

FUYUN MYANMAR COMPANY LIMITED

ENVIRONMENTAL MANAGEMENT PLAN

Production of Electrical Gifts, Decorations, and Its Related Materials on CMP Basis



Myanwei Environmental Solutions Company Limited

28-Dec-21



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Date: 12/28/2021

Attention: Dear Director
Environmental Conservation Department

Subject: Environmental Management Plan (EMP) Report in respect of the manufacturing of electrical gift, decoration, and its related materials by Fuyun Myanmar Company Limited.

EMP report describes the environmental condition of a project, including significant impact, formulation of mitigation measures and preparation of institutional requirements and environmental monitoring.

Myanwei Environmental Solutions Company Limited has prepared this report 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 considering 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.

We strongly commit that this report was prepared in compliance with Myanmar Environmental Laws and Regulations

FUYUN MYANMAR CO., LTD

Date 12, 28, 2021

Dear: Director

Environmental Conservation Department

Nay Pyi Taw

Subject: Environmental Management Plan (EMP) Report in respect of the Manufacturing of electrical gifts, decorations, and its related materials on CMP Basis

We refer to the captioned EMP report, which has been prepared by Myanwei Environmental Solutions Co., Ltd. (Third Party Consultant) in compliance with EIA procedure (2015) and other related laws/rules.

We believe, to the best of our knowledge at the time of writing, that;

- The EMP report is accurate and complete
- The EMP report has been prepared in strict compliance with all applicable laws, rules, regulations, and procedures in force.
- Fu Yun Myanmar Company Limited will always comply fully with all commitment and obligations included in the EMP report.

We acknowledge and understand that

TABLE OF CONTENTS

TABLE OF CONTENTS	I
LIST OF TABLES	IV
LIST OF FIGURES	VI
LIST OF APPENDICES	VII
ABBREVIATION	VIII
အစီရင်ခံစာအကျဉ်းချုပ်	IX
EXECUTIVE SUMMARY	XV
1. INTRODUCTION	1-1
1.1. PROJECT BACKGROUND	1-1
1.1.1. Project Proponent Profile.....	1-1
1.1.2. Environmental Consultant Profile	1-3
1.2. OBJECTIVE OF ENVIRONMENTAL MANAGEMENT PLAN	1-4
1.2.1. Institutional Requirement.....	1-5
1.2.2. Responsibilities of the EMP	1-5
1.2.3. Structure and Responsibilities for the EMP Development and Implementation.....	1-5
2. POLICY, LEGAL AND INSTITUTIONAL FRAMEWORK	2-7
2.1. MYANMAR REGULATORY FRAMEWORK	2-7
2.1.1. Laws and Regulations Related to Environmental and Social Considerations	2-7
2.2. NATIONAL ENVIRONMENTAL QUALITY (EMISSION) GUIDELINES	2-19
2.2.1. General Guidelines	2-20
2.2.2. Semiconductors and Other Electronics Manufacturing	2-22
2.2.3. IFC EHS Guidelines.....	2-23
2.3. INSTITUTIONAL ARRANGEMENT	2-24
2.4. COMMITMENT OF FU YUN (MYANMAR) COMPANY LIMITED	2-25
3. PROJECT DESCRIPTION	3-26
3.1. LOCATION	3-26
3.2. SITE DESCRIPTION	3-26
3.3. PROJECT OPERATION	3-31
3.3.1. Machinery and equipment	3-31
3.3.2. Work force.....	3-31
3.3.3. Utilities.....	3-31
3.4. PRODUCTION PROCESS	3-33
3.4.1. Raw Material.....	3-33
3.4.2. Production Process.....	3-42

Environmental Management Plan

3.4.3. Products.....	3-45
3.5. GENERATION OF WASTE, EMISSION AND DISTURBANCES	3-47
4. BRIEF DESCRIPTION OF SURROUNDING ENVIRONMENT	4-49
4.1. METHODOLOGY FOR DATA COLLECTION AND ANALYSIS	4-49
4.2. ENVIRONMENTAL BASELINE STUDY	4-49
4.2.1. Surrounding Map View of Project Area	4-49
4.2.2. Baseline environmental monitoring	4-49
4.2.3. Climate and Meteorology.....	4-50
4.2.4. Air Quality	4-52
4.2.5. Weather Condition	4-52
4.2.6. Noise.....	4-53
4.2.7. Light	4-54
4.3. PHYSICAL COMPONENT	4-55
4.3.1. Topography.....	4-55
4.3.2. Geology.....	4-55
4.3.3. Tectonics.....	4-56
4.3.4. Soil	4-57
4.3.5. Hydrogeology.....	4-59
4.4. BIOLOGICAL COMPONENT	4-59
4.5. SOCIO-ECONOMIC COMPONENT	4-60
4.5.1. Population	4-60
4.5.2. Religion	4-60
4.5.3. Local Economy	4-60
4.5.4. Public Infrastructure and Access.....	4-61
4.6. CULTURAL AND VISUAL COMPONENTS.....	4-63
5. RISK ASSESMENT AND MITIGATION MEASURE PLAN	5-64
5.1. METHODOLOGY FOR THE ASSESSMENTS	5-64
5.2. IMPACT IDENTIFICATIONS	5-65
5.3. IMPACT ON ENVIRONMENTAL RECOURSE	5-65
5.3.1. Impact on Air Quality	5-65
5.3.2. Energy Consumption and Related CO ₂ (GNG) emission	5-65
5.3.3. Impact of Noise.....	5-66
5.3.4. Impact on Water Quality	5-67
5.3.5. Wastewater Effluents.....	5-67
5.3.6. Impact on Soil Quality.....	5-67

Environmental Management Plan

5.3.7.	Impact of Waste Disposal.....	5-67
5.4.	IMPACT ON HUMAN	5-67
5.4.1.	Health Environmental Hazards.....	5-67
5.4.2.	Socio-economic Benefit.....	5-68
5.4.3.	Occupational Health and Safety.....	5-68
5.5.	PROJECT ACTIVITIES AND ITS SIGNIFICANT IMPACTS AND MITIGATION MEASURE 5-69	
5.6.	ENVIRONMENTAL IMPACTS MITIGATION MEASURES FOR OPERATION PHASE ...	5-70
5.6.1.	Recommended Air Impact Mitigation Measures	5-70
5.6.2.	Mitigation Measures for Noise Impact.....	5-71
5.7.	MITIGATION MEASURES FOR WATER CONSUMPTION AND CONTAMINATION	5-71
5.7.1.	Recommended Wastewater Effluents Impact Mitigation Measures	5-71
5.7.2.	Toilet Facilities	5-72
5.8.	MITIGATION MEASURES FOR WASTE DISPOSAL	5-72
5.9.	MITIGATION MEASURES FOR OCCUPATIONAL HEALTH AND SAFETY	5-72
5.9.1.	Recommended Mitigation Measures for Occupational Health and Safety.....	5-72
5.9.2.	First Aid Guidelines and Facilities	5-73
6.	PUBLIC CONSULTATION PROCESS	6-75
6.1.	RECOMMEND SUGGESTION AND COMMENT	6-75
7.	ENVIRONMENTAL MANAGEMENT PLAN	7-77
7.1.	AIR POLLUTION/DUST MANAGEMENT PLAN	7-77
7.2.	NOISE MANAGEMENT PLAN	7-77
7.3.	SOLID WASTE MANAGEMENT PLAN	7-78
7.4.	WASTEWATER MANAGEMENT PLAN	7-79
7.5.	ENERGY MANAGEMENT PLAN	7-79
7.6.	WATER CONSUMPTION MANAGEMENT PLAN.....	7-80
7.7.	EMERGENCY RESPONSE AND DISASTER MANAGEMENT PLAN	7-80
7.8.	ENVIRONMENTAL MONITORING SCHEDULE AND REPORTING.....	7-81
7.9.	CORPORATE SOCIAL RESPONSIBILITY (CSR) PLAN	7-83
7.9.1.	Public School	7-83
7.9.2.	Non-profit Training	7-83
7.9.3.	Healthcare.....	7-83
7.10.	BUDGET PLAN FOR ENVIRONMENTAL MANAGEMENT AND MONITORING.....	7-83
7.11.	GRIEVANCE REDRESS MECHANISM (GRM)	7-84
8.	CONCLUSION	8-86
9.	RECOMMENDATION	9-87

LIST OF TABLES

Table 1-1	Information of Investor	1-1
Table 1-2	Salient features of the project.....	1-2
Table 1-3	Member of EMP study team.....	1-3
Table 2-1	List of Myanmar's Law Relating to Environmental Management	2-7
Table 2-2	WHO's air quality guideline	2-20
Table 2-3	Wastewater, Storm Water Runoff, Effluent and Sanitary Discharges (general application) 2-21	
Table 2-4	Community health and safety contents	2-24
Table 3-1	List of machinery.....	3-31
Table 3-2	Employment Schedule of Fu Yun Myanmar Industrial Limited.....	3-31
Table 3-3	List of Raw Material Requirement For 1 Pcs (Norm)	3-33
Table 3-4	Annual production rate	3-46
Table 3-5	Waste generation and waste amount.....	3-47
Table 4-1	Annual rainfall and temperature	4-51
Table 4-2	Relative humidity and temperature measure at factory	4-51
Table 4-3	Observed air quality results	4-52
Table 4-4	Noise level measurement result	4-53
Table 4-5	Recommended illumination and limiting glare index based on IES Code, 1968.....	4-54
Table 4-6	Result of Light Measurement in Fu Yun Myanmar Company Limited	4-55
Table 4-7	Population of Males and Females at Hlaing Thar Yar Township (2017)	4-60
Table 4-8	Religion in Hlaing Thar Yar Township (2017)	4-60
Table 4-9	Transportation route	4-61
Table 4-10	List of major school in Hlaing Thar Yar Township	4-61
Table 4-11	Common Diseases in the Hlaing Thar Yar Township	4-62
Table 4-12	Lists of hospital in the Hlaing Thar Yar Township.....	4-62
Table 5-1	Impact assessment parameters and its scale.....	5-64
Table 5-2	Air Quality Impact Sources	5-65
Table 5-3	Category of GHGs Assessment	5-65
Table 5-4	CO ₂ Emission by the Uses of Fuel	5-66
Table 5-5	Permissible exposure of noise limits	5-66
Table 5-6	Evaluation and Perditi on of Significant Impacts for Operation Phase	5-69

Environmental Management Plan

Table 6-1	Summary of public consultation meeting	6-75
Table 7-1	Environmental monitoring schedule	7-82
Table 7-2	CSR plan at Fu Yun (Myanmar) Company Limited	7-83
Table 7-3	Cost estimation for EMP implementation	7-84

LIST OF FIGURES

Figure 1-1	Organization chart of Fuyun Myanmar Company Limited	1-2
Figure 1-2	PDCA cycle.....	1-4
Figure 3-1	Location map	3-27
Figure 3-2	Factory Layout Map	3-28
Figure 3-3	First floor layout drawing	3-29
Figure 3-4	Second floor layout drawing	3-30
Figure 3-5	Drinking water and general usage of water supply photos.....	3-32
Figure 3-6	Electricity facility	3-33
Figure3-7	Raw Materials and Chemicals Storage Planning Photo	3-42
Figure 3-8	Process flow diagram	3-43
Figure 3-9	Production process photo.....	3-44
Figure 3-10	Product Photos of Fu Yun Myanmar Factory	3-46
Figure 4-4	Surrounding condition map near proposed factory.....	4-50
Figure 4-3	Humidity and Temperature Measurement Photo.....	4-51
Figure 4-5	Air Quality Measurement Photo	4-52
Figure 4-6	Noise level result graph	4-53
Figure 4-7	Sound level measurement photo.....	4-54
Figure 4-8	Light Quality Measurement Photo.....	4-55
Figure 4-1	Geological Map of Yangon Region	4-56
Figure 4-2	Soil map of Yangon (Source: Land use of Bureau of Yangon)	4-58
Figure 5-1	Toilet facility photo	5-72
Figure 5-2	Emergency safety and fire management	5-74
Figure 6-1	Public consultation meeting.....	6-76
Figure 7-1	Grievance Redress Mechanism Flow Diagram.....	7-85

LIST OF APPENDICES

- APPENDIX A Company Document's Fu Yun Myanmar Company Limited
- APPENDIX B Transitional Consultant Certificate
- APPENDIX C Fire Safety Training Photo
- APPENDIX D Monitoring Result
- APPENDIX E Public Consultation Meeting

Abbreviation

1. CEMP	= Construction Environmental Management Plan
2. CMP	= Contract Manufacturing Process
3. CSR	= Corporate Social Responsibility
4. ECC	= Environmental Compliance Certificate
5. ECD	= Environmental Conservation Department
6. EIA	= Environmental Impact Assessment
7. EMoP	= Environmental Monitoring Plan
8. EMP	= Environmental Management Plan
9. GIIP	= Good International Industry Practices
10. HSE	= Health, Safety and Environment
11. IEE	= Initial Environmental Examination
12. IFC	= International Finance Corporation
13. NEQG	= National Environmental Quality (Emission) Guidelines
14. MIC	= Myanmar Investment Commission
15. MOECF	= Ministry of Environmental Conservation and Forestry
16. MONREC	= Ministry of Natural Resources and Environmental Conservation
17. OEMP	= Operation Environmental Management Plan
18. OSHA	= Occupational Safety and Health Administration
19. PPE	= Personal Protective Equipment
20. WHO	= World Health Organization
21. YCDC	= Yangon City Development Committee
22. YESB	= Yangon City Electricity Supply Board

အစီရင်ခံစာအကျဉ်းချုပ်

အဆိုပြုလုပ်ငန်းသည် CMP စနစ်ဖြင့်အီလက်ထရောနစ်စနစ်ဖြင့် ပြုလုပ်ထားသောလက်ဆောင်၊ အလှဆင်ပစ္စည်းများနှင့် ဆက်စပ်သောပစ္စည်းများ ထုတ်လုပ်ခြင်းလုပ်ငန်းအတွက် ရင်းနှီးမြှုပ်နှံသော ကုမ္ပဏီဖြစ်ပါသည်။ ရင်းနှီးမြှုပ်နှံမှုလိုင်စင်ကို ၂၀၁၉ခုနှစ်၊ ဇွန်လိုင်လ၊ ၁၁ ရက်နေ့တွင် (ထောက်ခံချက်အမှတ် ၁၉၉/၂၀၁၉)ဖြင့် ရန်ကုန်တိုင်းဒေသကြီး ရင်းနှီးမြှုပ်နှံမှုကော်မတီမှ ရရှိပြီးဖြစ်ပါသည်။ လုပ်ငန်းလည်ပတ်ရန်အတွက် မြန်မာနိုင်ငံသယံဇာတနှင့် သဘာဝပတ်ဝန်းကျင် ထိန်းသိမ်းရေးဝန်ကြီးဌာန (MONREC) ၏ အတည်ပြုချက်ရယူရန် လိုအပ်ကြောင်း ကော်မရှင်မှ မှာကြားခဲ့ပါသည်။

ထို့ကြောင့် မြန်မာနိုင်ငံ ပတ်ဝန်းကျင်ထိန်းသိမ်းရေး ဥပဒေ (၂၀၁၂)အရ၊ ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှုအစီအစဉ် (EMP) ပြုလုပ်ရန်လိုအပ်ကြောင်း ၂၀၁၉ ခုနှစ်၊ ဒီဇင်ဘာလ ၁၂ ရက်နေ့တွင် (စာအမှတ်၊ ရက-၁/၃/၄ (အီးအိုင်အေ) (၂၉၀၃/၂၀၁၉)ဖြင့် ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဦးစီးဌာန ရန်ကုန်တိုင်းဒေသကြီးမှ သဘောထားမှတ်ချက် ရရှိပြီးဖြစ်ပါသည်။ ထို့ကြောင့် EMP အစီအရင်ခံစာရေးဆွဲရန် တတိယအဖွဲ့အစည်းဖြစ်သော Myanwei Environmental Solutions Company Limited (Myanwei)မှ တာဝန်ယူရေးဆွဲခဲ့ပါသည်။

EMP အစီအစဉ်တွင် စက်ရုံ၌ ဖြစ်ပေါ်စေနိုင်သော ပတ်ဝန်းကျင်နှင့် လူမှုဘဝအပေါ် ဆိုးကျိုးသက်ရောက်မှုများကို လျော့ချရေး၊ စီမံခန့်ခွဲရေးနှင့် စောင့်ကြပ်ကြည့်ရှုရေး အစရှိသည့် အစီအစဉ်များ ပါဝင်ပါသည်။ ၎င်း EMP အစီအစဉ်များကို အကောင်အထည်ဖော်ရန်အတွက် Fuyun Myanmar Company Limited (Fuyun) သည် စက်ရုံတွင် ကျန်းမာရေး၊ ဘေးအန္တရာယ်ကင်းရှင်းရေးနှင့် ပတ်ဝန်းကျင်ဆိုင်ရာ အဖွဲ့အစည်းတစ်ခုထားရှိပြီး လျော့ချရေး၊ စီမံခန့်ခွဲရေးနှင့် စောင့်ကြပ်ကြည့်ရှုရေး အစီအစဉ်များကို အကောင်အထည်ဖော်သွားမည်ဖြစ်သည်။ (အသေးစိတ်ကို အခန်း ၁ တွင် ဖော်ပြထားပါသည်)

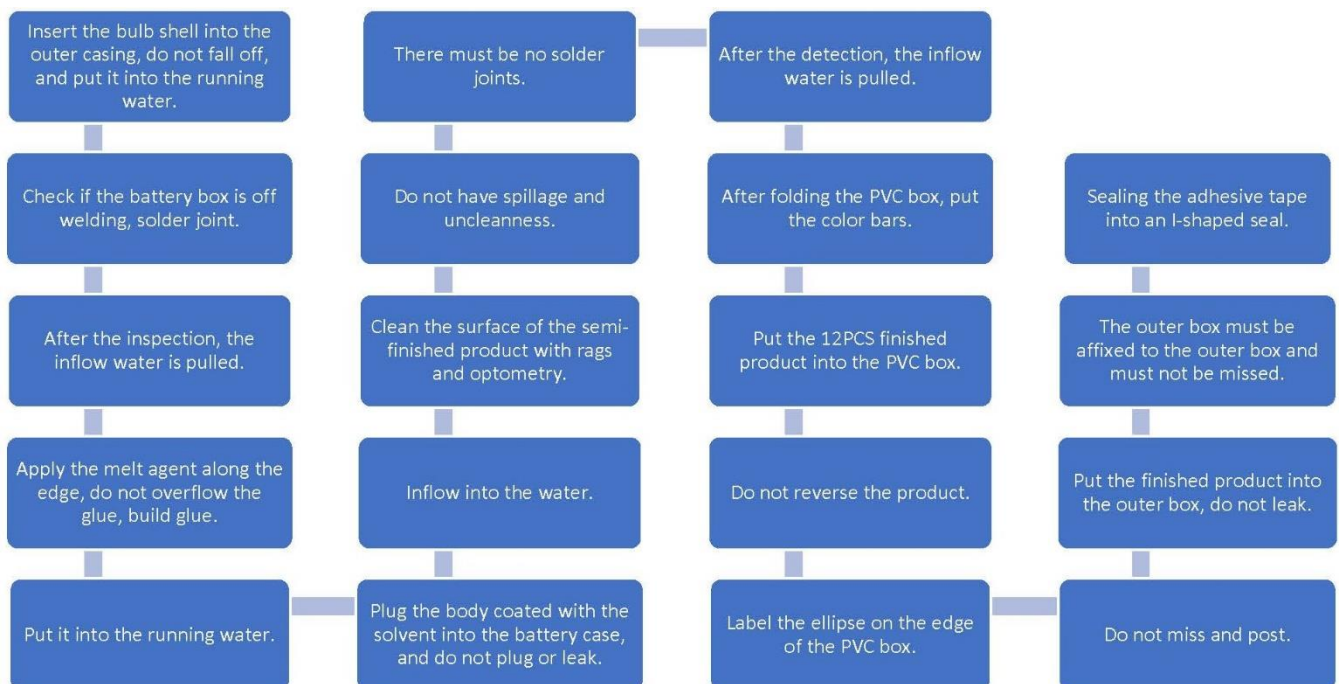
EMP ရေးဆွဲခြင်း၏ရည်ရွယ်ချက်မှာ နိုင်ငံတော်နှင့် နိုင်ငံတကာမှ ချမှတ်ထားသော ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးအစီအစဉ်များ၊ စည်းမျဉ်းစည်းကမ်းများ၊ ဥပဒေနှင့် နည်းဥပဒေများကို လိုက်နာပြီး ပတ်ဝန်းကျင်နှင့်လိုက်ရောညီထွေရှိသော ထိခိုက်မှုလျော့ချရေး အစီအစဉ်များပြုလုပ်ရန်ဖြစ်ပါသည်။ ထိုသို့ပြုလုပ်ရန်အတွက် Plan-Do-Check-Act (P D C A) စက်ဝိုင်းဖြင့် အစီစဉ်တကျ ပြုလုပ်သွားမည်ဖြစ်ပါသည်။ အစီအစဉ်တွင် စက်ရုံကြောင့် ဖြစ်ပေါ်စေနိုင်သော ပတ်ဝန်းကျင်နှင့် လူမှုဘဝအပေါ် ဆိုးကျိုးသက်ရောက်မှုများကို လျော့ချရေး၊ စီမံခန့်ခွဲရေးနှင့် စောင့်ကြပ်ကြည့်ရှုရေး အစရှိသည့် အစီအစဉ်များ ပါဝင်ပါသည်။ ၎င်း EMP အစီအစဉ်များကို အကောင်အထည်ဖော်ရန်အတွက် Fuyun Myanmar Company Limited သည် စက်ရုံတွင် ကျန်းမာရေး၊ ဘေးအန္တရာယ်ကင်းရှင်းရေးနှင့် ပတ်ဝန်းကျင်ဆိုင်ရာ အဖွဲ့အစည်းတစ်ခုထားရှိပြီး လျော့ချရေး၊ စီမံခန့်ခွဲရေးနှင့် စောင့်ကြပ်ကြည့်ရှုရေး အစီအစဉ်များကို အကောင်အထည်ဖော်သွားမည်ဖြစ်ပါသည်။ (အသေးစိတ်ကို အခန်း ၁ တွင် ဖော်ပြထားပါသည်)

ဥပဒေနှင့် နည်းဥပဒေ အခန်းတွင် MONREC မှ ထုတ်ပြန်ထားသည့် ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်းဆိုင်ရာ လုပ်ထုံးလုပ်နည်းများ၊ အမျိုးသားပတ်ဝန်းကျင်ဆိုင်ရာ အရည်အသွေး (ထုတ်လွှတ်မှု) လမ်းညွှန်ချက်များအပြင်

Environmental Management Plan

စက်ရုံနှင့်ဆက်စပ်သက်ဆိုင်နေပြီး လိုက်နာရမည့် ဥပဒေနှင့် နည်းဥပဒေများ၊ ဒေသတွင်း သို့မဟုတ် အပြည်ပြည်ဆိုင်ရာ သဘာဝပတ်ဝန်းကျင်နှင့် လူမှုပတ်ဝန်းကျင်ဆိုင်ရာ မူဝါဒများ၊ ဆက်စပ်နေသည့် နိုင်ငံတကာသဘောတူချက်များကို အကျဉ်းချုပ်ရေးသားဖော်ပြထားပါသည်။ စက်ရုံအတွင်းလိုက်နာ ဆောင်ရွက်ရမည့် စည်းမျဉ်းစည်းကမ်းများ၊ လုပ်ငန်းခွင် အန္တရာယ်ကင်းရှင်းရေးနှင့် ကျန်းမာရေးဆိုင်ရာ အခြေခံစည်းမျဉ်းစည်းကမ်းများလည်း ထည့်သွင်းဖော်ပြထားပါသည်။ Fuyun Myanmar Company Limited ၏ ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဆိုင်ရာ ကတိကဝတ်များအပြင် ပတ်ဝန်းကျင်ထိခိုက်မှုလျှော့ချရေး မူဝါဒများကိုလဲ ထည့်သွင်းဖော်ပြထားပါသည်။ (အသေးစိတ်ကို အခန်း ၂ တွင် ဖော်ပြထားပါသည်)

Fuyun Myanmar Company Limited စက်ရုံသည် မြေကွက်အမှတ်- ၄၆၇ (ခ)၊ မြေတိုင်းရပ်ကွက်အမှတ်- ၂၅၊ ရွှေလင်ပန်း စက်မှုမြို့၊ လှိုင်သာယာမြို့နယ်၊ ရန်ကုန်တိုင်းဒေသကြီး တွင်တည်ရှိပါသည်။ ကနဦးရင်းနှီးမြှုပ်နှံမှုသက်တမ်း (၂၅) နှစ်ဖြစ်ပြီး တည်ဆောက်ရေးကာလ ၁ နှစ်သတ်မှတ်ထားပါသည်။ စက်ရုံ၏ အကျယ်အဝန်း ၁.၉၀၈ ဧက၊ (၇၇၂၁.၄၀၂၁) စတုရန်းမီတာရှိသော မြေဧရိယာပေါ်တွင် လုပ်ငန်းလုပ် ဆောင်လျက်ရှိပါသည်။ အသုံးပြုသည့်ကုန်ကြမ်းများဖြစ်သော ပလပ်စတစ်အိတ်၊ ပလပ်စတစ်နှင့်ဆိုင်သော ဆက်စပ်ပစ္စည်းများ၊ ဝါယာကြိုး၊ မီးသီး၊ ဖျူ(စ်)၊ ပလပ်ခေါင်း၊ နှင့် ထုတ်ပိုးရာတွင်အသုံးပြုသော ဆက်စပ်ပစ္စည်းများကို နိုင်ငံခြားမှ တင်သွင်းအသုံးပြုပြီး၊ ထုတ်ကုန်များဖြစ်သော အီလက်ထရောနစ် စနစ်ဖြင့်ပြုလုပ်ထားသော လက်ဆောင် ၊ အလှဆင်ပစ္စည်းများနှင့် ဆက်စပ်သော ပစ္စည်းများကို နိုင်ငံခြားသို့တင်ပို့မည်ဖြစ်သည်။ လုပ်ငန်းအတွက်လိုအပ်သော စက်ပစ္စည်းများကို နိုင်ငံခြားမှတင်သွင်းပြီး အသုံးပြုပါသည်။ ကျန်လုပ်ငန်းသုံးယာဉ်နှင့် ရုံးသုံးပစ္စည်းများကို ပြည်တွင်းမှ ဝယ်ယူအသုံးပြုပါသည်။ ကုန်ထုတ်လုပ်ခြင်းလုပ်ငန်းမှာ automatic machine နှင့် လူစွမ်းအားကို အသုံးပြုသော လုပ်ငန်းမျိုးဖြစ်ပါသည်။ ထုတ်လုပ်ပုံအဆင့်ဆင့်ကို အောက်ဖော်ပြပါ ပုံပြဇယားဖြင့် ဖော်ပြထားပါသည်။



လုပ်ငန်းမှ ပထမနှစ်မှ ၁၀ နှစ်အတွင်း ထုတ်ကုန်အရေအတွက် ၂,၇၈၇,၅၀၀ မှ ၃,၀၆၆,၂၅၀ အထိ တိုးမြှင့်ထုတ်လုပ်သွားမည်ဖြစ်သည်။ နိုင်ငံခြားသားကျွမ်းကျင်ပညာရှင် (၈) ယောက်နှင့် နိုင်ငံသား (ပြည်တွင်း) ဝန်ထမ်းများကို ပထမ ၁ နှစ်မှ ၁၀ နှစ်အတွင်း ၅၈ ဦးခန့်အပ်ပြီး ဆောင်ရွက်သွားမည်ဖြစ်သည်။ EMP အတွက်ကွင်းဆင်းလေ့လာချိန်တွင် စက်ရုံတွင် ထုတ်လုပ်မှုအချို့ပြုလုပ်နေပြီး ပြင်ဆင်မှုများလဲပြုလုပ်နေသည်ကို တွေ့ရှိခဲ့ပါသည်။ စက်ရုံ၏ လုပ်ငန်းလည်ပတ်မှုကြောင့်လည်း သဘာဝပတ်ဝန်းကျင်အပေါ် ဆိုးဆိုးဝါးဝါးထိခိုက်မှု မရှိကြောင်း လေ့လာတွေ့ရှိခဲ့ပါသည်။ (အသေးစိတ်ကို အခန်း ၃ တွင် ဖော်ပြထားပါသည်)

လက်ရှိပတ်ဝန်းကျင် အခြေအနေနှင့် အခြေခံ လေ့လာမှုအခန်းကဏ္ဍတွင် ပတ်ဝန်းကျင်ဆိုင်ရာ အချက်အလက်နှင့် အခြေခံလေ့လာမှုများဖြစ်သည့် ပတ်ဝန်းကျင်အရည်အသွေးတိုင်းတာခြင်းများကို ၂၀၁၉ ခုနှစ်၊ ဇွန်လ ၂၇ ရက်နေ့တွင် ပြုလုပ်ခဲ့ပါသည်။ အဓိကအနေဖြင့် စက်ရုံအတွင်း အပူချိန်နှင့် စိုထိုင်းမှုတိုင်းတာခြင်း၊ ဆူညံသံတိုင်းတာခြင်းနှင့် လုပ်ငန်းခွင် အလင်းအခြေအနေ တိုင်းတာခြင်းများကို ပြုလုပ်ခဲ့ပြီး ရလဒ်များကိုလည်း အမျိုးသားပတ်ဝန်းကျင် အရည်အသွေး (ထုတ်လွှတ်မှု) လမ်းညွှန်ချက်၊ နိုင်ငံတကာစံချိန်စံနှုန်းများဖြင့်နှိုင်းယှဉ်၍ ဖော်ပြထားပါသည်။ ထို့အပြင် စက်ရုံတည်နေရာနှင့် သက်ဆိုင်သည့် အချက်အလက်များဖြစ်သော လူမှုစီးပွားအခြေအနေ၊ ရူပပတ်ဝန်းကျင်ဆိုင်ရာ အချက်အလက်များ၊ ဇီဝပတ်ဝန်းကျင်ဆိုင်ရာ အချက်အလက်များ၊ ရာသီဥတုဆိုင်ရာ အချက်အလက်များ အစရှိသည်များကို ရန်ကုန်တိုင်းဒေသကြီး၊ လှိုင်သာယာမြို့နယ်ရှိ တရားဝင် ပြဌာန်းထားသော မြို့နယ်ဆိုင်ရာအချက်အလက်များမှ ကိုးကားဖော်ပြထားပါသည်။ (အသေးစိတ်ကို အခန်း ၄ တွင် ဖော်ပြထားပါသည်)

