MYANMAR YARN & FABRIC TECHNOLOGY

COMPANY LIMITED

INITIAL ENVIRONMENTAL EXAMINATION

(IEE)

MANUFACTURING OF VARIOUS KIND OF WAEAVING AND

DYEING ON COMP BASIC

Commitment and Acknowledgement

To our knowledge, all information contained in this report is accurate and truthful presentation of all findings as relating to the project.

This report has been prepared by **Yang Chi Nagar Gold & Mining Production Co.,Ltd** with all reasonable skill, care and diligence within the terms of the Contract with the client, incorporating our General Terms and Conditions of Business and taking account of the resources devoted to it by agreement with the client. We disclaim any responsibility to the client and others in respect of any matters outside the scope of the above. This report is confidential to the client and we accept no responsibility of whatsoever nature to third parties to whom this report, or any part thereof, is made known. Any such party relies on the report at their own risk.

Approved by:

Commitment of Project Proponent

Company Limited has prepared this project report on Initial Environmental Examination (IEE). **Myanmar Yarn & Fabric Technology Company Limited**; As proponent of this project, do hereby solemnly affirm and declare that:

- The project particulars in this report are correct and true to the best of my knowledge
- The report is prepared by complying with all Myanmar laws, rules and regulations and Environmental Conservation Law (2012)
- Legal and other obligations are incorporated in the designs, procedures and project controls,

Yaung Chi Nagar Gold & Mining Production Company Limited. Manufacturing of various kind of bags on CMP basic is located at at Land Plot No. (23), (24), (25), No.(1420) (KA), Sit Pin Sate Kwin, Sit Pin Sate Village Tract, Bago Township, Bago Region. Do hereby solemnly affirm and declare that I fully understand and undertake to operate the project strictly in accordance with the said conditions and commitments in this IEE report.

Signature……

Name……..…

Designation……

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

LIST OF APPENDICES

LISTS OF ABBREVIATION

1. CEMP – Construction Environmental Management Plan
2. CSR – Corporate Social Responsibility
3. EMP – Environmental Management Plan
4. EIA – Environmental Impact Assessment
5. ECD – Environmental Conservation Department
6. ECC – Environmental Compliance Certificate
7. EMoP – Environmental Monitoring Plan
8. GIIP – Good International Industry Practices
9. HSE – Health, Safety and Environment
10. IEE – Initial Environmental Examination
11. IFC – International Finance Corporation
12. NEQG – National Environmental Quality (Emission) Guidelines
13. MIC – Myanmar Investment Commission
14. MOECAF – Ministry of Environmental Conservation and Forestry
15. MONREC – Ministry of Natural Resources and Environmental Conservation
16. OEMP – Operation Environmental Management Plan
17. OSHA – Occupational Safety and Health Administration
18. PPE – Personal Protective Equipment
19. WHO – World Health Organization
20. YCDC – Yangon City Development Committee
21. YESB – Yangon City Electricity Supply Board
22. YCDC – Yangon City Development Committee
23. ENV Team – Environmental Team
24. IND Team – Industrial Solution Team
25. Sq.meter – square meter
26. % – Percentage
27. ˚C – Degree Celsius
28. BOD – Biochemical Oxygen Demand
29. COD – Chemical Oxygen Demand
30. Co – Carbon Monoxide
31. CO_2 – Carbon Dioxide
32. NO_2 – Nitrogen Dioxide
33. VOC – Volatile Organic Compound
34. O_3 – Ozone
35. dB (A) – Decibel Unit
36. MT – Metric Ton
37. Kt – Kilo Ton
38. KWh – Kilo Watt Hour
39. Km – Kilo Meter
40. PM – Particulate Matter
41. ppm – Part Per Million

အစီရင်ခံစာအကျဉ်းချုပ်

လုပ်ငန်းအကြောင်းအရာဖော်ပြချက်

ကနဦးပတ်ဝန်းကျင်ဆန်းစစ်ခြင်းဆိုင်ရာ အစီရင်ခံစာသည် Myanmar Yarn & Fabric Technology Company Limited ၏ CMP စနစ်ဖြင့် ချည်ထည်ရက်လုပ်ခြင်းနှင့် ဆေးဆိုးခြင်းလုပ်ငန်းမှ ပတ်ဝန်းကျင်အပေါ် အဓိကထိခိုက်မှုများကို လေ့လာဆန်းစစ်ပြီး လျော့ချရေးအစီအစဉ်များ၊ ကာကွယ်ထိန်းသိမ်းရေးအစီအစဉ်များကို အဓိပ္ပါယ်သတ်မှတ်ထားခြင်း ဖြစ်သည်။

Myanmar Yarn & Fabric Technology Company Limited သည် မြေကွက်အမှတ် (၂၃)၊ (၂၄)၊ (၂၅) စစ်ပင်ကွင်း၊ စစ်ပင်ဆိပ်ကျေးရွာအုပ်စု၊ ပဲခူးမြို့နယ်၊ ပဲခူးတိုင်းဒေသကြီး တွင်တည်ရှိသော စုစုပေါင်း မြေဧရိယာ (၂.၈၄၈) ဧကပေါ်တွင် ချည်ထည်ရက်လုပ်ခြင်းနှင့် ဆေးဆိုးခြင်းလုပ်ငန်းအား ပဲခူးတိုင်းဒေသကြီးရင်းနှီးမြှုပ်နှံမှု ကော်မတီမှ ခွင့်ပြုချက် ရရှိပြီး ဖြစ်ပါသည်။ လုပ်ငန်းလည်ပတ်ရန်အတွက် မြန်မာနိုင်ငံသယံဇာတနှင့် သဘာဝပတ်ဝန်းကျင် ထိန်းသိမ်းရေးဝန်ကြီးဌာန (MONREC) ၏ အတည်ပြုချက်ရယူရန် လိုအပ်ကြောင်း ကော်မရှင်မှ မှာကြားခဲ့ပါသည်။ ထို့ကြောင့် မြန်မာနိုင်ငံပတ်ဝန်းကျင်ထိန်းသိမ်းရေး ဥပဒေ(၂၀၁၂)အရ၊ ကနဦးပတ်ဝန်းကျင်ဆန်းစစ်ခြင်း Initial Environmental Examination (IEE) ပြုလုပ်ရန် လိုအပ်ကြောင်း ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဦးစီးဌာန ပဲခူးတိုင်းဒေသကြီးမှ သဘောထားမှတ်ချက် ရရှိပြီးဖြစ်ပါသည်။ ထို့ကြောင့် သယံဇာတနှင့်သဘာဝပတ်ဝန်းကျင် ထိန်းသိမ်းရေးဝန်ကြီးဌာန (MONREC) ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဦးစီးဌာန (ECD)၏ ထုတ်ပြန်ထားသော ပတ်ဝန်းကျင် ထိခိုက်မှု ဆန်းစစ်ခြင်း လုပ်ထုံးလုပ်နည်း (EIA Procedure) ၂၀၁၅ A တိုင်း Myanmar Yarn & Fabric Technology Company Limited သည် စက်ရုံA တွက် IEE A စီA ရင်ခံစာ ရေးဆွဲခဲ့ပါသည်။ IEE A စီA ရင်ခံစာရေးဆွဲရန် တတိယA ဖွဲ့A စည်းဖြစ်သော Yaung Chi Nagar Gold & Mining Production Company Limited မှ တာဝန်ယူရေးဆွဲခဲ့ပါသည်။ စက်ရုံတွင် ကျန်းမာရေး၊ ဘေးA နှစ်ရာယ်ကင်းရှင်းရေးနှင့် ပတ်ဝန်းကျင်ဆိုင်ရာA ဖွဲ့A စည်း တစ်ခုထားရှိပြီး လျော့ချရေး၊ စီမံခန့်ခွဲရေးနှင့်စောင့်ကြပ်ကြည့်ရှုရေး A စီA စဉ်များကို A ကောင်A ထည်ဖော် သွားမည်ဖြစ်သည်။

Myanmar Yarn & Fabric Technology Company Limited စက်ရုံသည် ခန့်မှန်းခြေ A မေရိကန် ဒေါ်လာ (၄.၉၂၇) သန်းခန့် ခွင့်ပြုမတည်ရင်းငွေဖြင့် ချည်ထည်ရက်လုပ်ခြင်းနှင့် ဆေးဆိုးခြင်း လုပ်ငန်းဖြစ်ပါသည်။ စက်ရုံသည် (၁၀၀%) နိုင်ငံခြားသားရင်းနှီးမြှုပ်နှံမှုဖြင့် A ကောင်A ထည်ဖော် ဆောင်ရွက်လျက်ရှိပါသည်။ စက်ရုံA ကျယ်A ဝန်းမှာ (၂၁.၈၈၅) Eက မြေပေါ်တွင် စက်ရုံတည်ဆောက်ပြီး ချည်မျှင်ရက်လုပ်ခြင်းနှင့် ဆေးဆိုးခြင်းလုပ်ငန်းလုပ် ဆောင်ခြင်းဖြစ်ပါသည်။ တည်ဆောက်ပြုပြင်မွန်းမံချိန် (Construction phase)ကို ဇူလိုင်လ (၃)ရက်၊ ၂၀၂၀ ခုနှစ်တွင် စတင်ခဲ့သည်။ ကိုဗစ်ရောဂါပြန့်ပွားခြင်းနှင့် လုံခြုံရေးအခြေအနေ များကြောင့် တည်ဆောက်ပြုပြင်မွမ်းမံခြင်းများ ယခုကွင်းဆင်းအချိန်ထိ ရပ်ဆိုင်းခဲ့ရပါသည်။ ကနဦးရင်နှီးမြှုပ်နှံမှုကာလမှာ (၃၀)နှစ် သက်တမ်းဖြစ်ပြီး ကနဦးရင်းနှီးမြှုပ်နှံမှု ကာလမှာ (၂၀) နှစ်နှင့် သက်တမ်းတိုး(၅)နှစ် နှစ်ကြိမ် သက်တမ်းတိုးခွင့် သတ်မှတ်ထားပါသည်။ ကနဦး ပတ်ဝန်းကျင် ထိခိုက်မှုဆန်းစစ်ခြင်း A စီရင်ခံစာA တွက် စက်ရုံကွင်းဆင်း လေ့လာချိန်တွင် ဆောက်လုပ်ဆဲ အခြေအနေဖြစ်ပါသည်။ စက်ရုံလည်ပတ်ရန်A တွက် မြေနေရာA ၁း ဒေါ်တောမ်နူးထံမှ ငှားရမ်းပြီး ကနဦး နှစ် (၂၀)နှစ် စာချုပ်ဖြင့် (၅)နှစ် နှစ်ကြိမ်သက်တမ်းတိုး ငှားရမ်းA သုံးပြုနိုင်မည်ဖြစ်သည်။ A ဓိက ထုတ်ကုန်မှာ ချည်ထည်ရက်လုပ်ခြင်းနှင့် ဆေးဆိုးခြင်း ထုတ်ကုန် ထုတ်လုပ်ခြင်းဖြစ်ပါသည်။ ထုတ်လုပ်မှုလုပ်ငန်းA တွက် automatic စက်ပစ္စည်းများကို A သုံးပြုပြီး လူစွမ်းA ၁းကို စက်လည်ပတ်ခြင်းကိုထိန်းညှိပေးခြင်း၊ A ရည်A သွေး စစ်ဆေးခြင်း များတွင် A သုံးပြုပြီးလုပ်သော လုပ်ငန်းမျိုးဖြစ်ပါသည်။ စက်ကိရိယာ A သုံးပြုမှုများကို (Table 1-1) တွင် စီစဉ်တင်ပြထားပါသည်။ A ဓိကကုန်ပစ္စည်းများA ၁း တရုတ်နိုင်ငံမှ တင်သွင်းသည်။ နှစ်စဉ်ထုတ်လုပ်မှုနှုန်းA ၁း (Table 1-3) တွင် A သေးစိတ် ဖော်ပြထားပါသည်။ A ဓိက စက်ရုံA တွက် A သုံးပြုမှုများမှာ လျှပ်စစ်စွမ်းA ၎၊ A ရေးပေါ်မောတ်A ၁း ပြာတ် တောက်မှုA တွက် ဒီဇယ်ဆီသုံး ဂျင်နရေတာနှင့် ဝန်ထမ်းများA တွက် သောက်သုံးရေ A သုံးပြုမှုတို့ဖြစ်သည်။ လျှပ်စစ်စွမ်းA ၎A ၁းသုံးစွဲမှုသည် စက်ကိရိယာများ လည်ပတ်နိုင်ရန်၊ A လင်းရောင်ရရှိရန်ဖြစ်သည်။

တည်ဆောက်ပြုပြင်ဆဲကာလ (Construction Phase)

တည်ဆောက်ပြုပြင်ဆဲ ကာလဆိုသည်မှာ ကုန်ထုတ်လုပ်မှုA တွက် လိုA ပ်သော စက်နှင့်စက်ပစ္စည်း A မျိုးမျိုးA ၁းတပ်ဆင်ခြင်းကာလကိုဆိုလိုသည်။ စက်ရုံလည်ပတ်ရန်A တွက် မြေငှားရမ်းခြင်းတွင် တစ်ထပ်အဆောက်အဦး (၄)လုံးနှင့် (၂)ထပ် အဆောက်အဦး (၁)လုံးပါရှိ ပါသည်။ ဝန်ထမ်းများနေထိုင်ရန်အတွက် (၁)ထပ် အဆောက်အအုံ (၄)လုံး ဆောက်လုပ်ထားပါ သည်။ စက်ရုံEရိယာA ကျယ်A ဝန်း (၂၁.၈၈၅) Eက (၈၈၅၆၅.၅၃) စတုရန်းမီတာပေါ်တွင် (၄၄၂ပေ×၂၂၁ပေ)(၂၆၂ပေx၂၆၂ ပေ) (၁၃၁ပေx၂၆၂ ပေ) (၁၉၆ပေx၂၆၂ပေ) (၄)လုံးနှင့် (၃၇ပေ×၁၅၆ပေ) ပတ်လည်ရှိသော (၂)ထပ် ရုံးခန်းနှင့် လူနေအဆောက်အအုံတစ်လုံး ရှိပါ သည်။ လုပ်သားများA တွက် ကန်တင်းA ၁း သီးသန့်A ဆောင်တစ်လုံးထားရှိပြီး သက်ဆိုင်ရာ မီးစက်ခန်းနှင့် chemical ခန်း A စရှိသည်တို့A ၁း သီးသန့်တည်ဆောက်ပေး ထားပါသည်။ ပထမ နှစ်မှ(၅)နှစ်A တွင်း ချည်တန်ချိန် (၃၂၂၀) မှ (၃၂၅၇) A ထိ ထုတ်လုပ်လျက်ရှိပါသည်။ လျှပ်စစ်အသုံးပြုမှုမှာ စက်ရုံလည်ပတ်ရန်နှင့် A လင်းရောင်ရရှိရေးနှင့် A ထွေထွေA သုံးပြုမှု A တွက် ရေသုံးစွဲမှုရှိပါသည်။

ပိတ်သိမ်းခြင်းကာလ

မြန်မာနိုင်ငံရင်နှီးမြှုပ်နှံမှု A ဆိုပြုချက်A ရ (၃၀)နှစ် ရင်းနှီးမြှုပ်နှံမှုကာလA ပြီးတွင် လုပ်ငန်း ပိတ်သိမ်းခြင်း ကာလကိုဆိုလိုသည်။ **(အခန်း(၁)တွင် အသေးစိတ်ဖော်ပြထားပါသည်။)**

အဆိုပြုလုပ်ငန်း အဆိုပြုသူ၏အချက်အလက်

A ခန်း (၂) တွင် Myanmar Yarn & Fabric Technology Company Limited ၏ ရင်းနှီးမြှုပ်နှံမှုA စီA စဉ်များ၊ ဒါရိုက်တာA ကြောင်းA ရာနှင့် စက်ရုံ၏ဖွဲ့စည်းမှုပုံစံများA ား ဖော်ပြထား ပါသည်။ **(အခန်း (၂)တွင် အသေးစိတ်ဖော်ပြထားပါသည်။)**

အစီရင်ခံစာရေးသားသူများနှင့် တာဝန်ယူဆောင်ရွက်မှုများ

အခန်း(၃)တွင် အဆိုပြုသူစီမံကိန်း၏ ကနဦးဝန်းကျင်ဆန်းစစ်ခြင်းလေ့လာခဲ့သည့် Yang Chi Nagar Gold & Mining Production Company Limited မှ ကနဦးပတ်ဝန်းကျင်ဆန်းစစ်ခြင်းတွင် ပါဝင်ခဲ့သော အဖွဲ့တာဝန်နှင့် လုပ်ငန်းအတွေ့အကြုံများကို ဖော်ပြထားပါသည်။ **(အသေးစိတ်ကို အခန်း(၃)တွင် ဖော်ပြထားပါသည်။**

ဥပဒေနှင့် မူဝါဒဆိုင်ရာ အချက်အလက်များ

A ခန်း(၄)တွင် စက်ရုံနှင့်ဆက်စပ်သက်ဆိုင်နေပြီး လိုက်နာရမည့် ဥပဒေနှင့် နည်းဥပဒေ များ MONREC မှ ထုတ်ပြန်ထားသည့် ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်းဆိုင်ရာ လုပ်ထုံး လုပ်နည်းများ၊ A မျိုးသားပတ်ဝန်းကျင်ဆိုင်ရာ A ရည်A သွေး(ထုတ်လွှတ်မှု) လမ်းညွှန်ချက်များ၊ စက်ရုံနှင့် သက်ဆိုင်သည့်ဒေသတွင်း သို့မဟုတ် A ပြည်ပြည်ဆိုင်ရာ သဘာဝပတ်ဝန်းကျင်နှင့် လူမှုပတ်ဝန်းကျင်ဆိုင် ရာမူဝါဒများ၊ ဆက်စပ်နေသည့် နိုင်ငံတကာ သဘောတူချက်များကို A ကျဉ်းချုပ် ရေးသားဖော်ပြထားပါသည်။ **(အသေးစိတ်ကို အခန်း(၄)တွင် ဖော်ပြထားပါသည်။)**

အဆိုပြုလုပ်ငန်း၏ ပတ်ဝန်းကျင်ဆိုင်ရာအချက်အလက်များ

လက်ရှိပတ်ဝန်းကျင်၏ ပတ်ဝန်းကျင်ဆိုင်ရာ A ချက်A လက်နှင့် A ခြေခံလေ့လာမှုများ ဖြစ်သည့် ပတ်ဝန်းကျင်A ရည်A သွေးတိုင်းတားခြင်းများကို ၂၀၂၂ ခုနှစ်၊ ဖေဖော်ဝါရီလ၊ (၆) ရက်နေ့တွင် စက်ရုံA တွင်းကွင်းဆင်းလေ့လာခြင်း၊ လက်ရှိပတ်ဝန်းကျင်A ခြေနေ (လေ၊ ရေ၊ မြေ နှင့် ဆူညံသံ) တိုင်းတာခြင်းများပြုလုပ်ခဲ့ပါသည်။ ရလဒ်များကို A ခန်း(၅)တွင် A သေးစိတ်ဖော်ပြ ထားပါသည်။ ထို့A ပြင် စက်ရုံတည်နေရာနှင့် သက်ဆိုင်သည့် A ချက်A လက်များ ဖြစ်သော လူမှုစီးပွားA ခြေA နေ၊ ရှုပပတ်ဝန်းကျင်ဆိုင်ရာ A ချက်A လက်များ၊ ဇီဝပတ်ဝန်းကျင်ဆိုင်ရာ A ချက်A လက်များ၊ ရာသီဥတုဆိုင်ရာ A ချက်A လက်များ A စရိုသည့်များကို ပဲခူးတိုင်း ဒေသကြီး၊ ပဲခူးမြို့နယ်ရှိ တရားဝင်ပြဌာန်းထားသော မြို့နယ်ဆိုင်ရာ A ချက်A လက်များမှ ကိုးကားဖော်ပြထားပါသည်။ **(အသေးစိတ်ကို အခန်း(၅)တွင် ဖော်ပြထားပါသည်။)**

ပတ်ဝန်းကျင်ထိခိုက်မှုနှင့် လျော့ချရေးA စီA စဉ်

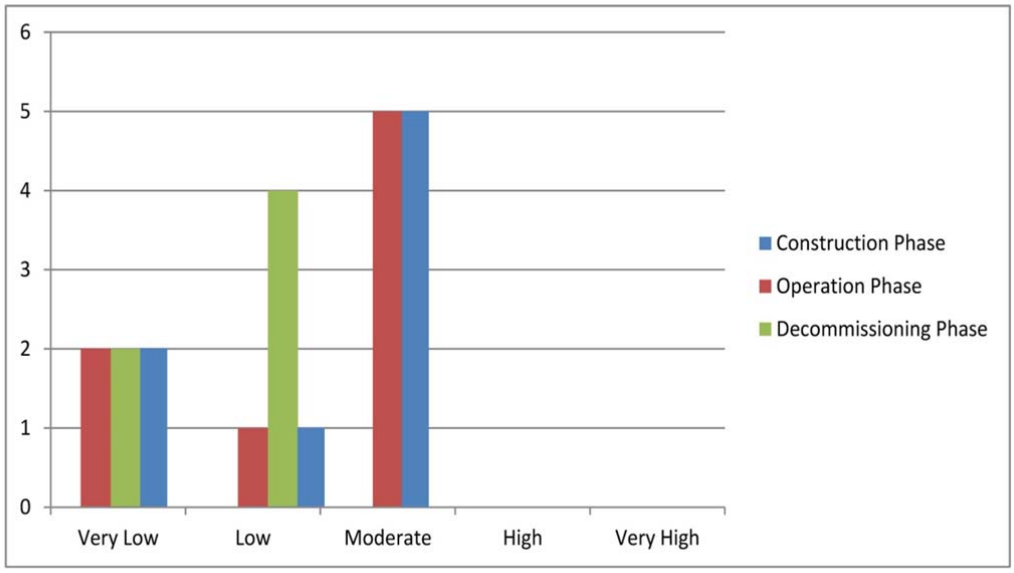
စက်ရုံA ကောင်A ထည်ဖော်မှုကြောင့် ပတ်ဝန်းကျင်နှင့် လူမှုဘဝA ပေါ် ပြောင်းလဲစေနိုင်သောကောင်းကျိုးနှင့် ဆိုးကျိုးများကိုသိရှိစေရန် စက်ရုံA တွင်း ကွင်းဆင်းလေ့လာခြင်း၊ သက်ဆိုင်ရာ စက်ရုံတာဝန်ခံများနှင့် ဆွေးနွေးတိုင်ပင်ခြင်းများA ပြင် ကနဦးပတ်ဝန်းကျင် ဆန်းစစ်ခြင်းA တွက် လေ့လာရေးအဖွဲ့မှ ပတ်ဝန်းကျင်A ခြေA နေများကို စစ်တမ်းကောက်ယူခြင်းများပြုလုပ်ပြီး ပတ်ဝန်းကျင်A ခြေ A နေများA ပေါ် ဆိုးကျိုးထိခိုက်မှုများကို လျော့ချနိုင်ရန် လေ့လာခဲ့ပါသည်။

ပတ်ဝန်းကျင်လက္ခဏာ	လုပ်ငန်းလုပ်ဆောင်မှု	ထိခိုက်မှုအဆင့်	လျော့ချရေးနှင့် ထိန်းချုပ်မှု
တည်ဆောက်ရေးကာလ			
လေထုညစ်ညမ်းမှု	• သယ်ယူပို့ဆောင်ရေးသုံးမော်တော်ယာဉ်တို့ကြောင့် ဖုန်မှုန့်နှင့် ဖန်လုံအိမ်ခါတ်ငွေ့ထွက်ခြင်း • လုပ်ငန်းအတွင်းဖုန်မှုန့်ထွက်ခြင်း • မီးဖိုမှ မီးခိုးထွက်ခြင်း အရေးပေါ်သုံးမီးစက်မှစွန့်ထုတ်အခိုးအငွေ့ထွက်ခြင်း	အသင့်တင့်	• မီးခိုးခေါင်းတိုင်တပ်ဆင်ခြင်းဖြင့် အခိုးအငွေ့ကြောင့် ပတ်ဝန်းကျင်ထိခိုက်မှုကို လျော့ချခြင်း။ • စက်ရုံအတွင်းနှင့် အနီးအနားတွင် သစ်ပင်ပန်းမံ စိုက်ပျိုးခြင်းဖြင့် Carbon ထွက်ရှိမှုကို လျော့ချခြင်း • NOx ထွက်ရှိမှုနည်းသော နည်းပညာမြင့် စက်ပစ္စည်းများသုံးခြင်း • စက်ပစ္စည်းများကို ပုံမှန်ပြုပြင်ထိန်းသိမ်းပေးခြင်း။
မြေဆီလွှာညစ်ညမ်းမှု	• မတော်တဆ စက်ပစ္စည်းမော်တော်ယာဉ်များမှ ဆီယိုဖိတ်ခြင်း • ဆောက်လုပ်ရေးပစ္စည်းများသယ်ယူခြင်း	အလွန်နည်း	• စက်ပစ္စည်းများကို ပုံမှန်ပြုပြင်ထိန်းသိမ်းပေးခြင်း။ • မတော်တဆမှု မဖြစ်စေရန် ထိန်းသိမ်းခြင်း။
ဆူညံသံ	• မီးစက်နှင့် မော်တော်ယာဉ်အသုံးပြု မှုကြောင့် ပတ်ဝန်းကျင်ဆူညံမှု	အသင့်တင့်	• ဆူညံသံထွက်သောနေရာများကို အကာအကွယ်ဖြင့် ထားရှိခြင်း • စက်ပစ္စည်းများကို ပုံမှန်ပြုပြင်ပေးခြင်း
မီးဘေးအန္တရယ်	• ဆောက်လုပ်ရေး ကုန်ကြမ်းသိုလှောင်မှုနှင့် လျှပ်စစ်သုံးစွဲ ပေါ့လျော့မှု	အသင့်တင့်	• ကုန်ကြမ်းများအား သီးသန့်ထားရှိခြင်း • လျှစ်စစ်သုံးစွဲမှုများအား စနစ်တကျအသုံးပြုစေခြင်း

စွန့်ပစ်အမှိုက်	• တည်ဆောက်ရေး ပစ္စည်းလက်ကျန် အပိုင်း အစများ၊ မီးဖိုချောင်နှင့် ရုံးတွင်းစွန့်ပစ်ပစ္စည်းများ	အသင့်တင့်	• စွန့်ပစ်အမှိုက်များအား ပြန်လည် သုံးစွဲရန်နှင့် စွန့်ပစ်ရန်အဖြစ် သတ်မှတ်ပြီး သီးခြားစွန့်ပစ်ခြင်း
စွန့်ပစ်အရည်	• နေအိမ်၊ စားသောက် ဆောင်တို့မှ စွန့်ထုတ်ရေ မိလ္လာကန်စနစ် ရေဆိုးသန့်စင်ခြင်းမှထွက် ရှိသောရေများ	အသင့်တင့်	• စွန့်ပစ်အမှိုက်များအား ပြန်လည် သုံးစွဲရန်နှင့် စွန့်ပစ်ရန်အဖြစ် • သတ်မှတ်ပြီး သီးခြားစွန့်ပစ်ခြင်း
အန္တရာယ်ရှိအမှိုက်	• စက်များမှ ဆီယိုစိမ့်မှုများ မော်တော်ယာဉ်များပြုပြင် ထိန်းသိမ်းမှုက ထွက်ရှိ သည့် အမှိုက်များ	အလွန်နည်း	• စက်သုံးဆီများအား စနစ်တကျ အသုံးပြုစေခြင်း၊ စနစ်တကျ သိုလှောင်ခြင်းနှင့် အန္တရာယ်ရှိ စက်ပစ္စည်းများအား စနစ်တကျ ထားရှိစေခြင်း
မတော်တဆထိခိုက်မှု	• ဆောက်လုပ်ရေးပစ္စည်းများ သယ်ယူခြင်း လုပ်ငန်းများကို ပေါ့ဆစွာ ဆောင်ရွက်ခြင်း	အနည်းငယ်	• မတော်တဆမှုများ မဖြစ်စေရန် ထိန်းသိမ်းခြင်း
လူမှုစီးပွားဘဝ	• ဒေသခံပြည်သူများအတွက် အလုပ်အကိုင်အခွင့်အလမ်း များ ရရှိစေခြင်း		
လုပ်ငန်းလည်ပတ်ခြင်းကာလ			
လေထုညစ်ညမ်းမှု	• သယ်ယူပို့ဆောင်ရေးသုံး မော်တော်ယာဉ်တို့ကြောင့် ဖုန်မှုန့်နှင့် ဖန်လုံအိမ် ခါတ်ငွေ့ထွက်ခြင်း • လုပ်ငန်းအတွင်းဖုန်မှုန့် ထွက်ခြင်း • မီးဖိုမှ မီးခိုးထွက်ခြင်း အရေးပေါ်သုံးမီးစက်မှ စွန့်ထုတ်အခိုးအငွေ့ ထွက်ခြင်း	အသင့်တင့်	• မီးခိုးခေါင်းတိုင်တပ်ဆင်ခြင်းဖြင့် အခိုးအငွေ့ကြောင့် ပတ်ဝန်းကျင် ထိခိုက်မှုကို လျှော့ချခြင်း။ • စက်ရုံအတွင်းနှင့် အနီးအနားတွင် သစ်ပင်ပန်းမံ စိုက်ပျိုးခြင်းဖြင့် Carbon ထွက်ရှိမှုကို လျှော့ချခြင်း • NOx ထွက်ရှိမှုနည်းသော နည်း ပညာမြင့် စက်ပစ္စည်းများသုံးခြင်း • စက်ပစ္စည်းများကို ပုံမှန်ပြုပြင် ထိန်းသိမ်းပေးခြင်း။
မြေဆီလွှာညစ်ညမ်းမှု	• မတော်တဆ စက်ပစ္စည်း မော်တော်ယာဉ်များမှ ဆီ ယိုဖိတ်ခြင်း	အလွန်နည်း	• စက်ပစ္စည်းများကို ပုံမှန်ပြုပြင် ထိန်းသိမ်းပေးခြင်း။ • မတော်တဆမှု မဖြစ်စေရန် ထိန်းသိမ်းခြင်း။
ဆူညံသံ	• မီးစက်၊ လေမှုတ်စက်နှင့်	အသင့်တင့်	• ဆူညံသံထွက်သောနေရာများကို

	မော်တော်ယာဉ်အသုံးပြုမှုကြောင့် ပတ်ဝန်းကျင်ဆူညံမှု		အကာအကွယ်ဖြင့် ထားရှိခြင်း • စက်ပစ္စည်းများကို ပုံမှန်ပြုပြင်ပေးခြင်း
မီးဘေးအန္တရယ်	• ကုန်ကြမ်းသိုလှောင်မှုနှင့် လျှပ်စစ်သုံးစွဲ ပေါ့လျော့မှု	အသင့်တင့်	• ကုန်ကြမ်းများအား သီးသန့်ထားရှိခြင်း • လျှစ်စစ်သုံးစွဲမှုများအား စနစ်တကျအသုံးပြုစေခြင်း
စွန့်ပစ်အမှိုက်	• ထုတ်လုပ်ရာတွင် ကျန်ရှိသော ပိတ်စအပိုင်းအစများ၊ မီးဖိုချောင်နှင့် ရုံးတွင်းစွန့်ပစ်ပစ္စည်းများ	အသင့်တင့်	• စွန့်ပစ်အမှိုက်များအား ပြန်လည်သုံးစွဲရန်နှင့် စွန့်ပစ်ရန်အဖြစ် သတ်မှတ်ပြီး သီးခြားစွန့်ပစ်ခြင်း
စွန့်ပစ်အရည်	• နေအိမ်၊ စားသောက်ဆောင်တို့မှ စွန့်ထုတ်ရေ မိလ္လာကန်စနစ်	အသင့်တင့်	• စွန့်ပစ်အမှိုက်များအား ပြန်လည်သုံးစွဲရန်နှင့် စွန့်ပစ်ရန်အဖြစ် • သတ်မှတ်ပြီး သီးခြားစွန့်ပစ်ခြင်း
အန္တရာယ်ရှိအမှိုက်	• စက်များမှ ဆီယိုစိမ့်မှုများ မော်တော်ယာဉ်များပြုပြင်ထိန်းသိမ်းမှုက ထွက်ရှိသည့် အမှိုက်များ	အလွန်နည်း	• စက်သုံးဆီများအား စနစ်တကျအသုံးပြုစေခြင်း၊ စနစ်တကျသိုလှောင်ခြင်းနှင့် အန္တရာယ်ရှိစက်ပစ္စည်းများအား စနစ်တကျထားရှိစေခြင်း
လူမှုစီးပွားဘဝ	• ဒေသခံပြည်သူများအတွက် အလုပ်အကိုင်အခွင့်အလမ်းများ ရရှိစေခြင်း		
လုပ်ငန်းပိတ်သိမ်းခြင်းကာလ			
လေထုညစ်ညမ်းမှု	• အဆောက်အဦများဖြိုချမှုများ • ဖြိုချပစ္စည်းများသယ်ယူမှုများ	အနည်းငယ်	• Nox ထွက်ရှိမှုနည်းသောနည်းပညာမြင့် စက်ပစ္စည်းများသုံးခြင်း။ • စက်ပစ္စည်းများကို ပုံမှန်ပြုပြင်ထိန်းသိမ်းပေးခြင်း
ရေ	• ဖြိုချပစ္စည်းများနှင့် မိလ္လာဖျက်ဆီးမှုများ	အနည်းငယ်	• ပုံမှန်သန့်ရှင်းရေးပြုလုပ်ပေးခြင်း။ • စက်ပစ္စည်းများကို ပုံမှန်ထိန်းသိမ်းပေးခြင်း။
မြေဆီလွှာညစ်ညမ်းမှု	• အဆောက်အဦးနှင့် ဆက်စပ်ပစ္စည်းများ • ဖြိုချပစ္စည်းများ သယ်ယူမှုများ	အနည်းငယ်	• မတော်တဆမှု မဖြစ်စေရန် ထိန်းသိမ်းခြင်း
အမှိုက်စွန့်ပစ်မှု	• အဆောက်အဦးများ • ဖြိုချပစ္စည်းများ သယ်ယူမှုများ	အနည်းငယ်	• စွန့်ပစ်ပစ္စည်းများအား ပြန်လည်သုံးစွဲရန်နှင့် စွန့်ပစ်ရန်အဖြစ် သတ်မှတ်ပြီး သီးခြားစွန့်ပစ်ခြင်း

အန္တရာယ်ရှိအမှိုက်	• စက်များမှ ဆီယိုစိမ့်မှုများ မော်တော်ယာဉ်များပြုပြင် ထိန်းသိမ်းမှုက ထွက်ရှိ သည့် အမှိုက်များ ဖြိုချပစ္စည်းများ သယ်ယူမှု များ	အလွန်နည်း	• စက်သုံဆီများအား စနစ်တကျ အသုံးပြုစေခြင်း၊ စနစ်တကျသိုလှောင်ခြင်းနှင့် အန္တရာယ်ရှိပစ္စည်းများအား စနစ်တကျထားရှိစေခြင်း
မတော်တဆ ထိခိုက်မှုများ	• အဆောက်အဦများ ဖြိုချမှုများ • ဖြိုချပစ္စည်းများ သယ်ယူ မှုများ	အနည်းငယ်	• မတော်တဆမှု မဖြစ်စေရန် ထိန်းသိမ်းခြင်း
လူမှုစီးပွားဘဝ	• ဒေသခံပြည်သူများအတွက် အလုပ်အကိုင် ရရှိခြင်း		



ပတ်ဝန်းကျင်ထိခိုက်မှုကို လေ့လာဆန်းစစ်ရာတွင် စီမံကိန်းကာလA တွင်း ထိခိုက်မှုတစ်ခု ချင်းစီ၏ ပမာဏ၊ ကြာမြင့်ချိန်၊ ကျယ်ပြန့်မှုနှင့် ဖြစ်နိုင်ခြေတို့A ား ဖော်ပြထားပါသည်။ စီမံကိန်း ကာလA တွင်း ထိခိုက်မှုပမာဏ A သင့်A တင့်ရှိ (၁၀)ခု၊ A နည်းငယ် (၆)ခုနှင့် A လွန်နည်း သော ပမာဏ (၅)ခုတို့ဖြင့် လေ့လာတွေ့ရှိခဲ့ပါသည်။ ပတ်ဝန်းကျင်နှင့် လူထုA ပေါ်ထိခိုက်မှုနှင့် လျော့ချရမည့်A စီA စဉ်ကို ေA ာက်ဖော်ပြပါဇယားတွင် ဖော်ပြထားပါသည်။ စက်ရုံ၏ လုပ်ဆောင် မှုများ ကြောင့် ဖြစ်ပေါ်လာနိုင်သည့် ပတ်ဝန်းကျင်ဆိုင်ရာထိခိုက်နိုင်မှုများတွင်-

၁။ A ရေးပေါA သုံးပြုသော ဒီဇယ်သုံး ဂျင်နရေတာနှင့် စက်ရုံသုံးမော်တော်ယာဉ်မှ ထွက် ရှိသော ဓာတ်ငွေ့ထုတ်လွှတ်မှု၊

၂။ စက်ရုံသုံးစက်ပစ္စည်းများ၊ A ရေးပေါA သုံးပြုသော ဒီဇယ်သုံးဂျင်နရေတာနှင့် မော်တော်ယာဉ်များမှ ထွက်ရှိသော ဆူညံသံ၊

၃။ ရုံးA သုံးပြုမှုမှထွက်သော ညစ်ညမ်းရေထွက်ရှိမှု၊

၄။ စွန့်ပစ်A မှိုက်များA ဖြစ် ကုန်ကြမ်း ထုတ်ပိုးလာသောA°တ်များ၊ ဝန်ထမ်းA သုံးပြုပြီး A မှိုက်များနှင့် တခြားရုံးသုံးA မှိုက်များ

သတ်မှတ်ထားသော A ဆင့်သတ်မှတ်ချက်များA လိုက် ဖြေလျှော့ရေးနည်းလမ်းများဖြင့် ရှောင်လွှဲရန်နည်း လမ်းများကို ဖော်ပြထားပါသည်။ **(A သေးစိတ်ကို A ခန်း ၆ တွင် ဖော်ပြထားပါသည်)**

သက်ဆိုင်သူများနှင့်တွေ့ဆုံဆွေးနွေးခြင်း

သက်ဆိုင်သူများနှင့် တွေ့ဆုံဆွေးနွေးခြင်း A စီA စဉ်တွင် စက်ရုံ၏ IEE A စီရင်ခံစာ A ကြောင်းကို ရှင်းလင်းတင်ပြခြင်းဖြစ်သည်။ တွေ့ဆုံပွဲကို (၆)ရက် ဖေဖော်ဝါရီလ၊ ၂၀၂၂ ခုနှစ်တွင် Myanmar Yarn & Fabric Technology Co.,Ltd A စည်းA ဝေးခန်းမ၌ ပြုလုပ်ခဲ့ပါသည်။ တွေ့ဆုံပွဲတွင် စက်ရုံ၏သက်ဆိုင်ရာပုဂ္ဂိုလ်များ၊ A စိုးရA ဖွဲ့ရုံးများဖြစ်သော ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဦးစီးဌာန၊ စက်မှုကြီးကြပ်နှင့်စစ်ဆေးရေးဦးစီးဌာန ၊ ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးနှင့် သန့်ရှင်းရေးဌာနA စရှိသော သက်ဆိုင်ရာဌာနများ၏ တာဝန်ရှိပုဂ္ဂိုလ်များ၊ စက်မှုဇုန်စီမံခန့်ခွဲမှု ကော်မတီ၏ တာဝန်ရှိပုဂ္ဂိုလ်များမှ လိုA ပ်သည်များကို A ကြံပေးခြင်း၊ စီမံကိန်း၏အစီရင်ခံစာတွင် လိုအပ်သည်များကို ဖြည့်စွက်ပေးရန် အကြံပြုချက်များပေးခဲ့ပါသည်။ ပြုလုပ်ခဲ့သည့် အစီအစဉ်အကျဉ်းကိုပါ ထည့်သွင်းဖော်ပြထားပါသည်။

အချိန်	၂၀၂၂ခုနှစ်၊ ဖေဖော်ဝါရီလ (၆)ရက်၊ နံနက်(၁၀)နာရီ
နေရာ	Myanmar Yarn & Fabric Technology Co.,Ltd အစည်းအဝေးခန်းမ၊ ပဲခူးမြို့နယ်၊ ပဲခူးမြို့။
အစီအစဉ်အကျဉ်း	• စက်ရုံနောက်ခံအကြောင်း • စက်ရုံလုပ်ငန်းအကြောင်း • ပတ်ဝန်းကျင်ထိခိုက်မှုနှင့် လျှော့ချရေးအစီအစဉ် • ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှုအစီအစဉ်နှင့် စောင့်ကြပ်ကြည့်ရှုမှုအစီအစဉ် • အမေးအဖြေကဏ္ဍ • စက်ရုံအတွင်းလှည့်ကြည့်ရှုခြင်းနှင့် စက်ရုံအခြေအနေအကဲဖြတ်ခြင်း

(A သေးစိတ်ကို A ခန်း (၇) တွင် ဖော်ပြထားပါသည်)

A ဆိုပါစက်ရုံ၏ ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှု A စီA စဉ်ကို ရေရှည်ဖွံ့ဖြိုးတိုးတက် ကောင်းမွန်သော ပတ်ဝန်းကျင်A ဖြစ် A ကောင်A ထည်ဖော်ဆောင်ရွက်ရန် ပတ်ဝန်းကျင်ဆိုင်ရာဆိုးကျိုးသက် ရောက်မှုများကို လျော့နည်းစေရန် စီမံခန့်ခွဲမှုA စီA စဉ်များနှင့် စောင့်ကြပ်ကြည့်ရှုရမည့် A စီ A စဉ်များကို ၎ဂ်ပါA တိုင်း ပတ်ဝန်းကျင်ဆိုင်ရာ A ကြောင်းA ရာတစ်ခုချင်းစီA လိုက် ခွဲခြား ပြု လုပ်ထားပါသည်။

၁။ လေထုညစ်ညမ်းမှုနှင့် ဖုန်မှုန့်ဆိုင်ရာ စီမံခန့်ခွဲမှု A စီA စဉ်

၂။ ဆူညံမှုထိန်းခြင်းဆိုင်ရာ စီမံခန့်ခွဲမှု A စီA စဉ်

၃။ A မှိုက်စွန့်ပစ်မှုဆိုင်ရာ စီမံခန့်ခွဲမှု A စီA စဉ်

၄။ ရေဆိုးစွန့်ပစ်မှုဆိုင်ရာ စီမံခန့်ခွဲမှု A စီA စဉ်

၅။ စွမ်းA ငA သုံးပြုမှုဆိုင်ရာ စီမံခန့်ခွဲမှု A စီA စဉ်

၆။ ရေA သုံးပြုမှုဆိုင်ရာ စီမံခန့်ခွဲမှု A စီA စဉ်

၇။ A ရေးပေါ်တုန့်ပြန်ရေး A စီA စဉ်

၈။ စောင့်ကြပ်ကြည့်ရှုရေး A စီA စဉ်

၉။ လူမှုA ကျိုးတူ ပူးပေါင်းပါဝင်မှု A စီA စဉ် (CSR Plan)

၁၀။ ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှုA စီA စဉ်A တွက် ငွေကြေးလျာထားမှုA ခြေA နေ

(A သေးစိတ်ကို A ခန်း (၈) တွင် ဖော်ပြထားပါသည်)

နိဂုံး

A ကျဉ်းချုပ်A ၁းဖြင့် ပြည်ထောင်စုသမ္မတ မြန်မာနိုင်ငံတော်၏ လမ်းညွှန်ချက်များ၊ ပတ်ဝန်း ကျင်ဆိုင်ရာ ဥပဒေ၊ နည်းဥပဒေ၊ စည်းမျဉ်းစည်းကမ်းများနှင့် ချမှတ်ထားသော မူဝါဒ လမ်းညွှန် ချက်များA တိုင်း ပတ်ဝန်းကျင်ဆိုင်ရာ စီမံခန့်ခွဲမှုA လေA ကျင့်များ၊ လုပ်ငန်းစဉ်များနှင့် လိုက်နာ ဆောင်ရွက်ကျင့်သုံးရန် တာဝန်များကို ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှု A စီA စဉ်တွင် ဖော်ပြရှင်းလင်း တင်ပြထားပါသည်။ စီမံကိန်းနှင့်သက်ဆိုင်သူများA ၁း စီမံကိန်းဆိုင်ရာ A ကြောင်းA ရာများ ရှင်းလင်းတင်ပြခြင်း၊ A ကြံပြုချက်များနှင့် ဆွေးနွေးတင်ပြလာသည့် သဘောထား A ကြံဉာဏ်များ ကိုရယူပြီး A စီA ရင်ခံစာတွင် ဖော်ပြထားပါသည်။

EXECUTIVE SUMMARY

Project Descriptions

This report describes the findings of the Initial Environmental Examination (IEE) for the Manufacturing of various kinds of bags on CMP Basic by Myanmar Yarn & Fabric Technology Company Limited. The main objective of this report is to identify the major environmental impacts due to implementation of the project along with the effective measures to mitigate the potential adverse impacts.

