The Environmental Impact Assessment undertaken by Kaung Kyaw Say Engineering Co.,Ltd for Manufacturing and Assembly of Motor Vehicles Project, implemented by Gold AYA Motors International Group Co.,Ltd located at Plot No.B-1-1 of Block Factory Area Zone 2C, Myotha Industrial Park Between Myotha and Nabu Aine village, total land area (20.084)Acres in Ngazun Township, Myingyan District, Mandalay Division Region, Union of Myanmar,

EIA Report

30-11-2021

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Content

1. Executive Summary (Myanmar) 7

2. Executive Summary (English) 30

3. Introduction 50

3.1 Introduction 50

3.2 The project origin, the need of project, purpose of project 50

3.3 Description of Project Proponent 51

3.4 The Period of Investment 51

3.5 The Approach and Methodology 51

3.6 The Scope of Study and the Study Area 52

3.7 Description of Environmental and Social Experts 54

3.8 The Commitments by the Project Proponent and Third Party Organization 55

4. Policy, Law and Legal Framwork 59

4.1 Myanmar Environmental Policy 59

4.2 Policy on environmental & social by project proponent 59

4.3 Environmental Law, Rules, International Convension Agreements, National and International Standards, Guidelines, Policy and Legal Fremework 59

4.4 Obligations and Other Commitments 67

4.5 Organizational Framework 68

4.6 Objective of Environmental and Social Standard 70

5. Description of Project and Alternatives 72

5.1 Project Background 72

5.2 Project Location, Area Map of covering whole project, Work Lay out plan 72

5.3 Project Development and Implementation Schedule 77

5.4 Size of Project, Layout, Applied Technology, Raw Materials, Finished Products, Utilities, Waste Development, Emission, Impacts, Employment List 78

5.5 Alternatives for Pre construction, Construction, Operation, Closure and Clousure Stages 89

5.6 Conparism of Alternatives 92

6. Description of Environment 94

6.1 Area Boundaries of Assessment 94

6.2 Methodology for data collection and analysis 95

6.3 Data on Geogrophy, Hydrology, Climate, Forestry 96

6.4 Physical Components 96

6.5 Biological Components 100

6.6 Socio-Economic Components 102

6.7 Visual Components 105

6.8 Infrasture, Transport 107

6.9 Economic, Livelihood, Land Use, ... 107

7. Environmental Impact Assessment & Mitigation Measures 108

7.1. Methodology 108

7.2. Scope of Assessment 109
7.3. Identification of Impacts 110
7.3.1. Identification of Impacts Before and During Constrution Stage (BC/DC) 110
7.3.2. Identification of Impacts during operation stage (OP) 110
7.4. Steps of Impact Assessment 111
7.5. Determining the Rating 111
7.6. Geographical Boundary & Temporal Boundary 112
7.7. Scoping of Impacts 113
7.8. Terms of Reference for Investigation of Environmental Impact Assessment 115
7.9. Environmental Assessment 116
7.9.1. Geological conditions 116
7.9.2. Soil Test 116
7.9.3. Water Quality 117
7.9.4. Air Quality 118
7.9.5. Noise Level 119
7.9.6. Flora and Fauna 120
7.9.7. Drainage System/Waste Water Piping/Waste Water Treatment System 122
7.9.8. Solid Waste 123
7.9.9. Hazardous Waste 123
7.9.10. Electricity 124
7.10. Social Impact Assessment 124
7.10.1. Demographic Impacts 124
7.10.2. Cultural Impact 125
7.10.3. Gender Impacts 125
7.10.4. Health Impact 126
7.10.5. Road & Conmunication 126
7.11. The Evalution of Impacts 127
7.11.1. Evaluation of Impacts Before and During Constrution Stage (BC/DC) 127
7.11.2. Evaluation of Impacts in Operation Stage (OS) 128
7.12. The Summary of Impacts 130
8. The Mitigation 133
8.1 Methodology 133
8.2 The mitigation of impacts 133
8.3 Mitigating Adverse Effects 133
8.4 The Summary of Mitigation Measures 134
8.4.1. Mitigation and Consideration Measures (Pre-Construction Phase) 134
8.4.2. Mitigation and Consideration Measures (During Construction Phase) 134
8.4.3. Mitigation and Consideration Measures (Operation Phase) 135
8.5 Conclusion and Recommendation 136

9. Cumulative Impact Assessment 137
9.1 Methodology 137
9.2 Brief Description on Existing and Future Development Program 137
9.3 Identification of Cumulative Impacts & mitigation by this project 137
10. Environmental Management Plan 138
10.1 Methodology 138
10.2 Management on Environment & Social policy, commitment and organization structure 138
10.3 Brief Description on Mitigation of Impacts 139
10.4 Environmental Management & Monitoring Plan 139
10.4.1 Air Quality Management Plan 139
10.4.2 Noise & Vibration Management Plan 141
10.4.3 Water and Energy Management Plan 143
10.4.4 Solid Waste Management Plan 143
10.4.5 Waste Water Management Plan 145
10.4.6 Transportation and Traffic Management Plan 147
10.4.7 Flora & Fauna Management Plan 147
10.4.8 Management Plan on Greening 148
10.4.9 Management Plan to Livelihood and Employment Opportunity 148
10.4.10 Occupational Health and Safety Management Plan 149
10.4.11 Hazardous Waste Management Plan 153
10.4.12 Emergency (Prepareness & Evacuation) Management Plan 154
10.4.13 Preparness for the natural diasastes (Water, Land Slide, Storm, Earthquake etc.) 160
10.4.14 Summary of Environmental Management Plan (Operation Phase) 161
10.4.15 Monitoring Program 163
10.4.16 The Monitoring Plan (Operation Phase) 166
10.5 Responsible Authorities for Implementation of EMP and Monitoring, ... 169
10.6 The Financial Allotment for EMP 172
10.7 Reporting Requirement 176
10.8 Factory Clousure Plan 176
10.9 Capacity Development and Training 177
10.10 The CSR program & environmental management financial allocation 177
11. Public Consultation Meeting & Disclosure 179
11.1 The Objectives and Aims of the Public Consultation 179
11.2 The Methodology and Approach 180
11.3 The summary of public consultation meeting 180
11.4 Meeting Outcomes, (the discussion points and the company’s commitments) 182
11.5 The Information Disclousure 183
12. Conclusion 184

List of Tables

No	List of Tables	Pg
1	Summary of Impacts (Myanmar)	18
1A	Summary of Impacts (English)	39
2	Summary of Mitigation (Myanmar)	22
2A	Summary of Mitigation (English)	43
3.1	Project Owner and Proponent, Project Implementation Organization	51
3.2	The List of Consultants	54
3.3	The Summary of Commitment	58
4	The Salient Data of the Project	11,34,53
4.1	Law, Rule, Regulation and Act	15,37,59
4.2	International and Regional Agreement and Conventions	69
5.1	Size of Buildings	79
5.2	The Raw Materials to be Imported Q35	83
5.3	The Items to be Imported for the vehicle model M20S	83
5.4	The Items to be Imported for the vehicle model Q7	83
5.5	The Items to be Imported for the vehicle model M60	84
5.6	The Items to be Imported for the vehicle model A6	84
5.7	The Items to be Imported for the vehicle model V8	84
5.8	The Items to be Imported for the vehicle model K9	85
5.9	The Item to be Purchased Locally	85
5.10	The Production Statement	86
5.11	The Estimate Fuel & Lubricant Requirement for Test Run	86
5.12	The Estimate of Utility Requirement per year	87
5.13	The Solid Waste Management	87
5.14	The Estimate Waste Water	88
5.15	The Employment List	89
5.16	The Planned Alternative Material Used	90
5.17	The Alternative on Planned Production Process Technology	91
5.18	The Comparism of Alternatives and Selected Technology	92
6	Effluent Levels (Manufacturing)	41
6.1	The Weather Data Recorded	96
6.2	The Points of Measurement	97
6.3	The Ambient Air Quality Measurement & Comparism with NEQEG	98
6.4	The Noise Measurement (db) Room Temp.(C°), RH	99
6.5	The Comparism of Noise to NEQEG	100
6.6	Soil Test	100
6.7	The List of Flora	101
6.8	The List of Wildlives in the Project Zone	101
6.9	The Land Use in Nganzun Tsp	102
6.10	The Demograph	102
6.11	The Education Facilities	102
6.12	Types of Livelihoods	107
7	Noise Standard	42
7.1	Scoping of Environmental and Social Impact	113
7.2	TOR	115
7.3	The Meter, Equipment and Aparatus	117
7.4	Survey Perimeters for Air Qualities	118
7.5	Summary of Key Terrestrial Habitat Features in the Survey Area	121
7.6	The Summary of Environmental and Social Survey Program	122
7.7	The Risk Summary	123
7.8	The Summary of Environmental & Social Impact Assessment	130
7.9	The Summary of Impact and Rating	132
8.1	The Mitigation of Impact	133
8.2	The Mitigation and Consideration Measures (Pre-Construction Phase)	134
8.3	The Mitigation and Consideration Measures (Construction Phase)	134

8.4	The Mitigation and Consideration Measures (Operation Phase)	135
10	Overview of Pollution Reduction	71
10.1	The Organization for the Implementation of EMP	138
10.2	The Summary of Impact and Mitigation Measures	139
11	The Summary of Environmental Management Plan (Operation Phase)	161
12	The Monitoring Plan (Operation Phase)	166
13	Air Emission (EQEG)	167
14	For Small Combustion Facilities Emission Guide lines	168
15	Work Safty Standards	168
16	The Environmental Management Plan Finance (During Construction and Operation Stage)	173
17	The Financial Allotment Cost Estimate for Monitoring (twice a year)	175
18	The Allotment for Miscellaneous Item	176
19	Types of Reports	176
20	The Types and Usage of Extinguisher	159
21	The Summary of Public Consultations and Activities Undertaken	179
22	The Discussion Points or Request at the Meetings and Company's Commitment and Progress	183

List of Figures

	List of Figures	Pg.
1	Project Location Map for GPS	73
2	Project Location Map (Area Detailed)	75
3	Factory Layout	79
4	Overall Site Layout Plan	80
5	Process Layout Schematic	80
6	Motor Assembling Process	81
7	The Illustration of Parts of SKD vehicle	82
8	EMP Team Structure	169
9	The Factory Clousure Plan	176

List of Abbreviations

AIDS	Acquired Immuno Defiency Syndrome
BC	Before Construction
CDC	City Development Committee
DC	During Construction
DRM	Disaster Risk Management
ECC	Environmental Compliance Certificate
ECD	Environmental Conservation Department
EIA	Environmental Impact Assessment
EMP	Environmental Management Plan
GAD	General Administration Department
HIV	Human Immunodefiency Virus
MONREC	Ministry of Natural Resources & Environmental Conservation
OS	Operation Stage
OHS	Occupational Health & Safty
PAP	Project Affected People
RRD	Department of Relief and Resettlement
SIA	Social Impact Assessment
SPC	Sub Project Contract

1. Executive Summary (Myanmar)

ယခုအခါပြည်ထောင်စုမြန်မာနိုင်ငံတော်သည်ခေတ်မီဖွံ့ဖြိုးတိုးတက်သောစက်မှုနိုင်ငံဖြစ်ပေါ်လာပြီးတိုင်းရင်းသားပြည်သူလူထုများစီးပွါးရေးနှင့်လူမှုရေးမြင့်မားလာစေရေးအတွက်ဝန်ဆောင်မှုလုပ်ငန်းများ၊ထုတ်လုပ်မှုလုပ်ငန်းများအပါအဝင်၊ အသေးစား၊အလတ်စားနှင့်အကြီးစားစက်မှုလုပ်ငန်းများဖွံ့ဖြိုးတိုးတက်လာစေရန်ဆောင်ရွက်ရာတွင်နိုင်ငံတော်၏သဘာဝပတ်ဝန်းကျင်ကိုမထိခိုက်စေဘဲသို့မဟုတ်ထိခိုက်မှုအနဲဆုံးနှင့်ရေရှည်ဖွံ့ဖြိုးတိုးတက်ရေးတို့ကိုအလေးထားလုပ်ကိုင်လျက်ရှိပါသည်။

မန္တလေးတိုင်းဒေသကြီးသည်မြန်မာနိုင်ငံ၏ရှေးယခင်မင်းနေပြည်တော်တည်ရှိရာသေဖြစ်ပြီးယဉ်ကျေးမှုအမွေအနှစ်များထွန်းကားရာဒေသဟုတင်စားခေါ်ဝေါ်ရသည့်ဒေသဖြစ်ပါသည်။မြန်မာနိုင်ငံ၏တိုးတက်ပြောင်းလဲမှုတွင်စက်မှုကုန်ထုတ်ကဏ္ဍသည်အထူးအရေးထားရမည့်ကဏ္ဍတစ်ခုဖြစ်ပါသည်။

ယခုစီမံကိန်းကိုနိုင်ငံခြားရင်းနှီးမှုပုံစံဖြင့်တည်ဆောက်ရန် Gold A Y A Motors International Group Co.,Ltd ကမန္တလေးတိုင်းဒေသကြီးအစိုးရအဖွဲ့နှင့်အတူတကွသက်ဆိုင်ရာဌာနဆိုင်ရာများအပါအဝင်မြန်မာနိုင်ငံရင်းနှီးမြှုပ်နှံမှုကော်မရှင်အဖွဲ့မှခွင့်ပြုချက်တောင်းခံပြီးနိုင်ငံခြားသားရင်းနှီးမြှုပ်နှံမှုသည့်ဥပဒေနှင့်အညီအကောင်အထည်ဖေါ်ဆောင်ရွက်သွားမည့်စမံကိန်းဖြစ်ပါသည်။

ပတ်ဝန်းကျင်ဆန်းစစ်ခြင်းလုပ်ငန်းဆောင်ရွက်ရာတွင်အဓိကတွေ့ရှိရသောအချက်များကိုအောက်ပါအတိုင်းအကျဉ်းချုံးဖော်ပြအပ်ပါသည်။

- ဒေသအတွက်ဖွံ့ဖြိုးရေးလုပ်ငန်းများတွင်လိုအပ်သောစီမံကိန်းတစ်ခုဖြစ်ပါသည်။
- မူလမြေကိုပိုမိုအကျိုးရှိစွာပြောင်းလဲလုပ်ကိုင်သောစီမကိန်းတစ်ခုဖြစ်ပါသည်။
- ပတ်ဝန်းကျင်ထိခိုက်မှုမရှိသောစီမံကိန်းဟုမှတ်ယူနိုင်ပါသည်။

စီမံကိန်းအကြောင်းအရာ။

ဂိုးအေဝိုင်အေမော်တာအင်တာနေရှင်နယ်အုပ်စုကုမ္ပဏီလီမိတက်သည်ဖက်စပ်မော်တော်ယာဉ်အုပ်စုကုမ္ပဏီအဖြစ် ၂၀၁၇ ခုနှစ်တွင်စတင်တည်ထောင်ခဲ့ပါသည်။ မြန်မာနိုင်ငံတွင်မှတ်ပုံတင်ထားပြီးမတည်ရင်းနှီးငွေအမေရိကန်ဒေါ်လာ သန်း၅၀ ဖြစ်ပါသည်။

မန္တလေးတိုင်းအတွင်းရှိမြို့သာစက်မှုဇုန်စီမံကိန်းသည်ပြည်တွင်းပြည်ပတို့မှရင်းနှးမြှုပ်နှံသူများအားမြေနေရာများကိုနှစ်တို၊နှစ်ရှည်ငှားရမ်းလုပ်ကိုင်ခွင့်ပေးမည့်လုပ်ငန်းဖြစ်ပါသည်။ယခုစီမံကိန်းတည်ဆောက်ထားသည့်စက်မမြို့တော်အားခေတ်မီနည်းစနစ်များအသုံးပြုပြီး၊အများပိုင်ကုမ္ပဏီအဖြစ်တည်ထောင်လုပ်ကိုင်စေရန်အတွက်မန္တလေးတိုင်းဒေသကြီးအစိုးရကအားပေးကူညီပံ့ပိုးထားပါသည်။ယခုတည်ဆောက်သည်စက်မှုဇုန်သည်အာရှအမြန်လမ်း၊အာရှရထားလမ်းကွန်ယက်၊ဧရာဝတီမြစ်နှင့်အပြည်ပြည်ဆိုင်ရာလေဆိပ်တို့နှင့်ဆက်သွယ်ထားရှိပါသည်။

ဤစီမံကိန်းသည် Gold A Y A Motors International Group Co.,Ltdကမန္တလေးတိုင်းဒေသကြီး၊မြင်းခြံခရိုင်၊ငါန်းဇွန်မြို့နယ်၊မြို့သာစက်မှုဇုန်၊မြို့သာနှင့်နဘူးအိုင်ကျေးရွာရှိမြေကွက်အမှတ်(ဘီ-၁-၁)၊မြေတိုင်းရပ်ကွက်အမှတ်(စက်မှုဇုန်နယ်မြေ၊ဇုန်-၂-စီ)မြေအကျယ်(၂၀. ၀၈၄)ဧကရှိမြေပေါ်တွင်မော်တော်ယာဉ်အမျိုးမျိုးတပ်ဆင်ထုတ်လုပ်သည့်စက်ရုံစီမံကိန်းကိုနိုင်ငံခြားသားများရင်းနှီးမြှုပ်နှံသည့်ဥပဒေနှင့်အညီအကောင်အထည်ဖေါ်ဆောင်ရွက်မည့်စီမံကိန်းဖြစ်ပါသည်။

ယခုစီမံကိန်းကိုအောက်ပါအတိုင်းရည်ရွယ်ချက်များထားရှိပါသည်။

(က)မြို့ပြနှင့်လမ္မှုဖွံ့ဖြိုးမှုတိုးတက်စေပြီးဆင်းရဲမှုလျော့ချစေရန်၊
(ခ)ကျွမ်းကျင်သူများမွေးထုတ်၍စက်မှုကဏ္ဍဖွံ့ဖြိုးတိုးတက်လာစေရန်၊
(ဂ)စက်မှုကဏ္ဍတွင်နိုင်ငံတကာမှရင်းနှီးမြှုပ်နှံမှုများဆွဲဆောင်နိုင်စေရန်၊
(ဃ)စက်မှုဇုန်ဖွံ့ဖြိုးမှု၊အလုပ်အကိုင်အခွင့်အလမ်းများရရှိလာမှုတို့နှင့်အတူလူနေမှုအဆငဖွံ့ဖြိုးတိုးတက်လာစေရန်၊
(င)နိုင်ငံတော်အတွက်ဘဏ္ဍာငွေတိုးတက်ရရှိလာစေရန်၊

စီမံကိန်းသည်မြေ၂၀. ၀၈၄၈ဧကပေါ်တွင်တည်ရှိပါသည်။ပထမအဆင့်အတွက်အသုံးပြုမည့်မြေ၁၄၅၃၇. ၈၉စတုရန်းမီတာပေါ်တွင်ပြခန်းများအတွက်မြေဧရိယာ၃၆၅၈. ၂၈စတုရန်းမီတာ၊ လူနေအိပ်ခန်း ၂၇၂၈ စတုရန်းမီတာနှင့်စက်ရုံအတွက ၈၁၅၁. ၆၁ စတုရန်းမီတာတို့အသုံးပြုသွားမည်ဖြစ်ပါသည်။

စီမံကိန်းကို Phase I နှင့် Phase II ဟူ၍ခွဲခြားထားပြီး၊ Phase I တွင် Workshop, Showroom Domitory တို့ပါဝင်ပါသည်။ အခြားသောစီမံကိန်းများကဲ့သို့ Phase Iနှင့် Phase II တို့ တစ်ပြိုင်နက်တည်ဆောက်ခြင်းမဟုပ်ဘဲ Phase I အရလုပ်ငန်းစတင်ဖေါ်ထုတ်ပြီးစီးမှသာ Phase II ကဆက်လက်လုပ်ကိုင်သွားနိုင်မည့်စီမံကိန်းဖြစ်ပါသည်။

စီမံကိန်းတည်နေရာ။
ယခုစီမံကိန်းသည်မြောက်လတ္တီတွဒ်၂၁ ၄၃’ ၅၂” နှင့် ၊ အရှေ့လောင်ဂျီ တွဒ် ၉၅ ၃၇’ ၃၀” တွင်တည်ရှိပါသည်။
စက်ရုံနေရာချထားရှိမှု၊
အောက်ပါပုံသည်စက်ရုံစီမံကိန်းတည်ဆောက်ပြီးစီးသွားပါကကားပြခန်း၊ဝန်ထမ်းနေအိမ်နှင့်စက်ရုံများထားရှိမှုကိုတွေ့မြင်ရမည့်ပုံဖြစ်ပါသည်။

Type of Project
ယခုစီမံကိန်းသည်သယ်ယူပို့ဆောင်ရေးနှင့်စက်မှုကဏ္ဍဖွံ့ဖြိုးရေးအတွက်သာမကဘဲ၊စီးပွါးရေး၊လူမှုရေး၊မြို့ရွာဖွံ့ဖြိုးရေးတို့အပြင်တစ်ဦးချင်းနှင့် နိုင်ငံတော်၏ဝင်ငွေများတိုးတက်လာစေရန်တို့ကိုအထောက်အကူပြုမည့်စီမံကိန်းလုပ်ငန်းအမျိုးအစားဖြစ်ပါသည်။

စီမံကိန်း၏ရည်ရွယ်ချက်နှင့်လုပ်ဆောင်မည့်နည်းစဉ်အကျဉ်းချုပ်။
ဂိုးအေဝိုင်အေမော်တာအင်တာနေရှင်နယ်အုပ်စုကုမ္ပဏီလီမိတက်သည် BAIC DAoDa နှင့် BAIC ChangHe Brand ကုန်အမှတ်တံဆိပ်များပါသည့်မော်တော်ယာဉ်နှင့်အပိုပစ္စည်းများရောင်းချခြင်း၊ရောင်းချပြီးနောက်ဝန်ဆောင်မှုတို့အပါအဝင်မော်တော်ယာဉ်အရစ်ကျရောင်းချခြင်းတို့ကိုပါတာဝန်ယူလုပ်ကိုင်မည်ဖြစ်ပါသည်။

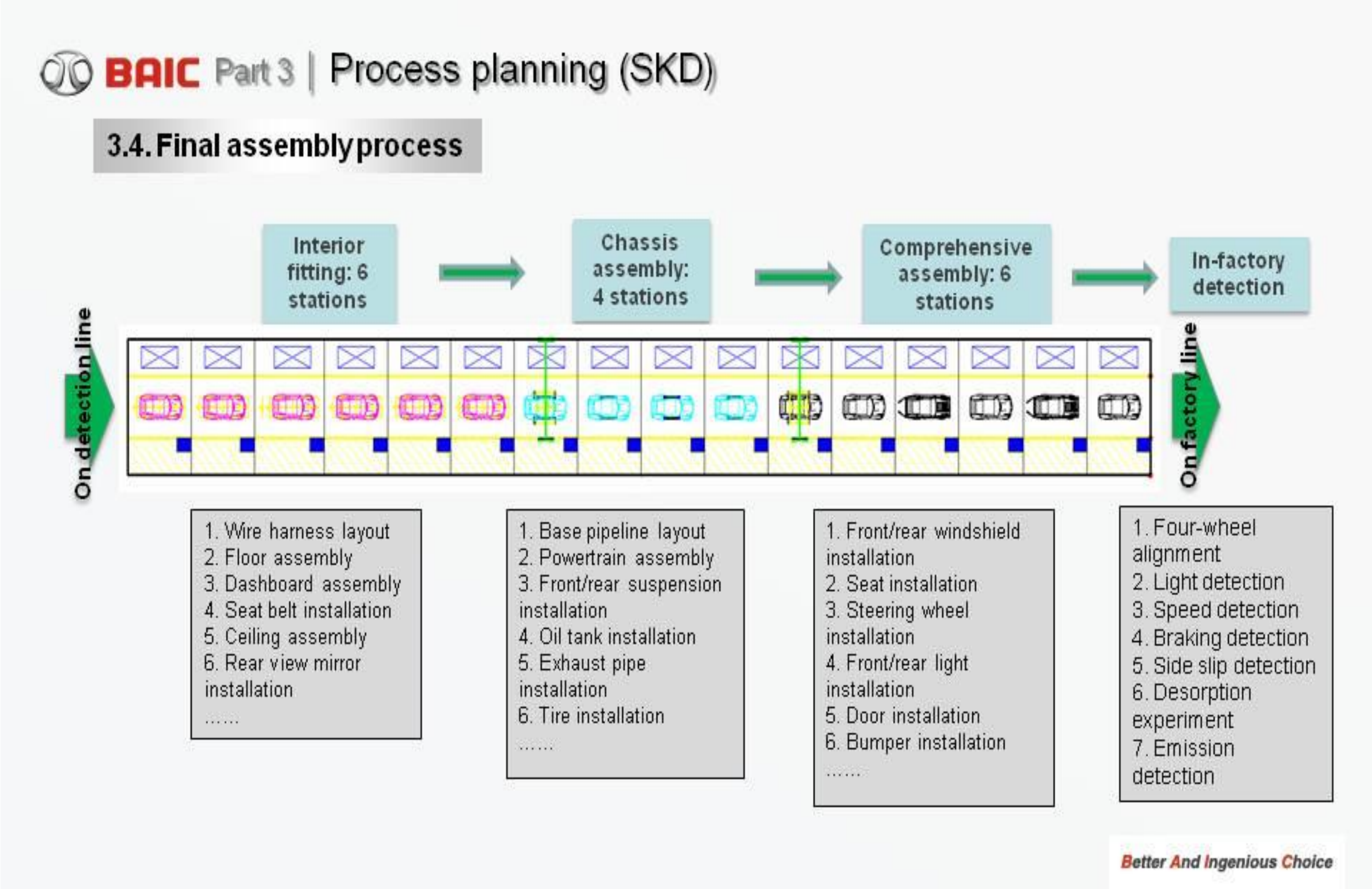
လက်ရှိတွင်အမျိုးအစား(၇)မျိုးဖြစ်သော အိမ်စီးကား၊ SUV, MPV လုပ်ငန်းသုံးကား၊ ပစ်ကပ်ကား၊ အထူးကားနှင့် စွမ်းအင်အသစ်သုံးကားများကိုထုတ်လုပ်သွားမည်ဖြစ်ပါသည်။ ရန်ကုန်နှင့်မန္တလေးမြို့တို့တွင်အရောင်းကိုယ်စားလှယ်များရှိမည်ဖြစ်သည်။အဓိကလုပ်ငန်းများမှာကားရောင်းမှုကိုယ်စားလှယ်ခန့်ထားမှု၊ဈေးကွက်၊ရောင်းချပြီးနောက်ဝန်ဆောင်မှု၊ဝယ်ယူသူများနှင့်ဆက်သွယ်ချိတ်ဆက်မှု၊စွမ်းအင်သစ်သုံးကားများအရောင်းအဝယ်၊အများနှင့်ဆက်ဆံမှု၊လူသားအရင်းအမြစ်၊ဘဏ္ဍာရေးဆိုင်ရာ၊ အိုင်တီ နှင့် ဝယ်ယူခြင်းတို့ဖြစ်ပါသည်။

ဇယား (၁. ၁)ထုတ်လုပ်မည့်မော်တော်ယာဉ်အမျိုးအစား။

No.	Type of Vehicles Model	Specification
1	CHANGHE Q35 SUV	1.5L Elite Version, AT, Smart Version
2	CHANGHE M 60 MPV – 1.5 T Standard	1.5 T Standard
3	CHANGHE A 6, Sedan Car	CTV Elite Version
4	DODA V-8 MPV	Business Type
5	DODA K-9 Pick-up	4 x 4 Diesel Version
6	CHANGHE Q-7 SUV	CTV, Luxury Version
7	CHANGHE M20S MPV	5 MT, Standard

ထုတ်လုပ်မှုနည်းအဆင့်ဆင့်ပုံစံ

ယခုစီမံကိန်းသည်မော်တော်ယာဉ်ထုတ်လုပ်ရောင်းချခြင်းဟုဆိုသော်လည်းမော်တော်ယာဉ်အစိတ်အပိုင်းအားလုံးကိုနိုင်ငံခြားမှတင်သွင်းလာပြီးယခုစက်ရုံတွင်တပ်ဆင်ထုတ်လုပ်ရောင်းချခြင်းသာဖြစ်ပါသည်။မော်တော်ယာဉ်တပ်ဆင်ထုတ်လုပ်သည့်လုပ်ငန်းစဉ်အဆင့်ဆင့်ကိုအောက်ပါအတိုင်းဖော်ပြထားပါသည်။



စီမံကိန်းလုပ်ဆောင်မည့်ကာလ။

စီမံကိန်းကိုပြည်တွင်းလုပ်သားဦးရေ၁၁၀နှင့်နိုင်ငံခြားသား၁၅ဦးတို့ဖြင့် မော်တော်ယာဉ်အမျိုးမျိုးတို့ကိုနှစ်ရှည် (နှစ်၅၀) သတ်မှတ်လုပ်ဆောင်သွားမည်ဖြစ်ပါသည်။

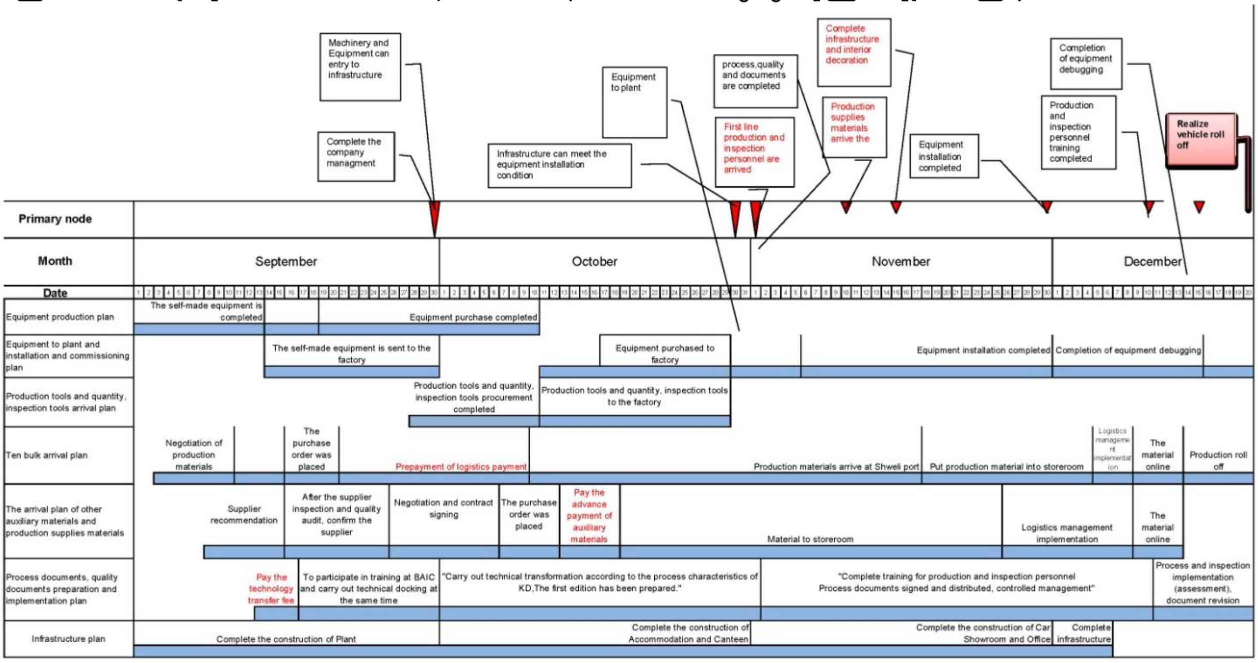
Gold A Y A Motors International Company Limited

(၁)ကုမ္ပဏီစတင်သည့်နေ့ ၂၈-၆-၂၀၁၇

(၂)MIC ခွင့်ပြုသည့်နေ့ ၂၇-၃-၂၀၁၈

(၃)စီးပွါးဖြစ်စတင်လုပ်ကိုင်သည့်နေ့ ၂၅-၆-၂၀၁၉

စက်ရုံတည်ဆောက်ရေးလုပ်ငန်းစီမံကိန်းအချိန်ဇယား။ (နောက်ဆက်တွဲတွင်ပုံကြီးပါရှိပါသည်။)



စီမံကိန်းစတင်ဆောင်ရွက်သည့်အချိန်မှစ၍စီမံကိန်းပိတ်သိမ်းသည့်အဆင့်အထိဆောင်ရွက်မည့်အဆင့်လိုက်အကောင်အထည်ဖော်မည့်အချိန်ဇယား။

Project Plan

Content	Item	Project														备注
		2017	2018				2019				2020	2021	2022	2023	2024	2025—2087	
			1st qtr	2nd qtr	3rd qtr	4th qtr	1st qtr	2nd qtr	3rd qtr	4th qtr							
Project Plan	lease landing																50 years contract & 20 years extension
	construction plan		construction start date - 20.5.2018 Finished date - end														
	equipment installation		At the end of the year of 2018，all the equipment began to enter the factory，April 2019 finish all equipment installation，June 2019														
	Production Plan								600 units	1000 units	5000 units	10000 units	15000 units	20000 units	30000 units	50000 units	all are per years

When the land lease expires, the company will continue to lease the land, upgrade the plant, upgrade the equipment and upgrade the products, and continue to operate.

ဇယား (၁.၂) စီမံကိန်းအချိန်ဇယား (အကြိုတည်ဆောက်ရေး၊တည်ဆောက်ရေးနှင့်ပုံမှန်လည်ပတ်ကာလ)

စဉ်	ဖော်ပြချက်	စီမံကိန်းကာလ				
		2017	2018	2019	2020~24	2025~87
က	အကြိုတည်ဆောကရေးကာလ					
ခ	တည်ဆောက်ရေးကာလ					
ဂ	ပုံမှန်လည်ပတ်စဉ်ကာလ					
	(၁)ထုတ်လုပ်ရေးနှင့်ပြုပြင်ထိန်းသိမ်းခြင်း					
	(၂)ပတ်ဝန်းကျင်နှင့်စွန့်ပစ်အမှိုက်စီမံခန့်ခွဲမှု					
	(၃)စောင့်ကြပ်ကြည့်ရှုခြင်း					

ဇယား (၁. ၃)စီမံကိန်းအကြောင်းအချက်များ။ The salient data of the project (Myanmar)

စဉ်	ဖော်ပြချက်		အရေအတွက်	မှတ်ချက်
၁	စီမံကိန်းအမျိုးအစား		JV (မြန်မာ ၂၀% + နိုင်ငံခြား ၈၀%)	ဖက်စပ်ရင်းနှီးမြှုပ်နှံမှု
၂	ရင်းနှီးမြှုပ်နှံမှုပမာဏ	မြန်မာ	အမေရိကန်ဒေါ်လာ ၃. ၁၃ သန်း	အမေရိကန်ဒေါ်လာနှင့်ညီမျှသောမြန်မာကျပ်ငွေအပါအဝင်စုစု ပေါင်းရင်းနှီးမြှုပ်နှံမှုပမာဏ (15.32 MUS$)
		နိုင်ငံခြား	အမေရိကန်ဒေါ်လာ ၁၂. ၁၉ သန်း	
		စုစုပေါင်း	အမေရိကန်ဒေါ်လာ ၁၅. ၃၂ သန်း	
၃	ကုမ္ပဏီတည်ထောင်သည့်နှစ်		28-6-2017	(Company Registration No. 100642476)
၄	လုပ်ငန်းစတင်လည်ပတ်သည့်နေ့		25-6-2019	
၅	လိုင်စင်များ		မြန်မာရင်းနှီးမြှုပ်နှံမှုကော်မရှင်ခွင့်ပြုမိန့်၊ ၀၆၇/ ၂၀၁၈ (၂၇-၃-၂၀၁၈) စီးပွါးရေးနှင့်ကူးသန်းရောင်းဝယ်ရေးဝန်ကြီးဌာန၊ထကသလိုင်စင်-၀၁၁၉၄၅ (၁၇-၀၈-၂၀၁၈) စီမံကိန်း၊ဘဏ္ဍာရေးနှင့်စက်မှုဝန်ကြီးဌာန၊ ပုဂ္ဂလိကစက်မှုလုပ်ငန်းမှတ်ပုံတင်လက်မှတ်၊ ၂တလ/ကြီး/ ၂၄၄၉ (၆-၈-၂၀၁၉) စက်မှုဝနကြီးဌာန၊လျှပ်စစ်-စစ်ဆေးရေး၊ လျှပ်စစ်ဓာတ်အားအသုံးပြုခြင်းဆိုင်ရာအန္တရာယ်ကင်းရှင်းကြောင်းလက်မှတ်၊ EI-MDY-187 (18-6-21~17-6-22) စက်မှုဝန်ကြီးဌာန၊လျှပ်စစ်-စစ်ဆေးရေး၊(၁)လျှပ်စစ်ဓာတ်အားထုတ်လုပ်ခြင်းနှင့်အသုံးပြုခြင်းဆိုင်ရာမှတ်ပုံတင်၊-076/2019 (21-6-19~20-6-23) (၂)လျှပ်စစ်ဓာတ်အားထုတ်လုပ်ခြင်းနှင့်အသုံးပြုခြင်းဆိုင်ရာမှတ်ပုံတင်အမှတ်၊-077/2019 (21-6-19~20-6-23)	
၆	ကုန်ကြမ်းတင်သွင်းသည့်နိုင်ငံ		တရုတ် + ပြည်တွင်း ပစည်းများ	နောက်ဆက်တွဲတွင်ကြည့်ရှုရန်
၇	ကုန်ချောတင်ပို့သည့်နိုင်ငံ		ပြည်တွင်းဈေးကွက်အတွက်သာ	
၈	ထုတ်ကုနနှင့်ပမာဏ		မော်တော်ယာဉ်အမျိုးမျိုးနှစ်စဉ်ပျမ်းမျှစီးရေ၁၀၀၀မှ၃၇၅၀၀ခန့်	(Changhe –Q35SuV,M60MPV-1.5 std, A6 Sedan Car, Q7-SUV, M20SMPV, DODA V8-MPV, K9-Pick-up)
၉	အလုပ်ချိန်	နေ့စဉ်(၀၈၊၀၀-၁၇၊၀၀)	၈ နာရီ နေ့လည်နားချိန်(၁၁၊၃၀-၁၂၊၃၀)	အချိန်နှင့်ထုတ်ကုန်လိုအပ်ချက်အရအချိန်ပိုလုပ်ကိုင်ပါသည်။
		အပတ်စဉ်	၄၀ နာရီ (၅ရက်)	
		နှစ်စဉ်	၂၅၀ ရက်ခန့်	
၁၀	စက်ပစ္စည်းစာရင်း		စက်ပစည်းတင်သွင်းသည့်စာရင်း	နောက်ဆက်တွဲ
၁၁	လုပ်သားဦးရေ		110 nos. 15 nos.	ပြည်တွင်းလုပ်သား 88%, ပြည်ပပညာရှင် 12%
၁၂	နှစ်စဉ်လောင်စာဆီလိုအပ်ချက်(ဒီဇယ်)		ဓါတ်ဆီ(၃၈၄၀ ဂါလံ)၊ ဒီဇယ်ဆီ (၃၆၀၁၆၀ ဂါလံ)	မီးစက်၊ရုံးသုံးကားနှင့်ကားသစ်များအတွက်
၁၃	နှစ်စဉ်ချောဆီလိုအပ်ချက်		2,040 gals	မော်တော်ယာဉ်သစ်များစက်စမ်း

			သပ်ခြင်းနှင့်မီးစက်အတွက်
၁၄	နှစ်စဉ်လောင်စာ(ထင်း)လိုအပ်ချက်	-	ထင်းလောင်စာသုံးဘွိုင်လာမရှိပါ
၁၅	နှစ်စဉ်လျှပ်စစ်လိုအပ်ချက်	5,500,000 units	လိုင်းအားနှင့်မီးစက်
၁၆	နှစ်စဉ်ရေလိုအပ်ချက်	185,600gals	အဝီစိတွင်း (၆လက) ၁ တွင်း
၁၇	စွန့်ပစ်အစိုင်အခဲ	0.2 ~1.0 tons per day	စက်မှုဇုန်သို့စွန့်ပစ်
၁၈	စွန့်ပစ်အရည် (ရေအိမ်နှင့်တစ်ကိုယ်ရေသုံး၊မီးဖိုချောင်)	$10m^3$ ~$50m^3$ per year	စွန့်ပစ်အရည် ပြင်ပသို့စွန့်ထုတ်ချက်ခြင်းမရှိ။

Need of EIA

ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်းသည်အဆိုပြုစီမံကိန်းကြောင့်ပတ်ဝန်းကျင်အပေါ်မည်သို့သောသက်ရောက်မှုများဖြစ်ပေါ်စေနိုင်ပြီး၊အဆိုပါသက်ရောက်မှုကြောင့်နောက်ဆက်တွဲမည်သို့ ခံစားရနိုင်သည်ကိုကြိုတင်မှန်းဆတိုင်းတာခြင်းဖြစ်ပါသည်။ဖေါ်ပြပါသက်ရောက်မှုတွင်ကောင်းသည့်သက်ရောက်မှုနှင့်မကောင်းသည့်သက်ရောက်မှုဟူ၍လည်းရှိနိုင်ပြီးအဆိုပါအချက်သည်ပင်လျှင်ရေရှည်ဖွံ့ဖြိုးတိုးတက်မှုအတွက်အရေးပါသောအချက်တစ်ခုပင်ဖြစ်ပါသည်။ မြန်မာနိုင်ငံသည်လုပ်သားအရင်းအမြစ်ကြွယ်ဝသောနိုင်ငံဖြစ်သည်နှင့်အညီစက်မှုနှင့်အလုပ်အကိုင်ဖွံ့ ဖြိုးတိုးတက်ရေးသည်နိုင်ငံတော်၏အရေးပါသောစီးပွါးရေးတစ်ခုဖြစ်ပါသည်။ ယခုအခါနိုင်ငံတော်သည်စီးပွါးရေးဖွံ့ ဖြိုးတိုးတက်ရေးအတွက်ဆောင်ရွက်နေသည့်အလျှောက်ပြည်တွင်းပြည်ပရင်းနှီးမြှုပ်နှံမှုများလည်းအရှိန်အဟုန်ဖြင့်ဝင်ရောက်လာလျက်ရှိရာ၊ ပြည်ပနှင့်ပြည်တွင်းမှနိုင်ငံသားများဖက်စပ်ရင်းနှီးမြှုပ်နှံမစီမံကိန်းသည်လည်း တစ်ခုအပါအဝင်ဖြစ်ပါသည်။

Gold A Y A Motors International Group Co.,Ltd၏ မန္တလေးတိုင်းဒေသကြီး၊မြင်းခြံခရိုင်၊ငါန်းဇွန်မြို့ နယ်၊မြို့သာစက်မှုဇုန်၊မြို့သာနှင့်နဘူးအိုင်ကျေးရွာရှိမြေကွက်အမှတ်(ဘီ-၁-၁)၊မြေတိုင်းရပ်ကွက်အမှတ်(စက်မှုဇုန် နယ်မြေ၊ဇုန်-၂-ဇီ)မြေအကျယ်(၂၀. ၀၈၄)ဧကရှိမြေပေါ်တွင်မော်တော်ယာဉ်အမျိုးမျိုးတပ်ဆင်ထုတ်လုပ်သည့်စက်ရုံစီမံကိန်းသည်ဒေသအတွက်သာမကဘဲနိုင်ငံတော်အတွက် GDP တိုးတက်လာစေရန်အမှန်တကယ်လိုအပ်ချက်အရတည်ဆောက်ရန်လျာထားရခြင်းဖြစ်ပါသည်။

EIA ဆောင်ရွက်ခဲ့သည့်နောက်ခံအချက်အလက်များ၊

ယခုစီမံကိန်းသည်မြန်မာနိုင်ငံ၏ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်းဆိုင်ရာလုပ်ထုံးလုပ်နည်းတွင်ပါရှိသည့်စီမံကိန်းအမျိုးအစားသတ်မှတ်ချက်များအရသတ္တုနှင့်စက်ပစ္စည်းများထုတ်လုပ်ခြင်းလုပ်ငန်းမော်တော်ယာဉ်နှင့်မော်တော်ဆိုင်ကယ်တပ်ဆင်ထုတ်လုပ်ခြင်းလုပ်ငန်းခေါင်းစဉ်အောက်တွင်ပါရှိပြီး EIA လုပ်ဆောင်ရမည်ဖြစ်သဖြင့်လိုက်နာဆောင်ရွက်ခြင်းဖြစ်ပါသည်။

သတ္တုစက်ပစ္စည်းနှင့်လျှပ်စစ်ပစ္စည်းများထုတ်လုပ်ခြင်းလုပ်ငန်း (၂၀၁၅ ပတ်ဝန်းကျင်ဆိုင်ရာလုပ်ထုံးလုပ်နည်း)

စဉ်	ရင်းနှီးမြှုပ်နှံမှုစီမံကိန်းအမျိုးအစား	ကနဦးပတ်ဝန်းကျင်ဆန်းစစ်ခြင်းပြုလုပ်ရန်လိုအပ်သည့်အရွယ်အစား	ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်းပြုလုပ်ရန်လိုအပ်သည့်အရွယ်အစား	မှတ်ချက်
၉၈	မော်တော်ယာဉ်နှင့်မော်တော်ဆိုင်ကယ်တပ်ဆင်ထုတ်လုပ်ခြင်း	ထုတ်လုပ်မှုဧရိယာစတုရန်းမီတာ၅၀၀၀နှင့်အထက်သို့မဟုတ်အော်ဂဲနစ်ပျော်ဝင်ပစ္စည်းတစ်နာရီလျှင်၆ကီလိုဂရမ်နှင့်အထက်သုံးစွဲခြင်း	ဝန်ကြီးဌာနကပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်းပြုလုပ်ရန်လိုအပ်သည်ဟုသတ်မှတ်သည့်စီမံကိန်းလုပ်ငန်းအားလုံး	

နယ်ပယ်သတ်မှတ်ခြင်း။

အထက်ဖော်ပြပါဇယားအရယခုစီမံကိန်းသည်ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်းပြုလုပ်ရန်လိုအပ်သည့်စီမံကန်းဟုသတ်မှတ်ရမည်ဖြစ်ပါသည်။

ယခုတင်ပြသည့် Environmental & Social Impact Assessment (Scoping Report) အစီရင်ခံစာသည် မန္တလေးတိုင်းဒေသကြီး၊မြင်းခြံခရိုင်၊ငါန်းဇွန်မြို့ နယ်၊မြို့သာစက်မှုဇုန်၊မြို့သာနှင့်နဘူးအိုင်ကျေးရွာရှိမြေကွက်အမှတ်(ဘီ-၁-၁)၊မြေတိုင်းရပ်ကွက်အမှတ်(စက်မှုဇုန် နယ်မြေဇုန်-၂-စီ)မြေအကျယ်(၂၀. ၀၈၄)ဧကရှိမြေပေါ်တွင်မော်တော်ယာဉ်အမျိုးမျိုးတပ်ဆင်ထုတ်လုပ်သည့်စက်ရုံစီမံကိန်း၏Phase I, Phase II အပါအဝင် Project တစ်ခုလုံးအတွက်တင်ပြခြင်းဖြစ်ပါသည်။ နယ်ပယ်အတိုင်းအတာသတ်မှတ်ခြင်းကိုအောက်ပါအတိုင်းဖော်ပြအတည်ပြုသတ်မှတ်ပြီးဖြစ်ပါသည်။

- စီမံကိန်းဧရိယာအတွင်းလေ့လာမည့်နယ်မြေဧရိယာ၊သက်ရောက်မှုရှိမည့်နယ်မြေဧရိယာ၊အချိန်ကန့်သတ်ချက်၊စီမံကိန်းအဆင့်နှင့်အကျိုးသက်ဆိုင်သူများကိုတိုင်းတာ၍အချက်အလက်များကောက်ခံခြင်း။
- ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်းအတွက်လိုက်နာရန်လိုအပ်သည့်တည်ဆဲစည်းမျဉ်း၊စည်းကမ်းနှင့်စံချိန်စံညွှန်းများဖော်ပြခြင်း။
- အဆိုပြုစီမံကိန်းနှင့်မူလရှိသည့်ပတ်ဝန်းကျင်ဆိုင်ရာအခြေခံအချက်အလက်နှင့်အကြောင်းအရာများစုဆောင်းခြင်း၊ဆန်းစစ်ခြင်းနှင့်ဆက်လက်လေ့လာရန်လိုအပ်မှုရှိမရှိဆန်းစစ်ခြင်း။
- အဆိုပြုစီမံကိန်းအတွက်နယ်ပယ်အနီးပတ်ဝန်းကျင်အတွင်းရှိထိလွယ်ခိုက်လွယ်သည့်အခြေအနေများကိုဖော်ပြသတ်မှတ်ခြင်း၊အချက်အလက်စုဆောင်းခြင်း၊လေ့လာစုံစမ်းမှုများမည်သို့ဆောင်ရွက်ရမည်၊နောက်ထပ်ဆက်လက်လေ့လာမှုများနှင့်စုံစမ်းစစ်ဆေးမှုများလိုအပ်မှုရှိမရှိစသည်တို့ဖော်ပြခြင်း။
- စက်ရုံမှထွက်ရှိလာနိုင်ချေရှိသောပတ်ဝန်းကျင်ထိခိုက်နိုင်မှုများဖော်ထုတ်သတ်မှတ်ခြင်း။
- ထိခိုက်မှုအလားအလာများကိုလျော့ပါးနိုင်သည့်နည်းများနှင့်လက်တွေ့ကြသောထိခိုက်မှုကိုလျော့ပါးစေရန်နည်းလမ်းများဖော်ပြခြင်းနှင့်ဖော်ထုတ်တိုင်းတာခြင်း။
- အနီးအနားသို့ တိုင်အလားအလာရှိသောဆူညံမှုများကိုထုတ်နှုတ်စီစစ်ရန်နှင့်လိုအပ်လျှင်လျော့ပါးစေမည့်နည်းများကိုအဆိုပြုရည်ညွှန်းရန်
- စီမံကိန်းအတွက်လိုအပ်သည့်အများပြည်သူသဘောထားကောက်ယူမှုအပေါ်နည်းပညာအကြံနှင့်အထောက်အကူပြုနိုင်ရန်။

စီမံကိန်းဖော်ဆောင်သူ၊ပိုင်ရှင်နှင့်ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးတာဝန်ယူသည့်အဖွဲ့များကိုအောက်ပါဇယား၁. ၄တွင်ဖော်ပြထားပါသည်။ပတ်ဝန်းကျင်ဆိုင်ရာဆန်းစစ်မှုအစီအစဉ်ကိုဇယား၁. ၅တွင်ဖော်ပြထားပါသည်။

ဇယား (၁. ၄)စက်ရုံစီမံကိန်းပိုင်ရှင်၊ဖော်ဆောင်သူနှင့်ပတ်ဝန်းကျင်ဆိုင်ရာ EIA တာဝန်ယူသည့်အဖွဲ့။

Item	Description
ကုမ္ပဏီအမည်	Gole A Y A Motors International Group Co.,Ltd,
စီမံကိန်းအမည်	မော်တော်ယာဉ်အမျိုးမျိုးတပ်ဆင်ထုတ်လုပ်သည့်စက်ရုံစီမံကိန်း
စီမံကိန်းဖော်ဆောင်သူ၊ပိုင်းရှင်	Mr. Li- Jifeng (General Manager) (Contact Person: Ms. Myat Noe Oo)
လိပ်စာ	**စက်ရုံလိပ်စာ**- မြေကွက်အမှတ် (ဘီ-၁-၁)မြေတိုင်းရပ်ကွက်အမှတ်(စက်မှုဇုန်နယ်မြေ၊ဇုန်-၂-စီ)မြို့သာစက်မှုဇုန်၊ငါန်းဇွန်မြို့နယ်၊မြင်းခြံခရိုင်၊မန္တလေးတိုင်းဒေသကြီး၊ ဖုံး၊၀၉၂၆၄၈၀၈၂၃၄ email; myatnoeoo.0412@gmail.com **ရုံးလိပ်စာ**- အမှတ် (အေ-၂)၆၃လမ်း၊ လမ်း၃၀နှင့်၃၁ ကြား၊ချမ်းအေးသာဇံရပ်ကွက်၊မန္တလေးမြို့၊မန္တလေးတိုင်းဒေသကြီး၊ ဖုံး၊၀၉၂၅၆၄၈၆၉၃ email; myatnoeoo.0412@gmail.com
Tel;	Mobile 09264808234
Email;	Myatnoeoo.0412@gmail.com
EIA အစီရင်ခံစာအပေါ် တာဝန်ယူသည့်အဖွဲ့	ကောင်းကျော်စေအင်ဂျင်နီယာလုပ်ငန်းကုမ္ပဏီလီမိတက်။ (Contact Person: Ms. Myint Myint Thein)
လိပ်စာ	အမှတ်၃၁၊ပင်လုံရိပ်မွန်၅လမ်း၊သဃ်န်းကျွန်းမြို့နယ်၊ရန်ကုန်မြို့ ဖုံး ၀၁-၇၅၇၁၂၈၄ - ၀၉၂၅၀၀၇၃၃၁၂ email: mdoffice@kaungkyawsay.com
Verified by	Daw Mya Mya Aye
Examined by	U Htun Naing Aung
Compiled by	Daw Myint Myint Thein

ဇယား (၁. ၅)Overall Framework of Environmental Impact Assessment

	2018					
Item	April	May	June	July	Aug	Sep
Selection of EIA Consultant						
Base line Survey						
Water Sampling						
Soil Sampling						
Air Measurement						
Noise and Traffic						
Flaura and Fauna Survey						
Culture Survey						
EIA Preparation						
Stakeholders Meeting						
Scoping & EIA report						

ဥပဒေ၊နည်းဥပဒေ၊လုပ်ထုံးလုပ်နည်း၊မူဝါဒနှင့်ဥပဒေမူဘောင်များ။

စီမံကိန်းဖော်ဆောင်သူသည်အောက်ဖော်ပြပါဥပဒေ၊နည်းဥပဒေ၊လုပ်ထုံးလုပ်နည်း၊မူဝါဒနှင့်ဥပဒေမူဘောင်များနှင့်အခါအားလျော်စွာထုတ်ပြန်သည့်ဆက်စပ်အမိန့်ကြေငြာချက်များကိုလိုက်နာသွားမည်ဖြစ်ပါသည်။