ပတ်ဝန်းကျင်အပေါ်ဆိုးကျိုးထိခိုက်မှုနှင့် လျော့ချရေး အစီအစဉ်များကို ဖော်ပြရာတွင် စက်ရုံအကောင်အထည်ဖော်မှု/ကုန်ထုတ်လုပ်မှုကြောင့် ပတ်ဝန်းကျင်နှင့် လူမှုဘဝအပေါ် ပြောင်းလဲစေနိုင်သော ကောင်းကျိုးနှင့် ဆိုးကျိုးများကိုသိရှိစေရန် စက်ရုံအတွင်း ကွင်းဆင်းလေ့လာခြင်း၊ သက်ဆိုင်ရာစက်ရုံတာဝန်ခံများနှင့် ဆွေးနွေး တိုင်ပင်ခြင်းများအပြင် EMP အတွက်လေ့လာရေးအဖွဲ့မှ ပတ်ဝန်းကျင်အခြေအနေများကို စစ်တမ်းကောက်ယူခြင်းများ ပြုလုပ်ပြီး ပတ်ဝန်းကျင်အခြေအနေများအပေါ် ဆိုးကျိုးထိခိုက်မှုများကို လျော့ချနိုင်ရန် လေ့လာခဲ့ပါသည်။

ပတ်ဝန်းကျင်ထိခိုက်မှုကို လေ့လာဆန်းစစ်ရာတွင် စီမံကိန်းကာလအတွင်း ထိခိုက်မှုတစ်ခုချင်းစီ၏ ပမာဏ၊ ကြာမြင့်ချိန်၊ ကျယ်ပြန့်မှုနှင့် ဖြစ်နိုင်ခြေတို့အား ဖော်ပြထားပါသည်။ အောက်ဖော်ပြပါ ဇယားတွင် စီမံကိန်းကြောင့် ဖြစ်ပေါ်လာနိုင်သော ထိခိုက်သက်ရောက်မှုများကို သက်ဆိုင်ရာကဏ္ဍအလိုက် ခွဲခြား၍ဖော်ပြထားပါသည်။ ဇယားတွင် ဖော်ပြထားသည့်အတိုင်း စီမံကိန်းကာလအတွင်း ထိခိုက်မှုပမာဏ အသင့်အတင့်ရှိ (၁)ခု၊ အနည်းငယ် (၄)ခု နှင့် အလွန်နည်းသောပမာဏ (၁)ခုတို့ဖြင့် လေ့လာတွေ့ရှိခဲ့ပါသည်။ ပတ်ဝန်းကျင်နှင့် လူထုအပေါ် ထိခိုက်မှုနှင့် လျော့ချရမည့်အစီအစဉ်ကို အောက်ဖော်ပြပါဇယားတွင်ဖော်ပြထားပါသည်။

Environmental Management Plan

ပတ်ဝန်းကျင် လက္ခဏာ	လုပ်ငန်းလုပ်ဆောင်မှု	ထိခိုက်မှုအဆင့်	လျော့ချရေးနှင့် ထိန်းချုပ်မှု
တည်ဆောက်ရေးကာလ - ပတ်ဝန်းကျင်ထိခိုက်မှုလေ့လာချိန်တွင် စက်ရုံတည်ဆောက်ပြီး လုပ်ငန်းလည်ပတ်နေချိန်ဖြစ်သောကြောင့် ဤကာလကိုထည့်သွင်းစဉ်းစားခြင်းမပြုထားပါ။			
လုပ်ငန်းလည်ပတ်ခြင်းကာလ			
လေထုညစ်ညမ်းမှု	<ul style="list-style-type: none"> သယ်ယူပို့ဆောင်ရေးသုံး မော်တော်ယာဉ်တို့ကြောင့် ဖုန်မှုန့် နှင့် ဖန်လုံအိမ်ဓာတ်ငွေ့ ထွက်ခြင်း လုပ်ငန်းခွင်အတွင်းဖုန်မှုန့်ထွက်ခြင်း မီးဖိုနှင့် ဘွိုင်လာတို့မှ မီးခိုးထွက်ခြင်း အရေးပေါ် သုံးမီးစက်မှ စွန့်ထုတ် အခိုးအငွေ့ထွက်ခြင်း 	အသင့်တင့်	<ul style="list-style-type: none"> ဘွိုင်လာနှင့်မီးစက် တို့တွင် မီးခိုးခေါင်းတိုင် တပ်ဆင်ခြင်းဖြင့် အခိုးအငွေ့ကြောင့် ပတ်ဝန်းကျင် ထိခိုက်မှုကို လျော့ချခြင်း၊ ပုံမှန်စစ်ဆေးခြင်း။ စက်ရုံအတွင်းနှင့် အနီးအနားတွင် သစ်ပင်ပန်းမံ စိုက်ပျိုးခြင်းဖြင့် carbon ထွက်ရှိမှုကို လျော့ချပေးခြင်း။ NOx ထွက်ရှိမှုနည်း သော နည်းပညာဖြင့် စက်ပစ္စည်းများသုံးခြင်း။ စက်ပစ္စည်းများကို ပုံမှန်ပြုပြင်ထိန်းသိမ်းပေးခြင်း။ Indoor Air Pollutionကိုလျော့ချနိုင်ရန် စက်ရုံတွင်း Ventilation System များတပ်ဆင်ခြင်း။
ရေ	<ul style="list-style-type: none"> မိလ္လာစွန့်ထုတ်ရေ စက်ပစ္စည်း၊ မော်တော်ယာဉ်များ မှ ဆီယိုဖိတ်ခြင်း 	အနည်းငယ်	<ul style="list-style-type: none"> လက်ရှိရေဆိုးစွန့်ပစ်မှုပုံစံဖြစ်သော မိလ္လာစနစ်ကို ပုံမှန်စစ်ဆေးပေးခြင်း။ မိလ္လာကန်နှင့် မိလ္လာ စနစ်ကိုလူဦးရေ နှင့် သင့်တင့်သည့် ပမာဏ ရှိရန် စီစဉ်ထားခြင်း။ ပုံမှန်သန့်ရှင်းရေးပြုလုပ်ပေးခြင်း။ စက်ပစ္စည်းများကိုပုံမှန်ပြုပြင်ထိန်းသိမ်းပေးခြင်း
မြေဆီလွှာညစ်ညမ်းမှု	<ul style="list-style-type: none"> မတော်တဆ စက်ပစ္စည်း၊ မော်တော်ယာဉ်များ မှ ဆီယိုဖိတ်ခြင်း 	အလွန်နည်း	<ul style="list-style-type: none"> စက်ပစ္စည်းများကို ပုံမှန်ပြုပြင်ထိန်းသိမ်းပေးခြင်း။ မတော်တဆမှု မဖြစ်စေရန် ထိန်းသိမ်းခြင်း။
ဆူညံသံ	<ul style="list-style-type: none"> မီးစက်၊ လေမှုတ်စက် နှင့် မော်တော် ယာဉ် အသုံးပြုမှုကြောင့် ပတ်ဝန်းကျင် ဆူညံမှု 	အနည်းငယ်	<ul style="list-style-type: none"> ဆူညံသံထွက်သောနေရာများကို အကာအကွယ် ဖြင့်ထားရှိခြင်း စက်ပစ္စည်းများကို ပုံမှန်ပြုပြင်ပေးခြင်း

Environmental Management Plan

ပတ်ဝန်းကျင် လက္ခဏာ	လုပ်ငန်းလုပ်ဆောင်မှု	ထိခိုက်မှုအဆင့်	လျော့ချရေးနှင့် ထိန်းချုပ်မှု
မီးဘေးအန္တရာယ်	<ul style="list-style-type: none"> ကုန်ကြမ်းသိုလှောင်မှု နှင့် လျှပ်စစ်သုံးစွဲ ပေါ့လျော့မှု 	အနည်းငယ်	<ul style="list-style-type: none"> ကုန်ကြမ်းများအား သီးသန့်ထားရှိခြင်း လျှပ်စစ်သုံးစွဲမှုများအား စနစ်တကျ အသုံးပြုစေခြင်း
စွန့်ပစ်အမှိုက်	<ul style="list-style-type: none"> ထုတ်လုပ်ရာတွင် ကျန်ရှိသော ပိတ်စ အပိုင်းအစများ။ မီးဖိုချောင်နှင့် ရုံးတွင်းစွန့်ပစ်ပစ္စည်းများ 	အသင့်တင့်	<ul style="list-style-type: none"> စွန့်ပစ်အမှိုက်များအား ပြန်လည်သုံးစွဲရန် နှင့် စွန့်ပစ်ရန် အဖြစ်သတ်မှတ်ပီး သီးခြားစွန့်ပစ်စေခြင်း
စွန့်ပစ်အရည်	<ul style="list-style-type: none"> နေအိမ်၊ စားသောက်ဆောင် တို့မှစွန့်ထုတ်ရေ။ မိလ္လာကန်စနစ်။ 	အသင့်တင့်	<ul style="list-style-type: none"> စွန့်ပစ်အမှိုက်များအား ပြန်လည်သုံးစွဲရန် နှင့် စွန့်ပစ်ရန် အဖြစ်သတ်မှတ်ပီး သီးခြားစွန့်ပစ်စေခြင်း
အန္တရာယ်ရှိအမှိုက်	<ul style="list-style-type: none"> စက်များမှ ဆီယိုစိမ့်မှုများ၊ မော်တော်ယာဉ်များ ပြုပြင်ထိန်းသိမ်းမှုမှ ထွက်ရှိသည့် အမှိုက်များ။ 	အလွန်နည်း	<ul style="list-style-type: none"> စက်သုံးဆီများအားစနစ်တကျ အသုံးပြုစေခြင်း၊ စနစ်တကျသိုလှောင်ခြင်း နှင့် အန္တရာယ်ရှိပစ္စည်းများအား စနစ်တကျထားရှိစေခြင်း

ပတ်ဝန်းကျင်အပေါ် ဆိုးကျိုးသက်ရောက်မှုများနှင့် လျော့ချရန်နည်းလမ်းများ၏ အသေးစိတ် လေ့လာတွေ့ရှိချက်နှင့် အကြံပြုချက်များကို စာကိုယ်၏ အခန်း ၅ တွင် ဖော်ပြထားပြီး သတ်မှတ်ထားသော အဆင့်သတ်မှတ်ချက်များအလိုက် ဖြေလျော့ရေးနည်းလမ်းများဖြင့် ရှောင်လွှဲရန်နည်းလမ်း များကို အစီရင်ခံစာတွင် ဖော်ပြထားပါသည်။ (အသေးစိတ်ကို အခန်း ၅ တွင် ဖော်ပြထားပါသည်)

သက်ဆိုင်သူများနှင့် တွေ့ဆုံဆွေးနွေးခြင်း အစီအစဉ်တွင် စက်ရုံ၏ EMP အစီရင်ခံစာ အကြောင်းကို ရှင်းလင်းတင်ပြခြင်းဖြစ်သည်။ တွေ့ဆုံပွဲကို ၁၀ ရက်၊ ဒီဇင်ဘာလ၊ ၂၀၁၉ ခုနှစ်တွင် ရွှေလင်ပန်းစက်မှုဇုန် ကော်မတီရုံး ကနောင်အစည်းအဝေးခန်းမ၌ ပြုလုပ်ခဲ့ပါသည်။ တွေ့ဆုံပွဲတွင် စက်ရုံ၏သက်ဆိုင်ရာပုဂ္ဂိုလ်များ၊ အစိုးရအဖွဲ့ရုံးများဖြစ်သော ပတ်ဝန်းကျင်ထိန်းသိမ်းရေး ဦးစီးဌာန၊ စက်မှုကြီးကြပ်နှင့် စစ်ဆေးရေး ဦးစီးဌာန၊ ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးနှင့် သန့်ရှင်းရေးဌာန အစရှိသော သက်ဆိုင်ရာဌာနများ၏ တာဝန်ရှိပုဂ္ဂိုလ်များ၊ စက်မှုဇုန်စီမံခန့်ခွဲမှုကော်မတီ၏ တာဝန်ရှိပုဂ္ဂိုလ်များမှ လိုအပ်သည်များကို အကြံပေးခြင်း၊ စီမံကိန်း၏ အစီရင်ခံစာတွင် လိုအပ်သည်များကို ဖြည့်စွက်ပေးရန် အကြံပြုချက်များပေးခဲ့ပါသည်။ ပြုလုပ်ခဲ့သည့် အစီအစဉ်အကျဉ်းကိုပါ ထည့်သွင်းဖော်ပြထားပါသည်။

အချိန်	သောကြာနေ့၊ ၁၀ ရက်၊ ဒီဇင်ဘာလ၊ ၂၀၁၉
နေရာ	ရွှေလင်ပန်းစက်မှုဇုန် ကော်မတီရုံး ကနောင်အစည်းအဝေးခန်းမ၊ လှိုင်သာယာမြို့နယ်၊ ရန်ကုန်မြို့။
အစီအစဉ်အကျဉ်း	<ul style="list-style-type: none"> စက်ရုံနောက်ခံအကြောင်း စက်ရုံလုပ်ငန်းအကြောင်း

Environmental Management Plan

	<ul style="list-style-type: none"> • ပတ်ဝန်းကျင်ထိခိုက်မှုနှင့် လျော့ချရေးအစီအစဉ် • ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှုအစီအစဉ်နှင့် စောင့်ကြပ်ကြည့်ရှုမှုအစီအစဉ် • အမေးအဖြေကဏ္ဍ
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အဆိုပါစက်ရုံ၏ ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှုအစီအစဉ်ကို ရေရှည်ဖွံ့ဖြိုးတိုးတက်ကောင်းမွန်သော ပတ်ဝန်းကျင်အဖြစ် အကောင်အထည်ဖော်ဆောင်ရွက်ရန် ပတ်ဝန်းကျင်ဆိုင်ရာ ဆိုးကျိုးသက်ရောက်မှုများကို လျော့နည်းစေရန် စီမံခန့်ခွဲမှုအစီအစဉ်များနှင့် စောင့်ကြပ်ကြည့်ရှုမည့်အစီအစဉ်များကို အောက်ပါအတိုင်းပတ်ဝန်းကျင်ဆိုင်ရာ အကြောင်းအရာတစ်ခုချင်းစီအလိုက် ခွဲခြားမှုပြုလုပ်ထားပါသည်။

၁။ လေထုညစ်ညမ်းမှုနှင့် ဖုန်မှုန့်ဆိုင်ရာ စီမံခန့်ခွဲမှု အစီအစဉ်

၂။ ဆူညံမှုထိန်းခြင်းဆိုင်ရာ စီမံခန့်ခွဲမှု အစီအစဉ်

၃။ အမှိုက်စွန့်ပစ်မှုဆိုင်ရာ စီမံခန့်ခွဲမှု အစီအစဉ်

၄။ ရေဆိုးစွန့်ပစ်မှုဆိုင်ရာ စီမံခန့်ခွဲမှု အစီအစဉ်

၅။ စွမ်းအင်အသုံးပြုမှုဆိုင်ရာ စီမံခန့်ခွဲမှု အစီအစဉ်

၆။ ရေအသုံးပြုမှုဆိုင်ရာ စီမံခန့်ခွဲမှု အစီအစဉ်

၇။ အရေးပေါ်တုန့်ပြန်ရေး အစီအစဉ်

၈။ စောင့်ကြပ်ကြည့်ရှုရေး အစီအစဉ်

၉။ လူမှုအကျိုးတူ ပူးပေါင်းပါဝင်မှု အစီအစဉ် CSR Plan

၁၀။ ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှုအစီအစဉ်အတွက် ငွေကြေးလျာထားမှုအခြေအနေ

(အသေးစိတ်ကို အခန်း ၇ တွင် ဖော်ပြထားပါသည်)

အကျဉ်းချုပ်အားဖြင့် ပြည်ထောင်စုသမ္မတမြန်မာနိုင်ငံတော်၏ လမ်းညွှန်ချက်များ၊ ပတ်ဝန်းကျင်ဆိုင်ရာ ဥပဒေ၊ နည်းဥပဒေ၊ စည်းမျဉ်းစည်းကမ်းများနှင့် ချမှတ်ထားသော မူဝါဒလမ်းညွှန်ချက်များအတိုင်း ပတ်ဝန်းကျင်ဆိုင်ရာ စီမံခန့်ခွဲမှု အလေ့အကျင့်များ၊ လုပ်ငန်းစဉ်များနှင့် လိုက်နာဆောင်ရွက်ကျင့်သုံးရန်တာဝန်များကို ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှု အစီအစဉ်တွင် ဖော်ပြရှင်းလင်းတင်ပြထားပါသည်။ စီမံကိန်းနှင့် သက်ဆိုင်သူများအား စီမံကိန်းဆိုင်ရာ အကြောင်းအရာများ ရှင်းလင်းတင်ပြခြင်း၊ အကြံပြုချက်များနှင့် ဆွေးနွေးတင်ပြလာသည့် သဘောထား အကြံဉာဏ်များကိုရယူပြီး အစီအရင်ခံစာတွင် ဖော်ပြထားပါသည်။

EXECUTIVE SUMMARY

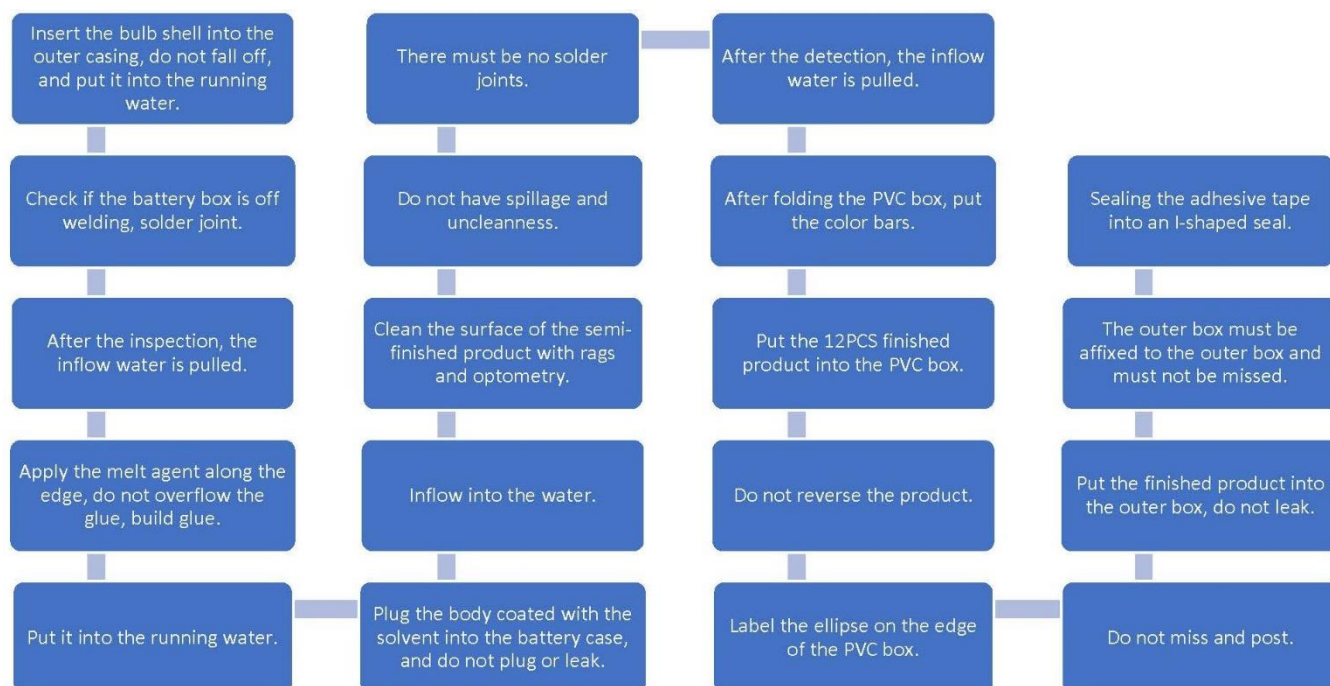
Environment Management Plan is required for ensuring sustainable development. It should not affect the surrounding environment adversely. The management plan presented in this chapter needs to be implemented by the proposed expansion of Fuyun Myanmar Company Limited (Fuyun). The Environment Management Plan (EMP) aims at controlling pollution at source with available and affordable technology followed by treatment measures. Waste minimization and waste recycling measures are emphasized. In addition to the industry specific control measures, the proposed industry should adopt following guidelines.

The project is new investment for production of electrical gifts, decorations, and its related materials on Contract Manufacturing Process (CMP) basic company from Taiwan. The project is issued by the Yangon Region Investment Committee (YRIC) on June 11, 2019 with the Endorsement No. (YGN-199/2019). YRIC asked 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 production of electrical gifts, decorations, and its related materials under the name of Fuyun Myanmar Company Limited as a solely owned foreign investment from Taiwan.

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), said project requires an Environmental Management Plan (EMP) to meet the environmental assessment requirements of Notification No. Yaka- 1/3/4 (EIA) (2903/2019) on 30 December 2019. Therefore, Fuyun commissioned Myanwei Environmental Solutions Company Limited (Myanwei) for EMP report study. (**See detail in Chapter 1**)

The next Chapter, 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. And occupational health and safety guideline is referenced from International Finance Corporation (IFC) guidelines. Fu Yun (Myanmar) Company Limited is commitment and complied for environmental prevention and EMP. (**See detail in Chapter 2**).

The factory is located at Plot No- 467 (B), Myay Taing Block No – 25, Shwe Lin Ban Industrial Zone, Hlaing Thar Yar Township, and Yangon Region. The total area of project site is 1.908 acres. Main structure is designed into office area for one building and assembling section, welding section and dyeing section for other building. Transformer room and generator room are separated by main factory building structure. The main products Fuyun factory are electrical gifts, decoration, and its related materials. The Utilities for proposed factory include electrical power, fuel oil for emergency used generator and water for domestic use. Electric power is consumed for the purpose of providing lighting and running of operation machineries.

Environmental Management Plan**Production Process**

Production rate of Fuyun factory is produced between first year of operation and ten years operation as 2,787,500 to 3,066,250 pieces annually. It's required of work force 8 foreigners' technician and 50 local employees for first year operation to 10 years operation. Moreover, the factory is installed and upgrading for operation during our site survey for EMP report. The factory is not major insignificant effect on environmental and social condition because of the factory operation is simple process of production system for electrical gifts, decoration, and its related materials. (**See detail in Chapter 3**)

For environmental baseline, data were collected by on-site measurements analysis during operation phase on 27 June 2019. On-site measurement was taken by indoor temperature, humidity, noise level and operation light condition at the factory. Moreover, secondary data collection of proposed project site area such as socio-economic condition, physical/ biological environment, weather data collected from official township data was obtained from Regional Data of Hlaing Thar Yar Township. (**See detail in Chapter 4**)

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 1 moderate significance impact on environment and human such as impact of electricity consumption. 4 low significant impacts on environment and human such as impact of wastewater effluents and occupational health and safety of employees, workers and 2 very low significant impact on environment and human such as impact on aquatic lives, air pollution and noise. Significance impacts on environmental and human and detail impact assessment for operation phases can be seen in Table. All the impacts during operation phases can be minimized by using mitigation measures and implementing Environmental Management Plan.

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. The potential environmental impacts brought by various activities of

Environmental Management Plan

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.

Evaluation and perdition of significant impacts during operation phase

Environmental Impact	Project Activities	Impact Significance	Mitigation Measure
Air pollution	<ul style="list-style-type: none"> Dust and GHGs emission from vehicles used for transporting raw materials and final products Particulate matters emission from the activities of production process Emission of smoke from steam boiler (rice briquettes) and kitchen Emission from emergency diesel generator 	Moderate	<ul style="list-style-type: none"> Install the efficient stack high in boiler and generators and must be care to reduce the expanse and CO2 emission. Plant and grass plantation programs must be provided at project site Using the modern machines. Machineries and vehicles regular check and maintain Install good ventilating system in order to reduce the indoor air pollution
Water pollution	<ul style="list-style-type: none"> Sewage disposed of from the toilets Oil spill and grease leaks from transporting vehicles and machinery equipment used in operation phase 	Low	Install water meter for internal control of water consumption <ul style="list-style-type: none"> Channeling and retention of water to reduce erosion and situation Collection and treatment of sewage and organic waste Increased recycling and reuse of water Neutralization and sedimentation of wastewater Dewatering of sludge and appropriate disposal of solids
Soil Contamination	<ul style="list-style-type: none"> Accidental spillage of oil used by vehicles operating 	Very Low	Carefully hand the machines and to cover the oil spillage
Noise Pollution	<ul style="list-style-type: none"> Generating noise from the production machinery Noise from the generating of the emergency generators 	Low	Ensure all the machineries are well maintained to reduce noise

Environmental Management Plan

Environmental Impact	Project Activities	Impact Significance	Mitigation Measure
			<ul style="list-style-type: none"> • Heavy duty muffler systems on heavy equipment • 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
Fire Hazard	<ul style="list-style-type: none"> • Poor electrical installations • waste disposed area • Raw materials storage 	Low	<ul style="list-style-type: none"> • Separately assembly the raw materials and use the dangerous electricity utility
Solid waste	<ul style="list-style-type: none"> • residual pieces of fabric scraps from the production lines • Waste from packaging materials • Waste from kitchen, dormitory and office. 	Moderate	<ul style="list-style-type: none"> • Recycle and reuse the solid wastes and discharges at the dumping site
Liquid waste	<ul style="list-style-type: none"> • Septic system and sewage. • Domestic liquid waste disposal from office, kitchen and dormitory. 	Moderate	<ul style="list-style-type: none"> • 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

Environmental Management Plan

Environmental Impact	Project Activities	Impact Significance	Mitigation Measure
			<ul style="list-style-type: none"> • 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 clean and in good state to function as intended and to prevent contamination
Hazardous waste	<ul style="list-style-type: none"> • Engine oil leaks, spills at diesel storage and during fuel refueling. • Used oil and lubricant discharged from the maintenance of vehicles and machines. 	Very Low	<ul style="list-style-type: none"> • Systemically store the fuel oil and hazardous materials
Occupational Health and Safety (Accidents, Injuries)	<ul style="list-style-type: none"> • Accidental cases cause by operating machines. • Electricity and emergency diesel generators. • Unloading, mixing, cutting, pressing and packaging activities. • Accidental cases of thermic fluid heater 	Moderate	<ul style="list-style-type: none"> • 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 concentrations 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

Environmental Management Plan

Environmental Impact	Project Activities	Impact Significance	Mitigation Measure
			day without hearing protection. <ul style="list-style-type: none"> • 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

Negative impacts and mitigation measures of the proposed factory were taken into consideration during the study. **(See detail in chapter 5)**

This chapter presents results of public consultation and information disclosure conducted for the Fuyun factory. 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 10, December 2019, 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 Yangon City Development Committee (YCDC), General Administrative Department, Fire Department, Factories and General Labor Law Inspection Department, Public Health Department, Industrial Supervision, and Inspection Department.

Time and Date	Friday, 10 December 2019 10:30-12:30
Venue	Shwe Lin Ban Zone Committee, Ka Naung Hall, Hlaing Tharyar Township, Yangon.
Agenda	<ul style="list-style-type: none"> • 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

Environmental Management Plan

The EMP Fuyun Myanmar 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 Fuyun 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
10. Budget Plan for Environmental Management Plan (***See details in Chapter 7***)

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 of electrical gifts, decorations and its related materials 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 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 and practiced at operation level.
- Keep full records of environmental management activities and present to annual independent third-party environment audit.
- Abide environmental policy, laws, rules and instructions of the Republic of the Union of Myanmar.

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

1. INTRODUCTION

Environment Management Plan is required for ensuring sustainable development. It should not affect the surrounding environment adversely. The management plan presented in this chapter needs to be implemented by the proposed expansion of Fuyun Myanmar Company Limited (Fuyun). The Environment Management Plan (EMP) aims at controlling pollution at source with available and affordable technology followed by treatment measures. Waste minimization and waste recycling measures are emphasized. In addition to the industry specific control measures, the proposed industry should adopt following guidelines.

1.1. PROJECT BACKGROUND

The project is new investment for production of electrical gifts, decorations, and its related materials on Contract Manufacturing Process (CMP) basic company from China. The project is issued by the Yangon Region Investment Committee (YRIC) on June 11, 2019 with the Endorsement No. (YGN-199/2019). YRIC asked 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 production of electrical gifts, decorations, and its related materials and under the name of Fuyun Myanmar Company Limited as a solely owned foreign investment from Taiwan.

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), said project requires an Environmental Management Plan (EMP) to meet the environmental assessment requirements of Notification No. Yaka- 1/3/4 (EIA) (2903/2019) on 30 December 2019. Therefore, Fuyun Myanmar commissioned Myanwei Environmental Solutions Company Limited (Myanwei) for EMP report study.

1.1.1. Project Proponent Profile

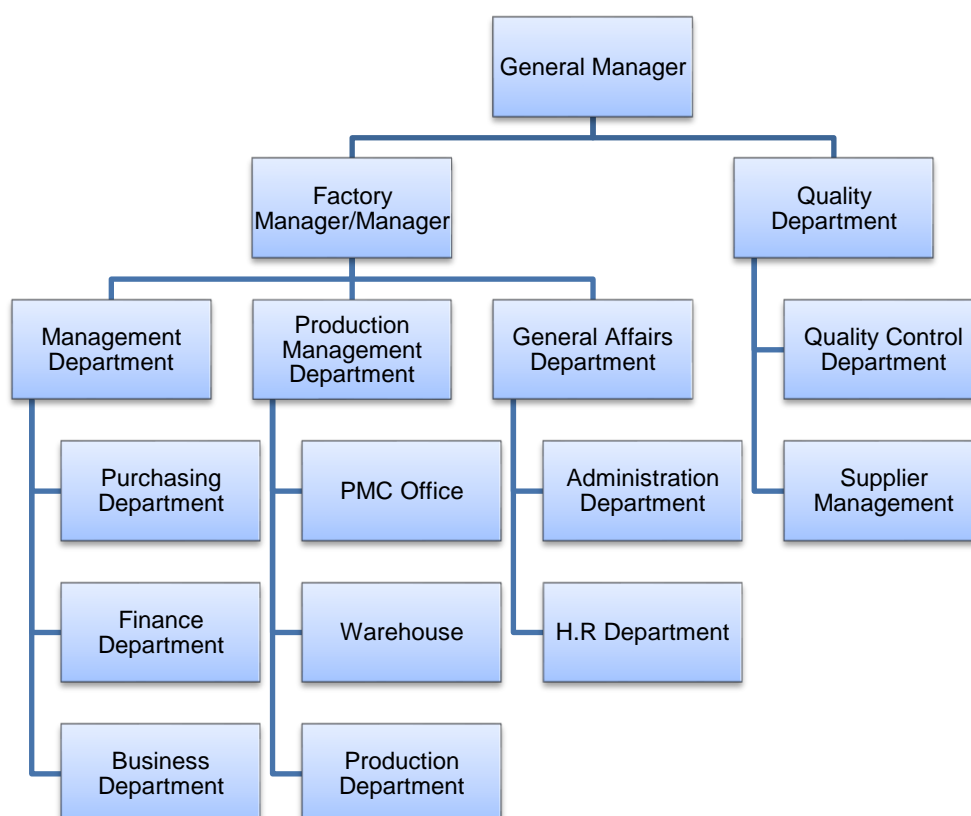
The estimated authorized capital investment is 0.5 million US Dollar (Table 1-2). Organization chart of Fuyun (Myanmar) Company Limited is presented in **Figure 1-1**. This is the information of project proponent from the MIC's registration that is describing in below Table 1-1 and Table 1-2.