The Bago Region Investment Committee announce for the environmental approval and comments of the Ministry of the Natural Resources and Environmental Conservation (MONREC) on the proposed project and had approved the proposal for investment in manufacturing of various kind of bags under the name of Myanmar Yarn & Fabric Technology Company Limited as a solely owned foreign investment from the China and Singapore. According to the Myanmar Environmental Conservation Law (2012), it requires that the proponents of every development project in the country submit either an Initial Environmental Examination (IEE) or an Environmental Impact Assessment (EIA) to Ministry of Natural Resources and Environmental Conservation (MONREC). As the comments of Environmental Conservation Department (ECD), the said project requires an Environmental Management Plan (IEE) to meet the environmental assessment. Therefore, Myanmar Yarn & Fabric Technology Company Limited commissioned Yaung Chi Nagar Gold & Mining Production Company Limited for IEE report study.

The proposed factory is the 100% foreign investment by C Star Myanmar Golden Bag Factory Company Limited with an estimated authorized capital of USD (4.927) million. The proposed factory is located at Land Plot No.23, 24, 25 Sit pin Sate Kwin, Sit Pin Sate Village Tract, Bago Township, Bago Region and the total land area 21.885 acres. The factory aims to manufacture of various kinds of Fabric & Dying products by using semiautomatic and automatic process control system with production process. The construction phase of the proposed factory is initiated in 6 June, 2020. The proposed duration of the investment shall be 20 years extendable 5 years periods two times. The term of the Lease shall be initial 20 years commencing from the date of signing of the Lease Agreement between Daw Taw Nue and Myanmar Yarn & Fabric Technology Company Limited for proposed project site for 21.885 acres of land and extendable for 5 years in 2 times recommended by the Yangon Region Government.

Construction Phase

The project identification of construction phase is factory buildings, machinery and equipment installation period. Project proponent was leased the project area from previous owner; this area already constructed the warehouse building. The Construction of factory building started in 6 June, 2020. But these all construction works halt in earliest months of 2021 due to covid disease out breaking and security concern. The machinery and equipment would be installed after completing factory buildings and wastewater treatment plant.

Operation Phase

The designed area for production building includes fabric knitting area, dying area, finishing area, warehouse area, and dining room. The facility of production is installed by utilities of transformer room, guardhouse and general utility room, water tank and canteen facilities etc. Maximum number of people 300 employees working at Myanmar Yarn & Fabric Technology Co.,Ltd. Most are local people, who manage the company by their dynamic, enthusiastic, experienced, and cooperative skills. The estimated production rate are from (3220 to 3257) ton per annually of production rate. In the operation phase, major utilities for proposed factory include electrical power, fuel oil for emergency used generator and water for production and general purpose. Electric power will be used for the purpose of to run the production machinery and to provide lighting. Water will be required for general purpose. Moreover, layout plan, overview map of proposed factory also mentioned.

Decommissioning Phase

The proposed project investment duration is 30 years and they will close out the project according to their MIC proposal. **(See details in Chapter 1)**

Project Proponent Profile

In the next chapter, detail information of project proponent, organization structure of Myanmar Yarn & Fabric Technology Company Limited, Lists of Management teams including salient feature of project and detail investment plan mentioned in chapter 2. **(See details in Chapter 2)**

Environmental Consultant Profile

In chapter 3, include the scope of the study of proposed project, IEE study objective and responsibility of IEE expert team of Yaung Chi Nagar Gold & Mining Production Co, .Ltd. **(See detail in Chapter 3)**

Policy, Legal and Institutional Frame Work

In Chapter 4, provides the brief summary of relevant national environmental legislations such as Environmental Impact Assessment Procedure (2015) and National Environmental Quality (emission) Guidelines, established by the Ministry of Natural Resources and Environmental Conservation (MONREC) and overview of current local and international environmental and social policies including related international or regional convention for the proposed project. **(See details in Chapter 4)**

Surrounding Environment

The development of infrastructure for the proposed project likely to take place changes in the local environment in terms of physical, biological and socio–economic

aspects along with the perspective on both positive and negative impacts. The potential environmental impacts brought by various activities of proposed factory project will be identified and judged by site surveying with checklist, meeting with client team, including plant manager and supervisor, representatives from the factory operators and assessing the environmental baseline information for operation and decommissioning phases along with its mitigation measures. **(See details in Chapter 5)**

Impact Assessment and Mitigation Measure

The assessment of each impact is based on consideration of the magnitude, duration, extent and probability of activities, which are going to be carried out during operation phases. In operation phase, there are 6 moderate significance impacts on environment and human which are air pollution, noise pollution etc. 4 low significant impacts on environment and human such as impact of wastewater effluents and 6 very low significant impacts on environment and human which are soil contamination and hazardous waste. Significance impacts on environmental and human and detail impact assessment for operation phases can be seen in following Table. All of the impacts during operation phases can be minimized by using mitigation measures and implementing Environmental Management Plan.

Environmental Impact	Project Activities	Significant of Potential Impacts					Impact Significance
		M	D	E	P	SP	
Construction Phase							
Air Pollution	• Dust and GHGs emission from vehicles used for transporting raw materials and final products • Particulate matters emission from the activities of production process • Emission from emergency diesel generator	3	4	2	4	36	Moderate
Water Pollution	• 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	• Accidental spillage of oil used by vehicles operating	1	4	1	2	12	Very Low
Noise Pollution	• Generating noise from the production machinery • Noise form the generating of the emergency generators	3	4	1	4	32	Moderate

Fire Hazard	• Poor electrical installations • Waste disposed area • Raw materials storage	3	5	2	4	40	Moderate
Solid Waste	• residual pieces of fabric scraps from the production lines • Waste from packaging materials • Waste from kitchen, dormitory and office.	3	4	1	4	32	Moderate
Liquid Waste	• Septic system and sewage. • Domestic liquid waste disposal from office, kitchen and dormitory.	2	4	2	4	32	Moderate
Hazardous Waste	• Engine oil leaks, spills 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)	• Accidental cases cause by operating machines. • Electricity and emergency diesel generators. • Unloading, mixing, cutting activities	3	4	1	4	32	Moderate
Social–economic Condition	• Job opportunities for local people	–	–	–	–	–	Positive Impact
Operation Phase							
Air Pollution	• Dust and GHGs emission from vehicles used for transporting raw materials and final products • Particulate matters emission from the activities of production process • Emission from emergency diesel generator	3	4	2	4	36	Moderate
Water Pollution	• 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	• Accidental spillage of oil used by vehicles operating	1	4	1	2	12	Very Low
Noise Pollution	• Generating noise from the production						

	machinery • Noise form the generating of the emergency generators	3	4	1	4	32	Moderate
Fire Hazard	• Poor electrical installations • Waste disposed area • Raw materials storage	3	5	2	4	40	Moderate
Solid Waste	• residual pieces of fabric scraps from the production lines • Waste from packaging materials • Waste from kitchen, dormitory and office.	3	4	1	4	32	Moderate
Liquid Waste	• Septic system and sewage. • Domestic liquid waste disposal from office, kitchen and dormitory.	2	4	2	4	32	Moderate
Hazardous Waste	• Engine oil leaks, spills 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)	• 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	• Job opportunities for local people	–	–	–	–	–	Positive Impact
Decommissioning Phase							
Air pollution	• Decommissioning of buildings and related materials • Transportation of demolished materials	3	1	1	4	20	Low
Water Pollution	• Sewage form decommissioning workers • Demolition machinery equipment	3	1	1	3	15	Low
Soil Contamination	• Decommissioning of buildings and related materials	3	1	1	3	15	Low

	• Transportation of demolished materials						
Noise Pollution	• Decommission activities • Transportation of demolished materials	3	1	1	3	15	Low
Waste disposal	• Sewage system • Demolished debris such as bricks, concrete materials	2	1	1	3	12	Very Low
Hazardous waste	• Used lubricants from decommissioning vehicles and machines	2	1	1	3	12	Very Low
Occupational Health and Safety (Accidents, Injuries)	• Decommissioning activities • Transportation of demolished materials	3	1	2	3	18	Low
Social–economic Condition	• Temporary job opportunities for local people	–	–	–	–	–	Positive Impact

1. Negative impacts and mitigation measures of the proposed factory were taken into consideration during the study. Gases emission from operation of emergency used of diesel generator and vehicle movements.

2. Noise pollution due to the operation of production machines at production area and vehicle movements.

3. Wastewater discharge from domestic wastewater discharged from office facilities

4. Produced of Solid waste such as cloth scraps, packaging materials from production area and paper, plastic waste and other general office waste etc.

5. Potential impact of occupational health and safety hazards such as exposure of noise and electrical hazards will be caused by working at the operation phase

Potential negative impacts and mitigation measures of the proposed factory were taken into consideration during the study. (**See detail in chapter 6)**

Public Consultation

This chapter presents results of public consultation and information disclosure conducted for Myanmar Yarn & Fabric Technology Co., Ltd. Public participation can be considered as the required element of the EMP process. In this study various stakeholder's participation were made. Public consultation during preparation of EMP report was conducted on 6, February 2022, following the EIA procedure. The project's stakeholders in this category are key officials or representatives of the regional and local authorities who have direct responsibilities for the administration of the EMP process for environmental and social clearance and issuing operation permits for proposed development projects. For this

factory, relevant key offices at the national level are Environmental Conservation Department (ECD) and Industry Supervision and Inspection Department. Relevant key office at the regional level is Bago City Development Committee (BCDC), General Administrative Department, Fire Department, Factories and General Labor Law Inspection Department, Public Health Department, Industrial Supervision and Inspection Department.

Time and Date	Sunday, 6 February 2022 10:00 – 12:00
Venue	Myanmar Yarn & Fabric Technology Company Limited Meeting Room.
Agenda	• Presentation on the Background Information of Project, • Project Description. • Impact, Assessment, Environmental Mitigation • Environmental Management Plan and Monitoring Plan • Site survey and performance of Myanmar Yarn & Fabric Technology Company Limited. • Received and Answer from feedback of Participants

(See detail in Chapter 7)

Environmental Management Plan

The EMP for Myanmar Yarn & Fabric Technology Company Limited has been prepared to address potential issues based upon discussion with factory management, workers, local community's view, stakeholder consultation and from the site visit of experts. The EMP is additional to and compliments the factory's safety management system. The following environmental issues that require environmental management plans based upon the potential impacts of activities by for proposed factory are as follows:

1. Air pollution/Dust Management plan
2. Noise Management
3. Solid Waste Management plan
4. Wastewater Management Plan
5. Energy Consumption Management Plan
6. Water Consumption Management Plan
7. Emergency Response plan
8. Environmental Monitoring and Reporting
9. Corporate Social Responsible (CSR) Plan (See details in Chapter8)

Conclusion and 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 EMP. It has been figured out that, the proposed bags 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 will be of immense benefit to the local community and national development as well.

This is recommended that;

- All appropriate environmental management measures detailed in this report, together with any other environmental management commitments should be implemented throughout the entire life of the factory
- Solid wastes and liquid wastes need to dispose according to BCDC rules and regulation
- 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 EMP and practiced at operation level.
- Keep full records of environmental management activities and present to annual independent third party environment audit.
- Abide by the environmental conservation policy and strictly follow rules and regulation set up by the Ministry of Natural Resources and Environmental Conservation
- Develop corporate responsibility (CSR) initiatives with focus on improvement of community resilience, community development, maintenance of ecosystem services and environment.
- Assuming that the mitigation measures and monitoring requirements in the environmental management plan are effectively implemented and the project is not expected to have a significant adverse environmental impact.

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

CHAPTER 1

PROJECT DESCRIPTION

1.1. BACKGROUND INFORMATION

This report describes the findings of the Initial Environmental Examination (IEE) for the Manufacturing of various kinds of bags by Myanmar Yarn & Fabric Technology Company Limited. The main objective of this report is to identify the major environmental impacts due to implementation of the project along with the effective measures to mitigate the potential adverse impacts.

1.1.1. Background of the Project

Myanmar Yarn & Fabric Technology Company Limited was incorporated under the Myanmar Companies Law as a private Company Limited by shares. (See: Appendix–A). The investment committee notified for the environmental approval and comments of the Ministry of the Natural Resources and Environmental Conservation (MONREC) on the proposed project and had approved the proposal for investment in manufacturing of various kind of bags under the name of Myanmar Yarn & Fabric Technology Company Limited

According to the Myanmar Environmental Conservation Law (2012), it requires that the proponents of every development project in the country submit either an Initial Environmental Examination (IEE) or an Environmental Impact Assessment (EIA) to Ministry of Natural Resources and Environmental Conservation (MONREC). As per the comments of Environmental Conservation Department (ECD), the said project requires an Initial Environmental Examination (IEE) to meet the environmental assessment requirements. Therefore, Myanmar Yarn & Fabric Technology Company Limited commissioned Yaung Chin Nagar Gold & Mining Production Company Limited for IEE report study.

1.2. PROJECT IMPLEMENTATION PROGRAM

The proposed factory is the 100% foreign investment by Myanmar Yarn & Fabric Technology Company Limited with an estimated authorized capital of USD (4.927) million. The proposed factory is located at Land Plot No.23, 24, 25, No.1420 (KA), Sit Pin Sate Kwin, Sit Pin Sate Village Tract, Bago Region and the total land area are 21.885 Acres. The factory aims to manufacture of various kind of bag products by using bags production process. The construction phase of the proposed factory is initiated in 6 June, 2020. The proposed duration of the investment shall be 20 years extendable 5 years periods two times. The term of the Lease shall be initial 20 years commencing from the date of signing of the Lease Agreement between Daw Taw Nue Myanmar Yarn & Fabric Technology Company Limited for proposed project site for 21.885 acres of land and extendable for 5 years in 2 times recommended by the Yangon Region Government.

1.3. CONSTRUCTION PHASE

The project identification of construction phase is machinery and equipment installation period. The installation of machinery and equipment started after completion of Factory buildings. During the IEE study, the factory building is constructing at the project site, photo of the factory building is presented in Figure 1–1. The construction phase is not finished yet because of out breaking of covid disease and security concern. The construction work will resume in the suitable period.

Figure 1–1 Photos of Myanmar Yarn & Fabric Technology

1.4. OPERATION PHASE

The total area of project site is 2.848 acre. There is four factory buildings (442 ft × 223 ft) (262 ft x 262 ft) (131 ft x 262 ft) (196 ft x 262 ft) , (37 ft × 156 ft) 2 storey building and 1 storey Building. Transformer room and generator room are separated by main factory building structure. Numbers of people are about 300 employees working at Myanmar Yarn & Fabric Technology. Most are local people, who manage the company by their dynamic, enthusiastic, experienced, and cooperative skills. The estimated production rate are from (3220 to 3257) ton per annually of production rate.

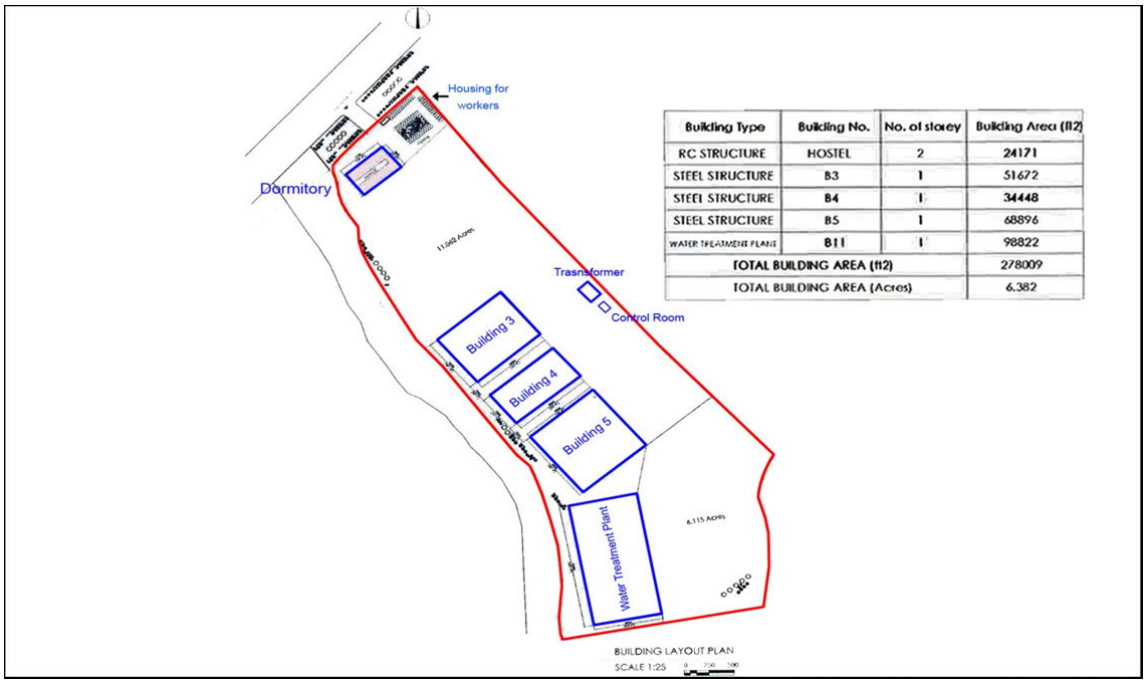
1.4.1. Location of Proposed Project

The proposed project factory is located at Land Plot No.23, 24, 25, No.(1420) (KA) Sit Pin Sate Kwin, Sit Pin Sate Village Tract, Bago Township, Bago Region and the Republic of the Union of Myanmar. The proposed factory falls at the coordinates of North Latitude 17°27'26.1"N and East Longitude 96°25'33.8"E. Location of the proposed project area were shown in Figure 1–2, Figure 1–3, Figure 1–4 and Figure 1–5.

Figure 1–2 Location Map of the Project

Figure 1–3 Location Map of Project (Google Source)

Figure 1–4 Site Layout Drawing (Google Drawing)



Building Type	Building No.	No. of storey	Building Area (ft2)
RC STRUCTURE	HOSTEL	2	24171
STEEL STRUCTURE	B3	1	51672
STEEL STRUCTURE	B4	1	34448
STEEL STRUCTURE	B5	1	68896
WATER TREATMENT PLANT	B11	1	98822
TOTAL BUILDING AREA (ft2)			278009
TOTAL BUILDING AREA (Acres)			6.382

Figure 1–5 Factory Layout Drawing

1.5 PRODUCTION PROCESS

The methods used to create fabric will vary between different color and quality of fabric according to the client interest. The main production of various kind of fabric is only two steps. The first one is circle knitting by automatic machine and the second phase is fabric dying. In finishing phase is washing, ironing, folding, pressing and packing of the products. Most of the fabric production utilized automatic and semiautomatic machines. Process flow diagram of Myanmar Yarn & Fabric Technology is presented in Figure 1–6.

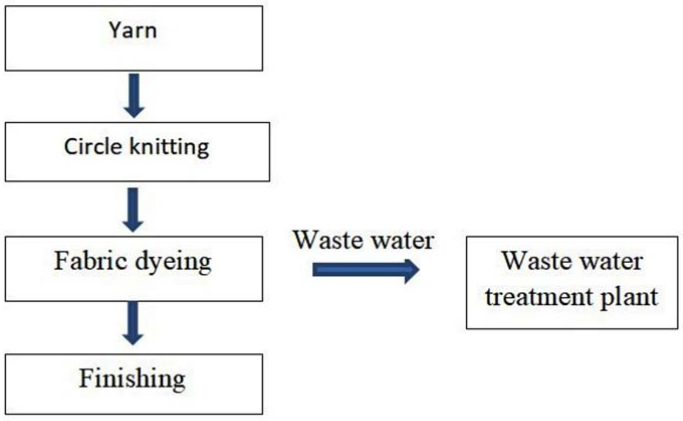
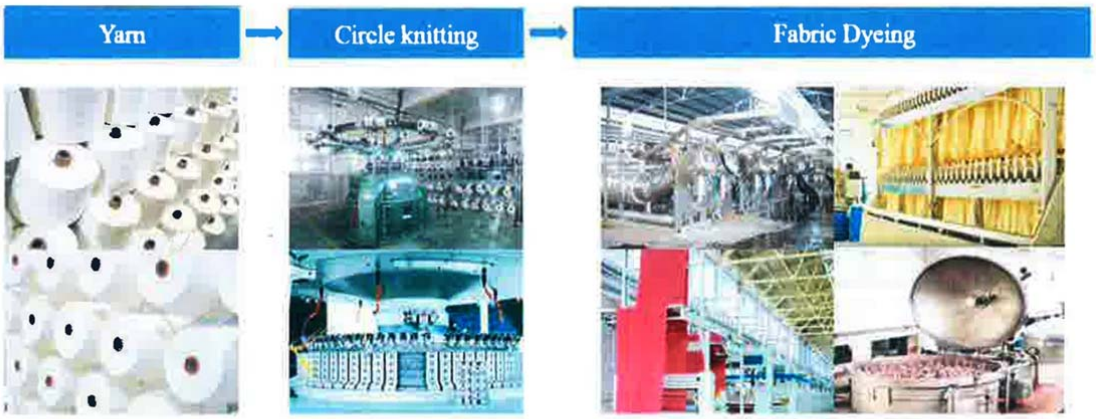


Figure 1–6 Production flow diagrams



1.6 UTILITIES

1.6.1 Machinery and equipment

Automation systems for fully automatic and semiautomatic systems control of each process machine or complete processing line have been implemented. Lists of machinery and equipment required for the proposed factory are listed in Table 1–1. Various machine use in Yarn & Fabric Production are presented Appendix – J

Table 1–1 List of machinery and equipment

No.	Machinery Name	Unit	Quantity
1	O-Type Overflow Cylinder	Set	16
2	Pre-Shrinking Machine	Set	1
3	Dryer	Set	1
4	Setting Machine	Set	3
5	Continuous Ring Dryer	Set	1
6	Continuous Open Width Washing Machine	Set	1
7	Roughening Machine	Set	2
8	Shearing Machine	Set	1
9	Singeing Machine	Set	1
10	Sanding Machine (Lafa)	Set	1
11	Carbon Grinding Machine (Nafa)	Set	1
12	Inspecting Machine	Set	3
13	Knitting Machine	Set	2
14	Constant temperature oven	Set	1
15	Single yarn strength machine	Set	1
16	Colour fastness to washing machine	Set	1
17	Yarn dryer	Set	1
18	Twist machine	Set	1
19	Electronic balance	Set	1
20	Sweat fastness oven	Set	1
21	Tribometer	Set	1
22	Washing Machine	Set	1
23	PH Detector	Set	1
24	Perspiration tester	Set	1
25	Pilling box	Set	1
26	Light box	Set	1
27	Measuring machine	Set	1
28	Multi–function micro projector	Set	1
29	Screen Machine	PLATFORM	1
30	Waste Water Lifting pump	PLATFORM	2
31	Frequency Conversion	Set	5
32	Submersible Pusher	Set	4
33	Microporous Aerator	Set	2535
34	Roots Blower	PLATFORM	5
35	Circulating Pump	PLATFORM	2
36	Sludge Pump	PLATFORM	1
37	Diaphragm Pump and fresh water pump	Set	1

38	Perforated aeration	Set	1
39	Plate and frame Filter press	Set	1
40	Diaphragm pump and fresh water pump	Set	1
41	Piping and vales	Set	1
42	Paint Anticorrosion	Set	1

Remark : Machines are to be imported from China, Hong Kong, USA, Europe and Thailand.

1.6.2 Raw Material

The main materials for production of bags are Fabric, Accessory and Packing material, which imported from China. Annual raw material requires for production process provided in Table 1-2. Some utilized raw materials are posted in Appendix – K

Table 1–2 List of Raw Material (For Dyes)

No	Material	A/U	Year-1	Year-2	Year-3	Year-4	Year-5	Year 6-10	Year 11-20	Year 21-30
			Annual Production	Annual Production	Annual Production	Annual Production	Annual Production	Annual Production	Annual Production	Annual Production
1	CATIONIC YELLOW X8GL	KG	58	88	118	148	178	208	238	268
2	CATIONIC RED 6B	KG	79	109	139	169	199	229	259	289
3	CATIONIC RED X5GN 250%	KG	92	122	152	182	212	242	272	302
4	CATIONIC BLUE GB 250%	KG	234	264	294	324	354	384	414	444
5	CATIONIC BLACK X-O 300%	KG	255	285	315	345	375	405	435	465
6	CATIONIC VIOLET 3BL	KG	50	80	110	140	170	200	230	260
7	CATIONIC Yellow 10GFF	KG	50	80	110	140	170	200	230	260
8	CATIONIC Yellow X-GL	KG	12632	12662	12692	12722	12752	12782	12812	12842
9	CATIONIC RED X-GRL	KG	9256	9286	9316	9346	9376	9406	9436	9466
10	CATIONIC BLUE X-BL 250%	KG	9256	9286	9316	9346	9376	9406	9436	9466
11	INTRACID YELLOW F-2BN 125	KG	46	76	106	136	166	196	226	256
12	INTRACID YELLOW F-2R(N)	KG	46	76	106	136	166	196	226	256
13	Arcilan Red PX	KG	46	76	106	136	166	196	226	256
14	Arcilan Blue PX	KG	46	76	106	136	166	196	226	256
15	NEOLAN RED P OPTIFLOW	KG	46	76	106	136	166	196	226	256
16	NELOAN YELLOW P OPTIFLOW	KG	46	76	106	136	166	196	226	256
17	NEOLAN BLUE P OPTIFLOW	KG	46	76	103	136	166	196	226	256
18	ANAZOL SCARLET AN-GFS	KG	3814	3844	3874	3904	3934	3964	3994	4024
19	INTRACRON T BLUE H-GN	KG	1978	2008	2038	2068	2098	2128	2158	2188
20	INTRACRON YELLOW AN-GF	KG	16534	16564	16594	16624	16654	16684	16714	16744
21	INTRACRON RED AN-GF	KG	33159	33189	33219	33249	33279	33309	33339	33369
22	INTRACRON RED AN-BS	KG	34148	34178	34208	34238	34268	34298	34328	34358
23	INTRACRON BLUE AN-GF	KG	1256	1286	1316	1346	1376	1406	1436	1466
24	INTRCRON BRILLIANT BLUE KN	KG	4941	4971	5001	5031	5061	5091	5121	5151
25	INTRACRON NAVY BLUE GG133	KG	1486	1516	1546	1576	1606	1636	1666	1696
26	INTRACRON BRILLIANT RED BB	KG	46	76	106	136	166	196	226	256
27	INTRACRON BALCK CDM	KG	292	332	352	382	415	442	472	502
28	INTRACRON SUPER BALCK G	KG	9275	92775	92785	92815	92845	92875	92905	92935
29	INTRACRON CHERRY RED A-D	KG	2170	2200	2230	2260	22900	2320	2350	23800

30	REACTIVE RED M-8B	KG	459	489	519	549	579	609	639	669
31	Drimaren Blue X-BLN p EN	KG	125	155	185	215	245	275	305	335
32	EVERZOL YELLOW 3GL	KG	1377	1407	1437	1467	1497	1527	1557	1587
33	EVERZOL BRILLIANT RED F2B	KG	2128	2158	2188	2218	2248	2278	2308	2338
34	EVERZOL SCARET 3FT	KG	751	781	811	841	871	901	931	961
35	EVERZOL BLUE BB	KG	125	155	185	215	245	275	305	335
36	EVERZOL BALCK GR	KG	4675	4704	4734	4764	4794	4824	4854	4884
37	EVERZOL ORANGE ED-2R	KG	209	239	269	299	329	359	389	419
38	Remazol Yellow 3RS conc gran	KG	83	113	143	173	203	233	263	293
39	Remazol Black B conc gran	KG	42	72	102	132	162	192	222	252
40	Remazol BrRed 3BS conc gran	KG	42	72	102	132	162	192	222	252
41	Remazol BrBlue R-X	KG	42	72	102	132	162	192	222	252
42	NOVACRON BLUE EC-R	KG	3672	3702	3732	3762	3792	3822	3852	3882
43	NOVACRON BLUE EC-GC	KG	7094	7124	7154	7184	7214	7244	7274	7304
44	Reactive Yellow 3RS 150%	KG	29211	29241	29271	29301	29331	29361	29391	29421
45	Reactive black KN-B 100%	KG	44067	44097	44127	44157	44187	44217	44247	44277
46	LANSOL BORDEAUX CE	KG	42	72	102	132	162	192	222	252
47	LANSOL BLUE CE	KG	42	72	102	132	162	192	222	252
48	LANSOL GOLDEN Yellow CE-01	KG	83	113	143	173	203	233	263	293
49	LANSOL RED CE	KG	42	72	102	132	162	192	222	252
50	LANSOL NAVY CE	KG	42	72	102	132	162	192	222	252
51	LANSOL BLACK CE	KG	167	197	227	257	287	317	347	377
52	NEUTRAILAN BALCK MS	KG	2337	2367	2397	2427	2457	2487	2517	2547
53	NEUTRAILAN BLACK M-R	KG	793	823	853	883	913	943	973	1003
54	Argacid Navy M-R	KG	417	447	477	507	537	567	597	627
55	Argacid Red E-BL 200%	KG	42	72	102	132	162	192	222	252
56	Argacid Yellow E-4RL 200%	KG	83	113	143	173	203	233	263	293
57	LANASET BORDEAUX B	KG	83	113	143	173	203	233	263	293
58	LANSET RED 2B	KG	167	197	227	257	287	317	347	377
59	LANSET RED G GR	KG	209	239	269	299	329	359	389	419
60	LANSET YELLOW 2R GR	KG	584	614	644	674	704	734	764	794
61	LANSET GREY G GR	KG	125	155	185	215	245	275	305	335
62	LANSET NAVY R XN	KG	626	656	686	716	746	776	806	836
63	LANSET BLUE 2R	KG	209	239	269	299	329	359	389	419
64	LANSET GREEN B	KG	42	72	102	132	162	192	222	252
65	LANSET YELLOW 4GN	KG	125	155	185	215	245	275	305	335
66	LNSET ORANGE RN	KG	42	72	102	132	162	192	222	252
67	LANSET VOLET B	KG	42	72	102	132	162	192	222	252
68	LANSET BLUE 5G	KG	42	72	102	132	162	192	222	252
69	Dianix Yellow AC-E new 01	KG	42	72	102	132	162	192	222	252
70	Dianix Yellow AC-E 02	KG	42	72	102	132	162	192	222	252
71	Danix BLUE AC-E	KG	42	72	102	132	162	192	222	252
72	Danix Luminous Red G	KG	42	72	102	132	162	192	222	252
73	Danix Luminous Red B	KG	42	72	102	132	162	192	222	252
74	Danix Luminous Yellow 10G	KG	42	72	102	132	162	192	222	252
75	Disperse Violet HFRL 100%	KG	42	72	102	132	162	192	222	252
76	Disperse BLUE 2BLN 100%	KG	167	197	227	257	287	317	347	377
77	Disperse Navy Blue TP-HGL 200%	KG	1043	1073	1103	1133	1163	1193	1223	1253
78	Disperse G Yellow SE-3R 200%	KG	42	72	102	132	162	192	222	252
79	Disperse Brown TP-4RL 100%	KG	1168	1198	1228	1258	1288	1318	1348	1378
80	Disperse Rubine TP-5BL 100%	KG	1085	1115	1145	1175	1205	1235	1265	1295
81	Disperse Red F3BS 150%	KG	125	155	185	215	245	275	305	335
82	Disperse Red 3B 100%	KG	584	614	644	674	704	734	764	794

83	Disperse Scarlet GS 200%	KG	459	489	519	549	579	609	639	669
85	Disperse Yellow C-4G 200%	KG	83	113	143	173	203	233	263	293
86	Disperse Turquoise S-GL 200%	KG	125	155	185	215	245	275	305	335
87	UVTEX 4BK	KG	1043	1073	1103	1133	1163	1193	1223	1253
88	UVTEX BAC LIQ	KG	209	239	269	299	329	359	389	419

Remark : Raw Materials are to be imported from china.