ဇယား (၁. ၆) ဥပဒေ၊နည်းဥပဒေ၊လုပ်ထုံးလုပ်နည်း၊မူဝါဒနှင့်ဥပဒေမူဘောင်များ။

စဉ်	ဥပဒေများ	Law,Rule, regulation and Act.
၁	မြန်မာနိုင်ငံရင်းနှီးမြှုပ်နှံမှုဥပဒေ ၂၀၁၆	Myanmar Investment Law 2016
၂	မြေလွတ်၊မြေလပ်၊မြေရိုင်းများစီမံခန့်ခွဲရေးဥပဒေ ၂၀၁၂	Free Land, Vacant Land, Margin Land Management Law2012
၃	အလုပ်သမာအဖွဲ့ အစည်းဥပဒေ ၂၀၁၁	Labor Organization Law 2011
၄	အလုပ်သမားအငြင်းပွါးမှုဖြေရှင်းရေးဥပဒေ ၂၀၁၂	Settlement of Labour Disputes Law 2012
၅	လူမှုဖူလုံရေးဥပဒေ ၂၀၁၂	Social Security Law 2012
၆	အနဲဆုံးလုပ်ခကြေးငွေဥပဒေ ၂၀၁၃	Minimum Wages Law 2013
၇	အခကြေးငွေပေးချေရေးဥပဒေ ၂၀၁၆	Payment of Wages Law 2016
၈	ခွင့်နှင့်အလုပ်ပိတ်ရက်များဥပဒေ ၁၉၅၁	The Leaves and Holidays Act 1951
၉	အလုပ်သမားလျော်ကြေးအက်ဥပဒေ ၁၉၅၁	Workmen Compensation Act 1951
၁၀	ရေနံနှင့်ရေနံထွက်ပစ္စည်းဆိုင်ရာဥပဒေ ၂၀၁၇	Petroleum and Product of Petroleum Law 2017
၁၁	ရေနံနည်းဥပဒေများ၁၉၃၇	Petroleum Rules 1937
၁၂	မော်တော်ယာဉ်ဥပဒေ ၂၀၁၅	The Motor Vehicle Law 2015
၁၃	မော်တော်ယာဉ်နည်းဥပဒေ ၁၉၈၇	The Motor Vehicle Rule 1987
၁၄	ပြည်သူ့ကျန်းမာရေးဥပဒေ၁၉၇၂	Public Health Law 1972
၁၅	ကူးစက်ရောဂါများကာကွယ်နှိမ်နင်းရေးဥပဒေ ၁၉၉၅	Prevention and Control of Communicable Diese Law 1995
၁၆	မြန်မာ့အာမခံလုပ်ငန်းဥပဒေ ၁၉၉၃	The Myanma Insurance Law 1993
၁၇	မြန်မာနိုင်ငံမီးသတ်တပ်ဖွဲ့ ဥပဒေ ၂၀၁၅	Myanmar Fire Force Law 2015
၁၈	ပို့ကုန်သွင်းကုန်ဥပဒေ၊၂၀၁၃	The Export and Import Law 2013
၁၉	အလုပ်အကိုင်နှင့်ကျွမ်းကျင်မှုဖွံ့ဖြိုးတိုးတက်ရေးဥပဒေ၂၀၁၃	Employment and Skill Development Law 2013
၂၀	ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဥပဒေ ၂၀၁၂	The Environmental Conservation Law 2012
၂၁	ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးနည်းဥပဒေ ၂၀၁၄	The Environmantal Conservation Rules 2014
၂၂	ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်းဆိုင်ရာလုပ်ထုံးလုပ်နည်း ၂၀၁၅	Environmantal Impact Assessment Procedure 2015
၂၃	အမျိုးသားပတ်ဝန်းကျင်ဆိုင်ရာအရည်အသွေး(ထုတ်လွှတ်မှု)လမ်းညွှန်ချက်များ ၂၀၁၅	The National Environmental Quality (Effluent) Guideline 2015
၂၄	တိုင်းရင်းသားလူမျိုးများ၏အခွင့်အရေးကာကွယ်စောင့်ရှောက်သည့်ဥပဒေ ၂၀၁၅	The Rights of National Races Law 2015
၂၅	ဧရာဝတီတိုင်းလွှတ်တော်မှပြဌာန်းသည့်ဥပဒေများအနက်ဆက်စပ်သည့်ဥပဒေများ၊နည်းဥပဒေများ။	All related Laws and Rules enacted by Ayeyarwaddy Division Region Hluttaw
၂၆	နိုင်ငံခြားသားရင်းနှီးမြှုပ်နှံမှုဥပဒေ (၂၀၁၂)	The Foreign Investment Law (2012)
၂၇	ကုန်သွယ်လုပ်ငန်းခွန်ဥပဒေ (၂၀၁၄)	The Commercial Tax Law 2014
၂၈	သဘာဝဘေးအန္တရာယ်ဆိုင်ရာစီမံခန့်ခွဲမှုဥပဒေ (၂၀၁၃)	The Natural Disaster Management Law 2013
၂၉	အလုပ်ရုံများအက်ပဒေ (၁၉၅၁)	The Factory Act (1951)
၃၀	ဓာတုနှင့်ဆက်စပ်ပစ္စည်းကြောင့်ထိခိုက်မှုအန္တရာယ်ကာကွယ်ခြင်းဆိုင်ရာဥပဒေ ၂၀၁၃	The Prevention of Hazard from Chemical and Related Substances Law 2013
၃၁	ဘွိုင်လာဥပဒေ (၂၀၁၅)	The Boiler Law (2015)
၃၂	မြေအောက်ရေအက်ဥပဒေ (၁၉၃၀)	The Underground Water Act (1930)

ဇယား (၁. ၇) စီမံကိန်းအဆိုပြုသူကလိုက်နာမည့်ကတိကဝတ်များ။

ကတိကဝတ်၏အတိုချုပ်အမည်	အမှတ်စဉ်	ကတိကဝတ်အားရှင်းလင်းဖော်ပြချက်	အစီရင်ခံစာပါရည်ညွှန်းချက် (အခန်း)
ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှုအစီအစဉ်သည်တိကျခိုင်မာကြောင်းနှင့်ပြည့်စုံကြောင်း	၁	ယခုတင်ပြသည့်ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှုအစီအစဉ်သည်သက်ဆိုင်ရာပညာရှင်များနှင့်တတ်ကျွမ်းသူပုဂ္ဂိုလ်များတို့မှသေ ချာစွာကိုယ်တိုင်ကွင်းဆင်းစစ်ဆေးကောက်ယူပြီးပြန်လည်တင်ပြခြင်းဖြစ်သောကြောင့်တိကျခိုင်မာကြောင်းတင်ပြအပ်ပါသည်။	အခန်း (၃. ၄) (က-၁)
ဤလုပ်ထုံးလုပ်နည်းအပါအဝင်သက်ဆိုင်ရာဥပဒေများကိုတိကျစွာလိုက်နာ၍ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှုအစီအစဉ် ကိုဆောင်ရွက်ထားကြောင်း	၂	ယခုအစီရင်ခံစာကိုပတ်ဝနးကျင်ထိန်းသိမ်းရေးဥပဒေ၊နည်းဥပဒေတို့နှင့်လုပ်ထုံးလုပ်နည်းအပါအဝင်၊အမျိုးသားပတ်ဝန်းကျင်ဆိုင်ရာအရည်အသွေး(ထုတ်လွှတ်မှု)လမ်းညွှန်ချက်များကိုတိကျစွာလိုက်နာ၍ဤပတ်ဝန်းကျင်ဆိုင်ရာစီမံခန့်ခွဲမှုအစီအစဉ်အစီရင်ခံစာတို့ကိုရေးဆွဲတင်ပြထားပါကြောင်း တင်ပြအပ်ပါသည်။	အခန်း (၃. ၄) (က-၂)
စီမံကိန်းဖေါ်ဆောင်သူသည်ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှုအစီရင်ခံစာပါကတိကဝတ်၊ပတ်ဝန်းကျင်ထိခိုက်မှုလျော့ချရေးလုပ်ငန်းများနှင့်စောင့်ကြပ်ကြည့်ရခြင်းအစီအစဉ်များကိုအပြည့်အဝအစဉ်အမြဲလိုက်နာဆောင်ရွက်မည်ဖြစ်ကြောင်း	၃	စီမံကိန်းပိုင်ရှင်သည်ယခုအစီရင်ခံစာဖြင့်တင်ပြထားသည့်အပေါ် သိရှိနားလည်သည့်အတိုင်းပတ်ဝန်းကျင်ဆိုင်ရာစီမံခန့် ခွဲမှုအစီအစဉ်၊ကတိကဝတ်၊ပတ်ဝန်းကျင်ထိခိုက်မှုလျော့ချရေးလုပ်ငန်းများနှင့်စောင့်ကြပ်ကြည့်ရှုခြင်းအစီအစဉ် များကိုအပြည့် အဝအစဉ်အမြဲလိုက်နာဆောင်ရွက်မည်ဖြစ်ကြောင်းဝန်ခံအပ်ပါသည်။	အခန်း (၃. ၄) (က-၃)
စီမံကိန်းလုပ်ငန်းများပြီးစီး၍စီမံကိန်းပိတ်သိမ်းချိန်တွင်လူမှုဝန်းကျင်အားထိခိုက်မှုအနည်းဆုံးဖြစ်စေရန်ဆောင်ရွက်မည်ဖြစ်ကြောင်း နှင့်ထိခိုက်မှုများရှိလာပါကထိခိုက်မှုအနည်းဆုံးဖြစ်စေမည့်အစီအစဉ်များကိုလည်းလုပ်ဆောင်သွားမည်ဖြစ်ကြောင်းကတိဝန်ခံချက်။	၄	စီမံကိန်းဖော်ဆောင်သူသည်စီမံကိန်းလုပ်ငန်းများပြီးစီး၍စီမံကိန်းပိတ်သိမ်းချိန်တွင်လူမှုဝန်းကျင်အားထိခိုက်မှုအနည်းဆုံးဖြစ်စေရန် ဆောင်ရွက်မည်ဖြစ်ကြောင်းနှင့်ထိခိုက်မှုများရှိလာပါကထိခိုက်မှုအနည်းဆုံးဖြစ်စေမည့်အစီအစဉ်များကိုလည်းလုပ်ဆောင်သွားမည်ဖြစ်ကြောင်းဝန်ခံအပ်ပါသည်။	အခန်း (၃. ၄) (က-၃)
စောင့်ကြပ်ကြည့်ရှုမှုအစီအစဉ်အစီရင်ခံစာပေးပို့ရန်ကတိဝန်ခံချက်။	၅	စီမံကိန်းပိုင်ရှင်သည်ပတ်ဝန်းကျင်ဆိုင်ရာဆန်းစစ်ခြင်းဆိုင်ရာလုပ်ထုံးလုပ်နည်းအပိုဒ်(၁၀၈)အရပတ်ဝန်းကျင်စီမံခန့် ခွဲမှုအစီအစဉ်၏ဇယားပါအတိုင်းစောင့်ကြပ်ကြည့်ရှုမှုအစီအစဉ်ကိုဝန်ကြီးဌာနသို့၆လတစ်ကြိမ်သို့မဟုတ်ဝန်ကြီးဌာနကသတ်မှတ်ထားသည့်အတိုင်းတင်ပြမည်ဖြစ်ကြောင်းဝန်ခံအပ်ပါသည်။	အခန်း (၈. ၁၆)
ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှုအစီအစဉ်အတွက်လျာထားရံပုံငွေအပေါ်ကတိဝန်ခံချက်။	၆	ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှုအစီအစဉ်၊စောင့်ကြပ်ကြည့်ရှုခြင်းအစီအစဉ်၊ CSRလုပ်ငန်းများအတွက်လျာထားရံပုံငွေဖြင့်လုံလောက်မှုမရှိပါကအနီးစပ်ဆုံးBODအစည်းအဝေးသို့တင်ပြတောင်းခံသွားမည်ဖြစ်ပါသည်။	အခန်း (၈. ၂၀) (ဗ-၄)

- လေ့လာခဲ့သောအဓိကအစားထိုးစီမံကိန်း၊နှိုင်းယှဉ်လေ့လာခြင်း၏ရလဒ်များ။

မူလစီမံကိန်းအရသတ်မှတ်ထားသည့်နေရာများသည်လယ်ယာမြေသာဖြစ်ပြီးစီးပွါးတွက်လုပ်ကိုင်နိုင်ခြင်းမရှိသောကြောင့်စီမံကိန်းဖေါ်ဆောင်လုပ်ကိုင်ရန်အခက်အခဲမရှိသည်ကိုတွေ့ရှိရပါသည်။

- ရွေးချယ်ထားသောအစားထိုးစီမံကိန်းကြောင့်ဖြစ်ပေါ်လာနိုင်သည့်သိသာထင်ရှားသောပတ်ဝန်းကျင်ထိခိုက်မှုတစ်ခုချင်းစီအားအတိုချုပ်ရှင်းလင်းဖေါ်ပြချက်။

ယခုစီမံကိန်းကိုအောက်ပါအတိုင်းစီမံကိန်းမတည်ဆောက်မီအစားထိုးစီမံကိန်းများအဖြစ်လေ့လာရွေးချယ်ခဲ့သော်လည်းယခုစီမံကိန်းသည်သာအကောင်းဆုံးဖြစ်သည်ကိုတွေ့ ရပါသည်။သို့ ဖြစ်ပါသဖြင့်ရွေးချယ်ထားသောအစားထိုးစီမံကိန်းများကိုယင်းတို့ အားရွေးချယ်ရသည့်အကြောင်းရင်းများကိုအောက်ပါအတိုင်းဖေါ်ပြအပ်ပါသည်။

- မြို့သာစက်မှုဇုန်တွင်တည်ဆောက်မည့်အဆိုပါစီမံကိန်းသည်နေရာအနေအထားအရအသင့်တော်ဆုံးသောနေရာဖြစ်ခြင်း။
- ဒေသဖွံ့ဖြိုးရေးအတွက်အဓိကအထောက်အကူပြုမည့်စီမံကိန်းဖြစ်သောကြောင့်ဒေသခံများစိတ်ထက်သန်စွာပါဝင်ဆောင်ရွက်လိုခြင်း။
- စိုက်ပျိုးမြေဖြစ်သော်လည်းပိုမိုအကျိုးရှိနိုင်သည့်နည်းလမ်းနှင့်စီးပွါးဖြစ်ဆောင်ရွက်ခြင်း။
- အလားတူမြေနေရာရရှိရန်ခက်ခဲခြင်း။

လက်ရှိပတ်ဝန်းကျင်အခြေအနေ။
ယခုစီမံကိန်းသည် မန္တလေးတိုင်းဒေသကြီး၊မြင်းခြံခရိုင်၊ငါန်းဇွန်မြို့ နယ်၊မြို့သာစက်မှုဇုန်၊မြို့သာနှင့်နဘူးအိုင်ကျေးရွာရှိမြေကွက်အမှတ်(ဘီ-၁-၁)၊မြေတိုင်းရပ်ကွက်အမှတ်(စက်မှုဇုန်နယ်မြေ၊ ဇုန်-၂-စီ)မြေအကျယ်(၂၀. ၀၈၄)ဧကရှိမြေပေါ်တွင်တည်ရှိပါသည်။ မြောက်လတ္တီတွဒ်၂၁ ၄၃’ ၅၂” နှင့် ၊ အရှေ့လောင်ဂျီ တွဒ် ၉၅ ၃၇’ ၃၀” တွင်တည်ရှိပါသည်။ စီမံကိန်းသည်မန္တလေး-မြို့သာကားလမ်းပေါ်မြို့သာနှင့်နဘူးအိုင်ကျေးရွာအကြားတွင်တည်ရှိပါသည်။စက်ရုံ၏ပတ်ဝန်းကျင်အနီးအနားတွင်လယ်ကွင်းများသာရှိပါသည်။ မြေမျက်နှာပြင်သွင်ပြင်မှာမြေပြန့်ဖြစ်ပါသည်။
ရာသီဥတု။
ငါန်းဇွန်မြို့နယ်သည် မန္တလေးတိုင်းအတွင်းရှိပြီးမြန်မာနိုင်ငံ၏အခြားသောဒေသများကဲ့သို့သမပိုင်းဒေသရာသီ၃ မျိုးရှိပါသည်။နွေ၊မိုး၊ဆောင်း ရာသီများအဖြစ်၄လစီအလှည့်ကျဖြစ်ပေါ်ပါသည်။အပူချိန်အနေဖြင့် ၁၂ ိမှ၄၂ ိစင်တီဂရိတ်အတွင်းရှိတတ်ပါသည်။
သက်မွေးဝမ်းကြောင်းမှု။
ငါန်းဇွန်မြို့နယ်တွင်နေထိုင်ကြသူများ၏သက်မွေးဝမ်းကြောင်းမှုသည်စုံလင်ပြီး၊အရောင်းအဝယ်နှင့်လခစား၊ဝန်ထမ်းနှင့်နေ့စားလုပ်သူများပါဝင်သည်သာမကပဲစစ်မှုထမ်းများ၊နိုင်ငြခားတွင်သွားရောက်လုပ်ကိုင်ကြသူများပါဝင်ပါသည်။

ပတ်ဝန်းကျင်နှင့်လူမှုစီးပွါးရေးအပေါ်သိသာထင်ရှားသည့်အဓိကထိခိုက်မှုများနှင့်ထိခိုက်မှုလျော့ချရေးနည်းလမ်းများ။
ယခုစီမံကိန်းကြောင့်ဖြစ်ပေါ်နိုင်သည့်ထိခိုက်မှုများကိုယေဘူယျအားဖြင့် ၂ပိုင်းခွဲခြားနိုင်ပါသည်။

၁။ စီမံကိန်းတည်ဆောက်မှုကာလဆောက်လုပ်ရေးလုပ်ငန်းစဉ်များကြောင့်ယာယီသို့ မဟုတ်အချိန်တိုအတွင်းထိခိုက်မှုများ။
၂။ ရေရှည်သို့ မဟုတ်အမြဲတမ်းလုပ်ငန်းစဉ်များကြောင့်ထိခိုက်နိုင်မှုများ။

- စီမံကိန်းကြောင့်ထိခိုက်ခံရနိုင်သည့်ပတ်ဝန်းကျင်အကြောင်းအတိုချုပ်ရှင်းလင်းဖော်ပြချက်။

စီမံကိန်းကြောင့်ထိခိုက်ခံရနိုင်သည့်သဘာသပတ်ဝန်းကျင်နှင့်လူမှုစီးပွါးအကျိုးသက်ရောက်နိုင်မှုများကိုအောက်ပါအတိုင်းအတိုချုပ်ရှင်းလင်းဖော်ပြအပ်ပါသည်။

ဇယား (၁. ၈) စီမံကိန်းကြောင့်သဘာဝပတ်ဝနးကျင်နှင့်လူမှုစီးပွါးအကျိုးသက်ရောက်နိုင်မှုများ။

သက်ရောက်မှုများကိုအဆင့် (၄)ဆင့်ခွဲကာဖော်ပြထားပါသည်။

A-	သိသာသောဆိုးကျိုးသက်ရောက်မှု	A+	သိသာသောကောင်းကျိုးသက်ရောက်မှု
B-	ဆိုးကျိုးသက်ရောက်မှုအနဲငယ်ရှိ	B+	ကောင်းကျိုးသက်ရောက်မှုအနဲငယ်ရှိ
C	အကျိုးသက်ရောက်မှုမရှင်းလင်းသဖြင့်ထပ်မံလေ့လာသင့်သည်။		
D	အကျိုးသက်ရောက်မှုမရှိ(သို့)မရှိသလောက်ဖြစ်၍ထပ်မံလေ့လာရန်မလိုအပ်။		

အမျိုးအစား	Assessment Parameter	Scoping Results: Before/During Construction (BC/DC)	Scoping Results: Operation Stage(OS)	Assessment Results: Before/During Construction (BC/DC)	Assessment Results: Operation Stage(OS)	ဆန်းစစ်ခြင်း (တွေ့ရှိချက်)
ညစ်ညမ်းမှု	လေအရည်အသွေး	B-	B-	B-	B-	BC/DC: ဆောက်လုပ်ရေးလုပ်ငန်းခွင်မြေပြုပြင်ခြင်းများမှထွက်ရှိသောဖုန်မှုန့်၊ သဲမှုန့် များသည်ပတ်ဝန်းကျင်နေရာများသို့ ပြန့်လွင့်ပြီးလေထုကိုညစ်ညမ်းစေနိုင်ပါသည်။ OS: လေထုညစ်ညမ်းမှုအနဲငယ်ရှိနိုင်ပါသည်။ အဘယ်ကြောင့်ဆိုသော်လုပ်ငန်းခွင်ထဲသို့ လာရောက်သည့်မော်တော်ယာဉ်များသာမကဘဲထုတ်လုပ်သည့်မော်တော်ယာဉ်များစက်စမ်းသပ်မှုကြောင့်လေထုညစ်ညမ်းမှုကိုဖြစ်စေနိုင်ပါသည်။
	ရေ အရည်အသွေး	D	D	D	D	BC/DC: ဆောက်လုပ်ရေးလုပ်ငန်းခွင်များမှထွက်ရှိလာမည့်ရွံ့ ပျော်ရည်များနှင့်ညစ်ညမ်းရေများသည်ရေအရည်အသွေးကိုကျဆင်းစေမည်ဖြစ်ပါသည်။ OS: ရေအရည်အသွေးကျဆင်းမှုသည်အနီးအနားရှိရေတွင်းရေကန်များအတွင်းသို့ စီးဝင်ပါကရေ၏အရည်အသွေးအပေါ် ထိခိုက်နိုင်ပါသည်။
	စွန့်ပစ်ပစ္စည်း	B-	D	B-	D	BC/DC: ဆောက်လုပ်ရေးဆိုင်ရာစွန့်ပစ်အမှိုက်များကြောင့်ထိခိုက်နိုင်ပါသည်။ OS:Process flow အရစွန့်ပစ်အမှိုက်များမထွက်ရှိပါ။မီးဖိုချောင်ထွက်အမှိုက်များ၊ တစ်ကိုယ်ရေနှင့်အခြားသောထုတ်ပိုးပစ္စည်းများမှစွန့်ပစ်အမှိုက်များကြောင့်ထိခိုက်နိုင်ပါသည်။
	စွန့်ပစ်အရည်	B-	D	D	D	BC/DC:စီမံကိန်းဖော်ကာလစွန့်ပစ်အရည်များမထွက်ရှိပါ။ OS: ယေဘူရအားဖြင့်မော်တော်ယာဉ်တပ်ဆင်သည့်လုပ်ငန်းမှစွန့်ပစ်အရည်မထွက်ရှိပါ။ သို့ ရာတွင်လုပ်ငန်းတစ်ခုချင်းစီမှထွက်ရှိသည့်စက်ဆီနှင့်အညစ်အကြေးများ ကိုမှုစနစ်တကျစီစစ်လုပ်ကိုင်ခြင်းမရှိပါကထိခိုက်နိုင်ပါသည်။
	မြေဆီလွှာအပေါ် ထိခိုက်မှု	D	D	D	D	BC/DC:ဆောက်လုပ်ရေးကာလမြေတူးဖော်မှုများကြောင့်မြေဆီလွှာထိခိုက်မှုကိုဖြစ်စေနိုင်သော်လည်းပတ်ဝန်းကျင်၏မြေဆီလွှာအပေါ် ထိခိုက်မှုမရှိနိုင်ပါ။ OS: လုပ်ငန်းတည်ဆောက်ပြီးပုံမှန်လုပ်ငန်းများမှစွန့် ပစ်ဆီနှင့်အမှိုက်များကြောင့်မြေဆီလွှာအပေါ် ထိခိုက်မှုဖြစ်ပေါ် စေနိုင်ပါသည်။
	အသံနှင့်တုန်ခါမှု	B-	B-	B-	B-	BC/DC:ဆောက်လုပ်ရေးဆိုင်ရာစက်ယန္တယားများကြောင့်အသံဆူညံမှုနှင့်တုန်ခါမှုများဖြစ်ပေါ် စေနိုင်ပါသည်။ OS: ယေဘူရအားဖြင့်၊ မီးစက်များလည်ပတ်မှု၊အင်ဂျင်နှင့်မော်တော်ယာဉ်စမ်းသပ်မှုတို့ကြောင့်အသံဆူညံမှုနှင့်တုန်ခါမှုများရှိနိုင်ပါသည်။
	မြေနိမ့်ကျဆင်းမှု	B-	B-	D	C	BC/DC:ဆောက်လုပ်ရေးကာလအတွင်းမြေနိမ့်ဆင်းမှုထက်မြေဖို့ ခြင်းများကြောင့် မြေမြင့်တက်မှုများဖြစ်ပေါ် နိုင်ပါသည်။ OS: စီမံကိန်းတည်ဆောက်ပြီးအဆိုပါဧရိယာအတွင်းမြေအောက်ရေထုတ်ယူသုံးစွဲခြင်းကြောင့်မြေနိမ့်ဆင်းမှုဖြစ်ပေါ် စေနိုင်ပါသည်။
	အနံ ့ဆိုးများ	B-	B-	B-	B-	BC/DC: ဆောက်လုပ်ရေးကာလတွင်စက်ယန္တယားများကြောင့်အနံ ့ဆိုးများရှိနိုင်ပါသည်။ OS: မော်တော်ယာဉ်စက်စမ်းသပ်ခြင်းလုပ်ငန်းများကြောင့်မီးခိုးနှင့်အနံ့များဖြစ်ပေါ်နိုင်ပါသည်။
သဘာ၀ပတ်ဂန်း	သစ်တောကြိုးဝိုင်း	D	D	D	D	စီမံကိန်းဧရိယာအတွင်းနှင့်အနီးတွင်ကာကွယ်ထိန်းသိမ်းထားသောဥယျာဉ်နှင့်သစ်တောကြိုးဝိုင်းများမရှိပါ။
	အပင်၊သတ္တဝါနှင့်	C	C	C	C	စီမံကိန်းဒေသရှိမှီခိုနေထိုင်သည့်တိရိစ္ဆာန်နှင့်အပင်များဆိုင်ရာမှတ်တမ်းများမရှိပါ။

ကျင်	**ဂေဟာစနစ်**					စမံကိန်းကြောင့်အနီးပတ်ဝန်းကျင်ဂေဟစနစ်ကိုထိခိုက်နိုင်ရန်မရှိပါ။
	ဇလဗေဒဆိုင်ရာ	B-	B-	B-	B-	BC/DC:ဆောက်လုပ်ရေးကာလမြေအောက်ရေကိုထုတ်ယူသုံးစွဲသဖြင့်ထိခိုက်မှုရှိနိုင်ပါသည်။ OS: မြေအောက်ရေထုတ်ယူသုံးစွဲခြင်းကြောင့်ထိခိုက်မှုရှိနိုင်ပါသည်။
	မြေမျက်နှာပြင်နှင့်ဘူမိဗေဒဆိုင်ရာ	D	D	D	D	စီမံကိန်းဖေါ်ဆောင်သည့်မြေနှင့်အနီးပတ်ဝန်းကျင်သည်မြေပြန့်သာဖြစ်သောကြောင့်မူလမြေမျက်နှာပြင်နှင့်ဘူမိဗေဒဆိုင်ရာကိုထိခိုက်နိုင်မှုမရှိပါ။
လူမှုပတ်ဝန်းကျင်	အစမရွှေ့ပြောင်းစေမှု	D	D	D	D	စီမံကိန်းကြောင့်မူလနေထိုင်သူများအတွက်ပြောင်းရွှေ့နေရာချထားမှုများမရှိပါ။ မူလနေထိုင်သူများမရှိပါ။ စီမံကိန်းးအနီးတွင်နေထိုင်သူများနှင့်တွေ့ဆုံဆွေးနွေးမှုရလဒ်အရဒေသခံများကလည်းစီမံကိန်းအပေါ်ထောက်ခံမှုများပြုလုပ်ခဲ့ပါသည။
	အကျိုးမြတ်နှင့်ထိခိုက်မှုအပေါ်ခွဲဝေမှုများယွင်းခြင်း	C	C	C	C	
	ဒေသခံများနှင့်သဘောထားကွဲလွဲမှု၊ ဝိရောဓိ၊အငြင်းပွါးမှု	D	D	D	D	
	လိင်(ကျား/မ)ဖြစ်တည်မှု	D	D	D	D	
	ကလေးအခွင့်အရေး	D	D	D	D	
	အနည်းစုဖြစ်သောလူမျိုးစုနှင့်ဒေသခံတိုင်းရင်းသားများ	D	D	D	D	
	ဆင်းရဲမှု	A+	A+	A+	A+	စီမံကိန်းအနီးနေထိုင်သူများစီးပွါးရေးနှင့်အလုပ်အကိုင်များပိုမိုဖြစ်ထွန်းလာမှုကြောင့်ဆင်းရဲမှုလျော့နဲပပျောက်သွားနိုင်ကြောင်းတွေ့ရှိရပါသည်။
	နေထိုင်မှုနှင့်အသက်မွေးမှု	A+	A+	A+	A+	BC/DC:OS: ဒေသစီးပွါးရေးနှင့်အလုပ်အကိုင်များပိုမိုတိုးတက်ဖွံ့ ဖြိုးလာနိုင်သဖြင့်ဒေသခံများအတွက်သိသာသောကောင်းကျိုးများသက်ရောက်နိုင်မည်ဖြစ်နိုင်ပါသည်။
	လက်ရှိလူမှုအဆောက်အအုံနှင့်ဝန်ဆောင်မှုများ	B+	B+	B+	B+	BC/DC: လမ်းပမ်းဆက်သွယ်မှုနှင့်ယာဉ်သွားလာမှုများပိုမိုများပြားလာနိုင်သကဲ့သို့ ကောင်းမွန်လာနိုင်ပါသည်။ OS: စီမံကိန်းပြီးစီးပြီးအဆိုပါမြေပေါ်တွင်ဖြစ်ပေါ်လာမည့်မြို့ပြစီမံကိန်းလမ်းများနှင့်အဆောက်အဦးများသည်ပိုမိုကောင်းမွန်လာမည်ဖြစ်ပါသည်။
	ရေသုံးစွဲမှု	B-	D	D	D	BC/DC: ရေသုံးစွဲမှုကြောင့်မူလရေအသုံးချစနစ်အပေါ်ထိခိုက်နိုင်မှုများရှိနိုင်ပါသည်။ OS: စီမံကိန်းများအတွက်လိုအပ်သည့်ရေကိုအဝီစိတွင်းမှထိန်းချုပ်ရယူသုံးစွဲခြင်းကြောင့်မူလစနစ်များအပေါ်ထိခိုက်မှုမရှိစေရေးအလေးထားဆောင်ရွက်ရမည်ဖြစ်ပါသည်။
	ယဉ်ကျေးမှုအမွေအနှစ်	C	C	C	C	စီမံကိန်းတည်ဆောက်သည့်နေရာအနီးတွင်မူလကတည်းကယဉ်ကျေးမှုဆိုင်ရာအဆောက်အဦးများမရှိသည့်အပြင်၊စီမံကိန်း၏အနီးအနားတွင်ရှိသောယဉ်ကျေးမှုဆိုင်ရာအဆောက်အဦးများကိုယခုစီမံကိန်းကြောင့်လုံးဝထိခိုက်နိုင်မှုများမရှိပါ။ တိုးတက်လာသည့်နေထိုင်သူများနှင့်စီမံကိန်းမှလျာထားချက်ဖြစ်သောလူမှုရေးရံပုံငွေများကြောင့်ပင်ကောင်းကျိုးသက်ရောက်မှုအချို့ရှိလာနိုင်ပါသည်။
	မြေပြင်အနေအထား၊တောတောင်ရေမြေရှုခင်း	C	C	C	C	စီမံကိန်းတည်ဆောက်သည့်မူလနေရာကိုစနစ်တကျမြေဖေါ်ထုတ်မှုကြောင့်မြေပြင်အနေအထားပိုမိုကောင်းမွန်လာနိုင်သည်။
	AIDS/HIV ကဲ့သို့သောအန္တရာယ်(သို့)ကူးစက်ရောဂါများ	B-	B-	B-	B-	ပတ်ဝန်းကျင်နှင့်မြေအနေအထားများပိုမိုကောင်းမွန်လာနိုင်သော်လည်း တိုးတက်လာမည့်လူဦးရေကြောင့်ကူးစက်ရောဂါများပိုမိုလာနိုင်သည့်အလားအလာရှိသဖြင့်အထူးဂရုစိုက်ရမည်ဖြစ်ပါသည်။
	လုပ်ခွင်အခြေအနေ (လုပ်ငန်းခွင်ဘေးကင်းလုံခြုံမှု)	B-	B-	B-	B-	BC/DC: OS: စီမံကိန်းအဆငဆင့်တိုင်းအတွက်လုပ်ငန်းခွင်ထိခိုက်မှုအနၲရာယ်ရှိနိုင်ပါသည်။
အခြား	**မတော်တဆထိခိုက်မှု**	B-	B-	B-	B-	BC/DC: စီမံကိန်းကာလအတွင်းမတော်တဆထိခိုက်မှုများရှိနိုင်ပါသည်။ OS: စီမံကိန်းမည်သည့်အဆင့်ပြီးဆုံးစေကာမူတိုးတက်လာသောမော်တော်ယာဉ်များကြောင့်ယာဉ်ထိခိုက်မှုအန္တရာယ်ရနိုင်ပါသည်။
	ကမ္ဘာ့ပူနွေးမှု	B-	B-	B-	B-	BC/DC:ဆောက်လုပ်ရေးဆိုင်ရာစက်များ၊မော်တော်ယာဉ်များများကြောင့်လေထုညစ်ညမ်းမှုပိုမိုဖြစ်ပေါ်လာနိုင်ပါသည်။ OS: ပုံမှန်အချိန်တွင်အသုံးပြုမည့်မော်တော်ယာဉ်များသွားလာမှု၊စက်များလည်ပတ်မနှင့်အမိုက်များမီးရှို့မှုကြောင့်ဖန်လုံအိမ်ဓတ်ငွေ့များထုတ်လွတ်မှုတိုးပွါးလာနိုင်ပါသည်။

ဇယား (၁. ၉)ထိခိုက်မှုအပေါ် အဆင့်သတ်မှတ်ချက်အချုပ်။

စဉ်	ထိခိုက်မှု။	Rating Significance
၁	ပတ်ဝန်းကျင်လေထုအပေါ် သက်ရောက်မှု(ညစ်ညမ်းမှု)	Low (outside) High (inside)
၂	သဘာဝပတ်ဝန်းကျင်အပေါ် သက်ရောက်မှု(ရေအရင်းအမြစ်)	High (w/o treatment system Low (With treatment system
၃	အသံနှင့်တုန်ခါမှု	Low-Medium (w/o Generator Running) High (with Generator Running)
၄	မြေပတ်ဝန်းကျင်အပေါ် သက်ရောက်မှု(မြေဆီလွှာညစ်ညမ်းမှု)	Low (Construction Period)
၅	ဇီဝလောကအပေါ် သက်ရောက်မှု	Low
၆	ဒေသခံများကျန်းမာရေးနှင့်လုံခြုံရေးအပေါ် သက်ရောက်မှု	Low but A+
၇	အလုပ်အကိုင်ပွင့်လင်းမှုအပေါ် သက်ရောက်မှု	High A+
၈	လုပ်ငန်းခွင်ကျန်းမာရေးနှင့်လုံခြုံရေးအပေါ် သက်ရောက်မှု	Low but A+
၉	အခွင့်အလမ်းများနှင့်သွားလာမှုကန့်သတ်မှုများ	-
၁၀	ဒေသစိုက်ပျိုးလုပ်ကိုင်သူများအပေါ် အစားထိုးစီးပွါးရေး	-
၁၁	အထွေထွေစီးပွါးရေးဖွံ့ဖြိုးတိုးတက်မှု	High A+
၁၂	ကုန်စည်သယ်ယူပို့ဆောင်မှု	High A+

ယခုစီမံကိန်းသည်စက်မှုဇုန်မြေပေါ်တွင်လုပ်ငန်းအသစ်ဖေါ်ထုတ်ခြင်းဖြစ်သော်လည်းသဘာဝပတ်ဝန်းကျင်ကိုထိခိုက်မှုမရှိပါ။ထို့အပြင်ပိုမိုကောင်းမွန်ထိရောက်သည့်ထုတ်လုပ်မှုနည်းစနစ်နှင့်စက်များကိုတပ်ဆင်အသုံးပြုသွားမည်ဖြစ်သောကြောင့်ယခင်စက်မှုဇုန်မဖော်ထုတ်မီကလယ်ယာလုပ်ငန်းများထက်ကောင်းကျိုးများပိုမိုပေးနိုင်သည့်စီမံကိန်းဖြစ်သည်ကိုတွေ့ ရှိရပါသည်။ ထိခိုက်မှုလျော့ချသည့်လုပ်ငန်းများကိုဆက်လက်ဖော်ပြအပ်ပါသည်။

ထိခိုက်မှုလျော့ချသည့်လုပ်ငန်းများ (မဆောက်လုပ်မီကာလ)

အမျိုးအစား	အချက်အလက်	Mitigation and Consideration Measures in (မဆောက်လုပ်မီကာလ)	တာဝန်ရှိသူ
ညစ်ညမ်းမှု	လေအရည်အသွေး	မရှိ	စီမံကိန်းအကောင်အထည်ဖော်ဆောင်သူ
	ရေ အရည်အသွေး	မရှိ	စီမံကိန်းအကောင်အထည်ဖော်ဆောင်သူ
	စွန့်ပစ်ပစ္စည်း	စီမံကိန်းအဆင့်တိုင်းတွင်စွန့်ပစ်အမှိုက်များလျော့ချခြင်း။	စီမံကိန်းအကောင်အထည်ဖော်ဆောင်သူ
	အသံနှင့်တုန်ခါမှု	အသံနှင့်တုန်ခါမှုဖြစ်ပေါ်နိုင်သည့်အရာများကိုလေ့လာပြီးလိုအပ်ပါကကြားခံနယ်မြေနှင့်အသံထိန်းတို့ တပ်ဆင်ခြင်း။	စီမံကိန်းအကောင်အထည်ဖော်ဆောင်သူ
သဘာဝပတ်ဝန်းကျင်	အပင်၊သတ္တဝါနှင့်မျိုးပွါးကွဲပြားမှု	မလိုအပ်ဘဲသစ်ပင်ခုတ်ခြင်းမပြုပါ၊အပင်စိုက်ခြင်း၊လမ်းရေကန်များတည်ဆောက်ခြင်းစသည့်အမြဲစိမ်းလမ်းစေရန်အတွက်စီမံကိန်းများရေးဆွဲထားမည်။	စီမံကိန်းအကောင်အထည်ဖော်ဆောင်သူ
	ဇလဗေဒအခြေအနေ	မြေအောက်ရေသုံးစွဲမှုနှင့်ဆောက်လုပ်ရေးလုပ်ငန်းခွင်များမှထွက်ရှိသောစွန့်ပစ်ရေကိုအနယ်စစ်ကန်များစနစ်သုံးစွဲခြင်းဖြင့်ထိန်းသိမ်းမည်။	စီမံကိန်းအကောင်အထည်ဖော်ဆောင်သူ
လူမှုပတ်ဝန်းကျင်	နေထိုင်မှုနှင့်အသက်မွေးမှု	အခြေခံအချက်အလက်များကောက်ယူခြင်း။	စီမံကိန်းအကောင်အထည်ဖော်ဆောင်သူ
	ရေသုံးစွဲမှု	မြေအောက်ရေသုံးစွဲမှုထိန်းချုပ်ခြင်း။	စီမံကိန်းအကောင်အထည်ဖော်ဆောင်သူ
	လက်ရှိလူမှုအဆောက်အအုံနှင့်သွားလာမှု	ဒေသခံတိုသွားလာနေသည့်လက်ရှိအများသုံးလမ်းများအဆင့်မြင့်ပေးခြင်းနှင့်ဖောက်လုပ်ပေးခြင်း။	စီမံကိန်းအကောင်အထည်ဖော်ဆောင်သူ
	AIDS/HIV ကဲ့သို့သောအန္တရာယ်(သို့)ကူးစက်ရောဂါများ	ကူးစက်ဖြစ်ပွါးနိုင်သောရောဂါများကိုအောက်ပါအတိုင်းဆောင်ရွက်ပေးရန်၊ • ကူးစက်မှုကြိုတင်ကာကွယ်ခြင်း၊ • အသိပညာဖြန့်ဝေခြင်း၊	စီမံကိန်းအကောင်အထည်ဖော်ဆောင်သူ
	လုပ်ခွင်အခြေအနေ	IFC အဖွဲ့၏သတ်မှတ်လမ်းညွှန်ချက်များအတိုင်းလုပ်ငန်းခွင်ဘေးကင်းလုံခြုံရေး	စီမံကိန်းအကောင်အထည်

	(လုပ်ငန်းခွင်ဘေးကင်းလုံခြုံမှု)	အစီအမံများကိုအစဉ်လိုက်နာခြင်း။	ဖော်ဆောင်သူ
အခြား	မတော်တဆထိခိုက်မှု	မတော်တဆထိခိုက်မှုများမဖြစ်စေရန်ကြိုတင်ကာကွယ်မှုများစီမံဆောင်ရွက်ခြင်း။	စီမံကိန်းအကောင်အထည်ဖော်ဆောင်သူ
	ကမ္ဘာ့ပူနွေးမှု	ဆောက်လုပ်ရေးသုံးယာဉ်များGHGs ထုတ်လုပ်မှုလျော့ချရန်နည်းများကြိုတင်ပြင်ဆင်ထားရှိခြင်း	စီမံကိန်းအကောင်အထည်ဖော်ဆောင်သူ

ထိခိုက်မှုလျော့ချသည့်လုပ်ငန်းများ(ဆောက်လုပ်ရေးကာလ)

အမျိုးအစား	အချက်အလက်	Mitigation and Consideration Measures in (ဆောက်လုပ်ဆဲကာလ)	တာဝန်ရှိသူ
ညစ်ညမ်းမှု	လေအရည်အသွေး	ဆောက်လုပ်ရေးသုံးယာဉ်များအလွန်အကျွံသုံးစွဲမှုလျော့ချခြင်း	စီမံကိန်းအကောင်အထည်ဖော်ဆောင်သူ
	ရေ အရည်အသွေး	ရေအရည်အသွေးအားစောင့်ကြပ်ကြည့်ရှုခြင်း၊ အနယ်ထိုင်ကန်များ၊ရေနောက်သန့်စင်စနစ်များတပ်ဆင်ခြင်း၊	စီမံကိန်းအကောင်အထည်ဖော်ဆောင်သူ
	စွန့်ပစ်ပစ္စည်း	အမှိုက်ပစ်ရန်နေရာသတ်မှတ်ထားရှိခြင်း၊ အမှိုက်များအားလုံးအတွက် 3R စနစ်အသုံးပြုခြင်း၊	စီမံကိန်းအကောင်အထည်ဖော်ဆောင်သူ
	အသံနှင့်တုန်ခါမှု	အသံနှင့်တုန်ခါမှုများကိုစောင့်ကြပ်ကြည့်ရှုခြင်း၊ အသံထိန်းနှင့်အသံကာများတပ်ဆင်ရန်နှင့်ညအချိန်ဆောက်လုပ်ရေးလုပ်ငန်းများ မလုပ်ပါ။	စီမံကိန်းအကောင်အထည်ဖော်ဆောင်သူ
သဘာဝပတ်ဝန်းကျင်	အပင်၊သတ္တဝါနှင့် မျိုးပွါးကွဲပြားမှု	မလိုအပ်ဘဲသစ်ပင်ခုတ်ခြင်းမပြုပါ၊အပင်စိုက်ခြင်း၊လမ်းရေကန်များတည်ဆောက်ခြင်းစသည့်အမြဲစိမ်းလမ်းစေရန်အတွက်စီမံကိန်းများရေးဆွဲထားခြင်း။	စီမံကိန်းအကောင်အထည်ဖော်ဆောင်သူ
	ဇလဗေဒအခြေအနေ	မြေအောက်ရေအသုံးချမှုထိန်းသိမ်းထားရှိခြင်း၊	စီမံကိန်းအကောင်အထည်ဖော်ဆောင်သူ
လူမှုပတ်ဝန်းကျင်	နေထိုင်မှုနှင့်အသက်မွေးမှု	သန့်စင်စနစ်၊အနယ်စစ်ကန်စနစ်တို့ဖြင့်စွန့်ထုတ်ရေအရည်အသွေးထိန်းချုပ်ခြင်းဖြင့်မြစ်ချောင်းများအတွင်းရှိငါးနှင့်ရေနေသတ္တဝါများအပေါ် ထိခိုက်မှုမရှိနိုင်ခြင်း၊	စီမံကိန်းအကောင်အထည်ဖော်ဆောင်သူ
	ရေသုံးစွဲမှု	မြေအောက်ရေထုတ်ယူသုံးစွဲမှုကိုထိန်းသိမ်းခြင်း၊	စီမံကိန်းအကောင်အထည်ဖော်ဆောင်သူ
	လက်ရှိလူမှုအဆောက်အအုံနှင့်သွားလာမှု	လုံခြုံစိတ်ချရသည့်အဆောက်အအုံနှင့်သွားလာမှုများအပေါ် စောင့်ကြပ်ကြည့်ရှုခြင်း၊	စီမံကိန်းအကောင်အထည်ဖော်ဆောင်သူ
	AIDS/HIV ကဲ့သို့သောအန္တရာယ်(သို့) ကူးစက်ရောဂါများ	ကူးစက်ဖြစ်ပွါးနိုင်သောရောဂါများကိုအောက်ပါအတိုင်းဆောင်ရွက်ပေးရန်ရှိပါသည်၊ • ကူးစက်မှုကြိုတင်ကာကွယ်ခြင်း၊ • အသိပညာဖြန့်ဝေခြင်း၊	စီမံကိန်းအကောင်အထည်ဖော်ဆောင်သူ
	လုပ်ခွင်အခြေအနေ (လုပ်ငန်းခွင်ဘေးကင်းလုံခြုံမှု)	လုပ်ငန်းခွင်ကျန်းမာရေးနှင့်လုံခြုံစိတ်ချစေရေးအတွက် IFC ၏ အညွှန်းများအတိုင်း လိုက်နာပါမည်၊ • လုပ်သားများအတွက်တစ်ကိုယ်ရေကာကွယ်မှုပစ္စည်းများဖြစ်သည့်ဦးထုပ်၊ဘိနပ်၊ဂတ်စုံနှင့်နားကြပ်များ၊ • ဆောက်လုပ်ရေးလုပ်ခွင်အတွင်းကျန်းမာရေး(အရေးပေါ်)စောင့်ရှောက်မှုပစ္စည်းနှင့်ဆေးဝါးများထားရှိခြင်း၊ • ဆောက်လုပ်ရေးလုပ်သားများအတွက်ရေသုံးစွဲမှု၊အထွေထွေကျန်းမာရေး၊လုပ်ခွင်လုံခြုံရေး၊မိမိလုပ်ခွင်နှင့် သက်ဆိုင်သည့်အန္တရာယ်နှင့်ထိခိုက်နိုင်မှုများကိုသိရှိသင်ကြားလေ့ကျင့်စေခြင်း၊ • လုပ်သားများအားလုံးအတွက်သန့်ရှင်းစိတ်ချရသောသောက်သုံးရေ၊ • စီမံကိန်းတစ်ခုလုံးကိုလွှမ်းခြုံသည့်သင့်လျော်မှန်ကန်သည့်ရေထုတ်စနစ်ရှိပြီးရေဝပ်မှုရေအိုင်မှုတို့ကြောင့်ရောဂါဖြစ်ပွါးမှုမဖြစ်စေရန်၊ • ရောဂါများဖြစ်ပေါ်ပြန့်ပွါးမှုများမဖြစ်စေရန်ရေစစ်ကန်နှင့်အမှိုက်ပုံးများ(ကန်ထရိုက်တာမှပုံမှန်သိမ်းဆည်းမှုပြုစေရန်)ထားရှိရန်၊ • စီမံကိန်းအတွင်းရှိအမှိုက်များကိုကန်ထရိုက်တာမှယာယီအဖြစ်ဒေသလူမှုအသိုက်အဝန်းတွင်းရှိသည့်အမှိုက်သိမ်းစခန်းနေရာများနှင့်ဆက်သွယ်လုပ်ဆောင်စေရန်၊ • အများပြည်သူအတွက်သင့်လျော်မှန်ကန်သောကာကွယ်မှုရရှိစေရန်လုံခြုံမှုနှင့်ထိခိုက်မှုကာကွယ်သည့်နေရာများစီစဉ်ထားရှိရန်၊ • ဆောက်လုပ်ရေးနယ်မြေအတွင်းလုံခြုံရာနေရာသို့အလွယ်တကူသွားလာနိုင်ရန်	စီမံကိန်းအကောင်အထည်ဖော်ဆောင်သူ
အခြား	မတော်တဆထိခိုက်မှု	မတော်တဆထိခိုက်မှုများမဖြစ်စေရန်ကြိုတင်ကာကွယ်မှုများစီမံဆောင်ရွက်ခြင်း။	စီမံကိန်းအကောင်အထည်ဖော်ဆောင်သူ
	ကမ္ဘာ့ပူနွေးမှု	GHGs ဆိုင်ရာလျော့ချနိုင်မှုများထိန်းသိမ်းလုပ်ဆောင်ခြင်း၊	စီမံကိန်းအကောင်အထည်ဖော်ဆောင်သူ

ထိခိုက်မှုလျော့ချသည့်လုပ်ငန်းများ (ပုံမှန်လုပ်ငန်းများလုပ်ကိုင်သည့်ကာလ)

အမျိုးအစား	အချက်အလက်	Mitigation and Consideration Measures in Operation Phase	Responsible Organization
ညစ်ညမ်းမှု	လေအရည်အသွေး	လေအရည်အသွေးအားစောင့်ကြပ်ကြည့်ရှုခြင်း၊ လေစစ်ပါသောလေလည်ပတ်စနစ်ကိုတပ်ဆင်အသုံးပြုရန်၊ ဆေးမှုတ်သည့်အခန်းလုံခြုံမှုနှင့်လေထွက်စနစ်ကိုစစ်ဆေးရန်၊	Developer/SPC
	ရေ အရည်အသွေး	ရေအရည်အသွေးအားစောင့်ကြပ်ကြည့်ရှုခြင်း၊ မြေအောက်ရေကိုထိခိုက်စေနိုင်သောရေထွက်ပေါက်နှင့်စွန့်ပစ်ရေဆိုးထွက်ရှိခြင်းများကိုအစဉ်စစ်ဆေးရန်။	Developer/SPC
	စွန့်ပစ်ပစ္စည်း	ပုံမှန်လာရောက်သိမ်းဆည်းမှုမပြုလုပ်မီယာယီအမှိုက်ပစ်ရန်နေရာသတ်မှတ်ထားရှိခြင်း၊ အမှိုက်များအားလုံးအတွက် 3R စနစ်အသုံးပြုခြင်း၊	Developer/SPC
	အသံနှင့်တုန်ခါမှု	အသံနှင့်တုန်ခါမှုများကိုစောင့်ကြပ်ကြည့်ရှုခြင်း၊ အသံထိန်းနှင့်အသံကာများတပ်ဆင်ရန်နှင့်ညအချိန်ဆောက်လုပ်ရေးလုပ်ငန်းများမလုပ်ပါ။	SPC
သဘာဝ ပတ်ဝန်းကျင်	အပင်၊သတ္တဝါနှင့်မျိုးပွါးကွဲပြားမှု	မလိုအပ်ဘဲသစ်ပင်ခုတ်ခြင်းမပြုပါ၊အပင်စိုက်ခြင်း၊လမ်းရေကန်များတည်ဆောက်ခြင်းစသည့်အမြဲစိမ်းလမ်းစေရန်အတွက်စီမံကိန်းများရေးဆွဲခြင်း။	Developer/SPC Tenants
	ဇလဗေဒအခြေအနေ	မြေအောက်ရေအသုံးချမှုထိန်းသိမ်းခြင်း၊	စီမံကိန်းအ ကောင်အထည်ဖော်ဆောင်သူ
လူမှုပတ်ဝန်းကျင်	နေထိုင်မှုနှင့်အသက်မွေးမှု	သန့်စင်စနစ်၊အနယ်စစ်ကန်စနစ်တို့ဖြင့်စွန့်ထုတ်ရေအရည်အသွေးထိန်းချုပ်ခြင်းဖြင့်မြစ်ချောင်းများအတွင်းရှိငါးနှင့်ရေနေသတ္တဝါများအပေါ် ထိခိုက်မှုမရှိနိုင်ခြင်း၊	SPC
	ရေသုံးစွဲမှု	စက်ရုံ၊လူနေဆောင်၊မီးဖိုဆောင်တို့တွင်ရေအသုံးပြုခြင်းကိုအနည်းဆုံးဖြစ်စေရန်သေချာစွာထိန်းချုပ်ခြင်းဖြင့်၊မြေအောက်ရေထုတ်ယူသုံးစွဲမှုကိုထိန်းသိမ်းခြင်း၊	SPC
	လက်ရှိလူမှုအဆောက်အအုံနှင့်သွားလာမှု	လုံခြုံစိတ်ချရသည့်အဆောက်အအုံနှင့်သွားလာမှုများအပေါ် စောင့်ကြပ်ကြည့်ရှုခြင်း၊	စီမံကိန်းအ ကောင်အထည်ဖော်ဆောင်သူ
	AIDS/HIV ကဲ့သို့သောအန္တရာယ်(သို့) ကူးစက်ရောဂါများ	ကူးစက်ဖြစ်ပွါးနိုင်သောရောဂါများကိုအောက်ပါအတိုင်းဆောင်ရွက်ပေးခြင်း၊ • ကူးစက်မှုကြိုတင်ကာကွယ်ခြင်း၊ • အသိပညာဖြန့်ဝေခြင်း၊	Tenants
	လုပ်ခွင်အခြေအနေ (လုပ်ငန်းခွင်ဘေးကင်းလုံခြုံမှု)	လုပ်ငန်းခွင်ကျန်းမာရေးနှင့်လုံခြုံစိတ်ချစေရေးအတွက် IFC ၏ EHS အညွှန်းများအတိုင်းလိုက်နာမါမည်၊	Developer/SPC
အခြား	မတော်တဆထိခိုက်မှု	မတော်တဆထိခိုက်မှုများမဖြစ်စေရန်ကြိုတင်ကာကွယ်မှုများစီမံဆောင်ရွက်ခြင်း။	Developer/SPC
	ကမ္ဘာ့ပူနွေးမှု	GHGs ဆိုင်ရာလျော့ချနိုင်မှုများထိန်းသိမ်းလုပ်ဆောင်ခြင်း၊	Developer/SPC

အဆိုပြုလုပ်ငန်းဆောင်ရွက်ခြင်းကြောင့်ဖြစ်ပေါ်လာသောအဓိကထိခိုက်နိုင်မှုများ၊ထိခိုက်မှုလျော့ပါးစေရေးနည်းလမ်းများ၊စသည်တိုကိုစီမံကိန်းစတင်သည်မှစ၍လိုက်နာဆောင်ရွက်လျက်ရှိပါသည်။

အဆိုပါစီမံကိန်းပြီးစီး၍ပုံမှန်လည်ပတ်သည့်အခါတွင်သဘာဝပတ်ဝန်းကျင်ဆိုင်ရာ၊လူမှုစီးပွါးရေးဆိုင်ရာများအပေါ်ထိခိုက်နိုင်သည့်

၁. ဖုန်များထွက်ရှိမှု
၂. အသံပိုင်းဆိုင်ရာ နှင့် တုန်ခါမှု
၃. စွန့်ပစ်ပစ္စည်းနှင့် ရေဆိုးရေညစ်များဆိုင်ရာ
၄. အနီးအနားတွင်ရှင်သန်သွားလာနေထိုင်သည့် သဘာဝတိရိစ္ဆာန်များအားထိခိုက်ခြင်း။
၅. လုပ်သားများအတွက်အလုပ်အကိုင်အခွင့်အလမ်းများ

စသည်တို့ကိုအဓိကထား၍ဆန်းစစ်မှုများကိုလုပ်ကိုင်ခဲ့ပြီးလျှော့ချနိုင်သည့်အစီအစဉ်များကိုစီစဉ်ထားရှိပါသည်။

၁. ဖုန်များအပေါ်စီမံထားရှိမှု။

ယခုစီမံကိန်းမစတင်မီကစက်မှုဇုန်မြေနေရာဖြစ်ခဲ့သော်လည်းမော်တော်ယာဉ်များဝင်ထွက်မှုကြောင့်မည်မျှဖုံထခဲ့သည်၊မည်မျှလေထုညစ်ညမ်းခဲ့သည်ကိုတိုင်းတာမှတ်သားမှုမရှိသဖြင့် Environmental Base Line အဖြစ်ကိန်းဂဏာန်းများမရရှိနိုင်ပါ။ သို့ရာတွင်အောက်ဖေါ်ပြပါအကြောင်းအချက်များဖြစ်သည့်

- စီမကိန်းတည်ဆောက်ရေးကာလတွင်ပို့ဆောင်ရေးမော်တော်ယာဉ်များဝင်ထွက်သွားလာခြင်း၊
- တည်ဆောက်ရေးအတွက်အသုံးပြုသည့် စက်ယန္တရားများစက်များဖြင့်အုတ်မြစ်ချလုပ်ငန်းများလုပ်ဆောင်ခြင်း။

- မြေမှုန့်များကိုလေတိုက်ခတ်ခြင်း၊
- တူးဖော်သည့်မြေကြီးများနှင့်ကုန်တင်ယာဥ်များပေါ်သို့တင်ချမှုများပြုလုပ်ခြင်း၊သယ်ယူပို့ဆောင်ခြင်း။

စသည်တို့ကြောင့်ပတ်ဝန်းကျင်ဒေသများအပေါ်ဖုန်မှုံများဖြစ်ပေါ်စေနိုင်ပါသည်။

ယင်းအတွက်သက်သာလျှော့နည်းစေရန်မော်တော်ယာဥ်များအရှိန်ထိန်းမောင်းနှင်ခြင်း။ကုန်ကြမ်းများ တင်/ချ ပြုလုပ်သည့်နေရာတွင်အကာအရံပြုလုပ်ပေးထားခြင်းတို့ဖြင့်ကာကွယ်လျှော့နည်းစေနိုင်ပါသည်။

