changed and as it could never be replaced in different ecosystem.

The significance assigned to this impact for the construction phase is considered to be very low (negative), as there will be no construction activities and the tyre factory compound itself is amidst the over 100 acre – vast land of rubber plantations and other industrial crop plantations, where the terrestrial biotopes could still survive and evolve.

5.2.2 Operation Phase

As for many other manufacturing operations, the main environmental impacts associated with production – processing activities are the high consumption of water, consumption of energy and the discharge of effluent with a high organic and inorganic content or toxic materials. Noise, odour and solid wastes may also be concerns for some plants.

Tyres for vehicles are not a highly perishable products but still need proper handling and preservation to have a long shelf life and retain a desirable quality and supportive value for reliability and accountability for safety in transportation of anything, be it human, living or non-living things as well as goods or commodities, perishable or non-perishable, as long as they need to be transported on vehicles using tyres.

The tire is an assembly of numerous components that are built up on a drum and then cured in a press under heat and pressure. Heat facilitates a polymerization reaction that cross-links rubber monomers to create long elastic molecules. These polymers create the elastic quality that permits the tire to be compressed in the area where the tire contacts the road surface and spring back to its original shape under high-frequency cycles. The term tyre processing refers to the processes associated with

- 🌿 Quality Control of Raw materials by visual, physical and chemical testing
- 🌿 Compound mixing
- 🌿 Rubberizing, triplex, inner liner production, bead wiring
- 🌿 Ply cutting, steel belting, tyre building
- 🌿 Curing, tyre trimming
- 🌿 Quality Control of the products at every step of production either/and/ or by visual, physical and chemical testing, to be passed on for the succeeding production unit.
- 🌿 Quality Control of the final finished products
- 🌿 Packaging

For the Environmental Impact Assessment by the Green Enviro survey team, each and every steps in production was carefully observed.

Tyre production operation is inevitably related with the following issues:

- 🌿 Pollution
- 🌿 Water consumption and management
- 🌿 Solid waste and by-products
- 🌿 Wastewater
- 🌿 Emissions to air and energy consumption

Air Pollution

The environmental impacts caused by the production of vehicle tyres include odour, solvent and dust emissions, noise, waste and consumption of energy. The most significant of these impacts are waste and, locally, odor. Solvent emissions (i.e. VOC emissions) are also a significant impact of the plant.

a) Emissions to Air

i. Solvents or volatile compounds (VOC)

Solvents or volatile organic compounds (VOC) constitute the most significant emissions into the air,. Solvents are used in the production of heavy tyres and treads for improving adhesion. The total emission limit according to the EU's VOC directive is 25% of the solvents used. To reduce VOC emissions, an incineration plant can be installed for use.

ii. Particle emissions (dust)

Particle emissions are caused by the processing of powdery chemicals in the compound mixing department. Mixing equipment can be fitted with efficient ventilation and dust collection devices. Particle emissions can be monitored by means of particle concentration and differential pressure gauges. The measured particle concentrations have to be complied with the permit limits at both production plants. The dust that passes through the filter system mainly causes an aesthetic inconvenience but poses no harm to the environment or human health.

iii Odour pollution

Processing plants generate strong odours, which is a nuisance issue for neighbouring facilities and residential areas. Odour is usually generated in tyre production at;

- 🌿 The mastication process for softening natural rubber, during the precipitation and dehydration phases of rubber milk, discharges of compounds in an unpleasant odor in the neighborhood. Droplet separators can be used for reducing the odour from mastication.
- 🌿 The tyre curing process, during which curing fumes are released directly proportional to the quantity of cured rubber though the concentrations of individual substances in the fumes are extremely small.

Attention is also be paid to the operation and monitoring of machinery units, boilers and engines that have potential atmospheric emission problems relating to organic compounds and particulates, as respiratory illnesses are known to occur in workers within processing areas.