Table 1–3 List of Raw Material (For Yarn)

No	Material	A/U	Year-1	Year-2	Year-3	Year-4	Year-5	Year 6-10	Year 11-20	Year 21-30
			Annual Production	Annual Production	Annual Production	Annual Production	Annual Production	Annual Production	Annual Production	Annual Production
1	1/3 NM 100% Cotton Slub Tape	Ton	3	33	63	93	123	153	183	213
2	1/3.6 NE BCI Cotton Tape	Ton	5	35	65	95	125	155	185	215
3	2/3.2 NE BCI Siro Spinning Yarn	Ton	143	173	203	233	263	293	323	353
4	2/60 BCI Mercerized Cotton	Ton	3	33	63	93	123	153	183	213
5	2/40 NE Combed Cotton	Ton	17	47	77	107	137	167	197	227
6	2/40 NE Airflow Cotton	Ton	2	32	62	92	122	152	182	212
7	2/30 NE Slub Cotton	Ton	2	32	62	92	122	152	182	212
8	2/32 NE Castor Cotton	Ton	3	33	63	93	123	153	183	213
9	2/20 NE Castor Cotton	Ton	2	32	62	92	122	152	182	212
10	2*7/32 NE Organic Cotton	Ton	5	35	65	95	125	1555	185	215
11	2/32 NE Organic Cotton	Ton	4	34	64	94	124	154	184	214
12	2/32 NE Organic Cotton	Ton	3	33	63	93	123	153	183	213
13	2/60 NE Organic Cotton	Ton	21	51	81	111	141	171	201	231
14	2/32 NE Organic Cotton	Ton	19	49	79	109	139	169	199	229
15	2/21 NE Organic Cotton	Ton	6	36	65	96	126	156	186	216
16	3/50 NE Organic Cotton	Ton	8	38	68	98	128	158	188	218
17	2/60 Heavy Twist Organic Cotton	Ton	34	64	94	124	154	184	214	244
18	1/6.5 NM 93 Cotton/7polyester TT Yarn	Ton	2	32	62	92	122	152	182	212
19	1/2.6 NM 75 Cotton/25 Polyester Pigtail Yarn	Ton	3	33	63	93	123	153	183	213
20	1/70 NM 69 Organic Cotton/31 Nylon	Ton	6	36	66	96	126	156	186	216
21	2/30 NE 60 Organic Cotton/40 Viscose	Ton	5	35	65	95	125	155	185	215
22	2/48 NM 50 Organic Cotton/40 Viscose/10Spun Silk	Ton	5	35	65	95	125	155	185	215
23	1/21 NM 62Cotton/38Recycled Polvester	Ton	4	34	64	94	124	154	184	214
24	2/16 NE BCI 60 Cotton/40Bulk Acrylic	Ton	7	37	67	97	127	157	187	217
25	2/32 NE 60 Cotton/40 Modal	Ton	6	36	66	96	126	156	186	216
26	1/10 NE 60 Cotton/40T Vortex Spinning	Ton	6	36	66	96	126	156	186	216
27	2/16 NE 60 Cotton/40 Acrylic	Ton	11	41	71	101	131	161	191	221
28	2/28 NE 60 Cotton/40 Acrylic PT	Ton	40	70	100	130	160	190	220	250
29	2/20 NE 60 Cotton/40 Acrylic PT	Ton	4	34	64	94	124	154	184	214
30	2/21 NE 60 Cotton/40 Acrylic PT	Ton	35	65	95	125	155	185	215	245
31	2/28 NE 60 Cotton/40 Acrylic PT	Ton	49	79	109	139	169	199	229	259

32	2/16 NE 60 Cotton/40 Bulk Acrylic	Ton	45	75	105	135	165	195	225	255
33	2/16 NE 60 Cotton/40 Bulk Acrylic	Ton	15	45	75	105	135	165	195	225
34	2/16 NE 60 Cotton/40 Bulk Acrylic	Ton	3	33	63	93	123	153	183	213
35	2/16 NE 60 Cotton/40 Bulk Acrylic	Ton	7	37	67	97	127	157	187	217
36	2/28 NE 60 Cotton/40 Bulk Acrylic	Ton	25	55	85	115	145	175	205	235
37	2/16 NE 60 Cotton/40 Bulk Acrylic	Ton	5	35	65	95	125	155	185	215
38	2/16 NE 60 Cotton/40 Bulk Acrylic	Ton	14	44	74	104	134	164	194	224
39	2/16 NE 60 Cotton/40 Bulk Acrylic	Ton	2	32	62	92	122	152	182	212
40	2*2/16 NE 60 Cotton/40 Bulk Acrylic	Ton	17	47	77	107	137	167	197	227
41	2/16 NE 60 Cotton/40 Bulk Acrylic	Ton	3	33	63	93	123	153	183	233
42	2*2/16 NE 60 Cotton/40 Bulk Acrylic	Ton	15	45	75	105	135	165	195	225
43	2/30 NE 55 Cotton/45 Acrylic	Ton	2	32	63	93	123	153	183	235
44	2/20 NE 50 Acrylic/50 Cotton	Ton	16	46	76	106	136	166	196	226
45	2/20 NE 50 Acrylic/50 Cotton	Ton	9	39	69	99	129	159	189	219
46	2/20 NE 50 Acrylic/50 Cotton	Ton	7	37	67	97	127	157	187	217
47	2/20 NE 50 Acrylic/50 Cotton	Ton	14	44	74	164	134	164	194	124
48	2/20 NE 50 Acrylic/50 Cotton	Ton	106	136	166	196	226	256	256	316
49	2/20 NE 50 Acrylic/50 Cotton	Ton	2	32	62	92	122	152	182	212
50	2/20 NE 50 Acrylic/50 Cotton	Ton	40	70	100	130	160	190	220	250
51	2/20 NE 50 Acrylic/50 Cotton	Ton	48	78	108	138	168	198	228	258
52	2/20 NE 50 Acrylic/50 Cotton	Ton	5	35	65	95	125	155	185	215
53	2/20 NE 50 Acrylic/50 Cotton	Ton	25	55	85	115	145	175	205	235
54	2/30 NE 55 Flax/45 Cotton	Ton	7	37	67	97	127	157	187	217
55	2/28 NE 55 Acrylic/45 Cotton	Ton	5	35	65	95	125	155	185	215
56	2/30 NE 55 Acrylic/45 Cotton	Ton	25	55	85	115	145	175	225	235
57	2/30 NE 45 Cotton/55 Acrylic	Ton	7	37	67	97	127	157	187	217
58	2/30 NE 45 Cotton/55 Acrylic	Ton	5	35	65	95	125	155	185	215
59	2/30 NE 45 Cotton/55 Acrylic	Ton	3	33	63	93	123	153	183	213
60	2/30 NE 45 Cotton/55 Acrylic	Ton	138	168	198	228	258	288	318	348
61	2/30 NE 45 Cotton/55 Acrylic	Ton	32	62	92	122	152	182	212	242
62	2/30 NE 45 Cotton/55 Acrylic AB Yarn	Ton	8	38	68	98	128	158	188	218
63	2/30 NE 55 Acrylic/45 Cotton	Ton	10	40	70	100	130	160	190	220
64	2/30 NE 55 Acrylic/45 Cotton	Ton	4	34	64	94	124	154	184	214
65	2/30 NE 55 Acrylic/45 Cotton	Ton	5	35	65	95	125	155	185	215
66	2/30 NE 60 Cotton/40 Rayon	Ton	12	42	72	102	132	162	192	222
67	2/30 NE 60 Cotton/40 Rayon	Ton	2	32	62	92	122	152	182	212
68	2/30 NE 60 Cotton/40 Rayon	Ton	18	48	78	108	138	168	198	228
69	2/30 NE 60 Cotton/40 Rayon	Ton	29	59	89	119	149	179	209	239
70	2/30 NE 60 Cotton/40 Rayon	Ton	5	35	65	95	125	155	185	215
71	2/30 NE 60/40 Cotton/Viscose	Ton	16	46	76	106	136	166	196	226
72	2/30 NE 60/40 Cotton/Viscose	Ton	2	32	62	92	122	152	182	212
73	3/40 NE 50/50 Modal Cotton	Ton	21	51	81	111	141	171	201	231
74	2/40 NE 50/50 Modal Cotton	Ton	15	45	75	105	135	165	195	225
75	2/30 NE 50 Cotton/12 Viscose/38 Polyester	Ton	5	35	65	95	125	155	185	215
76	2/30 NE 60Yayon/40 Cotton	Ton	2	32	62	92	122	152	182	212
77	1/21 NE 40 Cotton/60 Rayon	Ton	13	46	73	103	133	163	193	223
78	2/21 NE 40 Cotton/60 Rayon	Ton	4	34	64	94	124	154	184	214
79	2/30 NE 40 Cotton/60 Rayon	Ton	1	31	61	91	121	151	181	211
80	2/30 NE 60 Rayon/40 Cotton	Ton	4	34	64	94	124	154	184	214
81	2/30 NE 60 Rayon/40 Cotton	Ton	5	35	65	95	125	155	185	215

82	1/17 NM 50 Rayon/50 Nylon Feather Yarn	Ton	40	70	100	130	160	190	220	250
83	1/7.2 NM Feather Yarn	Ton	4	34	64	94	124	154	184	214
84	1/12 NM Feather Yarn	Ton	5	35	65	95	125	155	185	215
85	1/6.2 NM Feather Yarn	Ton	5	33	63	93	123	153	183	213
86	1/13 NM Feather Yarn	Ton	14	44	74	104	134	164	194	224
87	2/120D Bright Rayon	Ton	5	35	65	95	125	155	185	215
88	2/120D Bright Rayon	Ton	8	38	68	98	128	158	188	218
89	2/120D Bright Rayon	Ton	5	35	65	95	125	155	185	215
90	2/120D Bright Rayon	Ton	8	38	68	98	128	158	188	218
91	2/32 NE 100% Polyester	Ton	12	32	62	92	122	152	182	212
92	1/2.5 NM 100%Polyester Chenille	Ton	2	32	62	92	122	152	182	212
93	1/13 NM Flannel Polyester	Ton	5	35	65	95	125	155	185	215
94	1/32 NE Recycled Polyester	Ton	25	55	85	115	145	175	205	235
95	1/18 NE Recycled Polyester	Ton	12	42	72	102	132	162	192	222
96	2/32 NE 80 Polyester/20 Cotton	Ton	30	60	90	120	150	180	210	240
97	3/32 NE 35 Cotton/65 Polyester	Ton	3	33	63	93	123	153	183	213
98	1/30 Viscose	Ton	11	41	71	101	131	161	191	221
99	2/30 NE Lenzing Viscose	Ton	18	48	78	108	138	168	198	228
100	2/30 NE Lenzing Viscose	Ton	10	40	70	100	130	160	190	220
101	2/30 NE Lenzing Viscose	Ton	20	50	80	110	140	170	200	230
102	2/30 NE Lenzing Viscose	Ton	60	90	120	150	180	210	240	270
103	2/30 NE Vortex Spinning Viscose	Ton	24	54	84	114	144	174	204	234
104	2/30 NE Vortex Spinning Viscose	Ton	8	38	68	98	128	158	188	218
105	2/30 NE Vortex Spinning Viscose	Ton	6	36	66	96	126	156	186	216
106	2/30 NE Vortex Spinning Viscose	Ton	7	37	67	97	127	157	187	217
107	2/30 NE Vortex Spinning Viscose	Ton	2	32	62	92	122	152	182	212
108	2/30 NE Vortex Spinning Viscose	Ton	50	80	110	140	170	200	230	260
109	2/30 NE Vortex Spinning Viscose	Ton	12	42	72	102	132	162	192	222
110	2/30 NE Vortex Spinning Viscose	Ton	4	34	64	94	124	154	184	214
111	1/37 NM 77 Viscose/23 Nylon Heavy Twist Sarry	Ton	2	32	62	92	122	152	182	212
112	1/37 NM 77 Viscose/23 Nylon Sarry	Ton	30	60	90	120	150	180	210	240
113	2/48 NM 70 Viscose/24 BT Cored Yarn	Ton	17	47	77	107	137	167	197	227
114	1/28 NM 75 Viscose/25 Nylon Sarry	Ton	35	65	95	125	155	185	215	245
115	74 Viscose/13 Flax/13 Matt	Ton	3	33	63	93	123	153	183	213
116	2/48 NM 74 Viscose/26PBT Cored Yarn	Ton	12	42	72	102	132	162	192	222
117	2/50 NM 72 Viscose/28PBT Core Spun Yarn	Ton	28	58	88	118	148	178	208	238
118	2/50 NM 70 Viscose/30 PBT Core Yarn	Ton	7	37	67	97	127	157	187	217
119	1/24 NM 65/35 Viscose/Nylon Sarry	Ton	3	33	63	93	123	153	183	213
120	1/24 NM 65/35 Viscose/Nylon Sarry	Ton	3	33	63	93	123	153	183	213
121	2/28 NM 52/26/22 Viscose/PBT/ Nylon	Ton	3	33	63	93	123	153	183	213
122	2/28 NM 52 Viscose/26PBT/22	Ton	6	36	66	96	126	156	186	216
123	2/48 NM 52 Viscose/28 PBT/20 Nylon Core Yarn	Ton	157	187	217	247	277	307	337	367

124	2/30 NE 50 Viscose/50 Recycled Polyester Vortrx Spinning	Ton	3	33	63	93	123	153	183	213
125	2/30 NE 50 Viscose/50 Recycled	Ton	41	71	101	131	161	191	221	251
126	2/50 NM 50 Viscose/50 Acrylic	Ton	12	42	72	102	132	162	192	222
127	2/50 NM 50 Viscose/50 Acrylic	Ton	6	36	66	96	126	156	186	216
128	2/50 NM 50 Viscose/50 Acrylic	Ton	8	38	68	98	128	158	188	218
129	2/50 NM 50 Viscose/50 Acrylic	Ton	193	223	253	283	313	343	373	403
130	2/50 NM 50 Viscose/ 50 Acrylic	Ton	29	59	89	119	149	179	209	239
131	2/30 NE 50 Viscose/50 Acrylic AB Yarn	Ton	19	49	79	109	139	169	199	229
132	2/40 NE 50 Viscose/50 Acrylic	Ton	7	37	67	97	127	157	187	217
133	2/50 NM 50 Viscose/50 Acrylic	Ton	11	41	71	101	131	161	191	221
134	2850 NM 50 Viscose/50 Acrylic	Ton	26	56	86	116	146	176	206	236
135	2/50 NM 50 Viscose/50 Acrylic	Ton	29	59	89	119	149	179	209	239
136	3/32 NE 43 Viscose/50 Tencel/5 Spun silk	Ton	4	34	64	94	124	154	184	214
137	1/6.5 NM 54Flax/24 Cotton/22 Viscose	Ton	6	36	66	96	126	156	186	216
138	2/21 NE 100% Acrylic	Ton	31	61	91	121	151	181	211	241
139	1/9 NM 100% Acrylic Mohair	Ton	3	33	63	93	123	153	183	213
140	1/13 NM 100% Acrylic Mohair	Ton	14	44	74	104	134	164	194	224
141	2/28 NM Bulk Acrylic	Ton	2	32	62	92	122	152	182	212
142	2/32 NM Bulk Acrylic	Ton	1	31	61	91	121	151	181	211
143	2/26 NM Bulk Acrylic	Ton	23	53	83	113	143	173	203	233
144	2/26 NM Bulk Acrylic	Ton	2	32	62	92	122	152	182	212
145	2/28 NE Bulk Acrylic	Ton	28	58	88	118	148	178	208	238
146	2/23 NE Bulk Acrylic	Ton	5	35	65	95	125	155	185	215
147	2/28 NE Bulk Acrylic	Ton	49	79	109	139	169	199	229	259
148	2/28 NE Bulk Acrylic	Ton	25	55	85	115	145	175	205	235
149	2/26 NM Bulk Acrylic	Ton	6	36	66	96	126	156	186	216
150	2/28 NM Bulk Acrylic	Ton	4	34	64	94	124	154	184	214
151	2/26 NM Bulk Acrylic	Ton	5	35	65	95	125	155	185	215
152	2/28 NM Bulk Acrylic	Ton	3	33	63	93	123	153	183	213
153	2/29 NE Bulk Acrylic	Ton	10	40	70	100	130	160	190	220
154	2/32 NM Soft Acrylic	Ton	13	43	73	103	133	163	193	223
155	2/32 NE Bulk Acrylic	Ton	5	35	65	95	125	155	185	215
156	2/21 NE Bulk Acrylic	Ton	8	38	68	98	128	158	188	218
157	1/3.2 NM Acrylic Tape Yarn	Ton	2	32	62	92	122	152	182	212
158	1/3.2 NM Acrylic Tape Yarn	Ton	2	32	62	92	122	152	182	212
159	2/40 NM imitation of Cashmere	Ton	74	104	134	164	194	224	254	284
160	2/38 NM Imitation of Cashmere	Ton	20	50	80	110	140	170	200	230
161	1/2.4 NM 90 Acrylic/10 Wool Iceland Yarn	Ton	5	35	65	95	125	155	185	215
162	3/8 NM 86Bulk Acrylic/4 Polyester/ 10N Hollow Yarn	Ton	13	43	73	103	133	163	193	223
163	2/30 NE 75 Acrylic/25 Polyester	Ton	10	40	70	100	130	160	190	220
164	1/17 NM 75 Acrylic/25 Nylon TT Yarn	Ton	5	35	65	95	125	155	185	215
165	2/16 NE 70 Bulk Acrylic/30 Cotton	Ton	10	40	70	100	130	160	190	220
166	1/16 NM 63 Acrylic/25Nylon/4Spand/8 Wool	Ton	23	53	83	113	143	173	203	223
167	2/18.5 NM 50Rayon/50 Acrylic	Ton	7	37	67	97	127	157	187	217
168	1/12 NM 61 Acrylic/27 Nylon/5 Spandex/7 Alpaca Hair Mohair	Ton	3	33	63	93	123	153	183	213

169	2/3.8 NM 60 Acrylic/40PPT Chenille Yarn	Ton	6	36	66	96	126	156	186	216
170	2/28 NM 52/26/22 Acrylic Viscose/PBT/Nylon	Ton	4	34	64	94	124	154	184	214
171	1/3.8 NM 60 Acrylic/40 Polyester Bulk Yarn	Ton	4	34	64	94	124	154	184	214
172	1/3.6 NM 50 Acrylic/45 Nylon/5 Polyester	Ton	17	47	77	107	137	167	197	227
173	2/22 NM 50 Bulk Acrylic/50 Polyester	Ton	3	33	63	93	123	153	183	213
174	2/32 NM 50Wool/50 Acrylic Ulight	Ton	3	33	63	93	123	153	183	213
175	2/17 NM 50Wool/50 Bulk Acrylic	Ton	16	46	76	106	136	166	196	226
176	1/13 NM 45 Acrylic/33 Nylon/3 Spandex/19 Wool	Ton	12	42	72	102	132	162	192	222
177	2/30 NE 45 Acrylic/50 Viscose/5 Wool	Ton	16	46	76	106	136	166	196	256
178	1/28 NM 24 Acrylic/24 Polyester/4 Wool	Ton	8	38	68	98	128	158	188	218
179	2/30 NE 45 Acrylic/50 Viscose/5 Wool	Ton	2	32	62	92	122	152	182	212
180	2/32 NM 30Wool/70 Acrylic	Ton	2	32	62	92	122	152	182	212
181	2/32 NM 30 Wool/70 Acrylic	Ton	2	32	62	92	122	152	182	212

Remark : Raw Materials are to be imported from china.

Table 1–4 List of Raw Material (For Auxiliaries)

No	Material	A/U	Year-1	Year-2	Year-3	Year-4	Year-5	Year 6-10	Year 11-20	Year 21-30
			Annual Production	Annual Production	Annual Production	Annual Production	Annual Production	Annual Production	Annual Production	Annual Production
1	High Temperature Leveling agent	KG	960	900	1020	1050	1080	1100	1140	1170
2	Healant	KG	250	280	310	340	370	400	430	460
3	Peregal O	KG	1753	1783	1813	1843	1873	1903	1933	1963
4	ALBEGAL SET	KG	3172	3202	3232	3262	3292	3322	3352	3382
5	ALBEGAL PLUS	KG	125	155	185	215	245	275	305	335
6	Argacel CCA	KG	417	447	477	507	537	567	597	627
7	ARGASTAT TM	KG	1210	1240	1270	1300	1300	1360	1390	1420
8	Lyocol PRDN liq	KG	167	197	227	257	287	317	347	377
9	Acrylic leveling agent rx-8202	KG	37724	37754	37784	37814	37844	37874	37904	37934
10	Sodium chlorite	KG	1335	1365	1395	1425	1455	1485	1515	1545
11	Low temperature scouring enzyme DHA-KFS	KG	23369	23399	23429	23459	23489	23519	23549	23579
12	Hydrogen peroxide solution	KG	184073	184103	184133	184163	184193	184223	184253	184283
13	Sodium Hydrosulfite	KG	20156	20186	20216	20246	20276	20306	20336	20366
14	Chelating agent 6401-AH	KG	24746	24766	24806	24836	24866	24896	24926	24956
15	Setamol WS	KG	7637	7667	7692	7727	7757	7787	7817	7847
16	Dispersant IW	KG	19864	19894	19924	19954	19984	20014	20044	20074
17	Liquid wax DH-100 A	KG	12185	12215	12245	12275	12305	12335	12365	12395
18	Soaping agent JY-358	KG	47197	47227	47257	47287	47317	47347	47377	47407
19	Reductive cleaning agent 6401	KG	16191	16221	16251	16281	16311	16341	16371	16401

20	Detergent 209	KG	24704	24734	24764	24794	24824	24854	24884	24914
21	Jian	KG	8346	8376	8406	8436	8466	8496	8526	8556
22	Aldehyde fixing agent 6401-GS	KG	81959	81989	82019	82049	82079	82109	82319	82169
23	DYAPOL WRF 200 B	KG	42	72	102	132	162	192	222	252
24	Acid fixing agent PAN	KG	9014	9044	9074	9104	9134	9164	9194	9224
25	Argafix 18 Con	KG	3005	3035	3065	3095	3125	3155	3185	3215
26	Levelling agent JY-378	KG	376	406	436	466	496	526	556	586
27	Softening agent JY-343	KG	139589	139619	139649	139679	139709	139739	139789	139799
28	Softening agent JY-363	KG	42732	42762	42792	42822	42852	42882	41912	42942
29	Softening agent LH399	KG	119266	119296	119326	119356	119386	119416	119446	119476
30	Liquid wax DH-100A	KG	125	155	185	215	245	275	305	335
31	Softening agent 6401-OK	KG	62512	62542	62571	62602	62632	62662	62692	62722
32	Softening agent 6401-ZJ	KG	1252	1282	1312	1342	1372	1402	1432	1462
33	Promoting agent 6401-ZJ	KG	28418	28488	28478	28508	28538	28568	28598	28628
34	Softening Agent JY-8088	KG	153986	154016	154046	154076	154106	154136	154166	154196
35	Softening Agent 8058	KG	6385	6415	6445	6475	6505	6535	6565	6595
36	Hydroscopic deodorant 6401-XSPH	KG	6510	6540	65700	6600	6630	6660	6690	6720
37	Ladipur RSK.CN kiq c	KG	42	72	102	132	162	192	222	252
38	Ladipur R3 CN liq c	KG	125	155	185	215	245	275	305	335
39	Ceralube SVN liq 133 EN	KG	501	531	561	591	621	651	681	711
40	Defoaming agent 6401-XP	KG	35387	35417	35447	35477	35507	35537	35567	35597
41	Penetrating agent 6401-XP	KG	7804	7834	7864	7894	7924	7954	7984	8401
42	Souring agent 6401-DH	KG	52998	53028	53058	53088	53118	53148	53178	53208
43	Souring agent 6401-JL	KG	1627	1657	1687	1717	1747	1777	1807	1837
44	Sodium acetate	KG	1085	1115	1145	1175	1205	1235	1265	1295
45	Sodium nitrate	KG	1502	1532	1562	1592	1622	1652	1682	1712
46	Sodium pyroosulfite	KG	42	72	102	132	162	192	222	252
47	Formic acid	KG	23870	23900	23930	23960	23990	24020	24050	24080
48	Ethanedioic acid	KG	2504	2534	2564	2594	2624	2654	2684	2714
49	Acetic acid	KG	208819	208849	208879	208909	208939	208969	208999	209029
50	Citric acid	KG	167	197	227	257	287	317	347	377
51	Ammonium sulfate	KG	14397	14427	14457	14487	14517	14547	14577	14607
52	Sodium carbonate	KG	913982	914012	914042	914072	914102	914132	914362	914192
53	Caustic soda	KG	25998	26028	26058	26088	26118	26148	26178	26208
54	Sodium bicarbonate	KG	709	739	769	799	829	859	889	919
55	Anti-phenolic yellowing agent FK-162A	KG	1794	1824	1854	18884	1917	1944	1974	2004
56	Antistatic agent	KG	1210	1240	1270	1300	1330	1360	1390	1420
57	Sodium sulfate	KG	2760014	2760044	2760074`	2760014	0760134	2760164	2760194	2760224
58	Tetra sodium pyrophosphate	KG	209	239	269	299	329	359	389	417
59	CROSULUBE TCA	KG	167	197	227	257	287	317	347	377
60	Composite polyalumium chloride	KG	428405	428435	428465	428495	428525	428555	428585	428615
61	Salt	KG	1051984	1052014	1052044	1052074	1052014	1052134	1052164	1052194
62	Decolorizing agent	KG	89011	89041	89071	89101	89131	89161	89191	89221
63	Polyacrylamide	KG	1168	1198	1228	1258	1288	1318	1348	1378
64	Sodium bisulfite	KG	1502	1532	1562	1592	1622	1652	1682	1712
65	Scale inhibitor	KG	1335	1365	1395	1425	1455	1485	1515	1545
66	Sterilizing agent	KG	1168	1198	1228	1258	1288	1318	1348	1378

Remark : Raw Materials are to be imported from china.

1.6.3 Product

The Myanmar Yarn & Fabric Technology Industry producing a lot of fabrics. Annual production and income statement is presented in Table 1-3.

Table 1–5 Annual Production & Income Statement

Currency in USD

Sr. No	Particulars(Type)	A/U	Year							
			1	2	3	4	5	6–10	11–20	21–30
(A)	**Production Quantity**									
1	**Various kinds of 100% Cotton Fabric** (100%bic cotton semi–mercerized (Long Staple) 100%bci cotton, 100%cotton 100% organic cotton 1 x 1 rib 100% organic cotton)	Ton	460	460	460	470	470	470	470	470
2	Various Kinds of 96% Catton Fabric (96%bci cotton 4%uSP 5x2rib, 95%bci cotton 4%uSP 5%sp, 95%bci cotton 5%sp, 95%oc cotton 5%sp, 92%oc cotton 8%elastance 3x3rib 92%bci cotton 8%elastance 3x3rib)	Ton	460	464	465	465	465	465	465	467
3	**Various kinds of 80%bci cotton Fabric** (80%bci cotton 20% poly, 80% cotton 20% poly, 60%bci cotton 40% poly, 60% cotton 40% poly)	Ton	460	470	473	473	473	473	473	473
4	**Various Kinds of 100%Polyster (100%Poly)**	Ton	460	450	450	450	450	450	450	450
5	**Various Kinds of 96% Poly Fabric** (96% Poly 4%sp, 95% poly 5%elastane, 95% poly 5%sp, 90% poly 10%elastane, 88% poly 12%elastane, 77% poly 23% viscose, 62% poly 23% viscose, 55% recycle poly 46T viscose 2%elastane, 95% modal 5%elastane, 85% modal 10% recycle poly 5%elastane)	Ton	460	464	464	467	467	468	467	467
6	**Various kinds of modal Fabric** (95% modal 5%elastane, 85% modal 10% recycle poly 5%	Ton	460	469	469	470	470	470	470	470

	elastane, 59% modal 36% polyster 5% sp 50% modal 50% cotton 95% Viscose 5% spandex 30s+20D 67% Viscose 58% poly 5%sp 6x4rib 58% viscose 42% poly 91% T 5%R 4%sp)									
7	**Various kinds of 100% Linen Fabric**	Ton	460	462	462	462	462	462	462	462
Total quality for production		**Ton**	**3320**	**3239**	**3243**	**3257**	**3257**	**3258**	**3258**	**3229**

Currency in USD

Sr. No	Particulars(Type)	A/U	Year							
			1	2	3	4	5	6–10	11–20	21–30
(B)	**Dyeing Price Per Unit for Products**									
1	**Various kinds of 100% Cotton Fabric** (100%bci cotton semi–mercerized(Long Staple), 100%bci cotton, 100% cotton, 100%organic cotton 1x1rib 100%organic cotton)	usd/M	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
2	**Various kinds of 96% Cotton Fabric** (96%bci cotton 4%sp 5x2rib, 95%bci cotton 4%sp 5%sp, 95% organic cotton 5%sp, 95%bci cotton 5%sp, 92%oc cotton 8%elastane 3x3rib 92%bci cotton 8%elastane 3x3rib)	usd/M	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60
3	**Various kinds of 80%bci Cotton Fabric** (80%bci cotton 20%poly, 80% cotton 20%poly, 60%bci cotton 40%poly, 60% cotton 40%poly,	usd/M	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
4	**Various Kinds of 100%Polyster(100%poly)**	usd/M	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
5	**Various Kinds of 96% Poly Fabric** (96%poly 4%sp 95%poly 5%elastane, 95%poly 5%sp, 90%poly 10%elastane, 88%poly 12%elastane, 77%poly 23%viscose, 62%poly 23%viscose, 52%recycle poly 46T viscose 2%elastane, 95%modal 5%elastane,	usd/M	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20
6	**Various Kinds of modal Fabric** **(95%modal 5%elastane,** **85%modal 10%recycle poly 5%elastane,**	usd/M	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25

	59%modal 36%polyster 5%sp 50%modal 50%cotton 95%viscose 5%Spandex 30s+20D 67%viscose 58%poly 5%sp 6x4rib 91%T 5%R 4%sp)									
7	Various kinds of 100%Linen Fabric	usd/M	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30

Currency in USD

Sr. No	Particulars(Type)	A/U	Year							
			1	2	3	4	5	6–10	11–20	21–30
(C)	Total Sales									
1	Various Kinds of 100% Cotton Fabric (100%bci cotton semi–mercerized (Long Staple), 100%bci cotton, 100% cotton, 100%organic cotton 1x1rib 100%organic cotton)	USD	230	230	230	235	235	235	235	235
2	Various Kinds of 96% Cotton Fabric (96%bci cotton 4%sp 5x2rib, 95%bci cotton 4%sp 5%sp, 95% organic cotton 5%sp, 95%bci cotton 5%sp, 92%oc cotton 8%elastane 3x3rib 92%bci cotton 8%elastane 3x3rib	USD	276	278.4	279	279	279	279	279	280.2
3	Various Kinds of 80%bci cotton Fabric (80%bci cotton 20%poly, 80% cotton 20%poly, 60%bci cotton 40%poly, 60% cotton 40%poly)	USD	230	235	236.5	236.5	236.5	236.5	237	236.5
4	Various Kinds of 100%Polyster (100%poly)	USD	115	112.5	112.5	112.5	112.5	112.5	112.5	112.5
5	Various Kinds of 96% Poly Fabric (96%poly 4%sp, 95%poly 5%elastane, 95%poly 10%elastane, 88%poly 12%elastane, 77%poly 23%viscose, 62%poly 23%viscose, 52%recycle poly 46T viscose 2%elastane, 95%modal 5%elastane	USD	92	92.8	92.8	93.4	93.4	93.6	93.4	93.4
6	Viscose Kinds of modal Fabric (95%modal 5%elastane, 85%modal 10%recycled poly 5%elastane, 59%modal 36%polyster 5%sp	USD	115	117.5	117.5	117.5	117.5	117.5	117.5	117.5

	50%modal 50%cotton 95%viscose 5%Spandex 30s+20D 67%viscose 58%poly 5%sp 6x4rib 58%viscose 42%poly 91%T 5%R 4%sp)									
7	**Various Kinds of 100% Linen Fabric**	USD	138	138.6	138.6	138.6	138.6	138.6	138.6	138.6
Total Income from Production (USD)			**1196**	**1204.55**	**1206.65**	**1212.5**	**1212.5**	**1212.7**	**1213**	**1213.7**
Total Income form Production (USD in Thousand)			**1.196**	**1.20455**	**1.20665**	**1.2125**	**1.2125**	**1.2127**	**1.213**	**1.2137**

Note : Products are to be exported to Indonesia, Brunei, Malaysia, Cambordia, Thailand, Vitenam and Bangladesh.

Table 1–6 List of Profit and Loss Statement

Sr. No	Particular	Year–1	Year–2	Year–3	Year–4	Year–5	Year6–10	Year–11–20	Year–21–30
		US$	US$	US$	US$	US$	US$	US$	US$
I	**Income**	1196.00	1204.55	1206.65	1212.50	1212.50	1212.70	1213.00	1213.70
1	CMP–Export	1196.00	1204.55	1206.65	1212.50	1212.50	1212.70	1213.00	1213.70
II	**Expenditure**	1130.00	1130.00	1130.00	1130.00	1130.00	1130.00	1130.00	1130.00
1	Salary & Wages	800.00	800.00	800.00	800.00	800.00	800.00	800.00	800.00
2	Maintenance	100.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00
3	Depreciation		50.00	50.00	50.00	50.00	50.00	50.00	50.00
4	Administration	120.00	120.00	120.00	120.00	120.00	120.00	120.00	120.00
5	Selling Expense								
6	Fuel & Energy	60.00	60.00	60.00	60.00	60.00	60.00	60.00	60.00
7	Electricity	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00
8	Insurance								
9	Lease								
III	**Net Profit before Tax**	**66.00**	**74.55**	**76.65**	**82.50**	**82.50**	**82.70**	**83.00**	**83.70**
1	Income Tax								
IV	**Net Profit after Tax**	**64.68**	**73.06**	**75.12**	**80.85**	**80.85**	**81.05**	**81.34**	**82.03**
1	Corporate Social Responsibility – 2%	**1.32**	**1.49**	**1.53**	**1.65**	**1.65**	**1.65**	**1.66**	**1.67**

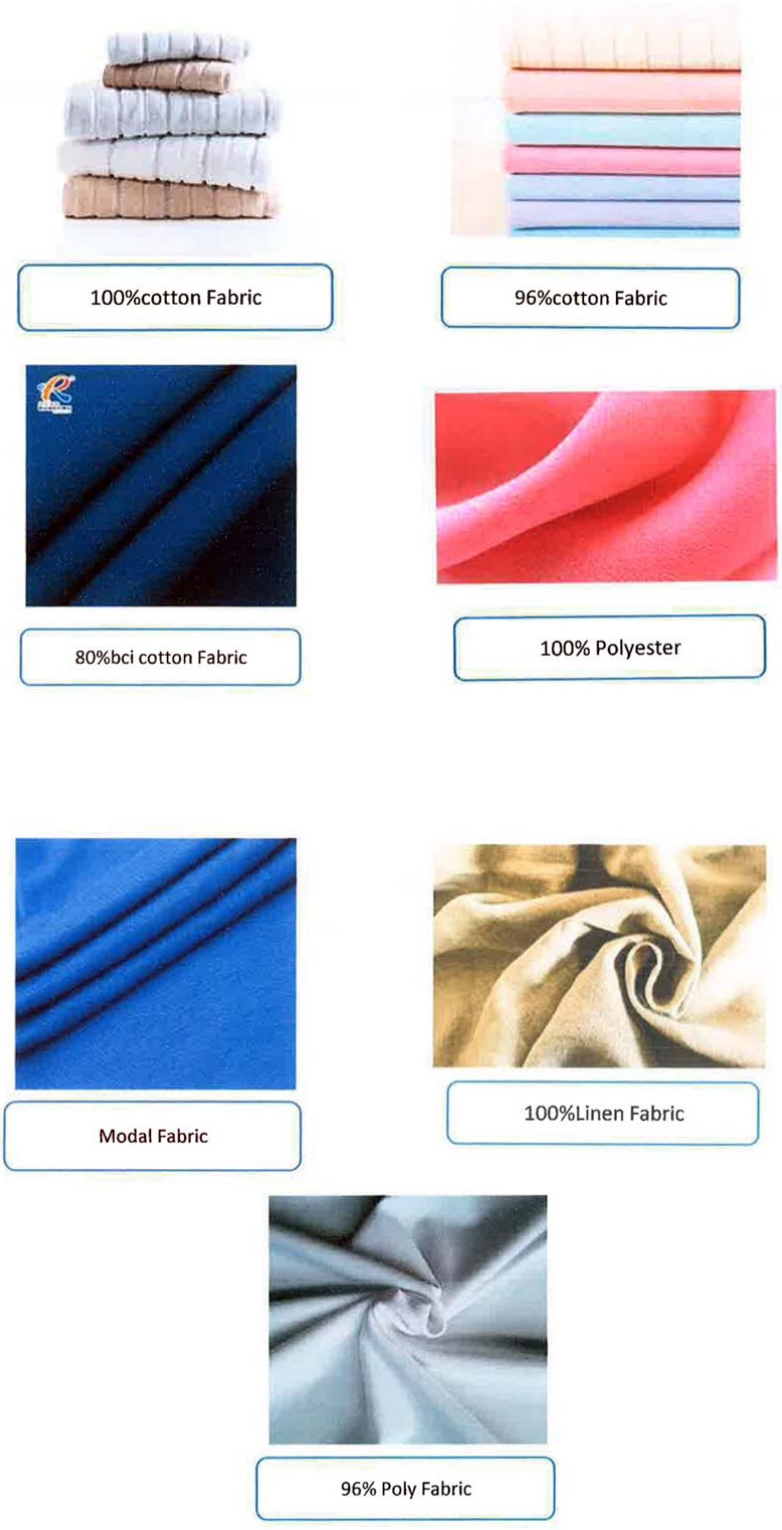


Figure 1–7 Product Photo

1.6.4 Human Resource

The proposed Factory of Myanmar Yarn & Fabric Technology Company Limited has the employees more than 99.9% are local people, who manage the company by their dynamic, enthusiastic, experienced, and cooperative skills. Currently, one shift (8 hours + overtime 2 hours) of production are running or operating. Management and team member detail of human resource is mentioned in Table 1–5.

Table 1–7 Manpower list on Myanmar Yarn & Fabric Technology Industry

(A) List of Local Employee

Sr No	Designation	Number of Person	Salaries/Month Kyat	Monthly–Kyats	Yearly–Kyats
1	General Manager	1	700,000	700,000	8,400,000
2	HR Manager	1	650,000	650,000	7,800,000
3	Secreaty	1	400,000	400,000	4,800,000
4	Production Dept	10	350,000	3,500,000	42,000,000
5	Store Supervisor	2	400,000	800,000	9,600,000
6	Translator	6	300,000	1,800,000	21,600,000
7	Technican	3	250,000	750,000	9,000,000
8	Quality Control (QC)	10	250,000	2,500,000	30,000,000
9	Store Keeper	5	200,000	1,000,000	12,000,000
10	Skill and Semi–skill Workers	70	200,000	14,000,000	168,000,000
11	Unskilled Workers	32	180,000	5,760,000	69,120,000
12	Driver	2	250,000	500,000	6,000,000
13	Security Staff	4	180,000	540,000	8,640,000
14	Cleaner	3	180,000	540,000	6,480,000
	Total	**150**	**4,490,000**	**33,620,000**	**403,440,000**

(B) **List of Overseas Employee**

Sr No	Designation	Number of Person	Salaries/Month US $	Monthly–US $	Yearly–US $
1	Factory Manager	1	1000	1000	12000
2	General Manager	1	900	900	1800
3	HR Manager	1	800	800	9600
4	Accounting Manager	1	800	800	9600
5	Purchasing Manager	1	800	800	9600
6	Quality Control, QC	2	800	1600	19200
7	Product Dept	2	800	1600	19200
8	Store Supervisor	1	600	600	7200
	Total	**10**	**6500**	**8100**	**97200**

1.6.5. Water Supply System and Water Use

The project was use groundwater for laundry use, domestic use and firefighting. The groundwater stores in the tanks with capacity of 90,000 gallons for fire–fighting and overhead tank with capacity of 18,000 gallons for domestic use. (See in Figure 1–10).

Figure 1–8 Water storage and filtration system

Currently about 300 employees, are at day shift workers (8:00 am to 5:00 pm). Based on world average, the average daily domestic demands in commercial/industrial settings range between 20 and 35 gallons per day (gpd) per employee. Since the factory has a maximum of 500 workers, factory water needs ranged from 20,000 to 30,000 gallons per day. All workers utilized drinking water imported from drinking water factory daily.

Other domestic use water utilized from purified water at factory compound.

The factory has 3 separated water distribution systems comprising production line use system, domestic use system and fire water system. Groundwater contains in ground storage tank with capacity of 90,000 gallons for fire–fighting. Treated water pumps to be stored in the overhead tank with 18,000 gallons on the water tower then water distribute to the factory operation area via pipes by gravity.

1.6.6 Water Drainage and flood protection

Kitchen and dishwashing sink was drainage pipe with 4–inch diameter PVC to drain wastewater from washing area into the concrete channel. Within the factory compound, there was drainage channel with concrete to collect rainwater in the factory area. The factory is located in Bago Township. This area has been suffered from flood problems during raining season. The factory has already provided internal rainwater drainage system in connection with local drainage system outside the factory to drain into Bago River to prevent flood problems.

Figure 1–9 Rainwater drainage in factory compound

1.6.7 Electricity system

The proposed project is intended to get required electricity supply form Bago City Electricity Supply Board (BESB) and distributed by 1600 KVA of Transformer. Other sources of energy 1000 KV generator will also be kept as the emergency generator if normal electricity supply could not provide for the proposed project. Electricity distribution room is shown in Figure 1–12.