Table 1-1 Information of Investor

Investor Name:	Mrs. Chen, Su-Hua
Passport No.:	TWN 306233938
Citizenship:	Taiwan
Address of Registration office:	Fu Xi Industrial, ZhuHai City, Guang Dong, People's Republic of China.

Environmental Management Plan**Table 1-2 Salient features of the project**

Type of Proposed Business	Production of electrical gifts, decorations and its related materials on CMP basic
Type of investment	100% foreign investment
Type of Share	Ordinary Share
Type of land	Industrial Land
Total land area	0.906 acres
Total building area	Two Storey Factory Building (67.07m x30.5m) Building
Land lease year	25 years
Construction period	One year
Operation starting date	25-year investment permit
Address	Plot No- 467 (B), Myay Taing Block No – 25, Shwe Lin Ban Industrial Zone, Hlaing Thar Yar Township, Yangon Region.
Contact person	Ma Aye Thida Myint (HR & Account) Ayethidamyint1176@gmail.com 09-256181176

**Figure 1-1 Organization chart of Fuyun Myanmar Company Limited**

Environmental Management Plan**1.1.2. Environmental Consultant Profile**

Myanwei Environmental Solutions Company Limited prepares the 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 1-3 Member of EMP study team

Name	Qualification	Responsibility
MYANWEI ENVIRONMENTAL SOLUTIONS COMPANY Limited	Transition Consultant Registration Certificate No. 0069	EIA Organisation
Dr. Win Aung	M.B, B.S (Yangon), M.P.H (Mahidol University, Thailand)	Public Health and Health Management Expert,
Dr. Hein Lynn Aung	M.B, B.S (Yangon), Business Management (International Collage of Management Sydney, Australia)	Project Director, Public health consultant, project management
Mr. Lin Htet Sein	MSc (Regional Geology) BSc (Hons) Geology Dip in Environmental Science Certificate in Environmental & Social Assessment TCR No. 0048	Project Director, Environmental consultant, project management
Ms. Wah Wah Zaw	B.E Material and Metallurgy Engineering Diploma in Environmental Planning and Management M.S Environmental Planning and Management	Senior Environmental Consultant, Social and Environmental Research, Quality control, Environmental planning and Management
Ms. Khin Thu Zar Myint	B.E(Materials and Metallurgy) Dip in Environmental Planning and Management	Senior Environmental Consultant, Social Research, Public consultation, social economic investigation
Ms. Su Myat Hlaing	B.E Civil Engineering B. Tech Civil Engineering	Environmental Engineer
Mr. Aung Kyaw Moe	B.E. Chemical Engineering B. Tech Chemical Engineering	Junior Environmental Consultant, monitoring measure, document administration
Mr. Saw Yan Naung	B.E. Chemical Engineering B. Tech Chemical Engineering	Junior Environmental Consultant, monitoring measure, document administration
Mr. Myat Ko Ko	B.Sc (Hons) Geology M.Sc. Geology (Economic and Mining) Certificate of Environment Management	Junior Environmental Consultant, monitoring measure, document administration
Mr. Htoo Nanda Aung	B.Sc (Forestry)	Junior Environmental Consultant, monitoring measure, document administration

Environmental Management Plan

Mr. Si Yan Hein	B.Sc (Geology)	Junior Environmental monitoring measure, administration	Consultant, document
Mr. Kaung Sett Lwin	B.Sc (Hons) Geology	Junior Environmental monitoring measure, administration	Consultant, document

1.2. 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 1-2). 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 mitigation measures for the potential environmental impacts will be implemented appropriately by the Project Proponent as described in this chapter.

➤ 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.

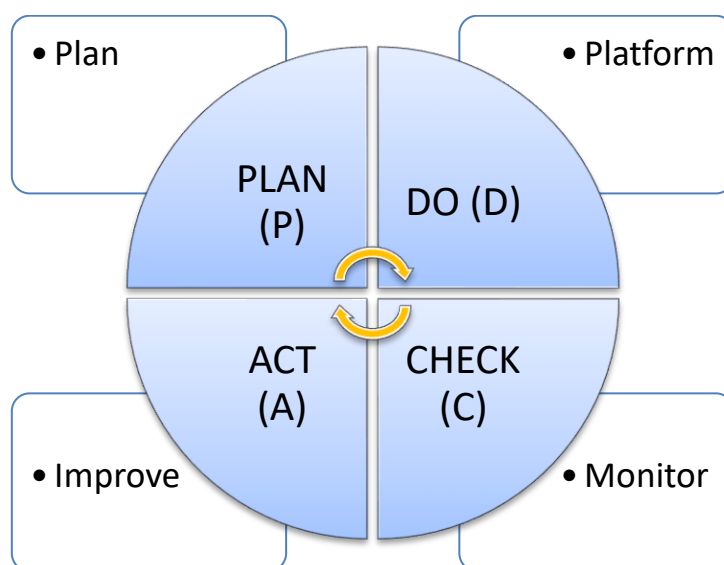


Figure 1-2 PDCA cycle

1.2.1. Institutional Requirement

Fuyun Myanmar Company Limited will manage 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 EMP and Environmental Monitoring Plan (EMoP) 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.

1.2.2. Responsibilities of the EMP

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:

Fuyun Myanmar 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 Fuyun (Myanmar) Company Limited for EMP implementation facilities.

ECD (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.

1.2.3. 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;

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 Environmental Management Plan (EMP) is prepared for the proposed

Environmental Management Plan

project covers the anticipated impacts of the said project, mitigation measures, management and monitoring plans during each of the phases:

- Construction Environmental Management Plan (CEMP)
- Operational Environmental Management Plan (OEMP)

CEMP is developed to ensure that appropriate environmental practices are followed during a project's construction. OMEP is developed to ensure that appropriate environmental practices are followed during a project's operation & decommissioning. As the factory is already built OEMP is designed for this factory.

The primary purpose of the OEMP is to provide an easily Interpreted reference document which ensures that the project environmental commitments, safeguards and mitigation measures from the environmental planning documents, project approvals, and the scope of Works and Technical criteria are implemented. It aims to minimize impacts associated with the operation of the project. The purpose of operational EMP is to:

- Define details of who, what, where & when environmental management & mitigation measures are to be implemented.
- Provide government agencies and their contractors, developers & other stakeholder better on-site environmental management control over the life of a project.
- Ensure that the commitments made as a part of the project proponent are implemented throughout the project life.
- Ensure the environmental management detail is captured & documented at all stages of the project

2. POLICY, LEGAL AND INSTITUTIONAL FRAMEWORK

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

2.1. MYANMAR REGULATORY FRAMEWORK

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

2.1.1. Laws and Regulations Related to Environmental and Social Considerations

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

Table 2-1 List of Myanmar's Law Relating to 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;

Environmental Management Plan

Law and Regulation	Description
Provisions of Duties and Powers relating to the Environmental Conservation of the Ministry: Section 7	<p>(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;</p> <p>(b) To prescribe categories of hazardous substances that may affect significantly at present or in the long run on the environment;</p> <p>(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;</p> <p>(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;</p> <p>(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;</p> <p>(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.</p>
Chapter VI Environmental Quality Standards: Section 10	<p>The Ministry may, with the approval of the Union Government and the Committee, stipulate the following environmental quality standards:</p> <p>(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;</p> <p>(b) water quality standards for coastal and estuarine areas;</p> <p>(c) underground water quality standards;</p> <p>(d) atmospheric quality standards;</p> <p>(e) noise and vibration standards;</p> <p>(f) emissions standards;</p> <p>(g) effluent standards;</p> <p>(h) solid wastes standards;</p> <p>(i) other environmental quality standards stipulated by the Union Government.</p>
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	<p>A person or organization operating business in the industrial estate or business in the SEZ or category of business stipulated by the Ministry:</p> <p>(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;</p> <p>(b) shall contribute the stipulated users' charges or management fees for the environmental conservation according to the relevant industrial estate, SEZ and business organization;</p>

Environmental Management Plan

Law and Regulation	Description
	(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 or 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	<p>The project proponent has to be liable for all adverse impacts caused by doing or emitting of project owner or contractor, sub-contractor, officer, employee, representative or consultant who is appointed or hired to perform on behalf of project owner, under sub-paragraph (a) of paragraph 102.</p> <p>The project proponent has to support, after consulting with effected persons by project, relevant government organization, government department and other related persons, to resettlement and rehabilitation for livelihood until the effected persons by the project receiving the stable socio-economy which is not lower than the status in pre-project, under sub-paragraph (b) of paragraph 102</p> <p>The project proponent has to fully implement all commitments of project and conditions included in EMP. Moreover, the project proponent has to be liable for contractor and sub-contractor who perform on behalf of him/her have to fully abide by the relevant laws, rules, this procedure, EMP and all conditions, under paragraph 103.</p> <p>The project proponent has to be liable and fully & effectively implement all requirements included in ECC, relevant laws and rules, this procedure and standards under rule 104.</p> <p>The project proponent has to inform the completed information, after specifying the adverse impacts caused by the project, from time to time, under paragraph 105.</p> <p>The project proponent has to continuously monitor all adverse impacts in the pre-construction phrase, construction phrase, operation phrase, suspension phrase, closure phrase and post-closure phrase, moreover has to implement the EMP with abiding the all conditions included in ECC, relevant laws & rules and this procedure, under paragraph 106.</p>

Environmental Management Plan

Law and Regulation	Description
	<p>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.</p> <p>The project proponent has to submit the monitoring report dually or prescribed time by Ministry in line with the schedule of EMP, under paragraph 108.</p> <p>The project proponent has to prepare the monitoring report in accord with the rule 109.</p> <p>The project proponent has to show this monitoring report in public place such as library, hall and website and office of project for the purpose to know this report by public within 10 days from the date which the report is submitted to the Ministry. Moreover, has to give the copy of this report, by email or other way which way agreed with the asked person, to any asked person or organization, under paragraph 110.</p> <p>The project proponent has to allow inspector to enter and inspect in working time and if it is needed by Ministry has to allow inspector to enter and inspect in the office and work-place of project and other work-place related to this project in any time, under paragraph 113.</p> <p>The project proponent has to allow inspector to immediately enter and inspect in any time if it is emergency or failure to implement the requirements related to social or environment or caused to it, under paragraph 115.</p> <p>The project proponent has to allow inspector to inspect the contractor and sub-contractor who implement on behalf of project, under paragraph 117.</p>
Screening: Section 23	<p>a) The project proponent shall submit the Project Proposal to the Ministry for Screening.</p> <p>b) The Ministry will send the Project Proposal to the Environmental Conservation Department to determine the need for environmental assessment.</p> <p>c) Following the preliminary Screening and verification that the Project Proposal contains all required documents and related materials, subject to Articles 8, 9, 10, 11, 26 and 27 the Department shall make a determination in accordance with Annex 1=Categorization of Economic Activities for Assessment Purposes', taking into account Article 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:</p> <p>i) An EIA Type Project, or</p> <p>ii) An IEE Type Project, or</p> <p>iii) A Non IEE or EIA Type, and therefore not required to</p>
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 Myanmar Environmental Policy (2019)	
National Environmental Policy Vision & mission	<p>Vision</p> <p>A clean environment, with healthy and functioning ecosystem, that ensures includes development and wellbeing for all people in Myanmar.</p> <p>Mission</p> <p>To establish national environmental policy principle for guiding environmental protection and sustainable development and for mainstreaming environmental consideration into all policies, laws, regulation, plans, strategic, programmes and projects in Myanmar.</p>

Environmental Management Plan

Law and Regulation	Description
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,

Environmental Management Plan

Law and Regulation	Description
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.

Environmental Management Plan

Law and Regulation	Description
	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	
<p>This law was enacted with the objectives of:</p> <ul style="list-style-type: none"> a. To protect from being damaged the natural environment resources and being hazardous any living beings by chemical and related substances; b. To supervise 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. <p>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.</p>	
Underground Water Act	
<p>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.</p>	
Myanmar Fire Brigade Law (2015)	
<p>The Pyidaungsu Hluttaw enacted this law by Law No.11/2015 on the date of 17th March, 2015 with the following objectives:</p> <ul style="list-style-type: none"> (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	<p>The relevant Government Department or organization shall, for the purpose of precaution and prevention obtain the approval of the Fire Force Department before granting permission for the following cases:</p> <ul style="list-style-type: none"> a. Constructing three-storied and above buildings market and condominium buildings,

Environmental Management Plan

Law and Regulation	Description
	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)	
<p>In 2014, the new Electricity Law, a comprehensive piece of legislation covering licensing, a new regulatory commission, standards, inspection, tariff, and restrictions, replaced the Electricity Law of 1984. The Electricity Law divides projects into “small” (up to 10 MW), “medium” (between 10 MW to 30 MW) and large (upwards of 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.</p>	
Boiler Law (2015)	
Chapter (2) Objective	<p>The objectives of this law are as follows:</p> <p>(a) To obtain boilers in compliance with Myanmar Standards or International Standards</p> <p>(b) To prevent the country and citizens from hazards caused by boiler accidents</p> <p>(c) To use boilers in compliance with Myanmar Standards or International Standards within the country</p> <p>(d) To develop boiler technology and to produce experts capable of manufacturing, handling, repair, and maintenance of boilers</p> <p>(e) To optimize the use of boilers through effective utilization of fuel energy</p> <p>(f) To reduce the environmental, social and health impacts through long-lasting use of boilers.</p>
Chapter (3) 4. With the permission of the Ministry, the inspector general can:	<p>Notify the inspection methods and instructions according to the national or international standards for safe operations of boilers in line with this law, procedures and instructions</p> <p>Only the results obtained from the prescribed boiler standards and inspection methods will be approved.</p>
Chapter (4). Boiler Registration	<p>5. Anybody who would like to use a boiler in any kind of business should be registered.</p> <p>6. Boiler should be manufactured according to Myanmar Standards or International Standards.</p> <p>7. Those who would like to apply for boiler registration according to Section 5 should apply to the inspector with the application, documents and vouchers related to boiler</p> <p>8. If the application regarding registration of boiler according to Section 7, the Registration Officer should conduct necessary inspection and submit results of the findings to the Inspector General.</p>

Environmental Management Plan

Law and Regulation	Description
	<p>9. The Inspector General should assess and inspect the submission of the Registration Officer according to Section 8 and could allow or reject for registration of the boiler.</p> <p>10. The Inspector General shall define boiler size according to heated surface area in accordance with adopted procedures.</p>
Chapter (13) Prohibitions	<p>59. According to Section 21, nobody must alter, change, deface, deform or make embossed registration unnoticeable illegitimately.</p> <p>60. Nobody is allowed to repair a boiler without boiler repair certificate.</p> <p>61. Nobody is allowed to maintain a boiler without boiler maintenance certificate.</p> <p>62. Nobody must alter safety relief valve in order to exceed the allowable pressure due to his consent or direction given by the owner.</p> <p>63. Nobody must manufacture boilers against Section 25, Subsection 25 (a) and (b) enacted.</p>
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 establishment;
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.

Environmental Management Plan

Law and Regulation	Description
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 dispute before the Arbitration Body or Tribunal, to affect the interest of such workers immediately.
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 if violates any act or any 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
Objectives	<p>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</p> <p>The project owner has to cooperate with the authorized person or organization in line with the section 3 and 5 of said law.</p> <p>The project proponent has to abide by any instruction or stipulation for public health under the section 3 of said law.</p>

Environmental Management Plan

Law and Regulation	Description
	The project proponent has to allow any inspection, anytime, anywhere if it is needed under the section 5 of said law.
Prevention and Control of Communicable Disease Law 1995 (Amendment in 2011)	
Chapter 2 Prevention	4. When a Principal Epidemic Disease of a 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).
Chapter 4 Environmental Sanitation	For prevention of the outbreak of Communicable Disease and effective control of Communicable Disease when it occurs, the public shall under the supervision and guidance of the Health Officer of the relevant area, 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 of 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

Environmental Management Plan

Law and Regulation	Description
	to support on establishing the ASEAN Free Trade Area and to enable to reduce technical barriers to trade to facilitate technological transfer and innovation by using the standards for the development of national economic and social activities in accordance with the national development programme.
Chapter 7 Taking Action by Committee No. 19	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
လုပ်ငန်းခွင်သုံးပေါက်ကွဲစေတက်သော ဝတ္ထုပစ္စည်းများဆိုင်ရာဥပဒေ (၂၀၁၈)	
ရည်ရွယ်ချက်	လုပ်ငန်းခွင်သုံးပေါက်ကွဲစေတက်သော ဝတ္ထုပစ္စည်းများကို စနစ်တကျပြုလုပ်ခြင်း၊ တင်သွင်းခြင်း၊ သယ်ယူခြင်း၊ သိုလှောင်ခြင်းနှင့် သုံးစွဲခြင်းတို့ပြုနိုင်ရန်။ ယမ်းဘီလူးနှင့် ဆက်စပ်သုံးပစ္စည်းများ အသုံးပြုသည့် လုပ်ငန်းခွင်ဘေးအန္တရာယ် ကင်းရှင်း၍ လုံခြုံမှုရှိစေရန်။ လုပ်ငန်းခွင်သုံး ပေါက်ကွဲစေတက်သော ဝတ္ထုပစ္စည်းများ ပြုလုပ်သုံးစွဲမှုများကို စနစ်တကျ ကြီးကြပ်နိုင်ရန်။
အခန်း ၇ တားမြစ်ချက်များ အမှတ် ၁၈	လိုဏ်ရေရှိသူနှင့် ခွင့်ပြုချက်ရရှိသူ မည်သူမျှ စစ်ဆေးရေးအရာရှိချုပ် သို့မဟုတ် စစ်ဆေးရေးအရာရှိ၏ စစ်ဆေးခြင်းကို ခံယူရန် ငြင်းပယ်ခြင်းမပြုရ။
အမှတ် ၁၉ (ခ)	ပုဒ်မ ၈ အရ ကာကွယ်ရေးဌာနကောင်စီ အမူဆောင်အဖွဲ့၏ အတည်ပြုချက်မရရှိဘဲ လုပ်ငန်းခွင် ပေါက်ကွဲစေတက်သော ဝတ္ထုပစ္စည်းများကို ဖျက်ဆီးခြင်းမပြုရ။
အမှတ် ၁၉ (ဂ)	ဤဥပဒေအရ ထုတ်ပြန်သည့် နည်းဥပဒေ၊ စည်းမျဉ်း၊ စည်းကမ်း၊ အမိန့်ကြော်ငြာစာ၊ အမိန့်နှင့် ညွှန်ကြားချက်များနှင့်အညီ ဆောင်ရွက်ရန် ပျက်ကွက်ခြင်း မရှိစေရ။
The Motor Vehicles Law (2015)	
Objectives	When the constructions periods and if it is needed in operation and production period for all vehicles <ul style="list-style-type: none"> The project proponent has to promise to abide by the nearly all provisions of said law and rules, especially the provisions related to air pollution, noise pollution and life safety.
The Conservation of Water Resources and Rivers Law (2006)	
Aims	The aims of this Law are as follows: <ul style="list-style-type: none"> (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:

Environmental Management Plan

Law and Regulation	Description
	(a) carry out any act or channel shifting with the aim to ruin the water resources and rivers and creeks. (b) cause the wastage of water resources wilfully.
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 intimation 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 payable.
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.

2.2. NATIONAL ENVIRONMENTAL QUALITY (EMISSION) GUIDELINES

As specified in the EIA Procedure, all projects are obliged to use, comply with and refer to applicable national guidelines or standards or international standards adopted by the Ministry. As

Environmental Management Plan

specified in the EIA Procedure, following project approval a project shall commence implementation strictly in accordance with the project EMP and any additional requirements set out in the project ECC, which will encompass conditions relating to emissions. While these Guidelines generally apply to all projects subject to the EIA Procedure, it is the prerogative of the Ministry to decide how the Guidelines should be applied to existing projects as referred to in the EIA Procedure.

According to the Environmental Conservation Law, MOECAP shall set standards of environmental qualities as agreed by the Union Government and the Environmental Conservation Committee 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.

2.2.1. General Guidelines**2.2.1.1. Air Emission**

Projects with significant sources of air emissions, and potential for significant impacts to ambient air quality, should prevent or minimize impacts by ensuring that: (i) emissions do not result in concentrations that reach or exceed national ambient quality guidelines and standards, or in their absence current World Health Organization (WHO) Air Quality Guidelines¹ for the most common pollutants as summarized below; and (ii) emissions do not contribute a significant portion to the attainment of relevant ambient air quality guidelines or standards (i.e. not exceeding 25 percent of the applicable air quality standards) to allow additional, future sustainable development in the same air shed. Industry-specific guidelines summarized hereinafter shall be applied by all projects to ensure that air emissions conform to good industry practice. Reference should be made to WHO's Air Quality Guidelines for Europe² for air pollutants not included in the following Table 2-2.

Table 2-2 WHO's air quality guideline

Parameter	Averaging Period	Guideline Value
Nitrogen Dioxide	1-year	40
	1-hour	200
Ozone	8-hour	100
Particulate Matter PM ₁₀ ^a	1-year	10
	24-hour	50
Particulate Matter PM _{2.5} ^b	1-year	10
	24-hour	25
Sulfur dioxide	24-hour	20
	10-minute	500

^a Particulate matter 10 micrometers or less in diameter

^b Particulate matter 2.5 micrometers or less in diameter

Environmental Management Plan**2.2.1.2. Wastewater**

Industry-specific guidelines apply during the operations phase of projects and cover direct or indirect discharge of wastewater to the environment. They are also applicable to industrial discharges to sanitary (domestic) sewers that discharge to the environment without any treatment. Wastewater generated from project operations includes process wastewater, wastewater from utility operations, runoff from process and storage areas, and miscellaneous activities including wastewater from laboratories, and equipment maintenance shops. Projects with the potential to generate process wastewater, sanitary sewage, or storm water should incorporate the necessary precautions to avoid, minimize, and control adverse impacts to human health, safety, or the environment. Industry-specific guidelines summarized hereinafter shall be applied by all projects, where applicable, to ensure that effluent emissions conform to good industry practice.

For project types where industry-specific guidelines are not set out in these Guidelines, the following general guideline values, or as stipulated on a case-by-case basis, apply during project operations.

Table 2-3 Wastewater, Storm Water Runoff, Effluent and Sanitary Discharges (general application)

Parameter	Unit	Guideline Values
5-day Biochemical oxygen demand	mg/l	50
Ammonia	mg/l	10
Arsenic	mg/l	0.1
Cadmium	mg/l	0.1
Chemical oxygen demand	mg/l	250
Chlorine (total residual)	mg/l	0.2
Chromium (hexavalent)	mg/l	0.1
Chromium (total)	mg/l	0.5
Copper	mg/l	0.5
Cyanide (free)	mg/l	0.1
Cyanide (total)	mg/l	1
Fluoride	mg/l	20
Heavy metals (total)	mg/l	10
Iron	mg/l	3.5
Lead	mg/l	0.1
Mercury	mg/l	0.01
Nickel	mg/l	0.5
Oil and grease	mg/l	10

Environmental Management Plan

pH	S.U. ^a	6-9
Phenols	mg/l	0.5
Selenium	mg/l	0.1
Silver	mg/l	0.5
Sulphide	mg/l	1
Temperature increase	°C	<3 ^b
Total coliform bacteria	100 ml	400
Total phosphorus	mg/l	2
Total suspended solids	mg/l	50
Zinc	mg/l	2

^a Standard Unit

^b At the edge of a scientifically established mixing zone which takes into account ambient water quality, receiving water use, potential receptors and assimilative capacity; when the zone is not defined, use 100 meters from the point of discharge

2.2.2. Semiconductors and Other Electronics Manufacturing

This guideline applies to semiconductors and other electronics manufacturing projects. It does not include information about the extraction of raw materials; assembly of general components, manufacturing of screens for the assembly of internal components within the plastic structure, or production of standard connectors.

Effluent Levels

Parameter	Unit	Guideline Value
5-day Biochemical oxygen demand	mg/l	50
Adsorbable organic halogens	mg/l	0.5
Ammonia	mg/l	10
Arsenic	mg/l	0.1
Cadmium	mg/l	0.1
Chemical Oxygen Demand	mg/l	160
Chromium (hexavalent)	mg/l	0.1
Chromium (total)	mg/l	0.5
Copper	mg/l	0.5
Cyanide (free)	mg/l	0.1
Cyanide (total)	mg/l	1
Fluoride	mg/l	5
Lead	mg/l	0.1
Mercury	mg/l	0.01
Nickel	mg/l	0.5
Oil and Grease	mg/l	10

Environmental Management Plan

PH	S.U. ^a	6-9
Selenium	mg/l	1
Silver	mg/l	0.1
Temperature Increase	°C	<3 ^b
Tin	mg/l	2
Total phosphorus	mg/l	2
Total suspended solids	mg/l	50
Zinc	mg/l	2

^a Standard unit

^b At the edge of a scientifically established mixing zone which takes into account ambient water quality, receiving water use, potential receptors and assimilative capacity; when the zone is not defined, use 100 meters from the point of discharge

Air Emission Levels

Parameter	Unit	Guideline Value
Acetone	mg/Nm ^{3a}	150
Ammonia	mg/Nm ^{3a}	30
Arsine and arsenic compounds	mg/Nm ^{3a}	0.5
Hydrogen chloride	mg/Nm ^{3a}	10
Hydrogen fluoride	mg/Nm ^{3a}	5
Inorganic hazardous air pollutants ^b	mg/Nm ^{3a}	0.42
Organic hazardous air pollutants ^b	mg/Nm ^{3a}	20
Phosphine	mg/Nm ^{3a}	0.5
Volatile organic compounds ^c	mg/Nm ^{3a}	20

^a Milligrams per normal cubic meter at specified temperature and pressure

^b Industry-specific hazardous air pollutants include: Antimony compounds, Arsenic compounds, Arsine, Carbon tetrachloride, Catechol, Chlorine, Chromium compounds, Ethyl acrylate, Ethylbenzene, Ethylene glycol, Hydrochloric acid, Hydrofluoric acid, Lead compounds, Methanol, Methyl isobutyl ketone, Methylene chloride, Nickel compounds, Perchloroethylene, Phosphine,

Phosphorus, Toluene, 1,1,1-trichloroethane, Trichloroethylene (phased-out), and Xylenes

^c Applicable to surface cleaning processes

2.2.3. IFC EHS Guidelines

The EHS Guidelines¹ by International Finance Cooperation (IFC) are technical reference documents with general and industry-specific examples of Good International Industry practice (GIIP), as defined in IFC's Performance Standard 3: Resources Efficiency and Pollution Prevention. The EHS Guidelines contain the performance levels and measures that are normally acceptable to IFC, and that are generally considered to be achievable in new facilities at reasonable costs by existing technology.

There are two kinds of guidelines, General EHS Guidelines and Industry Sector Guidelines. The General EHS Guidelines contain information on cross-cutting environmental, health, and safety issues potentially applicable to all industry sectors in the following section: (1) Environment, (2) Occupational Health and Safety, (3) Community Health and Safety and (4) Construction and Decommissioning. Table 2-4 shows the contents of the section of Community Health and Safety.

Environmental Management Plan**Table 2-4 Community health and safety contents**

Contents	Brief Description
Water Quality and Availability	Drinking water sources should at all times be protected so that they meet or exceed applicable national acceptability standards or in their absence the current edition of WHO Guidelines for Drinking-Water Quality. Project activities should not compromise the availability of water for personal hygiene needs and should take account of potential future increases in demand. The overall target should be the availability of 100 liters per person per day.
Structural Safety of Project Infrastructure	Reduction of potential hazards is best accomplished during the design phase when the structural design, layout and site modifications can be adapted more easily. The following issues should be considered and incorporated as appropriate into the planning, siting, and design phases of a project (1) inclusion of buffer strips or other methods of physical separation around project sites to protect the public from major hazards associated with hazardous materials incidents or process failure (2) incorporation of siting and safety engineering criteria to prevent failures due to natural risks posed by earthquakes, tsunamis, wind, flooding, landslides and fire, and (3) application of locally regulated or internationally recognized building codes, standards and regulations, and mitigation measures.
Traffic Safety	Traffic safety should be promoted by all project personnel during displacement to and from the workplace, and during operation of project equipment on private or public roads. Prevention and control of traffic related injuries and fatalities should include the adoption of safety measures that are protective of project workers and of road users, including those who are most vulnerable to road traffic accidents.
Transport of Hazardous Materials	Projects should have procedures in place that ensure compliance with local laws and international requirements applicable to the transport of hazardous materials.
Disease Prevention	Recommended interventions against the communicable diseases at the project level include (1) providing surveillance and active screening and treatment of workers, (2) preventing illness among workers in local communities by undertaking health awareness and education initiatives, training health workers in disease treatment and conducting immunization programs for workers, and (3) providing treatment through standard case management in on-site or community health care facilities.
Emergency preparedness and Response	All projects should have an Emergency preparedness and Response Plan that is commensurate with the risks of the facility and that includes the following basic elements: (1) Administration (policy, purpose, distribution, definitions, etc.) (2) Organization of emergency areas (command centers, medical stations, etc. (3) Roles and responsibilities, (4) Communication systems, (5) Emergency response procedures, (6) Emergency resources, (7) Training and updating, (8) Checklists (role and action list and equipment checklist), and (9) Business Continuity and Contingency.

Source: IFC, Environmental, Health, and Safety (EHS) Guidelines, General EHS Guidelines: Community Health and Safety (April 30.20070)

2.3. INSTITUTIONAL ARRANGEMENT

The Ministry of Environmental Conservation and Forestry (MOECF) 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.

2.4. COMMITMENT OF FU YUN (MYANMAR) COMPANY LIMITED

Fuyun Myanmar Company Limited 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 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 EMP and be abided by the environment policy, Environmental Conservation Law and other environmental related rules and procedures.

- a) The accuracy and completeness of the EMP,
- b) That the EMP has been prepared in strict compliance with applicable laws including this Procedure
- c) That the Project will always comply fully with the commitments, mitigation measures, and plans in the EMP Report.

Fu Yun Myanmar Co., Ltd. shall be responsible for the environmental assessment of factory development as follows:

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

3. PROJECT DESCRIPTION

3.1. LOCATION

Fu Yun (Myanmar) factory is located at Plot No- 467(B), Myay Taing Block No – 25, Shwe Lin Ban Industrial Zone, Hlaing Thar Yar Township, Yangon Region. Location map is as shown in **Figure 3-1**.