စီမံကိန်းတည်ဆောက်စဉ်စက်ပစ္စည်းများတပ်ဆင်ခြင်း၊စက်စမ်းသပ်ခြင်း၊ရွှေ့ပြောင်းခြင်း၊စသည်တို့ကြောင့်ဆူညံသံနှင့်တုန်ခါသံများဖြစ်ပေါ်မည်ဖြစ်ရာ၊အဆိုးဆုံးမှာ Power Generation, Pile Driving, စသည်တို့မှထွက်ရှိသောဆူညံသံသည်အကြီးမားဆုံးပြဿနာဖြစ်ခြင်းကြောင့်ဆူညံသံလျှော့နည်းစေသောနည်းများကိုအသုံးပြုခြင်း၊ အလုပ်ချိန်နှင့်လမ်းကြောင်းကန့်သတ်ခြင်း၊စီမံကိန်းပတ်လည်တွင်ဆူညံသံကိုခံနိုင်သောသံအကာအကွယ်များအသုံးပြုကာယံထားခြင်းစသည်တို့ဖြင့်ဆောင်ရွက်သွားမည်ဖြစ်ပါသည်။
စီမံကိန်းတည်ဆောက်စဉ်နှင့်တည်ဆောက်ပြီးပုံမှန်လည်ပတ်သည့်ကာလတို့တွင်မော်တော်ယာဥ်သစ်များရေဆေးခြင်း၊သန့်စင်ခန်းများသုံးစွဲခြင်း၊ မီးဖိုဆောင်စသည်တို့တွင်အသုံးပြုသည့်ရေပမာဏအားစနစ်တကျထိန်းသိမ်းဆောင်ရွက်ခြင်းဖြင့်ရေကြောင့်ဖြစ်သောညစ်ညမ်းမှုအားကာကွယ်ဆောင်ရွက်သွားရာရောက်မည်ဖြစ်ပါသည်။
ယခုအခါစီမံကိန်း (Phase I) အတွက်စက်ရုံမှာတည်ဆောက်ပြီးဖြစ်ပြီးထုတ်လုပ်မှုများစတင်လုပ်ကိုင်လျက်ရှိပါသည်။

လုပ်ငန်းများအမှန်တကယ်လည်ပတ်သည့်အခါတွင်ပုံမှန်စက်လည်ပတ်ခြင်းသာမကဘဲဝန်ထမ်းများနေ့စဉ်ပုံမှန်လှုပ်ရှားမှုများအရလေထု၊အမှိုက်၊စွန့်ပစ်ရေဆိုးနှင့်ညစ်ညမ်းမှုများထွက်ရှိမည်ကိုငင်းမီးလောင်မှုမဖြစ်စေရန်၄င်းအပြည်ပြည်ဆိုင်ရာစံချိန်စံညွှန်းများနှင့်ကိုက်ညီသည့်စံနစ်များအတိုင်းပတ်ဝန်းကျင်ထိခိုက်မှုများမဖြစ်စေရန်လုပ်ဆောင်နေသည်ကိုတွေ့ရပါသည်။

၂။ အသံပိုင်းဆိုင်ရာနှင့် တုန်ခါမှုများအပေါ်စီမံထားရှိမှု။
စီမံကိန်းကြောင့်အသံဆူညံမှုအဓိကဖြစ်ပေါ်ခြင်းသည်၊ အလုပ်သမားများနှင့်စက်ယန္တရားများကြောင့်မူလထက်ဒေသနှင့်ပတ်ဝန်းကျင်အပေါ်အသံဆူညံမှုများတိုးပွါးလာနိုင်ပါသည်။ ယင်းအတွက်သက်ဆိုင်ရာ တည်ဆောက်ရေးအဖွဲ့များမှလည်းတပ်နိုင်သမျှအသံဆူညံမှုမရှိစေရန်ထိန်းသိမ်းလုပ်ကိုင်သည်ကိုတွေ့ရှိရပါသည်။ တည်ဆောက်မှုများကိုနေ့အချိန်တွင်သာပြုလုပ်ပြီးညစနာရီထက်နောက်ကျစွာလုပ်ကင်ခြင်းမှရှောင်ရှားရမည်ဖြစ်ပါသည်။တည်ဆောက်မှုများပြီးစီးသည့်အခါယခုစက်ရုံ၏ပုံမှန်လုပငန်းစဥ်များလည်ပတ်ရာတွင်ထွက်ရှိမည့်အသံမှာမော်တော်ယာဥ်စက်စမ်းသပ်အသံနှင့်လေအေးပေးစက်၏ထွက်ရှိမည်အသံတို့သာဖြစ်ပြီး၄င်းတို့မှာသတ်မှတ်စံ၏လက်ခံနိုင်သောအဆင့်တွင်သာရှိပြီး အဆိုပါအသံမှအပအခြားသောဆူညံသည့်အသံများနှင့်တုန်ခါမှုများထွက်လာမည်မဟုတ်ပါ။

စီမံကိန်းတခုလုံးအတွက်လိုအပ်သည့်လျှပ်စစ်ဓါတ်အားကိုနိုင်ငံတော်၏လျှပ်စစ်ဓါတ်အားပေးရေးကွန်ယက်မှရယူမည်ဖြစ်သော်လည်းလျှပ်စစ်ဓါတ်အားပြတ်လပ်သည့်အခါကိုယ်ပိုင်မီးစက်ဖြင့်လည်ပတ်ရန်စီစဉ်ထားသည်ကိုတွေ့ရှိရပါသည်။အဆိုပါမီးစက်ကြီးများ၏လည်ပတ်ချိန်တွင်ထွက်ရှိလာမည့်စက်လည်ပတ်မှုအသံသည်ကျယ်လောင်နိုင်သကဲ့သို့မရပ်မနားထွက်ပေါ်လာမည့်အသံဆူညံချိန်သည်ပတ်ဝန်းကျင်အတွက်နားမခံနိုင်စရာထိခိုက်နိုင်မှုတစ်ခုအဖြစ်လေ့လာဆန်းစစ်မှုအရသိရှိရပါသည်။(စကရုံလုပ်ငန်းကိုနေ့အချိန်သာလုပ်ကိုင်ပြီးညပိုင်းလုပ်ကိုင်မှုမရှိပါ။)

၃။ စွန့် ပစ်ပစ္စည်းနှင့်ရေဆိုးရေညစ်များဆိုင်ရာလေ့လာဆန်းစစ်မှုနှင့်စီမံထားရှိမှု။
ပုံမှန်လည်ပတ်မှုလမ်းစဉ်အရစွန့်ပစ်ပစ္စည်းနှင့်ရေဆိုးရေညစ်များသည်အောက်ပါအတိုင်းထွက်ရှိနိုင်ကြောင်း Process Flow ဆိုင်ရာမှတ်တမ်းများနှင့်ကွင်းဆင်းစစ်ဆေးမှုအရသိရှိနိုင်ပါသည်။

(က) ရေချိုးခန်း၊ရေအိမ်များမှထွက်ရှိသောအညစ်အကြေးများ၊

(ခ) မီးဖိုဆောင်များမှထွက်ရှိသောအညစ်အကြေးများ၊

(ဂ) မော်တော်ယာဉ်သစ်များရေဆေးခြင်းမှထွက်ရှိသောအညစ်အကြေးများ၊

Project အမှန်တကယ်လည်ပတ်သည့်အခါတွင်လုပ်ငန်းစဉ်၏သဘောတရားအရ မော်တော်ယာဉ်ရေဆေးသည့်လုပ်ငန်းအဆင့်မှစွန့် ပစ်ရေဆိုးများထွက်ရှိနိုင်ပါသည်။အဆိုပါစွန့်ပစ်အရည်ကိုပြန်လည်အသုံးပြုသည့် Recycle စနစ်ကိုအသုံးပြုထားပြီးပြင်ပသို့စွန့်ထုတ်ခြင်းမပြုပါ။ စက်ရုံရုံးခန်း၊လူနေဆောင်တို့၏ပုံမှန်ရေချိုးခန်း၊မီးဖိုရေအိမ်များမှထွက်ရှိသည့်အညစ်အကြေးများကိုလည်းစံချိန်စံညွှန်းများနှင့်ကိုက်ညီသည့်ရေဆိုးများသန့် စင်သည့်စံနစ်(Septic Tank) များပါရှိသည့်အပြင်၊လိုအပ်လျှင်မြို့နယ်စည်ပင်သာယာအဖွဲ့သို့ဆက်သွယ်စွန့်ပစ်သောစနစ်ကိုအသုံးပြုသောကြောင့်ပတ်ဝန်းကျင်ထိခိုက်မှုမရှိစေရန်ဆောင်ရွက်လျက်ရှိသည်ကိုတွေ့ ရပါသည်။ ထို့ အပြင်အသံနှင့်တုန်ခါမှုများကြောင့်ထိခိုက်ရန်လည်းမရှိကြောင်းတွေ့ ရှိရပါသည်။

(မှတ်ချက်)။ ။ယခုအခါစီမံကိန်းဒေသသို့ကွင်းဆင်းတိုင်းတာစစ်ဆေးရာတွင်ယခုစီမံကိန်းသည်ဆောက်လုပ်ရေးလုပ်ငန်းများပြီးဆုံးပြီးပုံမှန်လည်ပတ်လုပ်ကိုင်နေသည်ကိုတွေ့ရှိရပါသည်။(စက်ရုံလုပ်ငန်းကိုနေ့အချိန်နံနက်၈နာရီမှညနေ၅နာရီအတွင်းသာလုပ်ကိုင်ပြီးညပိုင်းလုပ်ကိုင်မှုမရှိပါ။)

ပတ်ဝန်းကျင်ထိခိုက်မှုလျော့ချရေးနှင့်စောင့်ကြပ်ကြည့်ရှုနိုင်စေရန်အစီအစဉ်နှင့်အဖွဲ့အစည်းကိုလည်းဖွဲ့စည်းလုပ်ဆောင်ထားပါသည်။ပတ်ဝန်းကျင်စိမ်းလမ်းစိုပြေစေရေး၊အရေးပေါ် နှင့်ကယ်ဆယ်ရေးတို့ဆောက်ရွက်သွားနိုင်စေရန်ဖွဲ့စည်းမှုများနှင့်လုပ်ဆောင်ရန်အစီအစဉ်များကိုရေးဆွဲတင်ပြထားပါသည်။

ဇယား (၁. ၁၀)ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှုအစီအစဉ်ချုပ်နှင့်ရံပုံငွေလျာထားချက်။(ပုံမှန်လုပ်ငန်းလည်ပတ်စဉ်ကာလ)

အမျိုးအစား	အချက်အလက်	ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှု	တာဝန်ယူသည့်အဖွဲ့	ရန်ပုံငွေလျာထား ချက် (ကျပ်)
ညစ်ငြမ်းမှု	လေအရည်အသွေး	လေဝင်ထွက်မှုစနစ်ကောင်းမွန်စေရန်တံခါးပေါက်ကြီးများကိုတပ်ဆင်အသုံးပြု၍အပူချိန်နှင့်လေအရညအသွေးကိုထိန်းသိမ်းရန်။	EMP team/SPC	1,000,000
	အသံဆူညံမှု	အသံလုံသည့်မီးစက်နှင့်ကွန်ပရက်စာများအစားထိုးသုံးစွဲခြင်း၊ညအချိန်အလုပ်လုပ်ခြင်းမှရှောင်လျားခြင်း၊မော်တော်ယာဉ်များအရှိန်လျှော့မောင်းနှင်စေခြင်း၊လုပ်သားများအတွက်နားကြပ်တပ်စေခြင်း	EMP team/SPC	500,000
	ရေနှင့်စွမ်းအင်အသုံးပြုမှု	အဝီစိတွင်းနှင့်ရေအရည်အသွေးစစ်ဆေးခြင်းသုံးစွဲမှုထိန်းချုပ်ခြင်း၊သုံးနိုင်သည့်ရေများပြန်လည်အသုံးပြုခြင်း၊နေ့လည်ထမင်းစားချိန်တွင်လေအေးပေးစက်များအားရပ်နားထားခြင်း ဖြင့်ရေအသုံးပြုမှုထိန်းသိမ်းခြင်း၊ချွေတာစေခြင်း၊လေထုညစ်ညမ်းမှုလျော့ချစေခြင်း၊	EMP team/SPC	1,000,000
	ရေဆိုးထွက်ရှိမှု	septic tank တပ်ဆင်အသုံးပြုခြင်း၊သန့်စင်သညရေ၏အရည်အသွေးကိုစစ်ဆေးခြင်း၊ပြန်လည်အသုံးပြုစေခြင်းဖြင့်မြေအောက်ရေထိန်းသိမ်းခြင်း၊	EMP team/SPC	12,000,000
	ယာဉ်သွားလာမှု	ယာဉ်သွားလာမှုအရှိန်လျော့ချစေခြင်း၊ယဉ်များ၊မော်တော်ဆိုင်ကယ်များ၊စကဘီးများအ	**စီမံကိန်းဖေါ်ဆောင်သူ**	50,000

		တွက်ရပ်နားရန်နေရာစီစဉ်ပေးခြင်း၊		
	စွန့်ပစ်အစိုင်အခဲ	စွန့်ပစ်အမှိုက်များအားလုံး3R စနစ်အသုံးပြုစေခြင်း၊အမှိုက် များဝယ်ယူသူသို့ပြန်လည်ရောင်းချခြင်း၊စည်ပင်သာယာသို့ချိတ်ဆက်စွန့်ပစ်ခြင်းမပြုလုပ်မီကောင်းမွန်စွာသိုလှောင်ထားရှိစေခြင်း၊	**စီမံကိန်းဖော်ဆောင်သူ**	200,000
သဘာဝပတ်ဝန်းကျင်	အပင်နှင့်သက်ရှိများအပေါ်စီစဉ်ထားရှိမှု	အပင်များစိုက်ပျိုးခြင်း	**စီမံကိန်းဖော်ဆောင်သူ**	200,000
	စိမ်းလန်းစိုပြေစီစဉ်ထားရှိမှု	စိုက်ပျိုးထားသည့်အပင်များစိမ်းလမ်းစိုပြေစေရန်နေ့စဉ်နှင့်လိုအပ်သလိုရေလောင်းပေးခြင်း	EMP team/SPC	300,000
လူမှုပတ်ဝန်းကျင်	သက်မွေးဝမ်းကြောင်းမှု	စီမကိန်းအတွက်လိုအပ်သည့်လစ်လပ်ရာထူးများအတွက်ဒေသခံများအားဦးစားပေးခန့်ထားမှု၊စဉ်ဆက်မပြတ်စွမ်းဆောင်ရည်တိုးမြှင့်စေရန်လေ့ကျင့်ပေးခြင်း	**စီမံကိန်းဖော်ဆောင်သူ**	600,000
	လုပ်ငန်းခွင်ကျန်းမာရေးနှင့်လုံခြုံမှုအပေါ်စီစဉ်ထားရှိမှု	လုပ်ငန်းခွင်လုံခြုံရေးနှင့်ကျန်းမာရေးအတွက IFC \ OHS လမ်းညွှန်စံချိန်စံညွှန်းများကိုလက်နာရန်(power fan, hood & wall mounted) စသည့်တို့ကိုတပ်ဆင်၍လေဝင်လေထွက်နှင့်အပူချိန်၊လေထုညစ်ညမ်းမှုများကိုထိန်းချုပ်ရန်၊မီးစက်နှင့်ကွန်ပရက်စာများကိုအသံထိန်းကိရိယာတပ်ဆင်အသုံးပြုခြင်းနှင့်လုပ်သားများအတွက်နားကြပ်တပ်ဆင်ပေးရန်၊ညအချိန်အလုပ်လုပ်ခြင်းရှောင်လျားရန်၊မော်တော်ယာဉ်ရေဆေးရေသုံးစွဲမှုထိန်းချုပ်ရန်၊သန့်စဉ်ပြီးရေတို့အားပြန်လည်အသုံးပြုစေခြင်း၊ဓာတုဗေဒပစ္စည်းများအားကောင်းမွန်စွာသိုလှောင်သုံးစွဲခြင်း၊ ပုံးလွတ်များကိုပစ္စည်းပေးသွင်းသူသို့ပြန်လည်ရောင်းချခြင်းမပြုမီသေချာစွာသိုလှောင်ထားရှိခြင်း၊ဆေးလိပ်မသောက်ရ၊မီးသတိပြု၊လျှပ်စစ်ဗအားအန္တရာယ်စသည့်သတိပေးဆိုင်းဘုတ်များကိုလိုအပ်သည့်နေရာများတွင်တပ်ဆင်ထားရှိခြင်း၊ထိခိုက်မှုများအတွက်အရေးပေါ်အသုံးပြုနိုင်ရန်သူနာပြုဆေးသေတ္တာများကိုအလွယ်တကူထားရှိပေးခြင်း၊သောက်ရေသန့်စီစဉ်ပေးခြင်း၊ဖျားနာသူနှင့်ကိုယ်ဝန်ဆောင်များခွင့်ရက်ရယူနိုင်ရန်စီစဉ်ထားခြင်း၊သူနာပြုထားရှိပေးခြင်းနှင့်လူမှုဝန်ထမ်းမှတ်ပုံတင်ထားရှိစေခြင်း၊	**စီမံကိန်းဖော်ဆောင်သူ**	500,000
အခြား	အန္တရာယ်ရှိစွန့်	ဓာတုဗေဒပစ္စည်းများအားကောင်းမွန်စွာသို	**စီမံကိန်းဖော်ဆောင်သူ**	1,000,000

	ပစ်အမှိုက်များ အပေါ်စီစဉ် ထားရှိမှု	လှောင်သားစွဲခြင်း၊ပုံးလွတ်များကိုစပ်ပလိုင်ရာသို့ပြန်လည်ရောင်းချခြင်းမပြုမီသေချာစွာသိလှောင်ထားရှိခြင်း၊ရေဆိုးများသန့်စင်ခြင်း		
	အရေးပေါ်နှင့် ကယ်ဆည်ရေး အတွက်စီမံ ထားရှိမှု	အရေးပေါ်အစီအစဉ်နှင့်ကယ်ဆည်ရေးအတွက်အဖွဲ့ဖွဲ့စည်းထားရှိခြင်း၊သင်တန်းများလိုအပ်သလိုစီစဉ်ပေးခြင်း၊မီးသပ်ဆေးဘူးများကိုမီးသပ်စံချိန်စံညွှန်းများအတိုင်းထားရှိခြင်း၊အရေးပေါ်ထွက်ပေါက်နှင့်လမ်းညွှန်များကိုကြမ်းပြင်ပေါ်တွင်ရေးသားထားခြင်း၊အရေးပေါ်နှင့်မီးဘေးအချက်ပြဉသြတပ်ဆင်ထားခြင်း၊အရေးပေါ်ကာလဆက်သွယ်ရန်ဖုံးနံပါတ်များထားရှိခြင်း	**စီမံကန်းဖေါ်ဆောင်သူ**	1,000,000
	သဘာဝဘေး အန္တရာယ်အ ပေါ်စီစဉ် ထားရှိမှု	အရေးပေါ်အသုံးပြုနိုင်ရန်ဆေးများကိုအရေးပေါ်အတွကသာမကဘဲဝန်ထမ်းများဖျားနာခြင်းအတွက်လည်းပုံမှန်ဆေးကုသခွင့်နှင့်ထောက်ပံ့မှုများစီစဉ်ထားရှိခြင်း၊အရေးပေါ်အသုံးပြုနိုင်ရန်သူနာပြုဆေးသေတ္တာများကိုစက်ရုံအတွင်းအလွယ်တကူထားရှိပေးခြင်း	**စီမံကိန်းဖေါ်ဆောင်သူ**	500,000

မှတ်ချက်။ ။စက်ရုံမှမည်သည့်စွန့်ပစ်အမှိုက်၊ စွန့်ပစ်အရည်များကိုပတ်ဝန်းကျင်သို့စွန့်ထုတ်ခြင်းမပြုပါ။

အချိန်အခါအားလျော်စွာနှင့်အရေးပေါ်အစီရင်ခံစာများပေးပို့နိုင်ရန်လည်းသက်ဆိုင်ရာအဖွဲ့အစည်းများနှင့်အထောက်အကူပြုအဖွဲ့များသို့ညွှန်ကြားထားချက်များယခုအစီရင်ခံစာတွင်ပါရှိပါသည်။ အသံ၊ရေ၊စွန့်ပစ်အရည်စသည်တို့ကိုမည်သည့်အချက်များ၊မည်သို့တိုင်းတာရမည်စသည်တို့ကိုလည်းအောက်ပါအတိုင်းဖေါ်ပြထားပါသည်။

အသံ

စဉ်	ညစ်ညမ်းသည့်နေရာ	အကြောင်းရင်း	ထိခိုက်မှု	ပါရာမီတာ	အညွှန်း	နည်းစနစ်	လူ	ကာလ
1	Surrounding of Project Area	Traffic(Car Parking, loading/Unloading)	Noice	Sound Level	dB	Sound Level Meter		Daily

ရေနှင့်စွန့်ပစ်အရည်

စဉ်	ညစ်ညမ်းသည့်နေရာ	အကြောင်းရင်း	ထိခိုက်မှု	ပါရာမီတာ	အညွှန်း	နည်းစနစ်	လူ	ကာလ
1	Surrounding	Drain/Car Wash,etc.	Waste Water	Flow rate	BOD, COD	Lab Analysis	Person In charge	Daily Weekly Monthly

လေ

စဉ်	ညစ်ညမ်းသည့်နေရာ	အကြောင်းရင်း	ထိခိုက်မှု	ပါရာမီတာ	အညွှန်း	နည်းစနစ်	လူ	ကာလ
1	Inside Factory and/or Surrounding	Emission, Exhaust(Machines ,Vehicle,etc.)	Air	Exhaust Air (Temp/Pressure)	(Temp;humidity PM_{10},NO,SO_2,CO) Ordor level	Lab Analysis	Person In charge	Daily, Weekly, Monthly

စွန့်ပစ်အစိုင်အခဲ

စဉ်	ညစ်ညမ်းသည့်နေရာ	အကြောင်းရင်း	ထိခိုက်မှု	ပါရာမီတာ	အညွှန်း	နည်းစနစ်	လူ	ကာလ
1	Surrounding	Tree leaves	Solid Waste	Volume/Weight	Volume	Visual, Weight Measurement	Person In charge	Daily, Weekly, Monthly

အချက်အလက်များကိုနေရာ၊အချိန်အပိုင်းအခြားစသည်ဖြင့်စီမံကိန်းအကြိုကာလ၊တည်ဆောက်ဆည်းကာလ၊ပုံမှန်လည်ပတ်ကာလစသည်တို့အတွက်တိုင်းတာကောက်ယူရမည်ဖြစ်ပါသည်။
မှတ်ချက်။ ယခုစီမံကိန်းသည်ပုံမှန်လည်ပတ်စဉ်ကာလသို့ရောက်ရှိနေပြီဖြစ်သောကြောင့်ဆောက်လုပ်ရေးအကြိုကာလနှင့်တည်ဆောက်ဆဲကာလတို့အတွက်ချန်လှပ်ထားမည်ဖြစ်ပါသည်။

ဇယား (၁.၁၁) စောင့်ကြပ်ကြည့်ရှုမှုအစီအစဉ်နှင့်ရံပုံငွေလျာထားချက် (လုပ်ငန်းလည်ပတ်စဉ်ကာလ)

အမျိုးအစား	အချက်အလက်	Location (Lat/Long)	တိုင်းတာမည့်အကြိမ်	လျာထားရံပုံငွေ (ကျပ်)	တာဝန်ယူအဖွဲ့
လေအရည်အသွေး	VOC, HCHL, $PM_{2.5}$, PM_{10}	Construction Site (In factory and surrounding)	၆လ တစ်ကြိမ်	2,000,000	Sub Project Contractor
ရေအရည်အသွေး	pH, SS, DO, BOD, COD, oil & grease, chromium	Construction Site(In factory and surrounding)	တစ်နှစ် တစ်ကြိမ်	200,000	SPC
အစိုင်အခဲစွန့်ပစ်အမှိုက်	စက်ရုံနှင့်တစ်ကိုယ်ရေအစိုင်အခဲစွန့်ပစ်အမှိုက်များအပေါ်စီစဉ်ထားရှိမှုနှင့်ပမာဏတိုင်းတာခြင်း	Each tenant (In factory and surrounding)	၆လတစ်ကြိမ်	200,000	EMP team
မြေအရည်အသွေး	မြေအရည်အသွေးအပေါ်ထိခိုက်နိုင်သည့်စွန့်ပစ်အရည်၊ အစိုင်အခဲစွန့်ပစ်အမှိုက်များအပေါ်ထိန်းချုပ်မှု	Each tenant (In factory and surrounding)	တစ်နှစ် တစ်ကြိမ်	200,000	EMP team
အသံဆူညံမှု (တုန်ခါမှု)	အသံဆူညံမှု	Each tenant (In factory and surrounding)	တစ်ကြိမ် (peak period)	500,000	SPC
မြေနိမ့်ဆင်းမှု	မြေအနိမ့်အမြင့်စောင့်ကြပ်ရန်	Preservation site	တစ်နှစ် တစ်ကြိမ်	500,000	SPC
ဆိုးဝါးအနံ့	ချက်ပြုတ်မှုမှအနံ့များကိုထိန်းချုပ်ရန်၊	Each tenant (In factory and surrounding)	၆လ တစ်ကြိမ်	1,000,000	EMP team
အောက်ခြေအနယ်ထိုင်မှု	ရေအရည်အသွေးထိန်းသိမ်းမှုနှင့်အတူတကွဆောင်ရွက်ရန်၊	Preservation site	တစ်နှစ် တစ်ကြိမ်	500,000	SPC
ဇလဗေဒ	မြေအောက်ရေသုံးစွဲမှုနှင့်ထိန်းချုပ်ရန်၊	Preservation site	တစ်နှစ် တစ်ကြိမ်	500,000	SPC
ရေအသုံးချမှုနှင့် ဇလဗေဒအခြေအနေ	မြေနိမ့်ဆင်းမှုနှင့်အတူတကွစောင့်ကြည့်ရန်	Preservation site (In factory and surrounding)	တစ်နှစ် တစ်ကြိမ်	500,000	SPC
Risk for infectious disease such as AIDS/HIV	ကူးစက်ရောဂါများကိုစောင့်ကြပ်ကြည့်ရှုရန်၊	Each tenant/Worker	တစ်လ တစ်ကြိမ်	1,000,000	SPC/Tenants
လုပ်ခွင်အခြေအနေ (OHS)	လုပ်ငန်းခွင်ကျန်းမာရေးနှင့်ဘေးကင်းလုံခြုံမှုစောင့်ကြပ်ကြည့်ရှုရန်	Work site	တစ်လ တစ်ကြိမ်	1,000,000	SPC
မတော်တဆထိခိုက်မှု	မတော်တဆထိခိုက်နိုင်ခြေများအပေါ်စောင့်ကြပ်ရန်၊	Work Site	လိုအပ်သလို	1,000,000	Tenants

တိုင်းတာရရှိချက်များကိုအမျိုးသားပတ်ဝန်းကျင်ဆိုင်ရာအရည်အသွေး(ထုတ်လွှတ်မှု)လမ်းညွှန်ချက်တန်ဖိုးများနှင့်စစ်ဆေးရမည်ဖြစ်ပါသည်။

- EIA လေ့လာမှုအတွင်းဆောင်ရွက်ခဲ့သည့်လုပ်ငန်းများ၏အကျဉ်းချုပ်။

ကောင်းကျော်စေအင်ဂျင်နီယာလုပ်ငန်းကုမ္ပဏီသည် Gold A Y A Motors International Group Co.,Ltdက မန္တလေးတိုင်းဒေသကြီး၊မြင်းခြံခရိုင်၊ငါန်းဇွန်မြို့နယ်၊ မြို့သာနှင့်နဘူးအိုင်ကျေးရွာကြားတွင်တည်ရှိသော မြို့သာစက်မှုဇုန်ရှိမြေကွက်အမှတ် (ဘီ-၁-၁)၊ မြေတိုင်းရပ်ကွက်အမှတ်(စက်မှုဇုန် နယ်မြေ၊ဇုန်-၂-စီ)မြေအကျယ်(၂၀. ၀၈၄)ဧကရှိမြေပေါ်တွင်မော်တော်ယာဉ်အမျိုးမျိုးတပ်ဆင်ထုတ်လုပသည့်စက်ရုံစီမံကိန်းအပေါ်သယံဇာတနှင့်သဘာဝပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဝန်ကြီးဌာနမှရည်ညွှန်းချက်များအတိုင်း၊ အဖွဲ့ဝင်များလိုက်ပါလျက် ၂၀၁၈ခုနှစ်ဧပြီလ ၂၈ ရက်နေ့တွင်တကြိမ်၊ ၂၀၁၈ခုနှစ်မေလ၅ရက်နေ တွင်တကြိမ်၊ သွားရောက်ပြီးလိုအပ်သည့်တိုင်းတာစစ်ဆေးမှုများပြုလုပ်ခြင်း၊စီမကိန်းကြောင့်ဖြစ်ပေါ်လာနိုင်သည့်ကောင်းကျိုး၊ဆိုးကျိုးများကိုလေ့လာခဲ့သည့်အပြင်၊ အဆိုပါရက်များအတွင်းဒေသခံများတာဝန်ရှိသူများနှင့်တွေ့ဆုံမေးမြန်းခြင်း၊အနီးအနားတွင်နေထိုင်သူများပါဝင်သောလူထုအစည်းအဝေးများလုပ်ဆောင်ခဲ့သည်သာမကဘဲ၊

ငါန်းဇွန်မြို့နယ်အဆင့်ဌာနဆိုင်ရာများ၊ အရပ်ဘက်အဖွဲ့အစည်းများမှတာဝန်ရှိသူများ၊ ဒေသခံများနှင့်တစုတည်းနှင့်သီးခြားစီတွေ့ဆုံမေးမြန်း၍ဆန္ဒသဘောထားများကိုကောက်ခံရယူနိုင်ခဲ့ပါသည်။

အစီရင်ခံစာတင်သွင်းခြင်း၊အတည်ပြုခြင်း၊ကာလတစ်လျှောက်လုံး အီးအိုင်အေ တာဝန်ခံသည့်အဖွဲ့၊လုပ်ငန်းရှင်နှင့် ဒေသခံများ၊ ဆက်စပတာဝန်ရှိသူများတို့အကြားဆက်သွယ်ရေးလမ်းကြောင်းကိုလည်းစီစဉ်ထားပါသည်။

- ဆောင်ရွက်ခဲ့သောအများပြည်သူသဘောထားရယူခြင်းနှင့်ပြည်သူများပူးပေါင်းပါဝင်ခြင်း။

အများပြည်သူနှင့်တွေ့ဆုံဆွေးနွေးပွဲကျင်းပသည့်အခမ်းအနား။
မန္တလေးတိုင်းဒေသကြီး၊မြင်းခြံခရိုင်၊ငါန်းဇွန်မြို့နယ်၊မြို့သာစက်မှုဇုန်အတွင်းရှိစီမံကိန်းရုံးခမ်းမတွင်အနီးအနားတွင်နေထိုင်သူများနှင့်သက်ဆိုင်သူများပါဝင်သော အများပြည်သူသဘောထားရယူခြင်းနှင့်ပြည်သူများပူးပေါင်းပါဝင်ခြင်း၊တွေ့ဆုံလေ့လာဆန်းစစ်သည့်လုပ်ငန်းများ Public Consultation Meeting ကိုဇူလိုင်လ၅ရက်နေ့ တို့တွင် Gold A Y A Motors International Group Co.,Ltd ၏စီစဉ်ပံ့ပိုးမှုဖြင့်အောင်မြင်စွာကျင်းပပြုလုပ်နိုင်ခဲ့ပါသည်။

စီမံကိန်းအပေါ်သက်ဆိုင်သူများနှင့်တွေ့ဆုံဆွေးနွေးခြင်းကိုအောက်ပါအတိုင်းပြုလုပ်ခဲ့ပါသည်။
တွေ့ဆုံပွဲကျင်းပသွားနိုင်ရန်အတွက် Gold A Y A Motors International Group Co.,Ltd မှတာ ဝန်ရှိသူများနှင့် အတူ ၂၀၁၈ခုနှစ်ဇူလိုင်လ ၅ ရက်နေ့တွင်မြို့သာစက်မှုဇုန်နှင့်အနီးနားကျေးရွာတွင်နေထိုင်သူများနှင့် စီမံကိန်းရုံးခန်းမတွင်မြို့နယ်အဆင့်ဌာနဆိုင်ရာများ၊ အနီးအနားတွင်နေထိုင်သူ၊သက်ဆိုင်သူများနှင့်တွေ့ဆုံပွဲတစ်ရပ်ကျင်းပပြုလုပ်၍သက်ဆိုင်ရာဒေသခံများနှင့်တွေ့ဆုံဆွေးနွေးပြီးသဘောထားစစ်တမ်းများကောက်ယူနိုင်ခဲ့ပါသည်။

အများပြည်သူနှင့်တွေ့ဆုံဆွေးနွေးပွဲသို့ တက်ရောက်လာကြသူများစာရင်း၊သဘောထားမှတ်ချက်များတစ်ဦးချင်းစီ၏စစ်တမ်းအဖြေများအပါအဝင်မှတ်တမ်းဓါတ်ပုံများတို့ကိုမှတ်တမ်းတင်ထားရှိပါသည်။၎င်းကဲ့သို့ စစ်တမ်းများကောက်ယူရာတွင်လည်း နိုင်ငံတကာစံချိန်များ၊အညွှန်းကိန်းများနှင့်ကိုက်ညီပြီးမြန်မာနိုင်ငံသယံဇာတနှင့်သဘာဝပတ်ဝန်းကျင်ထိမ်းသိမ်းရေးဝန်ကြီးဌာနမှလက်ခံသည့်အတိုင်းဆွေးနွေးခြင်းဖြစ်ပါကြောင်းနှင့်စီမံကိန်း၏အသေးစိပ်အချက်အလက်များကိုလည်းသက်ဆိုင်ရာတာဝန်ရှိသူများမှရှင်းလင်းတင်ပြနိုင်ရန်ဖိတ်ခေါ်ခဲ့ပါသည်။သဘောထားကောက်ယူရာတွင်စီမံကိန်းဖေါ်ဆောင်မည့်ဒေသ၏စီမံကိန်းပတ်လည်တွင်နေထိုင်သူများကိုသာမကဘဲစီမံကိန်းအပေါ်စိတ်ဝင်စားသူများကိုပါလူထုစည်းဝေးပွဲသို့တက်ရောက်ရန်စီစဉ်ဖိတ်ကြားခဲ့ပါသည်။
ယခုစီမံကိန်းအတွက် အများပြည်သနှင့်တွေ့ဆုံဆွေးနွေးပွဲ ကိုအောက်ပါအတိုင်းကျင်းပခဲ့ခြင်းဖြစ်ပါသည်။

ဇယား (၁. ၁၂)အများပြည်သူသို့သတင်းအချက်အလက်ထုတ်ဖော်ချက်။

စဉ်	နေ့စွဲ	အကြောင်းအရာ	ကျင်းပသည့်နေရာ
၁	၂၀၁၈ မေလ ၄ ရက်	ငါန်းဇွန်မြို့နယ်ရှိ ဌာနဆိုင်ရာများ၊အစိုးရမဟုတ်သောအဖွဲ့အစည်းများမှတာဝန်ရှိသူများ၊ ရပ်မိရပ်ဖလူကြီးများနှင့်စိတ်ပါဝင်စားသူများနှင့်စီမံကိန်းအပေါ်သဘောထားကောက်ယူခြင်း။	ငါန်းဇွန်မြို့နယ်အထွေထွေအုပ်ချုပ်ရေးမှူးရုံး။
၂	၂၀၁၈ ဇူလိုင်လ ၅ ရက်	ငါန်းဇွန်မြို့နယ်ရှိ ဌာနဆိုင်ရာများ၊အစိုးရမဟုတ်သောအဖွဲ့အစည်းများမှတာဝန်ရှိသူများ၊ ရပ်မိရပ်ဖလူကြီးများနှင့်စိတ်ပါဝင်စားသူများနှင့်စီမံကိန်းအပေါ်သဘောထားကောက်ယူခြင်း။	MMID ကုမ္ပဏီရုံးခန်းမ

အထက်ပါအစီအစဉ်အတိုင်းပြည်သူအများနှင့်တွေ့ဆုံဆွေးနွေးမှုများလုပ်ဆောင်ခဲ့ပါသည်။ယခုစီမံကိန်းအတွက် တွေ့ဆုံဆွေးနွေးပွဲ ကိုအစည်းအဝေးပုံစံနှင့်သာမကဘဲတစ်ဦးချင်းတစ်ဌာနချင်းအလိုက်လည်းတွေ့ဆုံခဲ့ပါသည်။
ပတ်ဝန်းကျင်နှင့်လူမှုဆိုင်ရာကိစများနှင့်ပတ်သက်သောအကြံပြုချက်၊တိုင်ကြားချက်များကိုစီမံကိန်းရုံးသို့တိုက်ရိုက်ဖြစ်စေ၊ရပ်ကွက်၊ကျေးရွာ၊မြို့နယ်အထွေထွေအုပ်ချုပ်ရေးမှူးရုံးများမှတဆင့်ဖြစ်စေပေးပို့နိုင်ပါသည်။

အများပြည်သူနှင့်တွေ့ဆုံဆွေးနွေးပွဲတင်ပြသည့်သဘောထားမှတ်ချက်များနှင့်ကုမဏီမှလိုက်နာဆောင်ရွက်ထားရှိမှု။

ဒေသခံတက်ရောက်သူများ၏သဘောထားနှင့်တောင်းဆိုမှုများကိုအောက်ပါအတိုင်းမှတ်တမ်းတင်အပ်ပါသည်။

ဇယား(၁. ၁၃)ဆွေးနွေးပွဲမှရရှိသောအကြံပြုချက်များနှင့်ယင်းအပေါ်ဆောင်ရွက်မည့်အစီအစဉ်၊ကတိကဝတ်၊

စဉ်	ဒေသခံတက်ရောက်သူများ၏သဘောထားနှင့်တောင်းဆိုမှုများ	ကုမ္ပဏီမှဆောင်ရွက်ပေးမှု။
၁	အလုပ်အကိုင်အခွင့်အလမ်းများခေါ်ယူခန့်ထားရာတွင်ဒေသခံများအားဦးစားပေးခန့်ထားပေးပါရန်။	ဦးစားပေးခန့်အပ်လျက်ရှိပါသည်
၂	ဒေသခံများအားသင်တန်းခေါ်ယူပို့ချပြီးခန့်ထားစေလိုကြောင်း။	ဝန်ကြီးဌာန၊ဒေသခံအာဏာပိုင်အဖွဲ့တို့နှင့်လိုအပ်သလိုစီစဉ်လျက်ရှိပါသည်
၃	မော်တော်ယာဉ်များကိုဘဏ်နှင့်ချိတ်ဆက်သည့်အရစ်ကျစနစ်ဖြင့်ရောင်းချပေးစေလိုပါကြောင်း။	ဘဏ်နှင့်ချိတ်ဆက်လုပ်ဆောင်ရန်ရှိပါသည်။

စီမံကိန်းဒေသခံများအပေါ်ထိခိုက်မှုနှင့်ဒေသဖွံ့ဖြိုးရေးအတွက်ဆောင်ရွက်ပေးမည့်လုပ်ငန်းများ။

၁. စီမံကိန်းတွင်လိုအပ်သည့်အလုပ်ရာထူးများအတွက်ဒေသခံများအားဦးစားပေးခန့်ထားရန်၊

၂. ထိခိုက်မှုလျော့ချရေး၊စောင့်ကြပ်ကြည့်ရှုခြင်းတို့အတတ်နိုင်ဆုံးလုပ်ဆောင်ရန်နှင့်ဒေသဖွံ့ဖြိုးရေးတို့အတွက်အားပေးမြှင့်တင်ရန်၊

၃. လူမှုဆိုင်ရာတာဝန်ယူမှုရှိသည့်လုပ်ငန်းများအစဉ်ဆောင်ရွက်ပေးရန်၊

လျာထားရံပုံငွေဖြင့်လုံလောက်မှုမရှိပါကစီမံကိန်းဖော်ဆောင်သူသည်လိုအပ်သည့်အသုံးစရိတ်အတွက်နီးစပ်ရာဒါရိုက်တာအဖွဲ့အစည်းအဝေးသို့တင်ပြတောင်းခံအသုံးပြုသွားမည်ဖြစ်ပါသည်။

လူမှုစီးပွါးရေးအပေါ်သက်ရောက်မှုများနှင့်လျော့နည်းစေရန်ဆောင်ရွက်မည့်လုပ်ငန်းများ။

စီမံကိန်းအတက်လိုအပ်သည့်လစ်လပ်နေရာများကိုဒေသခံများအတွက်ဦးစားပေးခန့်ထားခြင်းဖြင့်စီမံကိန်းကြောင့်လူမှုရေးဆိုင်ရာကဏ္ဍတွင်ပိုမိုကောင်းမွန်နိုင်သည်ကိုတွေ့ရပါသည်။

ထို့အပြင်လိုအပ်သလိုဝန်ထမ်းများလုပ်ကိုင်မှုစွမ်းရည်တိုးမြှင့်လာစေရန်အတွက်လည်းသယံဇာတနှင့်ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဝန်ကြီးဌာနနှင့်ဆက်သွယ်ပြီးညွှန်ကြားချက်များကိုလိုက်နာခြင်းနှင့်သင်တန်းများပေးမည်ဖြစ်ပါသည်။

ပတ်ဝန်းကျင်ထိခိုက်မှုလျော့ချရေးနှင့်စောင့်ကြပ်ကြည့်ရှုနိုင်စေရန်အစီအစဉ်နှင့်အဖွဲ့အစည်းကိုလည်းဖွဲ့စည်းထားသကဲ့သို့ရံပုံငွေများကိုလည်းသီးခြားစွာသတ်မှတ်ထားပါသည်။

အစီရင်ခံစာ၏နိဂုံးချုပ်နှင့်အကြံပြုချက်များ။

ယခုစီမံကိန်းကိုမူလကစိုက်ပျိုးမြေနေရာပေါ်တွင်အခြား နည်းဖြင့်အကျိုးရှိစွာအသုံးပြုရန်ဖေါ်ထုတ်ခြင်းဖြစ်ပြီး၊Baseline Data ကောက်ယူရရှိချက်အရစိုက်ပျိုးရေးထက်စက်မှုလုပ် ငန်းလုပ်ဆောင်ခြင်းသည်ပိုမိုအကျိုးရှိနိုင်ပြီး၊ ပြည်သူများနှင့်တွေ့ဆုံရာတွင်စီမံကိန်းမှမော်တော်ယာဉ်တပ်ဆင်မှု၊စက်စမ်းသပ်မှုစသည်တို့မှအသံဆူညံမှုရှိနိုင်ကြောင်းနှင့်အနီးအနားတွင်နေထိုင်သူများအတွက်ထိခိုက်မှုမရှိနိုင်ကြောင်းကောင်းစွာသဘောပေါက်ကြပါသည်။အများပြည်သူတို့နှင့်ဆွေးနွေးချက်များအရစီမံကိန်းကြောင့်အလုပ်အကိုင်အခွင့်အလမ်းများတိုးပွါးမှုအပေါ်စိတ်ဝင်စားလျက်ရှိပြီးစီမံကိန်းအပေါ်ထောက်ခံမှုရှိသောကြောင့်မူလရှိသည့်သဘာဝပတ်ဝန်းကျင်ကိုထိခိုက်နိုင်သော်လည်း၊အဆိုပါထိခိုက်မှုများကိုလျော့ချနိုင်သည့်နည်းပညာအသစ်နှင့်တကွစံချိန်စံညွှန်းများပြည့်မီစွာလုပ်ကိုင်သွားမည်ဖြစ်သောကြောင့်ကောင်းကျိုးများပမိုပေးနိုင်သည့်စီမံကိန်းဖြစ်သည်ကိုတွေ့ ရှိရပါသည်။

အထွေထွေအားဖြင့် အဆိုပါစီမံကိန်းသည်မြန်မာနိုင်ငံ၏ပြည်ပသွင်းကုန်လျှော့ကျလာစေရန်အတွက်ဖေါ်ဆောင်ပေးမည့်စီမံကိန်းတစ်ခုဖြစ်ပါသည်။စီမံကိန်းဖေါ်ဆောင်မှုကြောင့်သဘာဝပတ်ဝန်းကျင်ကိုသော်၎င်း၊လူမှုစီးပွါးပတ်ဝန်းကျင်ကိုသော်၎င်း၊ ထိခိုက်မှုများထက်အကျိုးပြုမှုများပိုမိုရနိုင်သကဲ့သို့ ကောင်းမွန်စွာစီမံခန့် ခွဲလုပ်ကိုင်ခြင်းဖြင့်ထိခိုက်မှုများကိုလည်းလျှော့ချနိုင်သည့်အပြင်ဒေသခံများအတွက်အလုပ်အကိုင်အခွင့်အလမ်းများပိုမိုပွင့်လင်းလာပြီးလူမှုစီးပွါးရေးများပိုမိုတိုးတက်လာနိုင်သည်သာမကလူတစ်ဦးချင်းဝင်ငွေနှင့်နိုင်ငံတော်၏နှစ်စဉ်ထုတ်လုပ်မှု(GDP) တန်ဖိုးကိုမြှင့်တင်ပေးနိုင်သည့်အပြင်နိုင်ငံခြားပို့ ကုန်ကဏ္ဍများကိုပါပိုမိုဖွံ့ ဖြိုးတိုးတက်စေပြီးနိုင်ငံတော်အတွက်တဘက်တလမ်းမှဝင်ငွေခွန်များတိုးမြှင့်ရှာဖွေပေးသည့်စီမံကိန်းတစ်ခုဖြစ်ကြောင်းတွေ့ ရှိရပါသည။

2. Executive Summary (English)

The Union of Myanmar is aiming to improve its development without harming or less impact to its environment and sustainability for its national and citizen's economy and social development, services, manufacturing including small medium entrerprise and large scale industrial development to its goal of being industrialized developed country.

Mandalay Division Region is nation's central part of Myanmar. The industrial sector is one of the important prioities for Myanmar's developing process. Myothar, is not only located by road but also potential port for water transport as it is directly contact with other cities of Mandalay division region since long ago, in addition to the development of road network, within few hour driving distance to Mandalay the economic city, becoming more reliable strategic location of economic development day to day.

This project would be developed by foreign direct investment by Gold A Y A Motors International Group Co., Ltd by forming and getting approvals from Mandalay Regional Government including concerned ministries and Myanmar Investment Commission under the foreign direct investment law.

The following are the find out by environmental impact assessment.

- Supporting project of the regional development
- Could transform the land as more effective land use pattern
- It is considered as "The project with No environmental impacts

Description of Project

Gold AYA Motors International Group Co.,Ltd established in June 2017 is a joint venture integrated automobile group company. The registered country of the company is the federal republic of Myanmar with an authorized capital of 50,000,000USD.

It would be implemented by Myanmar and Foreigner Investment Law in this Mandalay Myotha Industrial Development Zone by leasing land short and long term for various types of industry as local and international market demand.This project is encouraged by the Mandalay Division Regional government for productive land use as it is planned to develop with advance production technology by forming public company.The industrial park connects the Asian expressway, the Asian railway network, the Irrawaddy river, the international airport and so on.

The Manufacturing and Assembly of Motor Vehicle Plant located at Plot No.B-1-1 of Block No.Factory Area Zone 2C, Myotha Industrial Park Between Myotha and Nabu Ain village, total land area (20.084) Acres in Nganzun Township, Myingyan District of Mandalay Division Region aims to develop by the compilation of Joint Venture Investment Law.

The project would be implemented by the following objectives.

A. To get poverty reduction and urban development by enhancing social development
B. To get skilled labor and industrial development.
C. To attract international investment in the industrial sector
D. To enhance socil life style by getting employment opportunities due to the industrial zone development
E. To increase national revenue

Company production base covers an area of 81278.36 square meters (20.084 acres). The first phase of construction covers an area of 14537.89 square meters, including 3658.28 square meters of showroom buildings, 2728 square meters of dormitory buildings and 8151.61 square meters of factory buildings.
There are phase I and Phase II to be developed where phase I (Workshop, Showroom & Domitory) is included. Like other project, it won't be developed all phases in the same time, but sequencly phase I and Phase II.

Location of project

The project located in the Ngazun township is positioned on the Global Polarize System of 21°43'52" N and 95°37'30"E. Nganzun, 640ft above sea level is a town in Mandalay Division Region which is in the Myingyan district and good access by road network in previous but road network at present to reach within few hours to Mandalay, Naypyitaw and even Yangon the economic capital and becoming one of the strategic town not only for Mandalay division region but also for the whole nation.

Factory Lay Out
This project would be developed in total area of 20.084 Acres for development of motor assembling factory from the industrial zone developer by renting the lands.

Type of Project
This project is the type of promotion to the import substitution and SME development.
This motor assembling project is the project not only for the industrial sector development but also supporting to economy, social including transport sector development, increasing personal income generation and improving GDP of the nation.

Objective of Project and Scope of Work

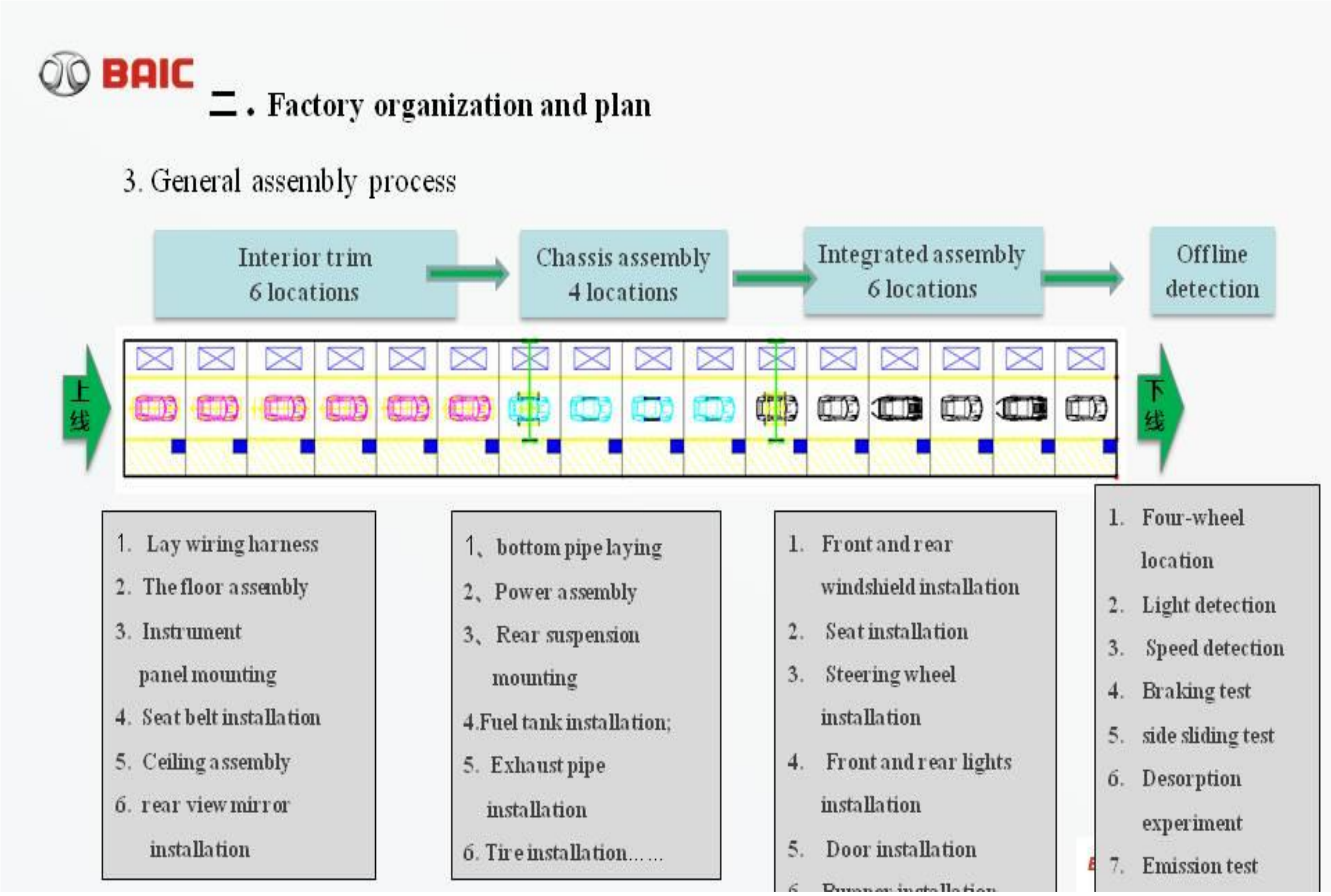
Gold AYA Motors International Group co., Ltd Is engaged in BAIC DaoDa and BAIC ChangHe brand automobile product, sales, after-sales service and automobile finance.
At present, the company plans to produce 7 models of seven categories, including household cars, SUV, MPV, commercial vehicles, pickups, special vehicles and new energy vehicles. Sales plan in Mandalay and Yangon have branch company. Main business covers sales, dealer network development, marketing, after-sales service, customer relationship management, new energy car business, public relations, human resources, finance, IT, purchasing, etc.

Table (1.1) Types of Vehicles Model

No.	Type of Vehicles Model	Specification
1	CHANGHE Q35 SUV	1.5L Elite Version, AT, Smart Version
2	CHANGHE M 60 MPV – 1.5 T Standard	1.5 T Standard
3	CHANGHE A 6, Sedan Car	CTV Elite Version
4	DODA V-8 MPV	Business Type
5	DODA K-9 Pick-up	4 x 4 Diesel Version
6	CHANGHE Q-7 SUV	CTV, Luxury Version
7	CHANGHE M20S MPV	5 MT, Standard

Production Process

Eventhough the project is named as automobile manufacturing it is just the assembling process by importing all parts of vehicle from abroad. The following figure shows the process of production (assembling process).



The period of investment

The project is designed to build and operate the manufacturing and assembling of motor vehicles factory to produce variety of vehicles by employing more than 80 local workers and 20 foreign experts depending on getting orders for long term (30 years) investment.

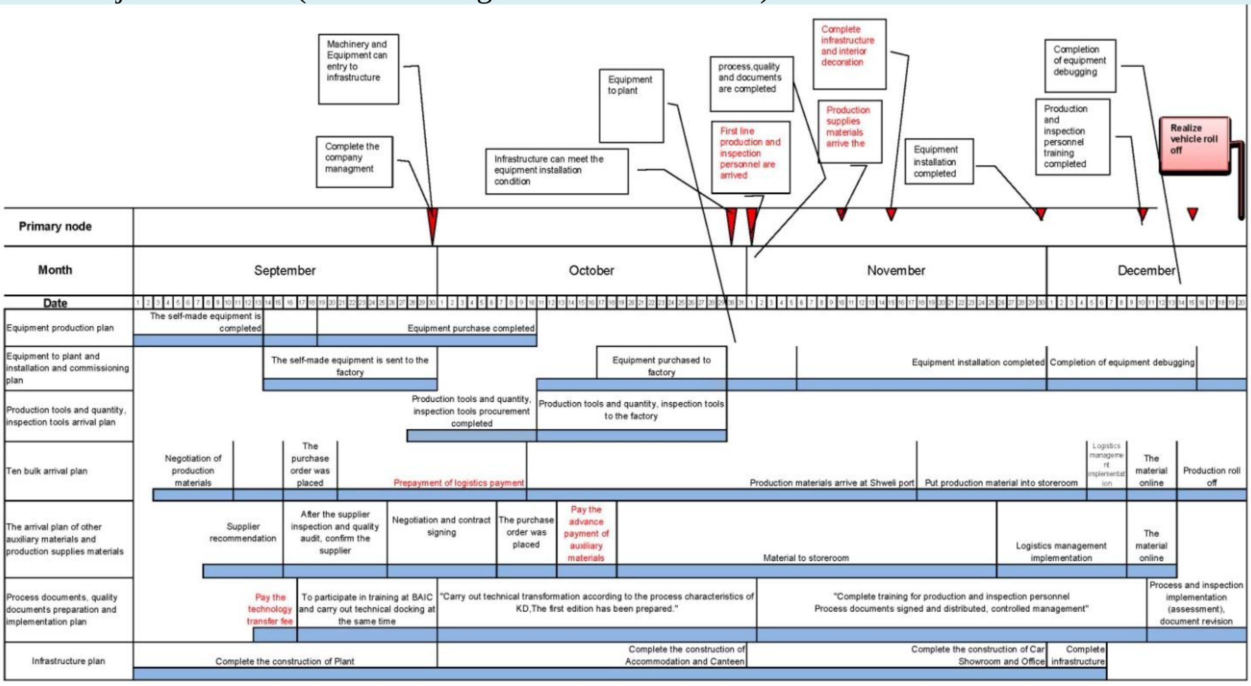
Gold A Y A Motors International Group Co.,Ltd

(1) Company Registration Start 28-6-2017

(2) MIC permit 20-5-2018

(3)The Official Commercial Operating Date : 25-6-2019

The Overall Project Schedule (Pls find enlarged size on the annex.)