Figure 1–10 Electricity distribution room

1.7 Wastewater Treatment

1.7.1 Wastewater and sewage collection system within the factory

All type of sewage drained from toilet, bathroom and other areas in which there is water usage was collected into underground septic tank. Wastewater pipes from kitchen, dish washing sink and office area to drain into factory drainage channel for further draining into oil and grease trap prior to sending to the silt trap then discharge to the storm water channel.

1.7.2 Flow and Water Quality of Wastewater

According to the information provided by the owner, the waste water to give treatment of water quantity and quality of the project are listed in the following table:

The name of The wastewater	Water yield (tons/day)	Water quality index of Wastewater : The average COD (mg/L)	SS (mg/L)	pH value
Comprehensive Sewage	3000	<2000	300	5–6

1.7.3 Water Quality Standards after Treatment

The main effluent quality for 3000m^3/d treatment plant should meet the following indicators:

Index	Unit	Standard
CODcr	mg/L	≤200
pH	–	6–9
SS	mg/L	≤70

1.7.4 Characteristics of Printing and Dyeing Wastewater

The raw water of this project is printing and dyeing wastewater, it has the following characteristics according to the characteristics analysis of our company in the same type of printing and dyeing enterprise wastewater:

The quality of printing and dyeing wastewater is complex and its pollutants can be divided into two categories by source: a kind of entrainment forms the fibrous material itself; another kind is the slurry, oil agent, dye, chemical auxiliary agent used in the process. The characteristics of its wastewater are analyzed in the following aspects:

Large amount of water may be high content of organic pollutants, deep color, alkaline and pH value changes, the charge of water quality. Due to the development of chemical fiber fabric and the process of finishing technology after printing and dyeing, large number of non–biodegradable organic matter such as PVA paste and new auxiliaries enter the printing and dyeing wastewater, which increases the difficulty of treatment.

The pH value, CODCr, BOD5 and color in wastewater are also different due to the dyeing and finishing requirements of different dyes, different auxiliaries and different fabrics, but the common characteristic is that the BOD5/CODCr value is very low, generally around 20% and the biodegradability is poor. Therefore, measures should be taken to increase the BOD5/CODCr value to 30% or higher to facilitate biochemical treatment.

Another Characteristic of printing and dyeing wastewater is high Chroma; some can be up to more than 4000 times. Therefore, one of the most important tasks of printing and dyeing waste water treatment is to decolorize, so it is necessary to study and select effective decolorizing bacteria, effective decolorizing coagulants and the processing technology that is conducive to decolonization.

In the printing and dyeing industry, the use of PVA paste and new auxiliaries greatly increases the content of refractory organic compounds in wastewater. In particular, the content of CODCr caused by PVA paste accounts for a large proportion of the total CODCr of printing and dyeing wastewater, and the common microorganisms used for water treatment are difficult to degrade this part of CODCr. Therefore, it is necessary to study and screen the microorganisms used to degrade PVA.

In addition, due to the intermittent operation of production, there is fluctuation of water quality; the chemical flocculation effect is relatively poor for the wastewater with VAT dye, sulfide dye and ice dye. Therefore, the treatment process should consider these factors, to have a certain capacity to adapt to the change of water quantity, water quality load.

Therefore, the selection of pretreatment process, membrane materials and the determination of the overall process needs to fully consider the characteristics of printing and dyeing wastewater.

Type of Typical Printing and Dyeing Wastewater

(a) DE sizing wastewater: the wastewater is light yellow, containing pulp decomposition, fiber debris, enzymes, etc.; the wastewater is alkaline, pH value of about 12; COD and BOD5 content of about 45% of printing and dyeing wastewater.

(b) Souring wastewater: large amount of water, has a large amount of water, a light degree of pollution, low COD, a relatively clean wastewater can be directly discharged of recycled.

(c) Bleaching wastewater: the waste water has a large amount of water, a light degree of pollution, low COD, a relatively clean wastewater can be directly discharged or recycled.

(d) Mercerization wastewater: the wastewater is more alkaline, high COD and Chroma.

(e) Dyeing wastewater: the water quality changes greatly; the wastewater generally shows strong alkalinity; the water quality is large; the water quality contains slurry, dye, additives, surfactants, etc. the wastewater Chroma can be up to several thousand times; the COD is generally 300~1000 mg/L; B/C is generally less than 0.2.

(f) Printing wastewater: the printing wastewater mainly comes from the washing wastewater of color paste, printing roller and printing screen, as well as the soaping and washing wastewater after printing. The water quality is larger, the pollutant concentration and COD value is higher.

(g) Sorting waste water: the amount of wastewater is small, which contains fiber chips, resins, oils, pastes, surfactants, formaldehyde, etc. Because the amount of water is small, the effect on the water quality of mixed wastewater is also small.

(h) Alkali–minimization wastewater: high pH value and organic matter concentration; COD can be up to ten thousand; polymer organic matter and some dyes are difficult to be biodegradable. This water belongs to high concentration refractory organic wastewater.

1.7.5 Selected Sewage Treatment Process of Myanmar Yarn & Fabric Company Limited.

(1) The design of this project adopts the biochemical treatment means of anaerobic hydrolytic – aerobic, namely A/O process. On the on hand, it is conducive to the transformation of refractory macromolecular substances into small molecular substances through anaerobic process, so as to improve the biodegradability of wastewater. It can reduce the Chroma of wastewater.

(2) The sludge area is built near the road to facilitate the later sludge transportation and treatment.

1.7.6 Principles of Wastewater Treatment of the Myanmar Yarn & Fabric Company Limited.

According to the characteristics of incoming water and the owner's technical requirements, this technical document will carry out the scheme design according to the following principles:

(1) Conscientiously implement the guidelines and policies of the state on environmental protection and make the design conform to the relevant national laws, regulations and standard.
(2) Considering the characteristics of wastewater quality and quantity, the selected process is advanced, reliable, economical, flexible and safe.
(3) The treatment process of the system must be specific, stable and effective in removing pollutants from the wastewater to ensure that the treated water quality meets the effluent standard.
(4) In addition to meeting the requirements of the process should be minimized construction investment, compact facilities.
(5) Proper disposal of sewage sludge and scum generated in the process of treatment to avoid secondary pollution.
(6) The scheme should adopt advanced and reliable system equipment, reduce the maintenance workload of the system and extend the service life of the equipment, so as to ensure the long-term normal operation of the system.
(7) Automated control systems are used in critical processing units to ensure processing effectiveness and reduce labor requirements.
(8) Comprehensively consider the available land of the enterprise and reasonably arrange the direction of sewage pipeline to reduce the cost of pipeline investment.

1.7.6 Technological Process

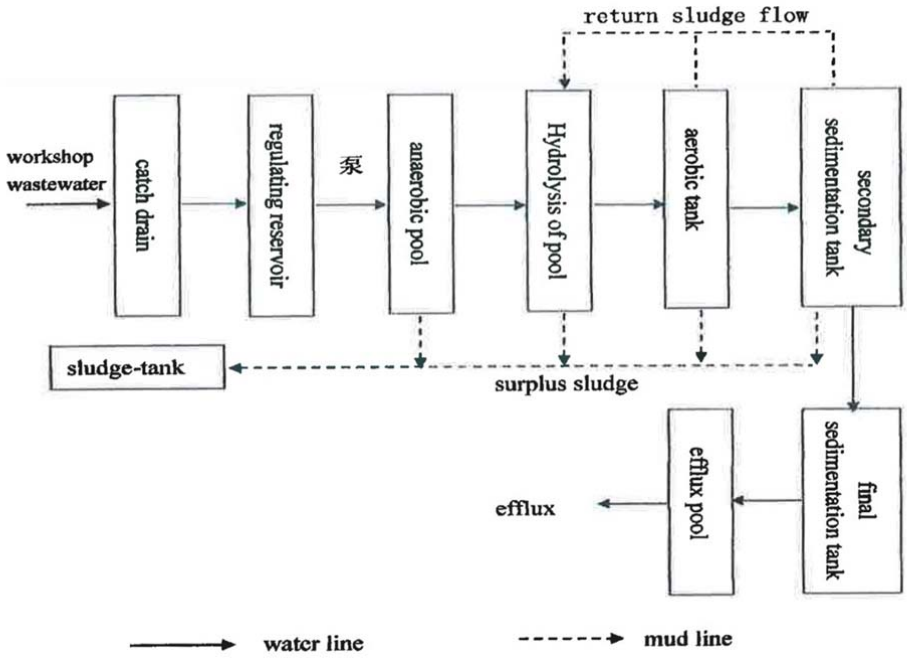


Fig : 1-11 Stages and processes of wastewater flow

After collecting 3000m^3/d workshop waste water, it flows into the regulating tank through a ditch or a pump, where the water quality and quantity is adjusted. Then it is pumped into the anaerobic tank. Through the function of the anaerobic tank, some organic matter in the waste water is removed, and some Chroma of the wastewater is taken away, and then it enters the hydrolysis tank. During the process of hydrolyzing and acidizing, microorganisms degrade the refractory macromolecules into small molecules and improve the biodegradability of wastewater. Subsequently, the superfine liquid flows into aerobic tank, and the organic matter in the waste water is decomposed by microorganisms to generate CO_2, H_2O and other inorganic substances, which can be converted from harmful to harmless, and the wastewater is purified. The sludge in the aerobic tank is partly returned to the tank and party discharged into the sludge concentration tank. After that, the sludge mixture was separated into solid and liquid in the secondary sedimentation tank. Most of the precipitated sludge was returned to the aerobic tank and the remaining sludge was discharged to the sludge concentration tank. The supernatant of the second sedimentation tank flows into the final sedimentation tank, and the waste water is fully mixed with coagulant to from flocculent and they enters the coagulation sedimentation tank for precipitation and separation. The SS and toxic substance in the water are removed by chemical precipitation method. The final sedimentation tank can be increased or decreased according to the water quality after treatment. And finally, it flows into the drain pool.

1.7.7 Function of Wastewater Treatment System

In order to achieve the treatment effect, the treatment system designed in this scheme includes the following main units:

Processing Stage	Structure and Equipment	Function
1	Adjusting tank	Used for collecting workshop waste water and regulating water quality and quantity; it is suggested to set a grid to remove large particles and sundries, and to set a grid in front of the regulating pool or other more sophisticated grid to intercept and remove suspended substances.
2	Anaerobic pool	Using the function of anaerobic bacteria, the organic matter is hydrolyzed, acidified and machinated, so the organic matter in the wastewater is removed, and the biodegradability of the wastewater is improved.
3	Hydrolysis acidification Pool	In the facultative anaerobic state, through the adsorption of facultative bacteria, biodegradable organic matter in wastewater is degraded, and large organic matter is decomposed into small molecules, so as to improve the efficiency of subsequent biochemical treatment.

4	Aerobic tank	The process rapidly degrades biodegradable organic pollutants in wastewater by adsorption of aerobic microorganisms under aerobic conditions.
5	The secondary sedimentation tank	The colloid and fine suspended matter in the waste water were precipitated and separated in the tank to reduce the Chroma, turbidity, COD and other indexes of the wastewater.
6	The final sedimentation tank	To ensure effluent and reuse requirements, coagulants and decolorizes were added to the final sedimentation tank to further remove COD, SS, Chroma and other indicators.
7	Sludge thickener	Used for sludge concentration and storage.
8	Filter press	Used for drying the concentrated sludge and then transporting the sludge for comprehensive utilization.
9	Efflux pool	Used for water storage and then water flows into the pipe network.

1.7.8 Removal Efficiency

Table – removal rate of each unit

Processing Unit	CODcr		pH
	Effluent (mg/L)	Removal Rate(μ)%	effluent
Inflow	≤2000	/	/
Anaerobic pool	≤1000	50	
Hydrolysis of pool	≤800	20	
Aerobic tank	≤200	75	7–8
Effluent quality Requirements	≤200		6–9

1.7.9 Pretreatment of Wastewater

In this scheme, the pretreatment part mainly uses the regulating pool to balance water quantity, homogenize water quality, adjust pH and cool down the wastewater, and reduces the impact of water quantity and water quality changes on the substances treatment unit.

1.7.10 Biological Treatment of Wastewater

The reuse water treatment systems of the project adopt a three–stage treatment system with biological treatment as the core. Considering that the COD concentration of this project is relatively low and the ratio of B/C is moderate, decided to adopt anaerobic + hydrolysis acidification process with aerobic activated sludge method process, on the basis of

quickly and effectively remove the soluble pollutants but also has advantages of less floor space and easy operation no ensure the stability of the effluent to meet the emission requirements:

- The treatment effect and process stability is good; and has a high buffering capacity against incoming water.
- Less mechanical equipment and simple daily maintenance.
- Less floor space, no adverse impact on the surrounding environment.

1.7.11 Characteristics of Selected Wastewater Treatment System

Based on the above contents, the wastewater treatment system designed in this scheme has the following characteristics:

- The wastewater treatment system designed in this scheme has high reliability under the condition of the investment.
- Hydrolytic treatment in the process can reduce the pH value of wastewater and improve the biodegradability of wastewater, which is conducive to the subsequent biological treatment.
- The system runs stably; has very strong anti–impact load ability and the management is convenient.
- Advanced treatment technology, effective pretreatment of wastewater to ensure the normal operation of subsequent treatment units.
- The possibility of secondary pollution is fully considered to minimize its impact.

1.7.12 Function and equipment for each unit

(A) Regulating Reservoir

– Processing capacity: Q≤6000m^3/d, average 250m^3/h

– Function: After each workshop wastewater is collected, it enters the regulating pool to

– Adjust the water quality and quantity, and then uses the lifting pump.

– Performance parameters: plane size: 55.0 X 20.0m, depth: 4.5m, effective water depth: 4.0m

– Effective volume: =4400m^3

– Standing time: 17.6h

– **Structure: underground steel concrete structure**

– **Configure Device:**

- Filter grille: mechanical grille

  B=5mm

- Mixing method: three sets of submersible mixer

  N=7.5kw

- Lifting pump type:

  Flux: Q=173m^3/h

  Lift: H=24m

Power P=17.3Kw

Quantity: two sets (with a case)

The impeller and shaft are made of stainless steel

- One set of pH on–line detector
- One set of acid and base regulating system

(B) **Anaerobic Pool**

– Processing capacity: Q≤3000m^3/d, average 125m^3/h

– Performance parameters: plane size: 10x12m, depth: 12m, effective water depth: 11.5m

– Effective volume: =1805.5m^3

– Structure time: = 14.4h

– Structure: steel structure of complete equipment

(C) **Hydrolysis of Pool**

– Processing capacity: Q≤3000m^3/d, average 125m^3/h

– Performance parameters: plane size: 17.7x29.3m, depth:6.0, effective water depth: 5.6m

– Effective volume: =2904m^3

– Standing time: = 23.23h

Configure Device:

- Submersible water impeller : QJB4/4–1800/3–56

  Quantity: 4sets

  Power: 4kw

(D) **Aerobic Tank**

Processing capacity: Q≤3000m^3/d, average 125m^3/h

Function: In the aerobic pool, the organic matter in the wastewater is decomposed by microorganisms to produce CO2, H2O and other inorganic substances, which can be converted from harmful to harmless, so that the wastewater can be purified, and biochemical processes can be used to a greater extent to improve the utilization rate of the pool.

– Performance parameters: plane size: 17.7x29.3m, depth: 6.0m

– Effective volume: 3142m^3

– Standing time: 25.14h

– Structure: ground type steel concrete structure

Configure Device:

- Fine bubble aerator

  Quantity” 2535 sets

  Texture: ABS

  Model: KBB216

- Air supply system

  Fan model: RSR–200
  Fan number: 3sets (2 in 1 case)
  Wind pressure: 63.7Kpa
  Power: 75Kw
  Air volume of a single fan: 46.41m^3/min
- Circulating pump model:

  Flux: Q=100m^3/h
  Lift: H=12.5m
  Power N=5.5Kw
  Number: 2sets (with a case)
- 2 sets of online dissolved oxygen detector

(E) **Secondary Sedimentation Tank**

– Processing capacity: Q≤6000 m^3/d, average 250m^3/h

– Function description: under the action of gravity, the activated sludge in the wastewater is separated from the clear liquid mud water; the activated sludge is returned to maintain the biochemical sludge concentration, and the effluent water quality is stable.

– Performance parameters: plane size: 24, depth 5.0 m

– Surface load: 0.55m^3/m^2.h

– Structure ground type steel concrete structure

Configure Device:

- Sludge pump mode:

  Flux: Q= 143m^3/h
  Lift: H=16m
  Power: N=11Kw
  Number: 2 sects (with a case)
- One set of full–bridge peripheral drive mud scraper

(F) **Final Sedimentation Tank**

– Processing capacity: Q≤6000 m^3/d, average 250m^3/h

– Function description: further remove the Chroma, SS and organic matter in the wastewater by adding the reagent.

– Performance parameters: plane size: 20, depth: 4.5m

– Surface load: 0.79m^3/m^2.h

– Structure: ground type steel concrete structure

Configure Device:

- One set of full–bridge peripheral drive mud scraper
- 3 sets of dosing plants
- 2 sets of mixers

(G) **Efflux pool**

- Function: store clean water after treatment, to be sent to reverse osmosis equipment.
- Performance parameters: plane size: 10 x 10m, depth of water: 4.5m effective volume : 420m^3
- Structure: ground type steel concrete structure
  - Discharge pump model: (for reference, if discharged directly into the river can be excluded)

    Flux: Q = 200m^3/h
    Lift: H=12.5m
    Power: N=15Kw
    Number: 2sets (with a cause)

(H) **Sludge thickener**

- Function: store the sludge discharged from the sedimentation tank and concentrate the sludge.
- Performance parameters: plane size 10x10m, depth: 4.5m, one set
- Effective volume: 350m^3
- Structure: steel concrete structure above ground

Configure Device:

- Plate and frame filter press, A=200m^2 (adjust according to the actual water quality)

  One set
- One set of pressure sensor
- One set of diaphragm pump
- One set of vertical multi–stage centrifugal pump

1.7.13 **Determination of Machines & Equipment Selection**

Equipment selection refers to the purchase of equipment, according to the production process requirement and market supply conditions, is accordance with the advanced technology, reasonable economy, production applicable principles, as well as the feasibility, maintainability, operability and energy supply requirements, optimization program.

As far as possible, all network equipment is selected from the same manufacturer, so as to have more advantages in terms of equipment interconnectivity, protocol interoperability, technical support and prices.

(A) **Selection of the Pump**

The pumps selected in this scheme are SLW series horizontal centrifugal pumps provided by Liancheng pumps.

SLW series single stage single suction horizontal centrifugal pump is based on the improved design of SLS series vertical centrifugal pump, Its performance parameters are equivalent to SLS series pumps, Its performance parameters are equivalent to SLS series pumps, and in line with ISO2858 requirements, products in strict accordance with the

requirements of the organization of production. The product quality is stable and the performance is reliable. So it is a novel horizontal centrifugal pump which replaces IS type horizontal pump, DL type pump and other conventional products.

SLW series horizontal centrifugal pumps used for conveying clean water and other liquids with similar physical properties the temperature of the medium used is below 80· C. It is suitable for industrial and urban water supply and drainage, pressurized water supply in high–rise buildings, sprinkler irrigation in gardens, pressurized water supply in firefighting, long–distance water supply, heating, cold and warm water circulation pressurization in bathrooms and supporting equipment etc.

Selected Product Feature:

- Compact structure. This series of pumps is horizontal structure, machine and pump integration, beautiful appearances, less floor area, compared with the common horizontal pump floor area reduced by 30%
- Smooth operation, low noise, high concentricity of components. Direct connection between the motor and the pump, which simplifies the intermediate structure, to enhance the stability of operation; the impeller has a good static and static balance, running vibration is small, improve the use of the environment.
- No leakage. The shaft seal adopts corrosion–resistant cemented carbide mechanical seal, which solves the problem of serious leakage of centrifugal pump packing and ensure a clean and tidy operation site
- Easy maintenance. The series horizontal pump is a rear door type structure, which can be repaired without removing the pipeline.
- The series horizontal pump form the inlet direction, the pump outlet can be installed in horizontal left, vertical upward and horizontal right three directions arbitrarily.

(B) Selection of the fan

The blower selected in this scheme is RSR series roots blower provided by Shandong Mingtian machinery CO., LTD.

Shandong Mingtian machinery CO., LTD is leading products RSR series roots blower is to absorb the advanced experience of roots blower design at home and aboard, and then optimize the design from their own. The volume efficiency is further improved by adopting the compound core profile on the impeller. The flow rate is from 0.6m^3/ min–250m^3/min, and the pressure is increased by 9.8Kpa–98Kpa. It has a total 21 models, more than 300 specifications, and small size, large flow, low noise, smooth and reliable operation and other characteristics.

Advantages and features of RSR series three–leaf roots blower:

- Low noise. The fan inlet and exhaust port adopts spiral shape, internal backflow and other world advanced structural design scheme, so that the process of inlet and exhaust according to the direction of the spiral line, to avoid the pulsating noise and vibration of the old fan when it exhausts. Meanwhile, by using a muffler with a noiseless air filter the matches the fan, the sound of the fan is much lower than in the past.

- High adiabatic and volumetric efficiency, thus it saves energy. The impeller adopts advanced compound wire, which is machined by precise numerical control machine. After the impeller assembly, the clearance is even, and the volume efficiency can be greatly improved.
- Stable performance: the fan rotor, housing wallboard, shaft and other key parts, all adopt advanced CNC machining equipment, so that the interchangeability of parts improved.
- Low vibration: although the rotor has been precisely machined, it is in equilibrium, still uses the high precision dynamic balance equipment to carry on the balance. Therefore, the fan runs without vibration.
- Adopt high precision and high hardness synchronous gear, which is 20CrMnTi material, so as to precision up to GB/T10095 accuracy. The tooth surface and cone hole were carburized and quenched, and the hardness reached. HRC56–62. It is not only the life of the fan extended but also effectively reduces the nose.
- This series of fan bearings adopt imported bearings to make the product quality more reliable.
- Output air is clean, which does not contain any oil and dust. Fan sealing structure is reasonable, so that the oil cannot enter the housing, thus air clean.

Belt drive three–leaf roots fan and imported form the United States.

1.7.14 Electrical Design

The electrical design of this project includes the dynamic design of the sewage station area. The main contents are as follows:

- Calculation of electrical load and low voltage power supply and distribution system. The design limit shall be 0.4KV cable into the distribution cabinet.
- As the electrical load of the project is medium and low, the power supply voltage of the sewage station is determined to be 0.4kv, which is directly introduced from the company's distribution room to the control room.

The control box of the wastewater treatment system shall be repeatedly grounded with a grounding charge less than 4 ohms.

- The 0.4kv power supply cable from the substation in the plant is connected to the distribution cabinet of the distribution room and supplied to the electric equipment through the output cable (wise). The distribution of the whole station adopts the method of combining trunk type and radiation type, adopts the way of bridge lying.
- The power distribution room is equipped with flow unit motor operation and fault display.

(i) List of Electricity Facilities

List of engineering electricity facilities

Sr. No	Device Name	Model	Stand By (plant Form)	Total Number (Platform)	Unit Power (Kw)	Total Power (Kw)	Elapse Time (h)	Power consumption (Kw.h)
1	Lift pump	Q–173m3/h, H=24m	1	2	18.5	37	20	370
2	Submersible Mixer	QJB7.5/12–620/3–480	0	3	7.5	22.5	24	540
3	Anaerobic treatment		1	1	15	30	20	300
4	Submersible Pusher	QJB4/–1800/3–56	0	4	4	16	24	384
5	Roots blower	RSR–200	1	3	75	225	24	2700
6	Circulating pump	Q=100m^3/h, H=12.5m	1	2	5.5	11	8	44
7	Sludge pump	Q=143m^3/h, H=16m	1	2	11	22	8	88
8	Diaphragm pump			1	7.5	7.5	10	75
9	Vertical multistage centrifugal pump			1	4	4	2	8
10	Other					15	15	225
11	Total	Installed power /h				390		
12	Total 2							4734

1.7.15 General Plan and Station Layout

A. Through operation management, find out the operation method more suitable for the sewage station. Including biological treatment, Oxidation reaction, physical treatment and so on.

B. Daily monitoring indicators with be observed such as temperature, pH, COD_{Cr}, SS, biological microscopy, Chroma and turbidity.

C. The proponent always seek proper disposal of grid slag, sediment, sludge and odor generated during sewage treatment and avoid secondary pollution to the environment.

The Company put people first and gives full consideration to measures that are convenient for operation and management. The Company always utilizes fully automatic control system in sewage treatment.

Strive for safe and reliable, economical and practical, to improve the management level, reduce labor intensity and operating costs.

(i) **Station Layout**

The wastewater treatment system covers an area of about 6000 square meters.

(ii) **Location of the Main Structure**

According to the needs of the process flow, each structure is arranged reasonably, and the pretreatment unit, biological treatment unit and deep treatment unit are organically combined. As far as possible, the structures should be designed in conjunction with each other, with clear distribution of functional objects, smooth roads around, and reasonable spacing between structures. The Company takes into account the requirements of construction, operation and maintenance, coordinate the relationship between plane layout, elevation layout and pipeline layout, and strive for a reasonable and perfect overall layout.

(iii) **Pipeline layout in Station Area**

According to elevation, all process pipelines and waste water pipelines in the station are divided into open pipe laying and closed pipe lying. We will lay the dark tube ad far as possible, according to the beautiful, practical, saving, maintenance and repair convenient principle layout. The pipeline between the structures should be short and quick to avoid twists and turns, so as to make the water flow smooth.

1.7.16 **Environmental Protection, Energy Saving and Labor Hygiene**

(a) **Environmental Protection**

The operation of water treatment facilities has some secondary effects on the surrounding environment, in view of the main pollution sources and pollutants, take corresponding measures.

(i) Impact analysis of atmospheric environment

The water treatment process produces a certain amount of odor, mainly for the smell of sewage; it has little effect on the atmospheric environment.

(ii) Ambient noise

The main source of noise is machinery such as working pump and blower, adopt measures to reduce mania:

- ❖ Reduce noise by the distance of sound: increases the distance between sound sources and adjacent buildings.
- ❖ Reduce noise through sound insulation: conduct sound insulation treatment on the partition wall, door and window between the equipment.

- ❖ Reduce noise by damping: add damping pad or flexible joint at the connection of equipment and pipeline.
- ❖ Reduce noise through greening: plant green, dense forest belt.

(iii) Solid waste

The main sources of solid waste are sludge generated by the dosing of physicochemical treatment units and backwash sewage from filters. Comprehensive utilization of physicochemical sludge after press and dehydration, reverse flush the sewage and return it to the sewage treatment system for treatment. Through these measures, the secondary impact on the surrounding environmental will be reduced to a lower level.

(b) **Energy Saving Measures**

Overall layout, full consideration of project site selection, in order to reduce the buried depth and transmission distance of the pipeline, reduce the head of the pump, and maximize the energy saving, High efficiency and energy saving water pump are selected to absorb the advanced experience of roots blower design at home and abroad, and then optimize the design form their own. The volume efficiency is further improved by adopting the compound core profile on the impeller. The flow rate is from 0.6m^3/min–250m^3/min, and the pressure is increased by 9.8Kpa–98Kpa. It has a total of 21 models, more than 300 specifications, and small size, large flow, low noise, smooth and reliable operation and other characteristics.

Advantages and feature of RSR series three–leaf roots blower:

(j) Low noise. The fan inlet and exhaust port adopts spiral shape, internal backflow and other world advanced structural design scheme, so that the process of inlet and exhaust according to the direction of the spiral line, to avoid the pulsating noise and vibration of the old fan when it exhausts. Meanwhile, by using a muffler with a noiseless air filter the matches the fan, the sound of the fan is much lower than in the past.

(k) High adiabatic and volumetric efficiency thus is saves energy. The impeller adopts advanced compound wire, which is machined by precise numerical control machine. After the impeller assembly, the clearance is even, and the volume efficiency can be greatly improved.

(l) Stable performance: the fan rotor, housing wallboard, shaft and other key parts, all adopt advanced CNC machining equipment, so that the interchangeability of parts improved.

(m) Low vibration: although the rotor has been precisely machined. It is in equilibrium. Still uses the high precision dynamic balance equipment to carry on the balance. Therefore. The fan runs without vibration.

(n) Adopt high precision and high hardness synchronous gear, which is 20CrMnTi material. So precision up to GB/T10095 five accuracy. The tooth surface and cone hole were carburized and quenched, and the hardness reached HRC56–62.Not only the life of the fan is extended, but also effectively reduce the noise.

(o) The series of fan bearings adopt imported bearings to make the product quality more reliable.

(p) Output air is clean, which does not contain any oil and dust. Fan sealing structure is reasonable, so that the oil cannot enter the housing, the air clean.

Belt drive three – leaf roots fan, it's belt is imported form the United State.

(c) **Measures for Occupational Safety and Hygiene**

Production structures are equipped with operating platform, walkways, safety barriers and escalators;

The power supply adopts double–circuit power supply to ensure safe electricity use;

The arrangement of electrical equipment has enough safe operating distance to protect the ground;

Set up stand safely mark and protection for electrical equipment with different voltage grade.

1.7.17 **Project Investment Analysis**

(A) Equipment List

Structure	Serial Number	Device Name	Main equipment Parameters	Number	Note
Integrated Regulating tank	1	Screen machine	B=1200mm,b=5mm	1 Platform	Guoxin or Equivalent
	2	Submersible Mixer	Impeller diameter 620mm, Material Polyurethane, Guide rail and Bracket adopt 304 Stainless steel	3 sets	Lanjiang or equivalent
	3	Waste water Lifting pump	Q=173m_3/h, H=24m, N=18.5kw	2 Platform	Liancheng or equivalent
	4	pH on–line detector	pH : 0–14	1 set	Aotai or equivalent
	5	Frequency Conversion	N=18.5kw	2 sets	Taida or equivalent
	6	Level controller	Measuring range: 0.3.5m	1 set	
	7	Acid regulating System	10m^3 plastic bucket or Iron drum (Depending on the Concentration of the Acid)	1 set	Locally Available or Scene made

	8	Alkali regulating system	10m^3 plastic bucket	1 set	Locally Available
Anaerobic Treatment	9	The whole System		A complete set	Choose by owner
Hydrolytic acidizing back	10	Submersible Pusher	QJB4/4–1800/3–56 Impeller diameter 1800mm, Material Polyurethane, Guide rail and Bracket adopt 304 Stainless steel	4 Sets	Lanjiang or Equivalent
Aerobic treatment	11	Micro porous aerator	The material: Silicone	2535 sets	Nantai or equivalent
	12	Roots blower	Wind pressure:63.7kpa Power:75kw Air volume of a Single fan:46.41m^3/min	3 platforms	Mingatian or Equivalent
	13	Frequency Conversion	N=90kw	3 platforms	Taida or Equivalent
	14	Circulating Pump	Q=100m3/h, H=12.5m, N=5.5kw	2 Platforms	Liancheng or Equipvalent
	15	Dissolved Oxygen on–line detector	Measuring range: 0–19.99mg/,4–20m A Signal output	2 platform	Hash or Equivalent
Sedimentation tank	16	Sludge pump	Q=143m3/h, H=16m, N=11kw	2 platform	Liancheng or equivalent
	17	Full–bridge Peripheral drive mud scraper	Underwater 304 Stainless steel, floating carbon steel, B=2400mm	1 set	Woma or equivalent
The final pool	18	Full–bridge Peripheral drive mud scraper	Underwater 304 Stainless steel, floating carbon steel, B=2000mm	1 set	Woma or Equivalent
	19	Physical Equipment	Complete cartridge, mixer and metering pump	3 sets	Guoxin or equivalent

	20	Blender	BLD12–23–4KW	2 sets	Nantai or equivalent
The sludge pool	21	Plate and frame Filter press	A=200m^2	1 set	Fengrun or Equivalent
	22	Diaphragm pump and fresh water pump	Supporting gas storage tank, air Compressor	1 set	
	24	Electromagnetic Flow meter	DN150	3 sets	Dihua automatic or equivalent
	25	Water diversion barrel	1*1.5m	1 set	Guoxin or Equivalent
	26	Piping and Valves		1 set	
	27	Paint Anticorrosion		1 set	
	28	Bacterial species			Owner's Responsibility

1. Considering that the enterprise directly discharges waste water into the nearby river course, the equipment list does not include the exudation pump.
2. Pump linings reported in this program are made of customized corrosion resistant materials.
3. The sewage in this scheme is mainly biological treatment. The plate and frame mud press can be purchased according to the actual situation of the final sedimentation tank.

1.8 ALTERNATIVE PROJECT SITE

No alternative site has been proposed aside from this area since the proposed project area is situated within Land Plot No.23, 24, 25, No.(1420) (KA) Sit Pin Sate Kwin, Sit Pin Sate Village Tract, Bago Township, Bago Region, which has been designated and already finished the construction phase during IEE study. The factory already has endorsement from Myanmar Investment Commission.

1.9 DECOMMISSIONING PHASE

The proposed project investment duration is 30 years and they will close out the project according to their MIC proposal.

CHAPTER 2

PROJECT PROPONENT PROFILE

2.1. PROJECT INFORMATION

This is the information of project proponent from the registration of Myanmar Investment Commission (MIC), which is described in below Table 2–1.

Table 2–1 List of Director of Myanmar Yarn & Fabric Technology Company Limited

No	Name	Citizenship	Passport No.	Designation	Address	Numbers Of shares Capital	Shares Capital Ratio
1	Chiclead International (Singapore) PTE.LTD	Incorporated In china Registration No.202002661R			11–07/08,20 Maxwell Road, Maxwell House, Singapore.	150,000 Shares	100%
	Representative (a) Mr.Xia Gang	Chinese	ED7864300	Director	RM (902), No.(21), Lane (388), Shang Hai City, FuRong Jiang Road, China.		
	(b) Mr. Xia Tie	Chinese	EG7189095	Director	Room (603), (113) Building, Taoyuanju, Lidau City Garden, Jiangyin City, Jiangsu Province, China		
	(C) Mr. Yang Xiaodong	Chinese	E71767753	Director	Room (2603), Building (38), Zhongnan Centruy City, Haimen City, Nantong City, Jaingsu Province, China		
	(D) Daw Sein Shwe Oo	Myanmar		Director	Coner of Strand Road & Lanmadaw Street, No.(458), 8th Floor, Room No.(8/B) Latha Township, Yangon Region, Myanmar		

Table 2–2 **Salient feature of the project**

Type of Proposed Business:	Manufacturing of Various Kind of Fabric on CMP Basis
Type of investment :	100% Foreign Investment
Type of Share :	Ordinary Share
Type of land :	Industrial Land
Total land area :	21.885 acres (88565.53 sq. meter)
Total building area :	Production building (442 ft × 223 ft) (262 ft x 262 ft) (131 ft x 262 ft) (196 ft x 262 ft) (37 ft x 156 ft) 4 Buildings
Land lease year :	30 years
Construction period :	One year
Address:	Plot No.23, 24, 25, No (1420) (KA) Sit Pin Sate Kwin, Sit Pin Sate Village Tract, Bago Township, Bago Region
Contact person:	Daw Aye Myat Kay Khine
Mobile :	09–426938612

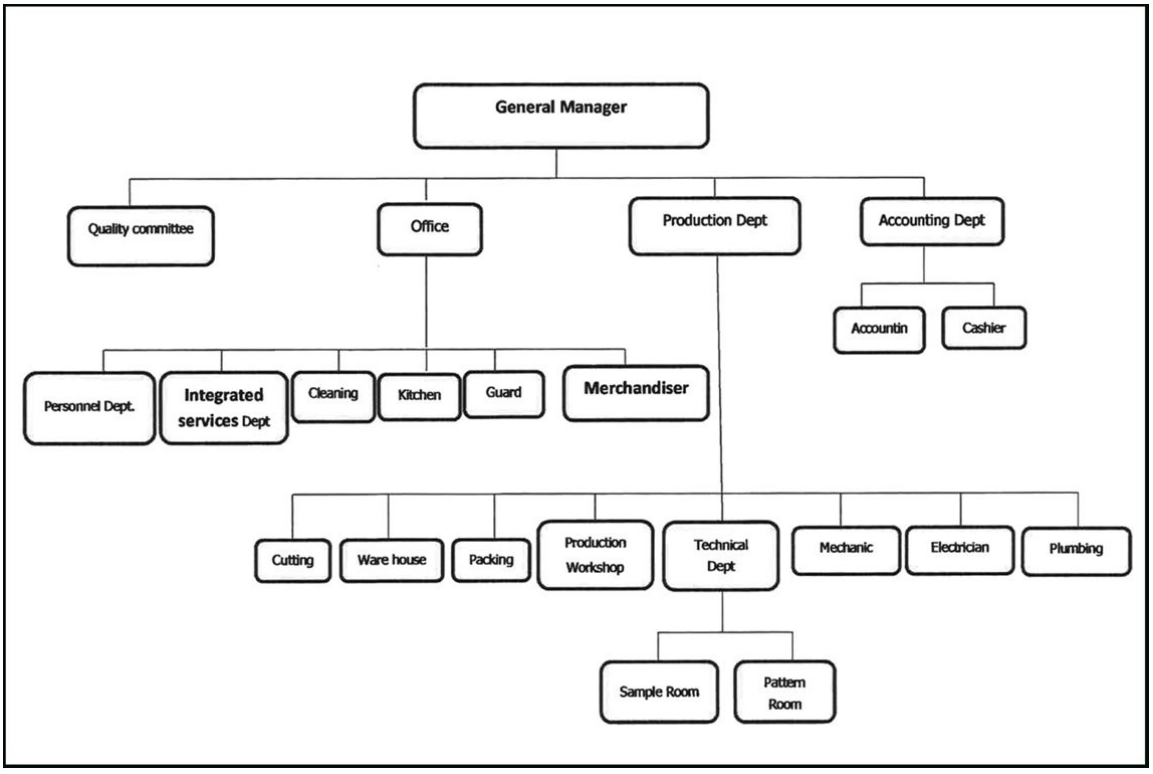


Figure : 2–1 Organization of Myanmar Yarn & Fabric Technology Company Limited

CHAPTER 3

ENVIRONMENTAL CONSULTANT PROFILE

3.1 SCOPE OF IEE STUDY

The IEE study firstly established baseline environmental setting within 100 meters of the project area, including existing conditions of air quality, water quality, noise, weather and local climate, waste, landscape and social assessment. The field studies were carried out by Yaung Chi Nagar Gold & Mining Production conducted field survey, assessment activities, and prepared the report.

A reconnaissance study was performed on the proposed project site and baseline environmental data were also collected from possible sources using the appropriate measuring devices. Data interpretation and analysis were made based on those collected data for the present and potential future conditions. Suitable measures were proposed for the impacts to be mitigated to reduce to acceptable ones.

Public consultation for the proposed project was conducted on 6, February 2022 and it included verbal disclosure of the project activities and discussion with stakeholders from Bago Township.

3.1.1 The specific objectives of the IEE study are as follows:

- To conduct preliminary examination of the environmental consequences of the project
- To describe the existing environmental condition of the proposed project site
- To collect detailed information about used of process, technology, equipment and machinery for proposed project
- To assess the potential environmental impacts of the proposed project
- To develop environmental management plan (EMP) with site specific environmental mitigation measures and monitoring standards guidelines for the proposed project
- To carry our public consultants to address any issues in concern with implementation of this project

3.2. IDENTIFICATION OF IEE STUDY TEAM

Yaung Chi Nagar Gold & Mining Production Company Limited prepares the Initial Environmental Examination (IEE) with the Environmental Management Plan (EMP) for the proposed project. The environmental study was carried out by the study team and the following is a summary of team member‘s responsibilities during the study period.