The significance assigned to this impact for the operation phase is considered to be low for Odour pollution as it causes just annoyance, with or without mitigation, but emission problems of inorganic compounds and particulates, causing respiratory illness to workers, is a medium impact of health hazard which can be mitigated by GMP and monitoring.

b) Exhaust Gases

Exhaust gas emissions (carbon dioxide [CO₂], nitrogen oxides [NO_x] and carbon monoxide [CO]) in the tyre processing sector are from the combustion of gas and fuel oil or diesel in turbines, boilers, compressors and other engines for power and heat generation. Guidance for the management of small combustion source emissions with a capacity of up to 50 megawatt thermal (MWth), including air emission standards for exhaust emissions, is provided in the General EHS Guidelines (**Environmental, Health, and Safety Guidelines by IFC**). For combustion source emissions with a capacity of greater than 50 MWth refer to the EHS Guidelines for Thermal Power.

c) Particulates

Particulate emissions are expected to be a serious problem in the tyre processing sector as it has to utilize the rubber and chemicals in most of the steps. In the recent study on Tyre production factory, it was informed and observed that, the ambient air is cleaned by exhaust fan outlets and air cleaners, and the particulates are taken care of by silo systems, in every production units.

One of the important processing step is “Mixing”, as is chemical related and also messy if cannot properly controlled in handling. Particle emissions are caused by the processing of powdery chemicals in the compound mixing department. In the Bilin Factory under study, the Carbon Black Filling System and the Carbon Black and Filter storage Tanks, were operated by the Carbon Black and Filter Automatic Feeding and Weighing System, which was carried out by the modernized equipment that it eliminates the messy and environment impact, normally expelled by the operation step.

The significance assigned to this impact for the operation phase is considered to be medium without mitigation, but low with mitigation by GMP.

d) Refrigerants

Refrigerants used at cooling the facilities, are either ozone-depleting chemicals (principally chlorofluorocarbons) and/or ammonia. If well maintained refrigeration systems, refrigerants remain within a sealed system and pose little environmental threat. Release of these compounds into the atmosphere, would result in damage to the local and global environment. Ammonia is toxic and can be a hazard to human health, harmful if inhaled, from irritation to severe respiratory injuries, possible fatality at higher concentrations.

- 🌿 The Occupational Safety and Health Administration (OSHA) Permissible Exposure Level (PEL) is 50 parts per million (ppm), 8-hour time-weighted average.

- ✿ The National Institute of Occupational Safety and Health (NIOSH) has established an Immediately Dangerous to Life and Health (IDLH) level of 300 ppm for the purposes of respirator selection.
- ✿ Ammonia is also corrosive and exposure will result in a chemical-type burn. Exposure to liquid ammonia will also result in frostbite since its temperature at atmospheric pressure is -28°F.
- ✿ Due to the pungent odour, ammonia can be usually detected at concentration in the range of 5 ppm. Concentrations above about 100 ppm are uncomfortable to most people; concentrations in the range of 300 to 500 ppm will cause people to leave the area immediately.

The significance assigned to this impact for the operation phase is considered to be *low* as Ammonia can safely be used as a refrigerant provided the system is properly designed, constructed, operated, and maintained. But EIA would be *high* in case of accidental releases of ammonia that have occurred from refrigeration facilities over pressure conditions, which led to risks of personal injury and fatalities on-site.

Table 5.5 Observed Air Quality Results

Parameters	Observed value	Guideline value	Unit	Organization	Period
CO ₂	320.456	345	ppm	WHO	8 Hrs
CO	28.69	9	ppm	Air NEPM	8 Hrs
NO ₂	48.83	200	µg/m ³	MONREC	8 Hrs
SO ₂	8.8	20	µg/m ³	MONREC	8 Hrs
PM ₁₀	33.61	50	µg/m ³	MONREC	8 Hrs
PM _{2.5}	34.59	25	µg/m ³	MONREC	8 Hrs

Noise and Vibrations Pollution

Any manufacturing facility inevitably generates noise and vibration, variable by the type and amount of machineries, equipment and products. It may result from proximity to machinery (e.g. compressors, automatic machinery, condensers, ventilation units, and pressurized air). Therefore, the objectives of acoustic environment management during operation period are to decrease the noise level, adopt the measures such as sound insulation, sound absorption, and any buffer system etc. so as to reduce the impact on the surrounding environment. MONREC has issued National Environmental Quality (Emission) Guidelines to provide the basis for regulation and control of noise level. Noise impact should not exceed the levels presented in Table. As the project area is located in an industrial zone, the noise measurement results are compared with the industrial, commercial receptor.