3.2. SITE DESCRIPTION

The total area of project site is 1.908 acre (7721.4021 square meters). Main structure is designed into office area for one building for production building. Transformer room, generator room and water treatment plant are separated by main factory building structure. The factory layout plan can be seen in **Figure 3-4**.

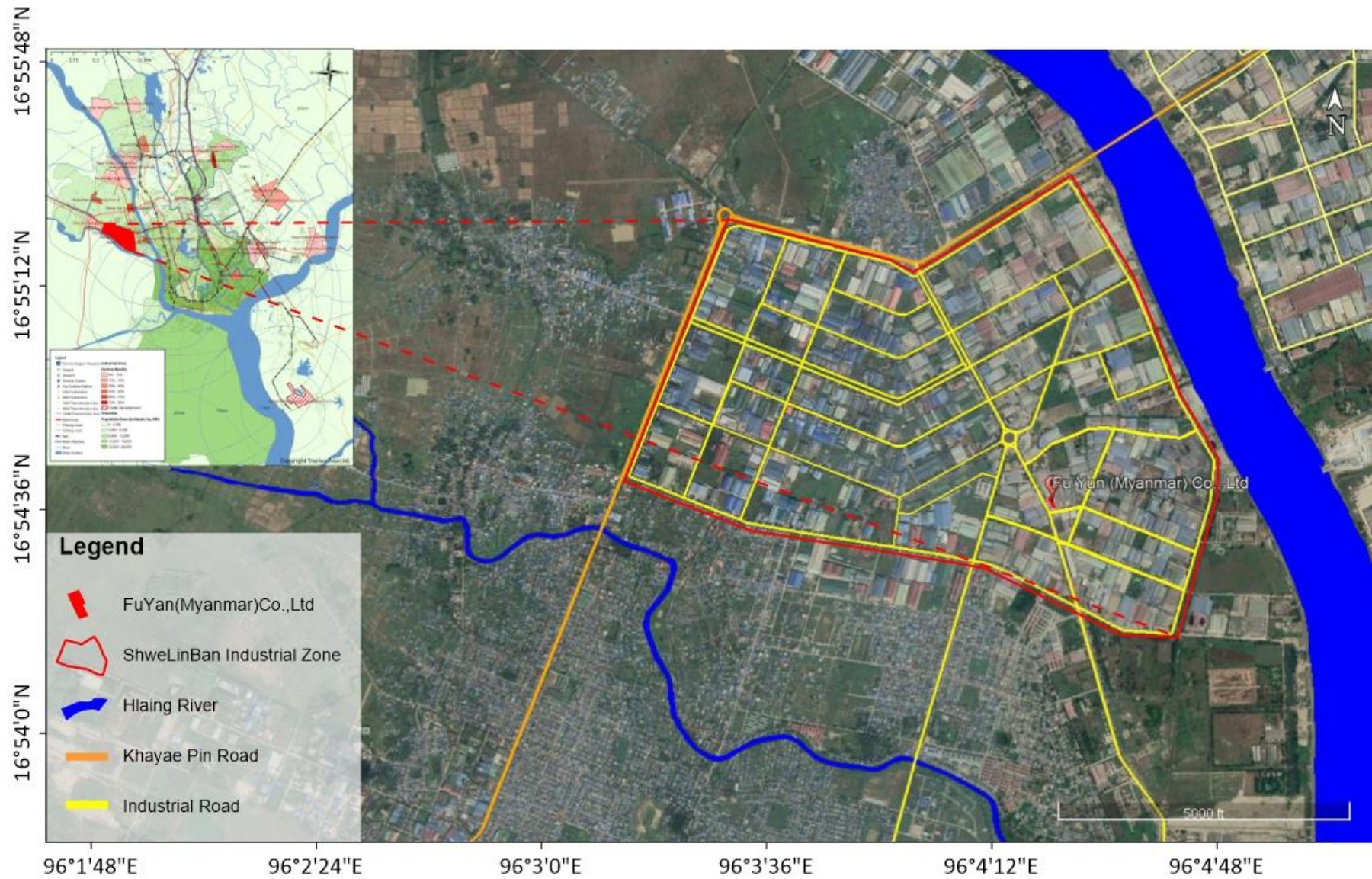


Figure 3-1 Location map



Figure 3-2 Factory Layout Map

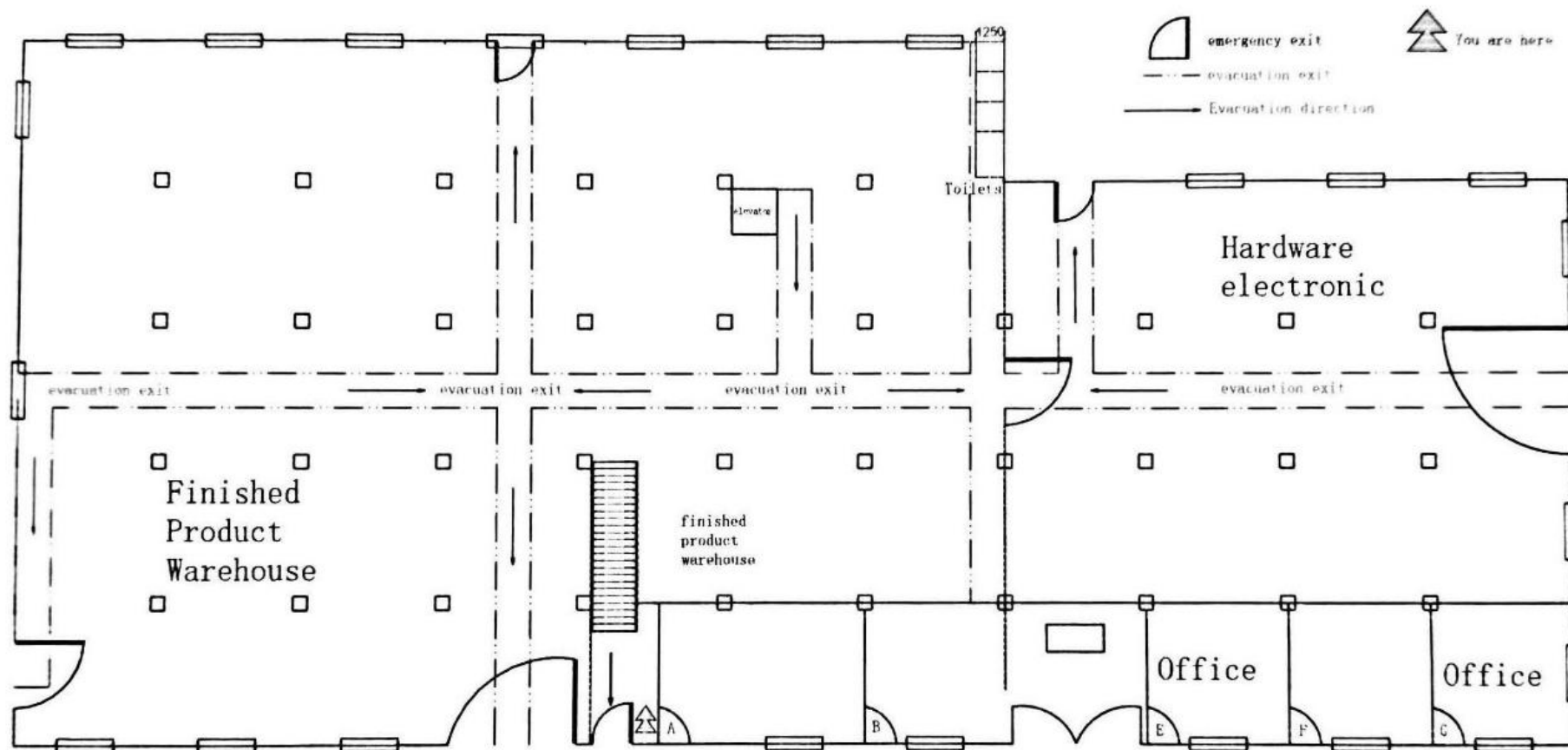


Figure 3-3 First floor layout drawing

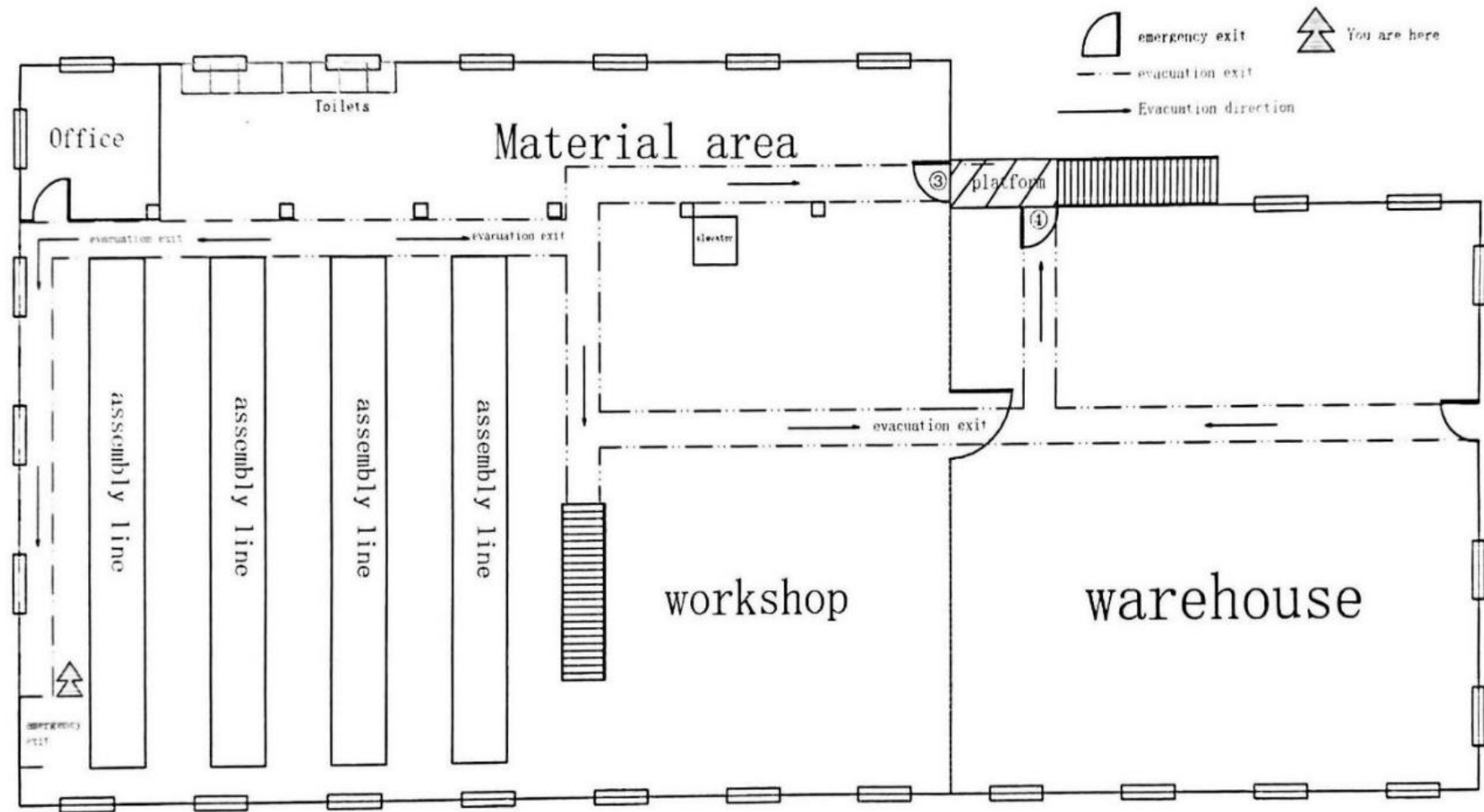


Figure 3-4 Second floor layout drawing

3.3. PROJECT OPERATION

3.3.1. Machinery and equipment

Lists of machinery and equipment required for the Fu Yun Myanmar factory is following in Table 3-1.

Table 3-1 List of machinery

No	Description	Unit	Quantity
1	Forklift (Small)	Set	4
2	Forklift (Large)	Set	2

3.3.2. Work force

Human resource required by foreign experts/technicians and local persons for administrative and production process are about 58 persons (Table 3-2). The factory started the working time from 9:00 PM to 5:00 PM daily and 58 employees per assign are delegating for 260 days of working days.

Table 3-2 Employment Schedule of Fu Yun Myanmar Industrial Limited

No	Particular	Local	Foreign
1	Factory Manager	1	1
2	Human Resources Manager	1	
3	Purchasing Manager		1
4	Production Manager		1
5	Quality Control	5	2
6	Production Technician		3
7	Store Keeper	2	
8	Driver	1	
9	Security Staff	1	
10	Supervisor	3	
11	Skill and Semi skill Workers	30	
12	Unskilled Workers	5	
13	Fire Safety Officer	1	
Total		50	8

3.3.3. Utilities

The Utilities for proposed factory include electrical power, fuel oil for emergency used generator and water for general uses. Electric power is used for the purpose of to run the machinery and to provide lighting and running machinery.

3.3.3.1. Water

Shwe Lin Ban industrial zone has no centralized water supply system and the factory gets water from the tube wells installed inside the factory compound. Groundwater from this tube well is pumped in the storage tanks for the dying operations and domestic usage. The main water use in the proposed project is for domestic usage such as for mixing of dyes, washing of stained materials, food preparation, and washing of utensils. Drinking water ordered from outsource suppliers. Figure 3-5 is presenting the water storage tanks and drinking water supply for Fu Yun Myanmar Co., Ltd.



Figure 3-5 Drinking water and general usage of water supply photos

3.3.3.2. Electricity and fuel requirement

The proposed project is intended to get required electricity supply form Yangon City Electricity Supply Board (YESB) and distributed by 400 kVA of Transformer. Another source of energy 63 kVA generator will also be kept as the emergency generator if normal electricity supply could not provide for the proposed project.



Figure 3-6 Electricity facility

3.4. PRODUCTION PROCESS

3.4.1. Raw Material

The main Raw Materials are plastic body, plastic accessories, wire, light bulb, fuse, plug, tail inserting and PP bag, which will be importing from China. Chemicals used in dying process also derive imported from china and stored in relevant room temperature and warehouse. Raw materials require for a piece of product is describing in Table 3-3.

Table 3-3 List of Raw Material Requirement For 1 Pcs (Norm)

No	Particular	Unit	Requirements
Holiday String			
1	Plastic Body	Pcs	5
2	Plastic Accessories	Pcs	5
3	Wire	Feet	315.5
4	Light Bulb	Pcs	14
5	Fuse	Pcs	1
6	Plug	Pcs	1
7	Tail Insertion	Pcs	1
8	Terminal	Pcs	20

Environmental Management Plan

No	Particular	Unit	Requirements
9	PVC Sky Cover	Pcs	1
10	Floor Box Color Strip White Card Core	Pcs	1
11	PP Bag	Pcs	1
12	Instruction Manual	Pcs	1
13	Outer Box	Pcs	0.08
14	Paint	Gram	0.6
15	Open Oil	Pcs	0.6
Street Light			
1	Lamp Cover	Pcs	1
2	Lamp Cap	Pcs	1
3	Lamp Cap	Pcs	1
4	Top Flower	Pcs	1
5	Plastic Screw	Pcs	4
6	Light Box	Pcs	1
7	Light Window	Pcs	1
8	Big Flower Bud	Pcs	4
9	Connector Cover	Pcs	1
10	Base	Pcs	1
11	Bottom Plate	Pcs	1
12	Connector	Pcs	1
13	Sand Cover	Pcs	1
14	Light Pole	Pcs	4
15	Arbors	Pcs	1
16	Hanging Arm	Pcs	2
17	Lamp Holder	Pcs	1
18	Plug	Pcs	1
19	Wire	Feet	10.5
20	Light Bulb	Pcs	1
21	Screw	Pcs	4
22	Lamp Cap + Cover	Pcs	1
23	Instruction Manual	Pcs	1
24	PP Bag	Pcs	8
25	White Box	Pcs	1
26	Outer Box	Pcs	0.5
27	Bubble Bag	Pcs	1
28	Paint	Gram	35

Environmental Management Plan

No	Particular	Unit	Requirements
29	Open Oil	Gram	70
30	Tender	Pcs	1
31	Ribbon	CM	102
32	Pine Strip	CM	102
33	Red Fruit	Pcs	14
Plastic Lantern			
1	Plastic Candle	Pcs	1
2	Plastic Battery Box + Battery Cover	Pcs	1
3	Plastic Lantern Pillar + Handle + Top Cover + Light Frame	Pcs	4
4	Plastic Waterproof case	Pcs	1
5	Waterproof Strip	Pcs	1
6	Waterproof Ring	Pcs	1
7	Solar Panels	Pcs	1
8	Battery	Pcs	1
9	PCB Board	Pcs	1
10	IC	Pcs	1
11	Inductor/ Resistor/ Capacitor	Pcs	1
12	Led	Pcs	1
13	Switch	Pcs	1
14	PVC Line	Pcs	5
15	Shrapnel	Pcs	1
16	Screw	Pcs	7
17	Glass Piece	Pcs	4
18	Tag	Pcs	1
19	PP Bag	Pcs	2
20	Outer Box	Pcs	0.25
21	Styrofoam Block	Pcs	1
22	Paint	Gram	8
23	Open Oil	Gram	16
Plastic Diving Light			
1	Water Light Base	Pcs	12.00
2	Battery Box + Transparent Cover	Pcs	12.00
3	Battery	Pcs	24.00
4	Shrapnel	Pcs	12.00
5	Waterproof Ring	Pcs	12.00
6	Led	Pcs	12.00

Environmental Management Plan

No	Particular	Unit	Requirements
7	PVC Box + PVC Inner Support	Pcs	1.00
8	Instruction Manual	Pcs	1.00
9	Color Bar	Pcs	1.00
10	Middle Box	Pcs	0.16
11	Quter Box	Pcs	0.02
Educational Toy Gift			
1	Poster Plastic Body		1
2	Poster Battery Box + Cover		1
3	Switch		1
4	Horn		1
5	PCB Board		1
6	PVC Line		12
7	LED Light		3
8	IC		1
9	Resistor- Capacitor		8
10	Shrapnel		1
11	Screw		3
12	Poster		1
13	Color Box		1
14	Sticker		1
15	PE Film		1
16	Conductive Film		1
17	PE Bag		1
18	Pearl Cotton		1
19	Neka		1
20	Outer Box		0.16
Glass Pumpkin Lamp & Accessories			
1	Glass Pumpkin Body	Pcs	
2	Iron Frame + Baked Black Paint	Pcs	
3	Plastic Body	Pcs	
4	Plastic Battery Cover	Pcs	
5	QY3091-51C Board	Pcs	
6	Led	Pcs	
7	Switch	Pcs	
8	PVC Line	Pcs	
9	Shrapnel	Pcs	
10	Screw	Pcs	

Environmental Management Plan

No	Particular	Unit	Requirements
11	Pine Come	Pcs	
12	Red Fruit Bunch	Pcs	
13	Plastic Pine Strip	Pcs	
14	Cloth	Yard	
15	Round TRYME Battery Box + White Parallel Lines	Pcs	
16	2.0 Terminal base with 8CM red and white parallel lines	Pcs	
17	PP Bag	Pcs	
18	EVA Pad	Pcs	
19	TRYME Paper Card	Pcs	
20	Transparent Buckle	Pcs	
21	Tag	Pcs	
22	Outer Box	Pcs	
23	Middle Box	Pcs	
24	Styrofoam Block	Pcs	
Educational Toy Gift 2			
1	Upper Cover + lower Cover + Battery Cover + Transparent Parts	Pcs	1
2	Shrapnel	Pcs	1
3	Screw	Pcs	5
4	Horn	Pcs	1
5	PVC Line	Pcs	8
6	Switch	Pcs	1
7	Conductive Button	Pcs	2
8	Zebra	Pcs	1
9	Chip Capacitor + Resistor	Pcs	4
10	Patch LED	Pcs	2
11	PCB Board	Pcs	2
12	IC	Pcs	1
13	PE Bag	Pcs	2
14	Color Cards	Pcs	1
15	Color Box	Pcs	1
16	Instruction Manual	Pcs	1
17	Outer Box	Pcs	0.08
18	Blister Cover	Pcs	1
Poly Ghost			
1	Polly Water	Gram	260

Environmental Management Plan

No	Particular	Unit	Requirements
2	Stone Powder	Gram	240
3	Hardener	Gram	8
4	Catalyst	Gram	1.5
5	Silicone	Gram	1000
6	Plaster	Gram	2200
7	Paint	Gram	4
8	Open Oil	Gram	8
9	Kerosene	Gram	5
10	Battery Box + Battery Cover	Pcs	1
11	Light Bulb Shell	Pcs	1
12	Shrapnel	Pcs	1
13	Screw	Pcs	1
14	Switch	Pcs	1
15	Battery	Pcs	1
16	Led	Pcs	1
17	Screw	Pcs	1
18	PVC Line	Pcs	4
19	PP Bag	Pcs	1
20	Instruction Manual	Pcs	1
21	Transparent Buckle	Pcs	1
22	Poly Dragon	Pcs	0.33
23	Tag	Pcs	1
24	Middle Box	Pcs	0.16
25	Outer Box	Pcs	0.04
Candle Light			
1	Candle Body	Pcs	12
2	Candle Bulb Shell	Pcs	12
3	Battery Box + Battery Cover	Pcs	12
4	Led	Pcs	12
5	Battery	Pcs	12
6	Switch	Pcs	12
7	Shrapnel	Pcs	12
8	Screw	Pcs	12
9	Candle PET Box	Pcs	1
10	Color Mark	Pcs	1
11	Outer Box	Pcs	0.25
True candle Light			

Environmental Management Plan

No	Particular	Unit	Requirements
1	Battery Box + Battery Cover	Pcs	3
2	Plastic Accessories	Pcs	3
3	Battery Case	Pcs	3
4	Support	Pcs	3
5	Buckle Cap	Pcs	3
6	Paraffin	Gram	552
7	Wavy mouth wax white billet	Pcs	3
8	Led	Pcs	3
9	Switch	Pcs	3
10	Chip Resistor and Capacitor	Pcs	3
11	PVC Line	Pcs	9
12	Crystal Oscillator	Pcs	3
13	Substrate	Pcs	3
14	Screw	Pcs	9
15	Shrapnel	Pcs	3
16	PET Drum + PET Holder	Pcs	1
17	Color Box	Pcs	1
18	Outer Box	Pcs	0.25
Plastic Decorative Lantern			
1	Plastic Body	Pcs	1
2	Battery Box + Cover	Pcs	1
3	TRYME Battery Case + Cover	Pcs	1
4	Plastic Cover + Top Cover + Accessories	Pcs	1
5	Glass Piece	Pcs	4
6	Cable	Pcs	2
7	Resistance	Pcs	1
8	Led	Pcs	1
9	Enameled Wire Lamp	Pcs	1
10	PVC Line	Pcs	2
11	Battery	Pcs	3
12	Switch	Pcs	1
13	Shrapnel	Pcs	1
14	Screw	Pcs	4
15	TRYME Shrapnel	Pcs	1
16	Foam String	Pcs	3
17	Pumpkin	Pcs	1

Environmental Management Plan

No	Particular	Unit	Requirements
18	Leaf	Pcs	2
19	Grape Leaves	Pcs	3
20	Water Grass String	Pcs	1
21	Toothed Green Leaf	Pcs	2
22	PVC Sheet	Pcs	1
23	UPC Transparent Standard	Pcs	1
24	Tag	Pcs	1
25	PP Bag	Pcs	2
26	FCC Specification	Pcs	1
27	TRYME Paper Card	Pcs	1
28	Outer Box	Pcs	0.25
29	Middle Box	Feet	0.5
Holiday Craft Jewelry			
1	PVC Powder	Pcs	1
2	Pigment	Pcs	1
3	Paint	Pcs	1
4	Open Oil	Pcs	1
5	Toner	Pcs	1
6	Sling	Pcs	1
7	Hang Buckle	Pcs	1
8	PP Bag	Pcs	1
9	Outer Box	Pcs	0.25
10	Middle Box	Pcs	0.25
Cylinder Light & 35 Light String			
1	Cylindrical Iron Mesh Body	Pcs	1
2	Plastic Battery Box + Cover HI: 46.5G	Pcs	1
3	35 Light String	Pcs	1
4	Resistance	Pcs	1
5	Switch	Pcs	1
6	PVC Line	Pcs	4
7	32.768 Crystal Oscillator	Pcs	1
8	PCB Board	Pcs	1
9	Shrapnel	Pcs	4
10	Screw	Pcs	1
11	Beads	Pcs	273
12	Metal Button	Pcs	273
13	Metal Buckle Bead	Pcs	273

Environmental Management Plan

No	Particular	Unit	Requirements
14	PVC Cover	Pcs	1
15	Mail Order Box	Pcs	1
16	Outer Box	Pcs	0.25
Wire Festival Lighting			
1	Wire Main Material	Kg	6
2	Iron wire main body forming + Baking paint	Pcs	1
3	Ground Hook	Pcs	2
4	Black Double Parallel	Pcs	1
5	Light with plug: there is a outlet in the middle	Pcs	4
6	Low voltage 24V flexible neon tube light 120 lights/ m pink light 3 meters/ section	M	4.5
7	Low voltage 24V flexible neon tube light 120 lights/ m pink light 1.5 m/ section	M	4.5
8	Output line: 1.5 meters straight welding	Pcs	1
9	Transformer: TS-24V12W constant current	Pcs	1
10	Nylon Cable Tie	Pcs	51
11	PP Bag	Pcs	5
12	Instruction Manual	Pcs	1
13	Sticker	Pcs	1
14	White Box	Pcs	1
15	Outer Box	Feet	0.25
16	Color Mark	Pcs	1
17	Black Heat Shrinkable Tube	Pcs	1
18	705 Glue	Gram	2.5



Figure3-7 Raw Materials and Chemicals Storage Planning Photo

3.4.2. Production Process

The dye or pigment is thickened with starch or made into emulsion, which in the case of pigment colors is prepared with an organic solvent. The engraved rollers, which print the material, take up this paste or emulsion and the color is subsequently fixed in the ager or curing machine. The printed cloth then receives the appropriate finishing treatment. The process flow diagram for electrical gifts, decorations and its related materials manufacturing is shown in Figure 3-8.

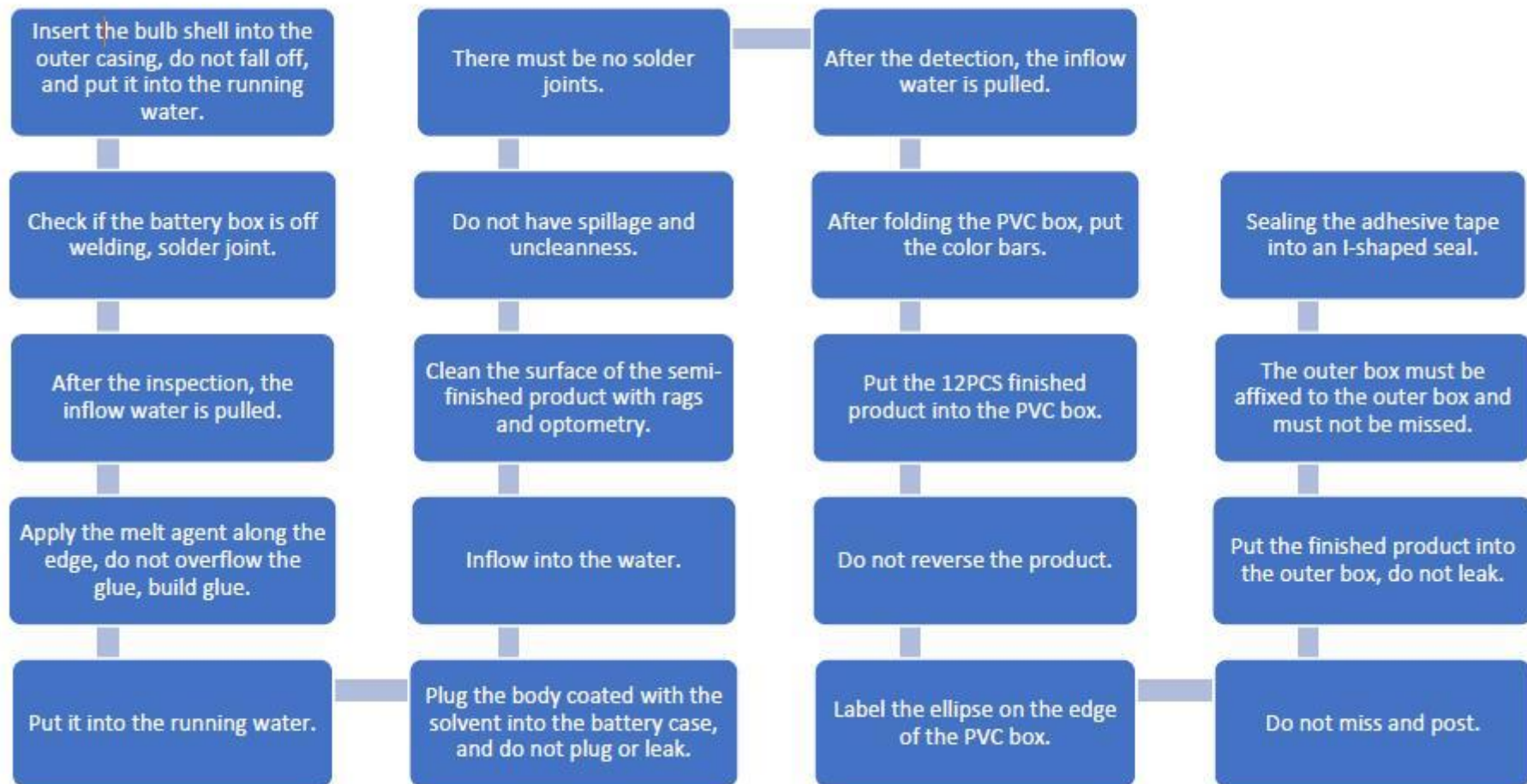


Figure 3-8 Process flow diagram



Raw Materials



Assembling



Welding



Dyeing



Products



Packing

Figure 3-9 Production process photo

3.4.3. Products

The products of Fuyun Myanmar factory are Plastic Lantern, Plastic Diving Light, Educational Toy Gift, Glass Pumpkin Light & Accessories, True Candle Light, Plastic Decorative Lantern, Holiday Craft Jewelry, Cylinder Light, and Wire Festival Lighting are shown in Figure 3-10. Table 3-4 is describing annual production rate.