Table 3–1 Member of IEE study team

Member List	Responsibility
U Zaw Ko Ko (Director) (Retired) No.(1) Mining Enterprise. B.S.c Geology, MPA	All Parts of Assessment & Report Ground Water & Hydrology, Noise & Vibration
Dr. Aung Win Acting Rector (Retired) Hinthada University PhD (Geography)	Report Writing, Socio Economy, Land Utilization, Soil Conservation, Data collection
U Min Thein Myint (Director) (Retired) Forest Department B.Sc (Forestry)	Ecology & Biodiversity Communication with Stakeholder in Project Area
U Tun Lwin BE (Mining)	Mining & Waste Management, Secondary Data Study Report Writing, Industrial Management, Fire Safety Training and Management Study
U Hla Ko B.Sc (Geology)	Secondary Data Collection, Risk & Hazard Management, Site Surveying
U Phyo Mg Mg B.E (Chemical)	Water Pollution, Base line Data Monitoring Report Preparation and Reviewing
Dr. Kaung Myat Zaw M.B.B.S (Yangon)	Health Impact Assessment, Mitigation and Monitoring, Report Reviewing, Socio medical Affairs
U Saw Than Lwin B.Sc (Geology)	Base Line Data Collecting Management, Project Description, Soil & Geology
U Khin Mg Lin BA (Geography)	Communication with Stakeholder in Project Area, Secondary Data Study, Administration

CHAPTER 4

POLICY, LEGAL AND INSTITUTIONAL FRAME WORK

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.

4.1 MYANMAR REGULATORY FRAMWORK

Myanmar has 29 ministries under the Office of the President as of February 2021. The leading ministries in-charge of environmental and social considerations are the Environmental Conservation Department (ECD) of the MONREC, that was reorganized Ministry of Environmental Conservation and Forestry (MOECAF) in February 2021

4.1.1. Laws and Regulations Related to Environmental and Social Considerations

Requirements related to environmental (and social) impact management for development projects are described in Table 4-1.

Table 4–1 List of Myanmar's Law relating to environmental management

Law and Regulation	Description
National Environmental Policy of Myanmar, (Notification No. 26/94 dated 5 December 1994)	To achieve harmony and balance between socioeconomic, natural resources and environment through the integration of environmental considerations into the development process enhancing the quality of the life of all its citizens.
Constitution 2008	
Section 37, (a)	The Union is the ultimate owner of all lands and all-natural resources above and below the ground, above and beneath the water and in atmosphere in the Union.
Section 37, (b)	The Union shall permit citizens' rights of private property, right of inheritance, right of private initiative and patent in accord with the laws.
Section 372	The Union guarantees the right to ownership, the use of property and the right to private invention and patent in the conducting of business if it is not contrary to the provisions of this Constitution and the existing laws.
Section 45	The Union shall protect and conserve natural environment.
Section 390, (a),(b),(c),(d)	Every citizen has the duty to assist the Union in preserving and safeguarding the cultural heritage, conserving the environment, striving for the development of human resources, and protecting and preserving the public property.
Environmental Conservation Law, 30 March 2012	
Objectives	to contract a healthy and clean environmental and to conserve natural and cultural heritage for the benefit of present and future generations; to maintain the sustainable development through effective management of natural resources and to enable to promote international, regional and bilateral cooperation in the matters of environmental conversation.
Section 3	c) to enable to emerge a healthy and clean environment and to enable to conserve natural and cultural heritage for the benefit of present and future generations;

	(d) to reclaim ecosystems as may be possible which are starting to degenerate and disappear; (e) to enable to manage and implement for decrease and loss of natural resources and for enabling the sustainable use beneficially;
Provisions of Duties and Powers relating to the Environmental Conservation of the Ministry: Section 7	(a) To specify categories and classes of hazardous wastes generated from the production and use of chemicals or other hazardous substances in carrying out industry, agriculture, mineral production, sanitation and other activities; (b) To prescribe categories of hazardous substances that may affect significantly at present or in the long run on the environment; (c) To promote and carry out the establishment of necessary factories and stations for the treatment of solid wastes, effluents and emissions which contain toxic and hazardous substances; (j) To prescribe the terms and conditions relating to effluent treatment in industrial estates and other necessary places and buildings and emissions of machines, vehicles and mechanisms; (m) To lay down and carry out a system of EIA and SIA as to whether or not a project or activity to be undertaken by any Government department, organization or person may cause a significant impact on the environment; (o) To manage to cause the polluter to compensate for environmental impact, cause to contribute fund by the organizations which obtain benefit from the natural environmental service system, cause to contribute a part of the benefit from the businesses which explore, trade and use the natural resources in environmental conservation works.
Chapter VI Environmental Quality Standards: Section10	The Ministry may, with the approval of the Union Government and the Committee, stipulate the following environmental quality standards: (a) suitable surface water quality standards in the usage in rivers, streams, canals, springs, marshes, swamps, lakes, reservoirs and other inland water sources of the public; (b) water quality standards for coastal and estuarine areas; (c) underground water quality standards; (d) atmospheric quality standards; (e) noise and vibration standards; (f) emissions standards; (g) effluent standards; (h) solid wastes standards; (i) other environmental quality standards stipulated by the Union Government.
Section 14	A person causing a point source of pollution shall treat, emit, discharge and deposit the substances which cause pollution in the environment in accord with stipulated environmental quality standards.
Section 15	The owner or occupier of any business, material or place which causes a point source of pollution shall install or use an on-site facility or controlling equipment in order to monitor, control, manage, reduce or eliminate environmental pollution. If it is impracticable, it shall be arranged to dispose the wastes in accord with environmentally sound methods.
Section 16	A person or organization operating business in the industrial estate

	or business in the SEZ or category of business stipulated by the Ministry: (a) is responsible to carry out by contributing the stipulated cash or kind in the relevant combined scheme for the environmental conservation including the management and treatment of waste; (b) shall contribute the stipulated users' charge s or management fees for the environmental conservation according to the relevant industrial estate, SEZ and business organization; (c) shall comply with the directives issued for environmental conservation according to the relevant industrial estate, SEZ or business.
Section 24	The project proponent has to allow relevant governmental organization or department to inspect whether performing is conformity with the terms and condition include in prior permission, stipulated by the ministry, or not.
Section 25	The project proponent has to comply with the terms and conditions include in prior permission.
Section 29	The project proponent has to abide by the stipulations included in the rules, regulations, by-law, order, notification and procedure, which are issued by said law.
Environmental Conservation Rules, 2014	
Rules 58	The Ministry shall form the EIA Report Review Body with the experts from the relevant Government departments, organizations.
Rules 59	The Ministry may assign duty to the Department to scrutinize the report of EIA prepared and submitted by any organization or person relating to EIA and report through the EIA Report Review Body.
Rules 61	The Ministry may approve and reply on the EIA report o IEE or EMP with the guidance of the Committee.
Sub-rule (a) of rule 68	The project proponent has to avoid emit, discharge or dispose the materials which can pollute to environment, or hazardous waste or hazardous material prescribed by notification in the place where directly or indirectly injure to public.
Sub-rule (b) of rule 68	The project proponent has to avoid performing to damage to ecosystem and the environment generated by said ecosystem.
Environmental Impact Assessment Procedure (December 2015)	
Objectives	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 (a) of paragraph 102. 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 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. 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. 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. 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. The project proponent has to submit, as soon as possible, the 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. 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. The project proponent has to prepare the monitoring report in accord with the rule 109. 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 of this report, by email or other way which way agreed with the asked person, to any asked person or organization, under paragraph 110. 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 of project and other work-place related to this project in any time, under paragraph 113. The project proponent has to allow inspector to immediately enter and inspect in any time if it is emergency or failure to implement the requirements related to social or environment or caused to it, under paragraph 115. The project proponent has to allow inspector to inspect the contractor and sub-contractor who implement on behalf of project, under paragraph 117.
Screening: Section 23	a) The project proponent shall submit the Project Proposal to the Ministry for Screening. b) The Ministry will send the Project Proposal to the Environmental Conservation Department to determine the need for environmental assessment. 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 25 and the additional factors listed in Article 28 in order to designate the Project as one of the following, and then submit it to the Ministry: i) An EIA Type Project, or ii) An IEE Type Project, or iii) A Non IEE or EIA Type, and therefore not required to

National Environmental Quality (Emission) Guidelines (NEQG) (December 2015)	
Objectives	To provide the basis for regulation and control of noise and vibration, air emissions, and liquid discharges from various sources in order to prevent pollution for purposes of protection of human and ecosystem health.
National Environmental Policy of Myanmar (2019)	
National Environmental Policy Vision & mission	Vision A clean environment, with healthy and functioning ecosystem, that ensures includes development and wellbeing for all people in Myanmar. Mission To establish national environmental policy principle for guiding environmental protection and sustainable development and for mainstreaming environmental consideration into all polices, laws, regulation, plans, strategic, programmes and projects in Myanmar.
Foreign Investment Law, 2012	
Section 8	(a) To support the primary objectives of the national economic development plan, and for businesses that cannot yet be run by the State and citizens or businesses that have insufficient funds and technology. (b) Development of employment activities (l) Protection and conservation of the environment. (q) Appearing the required modern services for the Union and citizens.
Section 17	(a) To abide by the existing laws of the Republic of the Union of Myanmar. (b) To carry out the business by forming a company under the existing laws of Myanmar by the investor. (h) To carry out not to cause environmental pollution or damage in accord with existing laws in respect of investment business. (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.
Foreign Investment Rule, 2013	
Rule 54	The promoter or investor shall: (a) comply with Environmental Protection Law in dealing with environmental protection matters related to the business; (b) shall carry out socially responsible investment in the interest of the Union and its people; (c) shall co-operate with authorities for occasional or mandatory inspection; (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, workshops, buildings, and other activities; (e) shall enforce Safety and Health
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, expert 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 3 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
Yangon City Development Committee Law (2018)	
Section (317)	The proponent shall not block the natural river channel, change the course, and disrupt the water channel, filling with soil within the city boundaries without the consent of the Committee
Section (318)	The project proponent shall not construct buildings, factories, and industries without sewage, toilet, septic tanks, and wastewater treatment system
Section (322)	The project proponent is not allowed to make activities that will produce noise pollution, water pollution, air pollution, and soil pollution to impact the environment within the city's boundaries
The Amended Law for Factories Act, 1951 (2016)	
Hygiene in Working Environment: Section 3	Mentions responsibilities of employer and manager regarding waste disposal, ventilation, extreme temperature, dust and gas generation, minimum space for each worker, lighting, portable drinking water and toilets for employees.
Safety in Working Environment: Section 4	States responsibilities of employer and manager concerning with machine guarding, personal protective equipment, housekeeping, aisles and exits, chemical storage and fire protection system to avoid accident.
The Private Industrial Enterprise Law, 1990	
Basic Principles: Section 3	Private Industrial Enterprises shall be conducted in accordance with the following basic principles:- (a) to enhance the higher proportion of the manufacturing value added in the gross national product and value of services, and to

	increase the production of the respective economic enterprises which are related to the industrial enterprise; (b) to acquire modern technical know-how for raising the efficiency of industrial enterprises and to establish the sale of finished goods produced by the industrial enterprise not only in the local market, but also in the foreign market; (d) to cause narrowing down of the gap between rural development and urban development by causing the development and improvement of industrial enterprises; (e) to cause opening up of more employment opportunities; (f) to cause avoidance of or reduction of the use of technical know-how which cause environmental pollution; (g) to cause the use of energy in the most economical manner.
The Export and Import Law (2012)	
Objectives	The objectives of this law are as follows: 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 international 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	
This law was enacted with the objectives of : a. To protect from being damaged the natural environment resources and being hazardous any living beings by chemical and related substances; b. To supervise systematically 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 environmental conservation. Regarding the chemical management and storage, currently, regulations governing chemicals 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.	
Underground Water Act	
The underground water act enacted on the date of 21st June in 1930 whereas it is expedient to conserve 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 recoverable from the owner of the tube as if it were an arrear of land-revenue.	
Myanmar Fire Brigade Law (2015)	

The Pyidaungsu Hluttaw enacted this law by Law No.11/2015 on the date of 17th March, 2015 with the following objectives : (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 (b) to organize fire brigade systemically and to train the fire brigade (c) to prevent from fire and to conduct release work when fire disaster, natural disaster, epidemic disease or any kind of certain danger occurs (d) to educate ,organize and inside extensively so as to achieve public corporation (e) to participate if in need for national security, peace for the citizens and law and order	
Section–8 Fire Safety Procedures	
Rule17	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: 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
Rule18	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
The Electricity Law (2014)	
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 30 MW); the states and regions can issue 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.	
Boiler Law (2015)	
Chapter (2) Objective	The objectives of this law are as follows: (a) To obtain boilers in compliance with Myanmar Standards or International Standards (b) To prevent the country and citizens from hazards caused by boiler accidents (c) To use boilers in compliance with Myanmar Standards or International Standards within the country (d) To develop boiler technology and to produce experts capable of manufacturing, handling, repair, and maintenance of boilers (e) To optimize the use of boilers through effective utilization of fuel energy (f) To reduce the environmental, social and health impacts through long-lasting use of boilers.
Chapter (3) 4. With the permission of the Ministry, the inspector general can:	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 Only the results obtained from the prescribed boiler standards and inspection methods will be approved.

Chapter (4). Boiler Registration	5. Anybody who would like to use a boiler in any kind of business should be registered. 6. Boiler should be manufactured according to Myanmar Standards or International Standards. 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 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. 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. 10. The Inspector General shall define boiler size according to heated surface area in accordance with adopted procedures.
Chapter (13) Prohibitions	59. According to Section 21, nobody must alter, change, deface, deform or make embossed registration unnoticeable illegitimately. 60. Nobody is allowed to repair a boiler without boiler repair certificate. 61. Nobody is allowed to maintain a boiler without boiler maintenance certificate. 62. Nobody must alter safety relief valve in order to exceed the allowable pressure due to his consent or direction given by the owner. 63. Nobody must manufacture boilers against Section 25, Subsection 25 (a) and (b) enacted.
Labor Dispute Settlement Law (28 Mar 2012 replacing 1929 version)	
The Pyidaungsu Hluttaw hereby enacts this Law for safeguarding the right of workers or having good relationship between employer and workers and making peaceful workplace or obtaining the rights fairly, rightfully and quickly by settling the dispute of employer and worker justly.	
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
Labor Dispute Settlement Law (28 Mar 2012 replacing 1929 version)	
This law was enacted for safeguarding the right of workers or having good relationship between employer and workers and making peaceful workplace or obtaining the rights fairly, rightfully and quickly by settling the dispute of employer and worker justly. It stipulates that employer in which more than 30 workers are employed shall form the workplace coordinating committee consisting of the representatives of workers and the representatives of employer.	
Section 23	A party, employer or worker, may complain individual dispute relating to his grievance to the Conciliation Body and if he is not satisfied with the conciliation of such body in accord with stipulated manners,
	may apply to the competent court in person or by the legal representative.
Section 24	The relevant Conciliation Body shall, in respect of the collective dispute known or received by the complaint of either party, employer or worker, in respect of the dispute; information sent by the Minister or the Region or State Government or any other means, carry out as follows: (a) conciliating so as to be settled within three days, not including the official holidays, from the day of knowing or receipt of such dispute; (b) concluding mutual agreement if the settlement is reached in conciliating under sub-section (a), before the Conciliation Body.

Section 25	The Conciliation Body shall refer the collective dispute which does not reach settlement to the relevant Arbitration Body and inform the persons relating to the dispute.
Section 38	No employer shall fail to negotiate and coordinate in respect of the complaint within the prescribed period without sufficient cause.
Section 39	No employer shall alter the conditions of service relating to workers concerned in such dispute at the consecutive period before commencing the dispute within the period under investigation of the
Section 40	The project proponent has to not close the work without negotiation, discussion on dispute in accord with this law, decision by Tribunal
Section 51	The project proponent has to pay the compensation decided by Tribunal f violates any act or any emission to omission to damage the interest of labour by reducing of product without efficient cause.
Section 46	Any employer who violates any prohibition contained in sections 38 and 39 shall, on conviction, be punished with a fine for a minimum of one-lakh kyats.
The employment and skill development (2013)	
This law was 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 settling the dispute of employer and worker justly. Employer shall conduct occupational training to enhance the skills of workers.	
Section 5	The project proponent has to appoint employees with the contract in line with the provision of section 5 of said law.
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 Wage 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.
The Minimum Wage Law (2013)	The minimum wage law, passed in March 2013, was replaced the 1949 Minimum Wage Act. The law provides a framework for minimum wage determination: the presidential office establishing a tripartite minimum wage committee shall decide minimum wage with industrial variation based on a survey on living costs of workers possibly every two years. This also stipulates equal payment.
Public Health Law (1972)	Chapter 2; Prevention of Public Health
	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

Prevention and Control of Communicable Disease Law 1995 (Amendment in 2011)	
Chapter 2 Prevention	4. When a Principal Epidemic Disease of a Notifiable 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).
Chapter4 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, undertake 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 o 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 purpose 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	The Objectives of this Law are as follows: 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 impact, 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
Chapter 7 Taking Action by Committee No. 19	The committee may, if it is found out that holder of certificate of certification violates any term or condition contained in the relevant recommendation, pass any of the following administrative order: warning suspending the certificate of certification for limited period cancelling the certificate of certification
လုပ်ငန်းခွင်သုံးပေါက်ကွဲစေတတ်သောဝတ္ထုပစ္စည်းများဆိုင်ရာ ဥပဒေ (၂၀၁၈)	
ရည်ရွယ်ချက်	လုပ်ငန်းခွင်သုံး ပေါက်ကွဲစေတတ်သော ဝတ္ထုပစ္စည်းများကို စနစ်တကျ ပြုလုပ်ခြင်း၊ တင်သွင်းခြင်း၊ သယ်ယူခြင်း၊ သိုလှောင်ခြင်းနှင့် သုံးစွဲခြင်း တို့ပြုနိုင်ရန်။ ယမ်းဘီလူးနှင့် ဆက်စပ်သုံးပစ္စည်းများ အသုံးပြုသည့် လုပ်ငန်းခွင် အန္တရာယ် ကင်းရှင်း၍ လုံခြုံမှုရှိစေရန်။ လုပ်ငန်းခွင်သုံး ပေါက်ကွဲစေတတ်သော ဝတ္ထုပစ္စည်းများ ပြုလုပ်သုံးစွဲမှုများကို စနစ်တကျ ကြီးကြပ်နိုင်ရန်။
အခန်း(၇) တားမြစ်ချက်များ အမှတ် (၁၈)	လိုင်စင်ရရှိသူနှင့် ခွင့်ပြုချက်ရရှိသူ မည်သူမျှ စစ်ဆေးရေးအရာရှိချုပ် သို့မဟုတ် စစ်ဆေးရေးအရာရှိတို့၏ စစ်ဆေးခြင်းကို ခံယူရန် ငြင်းပယ်ခြင်းမပြုရ။
အမှတ် ၁၉ (ခ)	ပုဒ်မ(၈)အရ ကာကွယ်ရေးဌာနကောင်စီ အမှုဆောင်အဖွဲ့၏ အတည်ပြုချက်မရရှိဘဲ လုပ်ငန်းခွင်ပေါက်ကွဲစေတတ်သော ဝတ္ထုပစ္စည်းများကို ဖျက်ဆီးခြင်းမပြုရ။
အမှတ် ၁၉ (ဂ)	ဤဥပဒေအရ ထုတ်ပြန်သည့် နည်းဥပဒေ၊ စည်းမျဉ်း၊ စည်းကမ်း၊ အမိန့်ကြော်ငြာ စာ၊ အမိန့်နှင့် ညွှန်ကြားချက်များနှင့်အညီ ဆောင်ရွက်ရန် ပျက်ကွက်ခြင်းမရှိစေရ။
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
The Conservation of Water Resources and Rivers Law (2006)	

Aims	The aims of this Law are as follows: (a) to conserve and protect the water resources and rivers system for beneficial utilization by the public; (b) to smooth and safety waterways navigation along rivers and creeks; (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 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 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, chemical, poisonous material and other materials which may cause environmental damage, or dispose of explosives from the bank or from a vessel which is plying, vessel which has berthed, anchored, stranded or sunk.
No. 12	No person shall carry out growing of 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 switchback, dockyard, wet dockyard, water-tight dockyard, building of jetty, pier, landing stage or vessel landing by drainage in the river-creek boundary, bank boundary and waterfront 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 operation as such to the relevant Township Revenue Officer as stipulated by regulations.
Chapter 6 Monthly Payment of Tax and Sending of Three-Monthly Return 12 (a)	Any person who has taxable proceed of sale or receipt from service 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 proceed 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, based on the information received, estimate and claim the tax payable or the additional tax
12 (d)	The tax paid under sub-section (a), (b) or (c) shall be set-off from the tax due in the assessment.
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.

4.2 AUTHORIZED INSTITUTIONS AND RECOMMENDATIONS

The Ministry of Environmental Conservation and Forestry (MOECAF) was reformed as the Ministry of Natural Resources and Environmental Conservation (MONREC) on 30th March, 2016 in order to undertake both environmental and natural resources conservation and management more effectively. Under Section 3 of the Environmental Impact Assessment Procedure (2015), pursuant to section 21 of the law and Articles 52, 53 and 55 of the Environmental Conservation Rules, all projects and project expansions undertaken by any organization, which may cause impact on environmental quality that, are required to obtain prior permission. This is to be in accordance with section 21 of the Environmental Conservation Law, and Article 62 of the Environmental Conservation Rules, having the potential to cause adverse impacts, that are required to undertake IEE or EIA or to develop an EMP, and to obtain an Environmental Compliance Certificate (ECC) in accordance with this EIA procedure.

4.3. COMMITMENT OF Myanmar Yarn & Fabric Technology COMPANY LIMITED

Project proponent shall be 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 Natural Resources and Environmental Conservation (MONREC) in which to conduct an IEE process and an EMP 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 IEE and be abided by the environment policy, Environmental Conservation Law and other environmental related rules and procedures. Project proponent shall be responsible for the environmental assessment of factory development as follows:

- To set up welfare plan such as staff medical checkup, training program and Public talk for getting knowledge, risk prevention, bonus and social security services.
- To promote Corporate Social Responsibility– (CSR) with 2% of the net profit for development of safe, economic and social environment
- To carry out fire safety assessment and ensure adequate and appropriate fire safety measures for employees
- To carry out disposing wastes according to Bago City Development Committee regulations, protect, and preserve the project environment from pollution of air, water and land by following laws and guidelines lay down by MONREC.

4.4 INTERNATIONAL GUIDELINES

Organization's Guidelines, World Bank Safeguard Policies, IFC Performance Standards and National Environmental Quality (Emission) Guidelines (2015) are referred for EMP of the proposed factory project.

CHAPTER 5
SURROUNDING ENVIRONMENT

The purpose of this Chapter is to predict how environmental and socio–economic conditions will affect because of the implementation of the proposed Project. This requires a sound understanding of the baseline conditions at the Project Site, which established through desktop study research, site surveys, primary data collection and projections for future developments. Findings provide the current and future characteristics of the Project Site and the value and vulnerability of the key environmental and socio–economic resources and receptors. The following sections provide a description of the environmental and socio– economic aspects of the Project.

5.1 METHODOLOGY FOR DATA COLLECTION AND ANALYSIS

The followings are methodologies used for Environmental Management Plan (EMP) for this IEE report preparation;

- Onsite Measurements and Analysis – Baseline parameters such as air quality and noise quality of the existing project site during the operation phase were measured onsite. For water quality parameters was also measured on site and sample raw water and waste were sent to respective laboratories for analysis. The analyzed results are mentioned in this chapter.
- Secondary data collection of proposed project site area – Socio economic condition, physical/biological environment, and weather data are collected from official township data of Bago Township, Yangon Region.

5.2 ENVIRONMENTAL BASELINE STUDY

The field observation for determining the environmental baseline of the proposed project area was undertaken during construction period. The survey team consists of the senior consultant and environmental quality team. The baseline data collected regarding the environmental condition of the project area was conducted in the following section. The environmental setting around the project site and monitoring location point is shown in Table 5–8.

Table 5–1 Environmental Setting around the Proposed Project Site

Particulars	Detail
Coordinate Point	17° 27' 26.1" N 96° 25' 33.8" E
Climate Conditions (Department of Meteorology and Hydrology – DMH)	Annual Mean Maximum Temperature: 32.5°C Annual Mean Minimum Temperature: 18.3°C Annual mean Rainfall: 3409 mm
Wind Speed	3.05 m/s
Present land use at the proposed site	Agricultural land use
Nearest Road	Yagon – Mandalay expressway
Nearest Water bodies	Bago River
Forest Area	No Exist
Wetlands	No Exist
Protective Area	No Exist

The purpose of this Chapter is to predict how environmental and socio–economic conditions will affect because of the implementation of the proposed Project. This requires a sound understanding of the baseline conditions at the Project Site, which established through desktop study research, site surveys, primary data collection and projections for future developments. Findings provide the current and future characteristics of the Project Site and the value and vulnerability of the key environmental and socio–economic resources and receptors. The following sections provide a description of the environmental and socio– economic aspects of the Project.

5.2.1 Topography

The proposed project area is situated in Agricultural Land use, Bago Township, and its topographic condition is flat. The proposed project site is primarily agricultural land, but now is initiated into the industrial zone area.

5.2.2. Geology

According to Dr. Win Swe (1978), the general succession of rocks underlying at the Bago region is as follow;

Lithological formation	Geologic Age	
Younger alluvium	– recent	– Quaternary
––– Unconformity		
Irrawaddy Formation	– Pleistocene	
––– Unconformity		
Eocene Strata	– Eocene	
––– Unconformity		
Indoburman Flysch	– Eocene, Cretaceous	

The general geology of the present site and surrounding area is mainly occupied by the alluvium formation. The major soil in this site is covered by back sand, alluvial deposits are composed of gravel, clay, silts, sands and laterite which lie upon the eroded surface. The rock type of Irrawaddy formation (Pliocene) in this area is mainly as consist of sandstone, limestone and gravel conglomerate.

1. The Soil Zone is layer the back soil, sand, medium fine–grained sand, pebble small size gravel conglomerate yellowish brown color and think size as silk layer
2. This area has heavy raining season and located in the seismic zone, at the grade of 0.125 to 0.25 g (Seismic Zone) See Figure 5–2.
3. Ground water level is Nil. (Shown in Figure 5–1.)

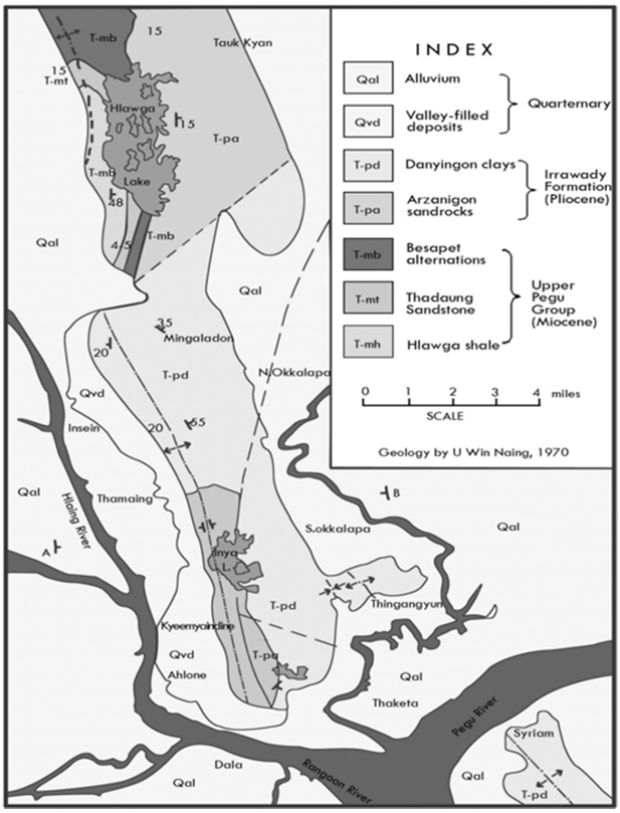


Figure 5–1 Geological Map of the project area

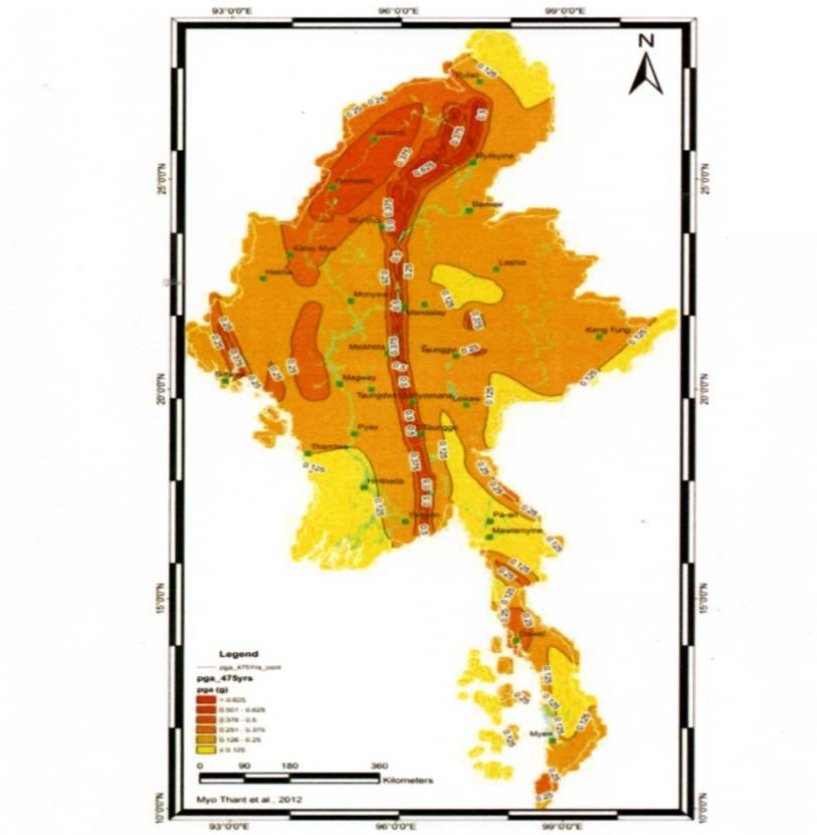


Figure 5–2 SEISIMIC ZONE MAP OF MYANMAR

5.2.3 Soils

High temperature and abundant rainfall enhance soil formation. Most soil that develop within the township are derived from alluvium and thus the resultant soils are of meadow soils (Gleysol) group. Meadow soils (Gleysol) cover most of the township area. Meadow gray soils (Gleysol (s) develop in poorly drained areas. Meadow alluvial soils (Gleysol & flusisol) occur along both sides of the river banks of Bago Reiver. Generally the southern low–lying part of the Bago Township is covered with meadow grey soils and somewhat loam because of the soil is inundating during the rainy season. Deep foundation is necessary as most roads are constructed on the low plains. Laterites soil can be found in some higher plces. The pH value of the soils is between 5.6 and 6.5. According to Royal–Geo Services Co.,Ltd's. Field Borelog (1), the soil layers are as follows :

Table 5–2 Soil profile layers

Field Borelog (1)			
Location	– 37/2 miles (New high–way Road_		
Bore Hole No	– 1	Ground water level	– Nil
Depth	– 3 meter	Date Started	– 6.2.2022
Lat ;	– N 17.457241	Date Finished	– 6.2.2022
Long ;	– E 96.426045	Geologist Name	Paing Oo

Project Name – Myanmar Yarn & Fabric Technology

Depth(m)	S.P.T (N)				Soil Classification
	Total	1st	2nd	3rd	
0.5–1.0	36	15	18	18	Medium to fine–grainded sand/brownish grey color
1.0–1.5	45	17	20	25	Silt with trace Clay
1.5–2.0	45	17	21	24	Medium to fine–grained sand/yellowish brown
2.0–2.5	40	15	18	22	Silty Sand
2.5–3.0	38	17	17	21	Silty Sand & Clay
3.0–3.5	39	15	15	24	Silty Sand & Clay

N = Soil Bearing capacity number Laboratory test results

5.2.4 Hydrology

Bago is rich in groundwater resources conserved by unconsolidated Tertiary–Quaternary deposits. In Bago, groundwater is mostly extracted from Valley filled deposits and Irrawaddy sandstones.

Groundwater: Groundwater availability is generally based on the distribution of permeable and relatively impermeable rocks. The nature of openings in the rocks determines permeability of rocks. High potential areas are underlain by Pliocene Series and recent Formations. High potential area covers approximately 85 percent of the Bago city. Stand pipe piezometers were installed at a depth of up to 30 m from the existing ground level while a pumping well was installed upon completion of the soil investigation works. Based on the results recorded up to the 6th of February 2022, stabilized groundwater level was observed to range between 0.49 m MSL to –1.81 m MSL4.

Water Supply: The Bago City Development Committee (BCDC) has an overall responsibility for the management and distribution of water for Bago City. Presently,. Areas not supplied with water from the BCDC rely on shallow surface wells and private boreholes. Water supply for the Project Site will be obtained from onsite bore wells for both construction and operations due to the poor reliability of municipal supply. Permitting is part of the Planning Consent Application currently underway. The boreholes will be provided and operated by the Developer.

Hydrology: The Bago river flows along a 80 km stretch flowing from southern Myanmar as an outlet of the Ayeyarwady River into the Ayeyarwady delta. A small portion of the Bago River (the estuary) lies within the Yangon Division. The Pazundaung Creek and Bago River joins the Yangon River and from there, flow towards the southwestern direction into Andaman Sea.

5.2.5. Climate

Bago has a tropical monsoon climate under the Koppen climate classification system. The city typically experiences a distinct rainy season from the month of May through to October when a substantial amount of precipitation occurs; and dry season, which commences from November and ends in April. During the course of a year, average temperatures show some variance with average highs ranging from 26 °C to 36 °C and average lows occurring between 18 °C and 25 °C. The hottest period is

between February and May, with little or no rain. At the end of this season, generally from March to April, the average monthly temperature reaches the upper 30 °C. The average temperatures in Bago range from 24 °C to 36 °C in April during the hot season and it ranges from 18 °C to 32 °C in January during the cooler season.

Rainfall and Relative Humidity: The climate of Myanmar follows a typical monsoon pattern. Historically, the average annual mean rainfall for Bago is 3409.9 mm with the annual average rainy days of 129.3 days. During the course of 2013, the Department of Meteorology and Hydrology (Myanmar) reported an annual precipitation of approximately 2700 mm. The month with the most precipitation was in July. The relative humidity was generally higher from May to October 2013. The dry season occurs from November to April. Based on the historical weather for the last twelve months in Yangon, no precipitation was observed in December 2012, February 2013 and March 2013. The least humid month of the last 12 months was February 2013 with an average daily low humidity of 34%, and the most humid month was September with an average daily high humidity of 80%.

The proposed project is located at Sit Pin Sate Kwin, Sit Pin Sate Kwin Village Tract, Bago Township, Bago Region. The climate condition of Bago Township is the dry season of area in which the project starts in December and ends in March. The raining season starts in June and ends in September and the cold season follow with the cooler, drier months of October to January. The highest temperature is 42°C and low range is 27°C reference from Township Meteorology data, Regional Data of Bago Township. 2010 to 2020 Yearly data of rainfall and temperature is presented in Table 5–3.

Table 5–3 The mean Monthly temperature and rainfall of Yangon (2010–2020)

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Avg/Total
Maximum Temp: (C)	31.3	34.3	36.1	37.7	33.8	30.9	29.8	29.7	30.8	32.4	32.6	30.9	32.5
Minimum Temp: (C)	16.6	18.1	21.1	23.8	24.2	23.7	22.4	23	23.2	23.9	21.7	18.3	32.5
Mean Temp : (C)	24	26.2	28.6	0.8	29	27.3	26.4	26.4	27	28.2	27.2	24.6	27.14
Mean Rainfall (mm)	6.6	2.8	10.5	59.8	362.1	619.8	553.6	744.7	481.4	202	64.3	19.3	3409.9

Source : Department of Hydrology and Meteorology, Kabar Aye, Yangon.

5.2.8 Noise

The sampling time for each pollutant were set at : 24 hours for PM10, PM2.5, 24 hours for NO2, 24 hours for SO2, 24 hours for Ozone, 24 hours for CO and 24 hours for TVOC. The following instruments were employed for the noise level surveys.

Table 5–4 Noise level Monitoring Equipment for C Star Bag Factory

Study	Parameter	Equipment	Survey frequency
Noise level	– 24–hours noise level – Degree of exposure	– Empirical data/ – GRI–IAT Air and Noise Monitoring Station	– 1 stations –24 consecutive hour collection

Noise Monitoring Location

The geographic coordinate points are presented in the following table and location map of the project.

Table 5–5: Geographic coordinate locations of Noise monitoring points: Myanmar Yarn & Fabric Technology Company Limited.

Sampling point	GPS Coordinates
A 1	17 ° 27' 25.42" N 96 ° 25' 33.60" E

Survey Activities

In order to characterize the current noise level inside the project site area, the baseline noise level sampling was conducted at the project site locations from 6, February 2022 to 7, February 2022. The survey period and descriptions of the sample location are given in the following table.

Table 5–6 Noise Quality Sampling Plan: Myanmar Yarn & Fabric Technology

Sampling ID	Sampling Date
A 1	6 to 7 February, 2022

Result of Noise Level Measurement

The monitoring results show that noise level at both sites is lower than the limited standards. The following table displays the result of the noise level monitoring at the sites.

Noise Level Measurement Result: Myanmar Yarn & Fabric Technology Co.,Ltd.

Station	CS1 Sound Level (dB)	NEQEG Standard	IFC'EHS guidelines	NEQEG Standard	IFC'EHS guidelines
		Residential/ Institutional Educational		Industrial/Commercial	
Daytime (6am – 10pm)	48	55	55	70	70
Nighttime (10pm – 6am)	37	45	45	70	70

5.2.9. **Air Quality**

The sampling time for each pollutant were set at: 24 hours for PM10, PM2.5, 24 hours for NO_2, 24 hours for SO_2, 24 hours for Ozone, 24 hours for CO and 24 hours for TVOC. The following instruments were employed for the noise level surveys.

Table 5–7 **Air quality Monitoring Equipment for Myanmar Yarn & Fabric Technology**

Study	Parameter	Equipment	Survey frequency
Air Quality	–PM 10, PM 2.5, SO2, NO2, CO, TVOC, Ozone	–GRI–IAT Air and Noise Monitoring Station	– 1 stations – 24 consecutive hour collection

(a) **Air Quality Analysis Results**

The following table reports the ambient air quality levels of CSI (location of Factory) compared with the IFC'EHS guidelines and NEQEC standard.