The project plan is as following

Project Plan

Content	Item	Project																备注
		2017	2018				2019				2020	2021	2022	2023	2024	2025—2087		
			1st qtr	2nd qtr	3rd qtr	4th qtr	1st qtr	2nd qtr	3rd qtr	4th qtr								
Project Plan	lease landing	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→		50 years contract & 20 years extension
	onstruction plan		construction start date - 20.5.2018 Finished date - end →	→	→	→	→	→										
	equipment installation	At the end of the year of 2018，all the equipment began to enter the factory，April 2019 finish all equipment installation，June 2019					→	→										
	Production Plan								600 units	1000 units	5000 units	10000 units	15000 units	20000 units	30000 units	50000 units		all are per years

When the land lease expires, the company will continue to lease the land, upgrade the plant, upgrade the equipment and upgrade the products, and continue to operate.

Table (1.2) Project Time & Work Schedule Pre-construction, Construction and Operation Stage

No	Description	Project Period				
		2017	2018	2019	2020~24	2025~87
A	Pre-construction	→				
B	Construction Stage	→				
C	Operation Stage					
1	Production & Maintenance		→	→	→	→
2	Environmental Management and Waste Management			→	→	→
3	Monitoring				→	→

Table (1.3) The salient data of the project

No	Description		Qty	Remarks
1	Tpye of project		JV (Myanmar 20%+Foreigner 80%)	Joint Venture Investment
2	Investment	Myanmar	1.13MUS$	Total Investment of 15.32 MUS$ including Myanmar kyats in US Dollar equivalent
		Foreigner	12.19MUS$	
		Total	15.32MUS$	
3	Date of Company Establish		28-6-2017	Company Registration No. 100642476
4	Date of Operation Start		25-6-2019	
5	Licenses		MIC Permit; 067/2018 (27-3-2018) Ministry of Commerce License: Export /Import No. 011945 (17-08-18) MOI: Industry License; Matala /Kyi/2449 (6-8-2019) MOI: (Mdy) Electricity-Inspection EI-MDY-187 (18-6-21~17-6-22) MOI: (Mdy) Electricity-Inspection (1) Electricity Production and Usage-076/2019 (21-6-19~20-6-23) (2) Electricity Production and Usage-077/2019 (21-6-19~20-6-23)	
6	Raw materials (Import)		Import from China + Local Purchase	Details on Annex
7	Product Export (To)		Local Sale Only	
8	Product Capacity		Vehicles (Approx; 1000~37500 nos) per year	(Changhe –Q35SuV, M60MPV-1.5 std, A6 Sedan Car, Q7-SUV, M20SMPV, DODA V8-MPV, K9-Pick-up)
9	Working Time	Daily (08:00 ~17:00) (lunch break; 11:30~12:30)	8 hours per day	Overtime would be based on the demand of product and timing
		Weekly	5 days per week	
		Yearly	250 days per year	
10	No of machines		As shown on the list of imported equipments	(See Annex)
11	No. of workers (Ref; to MIC proposl)		110 nos. 15 nos.	Local 88%, experts 12%
12	Annual Fuel Requirement (Diesel)		3,840 gals Petrol, 360,160 gals diesel For generator,Truck	For generator,Truck & New Vehicles
	Annual Lubricant Requirement (Engine Oil)		2,040 gals For Vehicles	For new vehicle (initial filling)+40 ltr/yr for Gen Set
13	Annual Fuel Wood Requirement		-	No Fuel Wood boiler
14	Annual Electricity Requirement		5,500,000 units From both grid and own geneartion	From both grid and own geneartion
15	Diesel Generating Set		(2 units) 633KVA, 165KVA	Run at the black out time only
16	Annual Water Requirement (Approx;)		185,600gals From (4”dia tube well-2 nos.)	Mainly utilize from tube well and enough
17	Solid Waste		0.2 tons per day	Sold out to recycle buyer
18	Waste Water (Toilet, Person use, Kitchen)		10m^3 ~50m^3 per year (Approx)	Use Septic Tank (No drain to the environment)

Need of EIA

Environmental Impact Assessment is predition of impacts which could cause by implementation of this project and how could be affected to the environment by these impacts. It would be both positive and negative impact which is key for the sustainability.

The industrial development and creating employment are the key business for Myanmar where is rich in human resources. This proposed project by local and foreign joint venture investment is one of the projects proposed by local and international investors which are to be developed for nation's economic development.

This project aims to develop Motor Assembling Plant (Gold A Y A Motors International Group Co.,Ltd) located at Plot No.B-1-1 of Block Factory Area Zone 2C, Myotha Industrial Park Between Myotha and Nabu Ain village, total land area (20.084)Acres in Ngazun Township, Myingyan District of Mandalay Division Region with foreigner investment law is planned to develop not only for the region but also to increase of GDP.

The following table shows the need of EIA for the proposed project due to its size. (the regulation of Myanma Environmental Law which is enacted 2015.)

သတ္တုစက်ပစ္စည်းနှင့်လျှပ်စစ်ပစ္စည်းများထုတ်လုပ်ခြင်းလုပ်ငန်း

စဉ်	ရင်းနှီးမြှုပ်နှံမှုစီမံကိန်းအမျိုးအစား	ကနဦးပတ်ဝန်းကျင်ဆန်းစစ်ခြင်းပြုလုပ်ရန်လိုအပ်သည့်အရွယ်အစား	ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်းပြုလုပ်ရန်လိုအပ်သည့်အရွယ်အစား	မှတ်ချက်
၉၈	မော်တော်ယာဉ်နှင့်မော်တော်ဆိုင်ကယ်တပ်ဆင်ထုတ်လုပ်ခြင်း	ထုတ်လုပ်မှုဧရိယာစတုရန်းမီတာ၅၀၀၀နှင့်အထက်သို့မဟုတ်အော်ဂဲနစ်ပျော်ဝင်ပစ္စည်းတစ်နာရီလျှင်၆ကီလိုဂရမ်နှင့်အထက်သုံးစွဲခြင်း	ဝန်ကြီးဌာနကပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်းပြုလုပ်ရန်လိုအပ်သည်ဟုသတ်မှတ်သည့်စီမံကိန်းလုပ်ငန်းအားလုံး	

Scoping

Due to the table above, this project is considered as the project type that needed to be compiled EIA report. This scoping report is for No.B-1-1 of Block Factory Area Zone 2C, Myotha Industrial Park Between Myotha and Nabu Ain village, total land area (20.084)Acres in Ngazun Township, Myingyan District of Mandalay Division Region covering the whole project of phase I & II.

The scoping and the impact assessment would be based on the following.

- The study area limit, the potential impact area, time limitation, project implementation phases and affected people and data collection
- The law, regulation, policy and standard to be inlined during environmental impact assessment
- Project background, base line data collection and dealing for further assessment is needed or not
- Describe potential impacts, data collection, methodology for assesment and needed further study or not
- Describe potential impacts which would caused by factory

- Describe mitigation to the Potential impacts
- Checking the Noise sources could effect to the nearby area and find the mitigation if it is needed
- Methodology and support for public consultation based on this project

The following table 2 shows the project owner & proponent, relevant organization of project implementation and the implementation organization of EIA. The overall frame work of Environmental Impact Assessment is shown in table 3.

(Table 1.4) Project Owner and Proponent, Project Implementation and Implementing Organization of EMP

Item	Description
Company name	Gold A Y A Motors International Group Co.,Ltd,
Project name	Manufacturing and Assembly of Motor Vehicles Project
Project Owner and Proponent	Mr. Li- Jifeng (Chinese) (General Manager) (Contact Person: Ms. Myat Noe Oo)
Address	**Factory:** Plot No.(B-1-1), Block-Factory Area, Zone-2C, Myotha Industrial Park, Myo Tha Tsp, Myingyan District, Mandala Division Region, Tel;+95-9-256486931 Mobile 09-264808234, email; myatnoeoo.0412@gmail.com **Office :** No.(A-2), 63th Street, Between 30th & 31st Street, Chan Aye Thar Zan Quarter, Mandalay, Mandala Division Region, Tel;+95-9-256486931 Mobile 09-264808234, email; myatnoeoo.0412@gmail.com
Tel;	Mobile 092648086234
Email;	myatnoeoo.0412@gmail.com
EIA undertaker	Kaung Kyaw Say Engineering Co.,Ltd (Contact Person: Ms. Myint Myint Thein)
Address	No. 31 Pinlone Yeikmon 5th Street, Pinlone Yeikmon, Thingungyun Tsp, Yangon, Myanmar. Tel 01-7571284 email: mdoffice@kaungkyawsay.com
Verified by	Daw Mya Mya Aye
Examined by	U Htun Naing Aung
Compiled by	Daw Myint Myint Thein

(Table 1.5) Overall Framework of Environmental Impact Assessment

	2018					
Item	April	May	June	July	Aug	Sep
MOU with Regional Government						
Selection of EIA Consultant						
Base line Survey						
Water Sampling						
Soil Sampling						
Air Measurement						
Noise and Traffic						
Flaura and Fauna Survey						
Culture Survey						
EIA Preparation						
Stakeholders Meeting						
EIA report						

Laws, Rules, Regulation and Announcements

The project proponent would be follow all the applicable policy, legal and Institutional Framework, laws and regulations that should be compliance to this project shown here under.

(Table 1.6) Laws, Rules, Regulation and Announcement

စဉ်	ဥပဒေများ	Law,Rule, regulation and Act.
၁	မြန်မာနိုင်ငံရင်းနှီးမြှုပ်နှံမှုဥပဒေ ၂၀၁၆	Myanmar Investment Law 2016
၂	မြေလွတ်၊မြေလတ်၊မြေရိုင်းများစီမံခန့်ခွဲရေးဥပဒေ ၂၀၁၂	Free Land, Vacant Land, Margin Land Management Law2012
၃	အလုပ်သမားအဖွဲ့ အစည်းဥပဒေ ၂၀၁၁	Labor Organization Law 2011
၄	အလုပ်သမားအငြင်းပွါးမှုဖြေရှင်းရေးဥပဒေ ၂၀၁၂	Settlement of Labour Disputes Law 2012
၅	လူမှုဖူလုံရေးဥပဒေ ၂၀၁၂	Social Security Law 2012
၆	အနဲဆုံးလုပ်ခကြေးငွေဥပဒေ ၂၀၁၃	Minimum Wages Law 2013
၇	အခကြေးငွေပေးချေရေးဥပဒေ ၂၀၁၆	Payment of Wages Law 2016
၈	ခွင့်နှင့်အလုပ်ပိတ်ရက်များဥပဒေ ၁၉၅၁	The Leaves and Holidays Act 1951
၉	အလုပ်သမားလျော်ကြေးအက်ဥပဒေ ၁၉၅၁	Workmen Compensation Act 1951
၁၀	ရေနံနှင့်ရေနံထွက်ပစ္စည်းဆိုင်ရာဥပဒေ ၂၀၁၇	Petroleum and Product of Petroleum Law 2017
၁၁	ရေနံနည်းဥပဒေများ၁၉၃၇	Petroleum Rules 1937
၁၂	မော်တော်ယာဉ်ဥပဒေ ၂၀၁၅	The Motor Vehicle Law 2015
၁၃	မော်တော်ယာဉ်နည်းဥပဒေ ၁၉၈၇	The Motor Vehicle Rule 1987
၁၄	ပြည်သူ့ကျန်းမာရေးဥပဒေ၁၉၇၂	Public Health Law 1972
၁၅	ကူးစက်ရောဂါများကာကွယ်နှိမ်နင်းရေးဥပဒေ ၁၉၉၅	Prevention and Control of Communicable Diese Law 1995
၁၆	မြန်မာ့အာမခံလုပ်ငန်းဥပဒေ ၁၉၉၃	The Myanma Insurance Law 1993
၁၇	မြန်မာနိုင်ငံမီးသတ်တပ်ဖွဲ့ ဥပဒေ ၂၀၁၅	Myanmar Fire Force Law 2015
၁၈	ပိုကုန်သွင်းကုန်ဥပဒေ၊၂၀၁၃	The Export and Import Law 2013
၁၉	အလုပ်အကိုင်နှင့်ကျွမ်းကျင်မှုဖွံ့ဖြိုးတိုးတက်ရေးဥပဒေ၂၀၁၃	Employment and Skill Development Law 2013
၂၀	ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဥပဒေ ၂၀၁၂	The Environmental Conservation Law 2012
၂၁	ပတ်ဝန်းကျင်ထိန်းသမ်းရေးနည်းဥပဒေ ၂၀၁၄	The Environmantal Conservation Rules 2014
၂၂	ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်းဆိုင်ရာလုပ်ထုံးလုပ်နည်း ၂၀၁၅	Environmantal Impact Assessment Procedure 2015
၂၃	အမျိုးသားပတ်ဝန်းကျင်ဆိုင်ရာအရည်အသွေး(ထုတ်လွှတ်မှု)လမ်းညွှန်ချက်များ ၂၀၁၅	The National Environmental Quality (Effluent) Guideline 2015
၂၄	တိုင်းရင်းသားလူမျိုးများ၏အခွင့်အရေးကာကွယ်စောင့်ရှောက်သည့်ဥပဒေ ၂၀၁၅	The Rights of National Races Law 2015
၂၅	ဧရာဝတီတိုင်းလွှတ်တော်မှပြဌာန်းသည့်ဥပဒေများအနက်ဆက်စပ်သည့်ဥပဒေများ၊ နည်းဥပဒေများ။	All related Laws and Rules enacted by Ayeyarwaddy Division Region Hluttaw
၂၆	နိုင်ငံခြားသားရင်းနှီးမြှုပ်နှံမှုဥပဒေ (၂၀၁၂)	The Foreign Investment Law (2012)
၂၇	ကုန်သွယ်လုပ်ငန်းခွန်ဥပဒေ (၂၀၁၄)	The Commercial Tax Law 2014
၂၈	သဘာဝဘေးအန္တရာယ်ဆိုင်ရာစီမံခန့်ခွဲမှုဥပဒေ (၂၀၁၃)	The Natural Disaster Management Law 2013
၂၉	အလုပ်ရုံများအက်ပဒေ (၁၉၅၁)	The Factory Act (1951)
၃၀	ဓာတုနှင့်ဆက်စပ်ပစ္စည်းကြောင့်ထိခိုက်မှုအန္တရာယ်ကာကွယ်ခြင်းဆိုင်ရာဥပဒေ ၂၀၁၃	The Prevention of Hazard from Chemical and Related Substances Law 2013
၃၁	ဘွိုင်လာဥပဒေ (၂၀၁၅)	The Boiler Law (2015)
၃၂	မြေအောက်ရေအက်ဥပဒေ (၁၉၃၀)	The Underground Water Act (1930)

(Table 1.7)The Summary of Commitments

Commitment in Brief	No.	Description of Commitment	Reference in Report (Chapter)
Declaration of report is completed and accredited.	1	This environmental impact assessment (EIA) and environmental management program (EMP) report is submited after getting self assessment done by each consultants and experts in their related fields and accreditated.	Chapter (3.4) (က-၁)
Confirmation of EMP report is compiled with all environmental law, rules, regulation and national effulant guidelines.	2	This report is compiled with all environmental law, rules, regulation and national effulant guidelines.	Chapter (3.4) (က-၂)
Commitment to fulfil all commitments to the mitigation program & monitoring program as mentioned in this environmental management program	3	The Project proponent has fully understand all description in this report and Committed to fulfil all commitments to the mitigation program & monitoring program	Chapter (3.4) (က-၃)

report		as mentioned in this environmental impact assessment and environmental management program report	
Commitment to conduct at least impacts to social and to fulfil the mitigation program during closure period at the time of project completion.	4	The project proponent had committed to conduct at least impacts to social and to fulfil the mitigation program during closure period at the time of project completion.	Chapter (3.4) (က-၃)
Commitment to submit the regular monitoring report	5	The project proponent has committed to submit the regular monitoring report to the ministry every 6 months according to the regulation of environmental impact assessment procedures para (108).	Chapter (8.16)
Commitment to finance to CSR program	6	The project proponent had committed to refinance for CSR program if the allotment is not enough by submitting proposal to the nearest BOD meeting and get approval.	Chapter (8.20)(9.4)

The Description of Environment

The project located in the Ngazun township is positioned on the Global Polarize System of 21°43’52” N and 95°37’30”E. Nganzun, 640ft above sea level is a town in Mandalay Division Region which is in the Myingyan district and good access by road network in previous but road network at present to reach within few hours to Mandalay, Naypyitaw and even Yangon the economic capital and becoming one of the strategic town not only for Mandalay division region but also for the whole nation.

The topographic feature is plain ground.

The weather
Myothar, Nganzun Township located in Mandalay Division Region is in the dry zone region. It has hot and dry weather at about the average year temperature in the range of 12C° to 42C°.

The Significant Environmental & Social Impacts and Mitigation Measures
There would be 2 types of impact would caused generally.

1. Temporary or short term Impact caused during construction period
2. Impacts caused by long term or operation process

Project Alternatives Findout and Result,

The following are found out during feasibility study before project implementation.
It is the dry land area and less chances of successful agricultural related business. Only industrial park project is possible.

Comparism and Reason of Selection of Alternatives
Eventhough alternatives were studied before construction start, it is found out that the selected project is the best option. Here are the alternatives and the reasons of selection as mentioned below.

- The land plot is the best location for the proposed project
- The villagers had realized and motivately participated that the project is reliable for the supporting of regional development
- It is implementation of better land use pattern.
- It is imposible to get enough land site as it is.

Scoping for Environmental and Social Impact Assessment

The impacts of pollution, natural environment, social environment were classified as A to D in accordance with the following criteria.

A-: Significant Negative Impact A+: Significant Positive Impact
B-:Some Negative Impact B+:Some Positive Impact
C: Impacts are not clear, need more investigation
D:No impact or Impacts are negligible, no further study required

The environmental and social impact assessment was conducted according to the scoping matrix below.

(Table 1.8) Scoping for Environmental and Social Impact Assessment

Category	Assessment Item	Scoping		Assessment		Impacts
		Before/During Construction (BC/DC)	Operation Stage(OS)	Before/During Construction (BC/DC)	Operation Stage(OS)	
Pollution	Air Quality	B-	B-	B-	B-	BC/DC: Emissions from construction equipment, dust arising from construction activities. OS: Emissions from generator and engine test running are anticipated.
	Water Quality	D	D	D	D	BC/DC: Muddy water inflows to river from construction site may effect to water quality. But not effected to the water body OS: Water pollution to the surrounding water bodies by waste water if it is not treated is anticipated. But no discharge from the factory.
	Solid Waste	D	D	D	D	BC/DC: Generation of construction waste by each works and removal of structures are anticipated. OS: All solid wastes from the production, personal including kitchen wastes are potential impact sources.
	Waste Water	D	D	D	D	BC/DC: No muddy or waste water from construction activities inflows to river and to water body OS: In general there is no waste water from the vehicle assembling process and no discharge from the factory.
	Soil Contamination	D	D	D	D	BC/DC: It could be affected to the soil only at the construction site during construction but not impact to the soil contamination. OS: Unmanaged waste, used oil and oil spillage to the ground could cause contamination in operation stage.
	Noise and Vibration	B-	B-	B-	B-	BC/DC:Noise and vibration from operation of construction machinery and construction vehicles are anticipated. OS:Noise and vibration from operation generator, vehicle assembling activities, engine & vehicle test running are anticipated.
	Ground Subsidence	A+	A+	A+	A+	BC/DC:Ground subsidence by construction activity is anticipated. OS: Ground subsidence by operation stage is anticipated.
	Offensive Odor	D	D	B-	B-	BC/DC: Offensive odor during construction is anticipated. OS: Offensive odor caused by generator is anticipated.
	Bottom Sediment	D	B-	D	D	BC/DC:Construction works is not anticipated. OS: No wastewater and disposal in operation stage and no bottom sediment would cause.
Natural Environment	Protected Area	D	D	D	D	No natural preserve area and national parks exist in and around the project site.
	Flaura/Fauna and Ecosystem	C	C	C	C	There are no information on inhabiting situation of important animals and valuable plant species in the surrounding area.
	Hydrology	B-	B-	D	D	BC/DC:hydrology impact to the ground water during

						construction is not anticipated. OS: Hydrology impact by using groundwater during operation stage is anticipated.
	Topography and geology	D	D	D	D	The project area is flat land, thus impact of topography and geology is not be anticipated.
Social Environment	In voluntary Resettlement	D	D	D	D	No resettlement is needed as the project site is relocated. The positive support by the neighbors received. The assessment of impact of these items for the people, who live or earn their living near project site will be SPC and relevant authorities.
	Misdistribution of benefit and damage	C	C	C	C	
	Local conflit of interests	D	D	D	D	
	Gender	D	D	D	D	
	Children's Right	D	D	D	D	
	Ethnic minorities and indigenous peoples	D	D	D	D	
	Poor	A+	A+	A+	A+	The povity elimination could be expected at BC, DC and OS by development of job opprotunities to the local residents
	Living and livelihood	A+	A+	A+	A+	BC/DC: OS: Positive impact on living and livelihood could be expected as the local economy & employment will be boosted.
	Existing social infrastructures and services	B+	B+	B+	B+	BC/DC: the assessment of traffic to the nearby project site would be done. OS: The positive impact is assumed by the development of facilities related to the project service and many social infrastructures will be improved.
	Water Usage	D	D	D	D	BC/DC: Impact on local water usage may occur if surface water would be taken not only for the construction activities but also usage by the tenants after project accomplished. OS: Impact on existing water usage is not expected. The implementation of new sources for water supply to the project would be considered without causing negative impact on local existing water usage.
	Cultural heritage	C	C	C	C	There is no cultural heritage at the project site and the surrounding area and cause no impact. It would be sources to develop the cultural heritage by the allotment of CSR fund.
	Landscape	C	C	C	C	It would be positive impact to the landscapes and viewpoints in the surrounding area due to the project layout.
	Risks for infectious disease such as AIDS/HIV	D	D	D	D	Risks of infectious diseases with a fixed probability are anticipated.
	Working conditions (including occupational safety)	B-	B-	B-	C	BC/DC: Impact of working conditions during construction is anticipated. OS: Impact on working conditions during operation stage are anticipated.
Other	Accident	B-	B-	C	C	BC/DC: There are chances of accident especially in the construction stage. OS: Due to increase of traffic volume since construction, the assessments are anticipated.
	Global Warming	B-	B-	B-	B-	BC/DC: Emission of Greenhouse gases (GHGs) by construction machineries are anticipated. OS: GHGs emission in operation stage by tenants and vehicles are anticipated.

(Table 1.9) The Summary of Impacts & Ratings

Impact	Significance Rating
Impact on Air environment (Pollution)	Low
Impact on Natural Environment (Water Resources)	Low
Impact on Noise and Vibration	Low-Medium (w/o Generator Running) High (with Generator Running)
Impact on Land Environment (Soil contamination, Ground Subsidence)	Low (Construction Period)
Impact on Biodiversity	Low
Impact on Community Safety and Health	Low but A+
Impact on Job Opportunity	High A+
Impact on Occupational Safety and Health	Low but A+
Restriction of Access	-
Economic Displacement of local Agriculturists	-
General Economic Development	High A+
Better Transportation	High A+

There is no impact than as it is implemented on agriculture land. It is also found out that could create more beneficial than agricultural business by reducing impact at good management. The mitigation to the potential impacts are shown below.

Mitigation and Consideration Measures (Pre-Construction Phase)

Category	**Item**	**Mitigation and Consideration Measures in Pre-construction Phase**	**Responsible Organization**
Pollution	Air Quality	None	Developer
	Water Quality	None	Developer
	Waste	Each work plan of the project will be designed to minimize waste	Developer
	Noise & Vibration	To study the sources sound making for both acceptable and unacceptable and to find the buffer zone or sound prove	Developer
Natural Environment	Flora, Fauna and Biodiversity	Design concept on Greening Plan To avoid unnecessary of cutting trees	Developer
	Hydrological Situation	There is no underground water usage at this project	Developer
Social Environment	Living and Livelihood	To collect the base line	Developer
	Water Usage	None	
	Existing social infrastructures and services	Securing Plan Community accessibility will be secured by improvement of existing roads	Developer
	Risk and infectious disease such as AIDS/HIV	Measures of infectious disease will be plan as following Prevention of spreading out Training of workers	Developer
	Working Conditions (including occupational safety)	Considering to follow OHS working condition and guideline such as EHS by IFC	Developer
Others	Accident	Accident prevention measures would be planned	Developer
	Global Warming	To control or minimize the mitigation measures of GHGs	Developer

Mitigation and Consideration Measures (During Construction Phase)

Category	Item	Mitigation and Consideration Measures in Pre-construction Phase	Responsible Organization
Pollution	Air Quality	As the intensive operating of the construction machinery will be avoided	Developer
	Water Quality	To monitor water quality Setting pond for simple turbid water treatment	Developer
	Waste	To provide dumping site To implement 3R for all wastes	Developer
	Noise & Vibration	Monitoring Noise & Vibration Installation of Sound Proof Avoid construction at night time	Developer
Natural Environment	Flora, Fauna and Biodiversity	Implementing of Greening Plan To avoid unnecessary of cutting trees	Developer
	Hydrological Situation	underground water usage	Developer
Social Environment	Living and Livelihood	Same as mitigation measure	Developer
	Water Usage	Monitoring of consumption of ground water	
	Existing social infrastructures and services	Securing Plan	Developer
	Risk and infectious disease such as AIDS/HIV	Prevention of spreading out Training of workers	Developer
	Working Conditions (including occupational safety)	Follow OHS working condition and guideline such as EHS by IFC *Personal protection equipment for workers such as safety helmets, booths, gloves, protecting cloths, spectacles and ear protection *Provision of adequate healthcare facilities (first aid) within construction site *Training of all construction workers in basic sanitation and healthcare issues, general health and safety matters and on the specific hazards of their work *Clean drinking water for all workers *Adequate drainage throughout the camp ensure that disease vectors such as stagnant water bodies and puddles do not form *Septic tank and garbage bins will be set up in construction site which will be regularly cleared by the contractor to prevent outbreak of disease *Where feasible the contractor will arrange the temporary integration of waste collection from work sites into existing waste collection system and disposal facilities of nearby communities *Adequate protection to the general public, including safety barriers and making of hazardous areas *Safe access across the construction site	Developer
Others	Accident	Accident prevention measures	Developer
	Global Warming	Control of mitigation measures of GHGs	Developer

Mitigation and Consideration Measures (Operation Phase)

Category	Item	Mitigation and Consideration Measures	Responsible Organization
Pollution	Air	To monitor air quality To installed and used of ventilation with filters, To check the painting boots enclosure and exhaust	Developer
	Water	To monitor water quality To check any contamination of water table such as restricting the discharge of drain and sewer onto the ground	Developer/SPC
	Waste	To provide temporary storage site before collector come To implement 3R for all wastes	Developer/SPC
	Noise & Vibration	Monitoring Noise & Vibration Installation of Sound Proof Avoid construction at night time	SPC
Natural Environment	Flora, Fauna and Biodiversity	Implementing of Greening Plan To avoid unnecessary of cutting trees	Developer/ Tenants/SPC
	Hydrological Situation	underground water usage	Developer
Social Environment	Living and Livelihood	Same as mitigation measure	SPC
	Water Usage	Monitoring of consumption of ground water by strictly controlling and minimizing the consumption of water used in factory, dormitory and kitchen	SPC
	Existing social infrastructures and services	Securing Plan	Developer
	Risk and infectious disease such as AIDS/HIV	Prevention of spreading out Training of workers	Tenants
	Working Conditions (including occupational safety)	Follow OHS working condition and guidline such as EHS by IFC	Tenants
Others	Accident	Accident prevention measures	Tenants
	Global Warming	Control of mitigation measures of GHGs	Tenants

The assessments were carefully done and arrange the mitigation measure environmental and socially potential impacts during operation stage to the following.

1. Dust pollution
2. Noise & Vibration
3. Waste and Wastewater
4. Flora and Fauna
5. Employment Opportunity

Air Quality - Dust Management Plan

Eventhough the project site was designed in the industrial zone and no household, there are no base line data recorded how much dust particles in the air and how much polluted in this area due to the vehicles passing.

The following are the major factors to the air and noise pollution

- Supporting trucks and vehicles moving around these areas.
- Construction machineries and pile driving
- Wind blowing effect to the dust
- New vehicle engine testing

To mitigate these impacts, it is needed to control the speed of vehicles and partition to the loading and unloading area.

Noise & Vibration Management Plan

As the major cause of noise comes from vehicles, construction machineries and communication among workers, it could be controlled by good management by the work charge or the team leader.

During operation period, there will be noise coming from grinding machines and others accessories in the factory. Eventhough, the electricity supply would be taken from the grid, the diesel generator would be running for black out time and could noise which is unavoidable. To mitigate the noise from the generator set, it could be installed in sound prove housing and install exhaust cylenser which could be very much useful to avoid noise impact. It should be priotize to work in day time just as much as possible and try to avoid working not later than 8pm.

The worst noise impact would come from diesel power generator and pile driving process and the loude communication between workers. To reduce these impacts, it could control by making partition at loading unloading area and manage the working hours or vehicle rerouting.

Solid Waste Management Plan

The solid and other waste such as paper, can, bottle including kitchen waste should all be collected and stored systematically with bag before the service company come and collect or selling by lot. The nature of project is making car assembling process and solid wastes would be created from operation and process as shown below.

a) Solid Waste from the Workshop
b) Solid Waste from kitchen & personals

Different kinds of solid wastes such as tissue papers, packaging papers, food residues, glasses, tins, bottles, stationeries, demaged/ expired devices or appliances and other miscellaneous would be generating everyday. Food waste could be generated from the kitchen at domitory. The other solid wastes such as bins, bottles and cans are sperated and tried to apply recyclable process as much as possible. The solid and other waste such as paper, can, bottle including kitchen waste should all be collected and stored systematically with bag before selling to the service company to come and collect. By this management, it could be avoided the impact to the environment by these wastes. The company will assign workers to collect waste and woul be instructed to store waste better than shown herewith. Furthermore 3R (Reduce, Reuse and Recycle) system should be applied as much as possible. The amount of waste estimated about 20~100 Kg per day (sold to recycle company by lot) It would be contacted to city development committee for occasionally such as septic tank is full and when hazardous waste is present.

Waste Water Management Plan

All these stages of project implementation, washing, toilet, and kitchen are the key areas that could smart control on water usage pattern, so that it could developed on mitigation process by control the amount of water used.

The nature of project is vehicle assembling and there is waste water process which could be harmful to the environment. The following are the waste water that would comes from normal operation and process.

a) Waste water from Kitchen, Shower and Toilets
b) Waste water from the personal washing process

(Remarks) The proposed project is under the normal operation stage as the constructions Phase I is completed.

This project would be done to be complied with international standard and guideline to avoid environmental impact caused by not only normal operation of machineries but also daily workers activities on wastes and effluents including fire prevention.

It is also well organized and planned for mitigation and monitoring program with environmental management plan. It is also planned to organize for greening and emergency evacuation plan.

(Table 1.9)The Summary of Environmental Management Plan & Financial Allotment (Operation Phase)

Category	Item	Environmental Management	Responsible Group	Frequency/Financial Allotment(Ks)
Pollution	Air Quality	-Cleaning dust in the factory always -In case that a tenant live in the domitory which may cause exhaust gas pollution such as intensive cooking. -Speed limiting to all vehicles and service machines	EMP team/SPC	Check Daily/ (1,500,000/ 3months) For air quality check
	Water Quality	-Smart control such as water saving ultra low flush toilet, spray nozzles, urinals and low flow shower heads etc., for water system should be applied for water usage. -No impacts to the surface and ground water as the septic tank is istalled	EMP team/SPC	Check Daily/ (500,000/ 3months) For water quality check
	Noise	Install Sound Proof Generator and Compressor, Avoid construction and operation at night time, Speed limit for drivers, Provide ear plug for operator. Buffer zone for sound-proving to the diesel generator using at black out time. (The engine has installed the silencer) The silent split type air conditioners should be installed instead of window type	EMP team/SPC	Check Daily/ (500,000/ 3months) For Noise check
	Water & Energy Consumption	Check tube wells, water usage and water quality, Reuse of water, stop airconditioner during lunch time to save electricity	EMP team/SPC	Check Daily/ (1,500,000/ 3months)
	Waste Water	-Install oil and grease trap should be installed -Ensure no waste water shoud be released from the project area to public area especially without treatment. -Install septic tank and frequent check	EMP team/SPC	Check Daily/ (1,500,000/ 3months) For waste water leak check
	Traffic Management	Control speed limit to all vehicles, Provide parking lot for motor bikes and bicycles	Developer	50,000/yr
	Solid Waste	Management on solid wastes to implement 3R for all wastes, keep all solid wastes systematically store before selling out to buyer or trash by contacting city development committee, -Waste collector bins should be placed enough both inside workshop, show room, office and domitory. -Food waste and bio waste should be collected and dispose daily systematically	Developer	200,000/yr
	Soil Contamination	-Ban on infiltrate liquid waste onto the ground.	EMP team/SPC	200,000/yr
	Ground Subsidence	-Check consumption of ground water and monitoring of ground subsidence.	EMP team/SPC	200,000/yr
	Offensive Odor	-Offensive odor which might be generated by the tenants would be strictly controlled.	EMP team/SPC	200,000/yr
	Bottom Sediment	-Not applicable as no discharge to river or stream	EMP team/SPC	-
Natural Environment	Flora, Fauna Management	-Planting and Maintenance of trees, vegetation , lawn in the public space such as road and other open spaces.	Developer	200,000/yr
	Management on Greening	Monitor and maintain all plants to keep green, plant a new trees as much as possible	EMP team/SPC	300,000/yr
Social Environment	Livelihood	Providing priority to all local and nearby residents for all vacancies at the project, Continuous training programs are planned for capacity development	Developer	600,000/yr
	Occupational Health and Safety Management	Follow OHS working condition and guideline such as EHS by IFC, Installed ventilation for temperature & dust control (power fan, hood & wall mounted), Manage efficiently generator operation hours, Use soundproof gen set and compressor to reduce noise	Developer	500,000/yr

		and provide ear plug to operator, Avoid night time operation, Manage water usage by controlling water level at dying/washing machine Chemicals are kept, handled and used well, The empty containers of chemicals are stored carefully and resell to the supplier, Hazardous waning including no smoking and high voltage signages are put on the necessary place, A nurse aids boxes are installed work stations in the factory to get quick access The purified drinking water is provided. The necessary health cares are provided to all sick, wounded and allow the maternity leaves.		
	Risk and Infectious disease such as AIDS/HIV	-Measures of infectious disease will be implemented as follows; • Plan for prevention of infectious disease from spreading. • Training plan for workers	EMP team/SPC	200,000/yr
Others	Accident	-Accident prevention measures inside and outside the project area will be planned.	EMP team/SPC	200,000/yr
	Global Warming	-Energy Saving devices such as LED lamps, door lock and switch card to be used to reduce energy consumption -Minimization of GHGs emission by construction machines and vehicle will be planned	EMP team/SPC	500,000/yr
	Hazardeous Waste Management	-The empty bottles and containers of Hygence and bleach used in laundry, Kitchen and spa are kept separately before disposal at special purpose company or cleansing department of city development council.	Developer	1,000,000/yr
	Emergency & Evacuation Management	Emergency Plan and Groups are formed Periodic training is provided, All emergency relief equipments such as fire extinguishers are placed as fire department standard, The evacuation maps and signs to way out are drawn on the floor, fire alarm are installed, The emergency contact numbers are informed	Developer	1,000,000/yr
	Preparaness for natural disaster	An AIDs medicines are provided by the company not only for emergency but also regular medical care to all employees. A nurse aids boxes are installed at work stations in the factory to get quick access.	Developer	500,000/yr
Storage and Handling of Materials	Kitchen	-Store in different refrigerators for meats, vegetables and foods & beverages -Check daily for expire for all food -Provide all storages and shelves from flood water at any time -Check and prevent rottan and other insect from entering into the kitchen	EMP team/SPC	100,000/yr
	Fuel	-All fuels lubricants should be store under fire prevention system including placing of fire extinctguishers -Extra care is needed to spill out fuels and lubricants to the ground	EMP team/SPC	100,000/yr

The following table shows the detailed information on how the parameter, method and program for the point that is to be measured.

Noise

No	Point of Pollution	Cause	Affected	Parameter	Indication	Method	Person	Duration
1	Surrounding of Project Area	Traffic(Car Parking, loading/Unloading)	Noice	Sound Level	dB	Sound Level Meter		Daily

Water & Waste Water

No	Point of Pollution	Cause	Affected	Parameter	Indication	Method	Person	Duration
1	Surrounding	Washing Process Drain/Car Wash,etc.	Waste Water	Flow rate	BOD, COD	Lab Analysis	Person In charge	Daily, Weekly Monthly

Air

No	Point of Pollution	Cause	Affected	Parameter	Indication	Method	Person	Duration
1	Inside Factory and/or Surrounding	Emission, Exhaust(Machines ,Vehicle,etc.)	Air	Exhaust Air (Temp/Pressure)	(Temp;humidity PM_{10},NO,SO_2,CO) Ordor level	Lab Analysis	Person In charge	Daily, Weekly, Monthly

Solid Waste

No	Point of Pollution	Cause	Affected	Parameter	Indication	Method	Person	Duration
1	Surrounding	Tree leaves	Solid Waste	Volume/Weight	Volume	Visual, Weight Measurement	Person In charge	Daily, Weekly, Monthly

The data to be collected, locations, periods and the data collectors all should be managed pre construction, during construction and normal operation period respectively.

(Remarks, It could be omitted the pre-construction and during construction stage as the project is in the operation stage.)

Table (1.11) **Monitoring Plan & Financial Allotment (Operation Phase)**

Category	Item	Location (Lat/Long)	Frequency	Financial Allotment (ks)	Responsible Organization
Air Quality	VOC, HCHL, $PM_{2.5}$, PM_{10}	Construction Site (In factory and surrounding)	Twice a year	2,000,000	Sub Project Contractor
Water Quality	pH, SS, DO, BOD, COD, oil & grease, chromium	Construction Site(In factory and surrounding)	Once a year	200,000	SPC
Waste	Amount of solid waste Management of solid waste including domestic and industrial waste	Each tenant (In factory and surrounding)	Once/6month	200,000	EMP team
Soil Contamination	Status of control of solid and liquid waste which causes soil contamination	Each tenant (In factory and surrounding)	Once a year	200,000	EMP team
Noise and Vibration	Noise & Vibration level	Each tenant (In factory and surrounding)	Once (peak period)	500,000	SPC
Ground Subsidence	Ground elevation	Preservation site	Once a year	500,000	SPC
Offensive Odor	Status of offensive odor control by tenants	Each tenant (In factory and surrounding)	Twice per year	1,000,000	EMP team
Bottom Sediment	Combine with water quality	Preservation	Once a year	500,000	SPC

		site			
Hydrology	Consumption of ground water amount	Preservation site	Once a year	500,000	SPC
Water Usage Hydrological Situation	Combine with ground subsidence monitoring	Preservation site (In factory and surrounding)	Once a year	500,000	SPC
Risk for infectious disease such as AIDS/HIV	Status of measures of infection disease	Each tenant/Worker	Once/month	1,000,000	SPC/Tenants
Working conditions (including occupational safety)	Working condition with safety and health	Work site	Once /month	1,000,000	SPC
Accident	Existence of accident	Work Site	As occasion arises	1,000,000	Tenants

The find out data should be checked with National Environmental Quality (Emission) Guidelines.

The impacts and mitigation measures on social economic

With the creation of jobs for local and nearby villages could definitely help income generation which is positive impact to social economic by this project.
The capacity building to the employees would be arranged together ECD of MONREC by trainings and courses when it is necessary.
The organizing and fund allocation are made for mitigation and monitoring program.

The public consultation and declaration

The public consultation meeting was held as following
The assessment trip was made to Myotha project side with concerned authorities from project proponent side and the assessments weres taken placed on May.4,2018 and July.5,2018 including public consultation with stakeholders and local villagers. During assessment study, it could get the base line environmental data, the potential impacts which could be affected by the project implementation and interviewed with government authorities of Nganzun township level and local villagers.

Table (1.12) Summary of Consultation Activities Undertaken

No	Date	Description	Venue
1	May.4,2018	Government Officials of Ngazun township and all people who concerned the project	Ngazun township general administration office
2	July.5,2018	Public Consultation with Local resident, CSO, NGO, Government Officials of Ngazun township and all people who concerned the project	MMID meeting room

The public consultations were done accordingly as mentioned in the table above with international guideline and standards and instruction by MONREC accordingly by explaining the project in details and giving chances of their opinion and discussion. The meeting is open to all and not limited to the ones who had attended the meeting from far and nearby. Furthermore, it is also announced to participate not only in the scheduled consultation meetings, but also provided the access to project office, third party office and the general administration office or ECD offices. The suggestion or complaint related to environmental and social affairs could be sent directly to the project office or through quarter or township administration office.

Table (1.13) The discussion points or request at the meetings and the company's commitments & progress

No.	Discussion points or request	Agreement or Commitment by Project Proponent	Progress
1	To acknowledge the vacancies at the factory reserve the priority right to the local residents	Agreed to announce the vacancies well ahead and give priority to the local residents	Done
2	To provide regular capacity training for local residents	Agreed as it is allocated the CSR fund	Coordination with MONREC & local authority
3	To sell vehicles to local residents with bank loan program	Agreed to sell vehicles with bank loan	Discussion with banks

In addition, the development program to the people affected by this project implementation
The following are the commitment for the community development and project affected people by the implementation of this project.

(1) To give priority of appointing to the people for geeting employment if there are vacencies.
(2) To use prevention measures on mitigation of impacts as much as possible and to promote community development.
(3) To promote CSR activities always.

If the allotted fund is not enough, the project proponent would be use additional fund by getting approval from the nearest board of director meeting.

Conclusion and Recommendation

It is found out the project is more beneficial than getting impact as it is well planned to implement with technical and standard for the alternative better land use to the existing dry agriculture land by avoiding impact. During the public consultation meeting the people lived in the project affected area and stakeholders all were acknowledged about the impact such as noise, waste and no waste water is generating by this project. All nearby residents are awaiting the development of employment and fully support to this project implementation. By this project implementation, it is found out that could create more beneficial by reducing impact at good management and increasing personal income and nation's GDP by creating employment opportunities and increasing revenue.

3. Introduction

3.1 Introduction

Gold AYA Motors International Group co., Ltd established in June 2017, is a joint venture integrated automobile group company. The registered country of the company is the federal republic of Myanmar, with an authorized capital of 50.000.000 USD. The production base is located in block b-1-1 in zone 2C, Myotha industrial park, central Mandalay Division Region, Myanmar.

3.2 The project origin, the need of project, purpose of project

The Project Origin

It is the manufacturing and assembly of motor vehicles factory project operating as Joint venture between Shining Star International Holdings Ltd of Hongkong at 60% share and Mr. Qian Haifang at 20% resided at Room2654, Building No.39, No.6, Qinqixi Road, Lt Tong District, Wuzhong City, Mingxia Province, China and U Ye Htut Lin, resided at No.(49/B2) corner of Thiri Myaing 2 Street (13) ward, Hlaing Township, Yangon from Myanmar at 20% shares to this project respectively. The Gold A Y A Motors International Group Co.,Ltd is registered at company registra office under the foreign investment law and obtained the company registration number 100642476 and the endorsement of dated 28-6-2017 from the Directorate of Investment and Company Administration.

The industrial park connects the Asian expressway, the Asian railway network, the Irrawaddy river, the international airport and so on.

Company production base covers an area of 81278.36 square meters (20.084 acres). The first phase of construction covers an area of 14537.89 square meters, including 3658.28 square meters of showroom buildings, 2728 square meters of dormitory buildings and 8151.61 square meters of factory buildings.

Need for Project

With the changes on politically and socially, Myanmar is potential country to be developed with its rich in natural and human resources. However, Myanmar is needed to be developed transport sectors to be in line with the development of social and economic by production of consumer's products and industrial based products even it is agricultural, natural and human resources based country.

Regarding to this situation, it is needed motor vehicles not only for the region but also for the country as a supporting project to economic and social sector development.

Purpose of Project

To produce auto vehicles locally
To reduce trade deficic by cutting vehicle import
To increase domestic product
To increase direct and indirect employment by this project development

3.3 Description of Project Proponent

Gold A Y A Motors International Group Co.,Ltd

Manufacturing and Assembly of Motor Vehicles Project

Table (3.1) Project Owner, Project Proponent and EIA Consultant

Item	Description
Company name	Gold A Y A Motors International Group Co.,Ltd,
Project name	Manufacturing and Assembly of Motor Vehicles Project
Project Owner and Proponent	Mr. Li-Jifeng (General Manager) (Contact Person: Ms. Myat Noe Oo)
Address	Plot No.B-1-1 of Block Factory Area Zone 2C, Myotha Industrial Park, Between Myotha and Nabu Aine village, Ngazun Township, Myingyan, District of Mandalay Division Region, Union of Myanmar, Mobile 09264808234 email; myatnoeoo.0412@gmail.com
Tel;	Mobile 09890674115
Email;	myatnoeoo.0412@gmail.com
EIA undertaker	Kaung Kyaw Say Engineering Co.,Ltd (Contact Person: Ms. Myint Myint Thein)
Address	No. 31 Pinlone Yeikmon 5th Street, Pinlone Yeikmon, Thingungyun Tsp, Yangon, Myanmar. Tel 01-7571284 email: kaungkyawsaymdoffice@gmail.com
Verified by	Daw Mya Mya Aye
Examined by	U Htun Naing Aung
Compiled by	Daw Myint Myint Thein

3.4 The Period of Investment

The investor, Mr. Li-Jifeng (the general manager of Gold AYA motors International Group Co.,Ltd) originary resided at Room2654, Building No.39, No.6, Qinqixi Road, Lt Tong District, Wuzhong City, Mingxia Province, China on behalf of Shining Star International Holdings Limited, Room 1806, 18/F, Park-In Commercial Centre 56 Dundas Street Mongkok, Kowloon, Hong Kong, plans to invest in the land of opportunity to establish a stable production base in response the expend and increasing local demand. This is why Myanmar has been selected to invest.

The project is designed to build and operate the manufacturing and assembly of motor vehicles factory to produce household cars, SUV, MPV, commercial vehicles, pickups, special vehicles and new energy vehicles by employing about 110 local workers and 15 foreign experts depending on getting orders for long term (50 years) investment.

(1) Company Registration Start 28-6-2017
(2) MIC permit 27-3-2018
(3)The Official Commercial Operating Date : 25-6-2019

3.5 The Approach and Methodology

This EIA report is followed on the collection of both assessment data & public consultation (primary data) and the secondary data from the literature & publication review.The EIA must examine the potential impacts and the risk assessment. The project may have either positive and or negative impacts to the environment. It should also find the mitigation and monitoring to these impacts by organizing the environmental management plan. This EIA report is prepared by predicting, identification, evaluation and assessing the potential key impacts covering pre construction, during construction and normal operating phases. The mitigation, managing and monitoring are well planned to reduce these impacts and to get high operating efficiency.

For the environmental sustainable manner, the Environmental Management Plan is being provided by harmonizing the project development with the no impacts or less impacts to the environmentally and socially by project developer with the provision of mitigation measures for the significant negative impacts. It is also identifies the monitoring requirements needed for the implementation of the suggested mitigation measures. The commitments by the proponent are also inserted in this report.

A monitoring plan for this project providing parameters, frequency, locations and applicable monitoring method are included in this report with the closure plan.

The fomat/contents of this EIA report are listed as below.

1. Executive Summary (Myanmar)
2. Executive Summary (English)
3. Introduction
4. Policy, Law and Legal Framwork
5. Description of Project and Alternatives
6. Description of Environment
7. The Environmental Impact Assessment & Mitigation Measures
8. The Mitigation
9. The Cumulative Impact Assessment
10. The Environmental Management Plan
11. The Public Consultation Meeting & Disclousure
12. The Conclusion
13. Annexes

The qualitive and quantitative methodology was adopted to conduct this study. The study included of both primary and secondary data through the Focus group discussion/public consultation, Interview with local authority and Secondary data (township data book).

3.6 The Scope of Study and the Study Area

The scope of study is identification of key environmental and social issues which will likely arise during construction and operation phases of proposed project, along with the significant negative impacts and mitigation measures to be adopted for their minimization.

Based on the find out data of impacts and mitigation measures, it is to produce the Environmental Management Plan (EMP) with the detailed instruction on monitoring program to be compliances with national environmental and social quality standards and reporting procedure which could lead the project operation in an environmentally sustainable manner.

The study area is included nearby villages within 3 miles radius distance from the project site.

Table (4) The salient data for the project

<table>
<tr><th>No</th><th colspan="2">Description</th><th>Qty</th><th>Remarks</th></tr>
<tr><td>1</td><td colspan="2">Tpye of project</td><td>JV (Myanmar 20%+Foreigner 80%)</td><td>Joint Venture Investment</td></tr>
<tr><td rowspan="3">2</td><td rowspan="3">Investment</td><td>Myanmar</td><td>1.13MUS$</td><td rowspan="3">Total Investment of 15.32 MUS$ including Myanmar kyats in US Dollar equivalent</td></tr>
<tr><td>Foreigner</td><td>12.19MUS$</td></tr>
<tr><td>Total</td><td>15.32MUS$</td></tr>
<tr><td>3</td><td colspan="2">Date of Company Establish</td><td>28-6-2017</td><td>Company Registration No. 100642476</td></tr>
<tr><td>4</td><td colspan="2">Date of Operation Start</td><td>25-6-2019</td><td></td></tr>
<tr><td>5</td><td colspan="2">Licenses</td><td>MIC Permit; 067/2018 (27-3-2018)
Ministry of Commerce License:
Export /Import No. 011945 (17-08-18)
MOI: Industry License; Matala /Kyi/2449 (6-8-2019)
MOI: (Mdy) Electricity-Inspection EI-MDY-187 (18-6-21~17-6-22)
MOI: (Mdy) Electricity-Inspection (1) Electricity Production and Usage-076/2019 (21-6-19~20-6-23)
(2) Electricity Production and Usage-077/2019 (21-6-19~20-6-23)</td><td></td></tr>
<tr><td>6</td><td colspan="2">Raw materials (Import)</td><td>Import from China + Local Purchase</td><td>Details on Annex</td></tr>
<tr><td>7</td><td colspan="2">Product Export (To)</td><td>Local Sale Only</td><td></td></tr>
<tr><td>8</td><td colspan="2">Product Capacity</td><td>Vehicles (Approx; 1000~37500 nos) per year</td><td>(Changhe –Q35SuV, M60MPV-1.5 std, A6 Sedan Car, Q7-SUV, M20SMPV,
DODA V8-MPV,
K9-Pick-up)</td></tr>
<tr><td rowspan="3">9</td><td rowspan="3">Working Time</td><td>Daily (07:30 ~16:30) (lunch break; 12:00~13:00)</td><td>8 hours per day</td><td rowspan="3">Overtime would be based on the demand of product and timing</td></tr>
<tr><td>Weekly</td><td>5 days per week</td></tr>
<tr><td>Yearly</td><td>250 days per year</td></tr>
<tr><td>10</td><td colspan="2">No of machines</td><td>As shown on the list of imported equipments</td><td>(See Annex)</td></tr>
<tr><td>11</td><td colspan="2">No. of workers (Ref; to MIC proposl)</td><td>110 nos.
15 nos.</td><td>Local 88%,
experts 12%</td></tr>
<tr><td rowspan="2">12</td><td colspan="2">Annual Fuel Requirement (Diesel)</td><td>50,000 gals Petrol, 100,000gals diesel For generator,Truck</td><td>For generator,Truck</td></tr>
<tr><td colspan="2">Annual Lubricant Requirement (Engine Oil)</td><td>2,000 gals For Vehicles</td><td>For vehicle (initial filling)</td></tr>
<tr><td>13</td><td colspan="2">Annual Fuel Wood Requirement</td><td>-</td><td>No Fuel Wood boiler</td></tr>
<tr><td>14</td><td colspan="2">Annual Electricity Requirement</td><td>5,500,000 units From both grid and own geneartion</td><td>From both grid and own geneartion</td></tr>
<tr><td>15</td><td colspan="2">Diesel Generating Set</td><td>(2 units)
633KVA, 165KVA</td><td>Run at the black out time only</td></tr>
<tr><td>16</td><td colspan="2">Annual Water Requirement (Approx;)</td><td>40,000,000gals From (6”dia tube well-1 nos.)</td><td>Mainly utilize from tube well and enough</td></tr>
<tr><td>17</td><td colspan="2">Solid Waste</td><td>0.2 tons per day</td><td>Sold out to recycle buyer</td></tr>
<tr><td>18</td><td colspan="2">Waste Water</td><td>$10m^3$ ~$50m^3$ per month (Approx)</td><td>Use Septic Tank (No drain to the environment)</td></tr>
</table>

This project could create employment as there would be 100 vacancies at the factory when it is in the full operation stage.

3.7 Description of Environmental and Social Experts

The Environmental Consultant Team of Kaung Kyaw Say Engineering Co.,Ltd
The Brief information of members of the Environmental Team of Kaung Kyaw Say Engineering Co.,Ltd.
holder of Certificate for Transitional Consultant Registration No. 00038 (Organization)

Table (3.2) The List of Consultants

No	Name	Position	Responsible
1	U Htun Naing Aung (Reg. No. 00144) (Person) (B.E)(Mechanical) A.G.T.I (Mechanical Power)	Chairman, Senior Consultant	All parts of assessment & reports (Specialize in Air pollution Control, Ground Water & Hydrology, Waste Management)
2	Daw Mya Mya Aye (Reg. No. 00146) (Person) (B.A)(History)	Consultant (Social Economic & Environmental)	Social Economic & Environment
3	U Mya Cho (Reg. No. 00038) (Org.) (B,Sc,)(Forestry)	Consultant (Environmental & Forestry)	Environmental & Forestry
4	Mr. Salil Duct (Reg. No. 00038) (Org.) MBA, M.Tech (Environment Management)	Consultant (Industrial & energy audit)	Industrial Pollution Prevention & Control
5	Dr. Tint Swe (Reg. No. 00038) (Org.) (Phd) (Marinebiology)	Consultant (Marinebiology)	Marinebiology & Environment
6	Daw Khin Sint Yi (Reg. No. 00038) (Org.) M.Sc (Bottany)	Consultant (Ecology & Biodiversity)	Ecology & Biodiversity, Social Economy (Flora)
7	Dr. Khin Mar Mar (Reg. No. 00038) (Org.) M.B,M.S, MPH USMLE (Step.2)	Consultant (Health)	Public Health
8	Daw Ni Ni Aung (Reg. No. 00038) (Org.) B.A (Geography)	Consultant (Geography)	Topography & Geography
9	(Reg. No. 00038) (Org.) Daw Myint Myint Thein	Assistant Consultant	M&E , Data collect

I the undersigned certisfied this Scoping report is taken responsibility to each and every parts of the report by each consultants that is assigned for.
ယခုအစီရင်ခံစာပါအခန်းအလိုက်အားသက်ဆိုင်ရာကျွမ်းကျင်သူတို့ကတာဝန်ယူရေးသားထားသည်မှာမှန်ကန် ပါသည်။

(ဦးထွန်းနိုင်အောင်) အဖွဲ့ခေါင်းဆောင်

3.8 The Commitments by the Project Proponent and Third Party Organization

The accuracy and complementness of EIA

This EIA has been prepared in strict compliance with applicable laws, procedure and with TOR of EIA.