Holiday Craft Jewelry



Cylinder Light & 35 Light String



Wire Festival Lighting

Figure 3-10 Product Photos of Fu Yun Myanmar Factory

Table 3-4 Annual production rate

No	Particulars	Unit	Yr - 1	Yr - 2	Yr - 3	Yr 4-10
I	Total Production (Pcs)		2,787,500	2,787,500	2,787,500	3,066,250
1	Holiday String		50,000	50,000	50,000	55,000
2	Street Light	Set	75,000	75,000	75,000	82,500
3	Plastic Lantern	Set	125,000	125,000	125,000	137,500
4	Plastic Diving Light	Set	75,000	75,000	75,000	82,500
5	Educational Toy Gift	Set	75,000	75,000	75,000	82,500

Environmental Management Plan

No	Particulars	Unit	Yr - 1	Yr - 2	Yr - 3	Yr 4-10
6	Poly Ghost	Set	37,500	37,500	37,500	41,250
7	Candle Light	Set	1,500,000	1,500,000	1,500,000	1,650,000
8	True Candle Light	Set	125,000	125,000	125,000	137,500
9	Plastic Decorative Lantern	Set	125,000	125,000	125,000	137,500
10	Holiday Craft Jewelry	Pcs	250,000	250,000	250,000	275,000
11	Glass Pumpkin Light & 35 Accessories	Set	125,000	125,000	125,000	137,500
12	Cylinder Light & 35 Light String	Set	25,000	25,000	25,000	27,500
13	Educational Toy Gift 2	Set	75,000	75,000	75,000	82,500
14	Wire Festival Lighting	Set	125,000	125,000	125,000	137,500

3.5. GENERATION OF WASTE, EMISSION AND DISTURBANCES

Fuyun Myanmar Company Limited is using ground water for both industrial and household purpose, which is supplied by deep tube well. The factory has generators for electricity facilitation. The fuel used in the industry is Diesel and Purchased electricity. The sanitary liquid waste of the factory is stored in septic tank.

The major pollution caused by the factory's operations are water pollution by discharging colored liquid generated from dying processing and these liquid wastes contaminating the surface water, harmful to animals, human health by utilizing these contaminated waters.

Wastes generated from dying process, addition, packing waste of plastic sheet, carton box from packing section. Wastewater particularly emitted dyed wastewater from dying process and cleaning of stained equipment. Total amount of wastewater will be generating about 100 m³ per day. This wastewater is contaminating with color, chemicals, total suspended solid (TSS), Chemical Oxygen Demand (COD), etc.

The number of staff and workers required in the day shift for the factory is maximum 58 persons during operation. 200 kg of solid waste (recyclable) generated from manufacturing of electric gifts, decorations and materials and another non re-usable solid waste from maximum number of operators and office staffs with assumption of waste generation rate at 22.62 kg/day calculated based on solid waste generation rate of 0.39 kg/person/day.

Domestic wastewater generated by maximum amount of 58 persons with assumption rate at 5.8 m³/day was calculated based on domestic wastewater generated rate of 0.1 m³/person/day¹. This water will let drain to factory outlet discharges.

Table 3-5 Waste generation and waste amount

Waste	Type of wastes	Estimated waste amount	Source of generation
-------	----------------	------------------------	----------------------

¹ The domestic wastewater generation was based on typical wastewater generation rate of 0.1 m³ per person per day (Metcalf & Eddy, 2004)

Environmental Management Plan

Solid waste	Re-usable	Canceled products, carton box	200 kg / day	Operations
	Non re-usable	Food residues, domestic waste	22.62 kg / day*	Canteen, Kitchens, dormitory
Liquid waste		Operation discharged water	100 m ³ / day*	Dying section, cleansing water, toilets, kitchen and canteen.
Domestic waste		Particularly non-reusable materials	5.8 m ³ / day	Dormitory and general usage
Hazardous waste		Toxic chemical leakage and oil spills	-	Operation of generator, boiler and movements of forklift

4. BRIEF DESCRIPTION OF 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.

4.1. METHODOLOGY FOR DATA COLLECTION AND ANALYSIS

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

- Onsite Measurements and Analysis – Baseline parameters such as Indoor temperature, humidity, operation light conditions, noise and water quality of the project site during operation phase were measured onsite. 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 Hlaing Thar Yar Township, Yangon Region.

4.2. 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.

4.2.1. Surrounding Map View of Project Area

The proposed factory is located at Shwe Lin Ban Industrial Zone, Hlaing Thar Yar T.S. Fu Yun Myanmar Co., Ltd. is bordering with other garment factories. Recently view of industrial map is mentioning with appropriate gazetteers.

4.2.2. Baseline environmental monitoring

The baseline environmental quality at the Project Site and its immediate surroundings was established by groundwater, wastewater, and ambient air quality samples; as well as noise measurements at immediate surrounding areas. The data is presented below.



Figure 4-1 Surrounding condition map near proposed factory

4.2.3. Climate and Meteorology

Yangon 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 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. 56. Temperature. 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 Yangon 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 Yangon is 2,681 mm with the annual average rainy days of 129.3 days. During 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 Shwe Lin Ban Industrial Zone, Hlaing Thar Yar Township and Yangon Region. The climate condition of Hlaing Thar Yar Township in which the project lies is the dry season, starts in February and ends in May. The raining season starts in June and ends in September and the cold season follow with the cooler, drier months of January. The highest temperature ranging

Environmental Management Plan

41°C and low range 27°C reference from Township Meteorology data, Regional Data of Hlaing Thar Yar Township. 2012 to 2017 Yearly data of rainfall and temperature is presented in Table 4-1. The weather condition during 27 June 2019 shows the average temperature of 39.1 °C while the average humidity is 61.3 percent (Table 4-2).

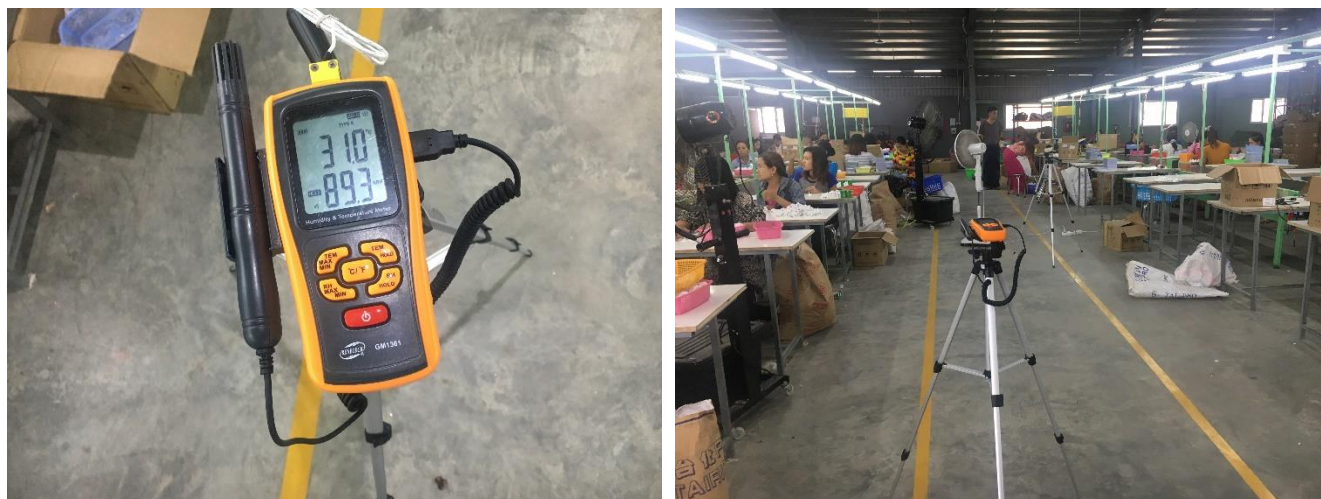
Table 4-1 Annual rainfall and temperature

Year	Rainfall		Temperature	
	Raining day	Rainfall value (Inches)	Summer season Max (°C)	Winter season Min (°C)
2012-2013	121	53.46	41	27
2013-2014	131	61.25	40	26
2014-2015	128	58.35	39	25
2015-2016	113	48.45	40	26
2016-2017	126	56.97	41	27

Source: Department of Administrative Hlaing Thar Yar Township, Regional data (www.gad.gov.mm.com)

Table 4-2 Relative humidity and temperature measure at factory

Date and Time	Description	Result value	Environmental parameter air station guideline
27 June 2019 (10:00 am to 4:00 pm)	Relative Humidity RH %	61.3 (%)	Present condition
	Temperature	39.1 °C	Present condition

**Figure 4-2 Humidity and Temperature Measurement Photo**

Wind Speed and Direction. Based on 2013 data, it was reported that the month with the highest wind speed was April 2013 with an average wind speed of 3 m/s while the least windy month was December 2012 with an average wind speed of 1m/s. The highest sustained wind speed was 54 m/s, occurring on September 19, 2013 and the highest daily mean wind speed was 4 m/s, occurred on May 14, 2013.

Environmental Management Plan

Natural Hazards: Myanmar is exposed to multiple natural hazards including cyclones, earthquakes, floods and fire. It has been periodically exposed by natural disasters. The Yangon District is in the vicinity of the southern section of the Sagaing Fault which has not been active in the past 50 to 75 years indicating that the faults may be under accumulating stress increasing the potential for an earthquake to occur. The Sagaing Fault is the most prominent active fault in Myanmar trending roughly north to south. It has been the originator of a large proportion of destructive earthquakes in Myanmar. The Project Site is also located in an earthquake zone and therefore the building construction design needs to cater for this hazard with adequate planning on emergency response procedures. Myanmar is exposed to cyclones and associated storm surges from the Bay of Bengal. Annually, there are approximately 10 tropical storms in the Bay of Bengal from April to December. Severe cyclones occur during the pre-monsoon period of April to May and post-monsoon period of October to December. The threat of flooding usually occurs in three waves each year: June, August, and late September to October.

4.2.4. Air Quality

To determine the existing baseline ambient air quality status within the project site on 27, June 2019, 8-hours of working period air pollutants level, which include dust (PM₁₀ and PM_{2.5}) were measured at the selected site, compared with National Environmental Quality (Emission) Guideline. The measurement location point is situated at latitude 16°50'43.18"N and longitude 96°18'1.01"E.

Table 4-3 Observed air quality results

Parameters	Observed value	Guideline value	Unit	Organization	Period
PM ₁₀	114.6	50	µg/m ³	NEQG	8 hrs
PM _{2.5}	45.9	25	µg/m ³	NEQG	8 hrs

NEQ = National Environmental Quality (Emission) Guideline



Figure 4-3 Air Quality Measurement Photo

4.2.5. Weather Condition

The weather condition during 27 June 2019 shows the average temperature of 35.5 °C while the average humidity is 26.7 % and its sunny day. There was no raining on the day between 10:00 am and 4:00 pm and the wind speed is 1.2 m/s SSW, S, SE, SSE and ESE direction.

4.2.6. Noise

The Noise level was measured by using Digital Sound Level Meter for working hours on 27 June 2019. The average noise level in the project site area is presented in Table 4-4 compared with NEQ guideline. However, according to the Noise source monitoring at operation area (inside the production sector) of noise level is exceeding the acceptable level of National Environmental Quality (Emission) Guideline.

Table 4-4 Noise level measurement result

Date and Time	Location	GPS value	Result value	NEQ Guideline
27 June 2019 (1:00pm to 4:00 pm)	Operation area (Sewing section, finishing section & Cutting Section)	16°54'30.28"N 96° 4'15.79"E	68.99dB	70 dB

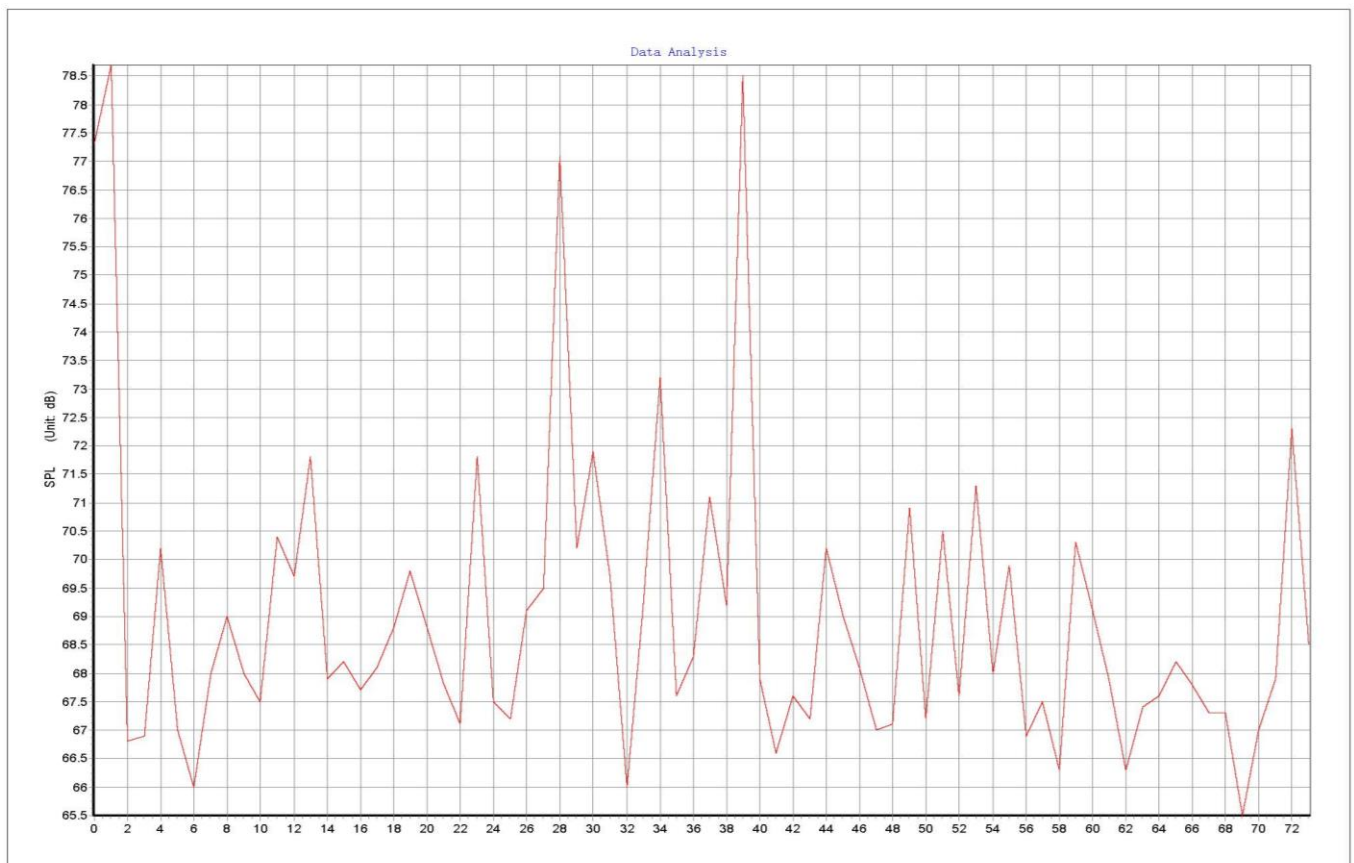


Figure 4-4 Noise level result graph



Figure 4-5 Sound level measurement photo

4.2.7. Light

Activities of the workers in the factory are highly dependent on the quality of light. Therefore, the consultants conducted the light measurement in the electric decorations factory and the recorded light result is presenting in Table 4-5. Fluorescent lamps in the factory are planning the operation area with 3x3 ft spacing and the whole factory is approximately 15x15 ft spacing at the whole factory.

Appropriate lighting is the need for every department, irrespective to the task being handled. Although, there are some areas where focus on maintaining proper illumination is very crucial, like the inspection points (on-floor and in stores), sampling, and the finishing section, as these areas are crucial for the quality of the production. The tasks involved in these areas require high levels of worker focus and accurate lighting to ensure lower errors and defects passing on to the next stage.

However, according to the result of light measurement at operation area (inside the production sector) is in good condition and at the acceptable level of standard.

Table 4-5 Recommended illumination and limiting glare index based on IES Code, 1968

Visual test	Illumination (lux)	Glare index
Casual seeing	100	28
Rough task with large detail	200	25-28
Ordinary task medium detail	400	25
Fairly severe task, small detail (e.g. drawing office, sewing)	600	19-22
Severe, prolonged task, very small detail (e.g. fine assembly, hand tailoring)	900	16-22
Very severe, prolonged task, very small detail (e.g. gem cutting, hosiery mending, gauging very small parts)	1,300 -2,000	13-16

Source: Koenigsberger, et al. 1975



Figure 4-6 Light Quality Measurement Photo

Table 4-6 Result of Light Measurement in Fu Yun Myanmar Company Limited

No	Location	Measure value (Lux)	Standard*
1	Warehouse	1469	2000
2	Operation Area	1292	1000
3	Packaging Building	986	1000

* Lighting standards and codes usually provide recommended illuminance ratios between the task area and its surroundings (EN 12464-1 2002) (CIBSE 1997) (IESNA 2000, 676708)

4.3. PHYSICAL COMPONENT

4.3.1. Topography

The proposed project area is situated in Shwe Lin Ban Industrial Zone, Hlaing Thar Yar Township, and its topographic condition is flat. The proposed project site is primarily agricultural land, but now is initiated into the industrial zone area.

4.3.2. Geology

The Yangon area is underlain by alluvial deposits (Pleistocene to Recent), the non-marine fluviatile sediments of Irrawady formation (Pliocene), and hard, massive sandstone of Pegu series (early-late Miocene). Alluvial deposits are composed of gravel, clay, silts, sands and laterite which lie upon the eroded surface of the Irrawaddy formation at 3-4.6 m above mean sea level (MSL). The rock type in Yangon is mainly soft rocks, which consist of sandstone, shale, limestones and conglomerate. Geological map of Yangon Regional area is shown in Figure 4-7.

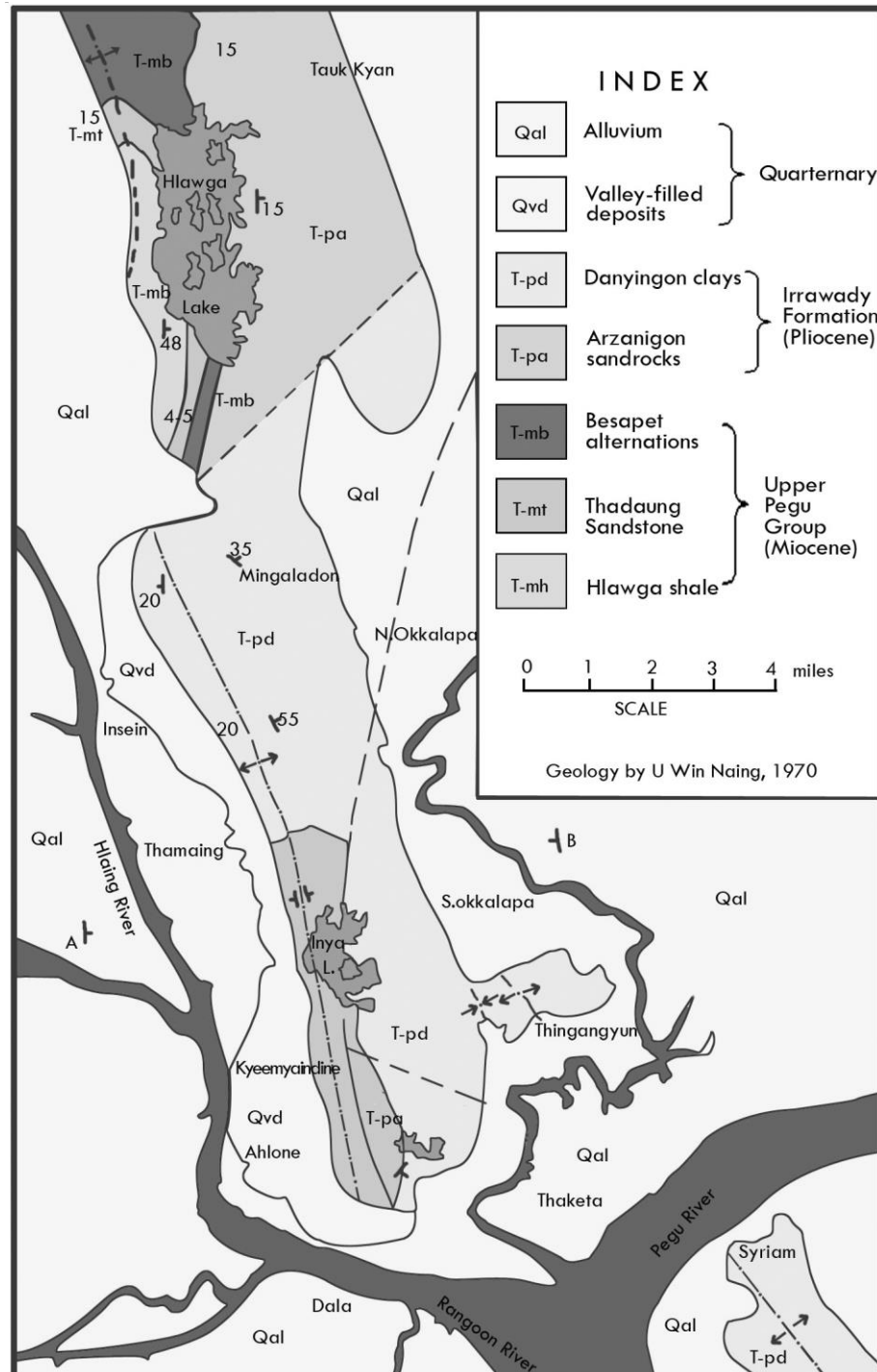


Figure 4-7 Geological Map of Yangon Region

4.3.3. Tectonics

Yangon is situated in the southern part of the Central Lowland which is one of the three major tectonic provinces of Myanmar. The Taungnio Range of the Gyophyu catchments area of Taikkyi District, north of Yangon, through the Thanlyin Ridge, south of Yangon forming a series of isolated hills probably resulted from the progressive deformation of the Upper Miocene rocks as the eastern continuation of the subduction or stretching and compression along the southern part of the Central Basin and regional uplifting of the Pegu Yoma (Aung Lwin 2012).

4.3.4. Soil

The underlying soil type at the Project Site and its surroundings is characterized as the Meadow and Meadow Alluvial Soil. Meadow Soil is soil which occurs near the river plains exposed to occasional tidal floods, is non-carbonate and usually contains a large amount of salt. Both materials mainly comprise salty clay loam and neutral soil rich in plant nutrient. The upper layers (approximately 0 to 7 m) of the soil at the Project Site comprise largely of cohesive layers with traces of sand and gravel, followed by sand layers with low silt content and trace gravel from 7 to 35 m. The lower layers comprise denser silt layer with traces of sand and gravel from approximately 57 to 70 m. Standard Penetration Test (SPT) results obtained from testing at the Project Site indicate that the soil strength generally increases with depth. The STP results showed that the current soil quality can accommodate the construction of the Project.

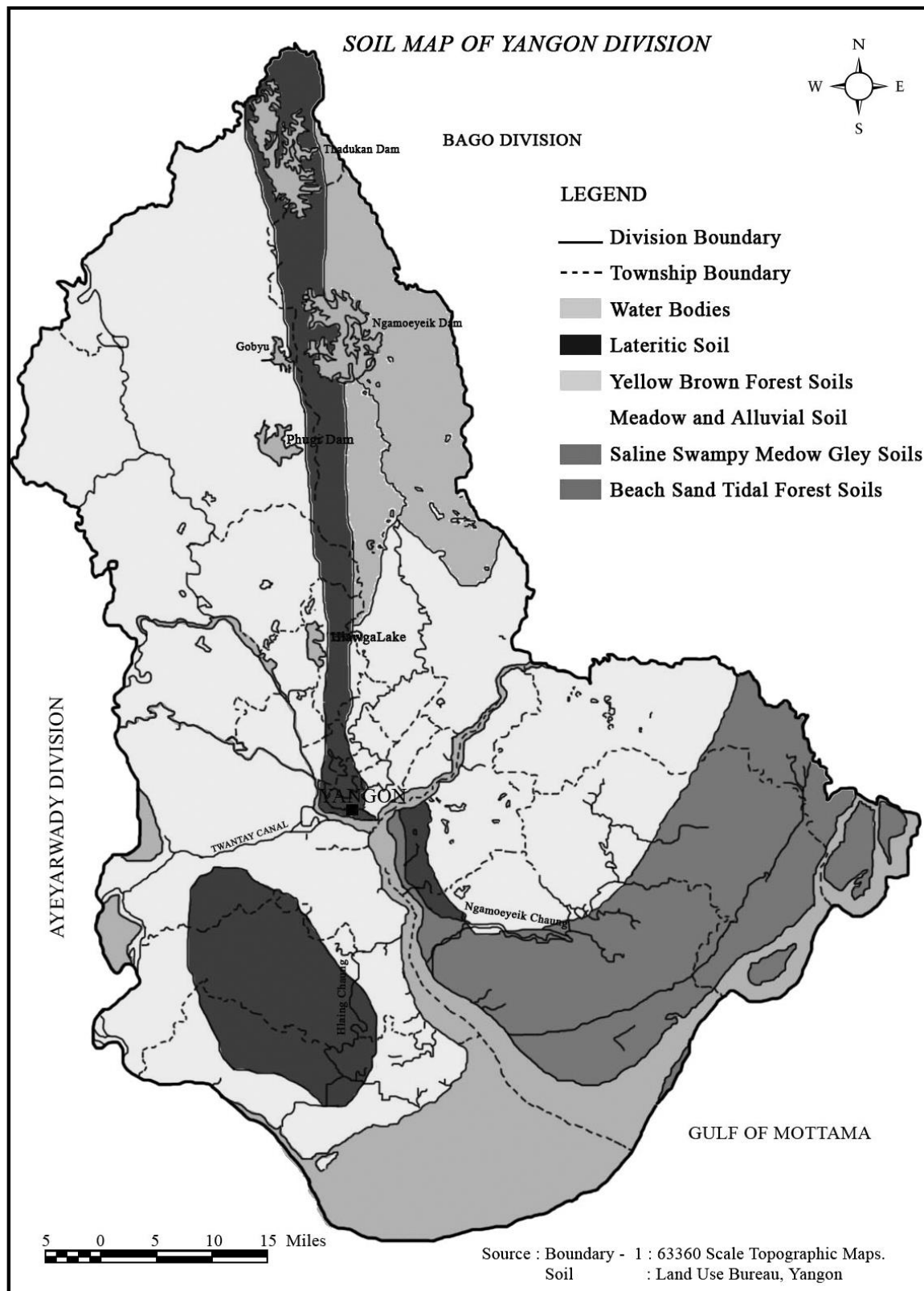


Figure 4-8 Soil map of Yangon (Source: Land use of Bureau of Yangon)

4.3.5. Hydrogeology

Yangon is rich in groundwater resources conserved by unconsolidated Tertiary-Quaternary deposits. In Yangon, groundwater is mostly extracted from Valley filled deposits and Ayeyarwady 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. Based on local geological considerations, potential groundwater source of Yangon can be roughly divided into two sub regions, namely the low potential area and high potential area. Low potential areas are areas with those rock units of Hlawga Shale, Thadugan Sandstones and Basepet Alternation of upper Pegu Group (Miocene epoch) and Danyingon Clays of Irrawaddy rocks. These rocks and formations are a dense, massive and consolidated nature and have impervious characteristic. High potential areas are underlain by Pliocene Series and recent Formations. High potential area covers approximately 85 percent of the Yangon city including Pabedan. 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 8th of December 2012, stabilized groundwater level was observed to range between 0.49 m MSL to -1.81 m MSL.

Water Supply: The Yangon City Development Committee (YCDC) has an overall responsibility for the management and distribution of water for Yangon City. Presently, YCDC's water supply is obtained from two main sources: (1) reservoir (Hlawga, Gyobu, Pugyi and Ngameoyeik reservoirs) and, (2) groundwater from YCDC's tube wells. Water from these sources is utilized to varying degrees. Areas not supplied with water from the YCDC rely on shallow surface wells and private boreholes. Water supply for the Project Site will be obtained from onsite borewells 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 Project Site lies along the catchment of the Pazundaung River which flows east of the site in a southerly direction to converge into the Yangon River. The Yangon River (also known as the Rangoon River or Hlaing River) is formed by the confluence of the Pegu and Myitmaka rivers and flows into the Gulf of Martaban which is part of the larger Andaman Sea. The river flows along a 40 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.

4.4. BIOLOGICAL COMPONENT

The proposed project site is not located in or near a sensitive ecosystem as the proposed project area is situated in the Shwe Lin Ban industrial zone. The Project Site is a built-environment and the species of flora surveyed at the site are native species uncommon to the Yangon area. There were no protected species or species of conservation value identified.

4.5. SOCIO-ECONOMIC COMPONENT

4.5.1. Population

Fu Yun Myanmar factory is located across Hlaing Thar Yar Township in Yangon Region. In 2017, the population of Hlaing Thar Yar Township is about 414,209 people as present in Table 4-7.

Table 4-7 Population of Males and Females at Hlaing Thar Yar Township (2017)

Item	Older 18 year			Younger 18 year			Total		
	Males	Females	Total	Males	Females	Total	Males	Females	Total
Urban	105075	119903	224978	44884	49782	94666	149959	169685	319644
Rural	33257	31319	64576	14953	10536	29989	48210	46355	94565
Total	138332	151222	289554	59837	64818	124655	198169	216040	414209

Source: Department of Administrative Hlaing Thar Yar Township, Regional data (www.gad.gov.mm.com)

4.5.2. Religion

The different kinds of religion present in Hlaing Thar Yar Township are shown in Table 4-8. More than 90% of the people living in the township are Buddhists.

Table 4-8 Religion in Hlaing Thar Yar Township (2017)

Township	Buddhist	Christian	Hindu	Muslim	Total
Hlaing Thar Yar township	395789	6400	8320	3700	414209

Source: Department of Administrative Hlaing Thar Yar Township, Regional data (www.gad.gov.mm.com)

4.5.3. Local Economy

Among regional towns, Hlaing Thar Yar Township has a variety of businesses and services operating in the community with other businesses/services, based in the region. Most of the source of livelihood in the Township is 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

Environmental Management Plan**4.5.4. Public Infrastructure and Access****4.5.4.1. Communication and Transportation**

Major transportation route in Hlaing Thar Yar Township are Highway road and car road as presented in Table 4-9.

Table 4-9 Transportation route

Categories	Township		Miles
	From	to	
Bus Line (61,23,68,16,6,69,17,74,20,52, 53,54,67,79,83,99)	Dagon Ayar Highway Bus Station & Western Yangon Technological University	Downtown Area, South Dagon & Shwe Paukkan	
Highway Road	Yangon Division	Especially Ayarwaddy Division	

Source: Department of Administrative Hlaing Thar Yar Township, Regional data (www.gad.gov.mm.com)

4.5.4.2. Electricity

The electricity demand of Hlaing Thar Yar Township is higher and higher due to the normally increased in population and infrastructure.

4.5.4.3. Education

Location of major schools were 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 university, in the Hlaing Thar Yar Township. The name and the located village tract/ ward of schools are described in Table 4-10.