Table 5–8 **Ambient Air quality concentration at the study area: Myanmar Yarn & Fabric at Sit Pin Sate Kwin, Bago Township**

Monitoring Parameter	**Unit**	**A1** (Factory location)	**IFC'EHS guidelines**	**NEQEG standard**
SO2 (24 hour)	μg/m3	6	20	20
NO2 (24 hour)	μg/m3	19	200	200
PM10 (24 hour)	μg/m3	7	50	50
PM2.5 (24 hour)	μg/m3	4	25	25
Co (24 hour)	ppm	0.01	9	–
03 (8 hours) maximum)	μg/m3	43	100	100
VOC (24 hours)	ppm	0.18	–	–

Figure 5–3 Recorded Photo of Air and Noise Quality Sampling Myanmar Yarn & Fabric

5.2.10 Water Quality

The Characteristic of ground water sample is presented in Table. Following table has desirable as well as permissible limits of WHO guideline for each parameter. Water Sample was taken from artesian tube well there are as follows:

Table 5–9 **Testing Results of Tube well Water**

Sr.	Quality Parameters	Results	Units	Drinking Standards	Remarks
1	pH[1]	6.5	S.U	6.58.5[c]	Normal
2	Temperature	20	C	–	–
3	Colour[3]	5	HU	≤0.15[c]	Normal

4	TSS[3]	0	mg/L	–	–
5	Ammonia[3]	0.12	mg/L	–	–
6	BOD_5[6]	3	mg/L	–	–
7	COD[3]	<30	mg/L	–	–
8	Total Phosphoruous[3]	0.06	mg/L	–	–
9	Cadmium[7]	ND	mg/L	≤0.003[b]	LOD=0.01 mg/l
10	Copper[7]	ND	mg/L	≤2 [b]	LOD=0.02 mg/l
11	Zinc[3]	<0.02	mg/L	≤2 [c]	Normal
12	Nickel[3]	ND	mg/L	≤0.07[c]	LOD=0.2 mg/l
13	Sulfide[3]	≤0.04	mg/l	≤0.05[c]	Normal
14	Phenol[3]	≤0.1	mg/l	–	–
15	Oil & Grease[9]	2	mg/l	–	–
16	Total Nitrogen[3]	<0.5	mg/l	–	–
17	Chromium (Hexavalent)[3]	0.11	mg/l	≤0.05c	Above the limit

Source : laboratory test results

Table 5–10 **Water Quality Result Compared with WHO guideline Value WHO Drinking Water Guideline**

Temperature (°C)	25.0 °C	
Fluoride (F)	mg/l	1.5 mg/l
Lead (as Pb)	mg/l	0.01 mg/l
Arsenic (AS)	mg/l	0.01 mg/l
Nitrate ($N.NO_3$)	mg/l	50 mg/l
Chlorine (Residual)	mg/l	
Ammonia Nitrogen (NH_3)	0.24 mg/l	
Ammonia Nitrogen (NH_4)	mg/l	
Dissolved Oxygen (DO)	mg/l	
Chemical Oxygen Demand (COD)	32 mg/l	
Biochemical Oxygen Demand (BOD) (5 days at 20 °C)	mg/l	
Cyanide (CN)	mg/l	0.07 mg/l
Zinc (Zn)	Nil mg/l	3 mg/l
Copper (Cu)	Nil mg/l	2 mg/l
Sillica (SiO_2)	mg/l	

Source : laboratory test results

Table 5–11 **Result of Water Analysis** **WHO Drinking Water Guideline**

pH	7.3	6.5–8.5
Colour (True)	15 TCU	15 TCU
Turbidity	NTU	5 NTU
Conductivity	Micro S/cm	
Total Hardness	mg/l as $CaCO_3$	500 mg/l as $CaCO_3$
Calcium Hardness	mg/l as $CaCO_3$	
Magnesuim Hardness	mg/l as $CaCO_3$	
Total Alkalinity	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	mg/l	0.3 mg/l
Chloride (as CL)	mg/l	250 mg/l
Sodium Chloride (as NaCL)	mg/l	
Sulphate (as SO_4)	mg/l	500 mg/l
Total Solids	mg/l	1500 mg/l
Total Suspended Solids	22 mg/l	
Total Dissolved Solids	mg/l	100 mg/l
Manganese	mg/l	0.05 mg/l
Phosphate	mg/l	
Phenolphthalein Acidity	mg/l	
Methyl Orange Acidity	mg/l	
Salinity	ppt	

After comparing with WHO guideline for Tube well, it can be seen that all of the water results are within the standards.

5.3. BIOLOGICAL COMPONENT

There is no forest area, wildlife and wetlands within or around the project compound. The proposed project site is not located in or near a sensitive ecosystem as the proposed project area is situated in the Bago Township. Moreover, desktop review and site visits confirmed the absence of unique or ecologically significant flora and fauna. However, the nearest water body is the Sit Pine Creek.

All the existing natural vegetation had been removed even before the establishment of the town, since the area was used as paddy farmland and village land.

The scattered large trees and most of the planted shade trees were destroyed by the powerful Nargis storm in May, 2008. There are still some trees such as Kokko (*Albizzia lebbkek*), Khayay (*mimusops*), Padauk (*Pterocarpus macrocarpus*), Mango (*Curcuma amada*), Coconut (*Cocos nucifera*) and Nyaung (*Ficus obtusifolia*). They are more common along the roads and some fruit trees are within the house compunds. Along the creeks are some tidal forest species such as lamu (*Sonneratia caseolaris*), Thetnhe and Dhani (*nipa fruticans*).

No wildlife inhabits within the study area, being occupied by human residences and related buildings and infrastructures. A few bird species, mostly crow, sparrow and pigeon are fairly common, in addition to some snakes.

5.4. SOCIO–ECONOMIC COMPONENT

5.4.1. Population

Myanmar Yarn & Fabric Industry is located across Bago Township in Bago Region. In 2017, there are about people 165,628 in Township as shown in Table 5–17.

Table 5–12 Population of Males and Females at Bago Township (2017)

Male	Female	Urban	Rural	Total
209429	230193	220487	219135	439622

Source: Department of Administrative Bago Townships, Regional data (www.gad.gov.mm.com)

5.4.2. Religion

The different kinds of religion present in Bago Townships are as shown in Table 5–18.

Table 5–13 Religion in Bago Township (2017)

Township	Buddhist	Christian	Hindu	Islam	Total
Bago	411380	17135	6137	2925	439622

Source: Department of Administrative Bago Townships, Regional data (www.gad.gov.mm.com)

5.4.3 Local Economy

Among regional towns, Bago Township has a variety of businesses and services operating in the community with other businesses/services, based in the region. Most of the sources of livelihood in the Township are employment of factory. Services and facilities available include:

- post office
- beauticians
- butcher
- hairdressers
- furniture and electrical store
- restaurants
- cafes

- shoe and clothing shops
- industrial services
- pharmacy
- veterinarian
- bus service
- gift stores
- music store
- pubs and bars
- florist

5.4.4. Public Infrastructure and Access

5.4.4.1. Communication and Transportation

Major transportation route in Bago Township are rail road and car road as presented in in Table 5–19. No.(2) high way road and Yangon–Mandalay railway line passes through the Bago Township.

There are no airports within the township, and the city is served mostly by Yangon International Airport but the proposed Hanthawaddy International Airport serving Yangon and Bago may be located within Bago Township. There are 2 rail lines that pass through Bago, one going to Mandalay and another south to Mawlamyine. Bago also has several bus depots on its outskirts with intercity buses providing regular service. Bago is served by the Yangon–Mandalay Expressway as well as the old highways going to Taungoo and Myeik. Bago has 7 major bridges crossing the Bago River in and around the city.

Table 5–14 Transportation route

Categories	Township		Miles
	From	to	
railway	Yangon	All rail road station in Myanmar	
Bago – Tha Nat Pin	Bago	ThaNat Pin	10
Bago – That kala	Bago	That Kala	10.2

Source: Department of Administrative Bago Townships, Regional data (www.gad.gov.mm.com)

5.4.4.2 Education

Location of major schools was situated i.e. Basic Education Primary School (B.E.P.S.), Basic Education Middle School (B.E.M.S), Basic Education High School (B.E.H.S) and Bago University in the Bago Township. The name and the located village tract/ ward of schools are described Table 5–20.

Table 5–15 **List of major school in Bago Township**

No.	Name of School	Location
1	Bago University	Oakthar Myo Thit (8) Ward
2	BEHS (1)	Yone Gyi Ward
3	BEHS (2)	Zay Pine Ward
4	BEHS (3)	Pan Hlaing Ward
5	BEHS (4)	Zine Ganine (North)
6	BEHS (5)	Oakthar Myo Thit
7	BEHS (6)	Nan Daw Yar
8	BEHS(7)	Kalayar Ni
9	BEHS (8)	Yone Gyi
10	BEHS (9)	Hninthar Kone
11	BEHS (Bayar Gyi)	Bayar Gyi
12	BEHS (Inntakaw)	Inntakaw
14	BEHS (Kyauk Tan)	Kyauk Tan
15	BEHS (Pyin Bon Gyi)	Pyin Bon Gyi
16	BEHS (Oakkan)	Tha Man Kone
17	BEHS (Baw Nat Gyi)	Baw Nat Gyi
18	BEHS (Htan Taw Gyi)	Htan Taw Gyi
19	BEHS (Zaung Tu)	Zaung Tu
20	BEHS (Wan Bae Inn)	Wan Bae Inn
21	BEHS (Let Pan Win)	Let Pan Win
22	BEHS (Myo Anauk) (Ka)	Leik Pyar Kan
23	BEMS (Branch) (13)	NO (15). Ward
24	BEMS (Branch) (14)	NO (14). Ward
25	BEMS (Branch) (15)	NO (13). Ward
26	BEMS (Branch) (16)	NO (11). Ward
27	BEMS (Branch) (17)	NO (7). Ward
28	BEMS (Branch) (18)	NO (11). Ward
29	BEPS (1 to 23)	Bago Township
30	Pre School (1 to 5)	Bago Township

Source: Department of Administrative Bago Townships, Regional data (www.gad.gov.mm.com)

5.4.4.3 Health Status

The diseases of high prevalence reported in 2013 are Tuberculosis (TB), followed by Acute Respiratory Infection (ARI), Diarrhea, TB and snakebites. With reference to the Township Health Profile 2014 of Bago Township, no accidental work injuries reported to the township hospital in 2013 as shown in Table 5–22. The common diseases are as shown in Table 5–21.

Table 5–16 Common Diseases in Bago Township

Disease	Bago	
	Morbidity	Mortality
Malaria (Per 100000P)	–	–
Dysentery	21	–
Diarrhea (Per 100000P)	37	–
TB (Sputum+)(Per 10000P)	67	–
Hepatitis	5	–

Table 5–17 Lists of hospital in Bago Township

Hospital Name	Beds/Services	Responsible
Township Hospital	500	Government
Cottage Hospital (Zaung Tu)	16	Government
Cottage Hospital (Htan Taw)	16	Government
Cottage Hospital (Bayar Gyi)	16	Government
Gyo Thein Hospital	25	Private
Myin Kyar Hospital	16	Private
Total	589	

Source: Department of Administrative Bago Townships, Regional data (www.gad.gov.mm.com)

Myanmar Yarn & Fabric Technology Company's Plan for Health

We Myanmar Yarn & Fabric Technology Company Limited intends to manufacturing of Various kinds of weaving and dyeing On Contract Manufacturing Processing (CMP) Basis and Regarding workers of our Factory, we will provide the following health programs.

(a) Medicine and first aid kits will be available at the Factory to address emergency cases.

(b) The Factory will have first adi kits and a resting room for staff who feel sick.

(c) Those who are sick will be sent to Social Welfare Hospital for care.

(d) We will train employees on basic health care every three months. It aims to teach staff how to provide first aids for injured person during emergency cases.

(e) We will supply medicine and/or provide for the cost of medicine long–time employees are required.

5.5. CULTURAL AND VISUAL COMPONENTS

Bago Township is growing into a busy and vibrant community. The population fluctuates; however, there has been steady growth over the last decade. In Sit Pin Sate Kwin area tends to be a stopover on a journey rather than a destination. Bago City has a number of sites that are interesting place such as Shwe Maw Daw Pagoda, Shwe Thar Hlaung, Kanbawza Thardi Palace. Visitors to the town are generally visiting for work, investment or family reasons and some take pilgrimage destination. The proposed site is about 10 miles away from Bago City.

CHAPTER 6

IMPACT ASSESSMENT AND MITIGATION MEASURE

6.1. METHODOLOGY FOR THE ASSESSMENTS

The assessment of each impact based on consideration of the magnitude, duration, spatial and frequency of activities, which are going to carry out during three phases and characteristics of the project site. The assessment is qualitative and the significance of each impact is been classified into five categories in overall.

The following methodology have been applied to assess the environmental impacts of the factory mainly on air, water, land, biodiversity, including human beings. Each source of impact had assessed by four parameters, magnitude, duration, extent and probability and each assess point have five scales as mentioned in Table 6–1:

Table 6–1 Impact assessment parameters and its scale

Assessment	Scale				
	1	2	3	4	5
Magnitude (M)	Insignificant	small and will have no effect on working environment	Moderate and will result in minor changes on working environment	High and will result in significant changes on working environment	Very high and will result in permanent changes on working environment
Duration (D)	0 - 1 year	2 - 5 year	6 - 15 year	Life of operation	Post Closure
Extent (E)	Limited to the site	Limited to the local area	Limited to the region	National	International
Probability (P)	Very improbable	Improbable	Probable	Highly probable	Definite

Then, the Significant Point (SP) calculated by following formula.

Significant Point (SP) = (Magnitude + Duration + Extent)* Probability

Impact Significance: Based on calculated significant point, impact significance is able to categorize as follows:

Significant Point (SP)	Impact Significance
<15	Very Low
15-29	Low
30-44	Moderate
45-59	High
60	Very high

6.2. IMPACT IDENTIFICATIONS

The development of infrastructure for the proposed project likely to happen changes in the local environment in terms of physical, biological and socio–economic aspects along with the perspective on both positive and negative impacts. In this IEE study, the potential environmental impacts brought by various activities of proposed factory project will be identified and judged by site surveying with checklist, meeting with client team, including plant manager and supervisor, representatives from the factory operators and assessing the environmental baseline information for operation and decommissioning phases along with its mitigation measure.

6.2.1. Positive Impact

During the project implementation, local people can get job opportunities in administrative sectors, office works, transportation sectors, skill and unskilled workers, etc. Due to the implementation of the project, there will be employment opportunities especially for workers from the local community. Employees will also improve more in their professional knowledge and skills. The net effect of job creation is the improvement of the livelihoods and living standards of the beneficiaries and poverty reduction, development of local people's livelihood. Cause of the proposed project is located in Sit Pin Sate Kwin area, there may have business opportunities to local people. Local people can have a market by selling foods, snacks and Soft drinks nearby the factory.

6.2.2. Negative Impact

The following Figure 6–1 briefly described the potential negative impacts of the proposed project. There are four main types of impacts; impact on environmental resources, impact on ecological resource, impact on human and impact of waste generation.

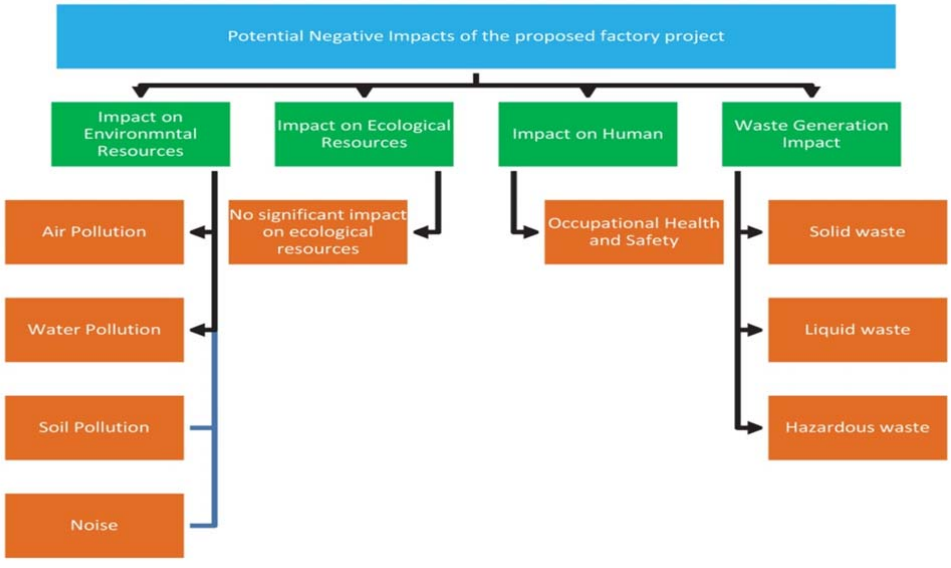


Figure 6–1 Potential negative impact affect from proposed factory project

6.3. POTENTIAL IMPACTS

Significant impacts were determined through the following issues:

I. Views of interested and affected local person;

II. Legislation

III. Professional adjustment of the project team include of consultant, associate consultant, international environmental impact assessment methodology

Impacts on the environment from various activities of the project can be categorized as follows;

I. Impact on Environmental Resource

- ❖ Impact on Air Quality
- ❖ Impact of Noise Level
- ❖ Impact on Water Quality
- ❖ Impact on Soil Quality

II. Impact on Ecological Resources

- ❖ Aquatic Ecosystem

III. Impact on Human Environment

- ❖ Health and Safety
- ❖ Socio–economics

IV. Impact of Waste Disposal

- ❖ Solid waste disposal
- ❖ Liquid waste disposal

6.4. POTENTIAL ENVIRONMENTAL IMPACTS OCCURRED

The following are the anticipated impacts during operation phases of bags manufacturing factory;

1. Impact of Air Emission
2. Impact of Noise
3. Impact of Water (consumption and pollution)
4. Impact of Solid waste and liquid
5. Electricity Consumption
6. Occupational Health and safety

None of the impacts during operation phase are affected directly to local communities, but some environmental impacts are primarily related to the factory in which resource utilization is an issue that should be seen from a sustainable development perspective, combustion of fossil fuels, greenhouse emission and occupational health and safety for employees working at the proposed factory.

6.5. ENVIRONMENTAL POLLUTION

6.5.1. Impact on Air Quality

In Myanmar Yarn & Fabric Technology Company will be used the semi–automatic process control system. In which assigned person from the operation line will operate each processing step. The major sources of air emission in the Myanmar Yarn & Fabric Technology Company will be defined as below. The project factory is already constructed during environmental assessment study and site visit. During construction phase, dust emission was addressed as potential environmental impact and is expected to be non–significant because the construction phase is a short–term affect. So, we are not assessed potential environmental impact during construction phase.

During the operation phase, there is no emission of smoke from the process of production. Particulate matters are generated during cutting and pressing the raw materials. But that particles amount is low. Dust particles, CO2 and SO2 would be emitted from the activities of loading, unloading and transportation of the raw materials and final product. Various activities as cooking from kitchen, using air conditioners in office building, storage of raw materials, vehicles movements, operating diesel generators and boiler combustion would also be a factor slightly affecting to air quality

Table 6–2 Air Quality Impact Sources

Sources	Emission parameters
Electricity consumption and diesel Generator and Vehicle movements for delivering and transporting of the raw materials and final products	PM, CO, SO_2 and NO_X

Air impact source of emergency used of generator and vehicle movements and transportation of raw materials may also generate particulate matters PM10, PM2.5, CO, SO2, NO2, and CO2. However, these anticipated impacts are in manageable limits to control the air pollution with relevant mitigation measures and the proposed factory will be managed by using their HSE guidelines.

6.5.2. Energy Consumption and Related CO_2 (GNG) emission

Though main electricity source for the factory is the national grid line, sound–proof diesel generators will be set–up in case of electricity shortages. So, the standby generators will be used for both operation and administration appliances. The proposed project will use annually 1,332 gallons of diesel for vehicles such as transportation vehicle and emergency use of a generator. The following table shows the amount of CO_2 emission coming from the combustion of fuels.

Burning diesel or other fuels creates exhaust gasses. Diesel generators produce carbon dioxide (CO_2), nitrogen oxide (NOx), and particulate matter. These generators release this into the atmosphere and substantially reduce air quality in the nearby regions. Every liter of fuel has 0.73 kg of pure carbon, 2.6 kg of carbon dioxide released per liter of diesel fuel.

Table 6–3 Category of GHGs Assessment

Category	Range
Negligible	no GHG assessment necessary
Low	< 20 kt/y CO2–equivalent per year
Medium–Low	20 – 100 kt CO2– equivalent per year
Medium–High	100 kt – 1 Mt CO2– equivalent per year
High	>1 Mt CO2–e equivalent per year

Source: EBRD GHG Assessment Methodology, 2010

Table 6–4 CO_2 Emission by the Uses of Fuel

No.	Type	Amount (gallon/year)	Equivalent CO_2 emission (Kilotons)	Status
1	Diesel for generator	1,332	0.0156	**Negligible**

According to above conversion, the emission of CO2 relative to the fuel consumed by the proposed project will not harmfully effect to the environment. However, the proposed bags factory will use a lot of electrical energy mainly for lighting, running of equipment, running of pumping systems for pumping water into the storage tank. Since electricity generation involves utilization of natural resources, excessive electricity consumption will strain the resource and negatively impact on their sustainability.

6.5.3. Impact of Noise

During the construction phase, significant impact on noise and vibration to surrounding environment must be generated from the movements of vehicles, operating the machinery, excavation activities and transportation of equipment and construction materials by heavy trucks. However, the project factory is already constructed during environmental assessment study and site visit. Therefore, the proposed project is located in industrial zone and already finished the construction, the potential impact on noise and vibration is not assessed and short– term affect must be caused the construction period is temporary.

During the operation phase, noise impact may be a significant impact for bags production sectors. The significant sources of noise impact activities are the operation of various machinery and equipment listed in for sewing line, cutting line and the emergency used of generator, vehicles and automobile movements (short–term noise) will be noise impacts sources. According to the noise results of 8 hours continuously measurement, at the source of operation area inside the factory and within the factory area are slightly exceeding the noise level of 70 dB of NEQ (emission) guideline. Therefore, no obvious influence can be caused expected to environment.

During the decommissioning phase, the heavy vehicles, machineries and equipment used for decommissioning activities can affect the noise level and vibration of the area. (See: Fig 6–2)

6.5.4. Impact on Water Quality

6.5.4.1. Water Consumption

In the operation phase of bags manufacturing factory, there is no water use for processing purpose. Tube well is the main source of raw water will be treated by passing through into (i) the oxidation tower to remove oxidized materials, (ii) chlorine dosing system, (iii) de–iron filter, (iv) carbon filter and (v) cartridge filter. Then the obtained treated water will be provided for the whole factory use of general office facilities such as canteen, toilets and other general use. Estimated maximum water consumption for the whole factory is 900 gal per day.

6.5.4.2. Water Pollution

The effluent wastewater will generate from the cleaning of utensil for operational use and domestic wastewater. Water pollution may be caused by domestic wastewater discharge from the canteen, which has Total Solid (TS), Total Suspended Solid (TSS). Grease and oil that can seriously also affected on water quality. In addition, improper management of wastewater treatment system of industry effluents, laundry wastewater and sewage effluents will impact on ground water and the nearest surface water body.

6.5.4. Impact on Soil Quality

During the construction phase, the excavation works from the construction activities must be the major impact on soil. The soil is compacted by the vehicles and the solid waste disposal improperly by the workers can affect the soil quality. Oil spillage from the vehicles could be also polluted to the soil. However, the project factory is already constructed during environmental assessment study and site visit. Therefore, impact on water quality is not assessed for this project.

During the operational phase, there is no significant impact on soil quality due to bags manufacturing activities because concrete road facilities have been implemented at the whole project site area. However, there may be effect on soil if wastes from the operation period are disposed improperly.

During the decommissioning phase, transportation of decommissioning materials and transferred of heavy machinery may happen oil leakage and lubricants, and thus it can lead to impact on soil. Moreover, hazardous releases of materials or oil utilized in the infrastructure can contaminate the existing soil during the decommissioning phase.

6.5.6. **Impact on Ecological Resource**

The proposed project is located in the agricultural land. Therefore, there is no wildlife, forests, protected area, coastal resource or mangrove area and rare and endangered species are found around the project area. The nearest water body is Sit Paing Creek which is running east to west and later joins into the Bago River in the south.

6.5.7. **Impact of Waste Disposal**

Most activities of the bags–manufacturing factory will generate the relatively low level of waste. Solid waste from production sector will consists of process waste such as Industrial waste would be generated from operation such as paper, cardboard, plastic bags, packing box, carton, cotton rope, transparent tape, masking tape, rivets, nylon zipper, garden waste, etc. However, proposed factory have been implemented the solid waste disposal system by the segregation of waste type such as paper waste, food waste,

production waste and hazardous waste according to their environmental health and safety guideline. The required rubbish bins have been provided and regularly checked and monitored by assigned person of proposed factory. Before send to dumping site of Bago Township Development Committee, the proper disposal waste facilities and temporary waste disposal site have been provided in the factory site and they should be followed and monitored the solid waste disposal system with the help of Municipal guidelines. Moreover, for the purpose of hygienic canteen, kitchen facilities and standard septic type of toilets, well–cleaned and well–maintained already provided for the proposed factory site.

6.5.7.1. Solid Waste

During the construction and decommissioning phase, various kinds of solid wastes will be generated. These wastes will be collected and clean every day to avoid any undesirable working condition and environmental impacts. Based on their types (glass, metal, plastic, wood, cement residues, oil spills and paper based), these solid wastes will be collected separately in rubbish bins and regular and proper disposal will be done in accordance with BCDC guidelines.

In the operation phase, major solid wastes of the proposed fabric & Dying factory may be generated form wastewater plant. Factory shall use textile, thread and carton box as raw materials. The residual pieces of the fabric scraps from the production lines and cutting line used carton box, plastic sheet from the packaging are the main source of solid waste. In addition to factory solid waste, canteen, kitchen and dormitory will produce solid wastes mainly personal remnants, household wastes and food residues.

6.5.7.2. Liquid Waste

There may be expected no significant liquid waste from the construction and decommissioning phase. The main source of the liquid waste of these two phases may be from the sanitary wastewater.

During the operation phases, sanitary wastewater from the usage of toilet facilities, kitchen and canteens will be discharged as liquid waste. All of the liquid waste will be collected in septic tanks which are attached with proper sewage treatment tanks (as mentioned in factory site plan) and regular monitoring should be done in co–operation with BCDC and follow the BCDC guidelines for proper disposal.

6.6 IMPACT ON HUMAN

6.6.1. Socio–economic Benefit

The proposed project is the long–term investment in the industrial sector. Most of the impacts of the proposed project on socio–economic environment may be positive. Implementation of proposed project may create temporary employment during construction and decommissioning phases and permanent jobs in the operation phase. Subsequently, socio economic standards of local people will be increased and eventually it may lead to the economic growth at local and regional level.

6.6.2. Occupational Health and Safety

During the construction phase, significant accidents and injuries like electric shocks, falling from heights, chemical exposure, crushing injury, fire hazards can be occurred due to the construction activities including metal grinding and cutting, concrete work and welding the metals. Moreover, accidents and injuries to workers and local communities could be caused from heavy vehicles movement for the transport of construction materials and equipment. Small injuries due to slips, headache and sickness must be caused of the noise, air pollution and odor could also be affected to the workers and local people. However, the project factory is already constructed during environmental assessment study and site visit. Therefore, impact on water quality is not assessed for this project.

During the operation phase, using the machinery for production process can get injuries. Noise from the generating of the machine and generator may also affect the health of people working in the project area. Fire and explosion hazards are mainly cause from the storage of raw materials and poor management of waste disposal. The usage of fuel must carefully handle because spillage and leakage of oil and grease can cause ignition of fire. Domestic wastewater or grey water produced from canteen, kitchen and toilets will cause enormous breeding of mosquitos, which can lead to diseases like malaria and dengue fever, if not carefully managed.

During the decommissioning phase, activities related with decommissioning process can cause injuries and can affect the health of decommissioning workers.

6.7. PROJECT ACTIVITIES AND ITS SIGNIFICANT IMPACTS

The relative importance 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 6–5 Evaluation and Prediction of Significant Impacts for Operation Phase

Environmental Impact	Project Activities	Significant of Potential Impacts					Impact Significance
		M	D	E	P	SP	
Construction Phase							
Air pollution	• Dust and GHGs emission from vehicles used for transporting Construction materials • Particulate matters emission from the activities of construction process • Emission from emergency diesel generator	3	4	2	4	36	Moderate

Water pollution	• 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	• Accidental spillage of oil used by vehicles operating	1	4	1	2	12	Very low
Noise Pollution	• Generating noise from the construction machinery • Noise from the generating of the emergency generators	3	4	1	4	32	Moderate
Fire Hazard	• Poor electrical installations • waste disposed area • Raw materials storage	3	5	2	4	40	Moderate
Solid waste	• Waste from packaging materials • Waste from kitchen, dormitory and office.	3	5	1	4	36	Moderate
Liquid waste	• Septic system and sewage. • Domestic liquid waste disposal from office, kitchen and dormitory.	2	4	2	4	32	Moderate
Hazardous waste	• Engine oil leaks, spills 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)	• Accidental cases cause by operating machines. • Electricity and emergency diesel generators. • Unloading, mixing, cutting activities.	3	4	1	4	32	Moderate
Social-economic Condition	• Job opportunities for local people	-	-	-	-	-	Positive Impact
Operation Phase							
Air pollution	• Dust and GHGs emission from vehicles used for transporting raw materials and final products • Particulate matters emission from	3	4	2	4	36	Moderate
	the activities of production process • Emission of smoke from steam boiler (rice briquettes) and kitchen • Emission from emergency diesel generator						
Water pollution	• 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	• Accidental spillage of oil used by vehicles operating	1	4	1	2	12	Very low

Noise Pollution	• Generating noise from the production machinery • Noise from the generating of the emergency generators	3	4	1	4	32	Moderate
Fire Hazard	• Poor electrical installations • waste disposed area • Raw materials storage	3	5	2	4	40	Moderate
Solid waste	• residual pieces of fabric scraps from the production lines • Waste from packaging materials • Waste from kitchen, dormitory and office.	3	5	1	4	36	Moderate
Liquid waste	• Septic system and sewage. • Domestic liquid waste disposal from office, kitchen and dormitory.	2	4	2	4	32	Moderate
Hazardous waste	• Engine oil leaks, spills 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)	• 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	• Job opportunities for local people	-	-	-	-	-	Positive Impact
Decommissioning Phase							
Air pollution	• Decommissioning of buildings and related materials	3	1	1	4	20	Low
	• Transportation of demolished materials						
Water pollution	• Sewage form decommissioning workers • Demolition machinery equipment	3	1	1	3	15	Low
Soil Contamination	• Decommissioning of buildings and related materials • Transportation of demolished materials	3	1	1	3	15	Low
Noise Pollution	• Decommission activities • Transportation of demolished materials	3	1	1	3	15	Low
Waste disposal	• Sewage system • Demolished debris such as bricks, concrete materials	2	1	1	3	12	Very Low
Hazardous waste	• Used lubricants from decommissioning vehicles and machines	2	1	1	3	12	Very Low
Occupational Health and Safety (Accidents, Injuries)	• Decommissioning activities • Transportation of demolished materials	3	1	2	3	18	Low

Social-economic Condition	• 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. But this can be prevented or mitigated by using the following mitigation measures. The following figure shows the impact significance of the proposed project.

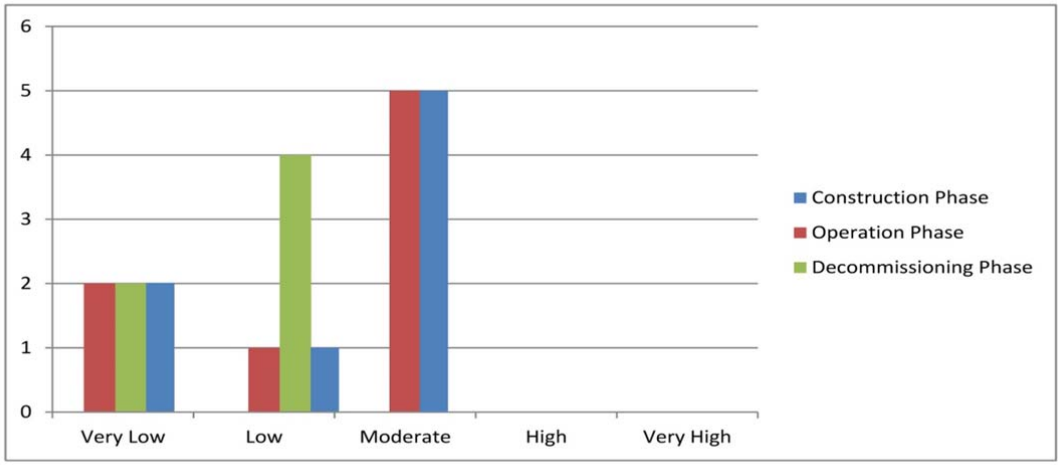


Figure 6–2 Impact Significance of the proposed project

6.8. ENVIRONMENTAL IMPACT MITIGATION MEASURES FOR OPERATION PHASE

The proposed Myanmar Yarn & Fabric Technology Company Limited Yarn & Fabric factory has developed the implementing of environmental management plan, appropriate mitigation measures for potential impact occurred in during operation phase, and additional impact mitigation measures shall be seen in following mitigation measures.

6.8.1. Mitigation Measures for Air Quality Impact

The significant sources of gas emission from emergency generator and transportation vehicles will be mitigated by using maintaining system in the operation process.

- Switch off vehicles when not in operation to reduce emissions by drivers
- Adequate stack must be provided as per Industrial guidelines for the proper dispersion of potential pollutants

Moreover, Myanmar Yarn & Fabric Technology Company Limited Yarn & Fabric factory has also implemented canteen facilities, kitchen ventilation system has already installed and operated in order to remove smoke, heat, odors, and steam from cooking.

6.8.2. Mitigation Measures for Noise Impact

The following mitigation measures shall be considered to reduce noise levels in the operation phase of the factory.

I. Low noise equipment should be used where possible
II. All preventive measures such as regular operation and maintenance of pump motors, and compressor should be carried out and enclosures will be provided to abate noise levels at source
III. Noisy equipment should not be permitted during night hours as much as possible

6.8.2.1. For Diesel Generator

Used of Generator should be housed in a suitable acoustic enclosure. The acoustic insulation should be designed to meet mandatory standards based on a 25 dB insertion loss.

6.9. MITIGATION MEASURES FOR WATER CONSUMPTION AND CONTAMINATION

6.9.1 Water Consumption

In operation phase, according to the estimated water consumption for the whole factory is 900 gallons per day for the purpose of general office uses and laundry section. So, the appropriate water conservation plan should be implemented with commensurate with the magnitude and cost of water use. These programs should promote the continuous reduction in water consumption and achieve savings in the water pumping, treatment and disposal costs.

Building Facility Operations

- Regularly maintain plumbing, and identify and repair leaks
- Shut off water to unused areas
- Install self–closing taps, automatic shut–off valves, spray nozzles, pressures reducing valves and water conserving fixtures (e.g low flow shower heads, faucets, toilets, urinals and spring loader)
- Operate dishwashers and laundries on full loads, and only when needed
- Install water–saving equipment in lavatories, such as low flow toilet
- Recycling water used from wastewater treatment system

6.9.2. Wastewater Effluents

An effective wastewater treatment system for laundry section that reduced for BOD, COD, total nitrogen and other organic compound shall be used to reduce the impact on aquatic lives and odor.

Currently, practice of the wastewater effluents discharge facilities of sewage for sanitation and septic system. Laundry wastewater effluents discharge facilities for wastewater treatment system. Wastewater treatment process is presented in above Chapter 1.

6.9.3. Toilet Facilities

Currently toilet facilities have hygienic toilets already provided and categorized by gender, marked distinctly for men and women by signs and symbols. There are 36 toilets building in the factory. In addition, toilet areas will also be provided with water sinks, necessary toiletries, and hand washing soaps, hand drying facilities, and waste bins.

Figure 6–3 Toilet Facilities in factory at Myanmar Yarn & Fabric Technology Factory

6.9.4. Recommended Wastewater Effluents Impact Mitigation Measures

- ❖ Ensure that liquid waste from the proposed site is directed to the appropriate drains
- ❖ Maintain the equipment, pipelines in good working conditions and drainage system to avoid clogging

6.10. MITIGATION MEASURES FOR WASTE DISPOSAL

At Myanmar Yarn & Fabric Technology Company Limited Yarn & Fabric factory, waste categorization has been developed into at least four types of waste that includes iron, compost waste, lubricant waste, recycle waste such as poly propylene bags (PP) and cardboards etc.

All of production waste such as plastic bags, cardboard, plastic string and other non–hazardous waste will be collected by designated garbage bins and then sent to the temporary storage areas of solid waste in the project site area, which include 4 compartments for different kinds of waste categories. In addition, pest control program has also implemented at the entrance of rodents and insects. Myanmar Yarn & Fabric Technology Company Limited also has an agreement services with Bago Township Development Committee for waste disposal facilities to collect the all production waste, office waste and domestic waste. According to the waste management practice, Myanmar Yarn & Fabric Technology Company Limited Yarn & Fabric factory has provided the dedicated dustbins for paper waste, plastic waste, production waste and food waste for the proper disposal of waste. Appropriate recycling methods are in practice to dispose of the wastes in the environmental friendly manner.

Figure 6–4 Solid waste management at Myanmar Yarn & Fabric Technology Factory

6.11.1 MITIGATION MEASURES FOR OCCUPATIONAL HEALTH AND SAFETY

6.11.1. Exposure of Noise

The Occupational Safety and Health Administration (OSHA) have recommended permissible noise exposure limit for industrial workers, which is based on 90 dB (A) for 8 hours exposure a day with 5dB trading rates. The limits are mentioned in Table 6–6. According to OSHA, the maximum allowable noise level for workers is 90 dB (A) for 8 hours exposure a day. Thus, adequate protective noise impact measures in the form of ear muffs/ear plugs to the workers working in high noise areas, need to provide if actual noise level monitoring results are more than 90 dB (A) at the work site for working time hours for 8 hours.

Table 6–6 Permissible exposure of noise limits

Total Time of Exposure Per Day in Hours	Noise Level dB(A)
8	90
6	92
4	95
3	97
5	100
1	105
½	110
¼	115

6.11.2. Recommended Mitigation Measures for Occupational Health and Safety

- Consider the provision of personal protective equipment only after all measures for removing or controlling safety hazards have been provided reasonably impractical

- Ensure that sufficient personal protective equipment is provided and that they are readily available for every person who may need to use them.
- The management should ensure that all persons make full and proper use of the personal protective equipment provided
- Provide instruction and training in the proper use and care of any specific protective equipment where necessary
- Ensure that the personal protective equipment is in good condition. Report immediately any damage to the management for replacement. Always keep the personal protective equipment as clean as possible.

Monitoring should be designed and implemented by accredited professionals, as part of an occupational health and safety–monitoring programme. Facilities should also maintain a record of occupational accidents and diseases. Projects should try to reduce the number of accidents among project workers (whether directly employed) to a rate of zero, especially accidents that could result in lost work time, different levels of disability, or even fatalities.

6.11.3. Material Storage guidelines

Storage practices to reflect the safety of workers are also developed in Myanmar Yarn & Fabric Technology Company Limited. All the shelves in the storage areas are secured, firmly placed and organized to prevent from any collisions that can affect the workers during working. Different materials will be stored separately by type and according to the designed layout.

6.11.4. First Aid Guidelines and Facilities

A well organized and proper first aid system is implanted to provide immediate first aid to anyone who is injured in the workplace and had also conducted the first aid training by Myanmar Red Cross Society. Adequate number of first–aid kits are listed and made available at all workplaces and contacts of medical providers, hospitals will be notified. The followings are some of the contents in a sample first aid kit. There are about 90 fire extinguisher and four fire hose in the factory. (See : Fig 6–5)

- Bandage
- Adhesive Tape
- Antiseptic wipe
- Burn dressing and treatment items
- Cold pack
- CPR barrier
- Sterile wound dressings
- Sterile eye coverings
- Scissors, tweezers, compress
-

Figure 6–5 Fire Safety and First Aid Facilities at Myanmar Yarn & Fabric Technology Factory

6.12. POTENTIAL ENVIRONMENTAL IMPACTS OCCURRED DURING DECOMMISSION PHASE

The proposed duration of the investment shall be 30 years. The term of the Lease shall be initial 30 years commencing from the date of signing of the Lease Agreement between Local owner and Myanmar Yarn & Fabric Technology Company Limited for proposed project site for 21.885 acres of land and extendable for five years in 2 times as recommended by the Bago City Government. The project of land and warehouse will be restitution to land owner after decommissioned. Therefore, the IEE study is not assessed for environmental impact during decommission phase.