That the project will at all times comply fully with the commitments, mitigation measures and plans in the EIA report.

In addition and according to the Article 62 of Environmental Regulation, the commitments by project proponent and third party organization would also be inserted in this section as following

- the accuracy and completeness of the EIA and the EMP report;
- that the EIA and the EMP report have been prepared in strict compliance with applicable laws including EIA Procedure Notification No. 616/2015 and with the TOR for the EIA; and
- that the Project will at all times comply fully with the commitments, mitigation measures, and plans in the EIA and EMP Report.

<u>The Commitment on Accuracy and Completness of the EIA Report</u>

EIA အစီရင်ခံစာသည်တိကျကြောင်းခိုင်မာကြောင်းဝန်ခံချက်။

ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဥပဒေနှင့်နည်းဥပဒေ၅၄နှင့်လုပ်ထုံးလုပ်နည်းအပိုဒ်(၂၄)တို့အရပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစခြင်းအစီရင်ခံစာရေးဆွဲတင်ပြရန်လိုအပ်သည့်အတွက်ရန်ကုန်မြို့မှကောင်းကျော်စေအင်ဂျင်နီယာလုပ်ငန်းကုမ္ပဏီမှဦးဆောင်ပြီးစီမံကိန်းပိုင်ရှင်နှင့်အတူတကွပတ်ဝန်းကျင်ဆိုင်ရာထိခိုက်မှုများဆန်းစစ်ခြင်းနှင့်စီမံခန့်ခွဲမှုအစီအစဉ်များကိုစိစစ်လုပ်ဆောင်ခဲ့ပြီးလုပ်ထုံးလုပ်နည်းအပိုဒ်(၅၅မှ၆၅အထိ)ကိုလိုက်နာဆောင်လျက်ယခုအစီရင်ခံစာကိုတင် ပြအပ်ပါသည်။

By following the environmental impact assessment procedures para (from 55-to 65), Kaung Kyaw Say Engineering Co.,Ltd officed in Yangon, leaded the accessment, together with project proponent and submits this Environmental Impact Assessment report in accordance with the environmtntal law, para 54 of environmental regulation and environmental impact assessment procedure para (24).

ယခုတင်ပြသည့်ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်းအစီရင်ခံစာသည်ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဥပဒေ၊နည်းဥပဒေ၊လုပ်ထုံးလုပ်နည်းနှင့်စံချိန်စံညွှန်းများကိုလိုက်နာလျက်သက်ဆိုင်ရာပညာရှင်များနင့်တတ်ကျွမ်းသူပုဂ္ဂိုလ်များတို့မှသေချာစွာကိုယ်တိုင်ကွင်းဆင်းစစ်ဆေးကောက်ယူပြီးပြန်လည်တင်ပြခြင်းဖြစ်သောကြောင့်တိကျခိုင်မာကြောင်းတင်ပြအပ်ပါသည်။

This report is completed and compiled with all environmental law, rules, regulation and national effulant guidelines and submits after getting self assessment done by each consultants and experts in their related fields and accreditated.

Mr. Li-Jifeng
General Manager
Gold AYA Motors International Group Co.,Ltd
Plot No.B-1-1 of Block Factory Area Zone 2C, Myotha Industrial Park Between Myotha and Nabu Aine village, Ngazun Township, Myingyan District of Mandalay Division Region, Union of Myanmar Mobile 09264808234

ဦးထွန်းနိုင်အောင်
ဉက္ကဌ
ကောင်းကျော်စေအင်ဂျင်နီယာလုပ်ငန်းကုမ္ပဏီလီမိတက်။
အမှတ်၃၁၊ပင်လုံရိပ်မွန်၊သဃ်န်းကျွန်းမြို့နယ်၊ရန်ကုန်မြို့။

<u>သက်ဆိုင်ရာဥပဒေများကိုတိကျစွာလိုက်နာလျက်ပတ်ဝန်းကျင်ဆန်းစစ်ခြင်းအစီရင်ခံစာကို ဆောင်ရွက်ထားပါကြောင်းကတိဝန်ခံချက်။</u>

<u>The commitment on report carefully conducted and submitted in strict compliance with applicable laws including EIA Procedure Notification No. 616/2015 and with the TOR for the EIA</u>

ကောင်းကျော်စေအင်ဂျင်နီယာလုပ်ငန်းကုမ္ပဏီမှဦးဆောင်ပြီးသက်ဆိုင်ရာ Stake holders များနှင့်အတူတကွ၊ပတဝန်းကျင်ဆိုင်ရာင်ဆန်းစစ်ခြင်း၊တွေ့ဆုံမေးမြန်းခြင်းစစ်တမ်းများကောက်ယူခြင်းလုပ်ငန်းများကိုစိစစ်လုပ်ဆောင်ခဲ့ပြီး၊သက်ဆိုင်ရာဥပဒေများ (ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဥပဒေ၊နည်းဥပဒေတို့နှင့်လုပ်ထုံးလုပ်နည်း(အပိုဒ်၅၅မှ၆၅အထိဖော်ပြချက်များနှင့်အညီ) အမျိုးသားပတ်ဝန်းကျင်ဆင်ရာအရည်အသွေး (ထုတ်လွှတ်မှု)လမ်းညွှန်ချက်) အပါအဝင်၊ EIA ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်းလုပ်ထုံးလုပ်နည်းအမိန့်ကြေငြာစာအမှတ်၆၁၆/၂၀၁၅ နှင့် EIA အတွက်သတ်မှတ်ထားသည့် TOR တို့ကိုတိကျစွာလိုက်နာ၍ ဤပတ်ဝန်းကျင်ဆိုင်ရာဆန်းစစ်ခြင်းအစီရင်ခံစာကိုရေးဆွဲတင်ပြထားပါသည်။

Kaung Kyaw Say Engineering Co.,Ltd has leaded the assessment, data collecting & public consultation together with stakeholders and submits this EIA report in strict compliance with applicable laws (environmental law, rule & the environmental impact assessment procedure para (55-65) and national effluent guidelines etc,) including EIA Procedure Notification No. 616/2015 and with the TOR for the EIA.

ဦးထွန်းနိုင်အောင်
နိုင်ငံသားလကမှတ်အမှတ် ၁၂/ဗဟန(နိုင်) ဝ၉၇၄၄၅
ဥက္ကဌ
ကောင်းကျော်စေအင်ဂျင်နီယာလုပ်ငန်းကုမ္ပဏီလီမိတက်။
ဥက္ကဌ၊
စွမ်းအင်နှင့်သဘာဝပတ်ဝန်းကျင်ထိန်းသိမ်းရေးအဖွဲ့၊
မြန်မာနိုင်ငံစက်မှုကုန်ထုတ်လုပ်သူများအသင်း။(MIA-EEnG)
အတွင်းရေးမှူး၊
(CDM Cooperation Board-Myanmar)စွမ်းအင်ဝန်ကြီးဌာန။
အကဲဖြတ်ဒိုင်
Board of Judges
ASEAN စွမ်းအင်ဆုရွေးချယ်ရေးအဖွဲ့၊ASEAN Center for Energy (ACE)

<u>The commitments by the project proponent</u>
<u>to mitigation measures and management plans mentioned in the EIA Report</u>

EIA အစီရင်ခံစာပါထိခိုက်မှုလျော့ချခြင်း၊ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှုအစီအစဉ်များအပေါ် စီမံကိန်းဖော်ဆောင်သူ၏ ကတိဝန်ခံချက်။

စီမံကိန်းဖော်ဆောင်သူသည်ဤပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်းအစီရင်ခံစာပါကတိကဝတ်၊ပတ်ဝန်းကျင်ထိခိုက်မှုလျော့ချရေးလုပငန်းများ၊ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှုအစီအစဉ်နှင့်ပတ်ဝန်းကျင်စောင့်ကြပ်ကြည့်ရှုခြင်းအစီအစဉ်ပါအချက်များကိုအပြည့်အဝအစဉ်အမြဲလိုက်နာဆောင်ရွက်မည်ဖြစ်ကြောင်းဝန်ခံအပ်ပါသည်။

We, the project proponent, committed to fulfil all commitments including the mitigation measures, the environmental management plan and monitoring program as mentioned in this environmental impact assessment report.

စီမံကိန်းလုပ်ငန်းများပြီးစီး၍စီမံကိန်းပိတ်သိမ်းချိန်တွင်လူမှုဝန်းကျင်အားထိခိုက်မှုအနည်းဆုံးဖြစ်စေရန်ဆောင်ရွက်မည်ဖြစ်ကြောင်းနှင့်ထိခိက်မှုများရှိလာပါကထိခိုက်မှုအနည်းဆုံးဖြစ်စေမည့်အစီအစဉ်များကိုလည်းလုပ်ဆောင်သွားမည်ဖြစ်ကြောင်းဝန်ခံအပ်ပါသည်။

It is committed to conduct least impacts to social environment and to fulfil the mitigation program if there is impact during closure period at the time of project completion.

Mr. Li-Jifeng
General Manager
Gold AYA Motors International Group Co.,Ltd
Plot No.B-1-1 of Block Factory Area Zone 2C, Myotha Industrial Park Between Myotha and Nabu Aine village, Ngazun Township, Myingyan District of Mandalay Division Region, Union of Myanmar Mobile 09264808234

Signature (Representative of the project proponent)

I, the undersigned Proponent (or representative, there of), hereby state that the information provided in/with the application and the report ensure;

a) the accuracy and completeness of the Scoping report;
b) that the Scoping report have been prepared in strict compliance with applicable laws including EIA Procedure Notification No. 616/2015 and with the TOR for the EIA; and
c) that the Project will at all times comply fully with the commitments, mitigation measures, and plans in the EIA and EMP Report.

Signature: ______________________ Date of submission: (dd/mm/yyyy) ______________

Name: ______________________

Table (3.3) The Summary of Commitments

Commitment in Brief	No.	Description of Commitment	Reference in Report (Chapter)
Declaration of report is completed and accredited.	1	This environmental impact assessment (EIA) and environmental management program (EMP) report is submited after getting self assessment done by each consultants and experts in their related fields and accreditated.	Chapter (3.4) (က-၁)
Confirmation of EMP report is compiled with all environmental law, rules, regulation and national effulant guidelines.	2	This report is compiled with all environmental law, rules, regulation and national effulant guidelines.	Chapter (3.4) (က-၂)
Commitment to fulfil all commitments to the mitigation program & monitoring program as mentioned in this environmental management program report	3	The Project proponent has fully understand all description in this report and Committed to fulfil all commitments to the mitigation program & monitoring program as mentioned in this environmental impact assessment and environmental management program report	Chapter (3.4) (က-၃)
Commitment to conduct at least impacts to social and to fulfil the mitigation program during closure period at the time of project completion.	4	The project proponent had committed to conduct at least impacts to social and to fulfil the mitigation program during closure period at the time of project completion.	Chapter (3.4) (က-၃)
Commitment to submit the regular monitoring report	5	The project proponent has committed to submit the regular monitoring report to the ministry every 6 months according to the regulation of environmental impact assessment procedures para (108).	Chapter (8.16)
Commitment to finance to CSR program	6	The project proponent had committed to refinance for CSR program if the allotment is not enough by submitting proposal to the nearest BOD meeting and get approval.	Chapter (8.20)(9.4)

4. Policy, Law and Legal Framwork

The Environmental Impact Assessment and the report is to be carried out to be in-lined with a number of laws, rules, procedures and notifications to justify the compliance of the project and its activities with relevant Myanmar laws such as Citizen Investment Law, Road and Highway Law, Ward and Village Tract Administration Law, Farm Land Law.,etc.

4.1 Myanmar Environmental Policy

The Government is to protect and conserve the natural environment and implies every citizen of Myanmar to assist the Government in environmental conservation. It is clearly mentioned in the constitution of the Republic of the Union of Myanmar. The National Environmental Policy was enacted in 1994 which is the basis for the integration of environmental consideration into development in Myanmar which proclaims the Government's commitment to sustainable development. The state has responsibility to preserve its natural resources in the interest of present and future generations and that environmental protection should always be the primary objective in seeking development. All natural resource management and environmental conservation work in pursuit of activities relating to biodiversity conservation is clearly mentioned in the Myanmar Agenda 21 developed in 1997.

4.2 Policy on environmental & social by project proponent

The Objectives of the project are as following.

1. For poverty reduction, social and urban development by creating direct and indirect employments
2. For Industrial Development and transport sector in Myanmar
3. To increase international investment in the industrial sectors
4. To elevate the livelihood of local people by providing employment opportunity by development of industries and economic zones
5. To increase nation's tex revenue

Environmental and social goals

The environmental and social goals are as following.

1. To develop the international standard production of automibiles by preventing or eliminating the environmental impacts caused by waste and waste water
2. To follow all procedures, methods and systems which are preventing environmental and health impact to near by local residents caused by variety of wastes
3. To follow all environmental laws, rules and policies which were enacted by nation

4.3 Environmental Law, Rules, International Convension Agreements, National and International Standards, Guidelines, Policy and Legal Fremework

The following table shows the applicable policy, legal and Institutional Framework, laws and regulations that should be compliance to this project.

Table (4.1) Law, Rule, Regulation and Act

စဉ်	ဥပဒေများ	Law,Rule, regulation and Act.
၁	ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဥပဒေ ၂၀၁၂	The Environmental Conservation Law 2012
၂	ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးနည်းဥပဒေ ၂၀၁၄	The Environmantal Conservation Rules 2014
၃	ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်းဆိုင်ရာလုပ်ထုံးလုပ်နည်း ၂၀၁၅	Environmantal Impact Assessment Procedure 2015
၄	အမျိုးသားပတ်ဝန်းကျင်အရေအသွေးဆိုင်ရာ(စွန့်ထုတ်မှု)လမ်းညွှန် ၂၀၁၅	The National Environmental Quality (Effluent) Guideline 2015
၅	မြန်မာနိုင်ငံရင်းနှီးမြှုပ်နှံမှုဥပဒေ ၂၀၁၆	Myanmar Investment Law 2016
၆	မြေလွတ်၊မြေလတ်၊မြေရိုင်းများစီမံခန့်ခွဲရေးဥပဒေ ၂၀၁၂	Free Land, Vacant Land, Margin Land Management Law2012

၇	အလုပ်သမားအဖွဲ့ အစည်းဥပဒေ ၂၀၁၁	Labor Organization Law 2011
၈	အလုပ်သမားအငြင်းပွါးမှုဖြေရှင်းရေးဥပဒေ ၂၀၁၂	Settlement of Labour Disputes Law 2012
၉	လူမှုဖူလုံရေးဥပဒေ ၂၀၁၂	Social Security Law 2012
၁၀	အနဲဆုံးလုပ်ခကြေးငွေဥပဒေ ၂၀၁၃	Minimum Wages Law 2013
၁၁	အခကြေးငွေပေးချေရေးဥပဒေ ၂၀၁၆	Payment of Wages Law 2016
၁၂	ခွင့်နှင့်အလုပ်ပိတ်ရက်များဥပဒေ ၁၉၅၁	The Leaves and Holidays Act 1951
၁၃	စက်ရုံဥပဒေ ၁၉၅၁	Factory Act 1951
၁၄	အလုပ်သမားလျော်ကြေးအက်ဥပဒေ ၁၉၅၁	Workmen Compensation Act 1951
၁၅	အလုပ်အကိုင်နှင့်ကျွမ်းကျင်မှုဖွံ့ဖြိုးတိုးတက်ရေးဥပဒေ၂၀၁၃	Employment and Skill Development Law 2013
၁၆	ရေနံနှင့်ရေနံထွက်ပစ္စည်းဆိုင်ရာဥပဒေ ၂၀၁၇	Petroleum and Product of Petroleum Law 2017
၁၇	ရေနံနည်းဥပဒေများ၁၉၃၇	Petroleum Rules 1937
၁၈	မော်တော်ယာဉ်ဥပဒေ ၂၀၁၅	The Motor Vehicle Law 2015
၁၉	မော်တော်ယာဉ်နည်းဥပဒေ ၁၉၈၇	The Motor Vehicle Rule 1987
၂၀	ပြည်သူ့ကျန်းမာရေးဥပဒေ၁၉၇၂	Public Health Law 1972
၂၁	ကူးစက်ရောဂါများကာကွယ်နှိမ်နင်းရေးဥပဒေ ၁၉၉၅	Prevention and Control of Communicable Diese Law 1995
၂၂	မြန်မာ့အာမခံလုပ်ငန်းဥပဒေ ၁၉၉၃	The Myanma Insurance Law 1993
၂၃	မြန်မာနိုင်ငံမီးသတ်တပ်ဖွဲ့ ဥပဒေ ၂၀၁၅	Myanmar Fire Force Law 2015
၂၄	ပို့ကုန်သွင်းကုန်ဥပဒေ၊၂၀၁၃	The Export and Import Law 2013
၂၅	တိုင်းရင်းသားလူမျိုးများ၏အခွင့်အရေးကာကွယ်စောင့်ရှောက်သည့်ဥပဒေ ၂၀၁၅	The Protection the Rights of National Races Law 2015
၂၆	မန္တလေးတိုင်းဒေသကြီးလွှတ်တော်မှပြဌာန်းသည့်ဥပဒေများအနက်ဆက်စပ်သည့် ဥပဒေများ၊ နည်းဥပဒေများ။	All related Laws and Rules enacted by Mandalay Division Region Hluttaw
၂၇	ဘာဆယ်ကွန်ဗင်းရှင်း ၂၀၁၇	Basel Convention (Signed in 2017)
၂၈	ဇီဝမျိုးစုံကွဲနှင့်သဘာဝထိန်းသိမ်းရေးနယ်မြေများကာကွယ်စောင့်ရှောက်ခြင်းဆိုင်ရာဥပဒေ (၂၀၁၈)	The Protection of Biodiversity and Natural Protected Area Law (2018)
၂၉	ကုန်သွယ်ခွန်ဥပဒေ (၂၀၁၄)	The Commercial Tax Law (2014)
၃၀	မြေအောက်ရေဥပဒေ (၁၉၃၀)	The Underground Water Act (1930)
၃၁	အင်ဂျင်နီယာကောင်စီဥပဒေ (၂၀၁၃)	The Engineering Council Law (2013)
၃၂	လျှပ်စစ်ဥပဒေ (၂၀၁၄)	The Electricity Law (2014)
၃၃	မြန်မာ့စံချိန်စံညွှန်းဥပဒေ (၂၀၁၄)	The Myanmar Standard Law (2014)

Applied Environmental law, regulation and standards

The environmental conservation law is enacted in 2012 by implementing of national policy by setting up of principles and guidelines for sustainable development and conservation of clean environment, natural and cultural heritage for present and future generation. There are 42 paragraphs in 14 sections of law. A person causing a point of source of pollution shall treat, emit, discharge and deposit the substances which cause pollution in the environment in accord with stipulated environmental quality standards is stipulated in paragraph 14. Moreover, paragraph 15 of the law says that the owner or occupier of any business, material or place which caused a point source of pollution shall install or use an on-site facility or controlling equipment in order to monitor, control, manage, reduced or eliminate environmental pollution. If it is impracticable, it shall be arranged to dispose the waste in accord with environmentally sound methods.

The Environmental Conservation Rules were officially announced on 5th June, 2014.

The national standard law is enacted July 2014.

The regulation for environment conservation is enacted in June 2014.

The Environmental Impact Assessment Procedures was enacted in 2015. Under this EIA procedures, all projects undertaken in Myanmar that can cause significant adverse impacts are required to undertake an IEE or EIA and to obtain an Environmental Compliance Certificate (ECC).

Institutional Framework

There are 22 ministries under the office of the President of Myanmar. The leading ministries in charge of environmental and social consideration are the Ministry of Natural Resources & Environmental Conservation (MONREC) and the ministry of Social Welfare, Relief and Resettlement (MSWRR). The Environmental Conservation Department is responsible for Environmental Conservation Law, National Environmental Policy, Strategy, Framework, Planning and action plan for the integration of environmental consideration into the national sustainable development process. ECD is also responsible for the conservation and management of Myanmar's natural resources and sustainable utilization, pollution control on water air and land.

Fundamental Laws and Regulations

It is the Citizens Investment Law. The objective of this law is to promote environmentally and socially sustainable economic growth and diversification of the productive sector of the union, providing investors with a set of fundamental and enforceable legal rights and guarantees to ensure that the investors and their investments are protected and treated with transparency, fairness and in strict accordance with the rule of law and accepted international standard and practice. The law also stated in para (3) its objective as "After exploiting abundant rich resources of the country, aiming at the people to enjoy sufficiently and to enable the surplus to export causing to open up of more employment opportunities for the people as the business developed and expand causing to develop human resources causing to develop respective regions including infrastructure, causing to rise economic enterprise and investment business, keeping abreast with the international norms.

The Detail of Compliance of Laws and Regulation

1) **Environmental Conservation Law(2012)**

The environmental law was enacted on 30th March 2012 prepared by MONREC. This environmental conservation law contains 14 chapters that define the rights and responsibilities of MONREC, environmental standards, environmental conservation, management in urban areas, conservation of natural and cultural resources, process for businesses to apply permission to engage in enterprise that has the potential to damage the environment, prohibitions, offenses and punishments. The article 16 in the law stipulates responsibility of business owner of industrial estate or business in the special economic zone on environmental conservation. Besides its rules as detailed enforcement regulations for ECL was got through parliament in July2013 and going to be issued. ECRs stipulates basic policy and concept on EIA application of the development of Projects (Article 55)

Default Environmental and Social Considerations

The project proponent set default environmental and social considerations based on the project components.

To install septic tank to treat wastewater from construction camp

To make workers secure a commitment to install pre-treatment facilities for neutralization, oil separation, removal of toxic and heavy metals.,etc.

Quantitative Target Levels for Consideration of Surrounding Environment

2) **The Environmental Conservation Rules (2014)**

- 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 under sub- rule (a) of rule 68.
- The project proponent has to avoid performing to damage to ecosystem and the environment generated by said ecosystem under sub-rule (b) of rule 68.

3) **Environment Impact Assessment Procedure (2015)**

- The project proponent has to be liable for all adverse impacts caused by doing or omitting of project owner or contractor, sub-contractor, officer, employee, representative or consultant who is appointed or hired to perform on behalf of project owner, under sub-paragraph (a) of paragraph 102.
- The project proponent has to support, after consultation with effected persons by project, relevant government organization, government department and other related persons, to resettlement and rehabilitation for livelihood until the effected persons by the project receiving the stable socio-economy which is not lower than the status in pre-project, under sub-paragraph (b) of paragraph 102.
- The project proponent has to fully implement all commitments of project and conditions included in EMP. Moreover the project proponent has to be liable for contractor and sub-contractor who perform on behalf of him/her have to fully abide by the relevant laws, rules, this procedure, EMP and all conditions, under paragraph 103.
- The project proponent has to be liable and fully & effectively implement all requirements included in ECC, relevant laws and rules, this procedure and standards under rule 104.

- The project proponent has to inform the completed information, after specifying the adverse impacts caused by the project, from time to time, under paragraph 105.
- The project proponent has to continuously monitor all adverse impacts in the pre-construction phrase, construction phrase, operation phrase, suspension phrase, closure phrase and post-closure phrase, moreover has to implement the EMP with abiding the all conditions included in ECC, relevant laws & rules and this procedure, under paragraph 106.
- The project proponent has to submit, as soon as possible, the failures of his or her responsibility, other implementation, ECC or EMP. If dangerous impact caused by this failure or failure should be known by the Ministry the project proponent has to submit within 24 hours and other than this situation has to submit within 7 days from knowing it, under paragraph 107.
- The project proponent has to submit the monitoring report dually or prescribed time by Ministry in line with the schedule of EMP, under paragraph 108.
- The project proponent has to prepare the monitoring report in accord with the rule 109.
- The project proponent has to show this monitoring report in public place such as library, hall and website and office of project for the purpose to know this report by public within 10 days from the date which the report is submitted to the Ministry. Moreover has to give the copy of this report, by email or other way which way agreed with the asked person, to any asked person or organization, under paragraph 110.
- The project proponent has to allow inspector to enter and inspect in working time and if it is needed by Ministry has to allow inspector to enter and inspect in the office and work-place of project and other work-place related to this project in any time, under paragraph 113.
- The project proponent has to allow inspector to immediately enter and inspect in any time if it is emergency or failure to implement the requirements related to social or environment or caused to it, under paragraph 115.
- The project proponent has to allow inspector to inspect the contractor and sub-contractor who implement on behalf of project, under paragraph 117.

4) **The National Environmental Quality (Effluent) Guideline (2015)**

- The project proponent will follow not to exceed all guide line values of NEQEG at the time of emit, discharge or dispose the solid and liquid wastes, or hazardous waste or hazardous materials.

5) **Myanmar Investment Law (2016)**

The Project Proponent will follows;

- The project proponent has to lease the land or building owned by government or private with lease agreement and register it by the registration of deeps law under sub- section (a) and (d) of section 50 of said law.
- The project proponent has to appoint the nationalities in the various levels of administrative, technical and expert work by the arrangement to develop their expertise, in line with the sub-section (b) of section51of said law.
- The project proponent has to appoint the nationalities only in normal work without expertise, in line with the sub-section (c) of section51of said law.
- The project proponent has to appoint either foreigner or nationality with the appointment agreement in accord with the law, in line with the sub-section (d) of section51of said law.
- The project proponent has to comply with the international best practices, existing laws, rules and procedures to not damage, pollute, and injure to environment, cultural heritage and social, in line with the sub-section (g) of section65of said law.
- The project proponent has to close the project after paying the compensation to the employees in accord with the existing laws if violates the appointment agreement or terminate, transfer or suspend the investment or reduce the number of employees , in line with the sub-section (i) of section 65 of said law.

- The project proponent has to pay the wages or salary to the employees in accord with the laws, rules, order and procedures in the suspension period, in line with the sub-section (j) of section65of said law.
- The project proponent has to pay the compensation or injured fees to the respected employees or their inheritors if injury in or loss of part of body or death caused by work, in line with the sub-section (k) of section 65of said law.
- The project proponent has to stipulate the foreign employees to respect the culture and custom and abide by the existing laws, rules, orders, directives, in line with the sub-section (l) of section65of said law..
- The project proponent has to abide by labour laws, in line with the sub-section (m) of section65of said law.
- The project proponent has to pay the compensation to the injured person for damages if damages of environment or socio-economy is occurred by misuse of project, in line with the sub-section (o) of section65of said law.
- The project proponent has to allow to inspect in anywhere of project if Myanmar Investment Commission inform to inspect the project, in line with the sub-section (p) of section65of said law..
- The project proponent has to obtain the permission of MIC before EIA process and report back this process to MIC, in line with the sub-section (q) of section 65of said law.

- The project proponent has to insure the prescribed insurance by rules, under section 73 of said law.

6) The Vacant, Fallow and Virgin Lands Management Law (2012)

The project proponent will follow

The submission for approval of extraction & mining in the vacant, fallow and virgin lands in the country according to the section 4 & 5 of said law,

7) Labour Organization Law (2011)

The Project Proponent will follows;

- ***Section 17*** - The project owner has to allow the labour organization to negotiate and settle with the employer if the workers are unable to obtain and enjoy the rights of the workers contained in the labour laws and to summit demands to the employer and claim in accord with the relevant law if the agreement cannot be reached.
- ***Section 18*** - The project proponent has to allow the demand for the re-appointment of worker who is dismissed by the employer without the conformity with the labour laws.
- ***Section 19*** - The project proponent has to send the representatives to the Conciliation Body in settling a dispute between the employer and the worker.
- ***Section 20*** - The project proponent has to allow the labour organization to participate and discuss in discussing with the government, the employer and the complaining employees in respect of employee’s rights or interest contained in the labour laws.
- ***Section 21*** - The project proponent has to allow the labour organization to participate in solving the collective bargains of the employees in accord with the labour laws.
- ***Section 22*** - The project proponent has to allow the labour organization to carry out the holding the meetings, going on strike and other collective activities in line with the procedure, regulation ,by-law and directive of relevant Chief Labour Organization .

8) The Settlement of Labour Dispute Law,2012

The Project Proponent will follows;

- The project proponent has to not absent to negotiation within the stipulated time for complaint, under section 38 of said law.
- The project proponent has to not change the existing stipulations for employees within conducting period before Tribunal, under section 39 of said law.
- The project proponent has to not close the work without negotiation, discussion on dispute in accord with this law, decision by Tribunal, under section 40 of said law.

- 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, under section 51 of said Law.

9) Social Security Law

The Project Proponent will follows;

- The project proponent has to register to the respected social security office, under sub-section (a) of section 11 of said law
- The project proponent has to pay the social security fund for at least four types of social security included in sub-section (a) of section 15, under section 15 of said law.
- The project proponent has to pay the fund which has to be paid myself and together with the fund which has to be paid from their salary by the employees .Moreover the project owner will pay the cost for paying the above mentioned fund only myself under sub-section (b) of section 18 of said law.
- The project proponent has to pay the fund for accidence, under sub-section (b) of section 48 of said law. (but this fund is not related to workmen compensation)
- The project proponent has to make correctly and submit the list and record provided in section 75 to respected social security office, under section 75 of said law.

10) The Minimum Wages Law 2013

The Project Proponent will follows;

- The project proponent has to pay the wages in line with section 12 of said law.
- The project proponent has to notify the prescribed wages obviously in work place, under sub-section (a) of section 13 of said law.
- The project proponent has to correctly record the lists, schedules, documents and wages and report these to the relevant department and give if these are asked while inspecting, in accord with the stipulations, under sub-section (b)(c)(d) of section13 of said law.
- The project proponent has to allow to be inspected by the inspector, under sub-section (d) and (e) of section 13 and section 18 of said law.
- The project proponent has to allow holiday for medical treatment if the employee' health is not fit to work, under sub-section (f) of section 13 of said law.
- The project proponent has to allow holidays without deducting from the wages if one of parents or one of family dies, under sub-section (g) of section 13 of said law.

11) Payment of Wages Law 2016

The Project Proponent will follows;

- The project proponent has to pay the wages in accord with the section 3 and 4 of said law, under section 3 & 4 of said law.
- The project proponent has to submit with the agreements of employees & reasonable ground to department if it is difficult to pay because of force majeure included in natural disaster, under section 5 of said law.
- The project proponent has to abide by the provisions of section 7 to 13 in chapter (3) in respect of deduction from wages.
- The project proponent has to pay the overtime fees, prescribed by law, to the employees who work over working hours, under section 14 of said law.

12) The Leaves and Holiday Act (1951)

The project proponent has to allow the leaves and holidays in line with the law.

13) The Revision of the Factory Act 1951 (2016)

The project proponent will follow,

To pay Commercial Tax on the import goods according to the regulation (para.4 A)
To pay Commercial Tax on all export goods according to the regulation (para.5)
To register at nearest township revenue office (para 11)

To submit the quarter and annual revenue statement (para 12 A)

14) Workmen's Compensation Act (1923)

The Project Proponent will follows;

Section 13 The project proponent has to pay the compensation in line with the provisions of said law base on kind of injury and case by case.

15) Employment and Skill Development Law (2013)

The Project Proponent will follows;

- The project proponent has to appoint employees with the contract in line with the provision of section 5 of said law.
- The project proponent has to carry out the training programs with the policy of Skill Development Body to develop the employment skill of employees who is appointed or will be appointed, under section 14 of said law.
- The project proponent has to monthly pay to the fund, which is fund for development of skill of employees, not less below 0.5 percentage of the total payment to the level of worker supervisor and the workers below such level, under sub-section (a) of section 30 of said law.
- The project proponent has to deduct from the payment of employees for above mentioned fund, under sub-section (b) of section 30 of said law.

16) Petroleum and Product of Petroleum Law (2016)

The Project Proponent will follows;

- The project proponent has to obtain the license, for importation of the fuel, issued by the Ministry of Commerce and Trade under sub-section (a) of section 7 of said law and abide by the stipulations in the license.
- The project proponent has to abide by the procedure and conditions, which to be safe in transportation and storage, prescribed by the Ministry of Commerce and Trade under sub-section (c) of section 7 of said law.
- The project proponent has to obtain the license for transportation and storage of the fuel under sub-section (a) of section 8 of said law and abide by the stipulations in the license.
- The project proponent has to abide by the procedure and conditions, which to be safe in transportation and storage, prescribed by the Ministry of Electricity and Energy under sub-section (d) of section 8 of said law.
- The project proponent has to transport the fuel by the vehicle or vessel which is licensed by the Ministry of Transportation and Communication under sub-section (a) of section 9 of said law.
- The project proponent has to store the fuel in the tank which is licensed by the Ministry of Natural Resource and Environmental Conservation under sub-section (a) of section 10 of said law.
- The project proponent has to show the notice of danger on the tank or container of fuel under section 11 of said law.

17) The Petroleum Rules (1937)

The Project Proponent will follows;

- The project proponent will abide by the provision of chapter (3) of the Petroleum Rules for transportation and the provisions of chapter (4) of said rules for storage.

18) The Motor Vehicles law (2015) and Rules (1987)

The Project Proponent will follows;

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.

19) The Motor Vehicle Rules (1987)

The Project Proponent will follows;
The project proponent has to promise to abide by the nearly all provisions of said law and rules, especially the provisions related to registration, driving, parking and life safety.

20) The Public Health Law (1972)

The Project Proponent will follows;

- The project owner will cooperate with the authorized person or organization in line with the section 3 and 5 of said law.
- ***Section 3*** - The project proponent has to abide by any instruction or stipulation for public health.
- ***Section 5*** - The project proponent has to allow any inspection, anytime, anywhere if it is needed

21) Prevention and Control of Communicable Diseases Law (1995)

The Project Proponent will follows;

- The project proponent has to built the housing in line with the health standards, distribute the healthful drinking water & using water and arrange to systematically discharge the garbage & sewage, under clause (9) of sub-section (a) of section 3 of said law.
- The project proponent has to abide by any instruction or stipulation by Department of health and Ministry of Health, under section 4 of said law.
- The project proponent has to inform promptly to the nearest health department or hospital if the following are occurred: (section 9)
  (a) Mass death of animals included in birds or chicken;
  (b) Mass death of mouse;
  (c) Suspense of occurring of communicable disease or occurring of communicable disease;
  (d) Occurring of communicable disease which must be informed.
- The project proponent has to allow any inspection, anytime, anywhere if it is need to inspect by health officer, under section 11 of said law.

22) The Myanma Insurance Law

The Project Proponent will follows;
Section 15 **-** If the project proponent uses the owned vehicles the project owner has to insure the insurance for injured person.
Section 16 The project proponent has to insure the insurance to compensate for general damages because the project may cause the damages to the environment and injury to public.

23) The Myanmar Fire Force Law (2015)

The Project Proponent will follows;

- The project proponent has to institute the specific fire services, under sub-section (a) of section 25 of said law.
- The project owner has to provide materials and apparatuses for fire precaution and prevention, under Sub-section (b) of section 25 of said law .

24) The Export and Import Law

- The project proponent has to abide by the conditions included in permit, under section 7 of said law.

25) Protection the Rights of National Races Law (2015)

Section 5 - The project proponent has to disclose to the residents national races all about the project fully.

- The project proponent has to cooperate with the residents national races.

26) **All Related Laws and Rules enacted by Mandalay Division Region Hluttaw**

The project proponent will abide for compilation of all laws enacted by the Mandalay Division Region Hluttaw.

27) **Basel Convention**

On the control of transboundary movements of hazardous wastes and their disposal

28) **The Protection of Biodiversity and Natural Protected Areas Law (2018)**

The project proponent has to abide by the conditions included in permit, under section 7 of said law.

To carry out the protection and observation of wildlife, ecosystems an migratory animals in accordance with international convention acceded by the state

To control smuggling or trafficking of wild animals and plants their parts of body and by products

To protect prominent geological site endangered species of wild life and their natural habitats

29) **Commercial Tax Law 2014**

The project proponent will

- The tax shall be paid for production , import and export
- submit and register about the service and shall furnish a letter of intimidation on the commencement of the operation as such to the relevant township revenue officer as stipulated by regulations.
- Shall furnish an annual return for such year to the township revenue officer within three months after the end of the relevant year

30) **The Underground Water Act (1930)**

The project proponent has to obtain the license granted by the water officer for sinking the underground water before sinking water, under section 3 of said law

31) **The Engineering Council Law (2013)**

- The project proponent has to appoint the employees, who obtained the registration certificate issued by the Myanmar Engineering Council, in the technical and engineering work, under section 37 of said law.
- The project proponent has to ensure the employees who are engineers abide to the provisions of Myanmar Engineering Council law, prohibitions included in the rules, order and directive issued under said law, conditions included in the registration certificate issued by the Myanmar engineering council, under section 34 of said law.

32) **The Electricity Law (2014)**

- The project proponent has to apply necessary permit for electricity use, under section 3-(g), of said law.
- The project proponent shall follow to appoint the skillful person to all installation of electricity system, under section 46 of said law.
- The project proponent shall follow not to connect, waste and utilize the electricity without permission, under section 52 of said law.

33) **The Myanmar Standard Law (2014)**

- The project proponent has to apply Myanmar standard to use, under the said law.

4.4 Obligations and Other Commitments

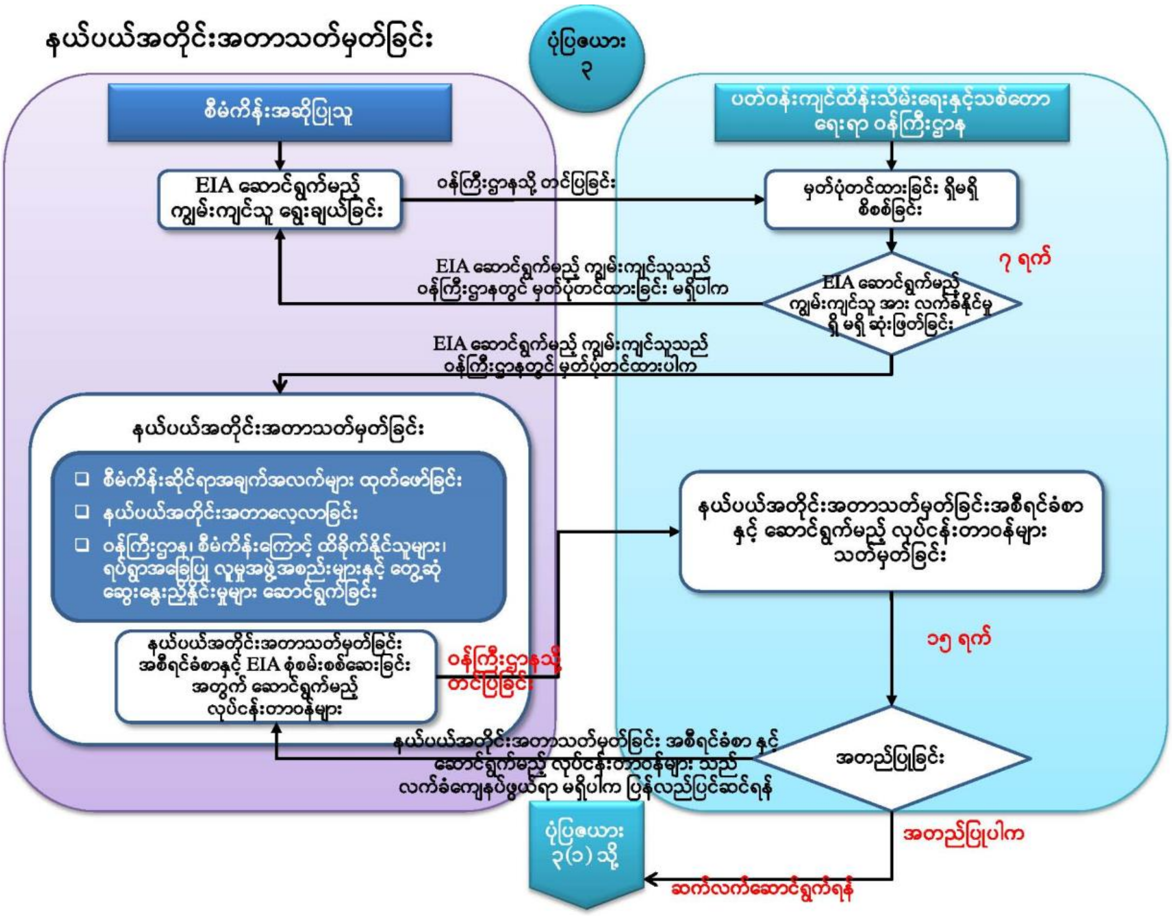
The Obligation

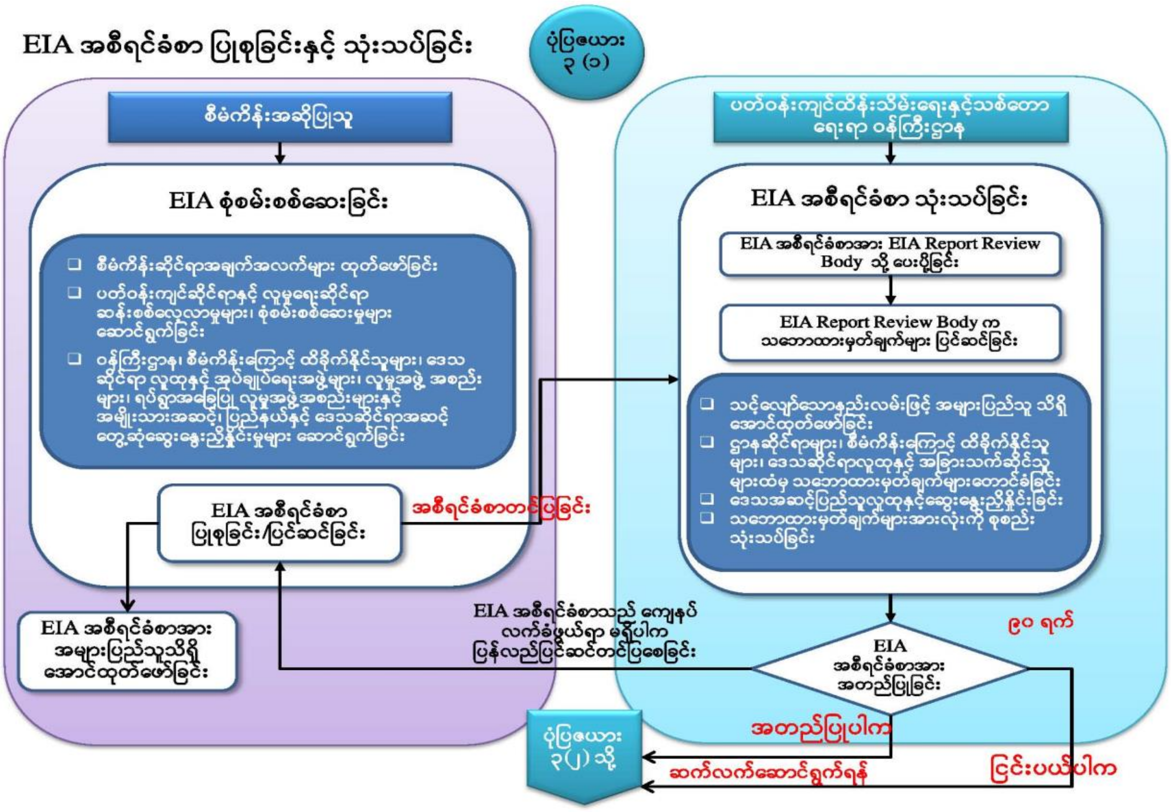
The project proponent, committed to fulfil all commitments including the mitigation measures, the environmental management plan and monitoring program as mentioned in this environmental impact assessment report.

Other Commitment

The fund allotment for the environmental management, mitigation of impact and monitoring is allocated. If the allocated fund is not enough it would be submitted to the nearest board of directors meeting for additional fund.

4.5 Organizational Framework





International Conventional Agreement

Table 4-2: International and Regional Agreement and Conventions

No	Conventions	Year (Ratified/ Acceded/ Accepted)
Environment		
1	Plant Protection Agreement for the Southeast Asia and Pacific Region, Rome 1956	1959 (Ratified)
2	MARPOL: International Convention for the Prevention of Pollution from Ship 1937 and MARPOL Protocol of 1978	1988 (Accession)
3	ICAO: ANNEX 16 of the Convention on International Civil Aviation Environmental Protection Vol. I and II, Aircraft Noise and Aircraft Engine Emission	Accession
4	Agreement on the Network of Aquaculture Centers in Asia and the Pacific, Bangkok 1988	1930 (Accession)
5	Vienna Convention for the protection of Ozone Layer, Vienne 1985	1993 (Ratification)
6	Montreal Protocol on substance that Deplete the Ozone Layer, Montreal 1987	1993 (Ratification)
7	London Amendment to the Montreal Protocol on Substances that Deplete the Ozone Layer, London 1990	1993 (Ratification)
8	United Nations Framework Convention on Climate Change (UNFCCC), New York 1992	1994 (Ratification)
9	Convention on Biological Diversity, Rio de Janeiro 1992	1994 (Ratification)
10	The Convention Concerning the Protection of the world Cultural and Natural Heritage, Paris 1972	1994 (Acceptance)
11	International Tropical Timber Agreement (ITTA), Geneva 1994	1997 (Accession)
12	United Nations Convention to Combat Desertification in Those Countries Experiencing Serious Drought, Paris 1994	1997 (Accession)
13	Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), Washington DC 1973; and as amended in Born, Germany 1979	1997 (Accession)
14	ASEAN Agreement on Conservation of Nature Resources, Kuala Lumpur, 1985	1997 (Signatory)
15	Kyoto Protocol to the Convention on Climate Change, Kyoto 1997	2003 (Accession)
16	ASEAN Agreement on Trans-boundary Haze Pollution	2003 (Ratification)
17	Stockholm Convention on Persistent Organic Pollutants (POPs), 2001	2004 (Accession)
18	Ramsar Convention on Wetlands of International Importance	2005(Accession)
19	Establishment of ASEAN Regional Center for Biodiversity	2005 (Signatory)
20	Declaration on ASEAN Heritage Parks	2003 (Signatory)
21	International Treaty on Plant Genetic Resources for Food and Agriculture, 2001	2004 (Ratification)
22	Catagena Protocol on Biosafety, Cartagena, 2000	2001 (Signatory)
23	Agreement to Promote Compliance with International Conservation and Management Measure by Fishing Vessels on the High Seas, Rome,1973	1994 (Acceptance)
24	United Nations Conservation on the Law of the Sea, Montego Bay, 1982	1996 (Ratified)
25	Agreement Relating to the Implementation of Part XI of the United Nations Convention on the Law of Sea of 10 December 1982, New York,1994	1996 (Accesion)

26	Convention on the Prohibition of the Development, Production, Stockpiling and Use of Chemical Weapons and their Destruction Paris, 1993	1993 (Signatory)
27	Treaty on the Prohibition of the Emplacement of Nuclear Weapon and other Weapons of Mass Destruction on the Sea Bed and Ocean Floor and in the Subsoil there of, London, Moscow, Washington, 1971	1971 (Signatory)
Social, Labour and Health		
28	Universal Declaration of Human Rights (UNDHR)	Signed
29	Convention on the Right of the Child	1991 (acceded)
30	Convention on Elimination of All Forms of Discrimination against Women (CEDAW)	1997 (acceded)
31	Relevant ILO Conventions in force in Myanmar • C1 Hours of Work (Industry) • C14 Weekly Rest (Industry) • C17 Workmen's Compensation (Accidents) • C19 Equality of Treatment (Accident Compensation) • C26 Minimum Wage Fixing Machinery • C29 Forced Labour Convention • C42 Workmen's Compensation (Occupational Diseases) Revised1934 • C52 Holidays with Pay • C87 Freedom of Association and Protection of the Right to Organize	

4.6 Objective of Environmental and Social Standard

National Environmental Quality (Emission) Guide lines 2015

- The project proponent has to emit, discharge or dispose in line with the standards stipulated in said guideline.

National Environmental Quality (Emission) Guide lines (NEQG) for waste, water, noise level and environmental monitoring parameters are referenced in this IEE, EMP report .

Effluent Water Quality

Industrial Wastewater Effluent Guideline Value

Target level of Effluent Water Quality in the Project

Table (6) **Effluent Levels (Manufacturing)**

Parameter	Unit	Guideline Value
5 day Biochemical oxygen demand	mg/l	30
Absorbable organic halogens	mg/l	1
Ammonia	mg/l	10
Cadumm	mg/l	0.02
Chemical oxygen demand	mg/l	250
Cromium (hexavalent)	mg/l	0.1
Cromium (Total)	mg/l	0.5
Cobalt	mg/l	0.5
Color	m^{-1}	7(436nm[a],yellow) 5(525nm, red) 3(620nm,blue)
Copper	mg/l	0.5

Nickel	mg/l	0.5
Oil and grease	mg/l	10
Pesticides	mg/l	0.05-0.10[b]
pH	S.U[a]	6-9
Phenol	mg/l	0.5
Sulfide	mg/l	1
Temperature increase	C°	<3[b]
Total coliform baterial	100ml	400
Total nitrogen	mg/l	10
Total phosphorus	mg/l	2
Total suspended solids	mg/l	50
Zinc	mg/l	2

[a] Nanometers
[b] 0.05 mg/l for total pesticides (organophosphorus pesticides excluded) ; 0.10 mg/l for organophosphorus pesticides
[c] Standard Unit
[d] 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

Default Environmental and Social Considerations
The project proponent set default environmental and social considerations based on the project components.

To install septic tank to treat wastewater from construction camp
To make tenants secure a commitment to install pre-treatment facilities for neutralization, oil separation, removal of toxic and heavy metals etc.

Quantitative Target Levels for Consideration of Surrounding Environment
Effluent Water Quality

Industrial Wastewater Effluent Guideline Value
Target level of Effluent Water Quality in the Project

Noise

Construction Phase
The noise standard of construction activities to receptors in Myanmar would be as followings.
Noise prevention and mitigation measures should be applied where predicted or measured noise impacts from a project facility or operations exceed the applicable noise level guideline at the most sensitive point of reception. Noise impacts should not exceed the levels presented below or result in a maximum increase in back ground levels of 3dBA at the nearest receptor location off-site.

Table (7)Noise Standard

Receptor	One Hour L_{Aeq} (dBA)	
	Day Time 07:00~22:00	Nigh time 22:00~07:00
Residential, institutional, educational	55	45
Industrial, Commercial	70	70

Operation Phase

Same as above

Vibration

Construction Phase
There is no vibration standard of construction activity to receptors in Myanmar as well as south East Asia and International Organizations such as WHO and IFC.
Operation Phase
There is no vibration standard to receptor near factories in Myanmar as well as South East Asia and International Organization such as WHO and IFC.

5. Description of Project and Alternatives

Type of Project: This project is the vehicle assembling plant and it is the type of the project supporting to the transportation sector.

This project is a kind of project to support nation's poverty reduction and increasing GDP. It is needed not only for the region but also for the country as a supporting project to economic sector development.
The following supporting documents are attached on the annexes.

1. Remarks by concerned stakeholders and authorities from concerned government
2. The remarks and supporting by the near by project and project affected people

5.1 Project Background

Gold AYA Motors International Group co., Ltd established in June 2017, is a joint venture between Shining Star International Holdings Ltd from Hong Kong, Mr. Qian Haifang from Peoples Republic of Chaina, and U Ye Htut Lin from the Republic of the Union of Myanmar by investing share of 60%, 20% & 20% respectively. The registered country of the company is the federal republic of Myanmar, with an authorized capital of 50,000,000 USD. The production base is located in block b-1-1 in zone 2C, Myotha Industrial Park, central Mandalay Division Region, Myanmar.

The Myanmar Investment Commission has approved the proposed project in the terms of project period as 50 years commencing from the date of issuance permit of 27th March, 2018. The terms of lease agreement for land and buildings shall be the same as MIC permitted period with 2 times of 10 years each for extension.

The Mandalay Myotha Industrial Park connects the Asian expressway, the Asian railway network, the Irrawaddy river, the international airport and so on.

Company production base covers an area of 81278.36 square meters (20.084 acres). The first phase of construction covers an area of 14537.89 square meters, including 3658.28 square meters of showroom buildings, 2728 square meters of dormitory buildings and 8151.61 square meters of factory buildings.

This project would be developed not on the new land but the existing land of total area of 10337 Acres for development of industrial zone including industrial warehouse and logistic development.

Need for Project

With the changes on politically and socially, Myanmar is potential country to be developed with its rich in natural and human resources. However, Myanmar is needed to be developed transport sectors to be in line with the development of social and economic by production of consumer's products and industrial based products even it is agricultural, natural and human resources based country.

Regarding to this situation, it is needed motor vehicles not only for the region but also for the country as a supporting project to economic and social sector development.

5.2 Project Location, Area Map of covering whole project, Work Lay out plan

The project located in the Ngazun township is positioned on the Global Polarize System of 21°43'52" N and 95°37'30"E. Myo Thar Industrial Park is near a town named as Myo Tha (Ngazun Township) in Mandalay Division Region which is 36 miles away from Mandalay and 45 miles away from Mandalay International Airport.
The company and production base is located in block b-1-1 in zone 2C, Myotha industrial park, Mandalay Division Region, Myanmar.

The industrial park connects the Asian expressway, the Asian railway network, the Irrawaddy river, the international airport and so on. It is positioned on the Global Polarize System of 21°43’52” N and 95°37’30”E. Ngazun is a town in Mandalay Division Region and 46miles from Mandalay International Airport.