Table 4-10 List of major school in Hlaing Thar Yar Township

No.	Name of School	Location
1	West Yangon University	Apyin Padan Village
2	BEHS (1)	2 Ward
3	BEHS (2)	12 Ward
4	BEHS (3)	17 Ward
5	BEHS (4)	5 Ward
6	BEHS (5)	7 Ward
7	BEHS (6)	Yay Oakan
8	BEHS (7)	16 Ward
9	BEHS (8)	20 Ward
10	BEMS (1)	6 Ward
11	BEMS (2)	Nyaung Village
12	BEMS (3)	Ding Su, Nyaung Village
13	BEMS (4)	6 Ward

Environmental Management Plan

No.	Name of School	Location
14	BEMS (5)	1 Ward
15	BEMS (6)	10 Ward
16	BEMS (7)	Apyin Padan Village
17	BEMS (8)	18 Ward
18	BEMS (9)	Shwe Lin Ban Village
19	BEMS (10)	9 Ward
20	BEMS (11)	12 Ward
21	BEMS (12)	18 Ward
22	BEMS (13)	15 Ward
23	BEMS (14)	14 Ward
24	BEMS (15)	13 Ward
25	BEMS (16)	11 Ward
26	BEMS (17)	7 Ward
27	BEMS (18)	11 Ward
28	BEPS (1-32)	Hlaing Thar Yar Township

Source: Department of Administrative Hlaing Thar Yar Township, Regional data (www.gad.gov.mm.com)

4.5.4.4. 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 Hlaing Thar Yar Township, no accidental work injuries reported to the township hospital in 2013. The common diseases are shown in Table 4-11 and Table 4-12.

Table 4-11 Common Diseases in the Hlaing Thar Yar Township

Disease	East Dagon Township	
	Morbidity	Mortality
Malaria (Per 100000P)	-	-
ARI (Per 100000<5Children)	-	-
Diarrhea (Per 100000P)	37	-
TB (Sputum+) (Per 10000P)	67	-
Hepatitis	5	

Table 4-12 Lists of hospital in the Hlaing Thar Yar Township

Hospital Name	Beds/Services	Responsible
Hlaing Thar Yar Hospital	200	Government
Cottage Hospital	16	Government
Pan Hlaing	95	Private
Htun Foundation	20	Private

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

4.6. CULTURAL AND VISUAL COMPONENTS

Hlaing Thar Yar Township is growing into a busy and vibrant community. The population fluctuates; however, there has been steady growth over the last decade. It tends to be a stopover on a journey rather than a destination. It has a number of sites that are interesting; however, there is no main attraction. Visitors to the town are generally visiting for work, investment, or family reasons.

5. RISK ASSESMENT AND MITIGATION MEASURE PLAN

5.1. METHODOLOGY FOR THE ASSESSMENTS

The assessment of each impact is based on consideration of the magnitude, duration, spatial and frequency of activities, which are going to be carried out during three phases and characteristics of the project site. The assessment is qualitative and the significance of each impact is classified into 5 categories in overall.

The following methodology has been applied to assess the environmental impacts of the factory mainly on air, water, land, biodiversity, including human beings. Each source of impact has been assessed by four parameters, magnitude, duration, extent and probability and each assess point have 5 scales as mentioned in Table 5-1:

Table 5-1 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) is calculated by following formula.

$$\text{Significant Point (SP)} = (\text{Magnitude} + \text{Duration} + \text{Extent}) * \text{Probability}$$

Impact Significance: Based on calculated significant point, impact significance can be categorized as follows:

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

5.2. 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. 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.

5.3. IMPACT ON ENVIRONMENTAL RECOURSE

5.3.1. Impact on Air Quality

In Fuyun factory is 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 Fuyun factory are defined as below Table 5-1.

Table 5-2 Air Quality Impact Sources

Sources	Emission parameters
Diesel Generator and Vehicle movements for delivering and transporting of the raw materials and final products	CO, SO ₂ , PM and NO _x

Air impact source of emergency used of generator and vehicle movements may also generate particulate matters PM₁₀, PM_{2.5}, CO, SO₂, NO₂, and CO₂. However, it can be concluded as the impact is not sufficient because the generator and vehicle movements will run only as short time. 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.

5.3.2. Energy Consumption and Related CO₂ (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, 63 kVA of standby generator will be used for both operation and administration appliances. The proposed project will use annually 480 gallons of diesel for vehicles such as transportation vehicle and emergency use of a generator. The following table shows the amount of CO₂ emission coming from the combustion of fuels.

Burning diesel or other fuels creates exhaust gasses. Diesel generators produce carbon dioxide (CO₂), nitrogen oxide (NO_x), 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 5-3 Category of GHGs Assessment

Category	Range
Negligible	no GHG assessment necessary
Low	< 20 kt/y CO ₂ -equivalent per year
Medium-Low	20 – 100 kt CO ₂ - equivalent per year

Environmental Management Plan

Category	Range
Medium-High	100 kt – 1 Mt CO ₂ - equivalent per year
High	>1 Mt CO ₂ -e equivalent per year

Source: EBRD GHG Assessment Methodology, 2010

Table 5-4 CO₂ Emission by the Uses of Fuel

No.	Type	Amount (gallon/year)	Equivalent CO ₂ emission (Kilotons)	Status
1	Diesel for generator	480	0.00472	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 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.

5.3.3. Impact of Noise

During the operation phase, noise impact may be a significant impact for electrical gifts, decorations, and its related materials 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 not exceeding the noise level of 70 dB of NEQ (emission) guideline. Therefore, no obvious influence can be caused occupational health and safety of employees during operation.

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 5-5. 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 5-5 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

5.3.4. Impact on Water Quality

5.3.4.1. Water Consumption

In the operation phase of electrical gifts, decorations and its related materials manufacturing factory, there is no water use for processing purpose. Tube well is the main source of raw water for factory waster use. The raw water is provided for the whole factory use of general office facilities such as canteen, toilets and kitchen. Estimated water consumption for the whole factory is 3,000 gallons per day and 4,145.025 cubic meters per year.

5.3.5. Wastewater Effluents

The effluent wastewater will generate from the cleaning of utensil for operational use, domestic wastewater. Liquid effluents discharged from the production process is minimal when compared with other industrial sectors.

5.3.6. Impact on Soil Quality

During the operational phase, there is no significant impact on soil quality due to electrical gifts, decorations, and its related materials production activities because concrete road facilities have been implemented at the whole project site area.

5.3.7. Impact of Waste Disposal

Most activities of the factories will generate the relatively low level of waste. Some components of wastes have the beneficial value and can be recycled once correctly recovered. Solid waste from production sector will consists of process waste such as Industrial waste would be generated from operation such as cloth scraps, fabric paper tube, plastic bags, cardboard, paper board, plastic string, etc. and food waste, plastic, paper, glass, metal can, sanitary napkins, tissue paper, garden waste, etc. However, Fu Yun Myanmar 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 YCDC, the proper disposal waste facilities and temporary waste disposal site have been provided in the factory site. 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.

5.4. IMPACT ON HUMAN

5.4.1. Health Environmental Hazards

The first step in prevention of poisoning in the dye industry includes well ventilated, properly equipped buildings. Selection of workmen is important and the use of the best methods in manufacturing. The hazards of the dye industry are those connected with any industry plus the poisonous chemicals necessarily handled in the production of dye stuffs. The first hazard we meet in the dye industry is from strong adds, such as nitric and sulphury or a mixture of these two known as mixed acid. These are used to nitrate the benzene, toluene etc. Their destructiveness to the human tissues is well known and every precaution is taken to prevent these acids from getting on the skin of the workmen. When acid does get on the workman, he quickly knows it by the pain it causes, and he immediately drowns it with water and

Environmental Management Plan

seeks a soothing dressing for his burn. Nitrous fumes may also be considered under this hazard and are the reddish-brown fumes, nitric peroxide, together with some finely atomized acid. Exposure to these fumes must be considered in an accident and occurs as the result of a narrator fire or a large spill. Their effects are those of an irritant to the mucous membrane of the respiratory tract and they may cause anything from slight bronchial irritation to a fatal pulmonary edema. The textiles sector contains many hazards and risks to workers, ranging from exposure to noise and dangerous substances, to manual handling and working with dangerous machinery. Each processing stage from the production of materials to the manufacturing, finishing, coloring and packaging poses risks for workers, and some of these are particularly dangerous for women's health. Many different groups of chemical substances are used in the textiles sector, including dyes, solvents, optical brighteners, crease-resistance agents, flame retardants, heavy metals, pesticides, and antimicrobial agents. They are used in dyeing, printing, finishing, bleaching, washing, dry cleaning, weaving slashing/sizing, and spinning. Respiratory and skin sensitizers can be found in the textiles industry, for example textiles fibers, reactive dyes, synthetic fibers, and formaldehyde. The exposure of workers to dusts from material such as silk, cotton, wool, flax, hemp, sisal, and jute can occur during weaving, spinning, cutting, ginning, and packaging. Exposure to loud noise can result in permanent hearing damage such as noise-induced hearing loss and tinnitus. Exposure to vibration, particularly together with risk factors for MSDS, can lead to long-term harm.

5.4.2. 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.

5.4.3. Occupational Health and Safety

The most significant impact of occupational health and safety hazards will be caused by working at the operation phase of electrical gifts, decorations and its related materials production and the main issues are as follows:

- ❖ Exposure of noise to employees and workers
- ❖ Electrical Hazards

During the operation phase, employees and workers of Fu Yun Myanmar factory will be endangered or oppressed particularly by noise from factory operation. The noise level results measured in production area during operation phase are not exceeding the NEQ (emission) guideline. For electrical hazards, technicians and workers may expose to electrical hazards due to the presence of electrical equipment throughout the whole factory operated facilities.

Thus, the appropriate personal protective equipment (PPE) for employee and workers will be provided and environmental, health and safety guideline have been prepared in proposed factory. In addition, for health insurance, health care facilities and first aid training have been provided for all employee and workers.

5.5. PROJECT ACTIVITIES AND ITS SIGNIFICANT IMPACTS AND MITIGATION MEASURE

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 5-6 Evaluation and Perdition of Significant Impacts for Operation Phase

Environmental Impact	Project Activities	Significant of Potential Impacts					Impact Significance
		M	D	E	P	SP	
Construction Phase; It is not assessed in this phase, because the construction activities are already completed during EMP preparation.							
Operation Phase							
Air pollution	<ul style="list-style-type: none">Dust and GHGs emission from vehicles used for transporting raw materials and final productsParticulate matters emission from the activities of production processEmission of smoke from steam boiler (rice briquettes) and kitchenEmission from emergency diesel generator	3	4	2	4	36	Moderate
Water pollution	<ul style="list-style-type: none">Sewage disposed of from the toiletsOil spill and grease leaks from transporting vehicles and machinery equipment used in operation phase	2	4	2	3	24	Low
Soil Contamination	<ul style="list-style-type: none">Accidental spillage of oil used by vehicles operating	1	4	1	2	12	Very Low
Noise Pollution	<ul style="list-style-type: none">Generating noise from the production machineryNoise from the generating of the emergency generators	3	4	1	4	32	Moderate
Fire Hazard	<ul style="list-style-type: none">Poor electrical installationswaste disposed areaRaw materials storage	3	5	2	4	40	Moderate
Solid waste	<ul style="list-style-type: none">residual pieces of fabric scraps from the production linesWaste from packaging materialsWaste from kitchen, dormitory and office.	3	4	1	4	32	Moderate
Liquid waste	<ul style="list-style-type: none">Septic system and sewage.Domestic liquid waste disposal from office, kitchen and dormitory.	2	4	2	4	32	Moderate
Hazardous waste	<ul style="list-style-type: none">Engine oil leaks, 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

Environmental Management Plan

Environmental Impact	Project Activities	Significant of Potential Impacts					Impact Significance
		M	D	E	P	SP	
Occupational Health and Safety (Accidents, Injuries)	<ul style="list-style-type: none"> Accidental cases cause by operating machines. Electricity and emergency diesel generators. Unloading, mixing, cutting, pressing and packaging activities. Accidental cases of thermic fluid heater 	3	4	1	4	32	Moderate
Social-economic Condition	<ul style="list-style-type: none"> Job opportunities for local people 	-	-	-	-	-	Positive Impact
Decommissioning Phase							
Air pollution	<ul style="list-style-type: none"> Decommissioning of buildings and related materials Transportation of demolished materials 	3	1	1	4	20	Low
Water pollution	<ul style="list-style-type: none"> Sewage form decommissioning workers Demolition machinery equipment 	3	1	1	3	15	Low
Soil Contamination	<ul style="list-style-type: none"> Decommissioning of buildings and related materials Transportation of demolished materials 	3	1	1	3	15	Low
Noise Pollution	<ul style="list-style-type: none"> Decommission activities Transportation of demolished materials 	3	1	1	3	15	Low
Waste disposal	<ul style="list-style-type: none"> Sewage system Demolished debris such as bricks, concrete materials 	2	1	1	3	12	Very Low
Hazardous waste	<ul style="list-style-type: none"> Used lubricants from decommissioning vehicles and machines 	2	1	1	3	12	Very Low
Occupational Health and Safety (Accidents, Injuries)	<ul style="list-style-type: none"> Decommissioning activities Transportation of demolished materials 	3	1	2	3	18	Low
Social-economic Condition	<ul style="list-style-type: none"> Temporary job opportunities for local people 	-	-	-	-	-	Positive Impact

5.6. ENVIRONMENTAL IMPACTS MITIGATION MEASURES FOR OPERATION PHASE

The proposed Fu Yun Myanmar 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.

5.6.1. Recommended Air Impact Mitigation Measures

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

- The factory uses chimney for generator through which the flue gas is emitted for reducing the impact of stack emission on environment

Environmental Management Plan

- Monitoring and check installed cyclones and ventilation system
- The factory has planted trees in its premises to reduce carbon emission and thus minimize air pollution
- Ensuring vehicles, compressor and generator are well maintained
- Masks are provided to workers and ensures that wear during working in dusty area

Moreover, Fu Yun Myanmar factory has also implemented canteen facilities, kitchen ventilation system has already installed and operated in order to remove smoke, heat, and odors.

5.6.2. Mitigation Measures for Noise Impact

The following mitigation measures shall be considered to reduce noise levels in the operation phase of the electrical gifts, decorations, and its related materials production 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

5.6.2.1. 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.

5.7. MITIGATION MEASURES FOR WATER CONSUMPTION AND CONTAMINATION**5.7.1. Recommended Wastewater Effluents Impact Mitigation Measures**

In operation phase, according to the estimated water consumption for the whole factory is 3310.796 cubic meters per annually for the purpose of general office uses. Therefore, the appropriate water conservation plan should be implemented with commensurate with the magnitude and 80 % cost of water use is estimated wastewater effluents about 2,648.6 cubic meter per year. 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 toilets
- ❖ 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

- ❖ Currently, practice of the wastewater effluents discharge facilities of sewage for sanitation and septic system.

5.7.2. Toilet Facilities

Currently toilet facilities have hygienic toilets already provided and categorized by gender, marked distinctly for men and women by signs and symbols. In addition, toilet areas will also be provided with water sinks, necessary toiletries, and hand washing soaps, hand drying facilities, and waste bins. Total numbers of toilet for male are 7 rooms and for female are 11 rooms.



Figure 5-1 Toilet facility photo

5.8. MITIGATION MEASURES FOR WASTE DISPOSAL

At Fu Yun Myanmar factory, waste categorization has been developed into at least five 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 fabric scraps, fabric paper tube, plastic bags, cardboard, wood, 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 5 compartments for different kinds of waste categories. In addition, pest control program has also implemented at the entrance of rodents and insects. Fu Yun Myanmar also has an agreement service with YCDC for waste disposal facilities to collect the all-production waste, office waste and domestic waste. According to the waste management practice, Fu Yun Myanmar 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 environmentally friendly manner.

5.9. MITIGATION MEASURES FOR OCCUPATIONAL HEALTH AND SAFETY

5.9.1. 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.

Environmental Management Plan

- 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 program. 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.

5.9.2. 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.

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

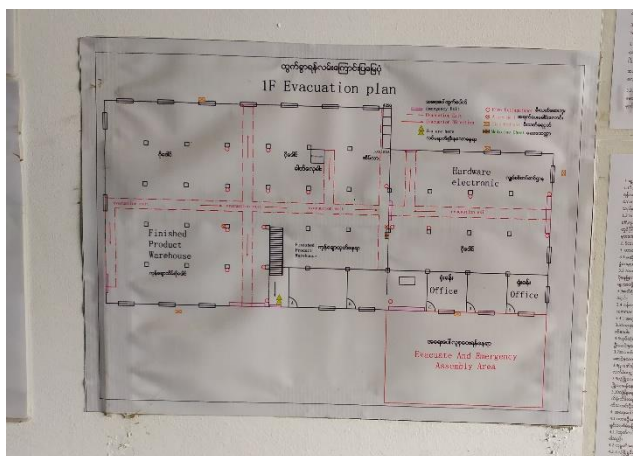




Figure 5-2 Emergency safety and fire management

6. PUBLIC CONSULTATION PROCESS

This chapter presents results of public consultation and information disclosure conducted for the Fuyun Myanmar Company Limited. Public participation can be considered as the required element of the EMP process. In this study various stakeholder's participation was made.

Public consultation during preparation of EMP report was conducted on 13, December 2019, 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 Yangon City Development Committee (YCDC), 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. Aung Kyaw Moe presented EMP study and findings from Myanmar, after the presentation following question and answer section. Summary of public consultation meeting is presented Table 6-1. Is shown the consultation meeting photo. **(PCM attendant list are presenting in Appendix E)**

Table 6-1 Summary of public consultation meeting

Time and Date	Friday, 10 December 2019 10:30-12:30
Venue	Hlaing Thar Yar Zone Committee, Ka Naung Hall, Hlaing Thar Yar Township
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

6.1. RECOMMEND SUGGESTION AND COMMENT

After the presentation, the floor opened for questions and answers. There is no question and comment for presentation and EMP draft report, because the project is sample manufacturing of electrical gifts, decorations, and its related materials (CMP basic). In addition, ECD were suggesting for the occupational health and safety, during project implementation about project planning and environmental issues. The following listed is suggestion of government officer.

Suggestion; Daw Zin Zin Htun; Assistant Supervisor (General Administration Office)

- To compliance with YCDC procedure for solid waste management and disposed process
- To implement the sufficient septic tank design for workers

- To construct the small pond in front of factory to filter the factory's wastewater before discharging to the surrounding drainage
- To get the septic tank capacity sufficiently with the number of employees



Figure 6-1 Public consultation meeting

7. ENVIRONMENTAL MANAGEMENT PLAN

The EMP for Fuyun Myanmar 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 Fuyun factory are as follows:

7.1. AIR POLLUTION/DUST MANAGEMENT PLAN

Objectives:	<ul style="list-style-type: none"> 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:	<ul style="list-style-type: none"> Nil complaints relating to air quality management Extraction equipment maintained as per maintenance schedule
Relevant government law and rule	<ul style="list-style-type: none"> National Environmental Quality (Emission) Guidelines (2015)
Management Plan	<ul style="list-style-type: none"> 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
Monitoring & Reporting	<ul style="list-style-type: none"> Biannually monitor the ambient air quality including CO, NO₂, SO₂, PM_{2.5}, PM₁₀
Time Frame	Entire life spans of the factory operation
Estimated cost	Approximately 10 million kyats (annually)
Responsibility	Management of the factory; <ul style="list-style-type: none"> 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

7.2. NOISE MANAGEMENT PLAN

Objectives:	<ul style="list-style-type: none"> 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

Environmental Management Plan

Relevant government law and rule	<ul style="list-style-type: none"> National Environmental Quality (Emission) Guidelines (2015)
Management Plan	<ul style="list-style-type: none"> 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.
Monitoring & Reporting	Monitor the work place noise level (dB) biannually
Time Frame	Throughout the project life
Estimated cost	Approximately 5 million kyats (annually)
Responsibility	<p>Manager</p> <ul style="list-style-type: none"> To hire organization/independent third-party testing noise level Ensure that all workers use PPE during operation

7.3. SOLID WASTE MANAGEMENT PLAN

Objectives:	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> National Waste Management Strategy and Action Plan (Draft 2018)
Management Plan	<ul style="list-style-type: none"> 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 is stored another in separate place of storage area. Recycle wastes like cloth 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 hands 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.
Monitoring & Reporting	<ul style="list-style-type: none"> Daily waste has to be collected and hand over to YCDC waste collector

Environmental Management Plan

	<ul style="list-style-type: none"> The inventory record of waste disposal will be maintained as proof for proper management as designed
Time Frame	Entire life spans of the factory operation
Estimated cost	Approximately 24 million kyats (annually)
Responsibility	Manager (HR) <ul style="list-style-type: none"> Responsible for overall site cleanliness and waste management Regular waste collection to minimize excessive waste storage

7.4. WASTEWATER MANAGEMENT PLAN

Objectives:	<ul style="list-style-type: none"> Prevent pollution underlying groundwater sources
Performance Indicator:	<ul style="list-style-type: none"> Implement an environmentally friendly sewerage system
Relevant government law and rule	National Environmental Quality (Emission) Guidelines (2015)
Management Plan	<ul style="list-style-type: none"> 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 bad odor emission and to avoid the block of water flow Effluent colored-wastewater should be treated in treatment can before discharges to municipal pipeline if applicable.
Monitoring & Reporting	Proper maintenance of drainage and sewerage system will be conducted periodically
Time Frame	Entire life spans of the factory operation
Estimated cost	Approximately 8 million kyats (annually)
Responsibility	<ul style="list-style-type: none"> Manager -To hire organization/independent third-party testing wastewater quality EHS officer-Monitor the condition of factory's drainage and sewerage system

7.5. ENERGY MANAGEMENT PLAN

Objectives:	<ul style="list-style-type: none"> 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:	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> Installation of timers and thermostats to control heating and cooling Energy saving light installed in different area of the factory for saving energy

Environmental Management Plan

	<ul style="list-style-type: none"> • Used of energy saving devices must be installed • Ensure that good housekeeping measures such as turning off equipment and lights when not in use
Monitoring & Reporting	Conduct annual energy efficiency of adult to find out the scope for energy saving
Time Frame	<ul style="list-style-type: none"> • Once in a year throughout the factory life
Estimated cost	<ul style="list-style-type: none"> • Approximately 5 million kyats (annually)
Responsibility	<p>Manager</p> <ul style="list-style-type: none"> • To arrange energy audit technical personnel • To monitor and record electricity consumption, other related energy issues and take necessary actions if any problem arises

7.6. WATER CONSUMPTION MANAGEMENT PLAN

Objectives:	<ul style="list-style-type: none"> • The water consumption management is aimed at minimizing ground water use
Performance Indicator:	<ul style="list-style-type: none"> • Prohibitions on accessing and using underground water without a license • Water consumption saving of general water use from groundwater
Relevant government law and rule	<ul style="list-style-type: none"> • The Underground Water Act (1930)
Management Plan	<ul style="list-style-type: none"> • 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
Monitoring & Reporting	<ul style="list-style-type: none"> • Daily visual inspections
Time Frame	<ul style="list-style-type: none"> • Once in a year throughout the factory life
Estimated cost	<ul style="list-style-type: none"> • Approximately 5 million kyats (annually)
Responsibility	<p>Manager</p> <ul style="list-style-type: none"> • Arrange audit on water usage controls environmental officer

7.7. EMERGENCY RESPONSE AND DISASTER MANAGEMENT PLAN

Objectives:	<ul style="list-style-type: none"> • Reduce the risk of accidents at the factory area
Performance Indicator:	<ul style="list-style-type: none"> • Establish a safe working environment
Relevant government law and rule	<ul style="list-style-type: none"> • The Employment and Skill Development Law (August 2013), ILO guide to Myanmar Labour Law (2017)
Management Plan	<ul style="list-style-type: none"> • The factory management has taken proper measures to handle any emergency situation like fire, earthquake, flood and storm

Environmental Management Plan

	<ul style="list-style-type: none"> • 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
Monitoring & Reporting	<ul style="list-style-type: none"> • Weekly check fire extinguishers and water hydrant in position • Daily inspect that all fire exist are open • Servicing fire extinguisher and records accidents,
Time Frame	<ul style="list-style-type: none"> • Entire life spans of the factory operation
Estimated cost	<ul style="list-style-type: none"> • Approximately 25 million kyats (annually)
Responsibility	<p>Manager and EHS officer</p> <ul style="list-style-type: none"> • Arrange firefighting training after every 3 months • Responsible for fire control and response • Monitoring daily danger warning and bans

7.8. ENVIRONMENTAL MONITORING SCHEDULE AND REPORTING

The EMoP 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 7-1 is provided the environmental monitoring schedule for Fuyun Myanmar Company Limited. The factory submits monitoring report to the Ministry not less frequently than every six (6) months, as provided in a schedule in the EMP,

Environmental Management Plan**Table 7-1 Environmental monitoring schedule**

Issues	Parameter	Frequency	Area to be monitored	Monitoring cost	Responsible Organization
Operation Phase					
Air quality	CO ₂ , CO, SO ₂ , NO _x , PM _{2.5} , PM ₁₀	Biannually monitoring and reporting to ECD (first 3 years after operation)	Within Factory Compound (16°51'46.6"N and 96°2'47.64"E)	1,500,000 Kyats per year	Environmental Management Team's Fu Yun Myanmar Company Limited
Water Quality	Wastewater	Biannually monitoring and reporting to ECD (first 3 years after operation)	Production area, Canteen and Office liquid waste discharges area (16°51'46.51"N and 96°2'46.88"E)	150,000 Kyats	Environmental Management Team's Fu Yun Myanmar Company Limited
Waste Generation	Solid waste, and hazardous waste	weekly	Cutting and Sewing Section 16°51'46.89"N and 96°2'48.34"E)	500,000 Kyats	Environmental Management Team's Fu Yun Myanmar Company Limited
Fire Hazardous	Visual inspection, firefighting equipment	Monthly	At the factory	500000 Kyats	Environmental Management Team's Fu Yun Myanmar Company Limited
Light intensity	Illuminance	Biannually	At the production line (especially cutting and QC) (16°51'48.7"N and 96°2'47.7"E)	50000 Kyats	Environmental Management Team's Fu Yun Myanmar Company Limited
Emergency Cases	Injuries and property loss due to accidents and natural hazardous	Biannually	At the factory	1,000,000 Kyats	Environmental Management Team's Fu Yun Myanmar Company Limited
Decommissioning Phase					
Air quality	SO ₂ , NO ₂ , CO, CO ₂ , PM _{2.5} , PM ₁₀	One time during this phase	One point in the demolishing area	1000000 Kyats	Land Owner
Noise	Noise level in decibel (dBA)	One time during this phase	One points in demolishing area	500000 Kyats	Land Owner
Rehabilitation	Recovering and Revegetation	Until the project completed	All decommissioning area	500000 Kyats	Land Owner

7.9. 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 Fuyun Myanmar Company Limited, Electrical gifts, decorations and its related materials making factory 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.

Fuyun Myanmar 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 diseases and its prevention. Part of our CSR activity such as donations will also contribute to public school around our factory (Table 7-2).

Table 7-2 CSR plan at Fu Yun (Myanmar) Company Limited

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

7.9.1. Public School

We will contribute 0.5% 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.

7.9.2. Non-profit Training

We will contribute 1% 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 materials 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.

7.9.3. Healthcare

One of our main concern 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.

7.10. 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, Fuyun Myanmar 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.

Environmental Management Plan

The following table shows the expenditures for the implementation of Environmental Management Plan for operation phase annually. Estimation cost for EMP implementation is presented in Table 7-3.

Table 7-3 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 month	70 per three month
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 Fits	Once per month	
Monitoring Plan			
1	Wastewater	2	200 per year
2	Noise level	2	300 per year
3	Environmental compliance auditing	1	1,000 lump sum

7.11. 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 through Grievance Committee, which includes the responsible persons of Fu Yun Myanmar Company Limited representative from Shwe Lin Ban Industrial Zone and representative from General Administration Department (Hlaing Thar Yar 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 7-1) show steps of Grievance Redress Mechanism of Proposed Factory Project.

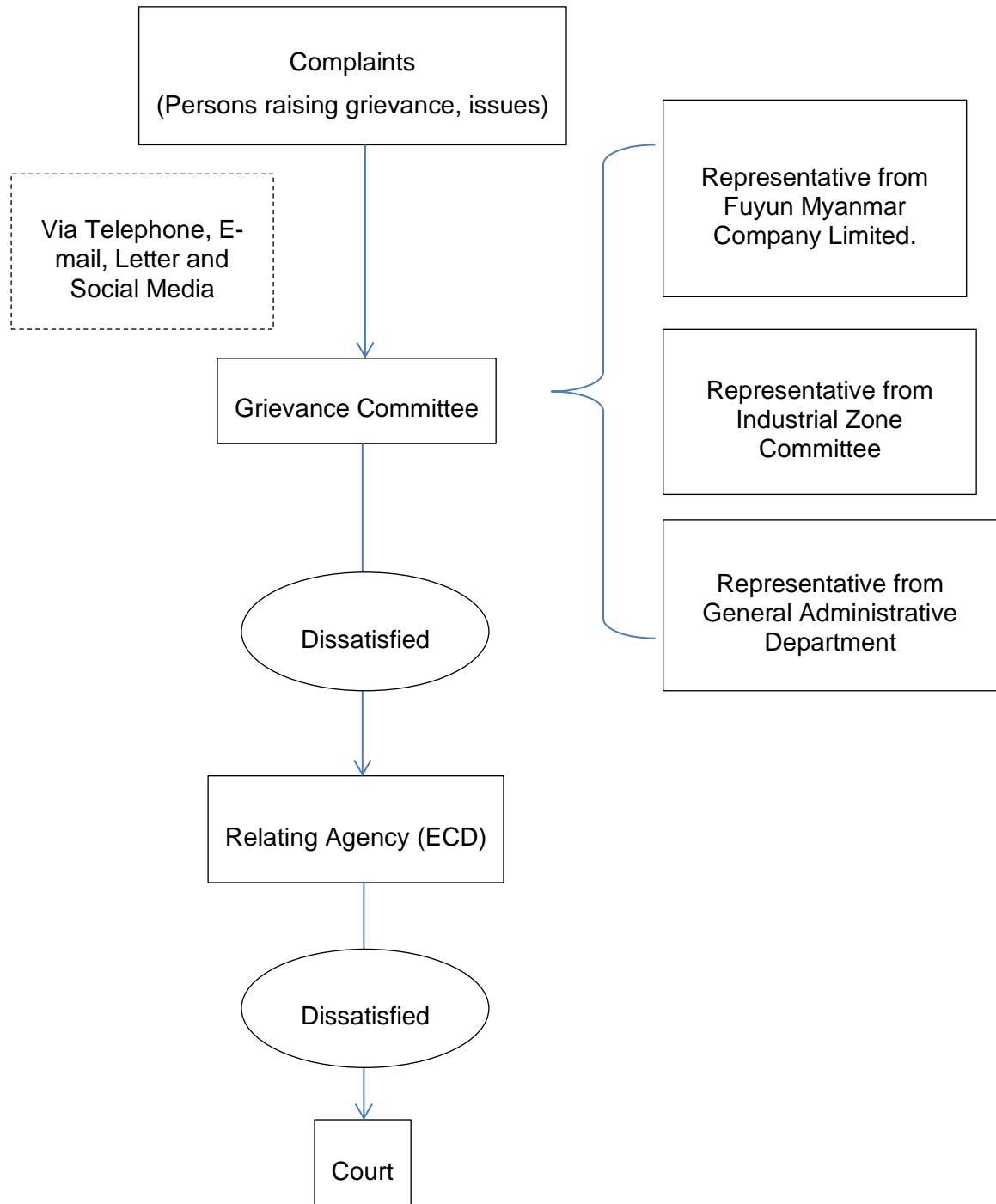


Figure 7-1 Grievance Redress Mechanism Flow Diagram

8. CONCLUSION

Environmental Management Plan (EMP) has been prepared for Fuyun Myanmar Company Limited is located at Plot No- 467(B), Myay Taing Block No – 25, Shwe Lin Ban Industrial Zone, Hlaing Thar Yar Township, and Yangon Region. The main objective of the study is focused specially on the required environmental management measures or creating environmentally friendly workplace. An EMP has been carried out for the factory according to the requirement of the proponent as it has been made for electrical gifts, decorations and its related materials manufacturing factory.