CHAPTER 7
PUBLIC CONSULTATION

7.1. PUBLIC CONSULTATION PROCESS

This chapter presents results of public consultation and information disclosure conducted for the Myanmar Yarn & Fabric Technology Company. Public participation can be considered as the required element of the EMP process. In this study various stakeholder‘s participation were made.

Public consultation during preparation of EMP report was conducted on 6, February 2022, following the EIA procedure.

The project’s stakeholders in this category are key officials or representatives of the regional and local authorities who have direct responsibilities for the administration of the EMP process for environmental and social clearance and issuing operation permits for proposed development projects.

For this factory, relevant key offices at the national level are Environmental Conservation Department (ECD) and Industry Supervision and Inspection Department.

Relevant key office at the regional level is Bago City Development Committee (BCDC), General Administrative Department, Fire Department, Factories and General Labor Law Inspection Department, Public Health Department, Industrial Supervision and Inspection Department.

Public consultation carried out after the presentation on the project, followed by questions, answers and discussion. U Zaw Ko Ko presented EMP study and findings from Yaung Chi Nagar, after the presentation following questions and answer section. Summary of public consultation meeting is presented Table 7–1 Is shown the consultation meeting photo. **(PCM presentation photos are described in Figure 7.1)**

Table 7–1 Summary of public consultation meeting

Time and Date	Sunday, 6 February 2022 10:00–12:00
Venue	Myanmar Yarn & Fabric Technology Company Meeting Room.
Agenda	• Presentation on the Background Information of Project, • Project Description, • Impact Assessment, Environmental Mitigation • Environmental Management Plan and Monitoring Plan • Received and Answer from feedback of participants • Site survey and performances of Myanmar Yarn & Fabric Technology Company

Attendance lists are shown in Appendix – H

7.2. RECOMMEND SUGGESTION AND COMMENT

After the presentation, the floor opened for questions and answers. There is no suggestion and comment for presentation and EMP draft report, because the project is sample manufacturing of bags (CMP basic). In addition,

Suggestion; U Aung Min Kyaw ; Representative of Bago Division Council.

- To compliance with BCDC procedure for solid waste management and disposed process
- To implement the sufficient septic tank design for workers
- To provide the waste tank for waste water and some used oils
- To make when they wasted at that time to get a bail
- To construct the small pond in front of factory to filter the factory's wastewater before discharging to the surrounding drainage
- To get sanitation regularly

Suggestion; U Thein Han, Administrator, Sit Pin Sate Village Tract.

- To control the dust emission form the operation and other dust emission area
- To describe the mitigation plan of dust emission level in the report
- To describe the monitoring plan of air quality and detail parameter in the report
- To implement monitoring plan regularly

Figure 7–1 Public consultation meeting Photo

CHAPTER 8

ENVIRONMENTAL MANAGEMENT PLAN

8.1. OBJECTIVE OF ENVIRONMENTAL MANAGEMENT PLAN

The objective of the environmental management is to ensure potential environmental issues are managed by proper mitigation measures in compliance with the relevant laws and regulations stipulated by national authorities. Environmental management is based on the basic principles of management known as the P–D–C–A cycle (Figure 8–1). Environmental management consists of four related tasks as described below:

- Plan (P) – What need to be done

Mitigation measures for the potential environmental impacts of the factory such as air emission, noise, solid waste, wastewater and health and safety at work are described in this chapter. The Project Proponent will follow the plan for the mitigation measures according to the scheduled time.

- Do (D) – Implement the plan

The Project Proponent as described in this chapter will implement the mitigation measures for the potential environmental impacts appropriately.

- Check (C) – Monitor and evaluate the results of implementation

The effectiveness of the mitigation measures will be monitored, evaluated and documented.

- Act (A) – Taking corrective actions to improve the results, if found inadequate If nonconformities are noted with reference to the environmental monitoring benchmarks, corrective actions need to be planned to mitigate the existing environmental impacts.

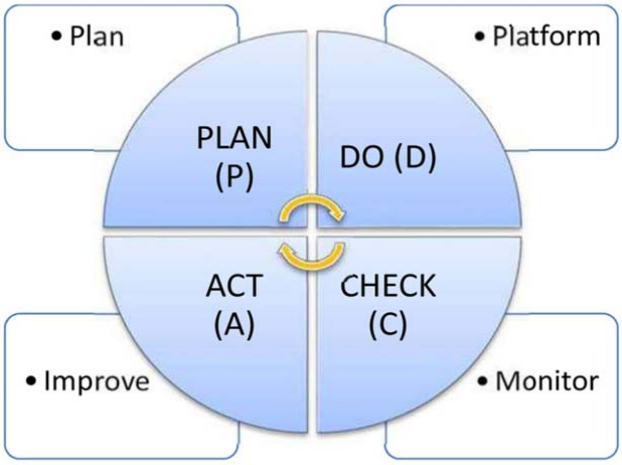


Figure 8–1 PDCA cycle

8.1.1. Institutional Requirement

Myanmar Yarn & Fabric Technology Company Limited will be managed the development of the proposed project. The project proponent should appoint Health, Safety and Environment (HSE) issues throughout the duration of the project phases. HSE team is responsible for implementation and monitoring of Environmental Management Plan (EMP) and Monitoring Plan as well as coordination with local authorities and the nearby communities. The HSE Team also makes regular review of EMP to cover all potential impacts, amendments and modifications.

8.2. RESPONSIBILITIES OF THE ENVIRONMENTAL MANAGEMENT PLAN

In order to ensure the sound development and effective implementation of the EMP, it will be necessary to identify and define the responsibilities. The environmental management practices, procedures, and responsibilities are defined herein to get full compliance with the existing environmental policy, laws, rules and regulations of the Republic of the Union of Myanmar. The following entities should be involved in the implementation of this EMP:

Myanmar Yarn & Fabric Technology Company Limited: The proponent will be charged with the responsibility for ensuring that the proposed development has been accomplished in an environmentally sound manner. This can be achieved by inclusion of environmental specifications in the tender specifications, selection of environmentally conscious contractors, and supervision to ensure that the objectives of this EMP are met. The implementation of Environmental Management Plan (EMP) process will prepare and follow up by appointed persons for health, safety, and environmental management under the instruction of management team of Myanmar Yarn & Fabric Technology Company Limited for EMP implementation facilities.

Environmental Conversation Department (Yangon Region): The responsibility of ECD is to exercise general supervision and coordinating over all matters relating to the environment and to be instrumental in providing guidance for recognized regulatory frameworks.

Third–Party Environmental Consultant: The environmental consultant will have to ensure that the proposed EMP is up to date and is being followed properly by the proponent. Periodic audits of the EMP will have to be done to ensure that its performance is as expected, by comparing with operating standards so that any corrective actions can be taken.

8.2.1. Structure and Responsibilities for the EMP Development and Implementation

The HSE officer is responsible to the HSE components of the project and on matters relating to the implementation of the EMP throughout operation life. The S&E officer will have responsibilities that include:

- Ensure a monitoring system is in place to track and report all health, safety and environmental incidents;
- Carry out a thorough initial site inspection of environmental controls prior to work commencement;
- Record and provide a written report to the General manager and production team of non–conformances with the EMP and require the HR supervisor to undertake mitigation

measures to avoid or minimize any adverse impacts on environment or report required changes to the EMP;

8.3. ENVIRONMENTAL IMPACT MITIGATION PLAN FOR THE OPERATION PHASE

According to the impact assessment occurred in during the operation phase mentioned in **Chapter 6** and environmental issues associated with the operational phase primarily include the following issues:

1. Impact of gases emission
2. Impact of Noise from operation of machinery, air compressor and generator operation
3. Impact of Electricity consumption
4. Impact of Solid Waste and Wastewater Discharge
5. Occupational Health and Safety for employees and workers

Although the proposed Myanmar Yarn & Fabric Technology has a number of adverse impacts on the surrounding environment, all of impacts will be reduced to some extent by related proper mitigation measures. However, the unavoidable impacts would evolve from Occupational Health and Safety of workers in the aspect of physical hazards with long term and short-term working. So, mitigation plan of operation phase is mentioned in Table 8-1. These activities shall be carried out to show that the factory operations comply with the maximum allowable environmental norms and standards.

Table 8–1 Environmental impact mitigation plan

Components	Recommended mitigation measures	Residual Impact	Time Frame	Responsible Person
Air Pollution • Exhaust emission from vehicles movements and diesel generator	• Plant and grass plantation programs must be provided at project site • Diesel consumption of generator must be managed and monitored to reduce the expanse and CO2 emission	Very Low	Throughout Operation Phase	HSE Coordinator
Noise Generation • Operation of machineries and equipment • Emergency Use of Generator	Ensure all the machineries are well maintained to reduce noise • Monitor the ambient and work zone noise level to conform the stipulated norms • Emergency use of diesel generator must be ensured by soundproof • Noise level monitoring programs must be designed and conducted by trained specialists at production area	Very Low	Throughout Operation Phase	HSE Coordinator
Water consumption	Install water meter for internal control of water consumption • All staff must be trained and made aware conservation practices and proper methods of water use must	Low	Throughout Operation Phase	HSE Coordinator

Components	Recommended mitigation measures	Residual Impact	Time Frame	Responsible Person
	be placed in the toilets and other areas of water consumption			
Effect of sewage effluents from the factory processing	• Properly designed and installed the sewage effluents treatments facilities to prevent any hazard to public health or contamination of land, nearest surface water and ground water • Ensure that lines and sewage system of factory drainage and the nearest public drainage are watertight and sufficient capacity • Regular monitoring the sewage treatment facilities and follow the NEQE guideline • Clean the factory's drainage to avoid odor emission and to avoid the block of water flow	Low	Throughout Operation Phase	HSE Coordinator
Waste Disposal • Production waste, packaging materials, food waste from Canteen and office waste	• Use of less excessive and more environmentally friendly packaging materials • Regularly inspection must be carried out of all bulk containment on site prevent leakage and product loss • Train both cleaners and employees for proper good housekeeping practice at production area • Regular check the temporary storage site of generated solid waste from the whole factory • All employee must be followed and practiced by the principle of waste reduction, recycling, recovery and reusing • Solvents and Oil waste must be collected by designated jerry cans • Provide appropriate control devices in storage of solvents, diesel to avoid possible leakages • Dispose at permitted areas specially designed to receive the waste • Separate areas must prepare for rejected products, waste materials and chemicals. • All waste must be disposed of any applicable environmental regulation • Ensure that all inside and outside areas, buildings, facilities and equipment are kept clan and in good state to function as intended and to prevent contamination	Low	Throughout Operation Phase	HSE Coordinator

Components	Recommended mitigation measures	Residual Impact	Time Frame	Responsible Person
Occupational Health and Safety • Accident and incidents leading to serious injuries • Exposure of Noise • Risk of increase in road accidents • Electrical Hazards Risk of fire	• Monitor and strict of employee and workers to wear the uniform and full personal protective equipment (PPE) during working at operation area • Arrange appropriate health check-up facilities • Measure the PM 10 and PM2.5 concentration in production area by quarterly and compare with NEQ (emission) guideline • Plant must implement the safety and health program designed to identify, evaluate, monitor and control safety and health hazards • All employee must not be exposed at noise level greater than 85 dB(A) for a duration of more than 8 hours per day without hearing protection. • Use of hearing protection must be enforced actively when the equipment sound level over 8 hours reaches 85 dB (A) • Ensure all rooms are well ventilated and Lighting • Ensure factory laws are strictly followed • Clearly display warning signs or symbols for dangerous areas at the factory • Monitoring plan must be prepared by accredited professionals • Regular maintenance of the road and Use of traffic signs • The employee must review and assess known and suspected presence of biological agents at the work place and implement appropriate safety measures, monitoring, training, and training verification programs	Low	Throughout operation phase	HSE Coordinator/ Operation Manger

8.4 ENVIRONMENTAL MANAGEMENT PLAN

The EMP for Myanmar Yarn & Fabric Technology Company Limited has been prepared to address potential issues based upon discussion with factory management, workers, local community‘s view, stakeholder consultation and from the site visit of experts. The EMP is additional to and compliments the factory’s safety management system. The following environmental issues that require environmental management plans based upon the potential impacts of activities by for polyester production are as follows;

8.4.1. Air Pollution/Dust Management Plan

Objectives :	• To minimize the adverse impact to air quality caused by stack gas emission from generator and also dust management generated from vehicular movement. • To comply with relevant government rules
Performance Indicator:	• Nil complaints relating to air quality management • Extraction equipment maintained as per maintenance schedule
Relevant government law and rule	• National Environmental Quality (Emission) Guidelines (2015)
Management Plan	• The factory has planted trees in its premises which reduce the carbon emission by the factory and minimize the air pollution • Periodic maintenance of generator is conducted • There is no open burning of waste materials at the site • Workers are provided mask during working in any dusty area
Responsibility	Management of the factory; • Head of maintenance-Total implementation of above of air pollution management plan • Production manager-Air quality in the production area is good enough • Manager -To hire organization/independent third party testing air quality • EHS officer-Monitor the hygiene of ambient air quality in surrounding of the factory

8.4.2. Noise Management Plan

Objectives:	• To avoid nuisance noise to nearby residents generated from generator and other machineries. • To comply with noise standard of National Environmental Quality (Emission) Guideline
Performance Indicator:	Nil complaints relating to noise nuisance
Relevant government law and rule	• National Environmental Quality (Emission) Guidelines (2015)
Management Plan	• Building noise insulated generator room and ensure satisfactory maintenance of relevant equipment • Impose speed limit to track and vehicles at the transportation route. • Provide sufficient personal protective equipment (PPE) at the work place • All the related personnel will be provided proper training about the relevant issues and ensure PPE wear during working in noisy area.
Responsibility	Manager • To hire organization/independent third party testing noise level • Ensure that all workers use PPE during operation
Objectives:	• To minimize waste generation by developing strategies for the management and disposal of all waste in a manner that is sustainable and sensitive to the environment • To comply government waste management policy
Performance Indicator:	Nil complaints relating to noise nuisance

Relevant government law and rule	• National Waste Management Strategy and Action Plan (Draft 2018)
Management Plan	• The factory does not dispose any kind of solid waste on the factory premises or not dump in the surface water like local pond, canal or river, etc. • The solid wastes are stored properly and separately in a certain location in proper manner such as cloth scrap waste need to collect at one place and poly/carton waste should collect at another place. Metal/Hazardous material waste such as fudge electric bulbs, empty chemical container are stored another in separate place of storage area. • Recycle wastes like fabric scrap, carton box, plastic sheet, etc. are hand over to local buyer for reuse and waste-tracking record shall be kept every day. • The metal or glass waste of electric bulb is taken by the suppliers to recycle them. • The daily domestic waste of workers hand over to YCDC waste collector to collect every day • Daily wastes are stored clearly labeled containers and in such a manner that all related personnel are provided proper training about the relevant issues.
Responsibility	Manager (HR) • Responsible for overall site cleanliness and waste management • Regular waste collection to minimize excessive waste storage

8.4.3. Wastewater Management Plan

Objectives:	• Prevent pollution underlying groundwater sources
Performance Indicator:	• Implement an environmental friendly sewerage system
Relevant government law and rule	National Environmental Quality (Emission) Guidelines (2015)
Management Plan	• Ensure that drainage lines and sewage system of factory and the nearest public drainage are watertight and sufficient capacity • Regular check and maintain sewerage facility. • Clean the factory‘s drainage to avoid odor emission and to avoid the block of water flow • Regularly monitor and check the discharge temperature from boiler wastewater before directly discharge into factory‘s final drainage
Responsibility	• Manager -To hire organization/independent third party testing wastewater quality • EHS officer-Monitor the condition of factory’s drainage and sewerage system

8.4.4. Energy Management Plan

Objectives:	• The energy management is aimed at minimizing electricity use results from site equipment and working lighting • Comply with the standard of energy use
Performance Indicator:	• Annual energy savings for all department facilities • Annual fuel saving for generator and vehicle
Relevant government law and rule	National Energy Management Committee (Myanmar Energy Master Plan 2015)
Management Plan	• Installation of timers and thermostats to control heating and cooling • Energy saving light installed in different area of the factory for saving energy • Used of energy saving devices must be installed • Ensure that good housekeeping measures such as turning off equipment and lights when not in use
Responsibility	Manager • To arrange energy audit technical personnel • To monitor and record electricity consumption, other related energy issues and take necessary actions if any problem arises

8.4.5. Water Consumption Management Plan

Objectives:	• The water consumption management is aimed at minimizing ground water use
Performance Indicator:	• Prohibitions on accessing and using underground water without a license • Water consumption saving of general water use from groundwater
Relevant government law and rule	• The Underground Water Act (1930)
Management Plan	• Install water meter for internal control of water consumption • All staff trains and makes aware conservation practices and proper methods of water use must be place in toilets and other areas of water consumption • The contamination of water is avoided by suitable management of oil and fuel used in machineries and vehicles • Trees plantation surrounding the factory
Responsibility	Manager • Arrange audit on water usage controls environmental officer

8.4.6. Emergency Response and Disaster management Plan

Objectives:	• Reduce the risk of accidents at the factory area
Performance Indicator:	• Establish a safe working environment
Relevant government law and rule	• The Employment and Skill Development Law (August 2013), ILO guide to Myanmar Labour Law (2017)

Management Plan	• The factory management has taken proper measures to handle any emergency situation like fire, earthquake, flood and storm • Provision and inspection of firefighting equipment and fire hydrant system in all the sections • A detail evaluation plan (fire exist, emergency exit door, etc.) is established and communicated with workers • Periodic inspection of safety relief valve provided with pressure vessels and equipment, preventive maintenance; aware the workers about electric shock by necessary training. • Regular fire drill operation is conducted • Workers are informed about what to do in earthquake like stay in a safe place such as under table of desk, not to try move outside during earthquake, workers who will be outside during earthquake shall remain stay out of the building, trees, lump post, etc. Other relevant safety instruction of emergency situation it informed to workers by training • Workers are aware of dangers from physical hazards such as obstacles covered by floodwater (storm debris, drainage opening, ground erosion) and from displaced reptiles (Snake) or other animals. • A medical team has been prepared for primary treatment (First Aid) • Prepare an emergency contact directory consisting contact numbers of nearest fire service, local police station, hospitals, etc. and display it in a place that everybody can see it easy. • Build a safety committee which from firefighting team, rescue team. The committee arrange a meeting every month to discuss about safety management • Ensure proper training of the employees about the disaster management, fire safety as well as occupational health and safety
Responsibility	Manager and EHS officer • Arrange firefighting training after every 3 months • Responsible for fire control and response • Monitoring daily danger warning and bans

8.4.7. Environmental Monitoring Plan

Monitoring of the anticipated environmental and social impacts in the receiving environments is important in evaluating the effectiveness of mitigation plan and compliance with the regulatory measures in place. During the operation phase, monitoring will be undertaken to ensure that proposed mitigation measures for negative impacts and enhancement measures for positive impacts are implemented. Main objectives of environment monitoring plan include;

1. To identify and resolve environmental issues and other functions that may arise during the operation phase
2. To implement air quality and noise affect monitoring plan during the operation phase
3. To check and quantify the overall environmental performance, implement action plans and recommend and implement remedial actions
4. To conduct regular reviews of monitored data as the basis for assessing mitigation measures are identified, designed and implemented;
5. To assess and interpret all environmental monitoring, data to ascertain whether environmental control measures and practices are functioning in accordance to specifications
6. To predict the unforeseen impacts

8.5. ENVIRONMENTAL MONITORING SCHEDULE AND REPORTING

The EMP cell members responsible may conduct daily, weekly or monthly general inspections of the project area and facilities. The objectives are to identify non–compliances to EMoP. Table 8–2 is provided the environmental monitoring schedule for Myanmar Yarn & Fabric Technology. The factory submits monitoring report to the Ministry not less frequently than every six months, as provided in a schedule in the EMP,

Table 8–2 Environmental monitoring schedule for Myanmar Yarn & Fabric Technology Company Limited

Issues	Parameter	Frequency	Area to be monitored	Responsible section
Construction Phase; It is not assessed in this phase, for the reason that construction is already completed during IEE preparation.				
Operation Phase				
Air quality	PM2.5, PM10	Biannually	One point in the production area	Myanmar Yarn & Fabric Technology Co.,Ltd
Water Quality	pH, DO, BOD, COD,TDS, Temp, Oil and Grease, Chlorine, Arsenic	Biannually	Final discharge point of factory drainage	Myanmar Yarn & Fabric Technology Co.,Ltd
Noise	Noise level in decibel (dBA)	Biannually	Two points (point source in operation area and sensitive receptor)	Myanmar Yarn & Fabric Technology Co.,Ltd
Waste Generation	Solid waste, Liquid waste and Hazardous waste	Regularly	Recycle house and waste house and at the factory office	Myanmar Yarn & Fabric Technology Co.,Ltd
Fire Hazardous	Visual inspection, firefighting equipment	Monthly	At the factory	Myanmar Yarn & Fabric Technology Co.,Ltd
Light intensity	Illuminance	Biannually	At the production line (especially cutting and QC)	Myanmar Yarn & Fabric Technology Co.,Ltd

Decommissioning phase				
Air quality	PM2.5, PM10	One time during this phase	One point in the Production area	Myanmar Yarn & Fabric Technology Co.,Ltd
Water Quality	pH, Do, BOD, COD TDS, Temp, Oil and Grease, Chlorine, Arsenic	One time during this phase	Final discharge point of factory drainage	Myanmar Yarn & Fabric Technology Co.,Ltd
Noise	Noise level in Decibel (dBA)	One time during this phase	One points in demolishing area	Myanmar Yarn & Fabric Technology Co.,Ltd
Rehabilitation	Recovering and Revegetation		All decommissioning area	Myanmar Yarn & Fabric Technology Co.,Ltd

8.6. CAPACITY BUILDING AND TRAINING PLAN

The emergency preparedness is vital, as quick and correct response is necessary in case of emergency to reduce injuries, harm and other damage. Care should be given for during processing activities in order to prevent synthetic errors and accidental cases (e.g., electricity shock and fire hazards).

The emergency response plans should be established for handling all foreseeable emergencies in the workplace and must provide the following;

8.6.1. Assignment of responsibilities

All senior staff such as a line production manager or safety officer should be assigned to lead the emergency response team and charged with the duties of (1) assessing the emergency and taking necessary actions (2) overseeing the implementation of the emergency response plan (3) organizing regular drill (4) ensuring all emergency equipment is well maintained.

8.6.2. Emergency procedures

Emergency procedures are operating instructions for employees to follow in emergency case

About work safety in the concerned processing, the management team should

a. Identify and list out all possible emergency situations in the workplace
b. Assess the effects and impacts of the emergency situations
c. Establish emergency response plans
d. Provide and maintain emergency equipment and other necessary resources
e. Ensure that staff are familiarized with the arrangements in case of emergencies by providing procedural instructions and employee training and organizing drills

8.6.3. Training for Emergencies

The type, amount and frequency of training varies, depending upon the tasks employees are expected to perform. Although training must be provided to employees at least annually, safety meetings and drills should be conducted at more frequent intervals.

Regardless of the specific type of facility, training should include, though not be limited to the following;

- Hazard recognition and prevention (fire, explosion, etc.)
- Proper use of fire extinguishers
- Emergency reporting procedures
- Preventive maintenance
- Hazardous materials spill response
- First Aid

8.6.4 Fire Prevention and Protection

The fire prevention and protection program must address the following topics:

Prevention; policies, practices and procedures designed to keep the conditions necessary for a fire from coming together

- Hot work permits
- Lockout/tag out policies
- Design specifications for storage of flammable materials

Severity reduction; policies, practices and procedures designed to reduce the spared of fire and end the fire.

- Emergency plans
- Alarm systems
- Portable fire extinguishers
- Fire Protection Equipment

Cleanup; policies, practices and procedures designed to return the affected area to an operational level and reduce other losses created by improper cleanup

- First aid
- Removal of debris to an appropriate waste site
- Equipment and facility repair

8.6.5. Fire Protection Equipment

1. Explosion Suppression Systems: Explosion suppression systems should be used in unusually hazardous areas such as elevator legs, boots and head, or in areas such as bins, distributors and tanks.
2. Portable Fire Extinguishers: All buildings within a facility must have fully charged and operable portable fire extinguishers. If employees are expected to use portable extinguishers or other firefighting equipment against incipient fires, they must be trained to use the equipment. Training must include the following:

- Correct type of extinguisher to use on different classes of fire
- Proper techniques for use of the equipment to extinguish a fire

3. Standpipes and Hoses: All areas within a facility that are above 75 feet from ground level and in which combustible materials other than grain are stored should have wet or dry standpipes and hoses installed.
4. Automatic Sprinkler Systems: Automatic sprinkler systems are recommended in areas containing combustible materials.
5. Fire Hydrants: All grain and feed mill facilities should have adequate public or private fire hydrants on site. Each fire hydrant should have an adequate water supply.

8.6.6. Fire Safety and Evacuation Plan

Fire Evacuation plans should include the following information

- Emergency escape routes must be clearly shown on floor plans and workplace maps
- Employers must know that their employees know the emergency escape routes
- Procedures for employees who must remain to operate critical equipment before evacuating
- Identification and assignment of personnel responsible for rescue or emergency medical aid

Fire Safety Plans should include the following information:

1. Procedure for reporting a fire or other emergency
2. Site plans indicating the following
   - The Occupancy assembly point
   - The locations of fire hydrants
   - The normal routes of fire department vehicles access
3. Floor Plans identifying the locations of the following
   - Exits
   - Primary evacuation routes
   - Secondary evacuation routes
   - Accessible egress routes
   - Areas of refuge
   - Exterior area for assisted rescue
   - Manual fire alarm boxes
   - Portable fire extinguishers
   - Occupant–use hose stations
   - Fire alarm annunciators and controls

The following American National Fire Fighting Association (NFFA) Standards must be following.

Table 8–3 American National Fire Fighting Association (NFFA) Standards

No.	Parameters	Proposed Capacity	Remark
1	Fire water flow	14 bar	
2	Deluging rate	12.0 liters/m2/min	
3	Foam rate	10.0 liters/m2/min	
4	Maximum water pressure	190 liters/min	For storage area

Emergency evacuation Drill: An exercise performed to train staff and occupants and to evaluate their efficiency and effectiveness in carrying out emergency excavation procedures

Employee Training and Response Procedures: Employee shall be trained in the fire emergency procedure described in their fire evacuation and fire safety plans and training should be based on these plans;

Frequency: Employee shall receive training in the contents of fire safety and evacuation plans and their duties as part of new employee orientation and at least annually thereafter. Records shall be kept and made available to the fire code official upon request.

Employee Training Program: Employee shall be trained in fire prevention, evacuation and fire safety in accordance with the following sections.

- Fire Prevention Training – Employee shall be apprised of the fire hazards of the materials and processes to which they are exposed. Each employee shall be instructed in the proper procedures for preventing fires in the conduct of their assigned duties
- Evacuation Training – Employees shall be familiarized with the fire alarm and evacuation signals, their assigned duties in the event of an alarm or emergency, evacuation routes, areas of refuge, exterior assembly areas and procedures for evacuation
- Fire Safety Training – Employee assigned fire–fighting duties shall be train Toilet to know the locations and proper use of portable fire extinguishers or other manual fire–fighting equipment and the protective clothing or equipment required for its safe and proper use.

8.6.7. Site Fire Control

1. Alert other people through fire alarm
2. If small, control using an extinguisher
3. Contact fire brigade if not under immediate control
4. Attend to human life in immediate danger
5. For electrical fires turn off power before fighting

6. Once out of the building, stay out. Do not allow people to go back into the burning building to collect valuables. While evacuating the building, close doors (but do not lock) to slow down the spread of fire
7. Obey all instructions
8. Proceed to an emergency evacuation area (Muster Point)

8.6.8. Fire Safety Plan and Firefighting System Prepared in Myanmar Yarn & Fabric Technology Company Limited

For fire safety plan, Myanmar Yarn & Fabric Technology Company Limited has a plan to keep sufficient amount of fire extinguishers, in case of emergency fire problems in factory building. Firefighting training plan is also prepared for all employees by using the instructions, techniques and guidelines in concern with fire emergency matters according to the guidelines of Myanmar Fire Services Department. Moreover, smoking inside the building is strongly prohibited to avoid unwanted fire problems and fire water will be stored by capacity of (2,500 gallon) of ground water tank. Myanmar Yarn & Fabric Technology Co.,Ltd have proposed to Bago Region investment commission to abide by the fire services department's rules, regulations, directives and instructions (See. Appendix – E)

8.6.9. Employee Information and Training

Employees must be informed about any operations in their work area where hazardous chemicals or materials are present. They must also be informed about the locations and availability of the hazard communication program, list of chemicals and SDSs. Employees must receive training on the following:

- Methods for detecting the presence or release of a hazardous chemical, such as monitoring devices and the visual
- appearance or odor of the chemical
- Physical and health hazards of chemicals in their work area
- How to protect themselves using work practices, emergency procedures and personal protective equipment
- How to interpret the information on the labels and MSDSs

8.6.10. Health and Safety Training Plan for Worker

Health and Safety Training plan currently used and provided in Myanmar Yarn & Fabric Technology Company Limited to all employees and workers by trainings internally and externally. Specific trainings are recommended and conducted according to the health and safety guidelines to enhance worker‘s health and to prevent all potential risks and hazards might occur in the factory. All required trainings related to health and the respective departments propose safety or operational parts, top management makes decision and HR organizes and conducts the trainings.

Table 8–4 Training Plan Used in Myanmar Yarn & Fabric Technology

No.	Health and Safety Guidelines	Training needs
1.	Management	General fire and emergency response plan, evacuation. All training materials and procedures covering health and safety for workers and employees
2.	Machine safety and noise management	Training for machine operations to all operators Use of PPE and proper use of any necessary protection Maintenance and Emergency procedures
3.	Environment safety	Understanding and training on recognition and maintenance not to affect environment
4.	Material storage and safety	Safety use of related devices and machines Use of necessary protections in working areas Sanitation work
5.	Fire Safety	Firefighting and evacuating training and practices Firefighting materials/ devices use
6.	First Aid	first aid / CPR/ AED training from providers (Outsource) training on hazard of pathogens

8.7. CORPORATE SOCIAL RESPONSIBILITY (CSR) PLAN

The CSR activities have the objective to uplift quality of life and gain favorable relations from all communities in the operation area. The CSR program for Myanmar Yarn & Fabric Company Limited consists of three main sectors; Health, Education and Community Development Sector. CSR activities are conducted in compliance with MIC's guideline for implementation of CSR program. Myanmar Yarn & Fabric Technology Company have already proposed some welfare programme to Bago Regional Investment commission for supporting stipend to employee's children, for promoting knowledge of half care, for undertaking systematic training course per rank. (see. Appendix – I)

Myanmar Yarn & Fabric Technology Company Limited will contribute 2% of our Net Profit to social welfare activities that will help society and country of Myanmar. Our social welfare activities shall include training of our employees such as on job training to be more qualified, language (Chinese) training on weekends with experienced teachers and providing necessary healthcare such as medical checkups and giving proper medical knowledge about deceases and its prevention. Part of our CSR activity such as donations will also contribute to public school around our factory (Table 8–5).

Table 8–5 CSR plan at Myanmar Yarn & Fabric Technology Company Limited

No	Particle	Contribution
1	Public school	1%
2	Non–profit training	0.5%
3	Employees healthcare	0.5%

8.7.1. Public School

We will contribute 1% of our net profit to the public school near the factory to be a part of creating the better community. We will also work together with the school to understand more about the needs and we will also ensure that our contributions will be used in the most effective and efficient way for the society for supporting scholarship programme to employee's children from work ship institution for school age children of the employees, to grand stipend for continuing the study or higher education.(Collage, University) level.

8.7.2. Non–profit Training

We will contribute 0.5% of our net profit for the trainings of our Employees. Our trainings include job–related trainings, language trainings and safety trainings. The main objective of our trainings are that we want our bags with their work but also improving their other skills such as language and promoting knowledge about safety measures and occupational health employees to be not only become more productive and more qualified.

8.7.3. Healthcare

One of our main concerns is the well–being of our employees. We will contribute 0.5% of our net profit for the healthcare, which includes medical checkup for the employees and providing health education to our workers. Furthermore for basic health care will make the employees by carrying out semi–annual health check–up with well qualified health care professionals.

8.8. BUDGET PLAN FOR ENVIRONMENTAL MANAGEMENT AND MONITORING

This section describes the budget plans for the environmental management and environmental monitoring by the project proponent. On the other hand, Myanmar Yarn & Fabric Technology Company Limited will take necessary environmental mitigation measures and its expenses for the environmental management not only at the construction and operation phases but also at the closing phase in accordance with their responsibility for the studies of recommendation.

The following table shows the expenditures for the implementation of EMP for operation phase annually. Estimation cost for EMP implementation is presented in Table 8–6.

Table 8–6 Cost estimation for EMP implementation

No	Item	Frequency/Times	Cost (USD)
Mitigation Plan			
1	Maintenance of air ventilation system	Once per year	200 per year
2	Grass plantation within the area of factory compound	Once per three mouth	70 per three mouth
3	Solid waste disposal	12	1000 per year
4	Purchase of Personal Protective Equipment (PPE)	Once per half a year	150 per half a year
5	Medical Check-up and Health Insurances	Once per year	500 per year
Emergency Preparedness			
1	Fire extinguisher	Once per month	300 per month
2	Fire alarm system	Once per month	
3	First Aid Kid	Once per month	
Monitoring Plan			
1	Air quality	2	800 per year
2	Noise level	2	300 per year
3	Environmental compliance auditing	1	1,000 lump sum

8.9. GRIEVANCE REDRESS MECHANISM (GRM)

People who live near the project affected area or stakeholders can complain about the problems and impacts that they suffer; they can complain though Grievance Committee, which includes the responsible persons of Myanmar Yarn & Fabric Company Limited representative from Bago Industrial Zone and representative from General Administration Department (Bago Township). Small issues will be solved at the Grievance Committee stage and other unsolved problems will be submitted to higher responsible authorities and finally the responsible person decided by the court in legal terms. The following diagram (Figure 8–2) show steps of Grievance Redress Mechanism of Proposed Factory Project.

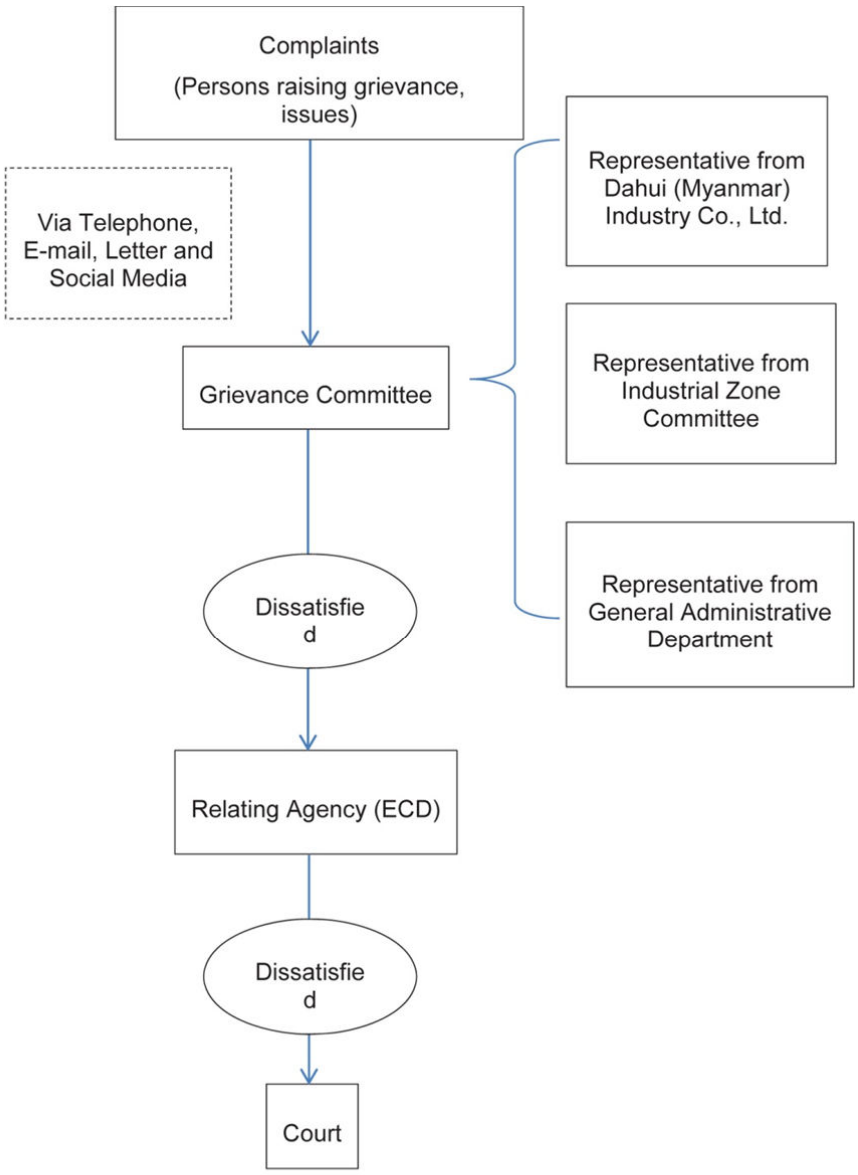


Figure 8–2 Grievance Redress Mechanism flow diagram

CHAPTER 9
CONCLUSION AND RECOMMENDATION

9.1. CONCLUSION

IEE has been prepared for Myanmar Yarn & Fabric Technology Company Limited is located at Land Plot No.23, 24, 25, (No.1420) (Ka), Sit Pin Sate Kwin, Sit Pin Sate Village Tract, Bago Township, Bago Region. The main objective of the study is focused specially on the required environmental management measures or creating environmentally friendly workplace. An IEE has been carried out for the factory according to the requirement of the proponent as it has been made for polyester production factory.

Thus, the factory management can take proper mitigation steps against adverse environmental impacts by following this IEE. The necessary measure to mitigate impact regarding different environmental parameter such as air, water, waste, noise has been proposed in this IEE.

However, all necessary implementation measures to mitigate adverse environmental, health and safety impacts have already been taken to meet National Environmental Quality (Emission) Guideline (2015). On the other, the factory has positive impacts in terms of environmental in the operation phase. Further, this will indirectly help in boosting up the national economic condition through foreign investment. An outline of IEE has been given in the present report to mitigate/enhance the impacts, which occurs during operation phase of the factory.

The effective implementation of the mitigation measures proposed will ensure towards good environmental management within the proposed project area. Furthermore, the environmental monitoring plan prepared as part of the EMP will provide adequate opportunities to address any residual impacts during the operation phase.

In conclusion, it has been figured out that, the proposed bags 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 will be of immense benefit to the local community and national development as well.

9.2. RECOMMENDATION

This is recommended that;

- All appropriate environmental management measures detailed in this report, together with any other environmental management commitments should be implemented throughout the entire life of the factory

- Solid wastes and liquid wastes need to dispose according to YCDC rules and regulation

- 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 EMP (Chapter 8) and practiced at operation level.

- Keep full records of environmental management activities and present to annual independent third party environment audit.

- Abide by the environmental conservation policy and strictly follow rules and regulation set up by the Ministry of Natural Resources and Environmental Conservation

- Develop corporate responsibility (CSR) initiatives with focus on improvement of community resilience, community development, maintenance of ecosystem services and environment.

- Assuming that the mitigation measures and monitoring requirements in the environmental management plan are effectively implemented and the project is not expected to have a significant adverse environmental impact.