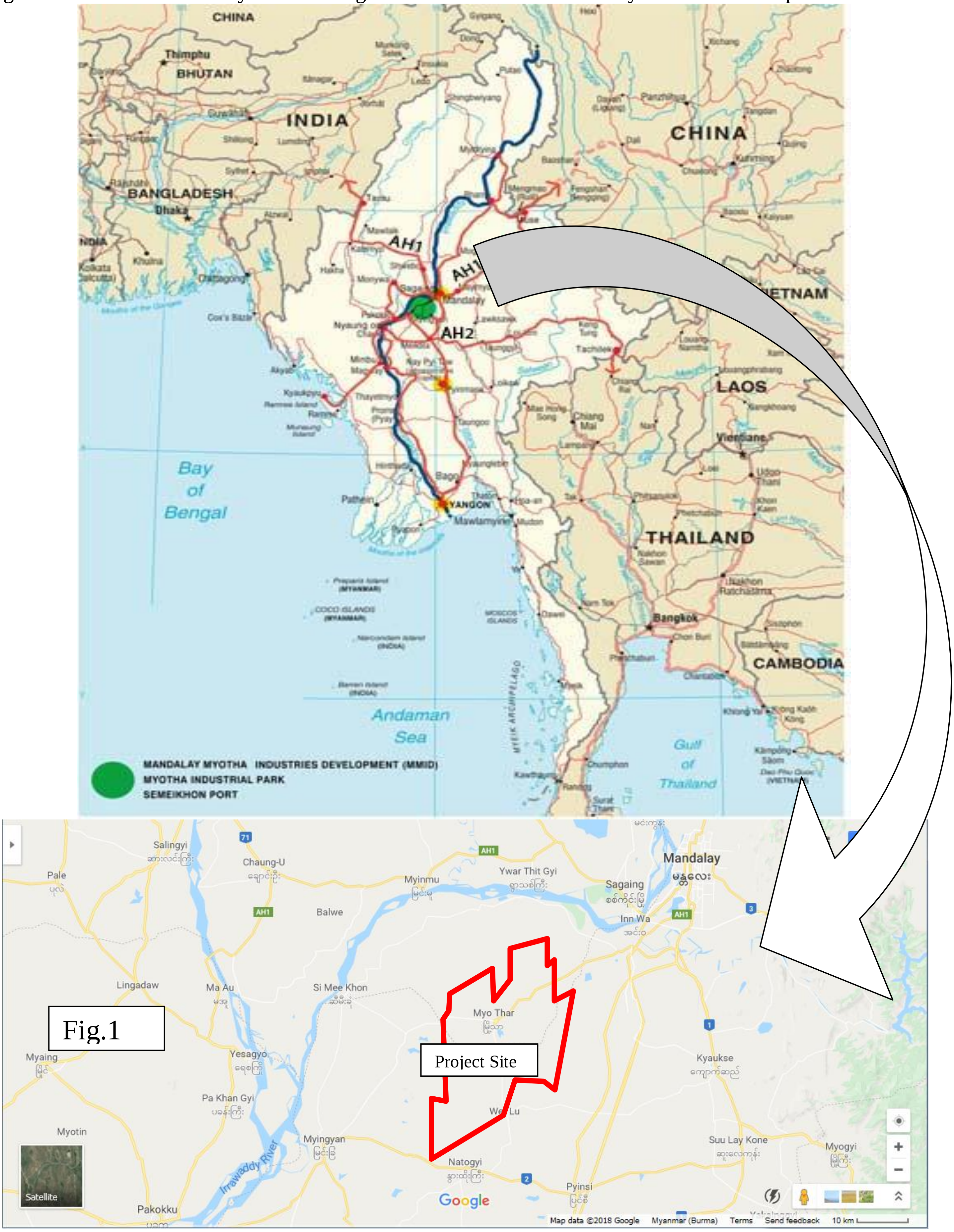
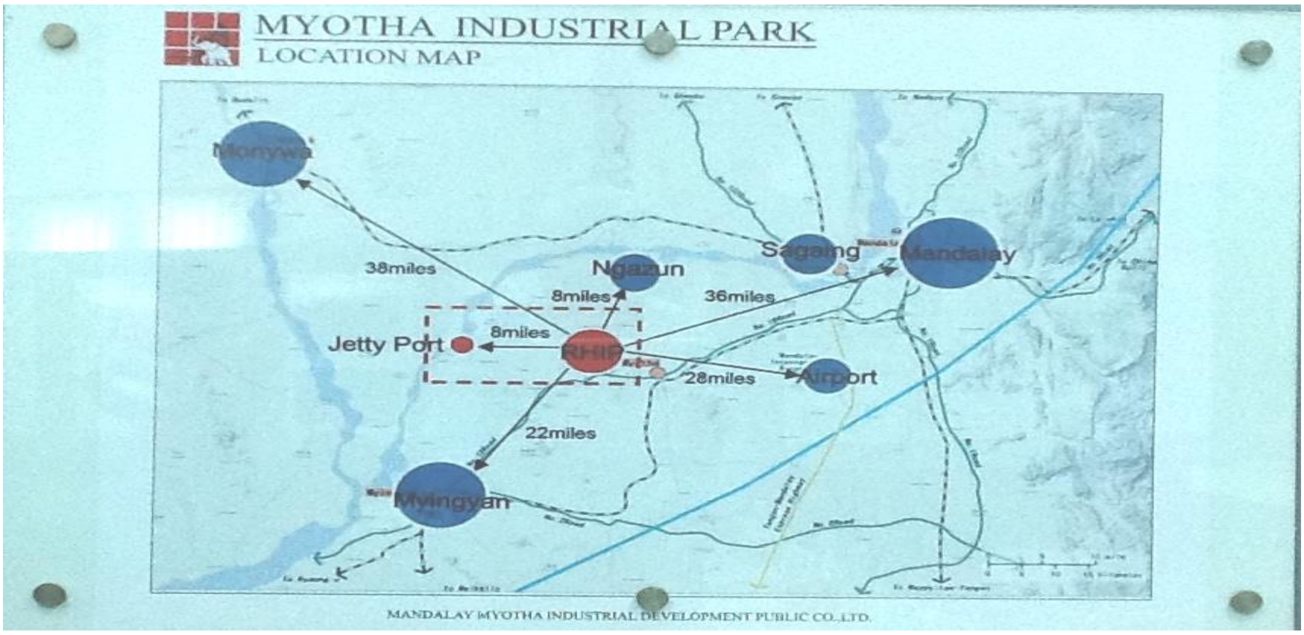
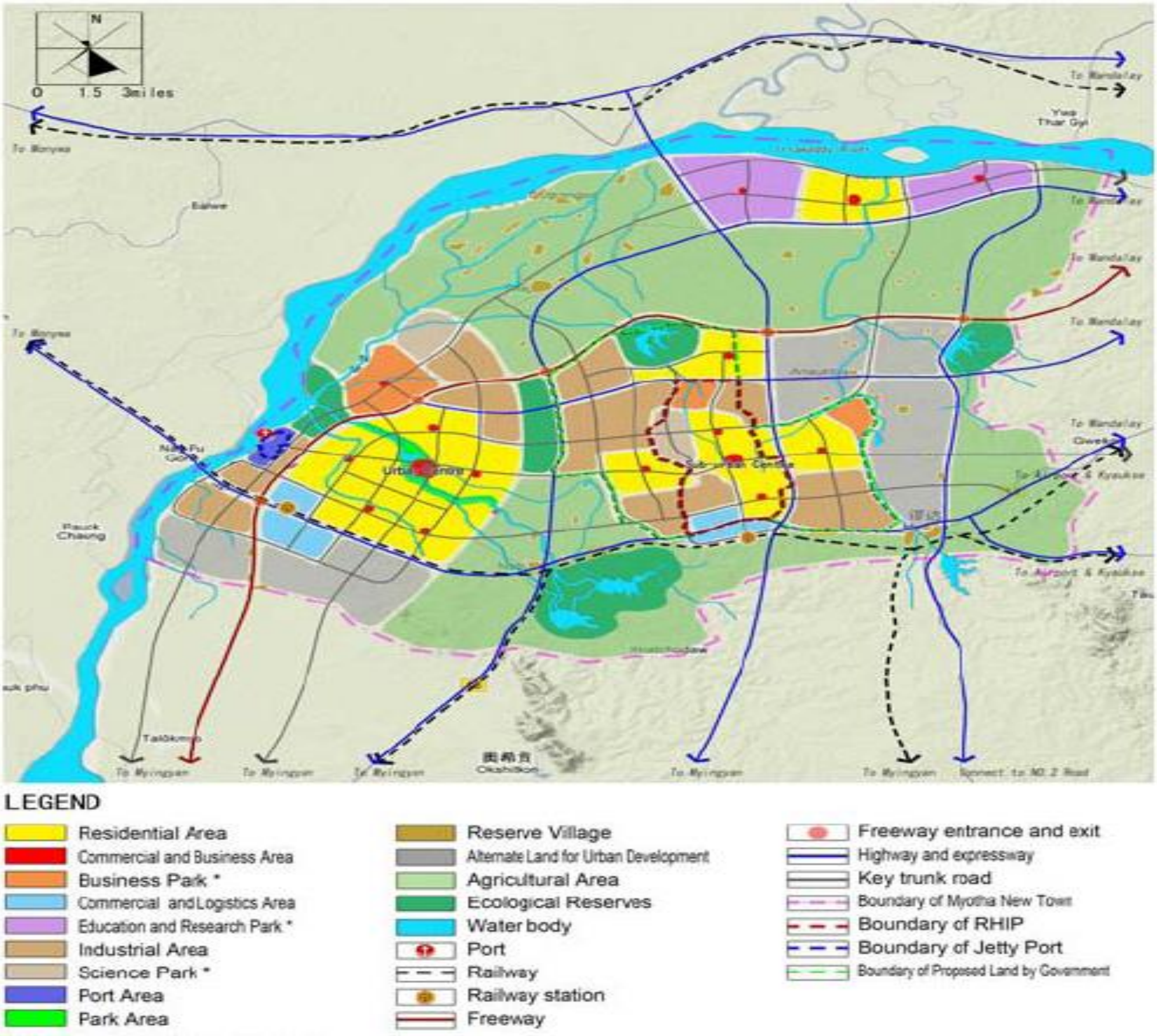


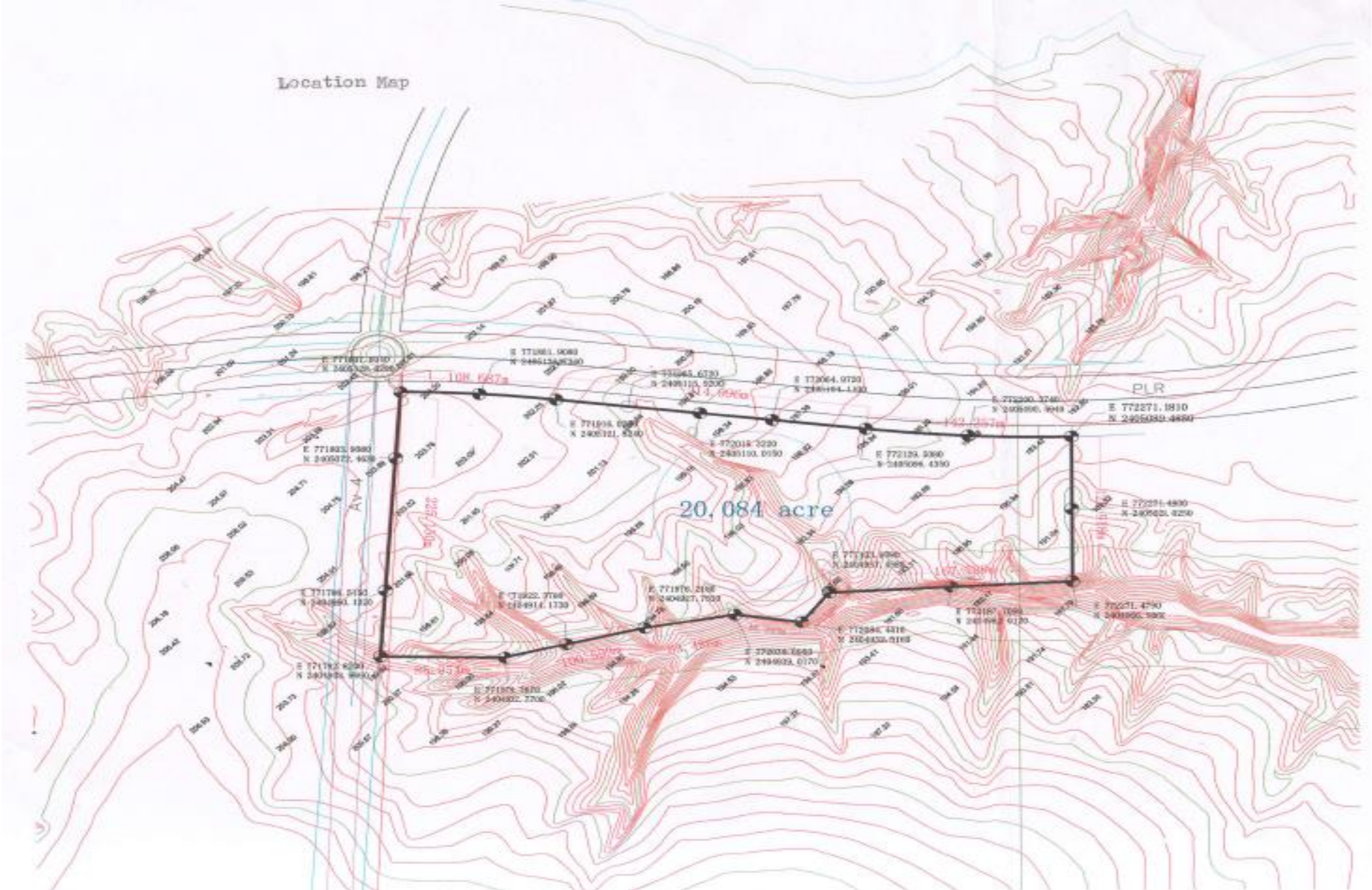
Fig.1

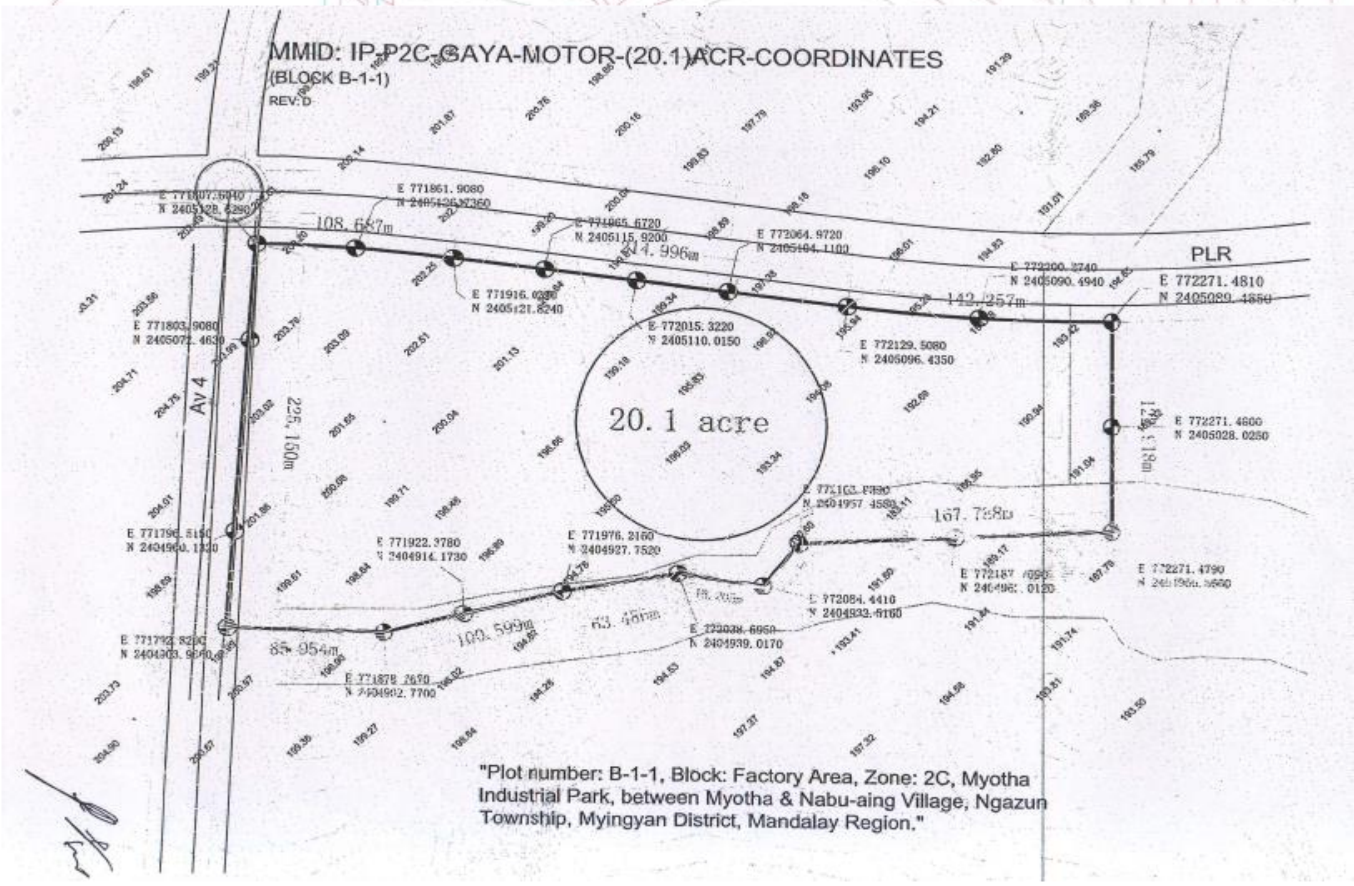


Myotha Industrial Park Layout



Project Location, overview map and site layout maps


Location Map
PLR
Av 4
20.084 acre


MMID: IP-P2C-GAYA-MOTOR-(20.1)ACR-COORDINATES
(BLOCK B-1-1)
REV: D
PLR
Av 4
20.1 acre
108.687m
225.150m
"Plot number: B-1-1, Block: Factory Area, Zone: 2C, Myotha Industrial Park, between Myotha & Nabu-aing Village, Ngazun Township, Myingyan District, Mandalay Region."

5.3 Project Development and Implementation Schedule

This Motor Assembling Factory Project is to be implemented by Gold A Y A Motor International Group Co.,Ltd. It is engaged in BAIC DaoDa and BAIC ChangHe brand automobile product, sales, after-sales service and automobile finance.
At present, the company plans to produce more than 7 models of 7 categories, including (1)household cars, (2)SUV,(3) MPV, (4)Commercial Vehicles, (5)Pickups, (6)Special vehicles and (7)New Energy Vehicles etc. Sales plan in Mandalay and Yangon have branch company offices. Main business covers sales, dealer network development, marketing, after-sales service, customer relationship management, new energy car business, public relations, human resources, finance, IT, purchasing, etc.
The company started its legal formation and construction in 2018 and planned to ready for the manufacturing of vehicles by the end of 2019. The production and manufacturing of vehicles is planned 50 years from 2000 until 2087 which is expected to get 20 years of extension.

The date of construction start: 25-6-2017
The date of installation start: 27-3-2018
The date of operation start: 25-6-2019

The project proponent has planned to continue the operation when the land least is expired by renewing the least contract and upgrating the plant and facilities & equipment etc.

The Life project planning

Project Plan

Content	Item	Project															备注
		2017	2018				2019				2020	2021	2022	2023	2024	2025—2087	
			1st qtr	2nd qtr	3rd qtr	4th qtr	1st qtr	2nd qtr	3rd qtr	4th qtr							
Project Plan	lease landing																50 years contract & 20 years extension
	construction plan		construction start date - 20.5.2018 Finished date - end														
	equipment installation	At the end of the year of 2018 , all the equipment began to enter the factory, April 2019 finish all equipment installation, June 2019															
	Production Plan								600 units	1000 units	5000 units	10000 units	15000 units	20000 units	30000 units	50000 units	all are per years

When the land lease expires, the company will continue to lease the land, upgrade the plant, upgrade the equipment and upgrade the products, and continue to operate.

After completion of these factories, there would be developed industrial sector with employment opportunities and increasing of GDP personally and nationally.
The total of 26 workers are needed except foreign experts during construction period which is opportunities for local people.
It is expected to create about 80% of 100 jobs opening for local people at this factory when it is in the normal production stage. (Workforce of 110 locals and 15 foreign experts are described on MIC proposal)

Propose Schedule of Implementation,

There will be 2 project phases to be implemented.
Phase I,

1. Car show room and office 3storeys building (29618 sq.ft - 174 ft 3inches x 99ft 5 inches)
2. Accomodation and Canteen (Domitory)4 storeys building (28644sq.ft - 139ft 7 inches, 52ft 11inches)
3. Factory (Workshop) 1 storey building (78296 sq.ft – 494ft 1inch, 158ft 6inches)

Phase II,

Factory (Workshop) 1 storey building 2 nos.

(The construction progress recorded on 24.4.18)

(The construction progress recorded on 5.7.18)

(The construction progress recorded on 1.5.21)

More pictures are shown on the annexes.

5.4 Size of Project, Layout, Applied Technology, Raw Materials, Finished Products, Utilities, Waste Development, Emission, Impacts, Employment List

Conceptual Project Layout and Components,

The project will consist of 2 phases approach to build and operate a world class environmentally protected motor vehicles assembling in the industrial zone.

The first phase of the project is outlined in detail in this proposal and consists of a show room, dormitory and workshop.

Table (5.1) Size of buildings

No.	Phase	Item	Qty	Size
1	Phase I	Car show room and office 3storeys building	1	(29618 sq.ft) (174 ft 3inches x 99ft 5 inches)
		Accomodation and Canteen (Domitory)4 storeys building	1	(28644sq.ft) (139ft 7 inches, 52ft 11inches)
		Factory (Workshop) 1 storey building	1	(78296 sq.ft) (494ft 1inch, 158ft 6inches)
2	Phase II	Factory (Workshop) 1 storey building	2	(78296 sq.ft) (494ft 1inch, 158ft 6inches)

The following is the actual effect drawing after the completion of the factory, which is divided into showroom, staff dormitory building, production workshop.

Fig.3

Fig.4

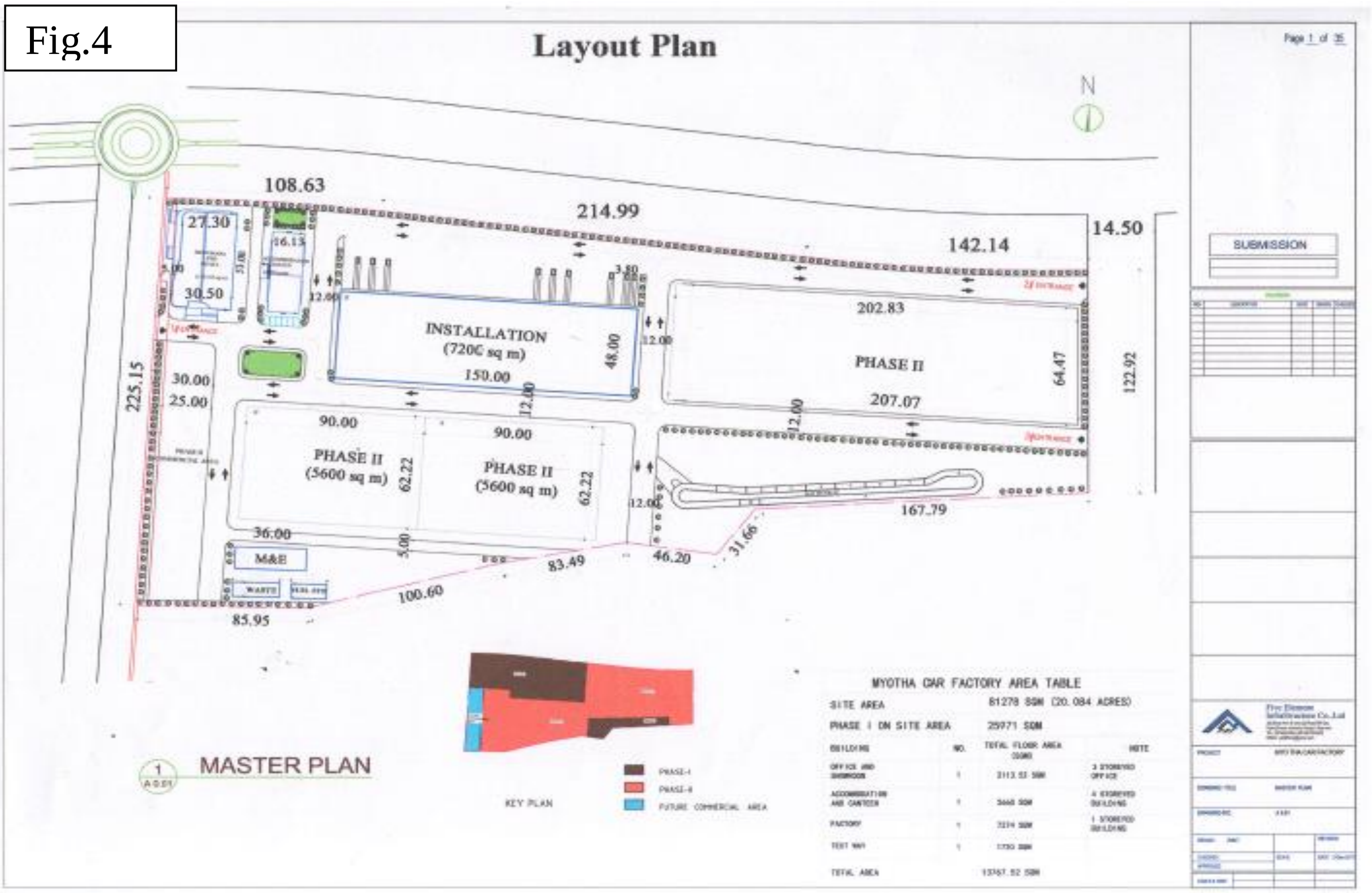
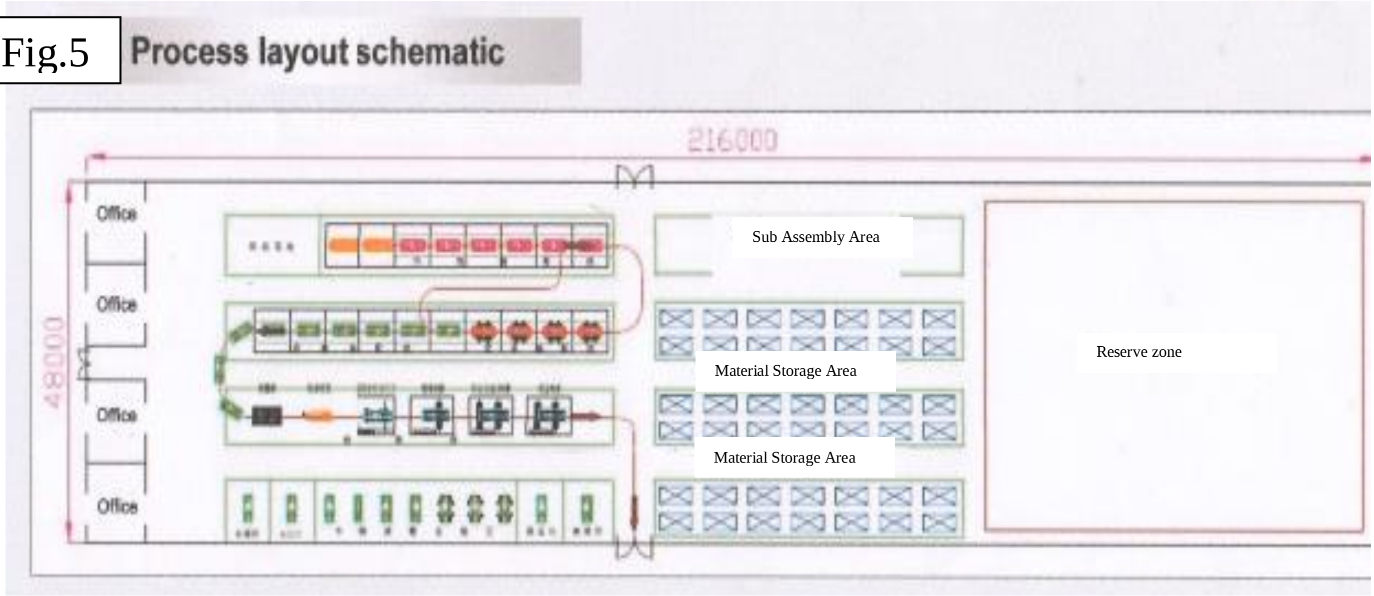


Fig.5



The Applied Technology

Due to the Trade Marks License Agreement between BAIC International Development and Gold A Y A Motors International Group Company Limited, the production technology would be provided by the mother company in Chaina which is complied by the international standard.

The general process of the motor assembling is as following.

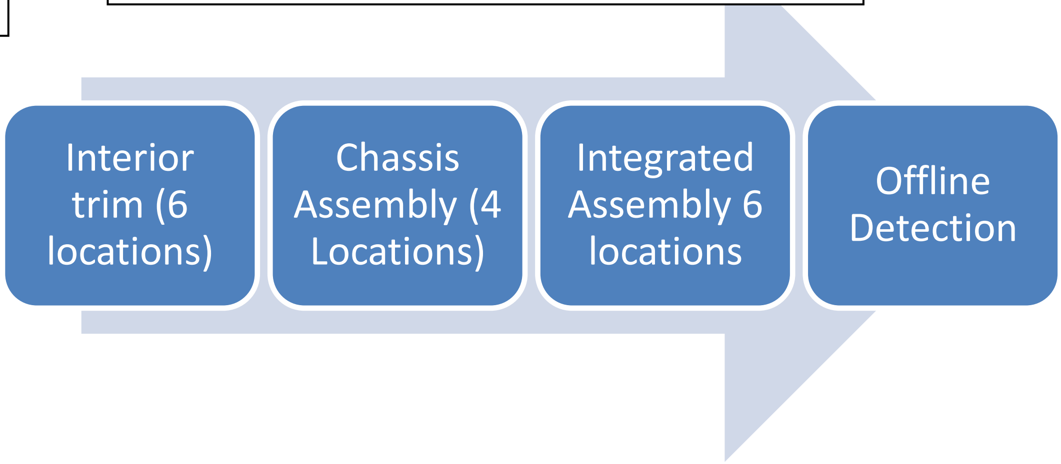
1. Interior trim
2. Chassis Assembly
3. Integrated Assembly
4. Offline Detection

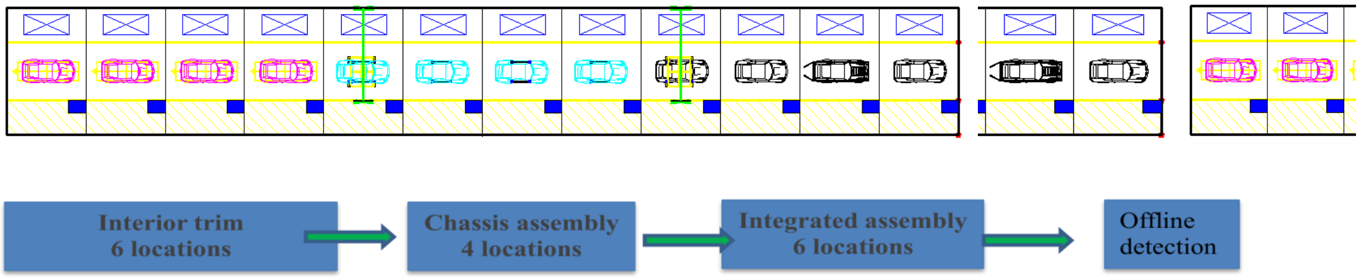
The company intends to bring the available technology developed by BAIC Co.,Ltd and parts manufactured in China compatible with the local condition for higher safety and lower environmental impact. It is expected to

produce 5,000 vehicles annually with all importing parts at the early stage and replace with locally available items of vehicle parts for later year to help the local production.

Fig.6

Motor Assembling Process





The Detail of Assembling Plant

There are 6 locations in the interior trim section, 4 locations in the chassis assembly, 6 loctions in integrated assembly and 7 locations in the offline detection section. The details of the locations are as following.

The detailed job located in the process flow of final assembling

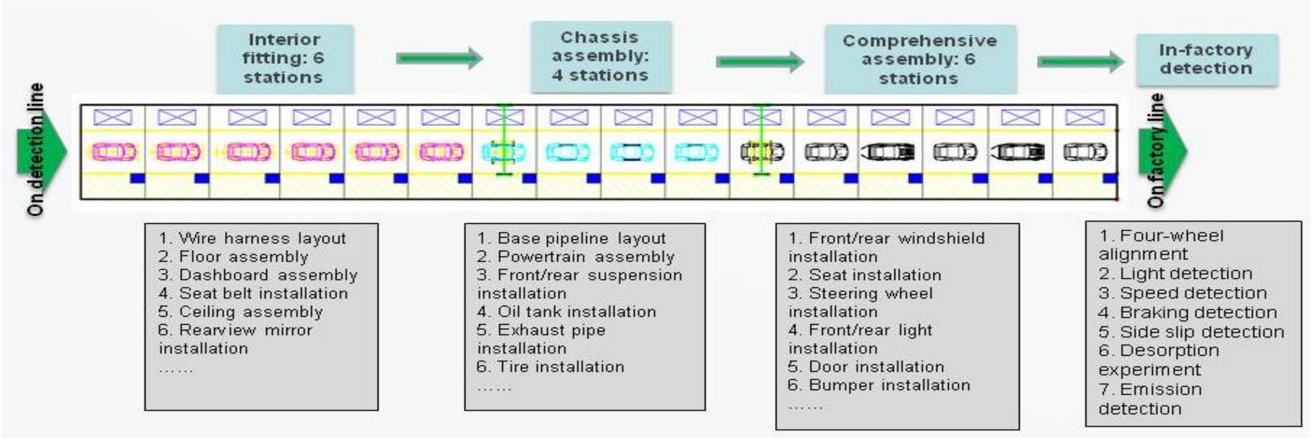


Fig.7

The Illustration of Parts of SKD vehicle

No.	KD module
1	Module-based supply includes the painted body assembly
2	Powertrain
3	Front suspension assembly
4	Rear suspension assembly
5	Steering system assembly
6	Exhaust pipe assembly
7	Seat assembly
8	Wheel assembly
9	Door assembly
10	Other sub-assemblies

- Standard parts: The standard parts shall be supplied in bulk with the purposes and quantity provided by the company;
- Main and auxiliary materials: The engine oil, gearbox oil, brake fluid, cooling liquid, air-conditioning liquid, bath of glass and process accessories are provided in bulk or locally purchased according to the company's technical standards and details.

The Zoning of work and Production Equipment used

Name of program	Detailed contents	Conveying equipment	Picture sample
Zone for preassembly and detection	Set up two preassembly and detection stations, manually push to the stations and mainly check the visual quality of the body before put on the detection line.	Push manually	
Interior assembly line	Set up six assembly stations and adopt the mode of track limits + manual pushing of the process trolley; Mainly complete the assembly of the body wiring harnesses, footcloth, ceiling, dashboard and interior panels, etc.	Wide strip chain	
Chassis assembly line	Set up four assembly stations and adopt the EMS mode to complete station conveyance; Mainly complete the base pipeline layout, powertrain final assembly, fuel tank fitting and wheel assembly, etc.	EMS	
Final assembly line	Set up six assembly stations and complete on-line conveyance by using unilateral narrow strip chains. Mainly complete assembling the front-end module, seats and other assemblies and complete oil filling and relevant other tasks.	Unilateral narrow strip chains	
Detection line	Provide four-wheel alignment, light detection, speed detection, brake detection, side slip detection, desorption experiment, emission detection and other detections for complete performance testing.	/	
Showering room	Rainfall test	/	
Commercialization area	Commercialization test	/	
Repair area	It shall be competent for repairing the interiors, chassis, electric appliances and paint, etc.	/	

The Planning Principles

- Abide by such general principles as follows: The requirements of the production capacity can be satisfied with the process quality featuring high conformity and affordability;
- The technological level shall meet the product accuracy requirements and adapt to the corresponding production programs; moreover, the current design tries to use such a production mode featuring small amount of mechanization subject to no automation on the premise of ensuring the production capacity and quality;
- Try to consider the future needs for series production of various categories and organize necessary flexible production lines;
- Adhere to the principle of "less input, more output", narrow the scale of investment and try to select the domestic simplified equipment that can meet the requirements for accuracy and efficiency;
- The current investment budget mainly includes the investment in the process equipment and production tools, etc., not including that in civil engineering and plant construction;
- Establish a comprehensive quality assurance system, strengthen the quality control means during the production and set up necessary areas for after-sales services and adjustment;
- This workshop is designed for small batches of flow process, its plane layout should make the logistics as reasonable as possible and the logistics distribution can meet the demands of the production capacity.

The Raw Materials to be imported

Table (5.2) The following table shows the item to be imported for the vehicle model Q35

No.	Item	HS Code	Yr.1	Yr.2	Yr.3	Yr.4	Yr. 5-10
1	Engine Assembly Transmission & Clutch System	8407	480	1,200	2,400	3,600	18,000
2	Welding Painted Body with including Chassis Group (W/O installation of combination meters, interior, Trimming Parts, Lamps, wind shield and wireness)	8707	480	1,200	2,400	3,600	18,000
3	Front Axles/Front Independent Suspension/Rear Axles	8708	480	1,200	2,400	3,600	18,000
4	Suspension Component	8708	480	1,200	2,400	3,600	18,000
5	Steering Wheel and Related	8708	480	1,200	2,400	3,600	18,000
6	Exhaust System	8708	480	1,200	2,400	3,600	18,000
7	Wheels & Tyres	4011	480	1,200	2,400	3,600	18,000
8	Seat Assembly	9401	480	1,200	2,400	3,600	18,000
9	Trimming Parts, Dashboard, Instrument Panel, Windshield, Wire harness and other Assories	8708	480	1,200	2,400	3,600	18,000
10	Door Group (Front and Rear) without assessories	8708	480	1,200	2,400	3,600	18,000

Table (5.3)The item to be imported for the vehicle model M20S

No.	Item	HS Code	Yr.1	Yr.2	Yr.3	Yr.4	Yr. 5-10
1	Engine Assembly Transmission & Clutch System	8407	200	500	1,000	1,500	4,500
2	Welding Painted Body with including Chassis Group (W/O installation of combination meters, interior, Trimming Parts, Lamps, wind shield and wireness)	8707	200	500	1,000	1,500	4,500
3	Front Axles/Front Independent Suspension/Rear Axles	8708	200	500	1,000	1,500	4,500
4	Suspension Component	8708	200	500	1,000	1,500	4,500
5	Steering Wheel and Related	8708	200	500	1,000	1,500	4,500
6	Exhaust System	8708	200	500	1,000	1,500	4,500
7	Wheels & Tyres	4011	200	500	1,000	1,500	4,500
8	Seat Assembly	9401	200	500	1,000	1,500	4,500
9	Trimming Parts, Dashboard, Instrument Panel, Windshield, Wire harness and other Assories	8708	200	500	1,000	1,500	4,500
10	Door Group (Front and Rear) without assessories	8708	200	500	1,000	1,500	4,500

Table (5.4)The item to be imported for the vehicle model Q7

No.	Item	HS Code	Yr.1	Yr.2	Yr.3	Yr.4	Yr. 5-10
1	Engine Assembly Transmission & Clutch System	8407	0	400	800	1,000	3,000
2	Welding Painted Body with including Chassis Group (W/O installation of combination meters, interior, Trimming Parts, Lamps, wind shield and wireness)	8707	0	400	800	1,000	3,000
3	Front Axles/Front Independent Suspension/Rear Axles	8708	0	400	800	1,000	3,000
4	Suspension Component	8708	0	400	800	1,000	3,000
5	Steering Wheel and Related	8708	0	400	800	1,000	3,000
6	Exhaust System	8708	0	400	800	1,000	3,000
7	Wheels & Tyres	4011	0	400	800	1,000	3,000
8	Seat Assembly	9401	0	400	800	1,000	3,000
9	Trimming Parts, Dashboard, Instrument Panel, Windshield, Wire harness and other Assories	8708	0	400	800	1,000	3,000
10	Door Group (Front and Rear) without assessories	8708	0	400	800	1,000	3,000

Table (5.5)The item to be imported for the vehicle model M60

No.	Item	HS Code	Yr.1	Yr.2	Yr.3	Yr.4	Yr. 5-10
1	Engine Assembly Transmission & Clutch System	8407	160	400	800	1,200	6,000
2	Welding Painted Body with including Chassis Group (W/O installation of combination meters, interior, Trimming Parts, Lamps, wind shield and wireness)	8707	160	400	800	1,200	6,000
3	Front Axles/Front Independent Suspension/Rear Axles	8708	160	400	800	1,200	6,000
4	Suspension Component	8708	160	400	800	1,200	6,000
5	Steering Wheel and Related	8708	160	400	800	1,200	6,000
6	Exhaust System	8708	160	400	800	1,200	6,000
7	Wheels & Tyres	4011	160	400	800	1,200	6,000
8	Seat Assembly	9401	160	400	800	1,200	6,000
9	Trimming Parts, Dashboard, Instrument Panel, Windshield, Wire harness and other Assories	8708	160	400	800	1,200	6,000
10	Door Group (Front and Rear) without assessories	8708	160	400	800	1,200	6,000

Table (5.6)The item to be imported for the vehicle model A6

No.	Item	HS Code	Yr.1	Yr.2	Yr.3	Yr.4	Yr. 5-10
1	Engine Assembly Transmission & Clutch System	8407	80	200	400	600	3,000
2	Welding Painted Body with including Chassis Group (W/O installation of combination meters, interior, Trimming Parts, Lamps, wind shield and wireness)	8707	80	200	400	600	3,000
3	Front Axles/Front Independent Suspension/Rear Axles	8708	80	200	400	600	3,000
4	Suspension Component	8708	80	200	400	600	3,000
5	Steering Wheel and Related	8708	80	200	400	600	3,000
6	Exhaust System	8708	80	200	400	600	3,000
7	Wheels & Tyres	4011	80	200	400	600	3,000
8	Seat Assembly	9401	80	200	400	600	3,000
9	Trimming Parts, Dashboard, Instrument Panel, Windshield, Wire harness and other Assories	8708	80	200	400	600	3,000
10	Door Group (Front and Rear) without assessories	8708	80	200	400	600	3,000

Table (5.7)The item to be imported for the vehicle model V8

No.	Item	HS Code	Yr.1	Yr.2	Yr.3	Yr.4	Yr. 5-10
1	Engine Assembly Transmission & Clutch System	8407	40	100	200	300	1,500
2	Welding Painted Body with including Chassis Group (W/O installation of combination meters, interior, Trimming Parts, Lamps, wind shield and wireness)	8707	40	100	200	300	1,500
3	Front Axles/Front Independent Suspension/Rear Axles	8708	40	100	200	300	1,500
4	Suspension Component	8708	40	100	200	300	1,500
5	Steering Wheel and Related	8708	40	100	200	300	1,500
6	Exhaust System	8708	40	100	200	300	1,500
7	Wheels & Tyres	4011	40	100	200	300	1,500
8	Seat Assembly	9401	40	100	200	300	1,500
9	Trimming Parts, Dashboard, Instrument Panel, Windshield, Wire harness and other Assories	8708	40	100	200	300	1,500
10	Door Group (Front and Rear) without assessories	8708	40	100	200	300	1,500

Table (5.8)The item to be imported for the vehicle model K9

No.	Item	HS Code	Yr.1	Yr.2	Yr.3	Yr.4	Yr. 5-10
1	Engine Assembly Transmission & Clutch System	8407	40	100	200	300	1,500
2	Welding Painted Body with including Chassis Group (W/O installation of combination meters, interior, Trimming Parts, Lamps, wind shield and wireness)	8707	40	100	200	300	1,500
3	Front Axles/Front Independent Suspension/Rear Axles	8708	40	100	200	300	1,500
4	Suspension Component	8708	40	100	200	300	1,500
5	Steering Wheel and Related	8708	40	100	200	300	1,500
6	Exhaust System	8708	40	100	200	300	1,500
7	Wheels & Tyres	4011	40	100	200	300	1,500
8	Seat Assembly	9401	40	100	200	300	1,500
9	Trimming Parts, Dashboard, Instrument Panel, Windshield, Wire harness and other Assories	8708	40	100	200	300	1,500
10	Door Group (Front and Rear) without assessories	8708	40	100	200	300	1,500

Table (5.9)The item to be purchased locally

No.	Model	Item	Yr.1	Yr.2	Yr.3	Yr.4	Yr. 5-7
1	Q35	(1)Wheel & Tyre Assembly (2)Battery	480	1,200	2,400	3,600	18,000
2	A6	(1)Wheel & Tyre Assembly (2)Battery	80	200	400	600	3,000
3	M60	(1)Wheel & Tyre Assembly (2)Battery	160	400	800	1,200	6,000
4	V8	(1)Wheel & Tyre Assembly (2)Battery	40	100	200	300	1,500
5	K9	(1)Wheel & Tyre Assembly (2)Battery	40	100	200	300	1,500
6	Q7	(1)Wheel & Tyre Assembly (2)Battery	-	400	800	1,000	3,000
7	M20S	(1)Wheel & Tyre Assembly (2)Battery	200	500	1,000	1,500	4,500

The Electrical Equipments (Local Purchase)

No.	Item	HS Code	Qty
1	Transformer	8404	2
2	Generator	8503	2
3	AC arc Welder	8538	3
4	Electric Hammer	8467	8
5	Power Reammer	8467	2

The Products (Models)

BAIC Change He Q35 will be put into production this year. BAIC ChangeHe Q7 plans to produce Baic road K9 later.

Models	Overall dimensions L×W×H (mm)	Gearbox	Displacement	Wheelbase (mm)	Curb weight (kg)
Q35 Small SUV	4286×1815×1665	4AT	1.5L	2560	1270
M60 7-seat MPV	4800×1824×1718	CVT	1.5T	2760	1445
D50 Saloon car	4582×1794×1486	CVT	1.5L	2670	1240
V8 7-seat MPV	4900×1830×1890	5MT(AT/CVT)	2.0L(2.4L,2.0T)	2950	1800
K9 Pick up	5646×1880×1824	5MT(AT/CVT)	2.0T(2.4L,2.8L)	3406	1995
Q7, 7 Seats SUV	4655×1855×1720	6MT/CVT	1.5L/1.5T	2670	1400
M20S, 7 Seats MPV	4440×1770×1780	5MT	1.5L	2790	1270

The Production Capacity

Annual capacity	Annual working days	Shifts	Single shift working hours (h)	Device mobility	JPH
5000	250	1	8	/	2.5

Remarks: : All products (100%) would be sent to local market only.

Table (5.10)The Production Statement

No.	Particulars	Specification	AU	Yr.1	Yr.2	Yr.3	Yr4	Yr5-Yr10
1	CHANGHE Q35SUV	1.5L Elite Version, AT, Smart Version	No.	480	1,200	2,400	3,600	18,000
2	CHANGHE M60MPV-1.5 T Standard	1.5T Standard	No.	160	400	800	1,200	6,000
3	CHANGHE A6 Sedan Car	CTV Elite Version	No.	80	200	400	600	3,000
4	DODA V-8-MPV	Business Type	No.	40	100	200	300	1,500
5	DODA K9-Pick-up	4 x 4 , Diesel Version	No.	40	100	200	300	1,500
6	CHANGHE Q7-SUV	CTV , Luxury Version	No.	-	400	800	1,000	3,000
7	CHANGHE M20S MPV	5MT Standard	No.	200	500	1,000	1,500	4,500
	Total Production			1,000	2,900	5,800	8,500	37,500

Remarks: :*Due to the market demand, BAIC Change He Q35 will be put into production this year (2019). BAIC ChangeHe Q7 plans to produce Baic road K9 later.*

The Utilities

A. Fuel (Diesel & Petrol)
   All required fuel would be purchased locally for initial test running of vehicles.
B. Lubricant
   All required lubricant would be purchased locally for initial test running of vehicles.
C. Electricity
   The electricity would be consumed from the grid system provided by Ministry of Electricity and Energy while own disel generating set is stand by for the black out period.
D. Water
   Water is utilized from the tube well. (4"dia x 2 nos.)

Table (5.11) The Estimate Fuel & Lubricant Requirement for Test Run for each vehicle initially

	No.Car	ltr/car	Total
Diesel	40	4	160
Patrol	960	4	3840
Lubricant	1000	2	2000

Table (5.12)The Estimate of Utilities Requirement per year

No.	Description	Utilities Requirement (per year)				
		Fuel Requirement (Ltr.)			Electricity (KWh)	Water (Gals)
		Diesel	Patrol	Lubricant		
1	Workshop	160	3840	2000	5,500,000	10,000
2	Office	-	-	-		3,300
3	Showrom	-	-	-		3,300
4	Domitory	-	-	-		168,000
5	Diesel Generator	36000	-	40	-	100
	Total	360160	3840	2040	5,500,000	185,600

Waste Development,

The nature of project is just assembling of vehicles and there are some places or process which could be generated waste but could be minimal harmful to the environment.

The solid Waste

The potential solid waste generation comes from the unpackaging of all imported vehicle parts, such as cardboards, empty cartoon boxes, plastic packaging materials, papers, workers' personal waste, organic and household wastes from the dormitory etc.

Table (5.13)The Solid Waste Generation

No.	Process	Content and Introduction	Type of Waste	Estimated Amount (Kg)
1	Preassemble inspection area	All required parts of the vehicle are collected, unpacked and checked at two pre-installed inspection stations set up which are manually traced to this station. Most of these packing materials will be left at the store room area.	Packing Paper, Plastic, Cartoon Box, Steel wire strip	100 Kg per day
2	Interior Line	There are six assembly stations at this interior line section to complete the content of the body. The waste generation at this section is less than preassembling section as the packing materials are removed such as body wire harness laying, carpet, item shed, instrument panel and interior trim panel.	Packing Paper, Plastic, Cartoon Box, Steel wire strip	10Kg per day
3	Chassis Line	Four loading stations were set up, and the stations were transported by EMS.To complete the lower body of the pipeline teaching equipment, powertrain assembly, fuel tank.Wheel assembly drawing.	No solid waste at this station	-
4	Final Loading Line	Tilting position, the transmission of wire body adopts modules, seats, etc.ER sores plate chainWarping and oil injection tasks.	No solid waste at this station	-
5	Detection Line	Including four-wheel positioning, light detection, speed detection, braking test, side sliding test, desorption test and emission test 1 test, etc.	No solid waste at this station	-
6	Rain Room	At this stage only shower test is made. No solid waste at this station	The dust and sediment at the recycling system would be source of solid waste (wet) in some time of 3 to 6 months interval	1 Kg per batch (3~6 month)
7	Check Field	No solid waste at this station by commodity inspection	No solid waste at this station	-

8	Back Shop	No solid waste at this station for interior decoration, chassis, electrical appliances, paint repair ability	No solid waste at this station	-
9	Office	Office Domestic Solid Waste	Papers, Cans, Boxes, Plastic, Printer Ink Bottle Waste etc.	5 Kg per day
10	Showroom	Visitors	Papers, Cans, Boxes, Plastic	5 Kg per day
11	Domitory	Worker's personal & domestic waste, Kitchen Waste	Papers, Cans, Bottles, Plastic, Boxes, Food Waste etc.	20 Kg per day
			Total	130

The Waste Water

The waste water generating from this project mainly from the domestic sewer that would comes from the shore room, office, factory and dormitory while there is no waste water from production process as the showering process water is recycled and reused.

Table (5.14) The Estimate Waste Water

No.	Description	Item	Estimation (m^3 per day)	Remarks
1	Workshop	Shower Station	-	Recycling
		Paint Shop	-	Recycling
		Toilet	0.15	40gals/dayx250=10,000gal/yr
2	Showroom	Toilet	0.05	
3	Office	Toilet	0.05	
4	Dormitory	Toilet	0.05	
		Shower	1.5	
		Laundry	0.9	
		Kitchen	0.1	Grease Trap
	Total		2.8	

Emission and Impacts,

There are no emissions from the assembling process. However, the engine test and driving test could create the emission from the vehicle together with the visitor's vehicles and employee's personal cars and or ferry buses. The impacts from the vehicle testing would be more analysed in the next impact assessment chapter.

The emission from the cooking at the dormitory would also be considered.

The typical fuel combustion process in an automobile can be described by the general equation as follow, where a fuel air mixture reacts is burned towards the production of carbondioxide and water.

$$\textit{Fuel} + \text{Air} \rightarrow CO_2 + H_2O + \text{energy} + \text{others } (CO, NO_x SO_2, PM, HC)$$

Fuel consumption	CO	CO_2	NOx	HC	PM
9 l/100km (gasoline)	0.24g/km	214g/km	0.02g/km	0.01g/km	NA
6.5 l/100 km (gasoline)	0.1 g/km	153g/km	0.013 g/km	NA	0.0024 g/km
5 l/100km (diesel)	0.1 g/km	132 g/km	0.377 g/km	NA	0.03 g/km

CO= carbon monoxide, CO2 carbon dioxide, NOx= nitrogen oxides, HC= hydrocarbon, PM= particulate matter, NA=no data available

Traffic, Transportation & Logistics

The main transportation & logistics would becomes as following;

- Trucks for inward transportation of assembly parts and Raw materials
- Truck for outward transporation of Finished Products (individual or logistic by car carrier)
- Vehicles and cars for transportation of employees, workers, visitors etc.
- Trucks for outward transportation of waste and scrap materials

Table (5.15)Employment List

No	Item	Qty
	Foreigner	
1	General Manager	1
2	Senior Project Manager	1
3	Marketing Director	1
4	Manufaccturing Manager	1
5	Technical Manager	1
6	Finance Manager	2
7	Engineer	8
	Total	15
	Local Personal	
1	Technical Manager	2
2	HR Manager	1
3	Final Assembly Manager	1
4	Process Quality Controller	4
5	Repair Area Staff	4
6	Detection Line Staff	6
7	Showering Room Staff	4
8	Commercialization Staff	2
9	Sale Department & Show Room Staff	30
10	Assembly Worker	35
11	Logistics Distribution Staff	6
12	Security	5
13	Cleaner	5
14	Driver	5
	Total	110
	Grand Total	125

5.5 Alternatives for Pre construction, Construction, Operation, Closure and Clousure Stages

The Project Site (Location) Alternatives

Even though it is widely believed that there are always alternatives, however it is not always right about this philophy at concerning the location of the project as it is also subjected to all incentives applicable to MIC & MMID.This project is based on the plot of the industrial zone which is no location alternatives to similar.

The proposed site is to be located in an area which is devoid of any biodiversity including forestry, wildlife, migratory birds, game reserves (flora and fauna) or protected species of fauna & flora. There is no culture and or any other heritage in the project area and industrial park. There is no environmental sensitivity in the project area.

The proposed project location is determined to be the best convenient location and the minimal environmental and social impacts due to the project implementation. It is;

The best geographic location and

The best strategic place for the Project

The Construction Alternatives (Pre, During, Closure Stages)

This project is designed and analysed pre-feasibility at international standard including the selective from all alternatives interms of both the project (design, technology, operation and closure plan etc.) and site location. The assessment of project alternatives and site selection includes environmental and social factors and "no project" secenarios.
As there is a not exposed to any natural hazard, the concrete construction would have been applied in the foundation. During the design stage, the project contractor had chosen the construction technology which is best met Myanmar and Chinese standard on project schedule, safety and quality as well as the economic benefit to the local community & labor sources addition to the Chinese esperts. As the project is planned for the vehicle manufacturing 50 years from the date of MIC approval with extanable 10 years of 2 times which is total 70 years, the alternative to the closure plan should also be adjusted with all applicable laws and legal procedures at that time.

Technology Alternatives
During construction stage, the building & facility constructions would be used environmental friendly such as avoiding or minimizing of noises by the construction machineries, water spraying during earth work and foundation to minimize dust and air pollution, etc.
For manufacturing stage, the technology is not a new one. It is just duplication of existing automobile assembling plant in China under license agreement and best choice of manufacturing technic. Hense, it also has no alternatives on production technology. As an alternative of material used in the production, it is planned to use locally available parts of the vehicle such as battery and tyres and accessories such as fuel and lubricant in the early stage of the years of production (1st year to 3rd year) by the ratio of 99.71% to 0.29% of imported and local product respectively. It is planned to utilize 100% local products at the later years (approximately after 10 years). This would help to promote local brand car production in Myanmar.

Table (5.16)The planned alternative material used

No.	Year of Production	Imported Part (%)	Local Product (%)	Remarks (Local Products)
1	1st ~3rd Year	99.71%	0.29%	Battery
2	4th Year	96.64%	3.36%	Battery, Tyres
3	5th Year	76.00%	24.00%	6 pieces of white body assembly incl; floor, roof, welding Assembly Jig, Painting Equipment w/o ED coating
4	6th Year	65.00%	35.00%	Floor Welding Assembly
5	7th Year	61.50%	38.50%	Roof Welding Assembly
6	8th Year	51.00%	49.00%	Left and Right Side Wall Welding Assembly
7	9th Year	38.00%	62.00%	Left and Right Side Wall Welding Assembly (Additional)
8	10th Year	18.50%	81.50%	Electricstatic Coating, Complete Coating System
9	11th Year on ward	0%	100%	Achieving 100% local production

Table (5.17)The Alternatives on Planned Production Process Technology

Scheme's name	Planned Technology	Alternatives(I)	Alternatives(II)
Preassemble inspection area	The quality of the body appearance is mainly carried out before going on line check.	No inspection area	Two pre-installed inspection stations are set up, which are manually traced to this station.
Interior Line	+ manual pointing trolley technology to complete the content assembly of the body body wire harness laying, carpet, item shed, instrument panel and interior trim panel.	Four assembly stations are set up, and the line body transportation adopts the track limit	Six assembly stations are set up, and the line body transportation adopts the track limit
Chassis Line	To complete the lower body of the pipeline teaching equipment, powertrain assembly, fuel tank.Wheel assembly drawing.	Two loading stations were set up, and the stations were transported by EMS.	Four loading stations were set up, and the stations were transported by EMS.
Final Loading Line	Tilting position, the transmission of wire body adopts modules, seats, etc. ER sores plate chainWarping and oil injection tasks.	No Alternatives	Tilting position, the transmission of wire body adopts modules, seats, etc. ER sores plate chainWarping and oil injection tasks.
Detection Line	Including four-wheel positioning, light detection, speed detection, braking test, side sliding test, desorption test and emission test 1 test, etc.	No Alternatives	Including four-wheel positioning, light detection, speed detection, braking test, side sliding test, desorption test and emission test 1 test, etc.
Rain Room	Shower test	No Shower Test	With Shower Test
Check Field	Commodity inspection	No Inspection	With Inspection
Back Shop	Line vehicles have interior decoration, chassis, electrical appliances, paint repair ability.	No Paint Repair	With Paint Repair

"No Project" or "Do Nothing" alternative,
If there is no such project or do nothins, all the land would be the same as usual such as not agriculturalable land. Myanmar will continue to import vehicles which are including used cars (trashed stage cars in Japan) in the developed contries such as Japan, USA and others for the future needs. It could be mostly dependent on world economy and exchange rate fluction. Furthermore, it could not improve Myanmar's trade deficit and remain susceptible to high automobile prices. The regional development could not be expected without this project. No employment opportunity would be occurs. No personal imcome generation, no GDP growth and no revenue to the budget. It is worse than project implementation as the environmental impacts are manageable or no impact. In addition, There will be "No" transfer of technology associated with installation, operation of the equipment and vehicles and saving the foreign exchange etc hence this no project alternative is chosen.