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

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 EMP has been given in the present report to mitigate/enhance the impacts, which occurs during operation phase of the electrical gifts, decorations, and its related materials production 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 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. As the proponent factory, Fuyun Myanmar Company Limited. should take the accountability and responsibility of discharging the effluent-colored wastewater to the river through the municipal drains. The study further concluded that positive impacts will be of immense benefit to the local community and national development as well.

9. 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
- Discharges colored liquid waste (mixed chemicals) should be carefully collect and treated before discharges to the municipal drains.
- Workers should be provided by 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 environmental policy, laws, rules, and instructions of the Republic of the Union of Myanmar.

Finally, the proponent should follow the comments and suggestions made by ECD after reviewing this EMP report. Once concerned authorities approve EMP, effective implementation of EMP 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

Company Document's Fu Yun Myanmar Company Limited



ပုံစံ (၅-ခ)

ပြည်ထောင်စုသမ္မတမြန်မာနိုင်ငံတော်
ရန်ကုန်တိုင်းဒေသကြီးရင်းနှီးမြှုပ်နှံမှုကော်မတီ
အတည်ပြုမိန့်

အတည်ပြုမိန့်အမှတ် ရကတ- ၁၉၉/၂၀၁၉ ၂၀၁၉ ခုနှစ် ဇွန်လ ၁၁ ရက်

ရန်ကုန်တိုင်းဒေသကြီး ရင်းနှီးမြှုပ်နှံမှု ကော်မတီသည် မြန်မာနိုင်ငံ ရင်းနှီးမြှုပ်နှံမှု ဥပဒေ ပုဒ်မ-၂၅ အရ ဤအတည်ပြုမိန့်ကိုထုတ်ပေးလိုက်သည် -

- (၁) ရင်းနှီးမြှုပ်နှံသူအမည် MRS. CHEN, SU-HUA
- (၂) နိုင်ငံသား TAIWAN
- (၃) နေရပ်လိပ်စာ FU XI INDUSTRIAL, ZHUHAI CITY, GUANG DONG , PEOPLE'S REPUBLIC OF CHINA
- (၄) ပင်မအဖွဲ့အစည်းအမည်နှင့်လိပ်စာ ZHU HAI FUYUN LIGHTING INDUSTRIAL CO., LTD , No. A 18 , FU XI INDUSTRIAL ZONE, QIAN SHANG ZHUHAI CITY, PEOPLE'S REPUBLIC OF CHINA
- (၅) ဖွဲ့စည်းရာအရပ် PEOPLE'S REPUBLIC OF CHINA
- (၆) ရင်းနှီးမြှုပ်နှံသည့်လုပ်ငန်းအမျိုးအစား CMP စနစ်ဖြင့်အီလက်ထရောနစ် စနစ်ဖြင့် ပြုလုပ်ထားသော လက်ဆောင် ၊ အလှဆင်ပစ္စည်းများနှင့် ဆက်စပ်သော ပစ္စည်းများ ထုတ်လုပ်ခြင်းလုပ်ငန်း
- (၇) ရင်းနှီးမြှုပ်နှံသည့်အရပ်ဒေသ(များ) မြေကွက်အမှတ်- ၄၆၇(ခ) ၊ မြေတိုင်းရပ်ကွက်အမှတ် -၂၅ ၊ ရွှေလင်ပန်း စက်မှုမြို့၊ လှိုင်သာယာမြို့နယ်၊ ရန်ကုန်တိုင်းဒေသကြီး
- (၈) နိုင်ငံခြားမတည်ငွေရင်း ပမာဏ အမေရိကန်ဒေါ်လာ ၀.၅၀၀ သန်း
- (၉) နိုင်ငံခြားမတည်ငွေရင်းယူဆောင်လာရမည့်ကာလ အတည်ပြုမိန့် ရရှိသည့်နေ့မှ ၁ နှစ် အတွင်း
- (၁၀) စုစုပေါင်း မတည်ငွေရင်းပမာဏ(ကျပ်) အမေရိကန်ဒေါ်လာ ၀.၅၀၀ သန်းနှင့်ညီမျှသော မြန်မာကျပ်ငွေ
- (၁၁) တည်ဆောက်မှု/ ပြင်ဆင်မှုကာလ ၁နှစ်
- (၁၂) အတည်ပြုမိန့်သက်တမ်း ၂၅ နှစ်
- (၁၃) ရင်းနှီးမြှုပ်နှံမှုပုံစံ ရာခိုင်နှုန်းပြည့် နိုင်ငံခြားရင်းနှီးမြှုပ်နှံမှု
- (၁၄) မြန်မာနိုင်ငံတွင်ဖွဲ့စည်းမည့်ကုမ္ပဏီအမည် FUYUN MYANMAR COMPANY LIMITED



(ဖြိုးမင်းသိန်း)
ဥက္ကဋ္ဌ



Form (5-B)

THE REPUBLIC OF THE UNION OF MYANMAR

Yangon Region Investment Committee

ENDORSEMENT

Endorsement No. YGN - 199/2019

Date 11 June 2019

This endorsement is issued by Yangon Region Investment Committee according to the section 25 of the Myanmar Investment Law-

- (1) Name of Investor MRS. CHEN, SU-HUA
- (2) Citizenship TAIWAN
- (3) Residence Address FU XI INDUSTRIAL, ZHUHAI CITY, GUANG DONG ,
PEOPLE'S REPUBLIC OF CHINA
- (4) Name and Address of Principle ZHU HAI FUYUN LIGHTING INDUSTRIAL
CO., LTD , No. A 18 , FU XI INDUSTRIAL ZONE, QIAN SHANG ZHUHAI
CITY, PEOPLE'S REPUBLIC OF CHINA
- (5) Place of Incorporation PEOPLE'S REPUBLIC OF CHINA
- (6) Type of business PRODUCTION OF ELECTRICAL GIFTS,
DECORATIONS AND ITS RELATED MATERIALS ON CMP BASIS
- (7) Place(s) of investment Project PLOT NO- 467(B) , MYAY TAING
BLOCK NO - 25, SHWE LIN BAN INDUSTRIAL ZONE , HLAING THAR YAR
TOWNSHIP, YANGON REGION
- (8) Amount of Foreign Capital US\$ 0.500 MILLION
- (9) Period for Foreign Capital to be brought in WITHIN ONE YEAR FROM
THE DATE OF ISSUANCE OF ENDORSEMENT
- (10) Total Amount of Capital (Kyat) EQUIVALENT IN KYAT OF US\$ 0.500
MILLION
- (11) Construction/ Preparation Period ONE YEAR
- (12) Validity of Endorsement 25 YEARS
- (13) Form of Investment WHOLLY FOREIGN OWNED
- (14) Name of Company Incorporated in Myanmar FUYUN MYANMAR
COMPANY LIMITED



YRIC1992019



(Phyo Min Thein)

Chairman



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THE REPUBLIC OF THE UNION OF MYANMAR

YANGON REGION INVESTMENT COMMITTEE

Plot No. 49, Seinlae May Street,

Kabar Aye Pagoda Road, Yankin Township, Yangon

Tel : 01- 658263

Our ref: YRIC -1 /E- 199/2019(428)

Fax: 01- 658264

Date : 11 June 2019

Subject: Decision of the Yangon Region Investment Committee on the Endorsement for Production of electrical gifts, decorations and its related materials on CMP basis under the name of FuYun Myanmar Company Limited

Reference: FuYun Myanmar Company Limited 's letter date 27th May 2019

1. The Yangon Region Investment Committee, at its meeting (8/2019) held on 29th May 2019, approved the Endorsement for investment in production of electrical gifts, decorations and its related materials on CMP basis under the name of FuYun Myanmar Company Limited submitted by Zhu Hai FuYun Lighting Industrial Co., Ltd (100%) from People's Republic of China as a wholly foreign owned investment in accordance with the Myanmar Investment Law and Rules.
2. The terms and conditions of the Endorsement are stated in the following paragraphs:
 - (a) The term of an Endorsed project shall be twenty-five (25) years commencing from the date of the issuance of the Endorsement by the Yangon Region Investment Committee.
 - (b) The term of the Lease Agreement for land and building shall be initial five (5) years and extendable for two times for ten (10) years commencing from the date of signing of the Lease Agreement between U Nay Lin Zin (Lessor) and FuYun Myanmar Company Limited (Lessee).
 - (c) The annual rent for the land and building shall be Kyats 56.880 million (Kyat fifty-six million and eight hundred and eighty thousand only) calculated at the rate of Kyat 15513.636 per

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- 2 -

square meter per year measuring on total area of 3666.4519 square meters(0.906 acres) out of 1.908 acres.

- (d) FuYun Myanmar Company Limited may submit the application form for the right to use land under Chapter XII and exemptions and reliefs under sections 75,77 and 78 of the Chapter XVIII of Myanmar Investment Law.
- (e) FuYun Myanmar Company Limited shall use its best efforts to achieve a timely realization of the work stated in the Endorsement application.
- (f) FuYun Myanmar Company Limited shall obey and respect the responsibilities of investors under section 65 of Myanmar Investment Law and Chapter XX of Myanmar Investment Rules.
- (g) FuYun Myanmar Company Limited shall carry out prevention, mitigation and monitoring of significant environmental impacts according to the type of investment activities in accordance with the relevant laws, rules, regulations and procedures.
- (h) FuYun Myanmar Company Limited shall submit to the Myanmar Investment Commission any transfer of shares or transfer of the business to any person during the investment period in accordance with section 72 of Myanmar Investment Law and rule 191 of Myanmar Investment Rules.
- (i) FuYun Myanmar Company Limited, which has benefitted from the Endorsement or enjoyment of exemptions or reliefs, shall submit an annual report in the prescribed form to the Myanmar Investment Commission within three (3) months at the end of the financial year in accordance with rule 196 of Myanmar Investment Rules and shall publish a summary of the report on its website or the Myanmar Investment Commission's website.

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- 3 -

- (j) FuYun Myanmar Company Limited must, during the operation period under the Endorsement of the Yangon Region Investment Committee, submit its operating report quarterly in the prescribed form in accordance with rule 197 of Myanmar Investment Rules.
3. FuYun Myanmar Company Limited shall carry out in accordance with the stipulations of the relevant Union Ministries, governmental department and governmental organizations to obtain license, permit or registration as per section 65(d) of Myanmar Investment Law.
4. FuYun Myanmar Company Limited shall submit five (5) copies of all approvals, licences, permits and similar authorizations relevant to the initial implementation of the investment and the Lease Agreement for land and building to the Yangon Region Investment Committee.



(Phyo Min Thein)

Chairman

FuYun Myanmar Company Limited

- cc:
1. Office of the Government of the Republic of the Union of Myanmar
 2. Ministry of Home Affairs
 3. Office of the Myanmar Investment Commission
 4. Ministry of Natural Resources and Environmental Conservation
 5. Ministry of Labour, Immigration and Population
 6. Ministry of Industry
 7. Ministry of Commerce
 8. Ministry of Planning and Finance
 9. Ministry of Investment and Foreign Economic Relations
 10. Chairman, CMP Enterprises Supervision Committee
 11. Director General, Department of Environmental Conservation

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- 4 -

12. Director General, Directorate of Labour
13. Director General, Department of Immigration
14. Director General, Directorate of Industrial Supervision and Inspection
15. Director General, Department of Trade
16. Director General, National Archives Department
17. Director General, Customs Department
18. Director General, Internal Revenue Department
19. Director General, Directorate of Investment and Company Administration
20. Monitoring and Supervision Division, Directorate of Investment and Company Administration

Confidential

APPENDIX B

Transitional Consultant Certificate



REPUBLIC OF THE UNION OF MYANMAR
Ministry of Natural Resources and Environmental Conservation
CERTIFICATE FOR TRANSITIONAL CONSULTANT REGISTRATION
 (ကြားကာလအကြံပေးလုပ်ကိုင်သူမှတ်ပုံတင်ခြင်းအထောက်အထားလက်မှတ်)

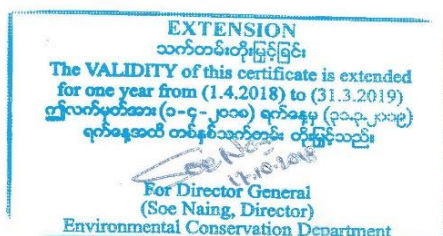


No. 10048 Date March 31, 2018

The Ministry of Natural Resources and Environmental Conservation, hereby, issues this certificate to the person under Environmental Impact Assessment Procedure, Notification No. 616/2015.

(ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်းဆိုင်ရာ လုပ်ထုံးလုပ်နည်း၊ အမိန့်ကြော်ငြာစာအမှတ်၊ ၅၁၆/၂၀၁၅ အရ သယံဇာတနှင့် သဘာဝပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဝန်ကြီးဌာနသည် ဤအထောက်အထားလက်မှတ်ကို လူပုဂ္ဂိုလ်အားထုတ်ပေးလိုက်သည်။)

- | | |
|---|---|
| (a) Name of Consultant
(အကြံပေးပုဂ္ဂိုလ်အမည်) | U Lin Htet Sein |
| (b) Citizenship
(နိုင်ငံသား) | Myanmar |
| (c) Identity Card / Passport Number
(မှတ်ပုံတင်/နိုင်ငံကူးလက်မှတ် အမှတ်) | 7/ Tha Ka Na (N) 101377 |
| (d) Address
(ဆက်သွယ်ရန်လိပ်စာ) | No.54, Room No.704, Waizayantar Tower,
Waizayantar Road, Thingangyun Township,
Yangon.
lin.tbs@gmail.com , 09 421137569 |
| (e) Organization
(အဖွဲ့အစည်း) | Total Business Solution Co., Ltd. |
| (f) Type of Consultancy
(အကြံပေးလုပ်ကိုင်မှုအမျိုးအစား) | Person |
| (g) Duration of validity
(သက်တမ်းကုန်ဆုံးရက်) | 31 March 2018 |



(Signature)

Director General

Environmental Conservation Department
 Ministry of Natural Resources and Environmental Conservation

Areas of Expertise Permitted
(ခွင့်ပြုသည့် ကျွမ်းကျင်မှုနယ်ပယ်များ)

1. Geology and Soil

EXTENSION
သက်တမ်းတိုးမြှင့်ခြင်း
The VALIDITY of this certificate is extended
for six month from (1.1.2021) to (30.6.2021)
ဤလက်မှတ်အား (၁-၁-၂၀၂၁) ရက်နေ့မှ (၃၀-၆-၂၀၂၁)
ရက်နေ့အထိ (၆)လ သက်တမ်းတိုးမြှင့်သည်။
Soe Naing
For Director General
(Soe Naing, Director)
Environmental Conservation Department

EXTENSION
သက်တမ်းတိုးမြှင့်ခြင်း
The VALIDITY of this certificate is extended
for six months from (1.7.2021) to (31.12.2021)
ဤလက်မှတ်အား (၁-၇-၂၀၂၁) ရက်နေ့မှ (၃၁-၁၂-၂၀၂၁)
ရက်နေ့အထိ (၆)လ သက်တမ်းတိုးမြှင့်သည်။
Soe Naing
For Director General
(Soe Naing, Director)
Environmental Conservation Department

EXTENSION
သက်တမ်းတိုးမြှင့်ခြင်း
The VALIDITY of this certificate is extended
for nine months from (1.4.2019) to (31.12.2019)
ဤလက်မှတ်အား (၁-၄-၂၀၁၉) ရက်နေ့မှ (၃၁.၁၂.၂၀၁၉)
ရက်နေ့အထိ (၉)လ သက်တမ်းတိုးမြှင့်သည်။
Soe Naing
For Director General
(Soe Naing, Director)
Environmental Conservation Department

EXTENSION
သက်တမ်းတိုးမြှင့်ခြင်း
The VALIDITY of this certificate is extended
for one year from (1.1.2020) to (31.12.2020)
ဤလက်မှတ်အား (၁-၁-၂၀၂၀) ရက်နေ့မှ (၃၁-၁၂-၂၀၂၀)
ရက်နေ့အထိ တစ်နှစ် သက်တမ်းတိုးမြှင့်သည်။
Soe Naing
For Director General
(Soe Naing, Director)
Environmental Conservation Department



THE REPUBLIC OF THE UNION OF MYANMAR
Ministry of Natural Resources and Environmental Conservation
Environmental Conservation Department



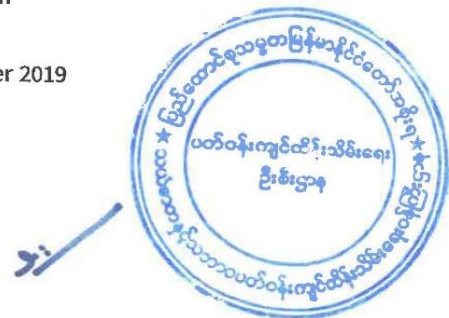
CERTIFICATE FOR TRANSITIONAL CONSULTANT REGISTRATION
(ကြားကာလအကြံပေးလုပ်ကိုင်သူမှတ်ပုံတင်ခြင်းအထောက်အထားလက်မှတ်)

No. 10068 Date 24 MAY 2019

The Ministry of Natural Resources and Environmental Conservation, hereby, issues this certificate to the organization under Environmental Impact Assessment Procedure, Notification No. 616/2015.

(ပတ်ဝန်းကျင် ထိခိုက်မှုဆန်းစစ်ခြင်းဆိုင်ရာ လုပ်ထုံးလုပ်နည်း၊ အမိန့်ကြော်ငြာစာအမှတ်၊ ၆၁၆/၂၀၁၅ အရ သယံဇာတနှင့် သဘာဝပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဝန်ကြီးဌာနသည် ဤအထောက်အထားလက်မှတ်ကို ထုတ်ပေးလိုက်သည်။)

- | | |
|--|--|
| (a) Name of Organization
(အဖွဲ့အစည်းအမည်) | Myanwei Consulting Co., Ltd. |
| (b) Name of the representative in the organization
(အဖွဲ့အစည်းကိုယ်စားလှယ်၏အမည်) | U Nyan Lynn Aung |
| (c) Citizenship of the representative in the organization
(အဖွဲ့အစည်းကိုယ်စားလှယ်၏နိုင်ငံသား) | Myanmar |
| (d) Identity Card /Passport Number of the representative person in the organization
(အဖွဲ့အစည်းကိုယ်စားလှယ်၏ မှတ်ပုံတင်/ နိုင်ငံကူးလက်မှတ် အမှတ်) | 12/Sakhana(N)056196 |
| (e) Address of organization
(ဆက်သွယ်ရန်လိပ်စာ) | No. 28, Myay nu street, Sanchaung Township,
Yangon, Myanmar.
Mobile phone: 09440251888
E mail: ceo@myanweiconsulting.com |
| (f) Type of Consultancy
(အကြံပေးလုပ်ကိုင်မှုအမျိုးအစား) | Organization |
| (g) Duration of validity
(သက်တမ်းကုန်ဆုံးရက်) | 31 December 2019 |



Director General
Environmental Conservation Department
Ministry of Natural Resources and Environmental Conservation

Areas of Expertise Permitted
(ခွင့်ပြုသည့် ကျွမ်းကျင်မှုနယ်ပယ်များ)

1. Facilitation of meeting,
2. Land use,
3. Legal analysis,
4. Geology and soil,
5. Occupational Safety and Health,
6. Public Health



EXTENSION
သက်တမ်းတိုးမြှင့်ခြင်း
The VALIDITY of this certificate is extended
for one year from (1.1.2020) to (31.12.2020)
ဤလက်မှတ်အား (၁-၁-၂၀၂၀) ရက်နေ့မှ (၃၁-၁၂-၂၀၂၀)
ရက်နေ့အထိ တစ်နှစ်သက်တမ်းတိုးမြှင့်သည်။
Soe Naing
For Director General
(Soe Naing, Director)
Environmental Conservation Department

EXTENSION
သက်တမ်းတိုးမြှင့်ခြင်း
The VALIDITY of this certificate is extended
for six month from (1.1.2021) to (30.6.2021)
ဤလက်မှတ်အား (၁-၁-၂၀၂၁) ရက်နေ့မှ (၃၀-၆-၂၀၂၁)
ရက်နေ့အထိ (၆)လ သက်တမ်းတိုးမြှင့်သည်။
Soe Naing
For Director General
(Soe Naing, Director)
Environmental Conservation Department

EXTENSION
သက်တမ်းတိုးမြှင့်ခြင်း
The VALIDITY of this certificate is extended
for six months from (1.7.2021) to (31.12.2021)
ဤလက်မှတ်အား (၁-၇-၂၀၂၁) ရက်နေ့မှ (၃၁-၁၂-၂၀၂၁)
ရက်နေ့အထိ (၆)လ သက်တမ်းတိုးမြှင့်သည်။
Soe Naing
For Director General
(Soe Naing, Director)
Environmental Conservation Department

APPENDIX C

Fire Safety Training Photo



၁၆


မီးသတ်တပ်ဖွဲ့စခန်း၊
ရွှေလင်းခန်းစက်မှုစုံ
လှိုင်သာယာမြို့နယ်၊ရန်ကုန်တိုင်းဒေသကြီး

ရက်စွဲ။ ၂၀၁၉ ခုနှစ်၊ ၁ လ၊ ၁၂ ရက်။

အကြောင်းအရာ။

၊(Fuyun Myanmar co.Ltd)အတွက် မီးဘေးကြိုတင်
ကာကွယ်ရေးဟောပြောခြင်း။

လှိုင်သာယာမြို့နယ် ကနောင်မင်းသာကြီးလမ်းအမှတ်(၄၆၇)ရှိ
(Fuyun Myanmar co.Ltd)စက်ရုံအတွက် မီးသတ်တပ်ဖွဲ့မှ မီးသတ်ဆေးပူအသုံးပြုနည်း
အရေးပေါ်ဖြစ်ခဲ့လျှင် ထွက်ပြေးတိမ်းရှောင်ခြင်းများကို မီးသတ်သရုပ်ပြမှု နှင့်စပ်လျဉ်း၍မီးသတ်တပ်ဖွဲ့ဝင်မှ
သင်တန်းပေးဟောပြောခြင်းများ ပြုလုပ်ပေး ထားပါကြောင်း အသိအမှတ်ပြုပါသည်။


စခန်းမှူး
ရွှေလင်းခန်းစက်မှုစုံ
လှိုင်သာယာမြို့နယ်

APPENDIX D

Monitoring Result

Air Quality Result



Plot No. (36, 38), Room No. 9A, 9th floor, Grand Myay Nu Condominium, Myay Nu Street, Sanchaung Township, Yangon Region, The Republic of the Union of Myanmar.
Office: (+95) 1 526574, Mobile: (+95) 9775405118, 9792528677, 9449251888; Website: www.myanweiconsulting.com

Project Name:	FuYun (Myanmar) Company Limited
Project	Plot No. 467 (B), Myay Taing Block No.25, ShweLinBan Industrial
Location:	Zone, Hlaing Thar Yar Township, Yangon Region.
Sampling	27 June 2019
Date:	
Sampling	1:00 pm to 3:00 pm
Time:	
Sampling	Good
Condition:	
Sampling By:	Environmental Team Represented by Myanwei Consulting Group Company Limited.

Instrument	Type	Sampling Rate	Location
Haz-Scanner	Environmental Perimeter Air Station	1 second to 21 weeks	Operation Area (Indoor)

No	Parameter	Unit	Result	Standard	Remark
1	PM ₁₀	(µg/M ³)	114.6	50	Normal
2	PM _{2.5}	(µg/M ³)	45.9	25	Normal

National Environmental Quality (Emission) Guideline

Parameter	Averaging period	Guideline value	Unit
PM 10b	1-year 24-hour	20 50	(µg/M ³)
PM 2.5b	1-year 24-hour	10 25	(µg/M ³)
NH ₃	-	-	
CO	-	-	
NO ₂	1-year 1-hour	40 200	
SO ₂	24-hours 10 minute	20 500	
VOC	-	2/20/50/75/100/1 150 c,d	mg/Nm ³

a. Particulate matter 10 micrometer or less in diameter

b. Particulate matter 2.5 micrometer or less in diameter

c. Calculated as Total carbon

d. As the 30-minute mean for stack emissions: 2 mg/Nm³ for volatile organic compounds classified as carcinogenic or mutagenic with mass flow greater than or equal to 10 g/hour; 20 mg/Nm³ for discharges of halogenated volatile organic compounds with a

mass flow equal or greater than 100 g/hour; 50 mg/Nm³ for waste gases from drying of large installations (solvent consumption > 15 tons/year); 75 mg/Nm³ for coating application processes for large installations (solvent consumption > 15 tons/year); 100 mg/Nm³ for small installations (solvent consumption < 15 tons/year); if solvent is recovered from emissions and reused, the guideline value is 150 mg/Nm³


 Lin Htet Sein
 Environmental Consultant
 Myanwei Consulting Co., Ltd.

Light Result



Plot No. (36, 38), Room No. 9A, 9th floor, Grand Myay Nu Condominium, Myay Nu Street, Sanchaung Township, Yangon Region, The Republic of the Union of Myanmar.
Office: (+95) 1 526574, Mobile: (+95) 9775405118, 9792528677, 9449251888; Website: www.myanweiconsulting.com

Project Name:	Fu Yun Myanmar Company Limited
Project	Plot No.467(B), MyayTaing Block No.25, Shwe Lin Ban Industrial
Location:	Zone, Hlaing Thar Yar Township, Yangon region.
Sampling	27 June, 2019
Date:	
Sampling	1:00 pm to 4:00 pm
Time:	
Sampling	Normal
Condition:	
Sampling By:	Environmental Team Represented By Myanwei Consulting Group Company Limited

Instrument	Type	Sampling Rate	Location
Uni-T (Luminometer)	UT380 Series	100 times/second	16°54'30.28"N 96° 4'15.79"E

No	Measure area	Unit	Result	Standard	Remark
1	Production Area	Lux	627	2000	
2	Quality Control	Lux	452	2000	
3	Warehouse	Lux	286	300	

IESNA Lighting Handbook

Area / Task / Process	Illuminance levels (lux)
Exterior calculating, walkways, stores, main entrances and exit roads, car parking, internal factory roads, etc.	20-50
Boiler house, transformer yards, furnace rooms, entrances, corridors, stairs, etc.	70-100
Calculation area in industry, stores, stock rooms and canteen.	100-150
Coarse Work	200-300
Medium work	300-500

Area / Task / Process	Illuminance levels (lux)
Fine Work	500-1500
Very fine minute and precise work	1500-3000

Department	Type of Light	Wattage of Light	Lux Level
Fabric store	Fluorescent tube light	40 W	300
Sewing floor	LED tube light	20 W (T8)	400
Cutting floor	LED tube light	22 W (T8)	1000
Finishing	LED tube light	28 W (T8)	600
Inspection points	LED tube light	28 W (T8)	900 (except 1500 at audit tables)
Sampling	LED tube light	22 W (T8)	500
Office areas	Fluorescent tube light	36 W (T)	300


 Lin Htet Sein
 Environmental Consultant
 Myanwei Consulting Co., Ltd.