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

APPENDIX A

Certificate of Incorporation

ကုမ္ပဏီမှတ်ပုံတင်လက်မှတ်

Certificate of Incorporation

MYANMAR YARN & FABRIC TECHNOLOGY COMPANY LIMITED
Company Registration No. 124803519

မြန်မာနိုင်ငံကုမ္ပဏီများဥပဒေ၂၀၁၇ အရ
MYANMAR YARN & FABRIC TECHNOLOGY COMPANY LIMITED
အား ၂၀၂၀ ခုနှစ် ဖေဖော်ဝါရီလ ၁၄ ရက်နေ့တွင်
အစုရှယ်ယာအားဖြင့် တာဝန်ကန့်သတ်ထား သည့် အများနှင့်မသက်ဆိုင်သောကုမ္ပဏီ
အဖြစ် ဖွဲ့စည်းမှတ်ပုံတင်ခွင့်ပြုလိုက်သည်။

This is to certify that
MYANMAR YARN & FABRIC TECHNOLOGY COMPANY LIMITED
was incorporated under the Myanmar Companies Law 2017 on 14 February 2020 as a Private Company Limited by Shares.

ကုမ္ပဏီမှတ်ပုံတင်အရာရှိ
Registrar of Companies
ရင်းနှီးမြှုပ်နှံမှုနှင့်ကုမ္ပဏီများညွှန်ကြားမှုဦးစီးဌာန
Directorate of Investment and Company Administration

DIRECTORATE OF INVESTMENT AND COMPANY ADMINISTRATION

Myanmar Companies Online Registry - Company Extract

Company Name (English)
MYANMAR YARN & FABRIC TECHNOLOGY COMPANY LIMITED

Company Name (Myanmar)
-

Company Information

Registration Number	Registration Date	Status
124803519	14/02/2020	Registered
Company Type	**Foreign Company**	**Small Company**
Private Company Limited by Shares	Yes	-
Principal Activity	**Date of Last Annual Return**	**Previous Registration Number**
-	-	-

ddresses

Registered Office In Union	No. 1420(Ka), Sit Pin Sate Kwin, Plot No. 23+24+25 Sit Pin Sate Village Tract, Bago Township Bago Region, Myanmar

Officers

Name:	DAW SEIN SHWE OO	Type:	Director
Date of Appointment:	14/05/2020	Date of Birth:	18/10/1991
Nationality:	Myanmar	N.R.C./Passport:	9/KHAMASA(N)018376
Gender:	Female	Business Occupation:	-
Name:	MR. XIA GANG	Type:	Director
Date of Appointment:	14/02/2020	Date of Birth:	19/02/1976
Nationality:	China	N.R.C./Passport:	ED7864300
Gender:	Male	Business Occupation:	-
Name:	MR. XIA TIE	Type:	Director
Date of Appointment:	14/02/2020	Date of Birth:	11/11/1977
ationality:	China	N.R.C./Passport:	EG7189095
Gender:	Male	Business Occupation:	-
Name:	MR. YANG XIAODONG	Type:	Director
Date of Appointment:	14/02/2020	Date of Birth:	30/11/1981
Nationality:	China	N.R.C./Passport:	E71767753
Gender:	Male	Business Occupation:	-

Ultimate Holding Company

Name of Ultimate Holding Company	Jurisdiction of Incorporation	Registration Number
-	-	-

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DIRECTORATE OF INVESTMENT AND COMPANY ADMINISTRATION

Myanmar Companies Online Registry - Company Extract

Company Name (English)
MYANMAR YARN & FABRIC TECHNOLOGY COMPANY LIMITED

Company Name (Myanmar)
-

Share Capital Structure

Total Shares Issued by Company
150,000

Currency of Share Capital
USD

Class	Description	Total Number	Total Amount Paid	Total Amount Unpaid
ORD	Ordinary	150,000	150,000.00	0.00

Members

Name of Company: CHICLEAD INTERNATIONAL (SINGAPORE) PTE. LTD
Registration Number: 202002661R Jurisdiction of Incorporation: Singapore

Class	Description	Total Number	Total Amount Paid	Total Amount Unpaid
ORD	Ordinary	150,000	150,000.00	0.00

Mortgages and Charges

Form / Filing Type	Effective Date

No records available

Details about all mortgages and charges can be accessed from the Company Profile Filing History at no charge.

Filing History

Form / Filing Type	Effective Date
C-4 | Notice of change of registered office or principal place of business	27/05/2020
D-1 | Particulars of directors and secretary	15/05/2020
C-2 | Notice of change of company name	20/02/2020
A-1 | Application for incorporation as a private company limited by shares	14/02/2020

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APPENDIX B

CONTRACT

ပြည်ထောင်စုသမ္မတမြန်မာနိုင်ငံတော်
REPUBLIC OF THE UNION OF MYANMAR

အခွန်တံဆိပ်ခေါင်း
REVENUE STAMP

၁၀၀၀ ကျပ် ငွေတစ်ထောင်ကျပ် K 1000

ကနဦးပတ်ဝန်းကျင်ဆန်းစစ်ခြင်း(Initial Environmental Examination–IEE) အစီရင်ခံစာရေးဆွဲရန် လုပ်ငန်းအပ်နှံခြင်းဆိုင်ရာ သဘောတူစာချုပ်

ဤသဘောတူစာချုပ်ကို ၂၀၂၂ ခုနှစ်၊ ဇန်နဝါရီလ၊ ၂၈ ရက်နေ့တွင် ရန်ကုန်မြို့နှင့်နေပြည်တော်မြို့တို့၌ အောက်ဖော်ပြပါအတိုင်း စာချုပ် ချုပ်ဆိုကြသည်–

လုပ်ငန်းအပ်နှံသူ ။ ။ Ally for Sustainable League Company Limited
အခန်းအမှတ်(7/A)၊ 95 Residence၊ (၈)မိုင်၊ မရမ်းကုန်းမြို့နယ်၊
ရန်ကုန်မြို့။

လုပ်ငန်းလက်ခံဆောင်ရွက်သူ ။ ။ Yaung Chi Nagar (Gold & Mining Production) Company Limited
အမှတ် ပ–၁၉၃၊ အင်ကြင်းလမ်း၊ သပြေကုန်းဈေးအနီး၊ ဇေယျာသီရိမြို့နယ်၊
နေပြည်တော်မြို့။

၁။ အထက်ပါလုပ်ငန်းအပ်နှံသူ Ally for Sustainable League Company Limited (၎င်းကုမ္ပဏီကိုယ်စား ဒေါ်စိန်ရွှေဦး (မန်နေးဂျင်းဒါရိုက်တာ)၊ ၉/ခပစ(နိုင်)၀၁၈၃၇၆) နှင့် လုပ်ငန်းလက်ခံဆောင်ရွက်သူ Yaung Chi Nagar (Gold & Mining Production) Company Limited (၎င်းကုမ္ပဏီကိုယ်စား ဦးဇော်ကိုကို (မန်နေးဂျင်းဒါရိုက်တာ)၊ ၄/ဖလန(နိုင်)၀၁၈၉၀၁)တို့အကြား ဤသဘောတူစာချုပ်အား ချုပ်ဆိုကြသည်။

၂။ လုပ်ငန်းအပ်နှံသူက လုပ်ငန်းလက်ခံဆောင်ရွက်သူထံသို့ မြေကွက်အမှတ် (၂၃+၂၄+၂၅)၊ အမှတ် (၁၄၂၀ ᵏ) စစ်ပင်ဆိပ်ကွင်း၊ စစ်ပင်ဆိပ်ကျေးရွာအုပ်စု၊ ပဲခူးမြို့နယ်၊ ပဲခူးတိုင်းဒေသကြီးမှ မြေဧရိယာ (၂၁.၈၈၅)ဧက၌ Myanmar Yarn & Fabri Technology Company Limited က ဆောင်ရွက်မည့် CMP စနစ်ဖြင့် ချုပ်ရက်လုပ်ခြင်းနှင့် ဆေးဆိုးခြင်းလုပ်ငန်း စီမံကိန်းအတွက် ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်းဆိုင်ရာ လုပ်ထုံးလုပ်နည်းနှင့်အညီ ကနဦးပတ်ဝန်းကျင်ဆန်းစစ်ခြင်းအစီရင်ခံစာ (Initial Environmental Examination – IEE Report) အပါအဝင် ပတ်ဝန်းကျင်ထိန်းသိမ်းရောက်စောင့်မှုတွင် ပတ်သက်သော လုပ်ငန်းများဆောင်ရွက်နိုင်ရန်နှင့် စက်ရုံမှ ထွက်ရှိသော စွန့်ပစ်ပစ္စည်း၊ စွန့်ပစ်အရည်များကို စနစ်တကျ ထိန်းသိမ်းစွန့်ပစ်ရန်၊ လူမှုရေးပြဿနာများကို စီမံခန့်ခွဲရန်အတွက် စီစဉ်ဆောင်ရွက်ရမည့် အကြံပြုချက်များ ပါဝင်သော အစီရင်ခံစာ ရေးဆွဲနိုင်ရန်အတွက် လုပ်ငန်းအပ်နှံခြင်းဖြစ်သည်–

၂–၁ စီမံကိန်းသည် မြေကွက်အမှတ်(၂၃+၂၄+၂၅)၊ အမှတ်(၁၄၂၀ ᵏ) စစ်ပင်ဆိပ်ကွင်း၊ စစ်ပင်ဆိပ်ကျေးရွာအုပ်စု၊ ပဲခူးမြို့နယ်၊ ပဲခူးတိုင်းဒေသကြီးမှ မြေဧရိယာ(၂၁.၈၈၅)ဧက၌ Myanmar Yarn & Fabri Technology Company Limited က ဆောင်ရွက်မည့် CMP စနစ်ဖြင့် ချုပ်ရက်လုပ်ခြင်းနှင့် ဆေးဆိုးခြင်းလုပ်ငန်း စီမံကိန်းဖြစ်သည်။

၂–၂ အဆိုပါ စီမံကိန်း၏ ကနဦးပတ်ဝန်းကျင်ဆန်းစစ်ခြင်းအစီရင်ခံစာ (Initial Environmental Examination – IEE Report) ရေးဆွဲဆောင်ရွက်ရန် လုပ်ငန်း အပ်နှံသူက လုပ်ငန်းလက်ခံ ဆောင်ရွက်သူသို့ လုပ်ငန်းအပ်နှံခြင်းဖြစ်သည်။

APPENDIX B

CONTRACT

-၃-

၅။ လုပ်ငန်းအပ်နှံသူနှင့် လုပ်ငန်းလက်ခံဆောင်ရွက်သူတို့သည် အထက်ဖော်ပြပါလုပ်ငန်းအားလုံးအတွက် လုပ်ငန်းဆောင်ရွက်ခအား စုစုပေါင်းငွေသားကျပ် ၇,၂၅၀,၀၀၀/-(ခုနှစ်ဆယ့်ငါးသိန်းငါးသောင်းကျပ်)တိတိဖြင့် လက်ခံဆောင်ရွက်ကြရန် နှစ်ဖက်သဘောတူ ကတိပြုကြပါသည်။

၆။ လုပ်ငန်းအပ်နှံသူအနေဖြင့် လုပ်ငန်းအပ်နှံချိန်တွင် လုပ်ငန်း၏ ပထမအရစ်အဖြစ် ငွေကျပ် ၃,၆၀၀,၀၀၀/-(သုံးဆယ့်ခြောက်သိန်းကျပ်)တိတိအား လည်းကောင်း၊ ကနဦးပတ်ဝန်းကျင်ဆန်းစစ်ခြင်း အစီရင်ခံစာအား သဘာဝပတ်ဝန်းကျင်ဦးစီးဌာန၊ နေပြည်တော်မြို့သို့ တင်ပြပြီးချိန်တွင် ဒုတိယအရစ်အဖြစ် ငွေကျပ် ၃,၆၅၀,၀၀၀/-(သုံးဆယ့်ခြောက်သိန်းငါးသောင်းကျပ်)အား လည်းကောင်း ပေးအပ်ရန် သဘောတူကြသည်။

၇။ ထို့အပြင်လုပ်ငန်းစာချုပ် ချုပ်သောနေ့တွင် လုပ်ငန်းအပ်နှံသူမှ ကနဦးပတ်ဝန်းကျင်ဆန်းစစ်ခြင်း (Initial Environmental Examination–IEE) အစီရင်ခံစာဆောင်ရွက်မည့် တတိယအဖွဲ့အစည်းတင်ပြခြင်းကို ပံ့ပိုးတိုင်းဒေသကြီး ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဦးစီးဌာနသို့ တင်ပြမည်ဖြစ်ပြီး တတိယအဖွဲ့အစည်း ခွင့်ပြုမိန့်ကို ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဦးစီးဌာနမှ ပြန်မကျလာပါက လုပ်ငန်းလက်ခံဆောင်ရွက်သူ Yaung Chi Nagar (Gold & Mining Production) Company Limited မှ စရံငွေ ၃,၆၀၀,၀၀၀/-(သုံးဆယ့်ခြောက်သိန်းကျပ်)တိတိကို (၇)ရက်အတွင်း ပြန်လည်ပေးအပ်ရမည်ဖြစ်ကြောင်း သဘောတူပါသည်။

၈။ ဤစာချုပ်ပါအချက်အလက်များအား လုပ်ငန်းအပ်နှံသူနှင့် လုပ်ငန်းလက်ခံဆောင်ရွက်သူတို့သည် ကောင်းစွာ ဖတ်ရှုနားလည်သဘောတူကြသည်ဖြစ်၍ မိမိတို့၏ လွတ်လပ်သော သဘောဆန္ဒများအရ အောက်ပါအသိသက်သေများ ရှေ့မှောက်တွင် လက်မှတ်ရေးထိုးစာချုပ် ချုပ်ဆို ကြပါသည်။

လုပ်ငန်းအပ်နှံသူ | **လုပ်ငန်းလက်ခံဆောင်ရွက်သူ**

ဒေါ်စိန်ရွှေဦး
မန်နေဂျင်းဒါရိုက်တာ
Ally for Sustainable League Co., Ltd

ဦးဇော်ကိုကို
မန်နေဂျင်းဒါရိုက်တာ
Yaung Chi Nagar (Gold & Mining Production) Co.,Ltd

အသိသက်သေများ

လက်မှတ် - .....
အမည် - ဦးအောင်မင်းကျော်
မှတ်ပုံတင်အမှတ်- ၈/ပခက(နိုင်)၁၄၃၃၆၀

လက်မှတ် - .....
အမည် - ဦးလှကို
မှတ်ပုံတင်အမှတ်- ၁၀/ကမရ(နိုင်)၀၀၂၅၄၇

APPENDIX C

D.1 Environmental Quality Result

Noise Result

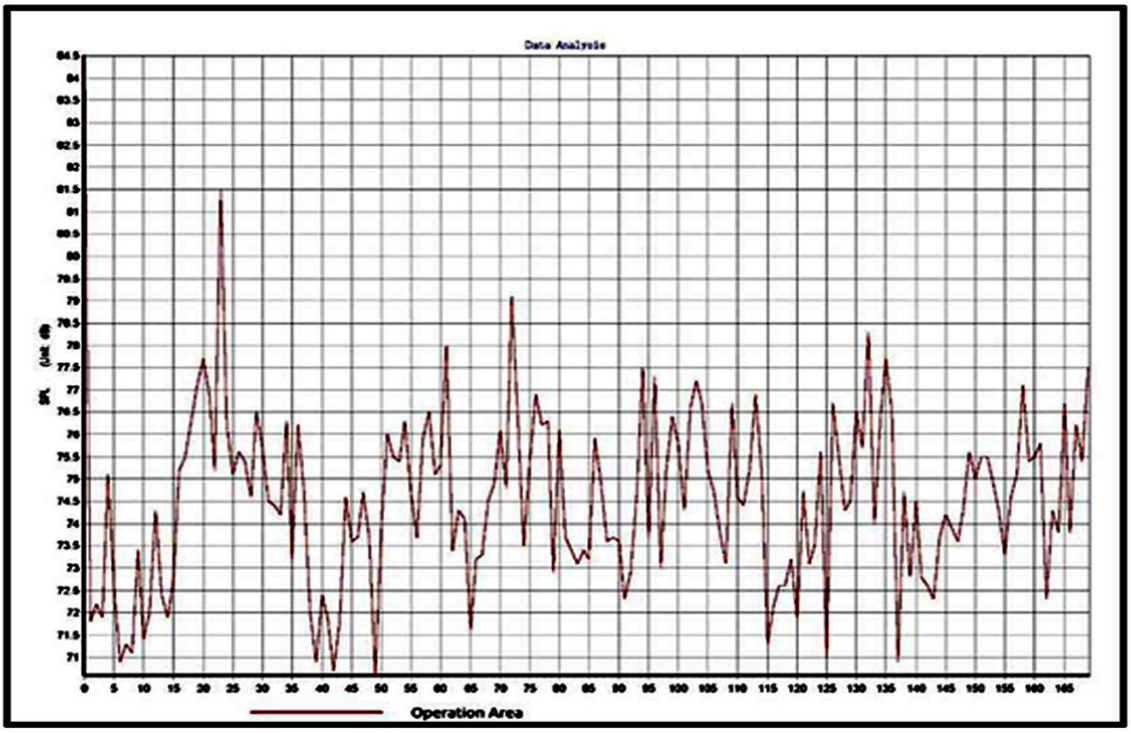
Project Name:	Myanmar Yarn & Fabric Technology Company Limited.
Project Location:	Plot No. 23,24,25 Sit Pin Sate Kwin, No.(1420) KA Sit Pin Sate Village Tract, Bago Township.
Sampling Date:	6–7 February 2022
Sampling Time:	1:00 am to 4:00 pm
Sampling Condition:	Normal
Sampling BY:	Environmental Team Represented By Yaung Chi Nagar Gold & Mining Production Company Limited.

Instrument	Type	Sampling Rate	Location
Digital Sound Level Meter	GM 1356 USB	30–130 dB	17° 27' 25.42" N 96° 25' 33.60" E

D.2 National Environmental Quality (Emission) Guideline

Receptor	One Hour Laeq (dBA)	Guideline Value
	Day Time	Night Time
	7:00 – 22:00 (10:00–22:00) For Public holidays	22:00 – 07:00 (22:00–10:00) For Public holidays
Residential, Institutional, Educational	55	45
Industrial Commercial	70	70

Monitoring Graph



D.3 Air Quality Result

Project Name:	Myanmar Yarn & Fabric Technology Company Limited.
Project Location:	Plot No. 23,24,25 Sit Pin Sate Kwin, No.(1420) KA Sit Pin Sate Village Tract, Bago Township.
Sampling Date:	6–7 February 2022
Sampling Time:	1:00 am to 4:00 pm
Sampling Condition:	Normal
Sampling BY:	Environmental Team Represented By Yaung Chi Nagar Gold & Mining Production Company Limited.

Instrument	Type	Sampling Rate	Location
OCEANUS (Air Quality Monitoring System)	Environmental Perimeter Air Station	1 second to 21 weeks	Operation Area (Outdoor)

National Environmental Quality (Emission) Guideline

Parameter	Averaging period	Guideline value	Unit
PM 10[a]	1–year 24–hour	20 50	($\mu g/M^3$)
PM 2.5[b]	1–year 24–hour	10 25	($\mu g/M^3$)
NO_2	1–year 1–hour	40 200	($\mu g/M^3$)
SO_2	24–hour 10–minute	20 500	($\mu g/M^3$)

Monitoring Result

Location	GPS Value	Parameters	Observed Value	Unit	Guideline Value
Production Area (Outdoor)	17° 27' 25.42" N 96° 25' 33.60" E	SO_2	6	($\mu g/M^3$)	20
		NO_2	19	($\mu g/M^3$)	200
		PM_{10}	7	($\mu g/M^3$)	50
		$PM_{2.5}$	4	($\mu g/M^3$)	25
		CO	0.01	ppm	–
		O_3	43	($\mu g/M^3$)	100
		VOC	0.18	ppm	–

D.4 Water Result

ALARM Ecological Laboratory

Water Testing Result Report

Report Number : EL-WR-22-00072 | Date : February 21, 2022

Client Information

Client Name	:	SEAM
Organization	:	YAUNG CHI NAGAR (Gold & Mining Production) Co.,Ltd
Client ID	:	-
Registration Date & Time	:	7.2.2022
Contact	:	09-269410460
Testing Purpose	:	-

Sample Information

Sample ID	:	7671
Sample Name	:	Sit Pin Sate
Sample Type / Source	:	Ground
Sampling Date & Time	:	6.2.2022 ; 15:00
Sample Location	:	Bago
Latitude	:	-
Longitude	:	-

Testing Results

This laboratory analysis report is based solely on the sample submitted by the client unless client took our sampling service.
This report shall not be reproduced except in full, without written approval of the laboratory

Sr.	Quality Parameters	Results	Units	Drinking Standards	Remarks
1	pH[1]	6.5	S.U	6.5 – 8.5[c]	Normal
2	Temperature[2]	20	°C	-	-
3	Colour[3]	5	HU	≤15 [c]	Normal
4	TSS[3]	0	mg/L	-	-
5	Ammonia[3]	0.12	mg/L	-	-
6	BOD_5 [6]	3	mg/L	-	-
7	COD[3]	< 30	mg/L	-	-
8	Total Phosphorous[3]	0.06	mg/L	-	-
9	Cadmium[7]	ND	mg/L	≤0.003[b]	LOD = 0.01 mg/L
10	Copper[7]	ND	mg/L	≤2[b]	LOD = 0.02 mg/L
11	Zinc[3]	< 0.02	mg/L	≤3 [c]	Normal
12	Nickel[3]	ND	mg/L	≤0.07 [c]	LOD = 0.2 mg/L
13	Sulfide[3]	< 0.04	mg/L	≤0.05 [c]	Normal
14	Phenol[3]	< 0.1	mg/L	-	-
15	Oil & Grease [9]	2	mg/L	-	-
16	Total Nitrogen[3]	< 0.5	mg/L	-	-
17	Chromium(Hexavalent)[3]	0.11	mg/L	≤0.05 [c]	Above the limit

"ND" = Not Detected | "LOD" = Lower limit of detection | " - " = No Reference Standard

Tested by	Checked by	Approved by
Daw May Aung Khine Lab. Technician II Ecological Laboratory ALARM	Daw Lin Myat Myat Aung Lab. Technician I Ecological Laboratory ALARM	Dr. Aye Aye Win Laboratory In-Charge Ecological Laboratory (ALARM)

531-D, MarlarMyaingYeik Thar Street, 8 Ward, Kamayut Tsp., Yangon. Tel: 01-503301, 01-503302, 09-407496078
Email: aelab@alarmmyanmar.org

APPENDIX E

Fire Safety Training

MYANMAR YARN & FABRIC TECHNOLOGY COMPANY LIMITED

Plot No.(23+24+25), No. (1420/KA), Sit Pin Sate Kwin, Sit Pin Sate Village Tract, Bago Township, Bago Region, Myanmar.

MYANMAR YARN & FABRIC TECHNOLOGY COMPANY LIMITED No..... Date.....

To.

The Chairman
Bago Region Investment Committee
Republic of the Union of Myanmar
Bago Region

Date : : 03 , June , 2020

Subject : : Explanation for Fire Safety Plan

We " **Myanmar Yarn & Fabric Technology Co., Ltd.**" have proposed to Bago Region Investment Commission to carry out **Manufacturing of Various Kinds of weaving and dyeing on Contract Manufacturing Processing (CMP) Basis** at in **Plot No.(23+24+25), No (1420^{Ka}), Sit Pin Sate Kwin, Sit Pin Sate Village Tract, Bago Township, Bago Region.**

Myanmar Yarn & Fabric Technology Company Limited shall have to abide by the Fire Services Department's rules , regulations, directives and instructions.

Yours Faithfully

杨晓冬

MR. YANG XIAO DONG
DIRECTOR
MYANMAR YARN & FABRIC TECHNOLOGY
COMPANY LIMITED

APPENDIX F

Plan for Health of C Star Myanmar

MYANMAR YARN & FABRIC TECHNOLOGY COMPANY LIMITED

Plot No.(23+24+25), No. (1420/KA), Sit Pin Sate Kwin, Sit Pin Sate Village Tract, Bago Township, Bago Region, Myanmar.

MYANMAR YARN & FABRIC TECHNOLOGY COMPANY LIMITED No..... Date.....

Plan for Health

We **Myanmar Yarn & Fabric Technology Company Limited** intends to **manufacturing of Various kinds of weaving and dyeing On Contract Manufacturing Processing(CMP) Basis** and Regarding workers of our Factory, we will provide the following health programs.

(a) Medicine and first aid kits will be available at the Factory to address emergency cases.

(b) The Factory will have first aid kits and a resting room for staff who feel sick.

(c) Those who are sick will be sent to Social Welfare Hospital for care.

(d) We will train employees on basic health care every three months. It aims to teach staff how to provide first aids for injured person during emergency cases.

(e) We will supply medicine and / or provide for the cost of medicine long-time employees as required.

With respect,

杨 晓 冬

MR. YANG XIAO DONG
DIRECTOR
MYANMAR YARN & FABRIC TECHNOLOGY
COMPANY LIMITED

APPENDIX G

Utilization of Electric Power

MYANMAR YARN & FABRIC TECHNOLOGY COMPANY LIMITED

Plot No.(23+24+25), No. (1420/KA), Sit Pin Sate Kwin, Sit Pin Sate Village Tract, Bago Township, Bago Region, Myanmar.

MYANMAR YARN & FABRIC TECHNOLOGY COMPANY LIMITED ☆ No..... Date.....

သို့

ဥက္ကဋ္ဌ

ပဲခူးတိုင်းဒေသကြီး ရင်းနှီးမြှုပ်နှံမှုကော်မတီ

ရက်စွဲ။ ။ ၂၀၂၀ ခုနှစ်၊ ဇွန် လ၊ (၃) ရက်။

အကြောင်းအရာ။ ။ လျှပ်စစ်သုံးစွဲမှုအား ရှင်းလင်းတင်ပြခြင်း။

ကျွန်တော်များ **Myanmar Yarn & Fabric Technology Company Limited** နိုင်ငံခြားသား ၁၀၀% ရင်းနှီးမြှုပ်နှံမှု ဖြင့် မြေကွက်အမှတ်(၂၃+၂၄+၂၅)၊ အမှတ် (၁၄၂၀ ကွ)၊ စစ်ပင်ဆိပ်ကွင်း၊ စစ်ပင်ဆိပ်ကျေးရွာအုပ်စု၊ ပဲခူးမြို့နယ်၊ ပဲခူးတိုင်းဒေသကြီးတွင် စီအမ်ပီစနစ်ဖြင့် ချည်ယက်လုပ်ငန်း နှင့် ဆေးဆိုးခြင်းလုပ်ငန်းအား လုပ်ကိုင်မည်ဖြစ်ပါသည်။ ကျွန်တော်များ **Myanmar Yarn & Fabric Technology Company Limited** တွင် လျှပ်စစ်သုံးစွဲမှု ပမာဏ 259,200 kwh per year ခန့်အသုံးပြုသွားမည်ဖြစ်ကြောင်း အသိပေးတင်ပြအပ်ပါသည်။

အထက်ပါအကြောင်းအရာအား ပဲခူးတိုင်းဒေသကြီးရင်းနှီးမြှုပ်နှံမှု ကော်မတီအား တင်ပြလျှောက်ထားအပ်ပါသည်။

လေးစားစွာဖြင့်

杨晓冬

MR. YANG XIAO DONG
DIRECTOR
MYANMAR YARN & FABRIC TECHNOLOGY
COMPANY LIMITED

APPENDIX H

Attendance for Public Consultation

သို့

ညွှန်ကြားရေးမှူးချုပ်

ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဦးစီးဌာန

သယံဇာတ နှင့် သဘာဝပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဝန်ကြီးဌာန

နေပြည်တော်

ရက်စွဲ၊ ၂၀၂၂ခုနှစ် ၊ဖေဖော်ဝါရီလ ၊ (၆)ရက်

အကြောင်းအရာ။ **သဘောထားမှတ်ချက် ထောက်ခံတင်ပြခြင်း။**

ပဲခူးမြို့နယ် ၊ စစ်ပင်ဆိပ်ကွင်းကျေးရွာအုပ်စု ၊ မြေကွက်အမှတ်(၂၃+၂၄+၂၅)၊ အမှတ်-၁၄၂၀(က) အနီးတွင် အောက်ဖော်ပြ ပါလုပ်ငန်းများအား ချည်ရက်လုပ်ခြင်း၊ ချည်ဆေးဆိုးခြင်း လုပ်ငန်း အကောင်အထည်ဖော်မည့် ကိစ္စနှင့် ပတ်သက်၍ မိမိတို့ ကျေးရွာအုပ်စုများတွင် အလုပ်အကိုင်များ ရရှိခြင်း လမ်းပန်းဆက်သွယ်ရေးကောင်းမွန်ခြင်း၊ စီးပွားရေးအား အထောက်အကူပြုသော လုပ်ငန်းများ ဖြစ်သောကြောင့် ကန့်ကွက်ရန်မရှိ သဘောတူပါကြောင်း အောက်တွင် လက်မှတ်ရေးထိုးကြပါသည်။

စဉ်	အမည်	မှတ်ပုံတင်အမှတ်	နေရပ်လိပ်စာ	လက်မှတ်
၁	ဦးသိန်းဟန်	၇/ပခန(နိုင်) ၁၅၄၅၁၃၄	စစ်ပင်ဆိပ် (ရပ်ကွက်အုပ်ချုပ်ရေးမှူး)	
၂	ဦးကျင်ဆိုး	-	စစ်ပင်ဆိပ် (ရပ်မိရပ်ဖ)	
၃	ဦးဆန်းဦး	၇/ပခန(နိုင်) ၁၅၄၇၃၂	စစ်ပင်ဆိပ် (အထောက်အကူ)	
၄	ဦးဝင်းအောင်	-	စစ်ပင်ဆိပ် (အထောက်အကူ)	
၅	ဦးဇော်နိုင်	၇/ပခန(နိုင်) ၁၁၄၀၇၀	စစ်ပင်ဆိပ် (အထောက်အကူ)	
၆	ဦးကျော်သောင်း	၇/ပခန(နိုင်) ၁၅၄၃၇၇	စစ်ပင်ဆိပ် (ရာအိမ်မှူး)	
၇	ဦးကျော်ဖွေး	၇/ပခန(နိုင်) ၂၃၂၄၂	စစ်ပင်ဆိပ် (အထောက်အကူ)	
၈	ဦးသိန်းဇော်လင်း	၇/ပခန(နိုင်) ၁၄၄၁၅၇	စစ်ပင်ဆိပ် (ရပ်မိရပ်ဖ)	
၉	ဦးကောင်းထက်ကျော်	-	စစ်ပင်ဆိပ် (ရပ်မိရပ်ဖ)	
၁၀	ဒေါ်မြင့်မြင့်နိုင်	-	စစ်ပင်ဆိပ် (ရပ်မိရပ်ဖ)	

APPENDIX H

Attendance for Public Consultation

စဉ်	အမည်	မှတ်ပုံတင်အမှတ်	နေရပ်လိပ်စာ	လက်မှတ်
၁၁	ဒေါ်ခင်သန်းအေး	၇/ပခန(နိုင်)၂၁၃၃၀၇	စစ်ပင်ဆိပ် (ရပ်မိရပ်ဖ)	
၁၂	ဦးဖေ	၃/ကဆက(နိုင်)၀၁၆၉၂၆	စစ်ပင်ဆိပ် (ရပ်မိရပ်ဖ)	
၁၃	ဦးဝင်းကျော်	၈/ပခက(နိုင်)၁၄၃၃၆၀	မဲချုံးတိုင်း	
၁၄	ဦးကောင်းဆင်း	၁၂/ဗဂတ(နိုင်)[illegible]	မရမ်းကုန်း	
၁၅	ဦးအောင်မြင့်ရဲ	၁၂/ဒပန(နိုင်)၀၅၈၁၀၇	မရမ်းကုန်း	
၁၆				
၁၇				
၁၈				
၁၉				
၂၀				

မိမိတို့ရှေ့မှောက်တွင် လက်မှတ်ရေးထိုးသည်မှာ မှန်ကန်ပါသည်။

၂၀၂၂ ခုနှစ်၊ ဖေဖော်ဝါရီလ၊ (၆) ရက်

ကျေးရွာအုပ်စုအုပ်ချုပ်ရေးမှူး
စစ်ပင်ဆိပ်ကျေးရွာအုပ်စု
(လက်မှတ်)

APPENDIX I

Responsibility for Corporate Social Responsibility

MYANMAR YARN & FABRIC TECHNOLOGY COMPANY LIMITED

Plot No.(23+24+25), No. (1420/KA), Sit Pin Sate Kwin, Sit Pin Sate Village Tract, Bago Township, Bago Region, Myanmar.

လူမှုရေးဆိုင်ရာ တာဝန်ယူမှုများ (Corporate Social Responsibility-CSR)

၁။ မြန်မာနိုင်ငံရင်းနှီးမြှုပ်နှံမှု ဥပဒေအရ ကျွန်တော်တို့၏ "Myanmar Yarn & Fabric Technology Company Limited" သည် မြေကွက်အမှတ်(၂၃+၂၄+၂၅)၊ အမှတ်(၁၄၂၀[ကွ])၊ စစ်ပင်ဆိပ်ကွင်း၊ စစ်ပင်ဆိပ်ကျေးရွာအုပ်စု၊ ပဲခူးမြို့ ၊ ပဲခူးတိုင်းဒေသကြီးရှိ ဧရိယာ(၂၈)ဧကော (၁၁၃၁၁.၀၈ စတုရန်းမီတာ) အကျယ်အဝန်းရှိ မြေကွက်အနက်မှ (၂၁.၈၈၅)ဧကော (၈၈၅၆.၅၃ စတုရန်းမီတာ)အား နှစ်ရှည်ငှားရမ်း၍ "Contract Manufacturing Processing(CMP) စနစ်ဖြင့် "ချည်ယက်လုပ်ခြင်း နှင့် ဆေးဆိုးခြင်း" လုပ်ငန်း (Manufacturing of Various Kinds of Weaving And Dying on CMP Basis) ဆောင်ရွက်ရန် ပဲခူးတိုင်းဒေသကြီး ရင်းနှီးမြှုပ်နှံမှုကော်မတီသို့ အတည်ပြုလွှာက်လွှာ ပေးပို့တင်ပြ လွှာက်ထားခြင်း ဖြစ်ပါသည်။ ဖော်ပြပါလုပ်ငန်းဆောင်ရွက် ရန်အတွက် လိုအပ်သော ဝန်ထမ်းများအား ပြည်တွင်း ပြည်ပမှ ခန့်အပ်လျှက် ဆောင်ရွက်မည်ဖြစ်ပါသည်။ အဆိုပါ လုပ်ငန်းဆောင်ရွက်ရန်အတွက် ရင်းနှီးမြှုပ်နှံ မှုများအား ငွေကြေးအားဖြင့်လည်းကောင်း၊ ပစ္စည်းအားဖြင့်လည်းကောင်း ရင်းနှီးမြှုပ်နှံမှု ဆောင်ရွက်မည် ဖြစ်ပါသည်။

၂။ ကျွန်တော်တို့ ကုမ္ပဏီ၏ လူမှုရေးဆိုင်ရာတာဝန်ယူမှုများ (Corporate Social Responsibility-CSR) အနေနှင့် နိုင်ငံတော်အတွက် အခွန်ဘဏ္ဍာငွေများ ထမ်းဆောင်ပြီးနောက် ကျန်ရှိသော အသားတင်အမြတ်၏ ၂% ကို ပထမနှစ်မှ တတိယနှစ်အတွင်း လည်းကောင်း၊ ၂% အား စတုတ္ထနှစ်မှ နှစ်(၃၀) အထိ ထည့်ဝင်ကာ တိုင်းဒေသကြီးအစိုးရအဖွဲ့၏ လမ်းညွှန်ချက်များနှင့်အညီ အောက်ဖော်ပြပါ လူမှုအကျိုးပြုလုပ်ငန်းများနှင့် လိုအပ်သည့်နေရာများတွင်သုံးစွဲသွားရန် စီစဉ်ဆောင်ရွက်လျက်ရှိပါကြောင်း တင်ပြ အပ်ပါသည်။

(က) ဝန်ထမ်းများ၏ အရည်အသွေး ပိုမိုတိုးတက်ကောင်းမွန်လာစေရန် (၆၀%)

(ခ) ဒေသတွင်း ဖွံ့ဖြိုးတိုးတက်ရေးအတွက် လမ်းများ တံတားများ၊ (၄၀%)
ကျောင်းများ၊ စာကြည့်တိုက်များအား တည်ဆောက်ထိန်းသိမ်းခြင်း
လုပ်ငန်းများနှင့် ရပ်ရွာဖွံ့ဖြိုးတိုးတက်ရေးအတွက် အခြားလိုအပ်သော
နေရာများတွင် ပံ့ပိုးပေးခြင်း။

၃။ သို့ဖြစ်ပါ၍ ကျွန်တော်တို့ ကုမ္ပဏီ၏ ""Contract Manufacturing Processing (CMP) စနစ်ဖြင့် ချည်ယက်လုပ်ခြင်းနှင့် ဆေးဆိုးခြင်း" လုပ်ငန်း (Manufacturing of Various Kinds of Weaving and Dyeing) လုပ်ကိုင်ရန်အတွက် ပဲခူးတိုင်းဒေသကြီးရင်းနှီးမြှုပ်နှံမှုကော်မတီ၏ အတည်ပြုမိန့်ဖြင့် ဆောင်ရွက်ခွင့် အတွက် ဆောလျင်စွာ ခွင့်ပြုပေးနိုင်ပါရန် ရိုသေလေးစားစွာဖြင့် တင်ပြအပ်ပါသည်။

လေးစားစွာဖြင့်

လွှာက်ထားသူ

杨 晓 冬

MR. YANG XIAO DONG
DIRECTOR
MYANMAR YARN & FABRIC TECHNOLOGY
COMPANY LIMITED

APPENDIX J

Machine Photo

O-Type OverFlow Cylinder

Pre-Shrinking Machine

Continuous Ring Dryer

Continuous Open Width Washing Machine

Roughening Machine

Shearing Machine

Singeing Machine

Sanding Machine (Lafa)

Carbon Grinding Machine(Nafa)

Inspecting Machine

Knitting Machine

Constant Temperature Oven

Electronic Balance

Single Yarn Strength Machine

Color Fastness to Washing Machine

Yarn Dryer

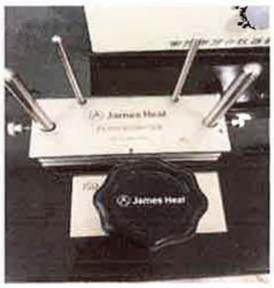
Twist Machine

Sweat Fastness Oven

Tribometer

Washing Machine

PH Detector



Perspiration tester

Pilling Box

Screen Machine

Waste Water Lifting Pump

Frequency Conversion

Submersible Pusher

Microporous Aerator

Roots Blower

Circulating Pump

Sludge Pump

Full-bridge Peripheral Drive Mud Scraper (24000mm)

Perforated Aeration

Plate and Frame Filter Press

Diaphragm Pump and Fresh Water Pump

One Set of Electrical Control Equipment(Transformer Room)

Boiler (20T/Coal)

Generator Set(1000KW)

Transformer(1600KV)

The Whole Equipment
(Anaerabic Treatment)

APPENDIX K

Raw Photo

POSYESTER MIXED

100%VISCOSE

85% VISCOSE

100%ACRYLIC

ACRYLIC MIXED

85% WOOL

Cationic (Various kinds of color)

Intracid/Arcilan/Neolan

Anazol/Intracron

LANASOL(Reactive Dyes for Wool)

Neutrilan/Argacid/Lanaset

Levelling agent

Bleaching Agent

Dispersing agent

Scouring agent

Fixing Agent

Softening agent

Stabilizing agent

Acid

Alkali

Finishing

Salt

Chelating agent

A

A