Noise Level Standard

Receptor	One Hour LAeq (dBA) ^a	
	Daytime 07:00-22:00 (10:00-22:00 for Public holidays)	Nighttime 22:00-07:00 (22:00-10:00 for Public holidays)
Residential, Institutional, educational	55	45
Industrial, commercial	70	70

Table 5.6 Noise level measurement result

No.	Location	Measured Value (dBA)
1	Generator Room	99
2	Compound Mixing Section	78
3	Rubberizing Section	75
4	Tread Extrusion Section	76
5	Bead Preparation Section	80
6	Bias Cutting Section	77
7	Tyre Building Section	76
8	Tyre Curing Section	76

The significance assigned to this impact for the operation phase is considered to be *medium* as the process can result in localized impacts resulting directly from the type and form of generators and machinery systems employed. The whirring of machinery cannot lead to hearing impairment but better with mitigation by GMP (Good Manufacturing Practices) and frequent maintenance.

Water Consumption

a) Water supply

Water supply to the Bilin Tyre Factory comes from two different sources.

Water for drinking is from tube wells, and supplied after passing through the Water Treatment plant into the drinking water plant. The water should meet potable, water standards. Local standards may vary or even be absent. The quality of the source water, the water treatment and the control exerted by the local regulatory authorities differs from place to place depending on the local situation.

WHO issued “Guidelines for drinking water quality”, (WHO 1984b) and is described in detail in the EMP report of the Bilin Tyre factory by the Green Enviro Services Ltd., submitted together with this report.

Water for domestic use, for production process, factory operations, cooling or cleaning, is from Bilin stream or rivulet. Water was pumped up into two water reservoirs of 80,000 and 70,000 gallons each, the former for the direct stream water to be sedimented, filtered or decanted into the latter reservoir, from which it was pumped up hill to another two water reservoirs of 50,000 and 50,000 gallons each, with the same treatment as in the river bank below. The decanted water from the second reservoir uphill, water supply is let by gradient downhill in to the factory compound.


Water for cooling, large amounts of water is used for cooling in the tyre manufacturing processes. The cooling water has no contact with chemicals at any stage and is not contaminated when it returns to the river. The consumption of cooling water depends on the temperature of the water, which makes it impossible to set a numeric target for it. The temperature of the cooling water is increased after the cooling processes and hot water must be cooled down if not recycled, but before discharges out.

The Significance assigned to this impact is considered to be low, with mitigation by GMP and monitoring.

Waste Pollution

(a) Liquid wastes

Massive Liquid waste in bulk is unlikely in the tyre production plant. Wastewater or the typical sanitation water from the plant is usually suggested to be treated with the waste management and pumped or conveyed to the sewerage system of town.

-  Most of the bulks of waste water are for Gas boilers which are always recycled and usually need to replenish once a year for boiler cleaning and boiler inspection.

- 🌿 Water from Domestic use is normally non-hazardous, spread out via the drainage into nowhere and absorbed by the vast surrounding land with rubber plantations, other trees and shrubs.
- 🌿 Water from laboratory use might be a bit hazardous for biotopes in the vicinity, and should be channeled to septic tank or waste ponds.
- 🌿 Detergents, disinfections also present in the wastewater stream, during facility washing and cleaning activities. [Chemicals commonly used for cleaning are acid, alkaline, and neutral detergents, and disinfectants such as chlorine compounds, hydrogen peroxide, and formaldehyde.]
- 🌿 Liquid waste may need holding temporarily, and disposed of without damage to the environment.

Disposal depends on the content levels in the waste and on an assessment of parameters such acidity levels, temperature, odour, and biochemical oxygen demand and chemical oxygen demand.

The magnitude of waste management issues depends on

- 🌿 waste volume,
- 🌿 the nature of the pollution it carries,
- 🌿 the rate at which it is discharged
- 🌿 the capacity of the receiving environment to assimilate the pollutants.

The receiving water body should be able to degrade the organic and inorganic waste components in a way that does not damage the aquatic ecosystem. The nearest water ways such as Taung Soon chaung and Thae Phyu chaung, fortunately, are a few miles away.