Noise Result



Plot No. (36, 38), Room No. 9A, 9th floor, Grand Myay Nu Condominium, Myay Nu Street, Sanchaung Township, Yangon Region, The Republic of the Union of Myanmar.
Office: (+95) 1 526574, Mobile: (+95) 9775405118, 9792528677, 9449251888; Website: www.myanweiconsulting.com

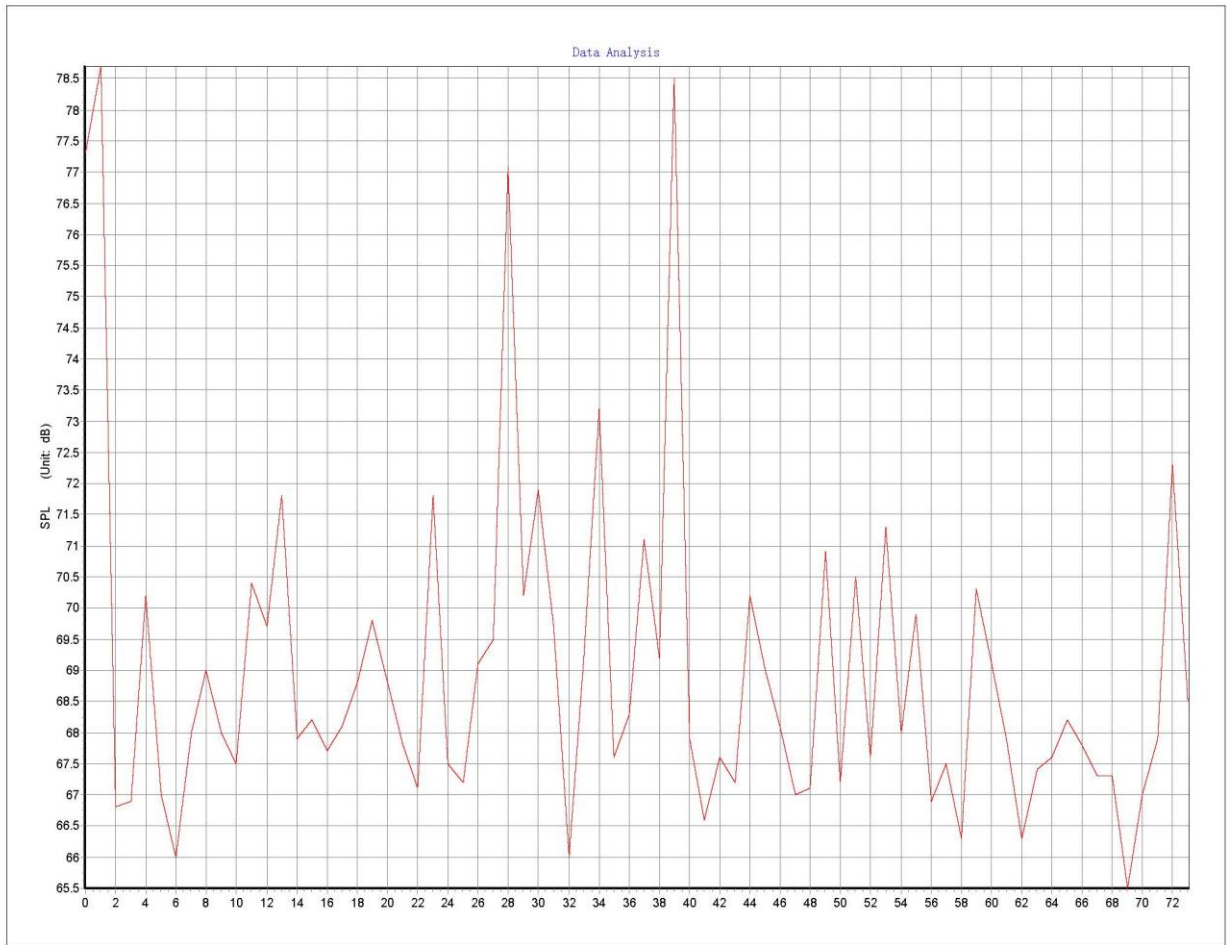
Project Name:	FuYun (Myanmar) Company Limited
Project	Plot No.(467-B), Myay Taing Block No (25), Shwe Lin Ban
Location:	Industrial Zone, Hlaing Thar Yar Township, Yangon Region.
Sampling	
Date:	27 June, 2019
Sampling	
Time:	1:00 pm to 4:00 pm
Sampling	
Condition:	Normal Condition
Sampling By:	Environmental Team Represented By Myanwei Consulting Group Company Limited

Instrument	Type	Sampling Rate	Location
Digital Sound Level Meter	GM 1356 USB	30 -130 dB	16° 54' 30.28"N and 96° 4' 15.79"E

No	Place	Unit	Result	Standard	Remark
1	Operation Area	dBA	68.99 dBA	70 dBA	Normal

National Environmental Quality (Emission) Guideline

Receptor	One Hour Laeq (dBA)	Guideline value
	Daytime	Nighttime
	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



APPENDIX E

Public Consultation Meeting

တွေ့ဆုံဆွေးနွေးပွဲ အခမ်းအနားသို့ ဖိတ်ကြားထားသူများစာရင်း

နေ့စွဲ - ၁၀ ရက်၊ ဒီဇင်ဘာလ၊ ၂၀၁၉ ခုနှစ်

စဉ်	အမည်	ရာထူး	ဌာန / အဖွဲ့အစည်း	ဆက်သွယ်ရန်	လက်မှတ်
၁။	ဦးသီဟမော်	ဥပဒေရေးရာ	ဦးသီဟ	၀၇၅၅၆၁၂၅၆၁၈	
၂။	ဦးမောင်မောင်	ဥပဒေရေးရာ	ဦးမောင်မောင်	၀၉-၄၄၁၂၄၃၇၈၆	
၃။	ဦးခင်အောင်	တာဝန်ရှိသူ	အလုပ်အကိုင်အဖွဲ့	၀၇-၇၆၁၇၇၇၇၆၇	
၄။	ဦးမောင်မောင်	ဥပဒေရေးရာ	ဦးမောင်မောင်	၀၇ ၆၄၅၀၁၅	
၅။	ဦးမောင်မောင်	ဦးမောင်မောင်	ဦးမောင်မောင်	၀၇၇၇၇၇၇၇၇၇	
၆။	ဦးမောင်မောင်	ဦးမောင်မောင်	ဦးမောင်မောင်	၀၇၇၇၇၇၇၇၇၇	
၇။	ဦးမောင်မောင်	ဦးမောင်မောင်	ဦးမောင်မောင်	၀၇၇၇၇၇၇၇၇၇	
၈။	ဦးမောင်မောင်	ဦးမောင်မောင်	ဦးမောင်မောင်	၀၇၇၇၇၇၇၇၇၇	
၉။	ဦးမောင်မောင်	ဦးမောင်မောင်	ဦးမောင်မောင်	၀၇၇၇၇၇၇၇၇၇	

Myanwei Consulting Company Limited

နေ့စွဲ - ၁၀ ရက်၊ ဒီဇင်ဘာလ၊ ၂၀၁၉ ခုနှစ်

[illegible]

106

List of Commitment

Fu Yun Myanmar Company Limited ၏ အီလက်ထရောနစ်စနစ်ဖြင့် ပြုလုပ်ထားသောလက်ဆောင်၊ အလှဆင်ပစ္စည်းများနှင့် ဆက်စပ်သောပစ္စည်းများ ထုတ်လုပ်ခြင်းလုပ်ငန်းအတွက် လုပ်ငန်းလည်ပတ်ဆောင်ရွက်ခြင်းကြောင့် ဖြစ်ပေါ်လာနိုင်သော သဘာဝပတ်ဝန်းကျင်၊ လူမှုဘဝ နှင့် ကျန်းမာရေး ထိခိုက်မှုများရှိခဲ့ပါက လျော့ချရေး၊ စီမံခန့်ခွဲရေး နှင့် တားဆီးရေး အစီအစဉ် များကို ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှုအစီအစဉ် (Environmental Management Plan – EMP) တွင် ပါဝင်ရမည့် အချက်များကို အကောင်အထည်ဖော် စီမံဆောင်ရွက်သွားမည် ဖြစ်ကြောင်း၊ အောက်ဖော်ပြပါ ဇယားဖြင့် အကျဉ်းချုပ် စာရင်းပြုစု ဖော်ပြထားပါသည်။

ကတိကဝတ်၏ အတိုချုပ် အမည်	အမှတ်စဉ်	ကတိကဝတ်အား ရှင်းလင်းဖော်ပြချက်	အစီရင်ခံစာပါ ရည်ညွှန်းချက် (အခန်း)
မူဝါဒ၊ အဖွဲ့အစည်းဆိုင်ရာမူဘောင်များ ဥပဒေနှင့်	၁	<p>ပတ်ဝန်းကျင် ထိန်းသိမ်းရေး ဥပဒေ (၂၀၁၂)</p> <p>ပတ်ဝန်းကျင် ထိန်းသိမ်းရေး နည်းဥပဒေ (၂၀၁၄)</p> <p>ပတ်ဝန်းကျင် ထိခိုက်မှုဆန်းစစ်ခြင်းဆိုင်ရာ လုပ်ထုံးလုပ်နည်း (၂၀၁၅)</p> <p>မြန်မာနိုင်ငံမှ ချမှတ်ထားသော စက်ရုံနှင့် သက်ဆိုင်သည့် တခြား လိုက်နာဆောင်ရွက်ရမည့် လုပ်ထုံးလုပ်နည်း၊ ဥပဒေ၊ နည်းဥပဒေ နှင့် မူဝါဒများ</p> <p>အမျိုးသား ပတ်ဝန်းကျင်ဆိုင်ရာ အရည်အသွေး (ထုတ်လွှတ်မှု) လမ်းညွှန်ချက် (၂၀၁၅) နှင့် နိုင်ငံတကာ ပတ်ဝန်းကျင်ဆိုင်ရာ စံသက်မှတ်ချက်များနှင့် ပတ်ဝန်းကျင် စီမံခန့်ခွဲမှုဆိုင်ရာ လမ်းညွှန်ချက်များ</p>	အခန်း (၂)

ကတိကဝတ်၏ အတိုချုပ် အမည်	အမှတ်စဉ်	ကတိကဝတ်အား ရှင်းလင်းဖော်ပြချက်	အစီရင်ခံစာပါ ရည်ညွှန်းချက် (အခန်း)
ကတိကဝတ်ပြုခြင်း	၁.၁	စီမံကိန်းအဆိုပြုသူနှင့် ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှုအစီအစဉ်ရေးသားသူဘက်မှ ပတ်ဝန်းကျင်ထိန်းသိမ်းမှုဆိုင်ရာ လိုက်နာဆောင်ရွက်မည်များအား ကတိကဝတ်ပြုခြင်း	အခန်းခွဲ (၂.၄)
စီမံကိန်းအကြောင်းအရာဖော်ပြချက်	၂	စက်ရုံတည်နေရာ၊ တည်နေရာမြေပုံများ စက်ရုံရှိသုံးစွဲသော ကုန်ကြမ်းများနှင့် အခြေခံလိုအပ်ချက်များ ထားရှိမှု စက်ရုံထွက်အမှိုက်များ ထွက်ရှိမှုနှင့် သိုလှောင်ထားရှိမှု	အခန်း (၃)
ပတ်ဝန်းကျင် အရည်အသွေးတိုင်းတာမှု	၃	အမျိုးသား ပတ်ဝန်းကျင်ဆိုင်ရာ အရည်အသွေး (ထုတ်လွှတ်မှု) လမ်းညွှန်ချက် (၂၀၁၅) နှင့် နိုင်ငံတကာ ပတ်ဝန်းကျင်ဆိုင်ရာ စံသက်မှတ်ချက်များနှင့် ပတ်ဝန်းကျင် စီမံခန့်ခွဲမှုဆိုင်ရာ လမ်းညွှန်ချက်များကို အခြေခံ၍လေ့လာ တိုင်းတာထားပါသည်။	အခန်း (၄)
လေအရည်အသွေး	၃.၁	အဆိုပြုစီမံကိန်း၏ ပတ်ဝန်းကျင်ဆိုင်ရာ လေအရည်အသွေး (ထုတ်လွှတ်မှု) ထုတ်လွှတ်အမိုးအငွေ့ (Air emissions) ကို အမျိုးသားပတ်ဝန်းကျင်ဆိုင်ရာ (၂၀၁၅) လမ်းညွှန်သက်မှတ်ချက် (PM10, PM2.5) တို့ဖြင့် နှိုင်းယှဉ် ဖော်ပြထားပါသည်။	အခန်းခွဲ (၄.၂.၁)

ကတိကဝတ်၏ အတိုချုပ် အမည်	အမှတ်စဉ်	ကတိကဝတ်အား ရှင်းလင်းဖော်ပြချက်	အစီရင်ခံစာပါ ရည်ညွှန်းချက် (အခန်း)
ဆူညံသံ	၃.၂	အဆိုပြုစီမံကိန်း၏ ပတ်ဝန်းကျင်ဆိုင်ရာ အသံအရည်အသွေး အမြင့်ဆုံး လက်ခံနိုင်သည့် ဆူညံသံအဆင့် (Noise level) (ထုတ်လွှတ်မှု) ကို အမျိုးသားပတ်ဝန်းကျင်ဆိုင်ရာ (၂၀၁၅) လမ်းညွှန်သက်မှတ်ချက် စက်မှုဇုန် ဧရိယာတွင် (70 One hour LAeq (dBA)) ဖြင့် နှိုင်းယှဉ် ဖော်ပြထားပါသည်။	အခန်းခွဲ (၄.၂.၃)
စက်ရုံတွင်း အလင်းရောင် ရရှိမှု	၃.၃	Illumination and Limiting Glare Index based on IES Code, 1968 ဖြင့် နှိုင်းယှဉ် ဖော်ပြထားပါသည်။	အခန်းခွဲ (၄.၂.၄)
ပတ်ဝန်းကျင်ညစ်ညမ်းမှုလျှော့ချရေး အစီအစဉ်များ	၄	ပတ်ဝန်းကျင်နှင့် ပြည်သူလူထုအပေါ်ထိခိုက်စေနိုင်သော အရာများဖြစ်သည့် လေထု၊ ရေထု၊ အသံ၊ စွန့်ပစ်အရည်၊ မြေဆီလွှာ၊ အမှိုက်စွန့်ပစ်မှု၊ လုပ်ငန်းခွင်ဘေးကင်းရှင်းရေးနှင့် ကျန်းမာရေး၊ ပတ်ဝန်းကျင်ဆိုင်ရာအန္တရာယ်ရှိပစ္စည်းများ လျှော့ချရေးနည်းလမ်းများနှင့် လမ်းညွှန်ချက်များအား ဖော်ပြထားပါသည်။	အခန်း (၅)
စီမံကိန်းနှင့်ပတ်သက်၍ အများပြည်သူနှင့်တွေ့ဆုံဆွေးနွေးခြင်းအစီအစဉ်	၅	စီမံကိန်းအခြေအနေရှင်းလင်းတင်ပြခြင်းနှင့် မေးမြန်းအကြံပြုချက်များအား မှတ်တမ်းတင်ခြင်း	အခန်း (၆)
ပတ်ဝန်းကျင် စီမံခန့်ခွဲမှု	၆	Fuyun Myanmar Company Limited ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှု အစီအစဉ် (EMP) အတွက် စက်ရုံစီမံခန့်ခွဲရေးအဖွဲ့၊ အလုပ်သမားများ၊	အခန်း (၇)

ကတိကဝတ်၏ အတိုချုပ် အမည်	အမှတ်စဉ်	ကတိကဝတ်အား ရှင်းလင်းဖော်ပြချက်	အစီရင်ခံစာပါ ရည်ညွှန်းချက် (အခန်း)
		ဒေသခံလူထုများ၏ အမြင်၊ သက်ဆိုင်ရာ တာဝန်ရှိသူတို့၏အကြံပြုချက်များနှင့် ကွင်းဆင်းလေ့လာသူများမှ ဆွေးနွေးတိုင်ပင်မှုတို့ အပေါ် အခြေခံပြီး ဆောင်ရွက်သွားမည် ဖြစ်သည်။ EMP တွင် စက်ရုံအတွင်း ဘေးအန္တရာယ် ကင်းရှင်းရေး စီမံခန့်ခွဲမှုများကို လိုက်နာရန်အတွက် ထည့်သွင်းဖော်ပြထားပါသည်။	
လေထုညစ်ညမ်းမှုနှင့် ဖုန်မှုန့်များ	၆.၁	<ul style="list-style-type: none"> ➢ မီးစက်တွင် သင့်တင့်သော မီးခိုးခေါင်းတိုင် တပ်ဆင်ခြင်းဖြင့် အခိုးအငွေ့ကြောင့် ပတ်ဝန်းကျင် ထိခိုက်မှုကို တိုက်ရိုက်လျော့ချခြင်း၊ ➢ စက်ရုံဝင်းအတွင်း အကာအကွယ်မဲ့မီးရှို့ခြင်း(Open Burning)ကို တားမြစ်ခြင်း၊ ➢ စက်ရုံအတွင်းနှင့် အနီး အနားတွင် သစ်ပင်ပန်းမန် စိုက်ပျိုးခြင်းဖြင့် carbon ထွက်ရှိမှုကို လျော့ချပေးခြင်း၊ ➢ NOx ထွက်ရှိမှုနည်းသော နည်းပညာဖြင့် စက်ပစ္စည်း များသုံးခြင်း၊ ➢ စက်ပစ္စည်းများကို ပုံမှန်ပြုပြင်ထိန်းသိမ်းပေးခြင်း။ 	အခန်းခွဲ (၇.၁)
ဆူညံသံထွက်ရှိမှု	၆.၂	<ul style="list-style-type: none"> ➢ မီးစက်ခန်းများထားရှိခြင်းနှင့် အခြားသက်ဆိုင်သည့် ပစ္စည်းများအား စနစ်တကျ ထိန်းသိမ်းထားရှိရမည်၊ ➢ အရေးပေါ်သုံး မီးစက်များကို အသံလုံစနစ်များတပ်ဆင်ထားခြင်း၊ 	အခန်းခွဲ (၇.၂)

ကတိကဝတ်၏ အတိုချုပ် အမည်	အမှတ်စဉ်	ကတိကဝတ်အား ရှင်းလင်းဖော်ပြချက်	အစီရင်ခံစာပါ ရည်ညွှန်းချက် (အခန်း)
		<ul style="list-style-type: none"> ဝန်ထမ်းများကို သက်ဆိုင်ရာကိစ္စရပ်များနှင့် ပတ်သက်၍ သင့်တော်သော သင်တန်းများပေးခြင်း၊ ဆူညံသံထွက်ရှိသည့်နေရာများတွင် PPE များကို ဝတ်ဆင်စေခြင်း 	
အမှိုက်စွန့်ပစ်မှု (အစိုင်အခဲ)	၆.၃	<ul style="list-style-type: none"> စွန့်ပစ်အမှိုက်များအား ရေလွှတ်မြောင်း၊ ကန်ထဲသို့ လွယ်လင့်တကူစွန့်ပစ်ခြင်းကို တားမြစ်ခြင်း၊ စွန့်ပစ်အမှိုက်များအား ပြန်လည်သုံးစွဲရန် နှင့် စွန့်ပစ်ရန် အဖြစ်သတ်မှတ်ပီး သီးခြားစွန့်ပစ်စေခြင်း စက်ရုံအတွင်း အမှိုက်ပုံးများထားရှိခြင်း သတ်မှတ်ထားသောနေရာတွင်သာ အမှိုက်စို၊ အမှိုက်ခြောက်များ ခွဲခြားစွန့်ပစ်ခြင်း အမှိုက်များကို ရန်ကုန်စည်ပင်သာယာရေးကော်မတီနှင့် ချိတ်ဆက်၍စွန့်ပစ်ခြင်း 	အခန်းခွဲ (၇.၃)
စွန့်ပစ်အရည်	၆.၄	<ul style="list-style-type: none"> စက်ရုံတွင်း ရေမြောင်းများ ကို စနစ်တကျ တည်ဆောက်ထားခြင်း၊ မိလ္လာစနစ်ကို ပုံမှန်စစ်ဆေးခြင်း စက်ရုံတွင်းရေမြောင်းများကို အနံ့အသက်ကင်းရှင်းရန်နှင့် ရေစီးရေလာကောင်းရန် ပုံမှန်ရှင်းလင်းပေးခြင်း ဆီကန်၊ မိလ္လာကန်များကို ပုံမှန်စစ်ဆေးခြင်း၊ သန့်စင်ခြင်းများပြုလုပ်ခြင်း 	အခန်းခွဲ (၇.၄)

ကတိကဝတ်၏ အတိုချုပ် အမည်	အမှတ်စဉ်	ကတိကဝတ်အား ရှင်းလင်းဖော်ပြချက်	အစီရင်ခံစာပါ ရည်ညွှန်းချက် (အခန်း)
		<ul style="list-style-type: none"> ဆိုးဆေးများပါဝင်သည့် စက်ရုံမှစွန့်ထုတ်အရည်များအား ရေမြောင်းများထဲသို့ မစွန့်ထုတ်မှီ အရင်သန့်စင်မှုပြုလုပ်ခြင်း 	
စွမ်းအင်အသုံးချမှု	၆.၅	<ul style="list-style-type: none"> အပူနှင့် အအေးထိန်းရန်အတွက် အချိန်ကန့်သတ်သည့်ကရိယာနှင့် သာမိုစတပ်များတပ်ဆင်ခြင်း စက်ရုံတွင်းသုံးစွဲသည့် မီးသီးမီးချောင်းများအား စွမ်းအင်သုံးစွဲမှုလျှော့နည်းသည်များကို ရွေးချယ်သုံးစွဲစေခြင်း၊ စွမ်းအင်ချွေတာသောကရိယာများတပ်ဆင်ခြင်း အသုံးမပြုသည့် အချိန်တွင် မီးပိတ်ထားခြင်း၊ စက်ပစ္စည်းများ ရပ်နားထားခြင်း 	အခန်းခွဲ (၇.၅)
ရေသုံးစွဲမှု	၆.၆	<ul style="list-style-type: none"> စက်ရုံတွင်းရေသုံးစွဲမှုအတွက် ရေမီတာတပ်ဆင်ခြင်း သန့်စင်ခန်း၊ ကန်တင်းနှင့် အခြားနေရာများတွင် စက်ရုံဝန်ထမ်းများအား ရေကိုစနစ်တကျသုံးတက်စေရန် အသိပညာပေးထားခြင်း ရေတွင်းရေကန်အနီး ချောဆီ၊စက်ဆီနှင့် အခြားရေထုညစ်ညမ်းစေနိုင်သော အရာများထားရှိခြင်း၊ သုံးစွဲခြင်းကို ရှောင်ရှားခြင်း 	အခန်းခွဲ (၇.၆)

ကတိကဝတ်၏ အတိုချုပ် အမည်	အမှတ်စဉ်	ကတိကဝတ်အား ရှင်းလင်းဖော်ပြချက်	အစီရင်ခံစာပါ ရည်ညွှန်းချက် (အခန်း)
		<ul style="list-style-type: none"> ➢ ရေကြည်ရေသန့် ရရှိနိုင်ရန် ရေထွက်ရာအရင်းအမြစ်များအနီးတွင် သစ်ပင်ပန်းမန်များ စိုက်ပျိုးထားရှိခြင်း။ 	
သဘာဝဘေးအန္တရာယ်နှင့် အခြေအနေ	၆.၇	<ul style="list-style-type: none"> ➢ စက်ရုံအနေဖြင့် သဘာဝဘေးအန္တရာယ်များကြောင့် ဖြစ်ပေါ်လာနိုင်သော မီးလောင်ခြင်း၊ ငလျင်များ၊ ဆိုင်ကလုန်းကဲ့သို့အပူပိုင်းမုန်တိုင်းများနှင့် နောက်ဆက်တွဲ ရေလွှမ်းမိုးခြင်းများအတွက် အရေးပေါ်အစီအစဉ်များကို ကြိုတင်စီစဉ်ထားရမည်။ ➢ စက်ပစ္စည်းချို့ယွင်းမှုနှင့် မတော်တဆပေါက်ကွဲမှုများအတွက် မီးငြိမ်းသတ်ရေးကိရိယာများကို စက်ရုံ၏ ကဏ္ဍအလိုက်နေရာများတွင် ထားရှိရမည်။ ➢ မြန်မာနိုင်ငံတွင်အဖြစ်များသော ငလျင်လှုပ်ခြင်းများအတွက် အလုပ်သမားများကို ငလျင်လှုပ်ခတ်စဉ် ခိုင်ခံ့သောစားပွဲအောက်ယာယီခိုအောင်းခြင်း၊ အဆောက်အအုံအထဲနှင့် သစ်ပင် တိုင်လုံးများအောက်နေထိုင်ခြင်းကို အထူးဂရုပြု ရှောင်ရှားခြင်း အစရှိသည့် အရေးပေါ်အခြေအနေတွင်း လိုက်နာရမည့်နည်းလမ်းများကို သင်တန်းပေးခြင်း၊ ➢ အရေးပေါ်အခြေအနေတွင် လွတ်မြောက်နိုင်မည့် အရေးပေါ်ထွက်ပေါက်၊ စုရပ်နှင့် အရေးပေါ်မြေပုံကိုစက်ရုံတွင် တပ်ဆင်ထားခြင်း 	အခန်းခွဲ (၇.၇)

ကတိကဝတ်၏ အတိုချုပ် အမည်	အမှတ်စဉ်	ကတိကဝတ်အား ရှင်းလင်းဖော်ပြချက်	အစီရင်ခံစာပါ ရည်ညွှန်းချက် (အခန်း)
		<ul style="list-style-type: none"> ➢ စက်ရုံအလုပ်သမားများအား အဆိပ်ရှိသတ္တဝါများနှင့် အဆောက်အအုံများ၏ထိခိုက်နိုင်သော အနေအထားများကို နားလည်ထားအောင် ပညာပေးခြင်း၊ ➢ စက်ရုံဆေးအဖွဲ့အနေဖြင့် ရှေးဦးသူနာပြုရခြင်းကို အဆင်သင့်ပေးနိုင်ရန် ပြင်ဆင်ထားခြင်း၊ ➢ အရေးပေါ်အခြေအနေအရပ်ရပ်အတွက် ဆက်သွယ်နိုင်မည့် လိပ်စာများ ဖုန်းနံပါတ်များကို စက်ရုံ၏ထင်သာမြင်သာရှိသောနေရာများတွင် ချိတ်ထားခြင်း၊ ➢ မီးသတ်အဖွဲ့နှင့် ကယ်ဆယ်ရေးအဖွဲ့ကို စနစ်တကျဖွဲ့စည်းထားရှိခြင်း ➢ သဘာဝဘေးဖြစ်ရပ်များ၊ မီးဘေးလုံခြုံရေးနှင့် လုပ်ငန်းခွင်ဘေးအန္တရာယ်ကင်းရှင်းရေးအတွက် အလုပ်သမားများအား သင့်တင့်သော သင်တန်းများပို့ချခြင်း။ 	
စောင့်ကြပ်ကြည့်ရှုမှု	၇	အဆိုပြုစီမံကိန်းသည် ပတ်ဝန်းကျင်စောင့်ကြပ်ကြည့်ရှုမှုအစီရင်ခံစာအား ၆လ တစ်ကြိမ် ဝန်ကြီးဌာနများသို့ တင်ပြရမည်	အခန်းခွဲ (၇.၈)
လေအရည်အသွေး စစ်ဆေးမှု	၇.၁	CO2, CO, SO2, NOx, PM2.5, PM10 တစ်နှစ် ၂ ကြိမ် (လုပ်ငန်းစတင်ပြီး ၃နှစ်)	ဇယား (၇.၁)

ကတိကဝတ်၏ အတိုချုပ် အမည်	အမှတ်စဉ်	ကတိကဝတ်အား ရှင်းလင်းဖော်ပြချက်	အစီရင်ခံစာပါ ရည်ညွှန်းချက် (အခန်း)
		အဆိုပြုလုပ်ငန်း/စက်ရုံဝန်းအတွင်း တစ်နှစ် ၁၅ သိန်းကျပ်	
ရေအရည်အသွေး စစ်ဆေးမှု	၇.၂	စက်ရုံမှထွက်ရှိပြီး ပြင်ပသို့ စွန့်ပစ်မည့် အရည်များ တစ်နှစ် ၂ ကြိမ် (လုပ်ငန်းစတင်ပြီး ၃နှစ်) ထုတ်လုပ်မှုဧရိယာ၊ ထမင်းစားဆောင်၊ ရုံးခန်းနှင့် လူနေဆောင် တစ်ကြိမ်လျှင် ၁ သိန်းခွဲကျပ်	ဇယား (၇.၁)
စွန့်ပစ်ပစ္စည်းထွက်ရှိမှုအခြေအနေ	၇.၃	စွန့်ပစ်ပစ္စည်းအစိုင်အခဲ၊ စွန့်ပစ်ရည်နှင့် အန္တရာယ်ရှိစွန့်ပစ်ပစ္စည်း အပတ်စဉ် စက်ရုံအတွင်း ပြန်လည်အသုံးပြုရန်ထားရှိသည့်နေရာနှင့် အမှိုက်ကန်များ တစ်နှစ်လျှင်၅သိန်းကျပ်	ဇယား (၇.၁)
မီးဘေးအန္တရာယ် စစ်ဆေးမှု	၇.၄	မီးငြိမ်းသတ်ရေးကိရိယာများ လစဉ်	ဇယား (၇.၁)

ကတိကဝတ်၏ အတိုချုပ် အမည်	အမှတ်စဉ်	ကတိကဝတ်အား ရှင်းလင်းဖော်ပြချက်	အစီရင်ခံစာပါ ရည်ညွှန်းချက် (အခန်း)
		စက်ရုံအတွင်း တစ်လ ၅ သိန်း	
စက်ရုံတွင်း အလင်းရောင်အခြေအနေ	၇.၅	အလင်းရောင် လစဉ် ကုန်ပစ္စည်းဖြတ်တောက်ခြင်း၊ အရည်အသွေးစစ်ဆေးခြင်းကဲ့သို့သော လုပ်ငန်းများလုပ်ကိုင်သည့် နေရာ တစ်ကြိမ် ၅ သောင်း	ဇယား (၇.၁)
ဘေးအန္တရာယ်ဆိုင်ရာ သင်တန်းပို့ချခြင်း	၇.၆	လုပ်ငန်းခွင်၌ ကြိုတင်ခန့်မှန်းနိုင်သော အရေးပေါ်အခြေအနေများကို အရေးပေါ်တုံ့ပြန်နိုင်ရန် အစီအစဉ်များ ချမှတ်ဆောင်ရွက်ခြင်း တစ်နှစ်လျှင် ၂၀ သိန်းကျပ်	ဇယား (၇.၁)
လူထုအကျိုးပူးပေါင်းပါဝင်ရန် ကတိကဝတ်ပြုမှု	၈	အဆိုပြုလုပ်ငန်းသည် လူထုအကျိုးပြုပေါင်းပါဝင်မှုကို ကျန်းမာရေး၊ ပညာရေးနှင့် နယ်မြေဖွံ့ဖြိုးတိုးတက်ရေးအတွက် မြန်မာနိုင်ငံရင်းနှီးမြှုပ်နှံမှုကော်မရှင်က ချမှတ်သည့် အတိုင်း	အခန်းခွဲ (၇.၉)

ကတိကဝတ်၏ အတိုချုပ် အမည်	အမှတ်စဉ်	ကတိကဝတ်အား ရှင်းလင်းဖော်ပြချက်	အစီရင်ခံစာပါ ရည်ညွှန်းချက် (အခန်း)
		ကုမ္ပဏီ၏ အကျိုးအမြတ် ၂ ရာခိုင်နှုန်းအား နှစ်စဉ် ထည့်ဝင်သွားမည်ဖြစ်သည်။	
မကျေနပ်မှုများနှင့် ပြဿနာများကို တွယ်ဖော်ရှင်းခြင်း	၉	<p>စီမံကိန်းအနီးပတ်ဝန်းကျင်အနီးတွင်နေထိုင်သောသူများ (သို့) သက်ဆိုင်သူများသည် သူတို့ခံစားနေရသော ပြဿနာများနှင့် သက်ရောက်မှုများနှင့် ပတ်သတ်၍ ဖြေရှင်းမှုများပြုလုပ်ရန်</p> <p>စက်ရုံ၏ တာဝန်ရှိသူများ၊ စက်မှုဇုန် စီမံခန့်ခွဲရေး ကော်မတီ၊ အုပ်ချုပ်ရေးဦးစီးဌာနတို့ဖြင့် ပူးပေါင်း ချိတ်ဆက် လုပ်ဆောင်ခြင်း။</p> <p>ကော်မတီအဆင့်တွင် အခြားမဖြေရှင်းနိုင်သော ပြဿနာများကို တာဝန်ရှိအာဏာပိုင်များသို့ တင်ပြပြီး ပြဌာန်းထားသော ဥပဒေအရ အဆုံးအဖြတ်ပြုလုပ်မည် ဖြစ်သည်။</p>	အခန်းခွဲ (၇.၁၁)