5.6 Conparism of Alternatives

Table (5.18)The Comparism of Alternatives and Selected Technology

Scheme's name	Comparism of alterternatives and its out comes		Selected Technology
	Alternatives(I)	Alternatives(II)	
Preassemble inspection area	No inspection area (would be inaccurate for inspection of parts before assembling)	Two pre-installed inspection stations are set up, which are manually traced to this station. (more accurate on default parts an quality)	Two pre-installed inspection stations are set up, which are manually traced to this station. The quality of the body appearance is mainly carried out before going on line check.
Interior Line	Four assembly stations are set up, and the line body transportation adopts the track limit (Weak assembling stations)	Six assembly stations are set up, and the line body transportation adopts the track limit (Better accurate and dynamic assembling stations)	Six assembly stations are set up, and the line body transportation adopts the track limit + manual pointing trolley technology to complete the content assembly of the body body wire harness laying, carpet, item shed, instrument panel and interior trim panel.
Chassis Line	Two loading stations were set up, and the stations were transported by EMS. (Weak assembling stations)	Four loading stations were set up, and the stations were transported by EMS. (Better accurate and dynamic assembling stations)	Four loading stations were set up, and the stations were transported by EMS.To complete the lower body of the pipeline teaching equipment, powertrain assembly, fuel tank.Wheel assembly drawing.
Final Loading Line	No Alternatives	Tilting position, the transmission of wire body adopts modules, seats, etc. ER sores plate chainWarping and oil injection tasks.	Tilting position, the transmission of wire body adopts modules, seats, etc.ER sores plate chainWarping and oil injection tasks.
Detection Line	No Alternatives	Including four-wheel positioning, light detection, speed detection, braking test, side sliding test, desorption test and emission test 1 test, etc.	Including four-wheel positioning, light detection, speed detection, braking test, side sliding test, desorption test and emission test 1 test, etc.
Rain Room	No Shower Test (No shining vehicle for sale)	With Shower Test (More attractive to the buyers)	Shower test
Check Field	No Inspection (possibly default items)	With Inspection (Perfect to sales w/o missing anythings)	Commodity inspection
Back Shop	No Paint Repair (Possible customer complaint leading for refund)	With Paint Repair (Perfect product and get customer's trust)	Line vehicles have interior decoration, chassis, electrical appliances, paint repair ability.

In summary, all alternatives are strictly considered from the design stage until the closure stage covering technology, safety, economically and all impacts on environmental and social. The proposed project plan and all applied technologies are among the best alternatives which could lead to the sustainability to the project implementation. However, it is opened to all advance technology at all times for further development.

Table (4) The salient data for the project

No	Description		Qty	Remarks
1	Tpye of project		JV (Myanmar 20%+Foreigner 80%)	Joint Venture Investment
2	Investment	Myanmar	1.13MUS$	Total Investment of 15.32 MUS$ including Myanmar kyats in US Dollar equivalent
		Foreigner	12.19MUS$	
		Total	15.32MUS$	
3	Date of Company Establish		28-6-2017	Company Registration No. 100642476
4	Date of Operation Start		25-6-2019	
5	Licenses		MIC Permit; 067/2018 (27-3-2018) Ministry of Commerce License: Export /Import No. 011945 (17-08-18) MOI: Industry License; Matala /Kyi/2449 (6-8-2019) MOI: (Mdy) Electricity-Inspection EI-MDY-187 (18-6-21~17-6-22) MOI: (Mdy) Electricity-Inspection (1) Electricity Production and Usage-076/2019 (21-6-19~20-6-23) (2) Electricity Production and Usage-077/2019 (21-6-19~20-6-23)	
6	Raw materials (Import)		Import from China + Local Purchase	Details on Annex
7	Product Export (To)		Local Sale Only	
8	Product Capacity		Vehicles (Approx; 1000~37500 nos) per year	(Changhe –Q35SuV, M60MPV-1.5 std, A6 Sedan Car, Q7-SUV, M20SMPV, DODA V8-MPV, K9-Pick-up)
9	Working Time	Daily (08:00 ~17:00) (lunch break; 11:30~12:30)	8 hours per day	Overtime would be based on the demand of product and timing
		Weekly	5 days per week	
		Yearly	250 days per year	
10	No of machines		As shown on the list of imported equipments	(See Annex)
11	No. of workers (Ref; to MIC proposl)		110 nos. 15 nos.	Local 88%, experts 12%
12	Annual Fuel Requirement (Diesel)		3,840 gals Petrol, 360,160 gals diesel For generator,Truck	For generator,Truck & New Vehicles
	Annual Lubricant Requirement (Engine Oil)		2,040 gals For Vehicles	For new vehicle (initial filling)+40 ltr/yr for Gen Set
13	Annual Fuel Wood Requirement		-	No Fuel Wood boiler
14	Annual Electricity Requirement		5,500,000 units From both grid and own geneartion	From both grid and own geneartion
15	Diesel Generating Set		(2 units) 633KVA, 165KVA	Run at the black out time only
16	Annual Water Requirement (Approx;)		185,600gals From (4”dia tube well-2 nos.)	Mainly utilize from tube well and enough
17	Solid Waste		0.2 tons per day	Sold out to recycle buyer
18	Waste Water (Toilet, Person use, Kitchen)		$10m^3$ ~$50m^3$ per year (Approx)	Use Septic Tank (No drain to the environment)

6. Description of Environment

Myanmar is one of the nations with huge potential to develop not only by its rich in natural resources but also with its changes on politically and economically. It is creating job opportunity and chances of income generation and revenue to the nation by its foreign direct investment based on natural and human resources.

In this section, all the following areas are to be specified to get the particular attention to be paid to the direct or indirect impacts. The base line or the background information on the local environment as well as on other environmental assessments, the environmental issues to be considered by covering Physical environment, Biological Conditions and Social-economic conditions etc.
The objectives of this study were:

A) to know the current status of the biodiversity of the study sites, and
B) to contribute the habitat mapping of each species.

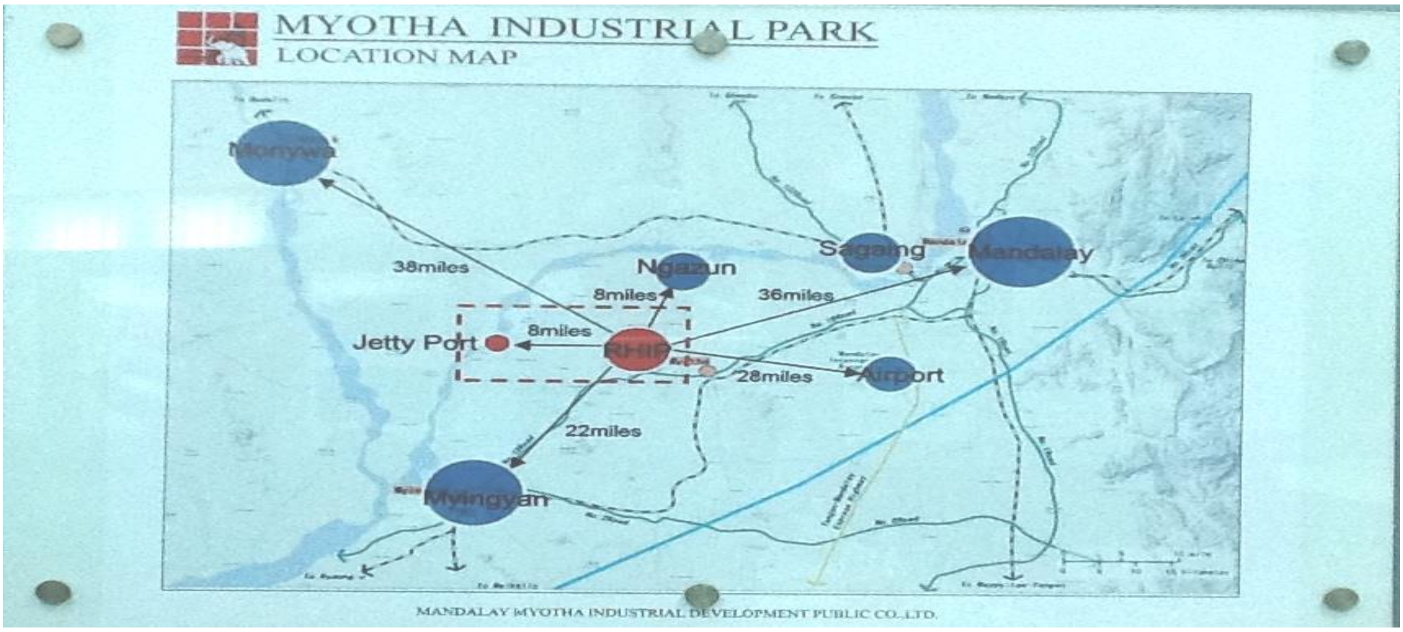
The description of environment and the detailed assessment would be done under the topic of following.

- Administration
- Physical Component
- Biological Component
- Social component
- Economic Component
- Cultural Component

6.1 Area Boundaries of Assessment

Setting the Study Limits
Due to the time and financial limitation, the study of the environmental and social impact assessment for this project is limited only for proposed area of the phase I & II of factory construction. It is mainly for the factory area and production stage. However, the study would be covered within 3 miles radius from the project site for social impact assessment.

The area covered for the assessement is shown which is in about 3 miles radius from the project site.



6.2 Methodology for data collection and analysis

Taking field assessment data as primary data and collect data from other sources would be used as secondary data such as meteorological data and local data of General Administration Department.
Mapping Methodology for Data Collection and Analysis should be followed to the law, regulation and guide line which is enacted by the Ministry of Natural Resources and Environmental Conservation.
EMP is based on consideration of resource conservation and pollution abatement such as water/air pollution, solid/liquid/harzadous waste, noise/dust emission and social economic impact including occupational health and safty. All data collection and analysis should be followed by the Environmental law, Regulation and Guide lines enacted by Ministry of Natural Resources & Environmental Conservation. A Global Positioning System (GPS) is used for the navigation the location of the project site with counter check on Google map position with appreciation of internet access. In order to obtain the essential ecological and biological datas, the field surveys records and photos taken on ground are considered for the record. All species of flora and fauna encountered at any time during the field surveys have been added to the total list of species. The primary and secondary informations collected during assessment would be also used for the cumulative impacts calculation for the project.

The site survey and field survey and data collection during investigation and assessment were performed by the KKS's study team for all environmental and social issues as base line data from possible sources and reliable instrutements and devices. The necessary lab test was also made with laboratories for clarification and confirmation.

6.3 Data on Geogrophy, Hydrology, Climate, Forestry

It is in the Mandalay Division Region, Myin Chan District, Nganzun Township, Myo Thar Industrial Zone. The factory is organized in the Myothar Industrial Zone Administration.
Location
Nganzun Township is located between 21°43'52"N ~21°54'44"N and 95°26'45"~ 95°45'04"N E. The total area is 355.991 square miles with the length of 21 miles from east to west and 20 miles long from the north to south. It is located Myin Mu Township about 10 miles at the north, Tadar Oo Township about 14 miles at east, Ngwa Tho Gyi Township about 19 miles at south and Myin Gyan Township abouth 21 miles at west respectively.
The project is located at 21°43'52"N and 95°37'30"E. It is 640 ft above from the sea level. It is 28 mile from Mandalay International airport and 36miles from Mandalay. The total area is 81,341.254 square meters (20.1 Acres).

6.4 Physical Components

6.4.1. Climate/Meteorology

It is in the tropical zone with tropical savana climate & low pricipitation. The highest day temperature is 42°C and coolest night temperature is 12°C respectively. (*from Nganzun Township Regional Datas Book 2018 May-2*)

Table (6.1) The weather data recorded as following.

No	Year	Precipitation		Temperature (C°)	
		Days	Inch	Highest	Coolest
1	2014	49	27.73	42	12
2	2015	55	30.17	42	12
3	2016	51	40.40	44	11
4	2017	61	40.58	43	12
5	2018	58	38.0	48	12

(*from Nganzun Township Regional Datas Book 2018 May-2*)

6.4.2. Atmosphere

During construction period could be dispersed the particulate matter but it is minimal as the soil is muddy. During the operation period, there are no harmful activities except the electric generator but it is minimal and carbon neutral as the trees would be planted in the Project's premise.

The Ambient Temperature

According to the meteorological department's recorded precipitation for 2018 is found as following.

Month	Temperature (C°)		Relative Humidity		Pricipitation (mm)
	Max	Min	Day (09:30)	Night (18:30)	
Jan	27.4	14.5	58	67	4
Feb	31.5	16.9	38	54	3
Mar	35.7	22.0	30	53	4
Apl	37.9	26.7	37	50	42
May	36.9	27.1	53	67	113
Jun	33.9	25.9	67	83	105
Jul	31.9	25.1	74	82	141
Aug	31.4	24.7	78	92	170
Sep	31.9	24.2	77	89	121
Oct	31.2	22.6	77	84	120
Nov	29.5	19.1	73	86	28
Dec	27.2	15.9	68	82	10

(*from weather-atlas.com: Nganzun Township 2018*)

Noise, Air quality, ground quality are recorded during assessment. (Please find on annex.)

Table (6.2) Points of Measurement

Point	Point.1	Point.2	Point.3	Point.4	Point.5
(GIS)Location	21°10'24.79"N, 94°54'08.06"E	21°10'27.65"N, 94°54'01.34"E	21°10'19.15"N, 94°54'01.31"E	21°10'19.71"N, 94°54'10.81"E	21°10'24.55"N, 94°54'12.10"E

6.4.3. Topography

It is flat land. Landscaping such as land leveling is the main activity of the Project Development. However, most of the Project structures would be laid out the minimum impact to the environment such as avoiding the destruction of original topography.

6.4.4. Geology/Seismology

Due to the project location, soil characteristics of the project site are muddy. During construction stage, it might has some potential impact on soil.

6.4.5. Natural Hazards

Strong wind and bright sun light ray are the main causes the natural hazards to that area. As the proposed area has covered almost no big trees, wind could be blown very freely while the sun light is included UV rays and high risk.

6.4.6. Hydrology

Not applicable to this project

6.4.7. Erosion and Sedimentation

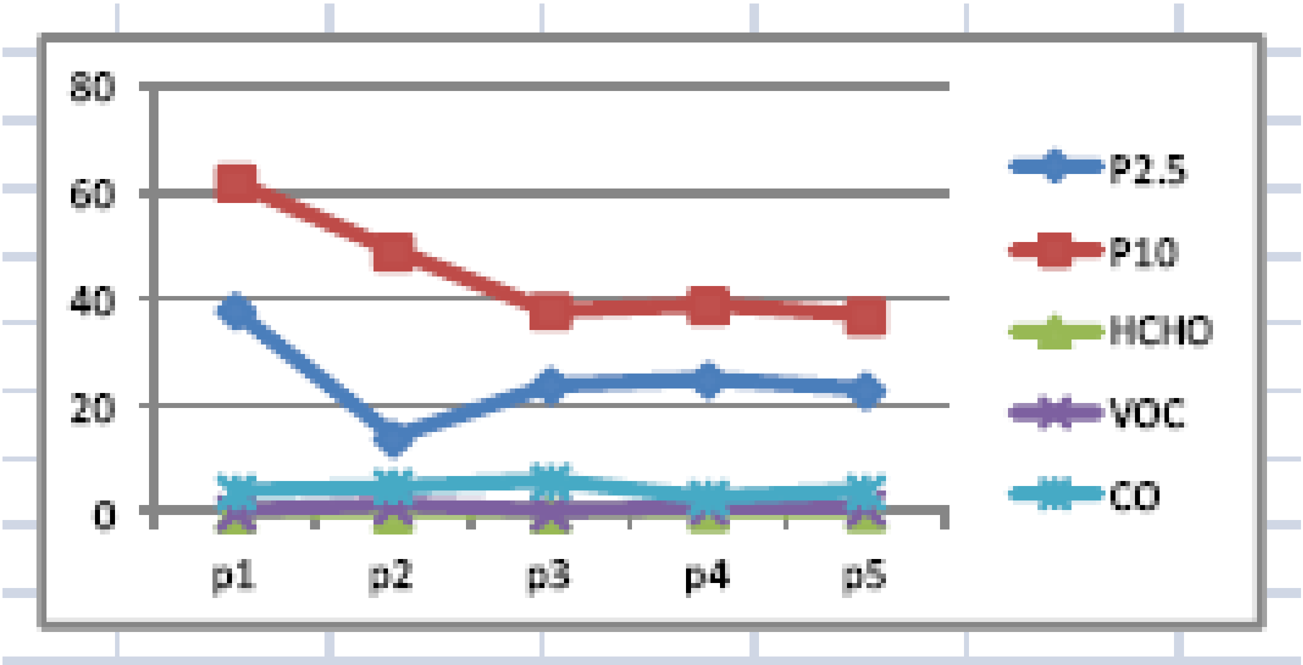
Not applicable as it is far from river.

6.4.8. Air Quality

Methodology: The air quality was checked for PM2.5, PM10, HCHO, VOC, CO, NO2 etc.To get the air quality the assessment team had measured same as others (5 points). The measurement was made only in the day time. (Pls find detailed measurement result on annex.)

Table (6-3) The Ambient Air Quality Measurement & Comparism with NEQEG

No	Parameter	Unit/ Lat/Long	NEQEG	WHO	Pt.1	Pt.2	Pt.3	Pt.4	Pt.5	Remarks
					21°10'24.79"N, 94°54'08.06"E	21°10'27.65"N, 94°54'01.34"E	21°10'19.15"N, 94°54'01.31"E	21°10'19.71"N, 94°54'10.81"E	21°10'24.55"N, 94°54'12.10"E	
1	$PM_{2.5}$	mg/Nm^3	25	25	38	14	24	25	23	
2	PM_{10},	mg/Nm^3	50	50	62	49	38	39	37	
3	HCHO	mg/Nm^3	-	-	0.02	0.02	0.02	0.02	0.11	
4	Volatile organic compounds (VOC)	mg/Nm^3	-	-	1.49	1.38	0.16	1.19	1.06	

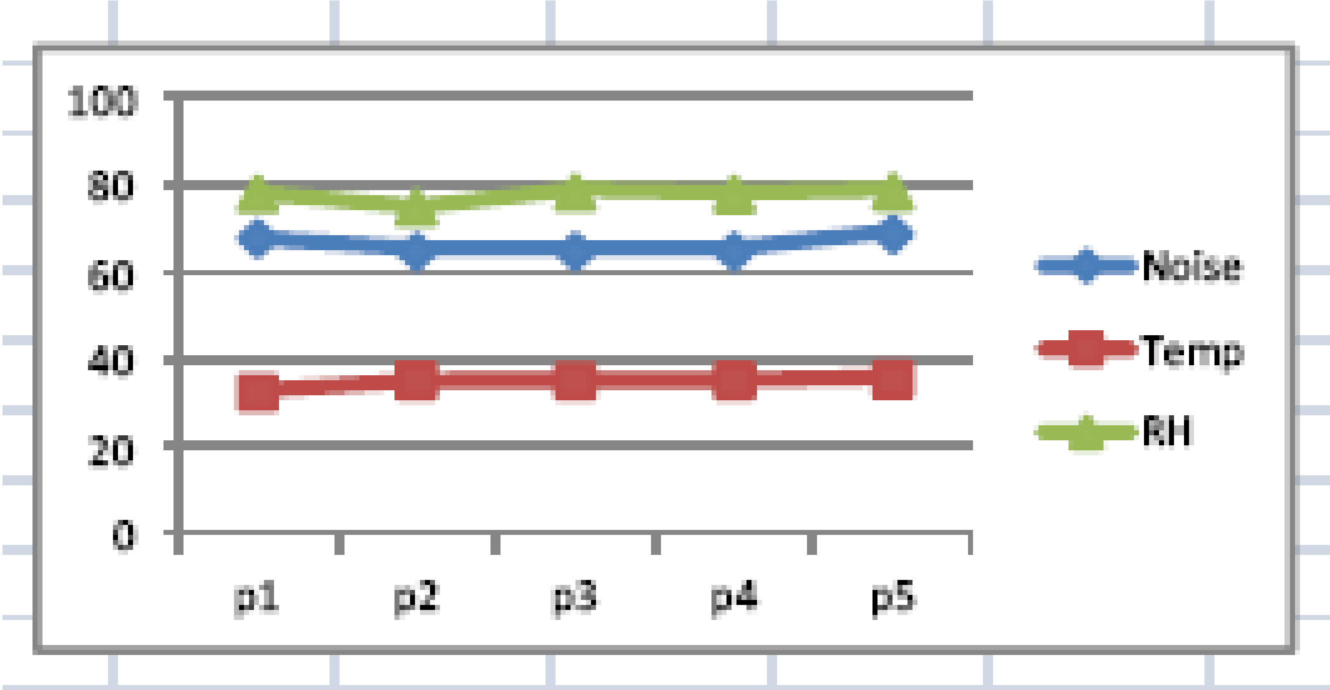


6.4.9. Noise

Methodology: The measurement was taken in the factory during working time. It found out just 55db in the day time. The detailed reading data (Air, Dust, Noise etc.) with the coordinates are shown. Pls seen on annex.

Table (6-4) The Noise Measurement (db)Room Temp.(C) RH %

Pt.1			Pt.2			Pt.3			Pt.4			Pt.5			Remarks
21°10’24.79”N, 94°54’08.06”E			21°10’27.65”N, 94°54’01.34”E			21°10’19.15”N, 94°54’01.31”E			21°10’19.71”N, 94°54’10.81”E			21°10’24.55”N, 94°54’12.10”E			
Noise (db)	Temp (C°)	RH (%)	Noise (db)	Temp (C°)	RH (%)	Noise (db)	Temp (C°)	RH (%)	Noise (db)	Temp (C°)	RH (%)	Noise (db)	Temp (C°)	RH (%)	
68	32.8	75.5	65	35.6	78.1	65	35.4	79.5	65	35.5	72.1	69	35.8	75.7	



The comparison of noise measured with National Environmental Quality Guideline is as following.
Table (6-5) The Comparism of Noise to NEQEG

	Receptor		NEQEG	Assessment
Noise One Hour L_{Aeq} (dBA)	Residential, institutional, educational	Day Time 07:00~22:00	55	-
		Nigh time 22:00~07:00	45	-
	Industrial, Commercial	Day Time 07:00~22:00	70	65
		Nigh time 22:00~07:00	70	-
Dust µg/m^3	Pm2.5 (24 hr)		25	47
	Pm10 (24hr)		50	84
Soil	PH		-	6.2

The detailed reading data (Air, Dust, Noise etc.) with the coordinates are shown. Pls seen on annex.

6.4.10. Soils

Soil of the project site is almost dry sandy soil covered and muddy in the dept. of more than 1 ft. As it is like in many other places in Myanmar, the soild is classified as yello alluvial soil as it is contained with large amount of silt.

Soil quality

The soil quality is nature with pH 6.0. The access road construction, clearing vegetation, moving top soil would cause impact to the top soil and ground.

Table (6.6) Soil Test

No	Parameter	Pt.1	Pt.2	Pt.3	Pt.4	Pt.5	Remarks
		16°51’04.58”N, 96°06’35.29”E	16°51’07.88”N, 96°06’33.15”E	16°51’07.18”N, 96°06’34.81”E	16°51’09.03”N, 96°06’35.37”E	16°51’05.63”N, 96°06’37.06”E	
1	Moisture (%)	68%	75%	82%	72%	72%	
2	PH	6.8	6.0	6.0	6.0	6.0	

Surface and Groundwater Quality

6.4.11. Surface Water

There is no potential environmental impact to the surface water as there is no waste water generation from the factory. (Pls find the mitigation measures in the EMP section.)

6.4.12. Ground Water

The impact to the ground water is minimal. (Pls find the mitigation measures in the EMP section.)

6.4.13. Mineral Resources

No official mineral resources are available

6.4.14. Mapping

As shown above

6.5 Biological Components

6.5.1. Terrestrial Ecology/Wildlife

Ecological Resources

6.5.2. Wildlife

As the area is farm land area, the wildlifes are easy to see these days. However, no records has been found the wild life such tiger, lion, elephant, crocodile, fox, dear and so on.

6.5.3. Forest/Vegetation Cover

No bounded and outside restricted forest is found in this area but the wild vegetation are covered seasonal. It is still recorded 3.99% of area covered by forest in Nganzun Township.

Table (6.7) The list of Flora

No	Common Name	No	Common Name	No	Common Name
1	Ma Gyee	9	Suu Phyu	17	Oak Shitt
2	Ta Mar	10	Tae	18	Tha Nat Kharr
3	Ta Yote Ma Gyee	11	Than Baut	19	Tha Buut
4	Htan	12	Na Bel	20	Zaung Gyann
5	Nyaung	13	Pyaut Sake	21	Zee Phyu
6	Sharr	14	Da Hat	22	Tha Mone Pin
7	Kokko	15	Sharr Saung	17	Oak Shitt
8	Gandarya	16	Hta Noun		

6.5.4. Aquatic Biota and Habitats

No Fisheries & Aquatic biology are applicable as the project is far from river.
Study site: Myotha Township
Study methods: Current data in this report were analyzed by using the previously recorded data and recent studies by scientists as pers. comm as secondary data as well.

Table (6.8) The list of wildlifes in the project zone

No.	Local Name	Common Name	Scientific Name	Family Name
1	Thamin	Deer	Antlered rusa	Antlered rusa
2	Yone	Hare	Lepus peguensis	Leporidae
3	Mway	Snake	Russells Viber	Colubridae
4	Phut	Monitor Lizard	Veranus Indicus	Varanidae

The primary data should be collected from study sites for habitat mapping of each marine biodiversity that can also be used for ecotourism purposes.

It is applicable directly as the area that project would be done on these area. The abandoned farm land would be becoming industrial and eco zone spot. However, the potential impact is very small due to the project area is on to be protected where the fishes and aquatic biology creatures are permanently lived in the river which is far from that project site area. However it could direct impact on fisheries and aquatic life it the sewage is drained directly to the river without treating to the acceptance level when full operation is done by different activities such as residential housing and other human activities. With the 3Rs (Reduce, Reuse and Recycle) program on the solid waste of the dormitory and office and septic tank waste water system installed in the project would be caused the impact minimal.

6.5.5. Forest

There is no bounded and outside restricted forest in this area in this township. There is 45 acres of firewood plantation and it is planned and proposed by Shwe Taung Co.,Ltd for the development of “out restricted forest” for 2682.72 acres.

Rare of endangered Species
No endangered Species were recorded.

6.5.6. Protected Areas

It is out of the protected area designated by the Ministry of Natural Resources and Environmental Conservation.

6.5.7. Coastal Resources

Not applicable

6.6 Socio-Economic Components

6.6.1. Administrative Organizations and Limits

The area and the project would be under public company.

6.6.2. Land Use in township

Table (6.9) The land use in Nganzun Township is as following.

No	Type of Land	Land Area (Acres)
1	Total Productive Agricultural Land	143168
2	Vacent Land	3482
3	Grazing Ground	2848
4	Industrial Land	11425
5	Urban	264
6	Rural (Villages)	4011
7	Marginal land	2827
8	Land not suitable for agriculture	59809
	Total	227834

According to the Myanmar Constitutional Law, the new land owner would be Myanmar Government and Regional Government of Mandalay Division Region, would have both rights of ownership and managed by MMID.

6.6.3. Social Profile

6.6.4. **Table (6.10)**Demography

Population	Male	Female	Total	Houses	Households
Rural (Villages)	62576	70862	133438	26770	28744
Urban	3253	4003	7256	1596	1751
Total	65829	74865	140694	28366	30495

6.6.5. Community Structure

Nganzun Township is organized by 4 wards, 44 village group and 158 villages.
Myotha, Pauksein, Thanbo and Nawarat Villages are most project affected communities.

6.6.6. Education

The education facilities in Nganzun Township are Baka School (10nos.), Pre KG (7) Primary School (77nos.),Mu Lun (21nos), Joint Middle School (10nos.), State Middle School (6 nos.), Joint State High School (6nos.), High School (6nos.) and Baka School (22) and there are no higher education facilities.

Table (6.11) The education facilities

No	Education Facility	No. of facility	No. of Teachers	No. of Students
1	Higher Education	-	-	-
2	State High School	6	217	6958
3	Joint State High School	6	217	6958
4	State Middle School	6	70	1706
5	Joint State Middle School	10	92	2179
6	Mu Lun	21	144	3093
7	State Primary School	77	385	5371
8	(Mu cho) Kindergarden	7	9	88
9	Ba Ka School	10	55	896

6.6.7. Population and Communities

The population of Myothar Township is about 140,694 peoples with female about 53.21% live in this area Myanmar, Indian mix, Chinese mix and others minorities with different religions live peacefully as communities.

No	Des;	House Holds	Family	Quarter	Village Group	Village	Male	Female	Total	Remarks
1	Town	1596	1751	4	-	-	3253	4003	7256	
2	Village	26770	28744	-	44	158	62576	70862	133438	
Total	15000	28366	30495	4	44	158	65829	74865	140694	

6.6.8. Gender Situation

Among total population, female about 52.21% live in Ngazun Township.

6.6.9. Religion

Physical and Cultural Heritage (Social and Cultural Components)

In Ngazun township, there are religion places as shown below.

(Budhist, Christian, Hindis and Islam) (But it could be found some ones without religious believe.)

Religious Buildings

Christian		Islam		Hindu		Chinese		Budhist	
Town	Village	Town	Village	Town	Village	Town	Village	Pagoda	Monestry
-	-	3	-	-	-	-	-	7	-

6.6.10. Economic Profile

Rate of Unemployment

No	Total Work Force	Employed	Unemployment	Rate of Unemployment
1	98307	96162	2145	2.18%
Total	98307	96162	2145	2.18%

Personal Income (Ks/Yr)

No.	2015-16	2016-17	2017-18
1	811929	814945	-

6.6.11. Industries

No industries are there until MMID development.

6.6.12. Mineral Development

Not applicable

6.6.13. Tourism

It is at early stage.

6.6.14. Health Profile

No	Population	Doctor's Health Care		Nurse's Health Care		Ass; Health Care	
		Doctor	Doctor/Patient Ratio	Nurse	Nurse/Patient Ratio	Assistant Health	Assistant Health/Patient Ratio
1	140694	8	1:17586	3	1:10822	7	1:20099
Total	140694	8	1:17586	3	1:10822	7	1:20099

6.6.15. Access to health services

The access to the health services are available as the area has some health facilities such as government owned and private sectors in the township.

6.6.16. Health Facilities

There is Ngazun General Hospital.
There are health facilities in Township such as private clinic and hospital.

Hospitals

No	Name of Hospital	Gov/Private	Bed
1	Nganzun Hospital	Gov.	50
2	Myo Thar District Hospital	Gov.	16
3	Ngan Myar District Hospital	Gov.	16
Total	3		82

Clinics

No	Name of Clinics	Gov/Private	Type
1	-	-	-
Total	-	-	-

Social Team (INGO)

No	Name of INGO	Address	Field
1	-	-	-
Total	-	-	-

Social Team (NGO)

No	Name of INGO	Address	Field
1	Amarathuka	No.(3) Quarter	Health, Education, Social
2	Myint Say Ta Nar	Out Yoe Myo Thar	Health, Education, Social
3	Say Da Nar Shin	Myauk Kyin Taung Lel Taw	Health, Education, Social
4	Workers Pensioners Association	No. (4) Quarter	Health, Education, Social
5	Kayakan Ku Tho Association	No.(4) Quarter	Health, Education, Social
6	Myo Set Lu Nge Lin Let Kyel	Kaung Zin	Health, Education, Social
7	Dama Parla Mingalar Maungmel	Ither	Health, Education, Social
8	Future Light (Nganzun)	No.(1) Quarter	Health, Education, Social
9	Gayuna Thi Ta La	Thar Kyin	Health, Education, Social
10	Ar Yu Thu Kha	Thu Nat Sin	Health, Education, Social
11	Myint Myat Phyu Sin	No.(3) Quarter	Health, Education, Social
Total	11		

6.6.17. Access to water supply

By tube well or traditional hand digged well

6.6.18. Nutrition levels

Not available

6.6.19. Communicable diseases, Motality and Morbidity

The diarea, tuberculosis and liver infection are the most infected diseases in the township.

No.	Kinds of Disease									
	Malaria		Diaria		Tuberculosis		Dysentery		Jorndise	
	Contracted	Motality	Contracted	Motality	Contracted	Motality	Contracted	Motality	Contracted	Motality
1	-	-	562	-	26	-	167	-	8	-

HIV/AIDS

No.	2016-2017		2017-2018	
	Contracted	Motality	Contracted	Motality
1	1	-	1	-

6.6.20. Infrastructure Facilities

There are no community infrastructure facilities such as water supply, electricity supply, but not sewage system. However, the proposed project has it all in MMID.

6.6.21. Water Use and Water Supply

Surface water from the river and tube well are widely used in Nganzun Township. The proposed project utilized underground water by 4" tube well.

6.6.22. Hospital, Medical Clinic

One General Township hospital and private clinic are available.

All primary data are collected from regional data book available from the office of general administration office and secondary data are collected by the assessment team during field survey period of 2018 and 2019 to cover yearly round data with the assistant of on line application.

6.6.23. Navigation

Not available

6.6.24. Airport

No airport is there.The nearest Mandalay International Airport is 26 miles away from the project.

6.6.25. Transmission Lines

Mandalay-Myothar transmission lines is located.

6.6.26. Electricity

National power grid is available. The project (MMID) is connected from Myothar Sub Station.

6.6.27. Agricultural Development,

The livelihoods of the people are farmers, traders, merchants etc.

6.7 Visual Components

Visual Components (Socio-Economic Conditions)

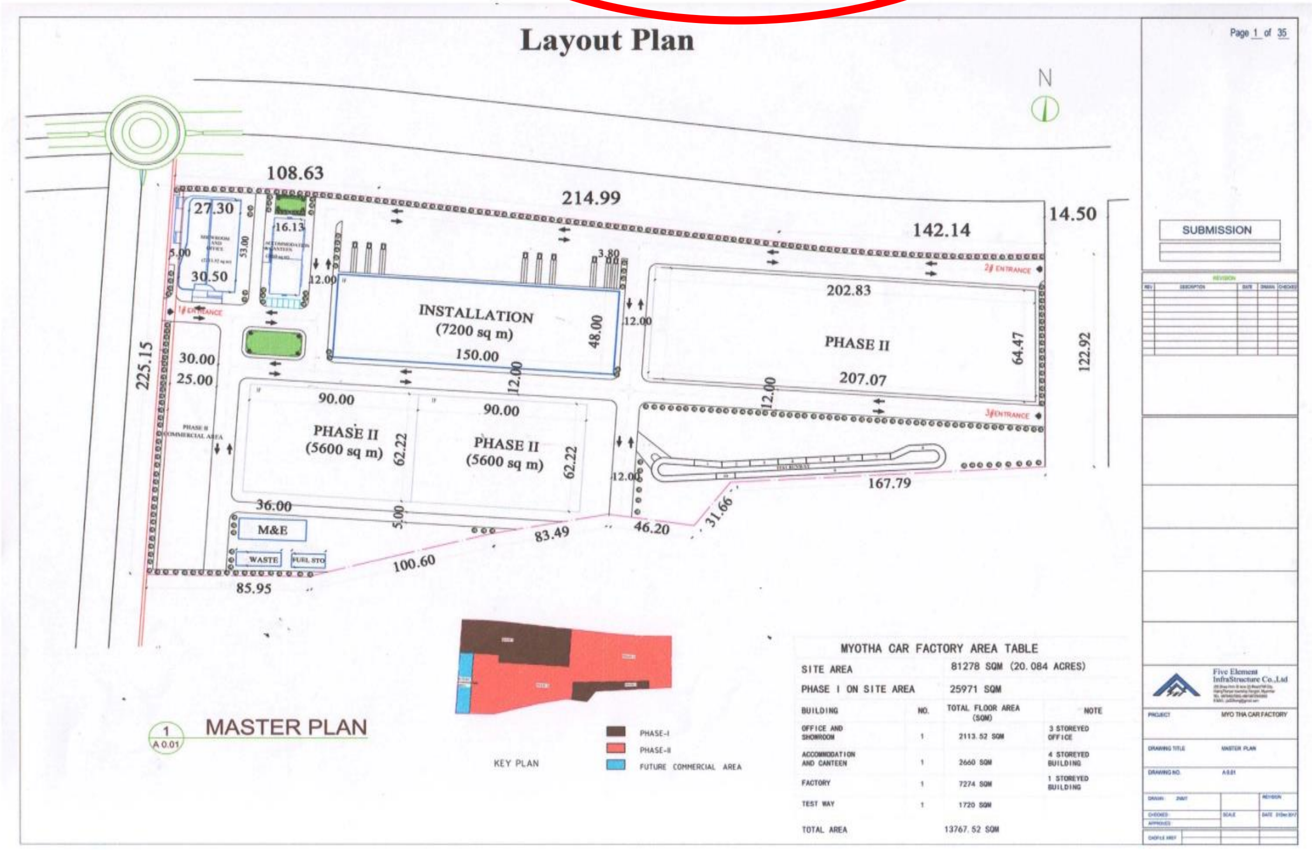
All sorts of employment and livelihoods are there but majority as a agriculture industry.

In general, the proposed project would create an impact to the environment in the following phases.

The temporary or short term impact during the construction phase

Long Term effect by daily operation

However, this project is the industrial park project, it is also necessary to consider the impacts during construction period such as noise and temporary wastes.



6.8 Infrasture, Transport

Road Transportation

The road are connected as it is located Myin Mu Township about 10 miles at the north, Tadar Oo Township about 14 miles at east, Ngwa Tho Gyi Township about 19 miles at south and Myin Gyan Township abouth 21 miles at west respectively. There is no obstruction to the public access road by this project implementation. MMID has developed all necessary assess road to the nearby and the whole country shown on the map of following.

6.9 Economic, Livelihood, Land Use,

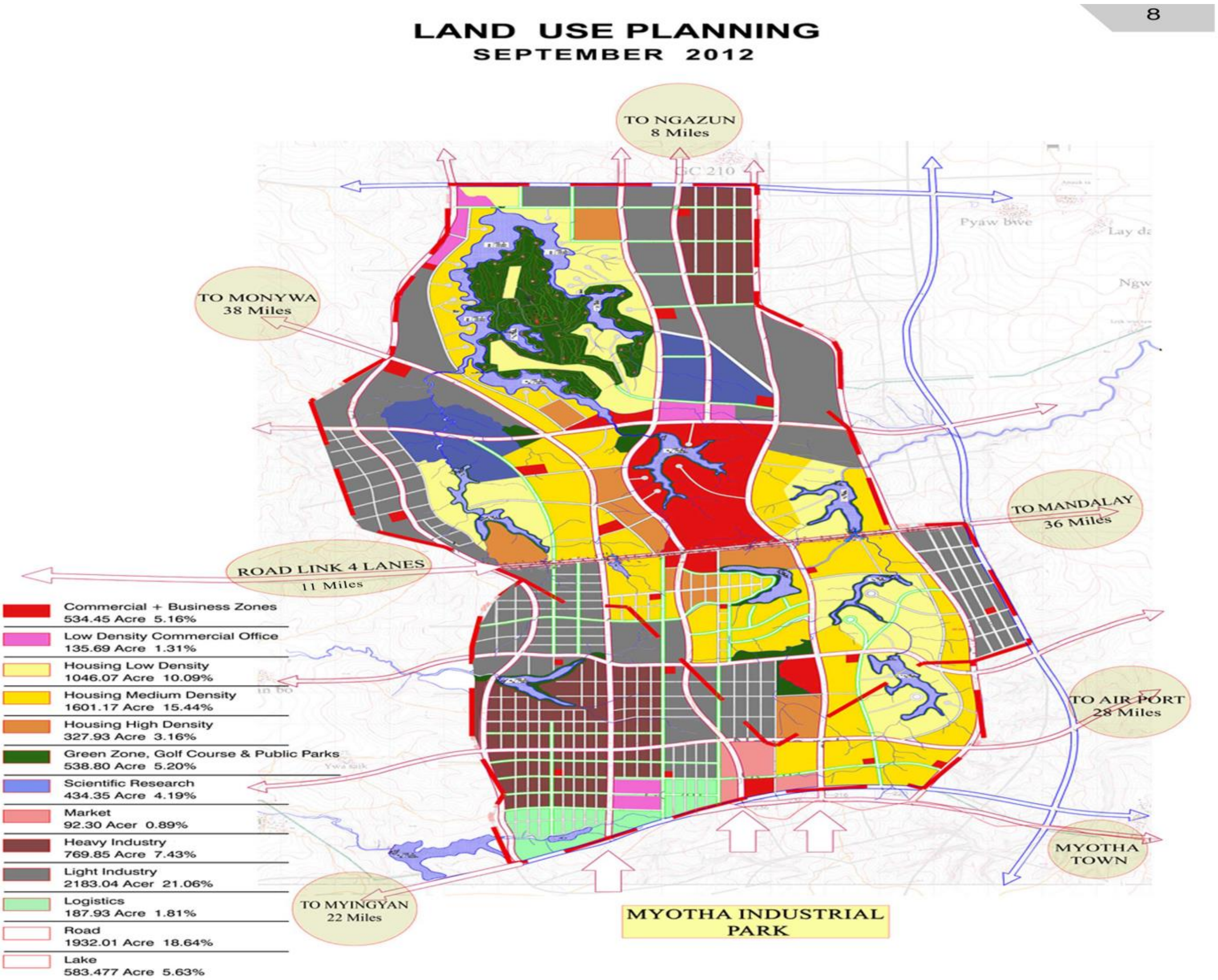
The Livelihood

The livelihood of the residents of Nganzun Township is variety from daily wages to the company owner and from skill labor to Director General and the resident of military personals and the oversea migrant workers and seamen etc.

Table (6.12) Types of livelihood

No	Gov. Staff	Service	Agri	Livestock	Trading	Technical	Fishery	General	Others	Total
1	1852	-	51815	14093	8097	1011	-	15017	4277	96162
Total	1852	-	51815	14093	8097	1011	-	15017	4277	96162

Land Use



7. Environmental Impact Assessment & Mitigation Measures

This proposed project is located in the dry land that classified as low grade land for season crop and owned by the farmers. Based on the effective land use policy and regional development program, it is decided to transform this agricultural land to industrial park by organizing all land owners to form as MMID company limited. Gold A Y A Motors International group Co.,Ltd, had rented land for the project which would be implemented by Foreign investment law.

As an approach to all potential impacts, it could be considered that all project implementations could be generated either positive and or negative impacts that could bring changes to the local environment in terms of physical, biological and social economic aspects.

7.1.Methodology

The impact assessment and mitigation measure would be on mapping, air quality, surface water quality, ground water quality, noise.,etc. The assessment would be obtained from various sources including consultation with local sources, individuals and organizations. It is also taken from literatures and researchs. The project team will use professional judgment, fieldwork and desktop analysis to identify potential impacts and their interactions to identify and assess potential impacts associated with or resulting from project activities. The project team will also evaluate unavoidable consequences effects to water quality, vegetation and biodiversity as in addition to evaluating specific sources areas. The significance of potential impacts that may result for the proposed project will be determined to assist in preparing recommendations for evaluation of the proposed project.

Impact Assessment Methodology,

The impact assessment methodology used in this EIA report provides a basis to characterize the potential environmental and social impacts of the project. This methodology is based on models commonly employed in impact assessment and takes into account international best practices.

The following are the three phases to be analyzed for potential environmental and social impacts such as,

1. Identification

   Specification of the impacts associated with each phase of the period and the activities undertaken.
2. Prediction

   Forecasting the nature, magnitude, extend and duration of the main impacts and
3. Evaluation

   Determining the significance of the residual impacts after taking into account how mitigation will reduce the predicted impact.

Identification of Impacts

The identification of impacts is essential an objective exercise to determine what could potentially happen to the environment as a consequence of the project and its associated activities.

Theidentification of impact and assessment starts with scoping which was conducted for the project report and continued through the reminder of the impact assessment process.

It is done with a logical and systematic approach. It is taken into account of all of the important environmental and social impacts and interactions which may be potentially significant impacts.

The impacts could be categorized into 2 parts as following.

A. Temporary Impacts caused during preconstruction and construction phases. (Remarks: this project is entering in the operation stage since 2019 as construction are completed.)
B. Impacts caused by normal operation period

The impacts would be identified under these categories with considering at before construction, during construction and operation stage.

1. **The Impacts by Pollution**
   (Air, Water, Waste, Soil, Noise & Vibration, Offensive Odor)
2. **The Impacts on Natural Environment**
   (Protected Area, Topography & Geology, Hydrology, Bottom Sediment, Ground Subsidence, Flauna/Fauna,)
3. **The Impacts on Social Environment**
   (Reseltement, Benefit & Damage, Local Conflict of Interest, Gender, Children's Right, Ethnic Minorities & Indigenous People, Poor, Living & Livelihood, Existing Social Infractures and Wervices, Water Usage, Cultural Heirtage, Landscape, Risks for Infectious Diesease, Working Condition)
4. **The Impacts on Others**
   (Accident, Global Warming)

Impact Assessment

After identification of all the important impacts, their potential size and characteristics are predicted by using conventional rating matrix method.

The principal impact assessment steps are summarized and comprising of

- **Impact Identification**: to determine what could potential happen to resources/receptors as consequence of the project and its associated activities.
- **Impact Evaluation**: to evaluate the significance of the predicted impacts by considering their magnitude or likelihood of occurrence and the sensitivity value and or importance of the affected resource/receptor.
- **Mitigation and enhancement**: to identify appropriate and justified measures to mitigate negative impacts and enhance positive impacts.
- **Residual Impact evaluation**: to evaluate the significance of impacts assuming effective implementation of mitigation and enhancement measures.

7.2.Scope of Assessment

The project is Joint Venture for manufacturing. The project consists of 4 main stages to assembling motors.

Scope of the Study on Environmentaql Impact Assessment

- The environmental impact assessment approach focused on potential environmental impacts in the project area in order to provide base line data and opportunities to stakeholders in proposing ideas/ recommendations and exchanging important information to dissolve their experiences with environment.

The scope of assessment would be cover as following.

a) Identify stakeholders and inform them of the proposed project and EIA process
b) Providing stakeholders with opportunity to identify and issues and concerns associated with the proposed project
c) Identify areas of likely impact and environmental and social issues that may require further investigation in an EIA
d)Determine the TOR for specialist baseline and impact assessment studies in response to intial stakeholder imput
e) Release the scoping phase report including draft TOR for specialist studies for stakeholder review and comment

In this project the following impacts would be considered majorly.

1. Impact on Air environment (Pollution)
2. Impact on Natural Environment (Water Resources)
3. Impact on Noise and Vibration
4. Impact on Land Environment (Soil contamination, Ground Subsidence)
5. Impact on Biodiversity
6. Impact on Community Safety and Health
7. Impact on Job Opportunity
8. Impact on Occupational Safety and Health
9. Restriction of Access
10. Economic Displacement of local Agriculturists
11. General Economic Development
12. Better Transportation

7.3. Identification of Impacts

7.3.1. Identification of Impacts Before and During Constrution Stage (BC/DC)

The temporary affect by the impacts during pre construction and during construction
The following are the major factors to the dust pollution and noise pollution

- Supporting trucks and vehicles moving around these areas.
- Construction machineries and pile driving for the foundation excavation and concrete footings
- Eraction of building steel frames, roofing and cladding
- Wind blowing effect to the dust
- Loading and unloading process by bulldozer, excavator and dump trucks
- Installation of machineries and equipments
- Ancillary facilities erection
- Services and utilities connections
- Building fitting out

Both Pre Construction and During Construction stages, the vibration and noise impacts could caused by moving vehicles and construction machineries. The worst noise impact would come from diesel power generator and pile driving process and the loude communication between workers.

The construction of factory buildings are completed (by the time of this report) which could already overcome these noice impacts and vibration.

7.3.2. Identification of Impacts during operation stage (OP)

The following are the causes of impacts during project implementation.

1) Air polution
2) Noise & Vibration
3) Solid waste and waste water
4) Impact to the livelihood
5) Employment Opportunities

(1)Air Polution

The potential air pollution would be expected both inside and outside of factory.
The spraying paint process is one the potential impact sources in this factory.

There would be some impacts to the surrounding air because of diesel generator when it is electricity blackout.

(2) Noise & Vibration

There are some noises from the air compressor, ventilation fans and electric generator. However, no Impact would be caused as cylencer is installed to engine exhaust but could not avoid for small Impact when the generator run during electricity blackout.

(3) Solid Waste and Waste Water

There are solid waste from the workshop, show room, office & domitory. It could be harmful to environment if could not manage properly. There are bio waste from the dinning area and toilets. No waste water created from the procuction process as it has the recycling.

(4) Impact to the livelihood

No negative impact potential by this project on loss of livelihood while positive impacts are potential.

Flaura and Fauna

There is no record for fauna in this factory area of 20.084 Acres as it is designated the industrial zone for the factory building, not for residential and business area, except sparrows, crows, pigeons, dogs, cats, mouses, cocroachs, mosquitoes, flys etc, which are close to human.

(5) Employment Opportunity

There would be 80% of 110 jobs available by this project for locals. The positive Impact caused to the livelihood by this project as creating jobs not only to the local people but throughout the country.

7.4.Steps of Impact Assessment

Impact Assessment would take place as following;

- The baseline characteristic which is the existing conditions before the project is undertaken and any effects are generated
- Identify sources of impacts and the impacts themselves that are generated by any aspect of the project
- Rate impacts before any mitigation is implemented for both positive and negative impacts
- Suggestion at mitigation and enhancement measures
- Rate impacts after mitigation to produce a residual impact impact rating

7.5.Determining the Rating

The overall rating of the impacts will be determined by using the following matrix but it should be noted that it should be guide and there may be situations where their rigid application is inappropriate and where stakeholder perceptions and feedback have significant role to plan. For specitic impacts where this is the case, the rating is clearly explained in the evaluation of the impact.

The environmental and social impact assessment was conducted according to the scoping matrix below and examined.

Impact Significances (Qualitative)

Magnitude of Impact	Resource/Receptor Sensitivity		
	Low	Medium	High
Negligible	Negligible	Negligible	Negligible
Small	Negligible	Minor	Moderate
Medium	Minor	Moderate	Major
Large	Moderate	Major	Major

Imapact Severity (Quantitative)

Impact Severity	Impact Likelihood				
	Extremely Unlikely	Unlikely	Low Likelihood	Medium Likelihood	High Likelihood/ Inevitable
Negligible	Negligible	Negligible	Negligible	Negligible	Negligible
Low	Negligible	Negligible	Negligible	Minor	Moderate
Medium	Negligible	Minor	Minor	Moderate	Major
High	Minor	Minor	Moderate	Major	Major

The Definition of Impacts for the impact identification and evaluation study

Significance	Definition
No Discernible Impact	The interaction between the project and a particular receptor/resource is not reasonably expected.
Negligible Impact	The predicted impact to a particular receptor/resource is considered to be slight and indistinguishable from natural background variations.
Minor Impact	A particular resource/receptor may experience a noticeable effect although the impact magnitude will be small and or the recptor of a low sensitivity.
Moerate Impact	The predited impact on a particular resource/recptor is assessed as significant but amenable to mitigation. Moderate impacts should be mitigated wherever practicable.
Major Impact	The predited impact on a particular resource/receptor is assured to be of a high magnitude and or the resource/receptor of a high sensitivity. Mitigation measures should be done until no residual impact as possible.

7.6.Geographical Boundary & Temporal Boundary

The geographical boundary for the environmental and social impacts assessment would be covered in about 3 miles radius from the project site as shown on the map. The temporal boundary would be during construction and post operation period (the closure stage).

The area for the social impact is covered Ngazun Township but also Nabu Aine village which is the nearest to the project.

7.7.Scoping of Impacts

Table (7.1) Scoping for Environmental and Social Impact Assessment

Category	Scoping Item	Evaluation		Reason for Evaluation
		Before/During Construction (BC/DC)	Operation Stage(OS)	
Pollution	Air Quality	B-	B-	BC/DC: Emissions from construction equipment, dust arising from construction activities. OS: Emissions from generator and workshop are anticipated.
	Water Quality	D	D	BC/DC: Muddy water inflows to river from construction site may effect to water quality. OS: Water pollution to the surrounding water bodies by waste water if it is not treated is anticipated.
	Waste	D	D	BC/DC: Generation of construction waste by each works and removal of structures are anticipated. OS: Any Water Pollution to the surrounding water bodies by land scaping work is anticipated.
	Soil Contamination	D	D	BC/DC: This development area is not farmland and thus soil pollution from construction are not anticipated. OS: Soil contamination in operation stage by vehicles, tenants are anticipated.
	Noise and Vibration	B-	B-	BC/DC:Noise and vibration from operation of construction machinery and construction vehicles are anticipated. OS:Noise and vibration from operation generator, vehicle assembling activities are anticipated.
	Ground Subsidence	A+	A+	BC/DC:Ground subsidence by construction activity is anticipated. OS: Ground subsidence by operation stage is anticipated.
	Offensive Odor	D	D	BC/DC: Offensive odor during construction is anticipated. OS: Offensive odor caused by generator is anticipated.
	Bottom Sediment	D	B-	BC/DC:Construction works is not anticipated. OS: Inadequate wastewater treatment and disposal in operation stage may cause water pollution and impact on bottom sediment.
Natural Environment	Protected Area	D	D	No natural preserve area and national parks exist in and around the project site.
	Flaura/Fauna and Ecosystem	C	C	There are no information on inhabiting situation of important animals and valuable plant species in the surrounding area.
	Hydrology	B-	B-	BC/DC:hydrology impact to the ground water during construction is not anticipated. OS: Hydrology impact by using groundwater during operation stage is anticipated.
	Topography and geology	D	D	The project area is flat land, thus impact of topography and geology is not be anticipated.
Social Environment	In voluntary Resettlement	D	D	No resettlement is needed as the project site is relocated. The positive support by the neighbors received. The assessment of impact of these items for the people, who live or earn their living near project site will be SPC and relevant authorities.
	Misdistribution of benefit and damage	C	C	
	Local conflit of interests	D	D	
	Gender	D	D	
	Children's Right	D	D	
	Ethnic minorities and	D	D	

	indigenous peoples			
	Poor	A+	A+	The assessment of impact of those items for the people who live or earn their living near the project site would be checked by SPC. On another hand, positive impact on the poor is anticipated because of the improvement of the job opportunities for them could be expected both BC/DC and OS.
	Living and livelihood	A+	A+	BC/DC: Assessment of impact of this item for the people during construction are anticipated. OS: Positive impact on living and livelihood could be expected as the local economy and employment will be boosted by tenants.
	Existing social infrastructures and services	B+	B+	BC/DC: the assessment of traffic to the nearby project site would be done by SPC. OS: The positive impacts is assumed by the development of facilities related to the project service and many social infrastructures will be improved.
	Water Usage	D	D	BC/DC: Impact on local water usage may occur if surface water would be taken not only for the construction activities but also usage by the tenants after project accomplished. OS: Impact on existing water usage is not expect. The implementation of new sources for water supply to the project would be considered without causing negative impact on local existing water usage.
	Cultural heritage	C	C	It is necessary to confirm information on distribution of cultural heritages in the surrounding area.
	Landscape	C	C	It is necessary to confirm information on important landscapes and viewpoints in the surrounding area.
	Risks for infectious disease such as AIDS/HIV	D	D	Risks of infectious diseases with a fixed probability are anticipated.
	Working conditions (including occupational safety)	B-	B-	BC/DC: Impact of working conditions during construction is anticipated. OS: Impact on working conditions during operation stage are anticipated.
Other	Accident	B-	B-	BC/DC: Chances of accident especially in the construction stage should be closed watch. OS: Due to increase of traffic volume since construction, the assessments are anticipated.
	Global Warming	B-	B-	BC/DC: Emission of Greenhouse gases (GHGs) by construction machineries are anticipated. OS: GHGs emission in operation stage by tenants and vehicles are anticipated.