Table 5.7 Water Quality of Factory Process Water

Sr.	Item	Result	Unit	WHO Standard
1	Turbidity	1.41	NTU	5 NTU
2	pH	6.91	pH Unit	6.5-8.5
3	Total Dissolved Solids	141	mg/L	1000 mg/L
4	Conductivity	281	µS/cm	N/A
5	Iron	0.19	mg/L	0.3 mg/L
6	Total Hardness	300	mg/L as CaCO ₃	500 mg/L
7	Total Alkalinity	225	mg/L as CaCO ₃	N/A
8	Chloride	7	mg/L	250 mg/L
9	Manganese	0.132	mg/L	0.1 mg/L

Data Source: Amd Laboratory

(Copies of the Water Test Data are provided in the attachments.)

Table 5.8 Waste Water Quality of Factory Outlet Water



Sr.	Item	Result	YCDC Target Range
1	Dissolved Oxygen (DO)	2.7	> 1 ppm
2	Biological Oxygen Demand (BOD ₅) (5 days at 20°C) (mg/L)	60	20-60 ppm
3	Chemical Oxygen Demand (COD) (Adaptation of the USEPA 410. approved method) (mg/L)	84	<200 ppm
4	pH effluent water	7.23	6<pH<9.6
5	Total suspended Solids (TSS)	135	<500 ppm
6	Nitrate (NO ₃ N)	0.0	N/A

Data Source: Amd Laboratory

(Copies of the Water Test Data are provided in the attachments.)

b) Solid Waste

Tyre processing generates inorganic waste and by-products as Solid waste from

-  different production units
-  miscellaneous packaging, domestic and commercial waste

Packaging wastes are of an important issue in the tyre factory under study, as it was observed that 50 Kg of rubber raw materials are packed in a special kind of plastic sheet wrap supplied by the factory itself to the dealers that need not be peeled but could be put into process together with the raw rubber. The particles from the filter or some cut debris or cut pieces can be recycled and used not in tyre itself but for tube linings and other parts. The final packaging materials for finished products of tyres also are not an issue, as the entire finished tyres are sent directly to Yangon Tyres factory in Yangon, for packaging.

c) Hazardous Waste Impact Evaluation

There will be very small quantities of hazardous wastes if any by chemical reactions. Roughly half of this is blade seal oils from compound mixing machines (so-called box grease). The consumption of these oils is directly dependent on the manufactured rubber volumes and these are considered to be very minor environmental issue for this activity.

The Significance assigned to this impact for the operation phase is considered to be low with mitigation by GMP, proper handling and systematic control over usage.

Safety

a) Manual Handling

Lifting, repetitive work and posture injuries occur as result of working in the processing industry (e.g. lifting heavy things and repetitive handling operations). Repetitive tasks can lead to musculoskeletal injuries.

The significance assigned to this impact for the operation phase is considered to be low by proper management on work assignment, support material and health care.

b) Electric Shock and Equipment Safety

The use of electrical devices in the processing facility (pumping facilities and lighting operations) means that the risk of electrical shock is present during a variety of operations. The use of sharp tools in machineries at some processing steps, also are vulnerable to physical hazard.

The Significance assigned to this impact for the operation phase is considered to be low with mitigation by GMP.

c) Slips and Trips

The wet environment in processing facilities means that there is a high risk of slips, trips and falls near any wet areas or areas of spillage.

The Significance assigned to this impact for the operation phase is considered to be low with mitigation by GMP.

d) Allergic Reactions

The handling of raw rubber and other product materials may cause allergies to very sensitive person, resulting from the direct exposure or contact.

The Significance assigned to this impact for the operation phase is considered to be low with mitigation by GMP and support health care.

e) Chemical Exposure

The variety of raw materials which are inorganic materials and chemicals used in the tyre production process and cleaning process leads to the potential exposure to hazardous substances (e.g. rubber compounds, chlorine and acids.)

The raw materials and chemicals usually stored on site may include:

- 🌿 Inorganic Rubber and Chemical ingredients for tyre processing
- 🌿 Acids and chemicals for Quality Control laboratory use
- 🌿 Disinfectant/detergent solution
- 🌿 Petrochemical oils for maintenance of machineries, generators and equipment

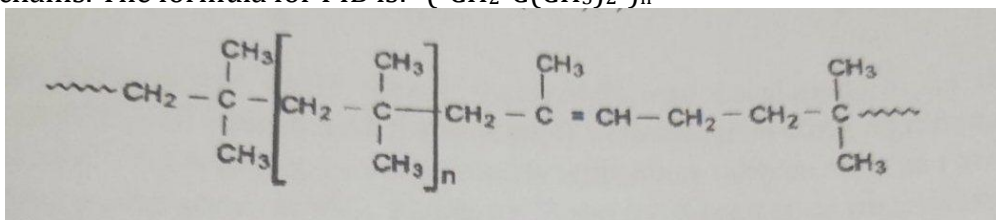
Rubber raw materials

Natural rubber, coming from latex of *Hevea brasiliensis*, is mainly poly-cis-isoprene containing traces of impurities like protein, dirt etc. and is often inferior to certain synthetic rubbers, especially to its thermal stability and its compatibility with petroleum products.

Synthetic rubber is made by polymerization of petroleum-based precursors called monomers. The most prevalent synthetic rubbers are styrene-butadiene rubbers (SBR) derived from the copolymerization of styrene and 1, 3-butadiene. Other synthetic rubbers are prepared from isoprene (2-methyl-1, 3-butadiene), chloroprene (2-chloro-1, 3-butadiene), and isobutylene (methylpropene) with a small percentage of isoprene for cross-linking. These monomers can be mixed in various proportions to be copolymerized to produce products with a range of physical, mechanical, and chemical properties.

No	ISO 1629 Code	Technical Name	Common Names
1	BR	Polybutadiene	Buna CB
2	SBR	Styrene Butadiene	SBR, Buna-S, GRS, Buna VSL, Buna SE
3	CIIR	Chloro Isobutylene Isoprene	Chlorobutyl, Butyl

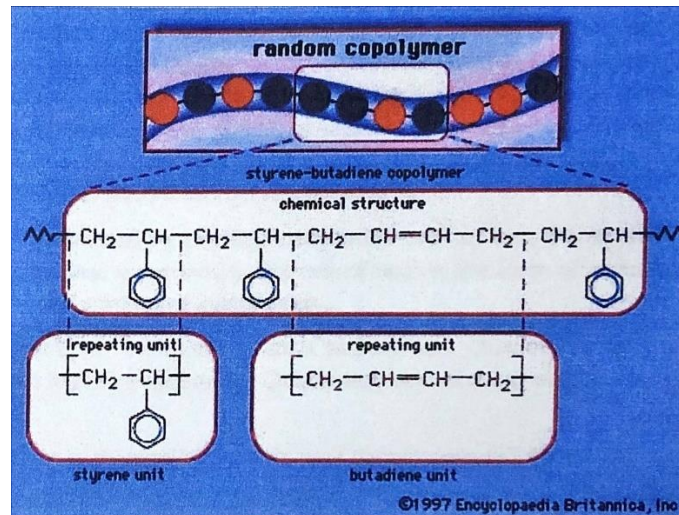
- (a) **Butyl rubber** is a synthetic rubber, a copolymer of isobutylene with isoprene. The IIR stands for Isobutylene Isoprene Rubber. Polyisobutylene, a colorless to light yellow viscoelastic material, known as "PIB" or polyisobutylene, $(C_4H_8)_n$, is the homo-polymer of isobutylene, or 2-methyl-1-propene, on which butyl rubber is based. Butyl rubber is produced by polymer-ization of about 98% of isobutylene with about 2% of Isoprene. It is odorless, tasteless, but may exhibit a slight odor. Butyl rubber has excellent impermeability, and good flex properties due to segments of polymer chains. The formula for PIB is: $-(CH_2-C(CH_3)_2-)_n-$



It can be made from the monomer isobutylene or $CH_2=C(CH_3)_2$ only via cationic addition polymerization.

Usage: A synthetic rubber, or elastomer, butyl rubber is impermeable to air and used in many applications requiring an airtight rubber.

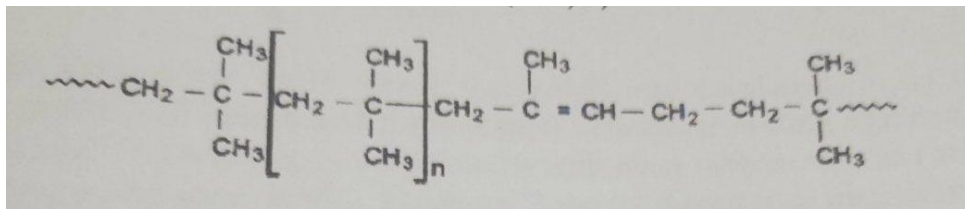
- (b) Styrene-butadiene rubber (SBR) is Chemical compound Alternate titles: Buna rubber; Buna S; Government Rubber-Styrene; GR-S; SBR



(SBR) is a general-purpose synthetic rubber, produced from a copolymer of styrene and butadiene.

Usage: SBR is used in automobile and truck tires, as an abrasion-resistant replacement for natural rubber (produced from polyisoprene)

- (c) CIIR stands for a Chloro Isobutylene Isoprene, a synthetic rubber, a copolymer of isobutylene with isoprene. Structurally, polyisobutylene resembles polypropylene, having two methyl groups substituted on every other carbon atom.



Usage: Halogenated butyl rubber (halobutyl) was developed, in its chlorinated (chlorobutyl) and brominated (bromobutyl) variants, providing significantly higher curing rates and allowing covulcanization with other rubbers such as natural rubber and styrene-butadiene rubber. Halobutyl is the most important material for the inner linings of tubeless tires. Butyl rubber and halogenated rubber are used for the inner liner that holds the air in the tire.

Acids and chemicals for laboratory use are numerous and variable as they are for Quality Control testing of raw materials as well as the products at every steps for rejection or acceptance in the ongoing process. The washing or waste water need to be channeled properly into septic tank or waste water tank so as not to harm the terrestrial biotopes.

Disinfectant/detergent solution is for cleaning and washing the factory and premises for of workers and need to be disposed properly. Cleaning and Disinfection is a necessarily in all work sites, for products and / or for the sake of health of workers and staff. Dry cleaning is as simple as removing and brooming of the spilled materials, pieces or debris etc. as and wet cleaning is washing out the worksite with water and detergents. Disinfection is for production sites of consumables, edible or sanitary products, but also for the health and sanitation workers at the work site. As for Aung Htet Myet Co.,Ltd. it is for the sake of workers rather than the tyres as the products.

Disinfection can be effected by physical treatments such as heat, Ozone and UV irradiation, or by means of chemical compounds. The use of heat in the form of steam or hot water is a very safe widely used method of disinfection.

The chemicals used for disinfection are Chlorine and chlorine compounds, Iodophors, Peracetic acid and hydrogen peroxide, Quaternary ammonium compounds and Ampholytic compounds.

Table 5.9 Comparison of the more commonly used disinfectants (ICMSF 1988).

		Steam or hot water	Chlorine	Iodophores	QAC/QUATS surfactants	Acid anionic
Properties	Corrosive	No	Yes	Slightly	No	Slightly
	Affected by hard water	No	(No)	Slightly	Some are	Slightly
	Irritative to skin	Yes	Yes	Yes	No	Yes
	Affected by organic matter	No	Most	Somewhat	Least	Somewhat
	Incompatible with:	Materials sensitive to high temperature	Phenols, amines, soft metals	Starch, silver	Anionic wetting agents, soaps	Cationic surfactants and alkaline detergents
	Stability of use solution		Dissipates rapidly	Dissipates slowly	Stable	Stable

Stability in hot solution (greater than 66°C)		Unstable, some compounds stable	Highly usable (best used below 45°C)	Stable	Stable
Leaves active residue	No	No	Yes	Yes	Yes
Tests for active residue chemical	Unnecessary	Simple	Simple	Simple	Difficult
Maximum level permitted by USDA and FDA w/o rinse	No limit	200 ppm	25 ppm	25 ppm	
Effective at neutral pH	Yes	Yes	No	No	No

Petrochemical oils, diesel, premium diesel, engine oils, lubricants and hydraulic oil etc. for maintenance of machineries, generators and equipment should be under proper storage and systematic usage.

The significance assigned to this chemical impact in the operation phase is considered to be *medium* without mitigation but low with mitigation by GMP, proper storage.

f) Fire

As a factory that needs to operate in machinery chain work condition, the possibility of fire problem is from packing material, debris from production units, and electricity use or refrigeration gas problems. The plastic packing material for raw rubber is managed so as not necessary to peel but can be used directly in the process.

The Significance assigned to this impact for the operation phase is considered to be *low* with mitigation by GMP, proper housekeeping, storage and regular maintenance of electrical and refrigeration machineries.

5.2.3 Decommissioning Phase

The potential impact in decommission phase are

- ❖ Loss of direct and indirect job employment,
- ❖ Demolition waste, noise pollution, dust generation and exhaust emissions, and occupational health and safety hazards due to demolition works.
- ❖ Sedimentation/siltation of drainage or waterways from unconfined stockpiles of soil and other materials.
- ❖ Contamination of ground/ surface water from hazardous substances left after operation.

5.2.4 Socioeconomic Impact and Public Opinion

On discussion with the local authority and community elders of the Win Pyan and Kyaut Yae Twin villages nearby and some representative from the factory, it was observed that in general, the community of the Bilin tyre factory of Aung Htet Myet Co.,Ltd. in which the project site is situated, is a community that welcomes any development in their area. Public

attitude towards the project plan, is positive in the sense of no intention or no attempt to be against the project.

The community is expected to accept and to be employed in the project's activities, especially during the operational phases with high hoped for improvement in community living standard and educational status as the industrial development in neighborhood would apparently bring in. They are also expecting support for the schools, orphanage and village libraries as well as much needed electricity in their villages. Health facilities are necessary for them as they have to get the help from the Health Assistant of the factory.

The additional tyre factory will provide employment opportunities which would have a positive impact on future job creation. The proposed development would also result in a significance investment in services in the surrounding area.

The recent environment study is for Aung Htet Myet Co.,Ltd. which extended a new tyre factory, as is optimistic on potential higher demand of tyres, as per the rapidly growing influx of automobiles, import substitution and for economic development in Myanmar.

The EIA and EMP for the factory were conducted by the Green Enviro Services Ltd. and 'Green Enviro Survey Team'. The recent study is based on the followings; Environment, Environmental impact, Environmental performance for Prevention of air, water and soil pollution, and Socio-economic Impact on the community.

Impact on the environment at Pre-Construction and Construction Phase is not available as the factory was on lease of the already completed tyre factory, at the time of study. In case of renovation and some new installation in the future, it also must be of low or no impact, neither to the environment, the biotopes and terrestrial ecology and nor to the community at all, for being an already existing factory in the midst of a vast land of 130 acres, away from residential areas,

As pertaining to the Environmental Impacts at the Operation Phase, it was observed that,

- 🌿 As for pollution by odour, noise and vibration and probable air pollution by exhaust gas emission, particulates, the significance is considered to be Low or No significance and can be mitigated by GMP, Proper handling and systematic control over usage.
- 🌿 Concerning with the on-job safety and personnel and individual workers including Manual Handling Reactions, Chemical Exposure etc., the significance assigned to these personal impact for the operation phase is considered to be low by possible mitigation or obviated by GMP, proper management on work assignment, support material and health care.

- 🌿 In Tyre processing Waste management, Solid wastes are to be recycled, reused or sold out to traders for other uses. Liquid waste, which is from the domestic use, boiler and cooling water, non-hazardous in nature, is not a threat to the environment as they will be soaked up by the vast land of 130 acres of rubber plantations and shrubs, prior to reaching the aquatics in the water ways that, it seems it does not pose a threat either as pollutants or toxicity to Taung Soon, Thae Phyu and Bilin streams in a distance.

As for the Social Impact Assessment, the Study Team met with the nearby village authority and community, and factory personnel for discussion. There seemed to be no community disappointment as the village community is optimistic that the study project, will definitely provide job opportunities, income generation, on job trainings, and they are ambitious on upgraded village education level and health improvement. The Aung Htet Myet Co.,Ltd also planned for CSR with kyat 150 lakhs per year of allotted fund for Environment to be used for developing of the education in the villages in vicinity and for supporting the area development.

From the field visit by the Green Enviro Team, with careful observation, thorough scrutiny, stringent perusal and analysis on the available documents from the management of the Aung Htet Myet Co.,Ltd. the Environmental Impact Assessment (EIA) of the tyre manufacturing factory in Bilin, is generally be accepted as Low Impact or Non-significant Impact on Environment and none are regarded as having a significance impact to the extent that the intended activity cannot proceed, given that the follow-up studies, mitigation and recommendations proposed, be implemented and monitored.