7.8.Terms of Reference for Investigation of Environmental Impact Assessment

Motor Assembling Plant

As terms of reference (TOR) for investigation of Environmental Impact Assessment (EIA) the survey items and method of each negative impact evaluation item which was identified as A and B or C by scoping described in previous table. The baseline of air quality, water quality, noise soil flora/fauna and cultural heritage were confirmed by laboratory analysis and field survey.

Table (7.2) The terms of reference for the EIA report of Gold A Y A Co.,Ltd's Motor Assembling Plant.

Category	Scoping Item	Survey Item	Survey Method	Quantity
Pollution	Air Quality	1)$PM_{2.5}$,PM_{10},HCHL, VOC 2)Traffic Volume	1)Air quality measurement by instrument 2)Counting numbers of each type of vehicle	1)5 stations x 1 time each (dry and rainy season) 2) 2stations x 2 times (dry and rainy season)
	Water Quality	1)Natural and living environment parameters	Sampling and measurement by field equipment and laboratory analysis	2 stations x 1 time
	Waste	1)Amount of construction waste (Construction Stage) 2)Amount of industrial waste (Operation Stage)	1)Prevention of waste as construction work 2)Referring of similar project	1 time each
	Soil Contamination	pH,	Measurement by field equipment	2stations x 1 time each (dry and rainy season)
	Noise and Vibration	1)Traffic volume 2) Noise Level	1)Counting number of each type of vehicle 2)Noise level measurement by instrument	2stations x 2 times (dry and rainy season)
	Ground Subsidence	Water demand	Prevention of General contents of project which is assumed to cause impact on ground subsidence	-
	Offensive Odor	Distribution of residences and monastery around the project area	Prevention of General contents of project which is assumed to cause impact on water use	-
	Bottom Sediment	pH,	Measurement by field equipment	1station x 1 time (June)
Natural Environment	Flaura/Fauna and Ecosystem	1)Flora 2)Fauna	Record Data, Observation and interview survey	Project area x 2 times (dry and rainy season)
	Hydrology	1)Water Demend 2)Storm water control plan	Prevention of general contents of project which is assumed to cause impact on hydrology	-
Social Environment	Living and livelihood	Condition of living and livelihood around the project area	Record Data, Field Survey	1 time
	Existing social infrastructures and services	Condition of existing social infrastructures around the project area	Record Data, Field Survey	1 time
	Water Usage	Water demand	Prevention of general	-

			contents of project which is assumed to cause impact on water usage	
	Cultural heritage	Distribution of cultural heritage around the Project area	Record Data, Field Survey	1 time
	Landscape	Distribution of cultural heritage around the Project area	Record Data, Field Survey	1 time
	Risks for infectious disease such as AIDS/HIV	Measures of Landscapes and viewpoints in and around the project area	Record Data, Field Survey	1 time
	Working conditions (including occupational safety)	Safety measures of working environment	Prevention of general contents of project which is assumed to cause impact on working conditions	-
Other	Accident	Safety measures of working environment	Prevention of general contents of project which is assumed to cause impact on accident	-
	Global Warming	Traffic volume	Counting number of each type of vehicle	

7.9.Environmental Assessment

The consultant team had conducted the assessments during suevey and the assessment results are shown as following.

Survey Method; Field Observation
The survey assessment was conducted since the project is under land preparation stage, during construction and operation stage.During the field survey period, the whole area was observed. The actual data were recorded not only by the interviewing to the local people but also recorded by taking photos.

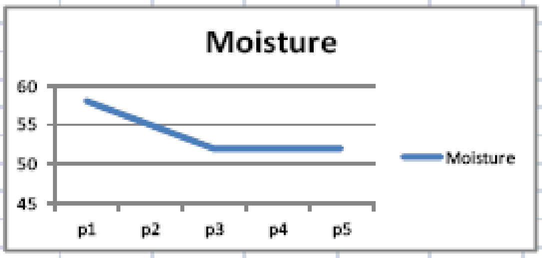
Interview and Literature Survey
The survey data was collected by interviewing with local people and residents in addition to the field observation and assessment. The survey team visited around the survey area and interviewed the name of plants, animals that could be seen in and around the area. It is also asked the past and present situation of flora and fauna to them that they had noticed and on the changes on biodiversity and ecosystem in the designed area and nearby. However, there are no existing literatures related to Flora and Fauna around the area.

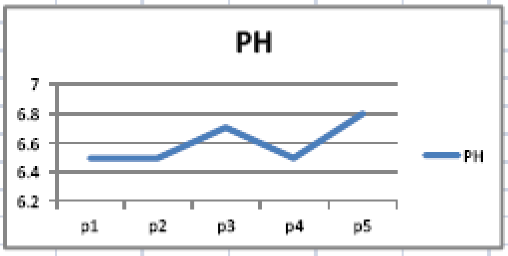
7.9.1. Geological conditions

Geological Survey for this project is estimated to be (silty sand), and silty clay layer is covered with thin layer (10cm). Necessary stones for construction will be supplied by the local supplier.

7.9.2. Soil Test

No	Parameter	Pt.1 21°43'53.67"N, 95°37'30.4"E	Pt.2 21°43'52.05"N, 95°37'31.64"E	Pt.3 21°43'51.33"N, 95°37'29.46"E	Pt.4 21°43'51.66"N, 95°37'34.46"E	Pt.5 21°43'53.12"N, 95°37'34.23"E	Remarks
1	Moisture (%)	58%	55%	52%	52%	52%	
2	PH	6.5	6.5	6.7	6.5	6.8	





7.9.3. Water Quality

Survey Item

Parameters of water quality survey are determined by referring to the parameters of quality standards (draft) in Myanmar.

Survey Location

The locations of sampling points are shown in the following table. The detail of each sampling points are described below.

Sampling Points for Water Quality Survey

Category	Sampling Point	Coordinates	Description of Sampling Point
Surface Water	TW-1		
	TW-2		
Ground Water	TW-3	20°08'45.66"N, 92°53'45.46"E	
	TW-4		

(Remarks; More tests & results would be submitted in EIA report.)

Surface Water

This project would not affect to the surface water.

Survey Period

June ~ July, 2019

Survey Method

Water samples were taken by horizontal water sampler and collected in sterilized sample containers. All sampling was in strict accordance with recognized standard procedures. The parameters pH, temperature, dissolved oxygen (DO), electricity conductivity (EC) were measured at each site concurrently with sample collection. All samples were kept in iced boxes and were transported to laboratory and stored at 2-4°C refrigerators.

Laboratory

Water Samples were sent to the Laboratory in Yangon.

Table (7.3) The Meter, Equipment and Appratus for Environmental Quality Test & Measurement

No	Measurement	The Equipment / Model
1	Air	(1) CEM Partical Counter (DT 9811 (2) BRAMC Air Quality Test (BR Smart 126)
2	Noise	(1)Environment Meter CEM DT-8820 (2)UNI-TSound Level Meter UT-352
3	Soil	Soil Survey Instrument (4in1)
4	Temperature	Compact InfraRed Thermometer (CEM-DT-8802)
5	Water	(1)Hydro Master HM-500, (2)Aquapro Water Tester AP-1

Survey Result

The water quality survey was conducted in monthly as part of environmental monitoring program and it should have been done as environmental management plan.

The following table was used as a format for the water quality tests based on the following.

1. Result of Water Quality (Natural and Living Environmental Parameters)
2. Result of Water Quality (Health Impact Parameters)

7.9.4. Air Quality

The parameters of air quality survey were determined as following referring to National Environmental Quality (Efluent) Guidelines (NEQEG).

Table (7.4)Survey Parameters for Air Quality

No	Parameter	Averaging Period	NEQEG Guide line Value (µg/m^3)
1	Particlate matter (PM $_{2.5}$)	1hour	75 (Interim Target) 50 (Interim target) 37.5 (Interim target) 25(guideline)
2	Particlate matter (PM$_{10}$)	1hour	150 (Interim Target) 100 (Interim target) 75 (Interim target) 50(guideline)
3	HCHL	1hour	
4	Volatile organic compounds (VOC)	1hour	

Survey Location

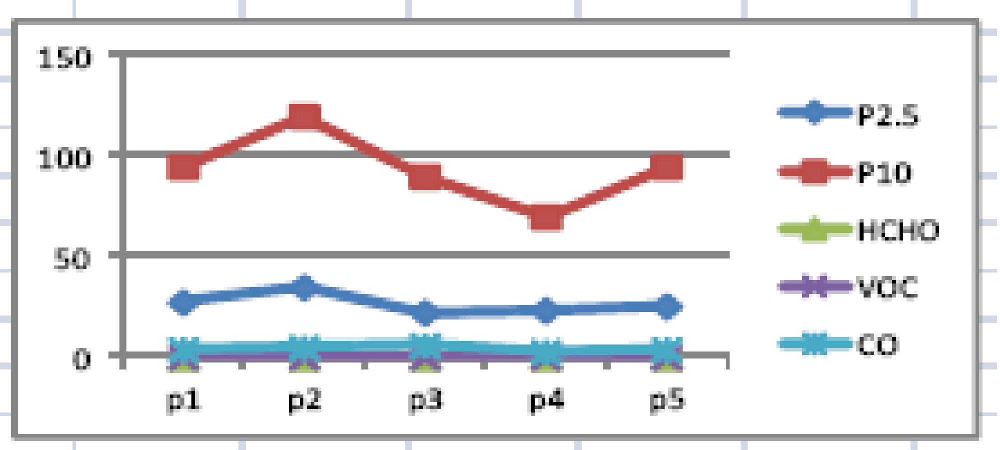
Survey Period

Air Quality Surveys were conducted in raining season as shown.

Season	Period
Raining Season	Jun-July 2019
Dry Season	April,2018

Air Quality Measurement

No	Parameter	Unit/ Lat/Long	NEQEG	Pt.1 21°43'53.67"N, 95°37'30.4"E	Pt.2 21°43'52.05"N, 95°37'31.64"E	Pt.3 21°43'51.33"N, 95°37'29.46"E	Pt.4 21°43'51.66"N, 95°37'34.46"E	Pt.5 21°43'53.12"N, 95°37'34.23"E	Remarks
1	$PM_{2.5}$	mg/Nm^3	25	27.5	35.0	22.5	23.5	25.5	
2	PM_{10},	mg/Nm^3	50	95	120	90	70	95	
3	HCHO	mg/Nm^3	-	0.02	0.02	0.02	0.02	0.02	
4	Volatile organic compounds (VOC)	mg/Nm^3	-	0.16	0.15	0.16	0.16	0.16	



7.9.5. Noise Level

Survey Item

Parameter for noise level survey was determined as following.

Survey Parameter for Noise Level

Receptor	(NEQEG) L_{Aeq} (dBA)	
	07:00~22:00	22:00~07:00
Residential, institutional, educational	55	45
Industrial, Commercial	70	70

Survey Location

Survey Point	Coordinates	Description of Survey Point
N1 (Along the Road)	21°43'53.74"N, 95°37'30.12"E	On the road
N2 (Living Environment)	21°43'51.92"N, 95°37'31.82"E	Inside the factory compound
N3 (Living Environment)	21°43'51.60"N, 95°37'34.98"E	Inside the factory compound

Survey Period

Noise Level Surveys were conducted in raining season as shown.

Season	Period
Raining Season	Jun~July, 2019
Dry Season	May.24~27,2018

Survey Method

Methodology

Measurement of Environmental sound level was conducted by referring to the recommendation of International Organization for Standardization (ISO),ISO1996-1:2003 and ISO1996-2:2007.

By Instrumentation

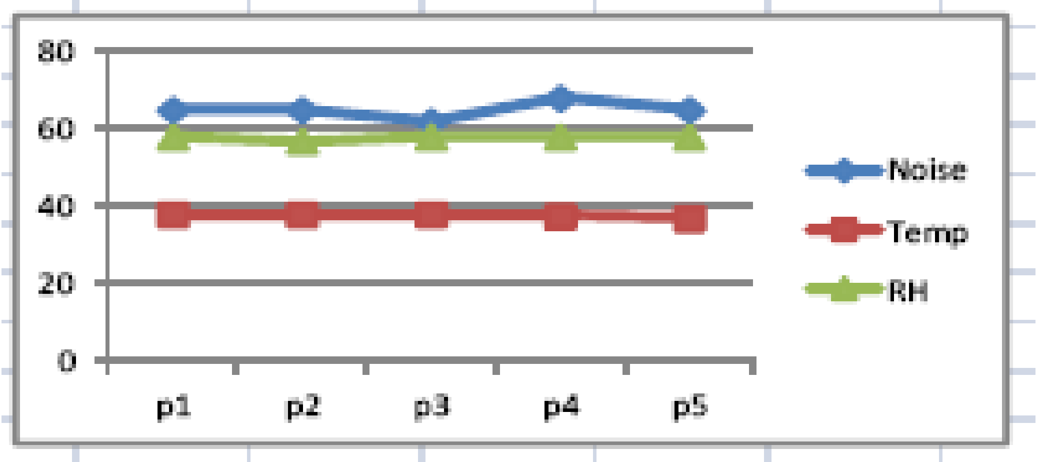
The instrumentation used for noise quality survey is shown in Table

Instrumentation	Description
Sound Level meter	Sound level meter, Model UT-351/352

Survey Result

Noise Measurement (db)Room Temp.(C) RH %

Pt.1			Pt.2			Pt.3			Pt.4			Pt.5			Remarks
Noise (db)	Temp (C°)	RH (%)	Noise (db)	Temp (C°)	RH (%)	Noise (db)	Temp (C°)	RH (%)	Noise (db)	Temp (C°)	RH (%)	Noise (db)	Temp (C°)	RH (%)	
65	38	58	65	38	57	62	38	58	68	37.5	58	65	37	58	



7.9.6. Flora and Fauna

Survey Item

Survey Item for flora and fauna are as follows;

1. Vegetation
2. Inhabitants
3. Important Species
4. Biodiversity and Ecosystem

Survey Area

The survey area is in and around the project site
The existing land plot area nearby project site

Survey Period

Flora and fauna survey was conducted both dry and rainy season. The survey duration is as shown in table
Survey periods for Flora and Fauna Survey

Season	Period
Dry Season	May10~12,2018
Raining Season	June~July 5,2019

Survey Method

The survey assessment was conducted since the project is under land preparation stage, during construction stage and operation stage etc. During survey period, the whole area was observed. The actual data were recorded not only by the interviewing the local people, but also recorded all findouts and taken photos as shown in annex.

Interview and literature Survey

The survey datas are recorded together with interviewing with local people and residents in additional to the field observation. The survey assessment team had visited around the survey area and interviewed the name of plants, animals that could be seen in and around the area. It is also asked the past and present situation of flora and fauna to them that they had noticed and on the changes on biodiversity and ecosystem in the designated area and nearby. However, there are no existing literatures related to Flora and Fauna around the area.

Survey Result

There are four major types of habitat were observed namely (1)patches of mixed vegetation with scattered trees (2)cultivated land and (3)aquatic habitat and (4)human habitation area. There is no threatened plant and animal species in the area and the overall habitat are assumed to be low.

Butterfly

During Survey Period, no butterfly is found.

Birds

No birds found in the day time as the project is cleared trees except the plannts are all in the nursery stage

Mammals

The dogs, cats and pigs are common mammals seen in the area as human raised them as pets or money making.

Reptilian and Amphibian Species

No reptilian and amphibian species found during assessment period.

Aquatic Ecology

It is not applicable as the project site is far from river and sea.

Table (7.5)Summary of Key Terrestrial Habitat Features in the Survey Area

No	Criterion	Features	Remarks
1	Fauna and Flora	Threatened species	Nil
2	Threatened Communities	Mixed vegetation and water body	Potential human disturbance and construction
3	Migratory Birds	Locally	Local migration will be continued
4	Wild Corridor	Low	No wild life recorded
5	Representativeness	Moderate	Mixed vegetation and water body
6	Natural Diversity	Low	Nil
7	Rarity and Distinctiveness	Low	Mixed vegetation, water body support the biodiversity
8	Naturalness	Low	Mixed vegetation, water body support the biodiversity
9	Pest Species	Insect pests and field rat	Seasonal
10	Long-Term viability	Moderate	Potential human pressure and construction development
11	Adjacent habitat values	low	Disturbed land
12	Degree of existing modification	Moderate	Human activities due to development
13	Sensitivity to disturbance	Moderate	Mixed vegetation and water body
14	Overall habitat value	Moderate	Patches of mixed vegetation and water body

The summary of environmental survey program is as shown in following table and sampling points for environmental survey are shown in next level.

Table (7.6) Summary of Environmental and Social-Economic Survey Program

Water Quality	Parameter	Natural and Living Environmental Parameters (1)pH (2)color (3)Turbidity (4)electrical conductivity (5) total hardness (6)Calcium Hardness (7)Magnesium Hardness (8)Total Alkalinity (9)Phenolphthalein Alkalinity (10)Cabonate (CaCO3) (11)Bicarbonate (HCO3) (12)Iron (13)Chloride (as CL) (14)Sodium chloride(as NaCL) (15)Sulphate (as SO4) (16)Total Solids (17)Suspended Solids (18)Dissolved Solids (19) Manganese
	Period	Monthly sampling at 2 points for Natural and living and 1 point for Health impact parameters for 6 months duration
	Location	Points are water source, existing well,
Sediment and Soil Quality	Parameter	(1)Mercury(Hg) (2)Arsenic (As) (3)Lead (Pb) (4)cadmium (Cd) (5)copper (cu)(6)zinc(Zn) (7)Chromium (Cr) (8)Nickel(Ni)
	Period	Two times sampling at 2 points
	Location	- (Not applicable)
Air Quality	Parameter	(1) $PM_{2.5}$ (2)PM_{10} (3)HCHL (4)VOC
	Period	5 points for 2 times
	Location	Factory area
Traffic Volume	Parameter	Volume of traffic and travelling velocity of vehicles
	Period	Daily survey (6:00-18:00) for 2 weekdays and 1 weekend at 2 points
	Location	the nearby residential area and along the road
Noise Level	Parameter	LAeq (A-weighted loudness equivalent)
	Period	2 times at 5 locations for 8 hours duration
	Location	Same as traffic volume survey
Flora and Fauna	Item	Interview, field observation and secondary data collection
	Area	-
	Period	Whole survey period
Cultural	Item	Interview, field observation and secondary data collection
	Area	-
	Period	Whole survey period

Environmental Base line,
There is no recorded environmental base line data as it is the remote area and no public transport access available.

Size and Details of Land Use,
The total land area for the proposed project is 20.084 Acreas. It is applied to transform land use from the agriculture land to industrial zone use.
Road and Traffic System
It is just 26 miles away by road from Mandalay International Airport and considered as Myo Thar is the one of the best location closet to Mandalay. It could be reached from either Mandalay and is a good road access.

Waste water system (Drainage System/Waste Water Piping/Waste Water Treatment System)

- No industrial water is used in the whole process of production and assembly. In terms of daily life, about 125 people (at full capacity as proposes at MIC) need water for daily use. No pollution damage to the atmosphere, soil and surrounding environment.

7.9.7. Drainage System/Waste Water Piping/Waste Water Treatment System

The Drainage Pipes are installed systematically. The U shape concrete ditches shall be laid along two sides of roads. The storm water will be discharged to natural drainage system. Chlorination Septic Tank is installed and only the acceptance level of treated waste would be delivered.

7.9.8. Solid Waste

There would be solid waste like the other project in general. It would be categorized as following.

Project Stage	Potential	
	Solid Waste Generation	Impact to Environment
Pre-construction	Land clearing wastes, Construction material packaging wastes, worker's personal wastes	It is not only harmful to the environment but also impact to the human health if it could not manage propelly.
During Construction	Construction material & packaging wastes, worker's personal wastes	
Normal Operation	Raw material waste & packaging, container wastes, worker's personal wastes	
Factory Closure Stage	Land clearing wastes, Demolished constructed material wastes, worker's personal wastes	

In the normal operation period the potential solid waste generation comes from the unpackaging of all imported vehicle parts, such as cardboards, empty cartoon boxes, plastic packaging materials, papers, workers' personal waste, organic and household wastes from the dormitory etc.

All these Solid Waste would be collected routinely and delivered to the designed place. All the solid waste would be applied to 3R code. The detailed solid wastement would be found in the EMP section.

7.9.9. Hazardous Waste

There won't be hazardous waste from this project due to the process flow and as it is mentioned by project proponent. However, it would be checked all time regularly.

Among the impacts, health care to all visitors and guests are important during their visit the show room and service center. The most common impacts are sliping, tripping and falling at stairs and bathroom. To avoid or minimize these risks, it is necessary to keep clean everywhere in the plant and even outdoor greening and landscaping areas including show room area. Moreover, the emergency first aid kit should be kept and standby car is needed to send patient nearby clinic or hospital within a few minutes in case of incident happen. As the front desk is operating during office hours it is always ready to assist any health care not only to the guests but also to all employees.

Risk Identification and Assessment

As it is just the vehicle assembling plant there are less-hazard risk area subject to no hazards and threats with employees and visitors to the show room due to the levels of exposure and vulnerability to these threads.

The risk assessment and threat are checked with exposure and vulnerability to the following.

- Production and Marketing at the site
- Well being of nearby Local people and communities etc.,
- Thread from natural hazards
- Threads from human-induces hazards

Table (7.7)The Risk Summary

Threat/Hazard		How is this as a thread?			Frequency	Severity	Risk	Monitoring
Natural Threads	What natural/factors threaten the plant?	1.Building/site physical integrity	2.economic activity	3.Well-being of localpeople/communities	How frequently does this occurs?	How severity does this threat affect?	Level of risk	Responsible agency
	Earthquake	✓	-	✓	Low (50 years for 6.8M earthquake)	High	High	MIP
	Flood	-	-	-	-	-	-	
	Heavy rain/flash flood	✓	✓	✓	High (annual)	Medium	Medium	MIP
	Drought	-	✓	✓	High (annual)	Low	Medium	MIP
Induced	Fire	✓	✓	✓	High (5 times/year)	Medium	High	MIP, Gold AYA, Fire Dept.
	General	✓	-	✓	Medium	Low	Low	Gold AYA

	Pollution				(continuous)			
	Waste management	✓	✓	✓	Medium (continuous)	Medium	Medium	Gold AYA, MIP
	Slippely Floor	✓	✓	-	Medium (progressive)	Low	Low	Gold AYA
	Noise	-	-	✓	Medium (progressive)	High	High	Gold AYA
	Vibration	✓	-	-	High (continuous)	Low	Medium	Gold AYA
	Accident	✓	-	-	High (continuous)	Low	Medium	Gold AYA
	Visitors	✓	✓	-	High (continuous)	High	High	Gold AYA

(MIP = Myotha Industrial Park)

Risk Level Definition by Frequency and Severity

Frequency (Return period)				
	High (Less than 2 years between events)	**Medium** Risk	**High** Risk	**High** Risk
	Medium (2 to 10years between events)	**Low** Risk	**Medium** Risk	**High** Risk
	Low (10years or more between events)	**Low** Risk	**Medium** Risk	**High** Risk
		Low Severity	**Medium** Severity	**High** Risk
		Identified Severity		

7.9.10. Electricity

There is national grid for electricity and it would be self generating power for the blackout time. Full load power will be supply from the grid.

7.10. Social Impact Assessment

The project impact assessment is derived from the observations in the field surveys, and from the questions posed to community leaders/source persons and personnel of the concerned authorities in the project area. The detailed can be summarized as following.

1. Objectives of the Study
    - To study the impact on the people residing community or society nearby project site from which the possible changes of socio-economics, culture and quality of life will be anticipated.
    - To prepare mitigation measures so that the project can be operated in harmony with the local community and society can be mostly reduced.

2. Scope of the Study

The social impact assessment approach focused on public participation (relations community) in the project area in order to provide opportunities to stakeholders in proposing ideas/ recommendations and exchanging important information to dissolve misunderstanding and unawareness of different groups. Social Impact Assessment emphasizes seeking information and ideas of the people to know about crucial problematic issues (impacts) in the community.

7.10.1. Demographic Impacts

About 125 jobs would be created from this project and the positions are priority to nearby residents. According to the estimation, about 110 jobs would be created from this project (after factories had built) and the positions are priority to nearby residents. With its recruitment, it would be some changes to the population increasement in this township temporary and some permanent.

Socio-economic Impacts
The positive socio-economic impact will be great because once the consortium project accomplished, it will lead to increasing employment, providing career building at all level and higher income to the communities. Moreover, it will induce various kinds of activities that will provide further employment such as trade and services.

Institutional Impacts
Not applicable

7.10.2. Cultural Impact

Survey Item
The survey item of cultural survey was as bellow;
The existence of cultural heritage in the area of project site

Survey Location
A cultural baseline data collection survey has been carried out in and around of the project site
Survey Period
During the period of May~July,2018, a cultural baseline data collection survey has been carried out.
Survey Method
The survey method to identify the cultural baseline data was as follow;
Documentary and Field Observation

Survey Result
Summary of Survey Results
There is no cultural heritage inside the boundary of the Area of project site. There are 427 pagodas in Nganzun Township with 7 famous shrine and pagodas as following.

No.	Stupa, Pagodas, Temple	Location
1	Shin Pin Moe Kaung	Nganzun
2	Shwe Maw Taw	Let Pan Kyin
3	Shew Gu Gyi	Thar Kyin
4	Shin Pin Sein Nyo Shin	Taung Pyin
5	Shin Pin Ku Ni	Nganzun
6	Shin Pin Thein Taw	Ngan Myar
7	Shin Pin Tant Kyaung	Ngan Myar

It is expected that the negative cultural impact to communities nearby project area are at moderate level although the people’s way of life will be changed from national to be more international and urbanized as it is expected to get more international travelers and expatriates to stay short and long time in this premises. The workers from the agriculture and fishery sector will enter into industry sector and will affect their life style in positively.

7.10.3. Gender Impacts

No Gender Impacts are expected by this project implementation. It is expected that the opportunities for socializing will be more than before. It is expected that the opportunities for socializing will be more than before.

7.10.4. Health Impact

As this project is just assembling the vehicle which material parts are produced in China, the impact including health impact was already eliminated for the production of vehicle parts. The health impact is more significant through the emission of carbon dioxide during the usage of vehicles than the vehicle production stage. However the emission rates by combustion of fuel from the utilization of vehicles also highly dependent on different parameters such as model of the car, the load, speed, and driving behaviours which is generally difficult to define. Moreover, this part would be the out of scope of this EIA study but should be inserted the government's road infrastructure network project.

The following table shows the contribution of the weight inventory results and the different impact categories considered to the final index obtained. (gasoline scenario)

Measurements (emissions to air and resources)	Human health				Ecosystem		Resources		Total
	Carcinogenic effects	Resp. Effects (organic)	Resp. Effects (inorganic)	Effect from climate change	Eco-toxic emissions	Acidification/ Eutrophication	Extraction of minerals	Extraction of fossil fuels	
(a) CO_2	-	-	-	10%	-	-	-	-	**10%**
(a) CH_4	-	0.00%	-	0.12%	-	-	-	-	**0.12%**
(a)VOC	-	0.024%	-	-	-	-	-	-	0.024%
(a) NOx	-	-	4.8%	-	-	0.9%	-	-	**5.73%**
(a) N_2O	-	-	-	0.62%	-	-	-	-	**0.62%**
(a) SOx	-	-	4.4%	-	-	0.25%	-	-	**4.65%**
(a) HC	-	0.1%	-	-	-	-	-	-	**0.1%**
(a) Particles	-	-	6.6%	-	-	-	-	-	**6.6%**
(a) PAH	0.00%	-	-	-	0.0%	-	-	-	0.00%
(a) Lead	-	-	-	-	0.0%	-	-	-	0.00%
(r) Aluminium	-	-	-	-	-	-	0.25%	-	**0.25%**
(r) Iron	-	-	-	-	-	-	0.05%	-	0.05%
(r) Copper	-	-	-	-	-	-	0.01%	-	0.01%
(r) Lead ore	-	-	-	-	-	-	0.02%	-	0.02%
(r) Zinc ore	-	-	-	-	-	-	0.01%	-	0.01%
(r) Manganese	-	-	-	-	-	-	0.004%	-	0.004%
(r) Coal	-	-	-	-	-	-	-	0.5%	**0.5%**
(r) Oil	-	-	-	-	-	-	-	62%	**62%**
(r) Natural gas	-	-	-	-	-	-	-	9.4%	**9.4%**

The sum of the percentages presented in this table may not come to 100% due to approximations. The sign "-"means that the respective substance or resource does not affect that impact category.
(a)= emission to air, (r) = resource
CO_2 =carbon dioxide, CH_4= methane, VOC= volatile organic compounds (non-methane), NOx= nitrogen oxides, N_2O= dinitrogen oxide, SOx= sulphur oxides, HC=hydrocarbons, PAH= polycyclic aromatic hydrocarbon

7.10.5. Road & Connumication

The project located in the Ngazun township is positioned on the Global Polarize System of 21°43'52" N and 95°37'30"E. Myo Thar Industrial Park is near a town named as Myo Tha (Ngazun Township) in Mandalay Division Region. The road assess and communication is very much suitable for logistic. It is 36 miles away from Mandalay and 45 miles away from Mandalay International Airport. The Mandalay Myotha Industrial Park connects the Asian expressway, the Asian railway network, the Irrawaddy river, the international airport and so on.

The company and production base is located in block b-1-1 in zone 2C, Myotha industrial park, Mandalay Division Region, Myanmar.

7.11. The Evalution of Impacts

7.11.1. Evaluation of Impacts Before and During Construtiom Stage (BC/DC)

The Evalution of Impacts on Pollution

(Air, Water, Waste, Soil, Noise & Vibration, Ground Subsidence, Offensive Odor, Bottom Sediment)

During construction phase, the certain amount of dust particles might be generated by construction activities such as land preparation, earth moving, vehicle passing.,etc. The generated air borne particles which is generated by not only these construction activities, but also natural wind blowing effect should be considered but possible to mitigate these impacts. The impact would be negative impact considered as (B-).

Waste generation at construction site, including personal should be anticipated. The impact would be negative impact considered as (B-).

Impact to Soil should not be anticipated during land preparation, land sacping and contamination of soil, any effect to get impact to soil such as oil spilling, hazardous waste, waste water etc. and land clearing by firing bushes if any. The impact would be considered as (D)as it has less chance to get happened.

The construction machines operating, diesel power generation, stone grinding, concrete mixing, pile driving, excavator moving, transportation vehicles are sources of noise emission to the environment and should be anticipated to consider the noise impact. The impact would be negative impact considered as (B-).

The Evaluation of Impacts on Natural Environment

(Protected Area, Flauna/Fauna, Hydrology, Topography & Geology)

There is no protected area near the proposed project site. It shoud be anticipated the impact to the flauna and fauna within the budget limit as much as possible. Hydrology, Topography and Geology impacts would not be anticipated as the project is relatively small to get impact on these factors. The impact would be considered as (D) as it is neglible.

The Evaluation of Impacts on Social Environment

(Reseltement, Benefit & Damage, Local Conflict of Interest, Gender, Children's Right, Ethnic Minorities & Indigenous People, Poor, Living & Livelihood, Existing Social Infractures and Wervices, Water Usage, Cultural Heirtage, Landscape, Risks for Infectious Diesease, Working Condition)

During construction phase, these are the areas of consideration as social impact. However there would not be resettlement by this project.

Reseltement, The impact would be considered as (D).
Benefit & Damage, The impact would be considered as (C).
Local Conflict of Interest, The impact would be considered as (A+).
Gender, The impact would be considered as (D).
Children's Right, The impact would be considered as (D).
Ethnic Minorities & Indigenous People, The impact would be considered as (D).
Poor, The impact would be possitive impact considered as (A+).
Living & Livelihood, The impact would be positive impact considered as (A+).
Existing Social Infractures and Wervices, The impact would be positive impact considered as (B+).
Water Usage, The impact would be considered as (D).
Cultural Heirtage, The impact would be positive impact considered as (A+).
Landscape, The impact would be positive impact considered as (A+).
Risks for Infectious Diesease, The impact would be positive impact considered as (B+).
Working Condition The impact would be positive impact considered as (B+).

The Evaluation of Impacts on Others

(Accident, Global Warming)

In general for all construction phases, the accident prevention should be considered as major precaution as parts of Occupational Healthe and Safety. GHG emission should be anticipated.

7.11.2. Evaluation of Impacts in Operation Stage (OS)

The Evaluation of Impacts on Pollution

(Air, Water, Waste, Soil, Noise & Vibration, Ground Subsidence, Offensive Odor, Bottom Sediment)

Air Pollution

Eventhough the project is in the operating stage, there are no base line data recorded how much dust particles in the air and how much polluted in this area both inside factory and due to the vehicles passing.

During operation phase, the certain amount of dust particles might be generated by vehicle passing.,etc. The generated air borne particles which is generated by not only these construction activities, but also natura, loading unloading as significance and considered as temporary impact and possible to mitigate these impacts. The impact would be negative impact considered as (B-).

In general the factory has noise & emission when the diesel generator is running during black out period.

Solid Waste

The solid wastes from the factory are one of the causes of impact if it is not properly managed.

The bio waste from the dinning area and toilet could also cause the impact.

There are solid waste estimated generating in the everage of 1~5Kg of solid waste from the office of the factory per day. The estimated total solid waste generated from the workshop could be calculated from the estimated data of following table.

The Total Solid Waste Estimation (per day)

No	Description	Solid Waste (Kg)
1	Office	5
2	Workshop	100
3	Lobby (Showroom)	5
4	Kitchen (Domitory)	20
	Total	130

The impact by the waste generation would be negative impact considered as (B-).

Waste Water

According to the nature of process flow to this industry, there is no waste water from the process and the project is also included bioseptic tank system. No waste wate is discharged from the factory. (D)

Soil

Impact to Soil should not be anticipated at normal operation period. The impact would be negative impact considered as (D).

Noise

The engine testing, diesel power generation, transportation vehicles are sources of noise emission to the environment and should be anticipated to consider the noise impact. The noise and vibration are also minimal. The impact would be negative impact considered as(B-).

The Evaluation of Impacts on Natural Environment

Protected Area,

There is no protected area near the proposed project site. (D)

Flauna/Fauna,
There is no record for fauna and inhabated in the proposed area.
It shoud be anticipated the impact to the flauna and fauna within the budget limit as much as possible. (C)

Hydrology, Topography & Geology
Hydrology, Topography and Geology impacts would not be anticipated as the project is relatively small to get impact on these factors. (D)

The Evaluation of Impacts on Social Environment

Reseltlement, Benefit & Damage, Local conflit of interest, Gender, Children's Right, Ethnic Minorities & Indigeneous Peoples
As the project is planned in the industrial zone, there would be no reseltlement but affected positive impact to the neighbors. (D)

Poor, Living & Livelihood,
The employment opportunities could be a chance for the poor to improve their livelihoods.(A+)

Transport Existing Social Infractures and Services,
As the project is located in the Myo Thar Township in Mandalay Division Region, there is no obstruction to the road infrastructure by this project implementation. The positive impacts is assumed by the development of facilities related to the project service and many social infrastures will be improved. (B+)

Water Usage,
There would not be affected to the social environment by the water usage. (D)

Cultural Heirtage,
There is no cultural heritage within the study area. (D)

Landscape,
There would not be affected to the social environment by the landscape. (D)

Risks for Infectious Diesease,
It could be controlled the risk of infectious disease to the social environment. (D)

Working Condition
It could be controlled the working condition. (D)

The Evaluation of Impacts on Others
(Accident, Global Warming)
In general for all times of operation phase, the accident prevention should be considered as major precaution as parts of Occupational Health and Safety. The situation should be studied always to prevent negative impact and further improvement. (C)
GHG emission should be anticipated. (C)

Economics Assessment
The economics assessment should consists of the following elements which should be integrated into the overall economic analysis of the project: (1) cost and benefits of environmental impacts; (2) cost, benefits and cost-effectiveness of mitigation measures and (3) discussion of impacts that have not been expressed in monetary values, in quantitative terms where possible.

However, these costs also needed the standardization and cost of the environment impacts to be able to calculate for economics assessment. With minimal impacts and unavailability of these standards and cost structures, this economic assessment would be exempted at this stage.

7.12. The Summary of Impacts

The impacts of pollution, natural environment, social environment were classified as A to D in accordance with the following criteria.

A-: Significant Negative Impact A+: Significant Positive Impact
B-:Some Negative Impact B+:Some Positive Impact
C: Impacts are not clear, need more investigation
D:No impact or Impacts are negligible, no further study required

The environmental and social impact assessment was conducted according to the scoping matrix and examined.

Table (7.8) The summary of Environmental and Social Impacts

Category	Assessment Item	Scoping		Assessment		Impacts
		Before/During Construction (BC/DC)	Operation Stage(OS)	Before/During Construction (BC/DC)	Operation Stage(OS)	
Pollution	Air Quality	B-	B-	B-	B-	BC/DC: Emissions from construction equipment, dust arising from construction activities. OS: Emissions from generator and engine test running are anticipated.
	Water Quality	D	D	D	D	BC/DC: Muddy water inflows to river from construction site may effect to water quality. But not effected to the water body OS: Water pollution to the surrounding water bodies by waste water if it is not treated is anticipated. But no discharge from the factory.
	Solid Waste	D	D	D	D	BC/DC: Generation of construction waste by each works and removal of structures are anticipated. OS: All solid wastes from the production, personal including kitchen wastes are potential impact sources.
	Waste Water	D	D	D	D	BC/DC: No muddy or waste water from construction activities inflows to river and to water body OS: In general there is no waste water from the vehicle assembling process and no discharge from the factory.
	Soil Contamination	D	D	D	D	BC/DC: It could be affected to the soil only at the construction site during construction but not impact to the soil contamination. OS: Unmanaged waste, used oil and oil spillage to the ground could cause contamination in operation stage.
	Noise and Vibration	B-	B-	B-	B-	BC/DC:Noise and vibration from operation of construction machinery and construction vehicles are anticipated. OS:Noise and vibration from operation generator, vehicle assembling activities, engine & vehicle test running are anticipated.
	Ground Subsidence	A+	A+	A+	A+	BC/DC:Ground subsidence by construction activity is anticipated. OS: Ground subsidence by operation stage is anticipated.
	Offensive Odor	D	D	B-	B-	BC/DC: Offensive odor during construction is anticipated. OS: Offensive odor caused by generator is anticipated.

	Bottom Sediment	D	B-	D	D	BC/DC:Construction works is not anticipated. OS: No wastewater and disposal in operation stage and no bottom sediment would cause.
Natural Environment	Protected Area	D	D	D	D	No natural preserve area and national parks exist in and around the project site.
	Flaura/Fauna and Ecosystem	C	C	C	C	There are no information on inhabiting situation of important animals and valuable plant species in the surrounding area.
	Hydrology	B-	B-	D	D	BC/DC:hydrology impact to the ground water during construction is not anticipated. OS: Hydrology impact by using groundwater during operation stage is anticipated.
	Topography and geology	D	D	D	D	The project area is flat land, thus impact of topography and geology is not be anticipated.
Social Environment	In voluntary Resettlement	D	D	D	D	No resettlement is needed as the project site is relocated. The positive support by the neighbors received. The assessment of impact of these items for the people, who live or earn their living near project site will be SPC and relevant authorities.
	Misdistribution of benefit and damage	C	C	C	C	
	Local conflit of interests	D	D	D	D	
	Gender	D	D	D	D	
	Children's Right	D	D	D	D	
	Ethnic minorities and indigenous peoples	D	D	D	D	
	Poor	A+	A+	A+	A+	The povity elimination could be expected at BC, DC and OS by development of job opprotunities to the local residents
	Living and livelihood	A+	A+	A+	A+	BC/DC: OS: Positive impact on living and livelihood could be expected as the local economy & employment will be boosted.
	Existing social infrastructures and services	B+	B+	B+	B+	BC/DC: the assessment of traffic to the nearby project site would be done. OS: The positive impact is assumed by the development of facilities related to the project service and many social infrastructures will be improved.
	Water Usage	D	D	D	D	BC/DC: Impact on local water usage may occur if surface water would be taken not only for the construction activities but also usage by the tenants after project accomplished. OS: Impact on existing water usage is not expected. The implementation of new sources for water supply to the project would be considered without causing negative impact on local existing water usage.
	Cultural heritage	C	C	C	C	There is no cultural heritage at the project site and the surrounding area and cause no impact. It would be sources to develop the cultural heritage by the allotment of CSR fund.
	Landscape	C	C	C	C	It would be positive impact to the landscapes and viewpoints in the surrounding area due to the project layout.
	Risks for infectious disease such as AIDS/HIV	D	D	D	D	Risks of infectious diseases with a fixed probability are anticipated.
	Working conditions (including occupational safety)	B-	B-	B-	C	BC/DC: Impact of working conditions during construction is anticipated. OS: Impact on working conditions during operation stage are anticipated.

Other	Accident	B-	B-	C	C	BC/DC: There are chances of accident especially in the construction stage. OS: Due to increase of traffic volume since construction, the assessments are anticipated.
	Global Warming	B-	B-	B-	B-	BC/DC: Emission of Greenhouse gases (GHGs) by construction machineries are anticipated. OS: GHGs emission in operation stage by tenants and vehicles are anticipated.

Impact Significance

Impact	Significance
Air Quality	
Noise	
Waste Water	
Soil Contamination	
Ground Water	

Table (7.9) The Summary of Impacts & Ratings

Impact	Significance Rating
Impact on Air environment (Pollution)	Low
Impact on Natural Environment (Water Resources)	Low
Impact on Noise and Vibration	Low-Medium (w/o Generator Running) High (with Generator Running)
Impact on Land Environment (Soil contamination, Ground Subsidence)	Low (Construction Period)
Impact on Biodiversity	Low
Impact on Community Safety and Health	Low but A+
Impact on Job Opportunity	High A+
Impact on Occupational Safety and Health	Low but A+
Restriction of Access	-
Economic Displacement of local Agriculturists	-
General Economic Development	High A+
Better Transportation	High A+

8. The Mitigation

The priority in mitigation is to apply mitigation measures to the source of impact and then to address the resultant effect to the resource/receptor via abatement or compensatory measures or offsets.

8.1 Methodology

The Environmental and social consideration measures taken in the course of project implementation were examined based on the findings obtained through the environmental and social impact assessment.
It is to evaluate what mitigation and enhancement measures are suitable and warranteed. The following mitigation hierarchy has been adopted.

- Avoid at Source; (e.g., avoiding by sitting or re-routing activity away from sensitive areas or reducing by restricting the working area or changing the time of the activity.)
- Abate on Site; (eg., installing the pollution control equipment)
- Abate on Receptor; (e.g., fencing to prevent animals straying onto the site.)
- Repair or Remedy; some impacts involve unavoidable damage to a resource and those impacts can be addressed through repair, restoration or reinstatement measures. (e.g., agricultural land and forestry due to creating access work camps or materials storage areas)
- Compensate in Kind or through other means; (e.g., planting to replace damaged vegetation, financial compensation for damaged crops or providing community facilities for loss of fisheries access, recreation and amenity space.)

8.2 The mitigation of impacts

Table (8.1) The mitigation of impacts.

Air Pollution	The painting room with air filteration abatement system is used to mitigate the impact. The vehicle test running is unavoidable for the safety of vehicles and accident and risk of human lives.
Noise and Vibration	BC/DC:Noise and vibration from operation of construction machinery and construction vehicles are specific and temporary events. OS:Noise and vibration from operation and test running of vehicles are expected.
Solid Waste	Applied 3R (Reduce, Reuse, Recycle) always at all stages of project implementation to mitigate the impact to the environment and health impact.
Hazardous Waste	Strictly control and storage of all hazardous substances on site to prevent environmental impact & health impact including spillage to the ground and disposal of empty drums and packaging of fuel and chemicals etc.

Mitigation of noise impact during construction period is to control the sound and arrange all works to be done in the normal working hours. (The working hour is to be recommended between 7am to 7pm.)
During operation, ear plug would be provided to workers who are working in the noise harzadeous area.

Allowing only obstructed trees and try to avoid the big trees as much as possible in the project site.

Waste management and implement 3R system while discharge only treated waste water with acceptance level to the sewage system.

8.3 Mitigating Adverse Effects

The following are to be done for preventing existing eco system
Saving water and electricity by energy efficiency program
Utilization of Natural Light
Not only using natural light as much as possible but also try to use energy saving equipments such as LED lights.

8.4 The Summary of Mitigation Measures

The mitigations are summarized as all phase such as pre-construction, during construction and operation phase etc.

8.4.1. Mitigation and Consideration Measures (Pre-Construction Phase)

Table (8.2) Mitigation and Consideration Measures (Pre-Construction Phase)

Category	Item	Mitigation and Consideration Measures in Pre-construction Phase	Responsible Organization
Pollution	Air Quality	None	Developer
	Water Quality	None	Developer
	Waste	Each work plan of the project will be designed to minimize waste	Developer
	Noise & Vibration	To study the sources sound making for both acceptable and unacceptable and to find the buffer zone or sound prove	Developer
Natural Environment	Flora, Fauna and Biodiversity	Design concept on Greening Plan To avoid unnecessary of cutting trees	Developer
	Hydrological Situation	There is no underground water usage at this project	Developer
Social Environment	Living and Livelihood	To collect the base line	Developer
	Water Usage	None	
	Existing social infrastructures and services	Securing Plan Community accessibility will be secured by improvement of existing roads	Developer
	Risk and infectious disease such as AIDS/HIV	Measures of infectious disease will be plan as following Prevention of spreading out Training of workers	Developer
	Working Conditions (including occupational safety)	Considering to follow OHS working condition and guideline such as EHS by IFC	Developer
Others	Accident	Accident prevention measures would be planned	Developer
	Global Warming	To control or minimize the mitigation measures of GHGs	Developer

8.4.2. Mitigation and Consideration Measures (During Construction Phase)

Table (8.3) Mitigation and Consideration Measures (During Construction Phase)

Category	Item	Mitigation and Consideration Measures in Pre-construction Phase	Responsible Organization
Pollution	Air Quality	As the intensive operating of the construction machinery will be avoided	Developer
	Water Quality	To monitor water quality Setting pond for simple turbid water treatment	Developer
	Waste	To provide dumping site To implement 3R for all wastes	Developer
	Noise & Vibration	Monitoring Noise & Vibration Installation of Sound Proof Avoid construction at night time	Developer
Natural Environment	Flora, Fauna and Biodiversity	Implementing of Greening Plan To avoid unnecessary of cutting trees	Developer
	Hydrological Situation	underground water usage	Developer
Social Environment	Living and Livelihood	Same as mitigation measure	Developer
	Water Usage	Monitoring of consumption of ground water	
	Existing	Securing Plan	Developer

	social infrastructures and services		
	Risk and infectious disease such as AIDS/HIV	Prevention of spreading out Training of workers	Developer
	Working Conditions (including occupational safety)	Follow OHS working condition and guideline such as EHS by IFC *Personal protection equipment for workers such as safety helmets, booths, gloves, protecting cloths, spectacles and ear protection *Provision of adequate healthcare facilities (first aid) within construction site *Training of all construction workers in basic sanitation and healthcare issues, general health and safety matters and on the specific hazards of their work *Clean drinking water for all workers *Adequate drainage throughout the camp ensure that disease vectors such as stagnant water bodies and puddles do not form *Septic tank and garbage bins will be set up in construction site which will be regularly cleared by the contractor to prevent outbreak of disease *Where feasible the contractor will arrange the temporary integration of waste collection from work sites into existing waste collection system and disposal facilities of nearby communities *Adequate protection to the general public, including safety barriers and making of hazardous areas *Safe access across the construction site	Developer
Others	Accident	Accident prevention measures	Developer
	Global Warming	Control of mitigation measures of GHGs	Developer

8.4.3. Mitigation and Consideration Measures (Operation Phase)

Table (8.4) Mitigation and Consideration Measures (Operation Phase)

Category	Item	Mitigation and Consideration Measures	Responsible Organization
Pollution	Air	To monitor air quality To installed and used of ventilation with filters, To check the painting boots enclosure and exhaust	Developer
	Water	To monitor water quality To check any contamination of water table such as restricting the discharge of drain and sewer onto the ground	Developer/SPC
	Waste	To provide temporary storage site before collector come To implement 3R for all wastes	Developer/SPC
	Noise & Vibration	Monitoring Noise & Vibration Installation of Sound Proof Avoid construction at night time	SPC
Natural Environment	Flora, Fauna and Biodiversity	Implementing of Greening Plan To avoid unnecessary of cutting trees	Developer/ Tenants/SPC
	Hydrological Situation	underground water usage	Developer
Social Environment	Living and Livelihood	Same as mitigation measure	SPC
	Water Usage	Monitoring of consumption of ground water by strictly controlling and minimizing the consumption of water used in factory, dormitory and kitchen	SPC
	Existing social infrastructures and services	Securing Plan	Developer
	Risk and infectious disease such as AIDS/HIV	Prevention of spreading out Training of workers	Tenants
	Working Conditions (including occupational	Follow OHS working condition and guidline such as EHS by IFC	Tenants

	safety)		
Others	Accident	Accident prevention measures	Tenants
	Global Warming	Control of mitigation measures of GHGs	Tenants

Justification to the impacts and economically analysis to the environmental management plan

It is not applicable to this project.

8.5 Conclusion and Recommendation

It is found out the project is more beneficial than getting impact as it is well planned to implement with technical and standard for the better land use to the existing dry land by avoiding impact.

The project would be implemented by the following objectives.

A. To get poverty reduction and urban development by enhancing social development
B. To get skilled labor and industrial development.
C. To attract international investment in the industrial sector
D. To enhance socil life style by getting employment opportunities due to the industrial zone development
E. To increase national revenue

In general, it is the project which would help to reduce the national import on vehicle especially the used car importing. With this project implementation, it is found out that could create more beneficial by reducing impact at good management and increasing personal income and nation's GDP by creating employment opportunities and increasing revenue by local sales.

9. Cumulative Impact Assessment

Cumulative Impact Assessment

- Methodology and Approach
- Determination of Valued Ecosystem Components
- Determination of a Spatial and Temporal Framework
- Development of a Management Framework

9.1 Methodology

The cumulative impact assessment shall take in account the impact of the other factories and facilities, including traffic in the Myotha Industrial Park.

9.2 Brief Description on Existing and Future Development Program

It should be considered the future development in the Myotha Industrial Park.

9.3 Identification of Cumulative Impacts & mitigation by this project

By this identification of cumulative impacts, the mitigation should be considered. There are no cumulative impacts found out during the assessment and surveys as the other land plot are not developing.

10. Environmental Management Plan

The environmental management plan aims to provide an integrated plan for the control of impacts and the comprehensive monitoring. It is a management tool for company to evaluate, report and improve its environmental performance. To get fulfillment of this aim, the management plan included what has to be managed, mitigate and monitor, how and why, when and where, by who and whom to report for all circumstances. The EMP will facilitate proponent to address the adverb impact of the project and enhance project benefits and introduce standards of good environmental practices.

10.1 Methodology

The EMP referring to the Environmental Management Plan would be managed based on the Environmental and social impacts accompanied in the course of project implementation and mitigation measures. As the project is in the operation stage, the EMP for pre-construction and during construction stages would be omitted.

Even though, there are temporary impact and long term impacts caused by this project and its normal operation, there are some mitigation to these impacts but not eliminated. The following are the EMP to all causes and prevention of impacts by this project together with mitigation measures by categorizing as following.

The Environmental Management Plan

1) Air Quality Management
2) Noise Management
3) Water & Energy Consumption Management
4) Waste Water Management
5) Traffic Management
6) Solid Waste Management
7) Flora & Fauna Management
8) Management on Greening

Social Management Plan

9) The livelihood
10) Occupational Health & Safety Management
11) Hazardous Management
12) Emergency & Evacuation Management

10.2 Management on Environment & Social policy, commitment and organization structure

As the project is long term, the environment and social policy are as following.

1. To develop the international standard production of automibiles by preventing or eliminating the environmental impacts caused by waste and waste water
2. To follow all procedures, methods and systems which are preventing environmental and health impact to near by local residents caused by variety of wastes
3. To follow all environmental laws, rules and policies which were enacted by nation

This policy is supported by the commitments that project proponent has made as shown in chapter 3.

Table (10.1) The organization for the implementation of EMP

No	Organization	Pre-Construction	During Construction	Operation	Remarks
1	Proponent	✓	✓	✓	Appointing own EMP team
2	Sub Project Contractor (SPC)	✓	✓	✓	Based on the contract with project proponent
3	Consultant	✓	✓	✓	Based on the contract with project proponent
4	ECD	✓	✓	✓	By monitoring

10.3 Brief Description on Mitigation of Impacts

Table (10.2) The summary of impacts and mitigation (Operation Stage)

Category	Item	Mitigation and Consideration Measures in Operation Stage	Responsible Organization
Pollution	Air Quality	To monitor air quality	Tenants
	Water Quality	To monitor water quality Setting pond for simple turbid water treatment	Tenants/SPC
	Waste	To provide dumping site To implement 3R for all wastes	Tenants/SPC
	Noise & Vibration	Monitoring Noise & Vibration Installation of Sound Proof Avoid construction at night time	SPC
Natural Environment	Flora, Fauna and Biodiversity	Implementing of Greening Plan To avoid unnecessary of cutting trees	Developer/ Tenants/SPC
	Hydrological Situation	underground water usage	Developer
Social Environment	Living and Livelihood	Same as mitigation measure	SPC
	Water Usage	Monitoring of consumption of ground water	SPC
	Existing social infrastructures and services	Securing Plan	Developer
	Risk and infectious disease such as AIDS/HIV	Prevention of spreading out Training of workers	Tenants
	Working Conditions (including occupational safety)	Follow OHS working condition and guidline such as EHS by IFC	Tenants
Others	Accident	Accident prevention measures	Tenants
	Global Warming	Control of mitigation measures of GHGs	Tenants

10.4 Environmental Management & Monitoring Plan

The detailed environmental management and monitoring plan is described in this section with the organization structure who would implement the management and monitoring.
Here is the detailed management plan of impacts identified during operation phase is as below.

10.4.1 Air Quality Management Plan

There are no environmental base line datas caused by traffic or vehicle movement. The following are the potential sources of impacts.

Objectives:
To manage all significant sources of air pollutants along the production process (cutting, welding, engine testing etc.) including diesel power generation during black out time.

- Construction and Supporting Vehicle movement to this area during construction period
- Operating of construction machineries and pile driving (during construction stage)
- Wind blowing effect on the dust but covering fencing
- Loading and unoading of soil to the truck and transporting
- Operating of diesel generator for electrification and extensive cooking.

These impacts could be mitigated by speed control on these vehicles and installing sound proof wall at these loading and unloading areas. Spraying water to the road is one of the mitigation action to dust control by vehicle moving.

Policy/Guideline

Table (4.4)Air Emissions (WHO Ambient Air Quality guide line)

Parameter	Unit	Guideline Value
Sulfur dioxide (SO_2)	mg/Nm^3	500
Nitrogen dioxides (NO_2)	mg/Nm^3	600
Particulate matter PM_{10}	mg/Nm^3	100
Particulate matter $PM_{2.5}$	mg/Nm^3	30
Ozone	mg/Nm^3	160

[a]Total metals are Arsenic, Lead, Cobalt, Chromium, Copper, Manganese, Nickel, Vanadium and Antimony

Table (4.2) **Air Emissions** (EQEG) (Environmental Quality Effluent Guide line)

Parameter	Average Period	Guideline Value mg/Nm^3
Nitrogen dioxides (NO_2)	1 Year 1-hour	40 200
Ozone	8 hour daily maximum	160
Particulate matter PM_{10}	1 year 24 hour	20 50
Particulate matter $PM_{2.5}$	1 year 24 hour	10 25
Sulfur dioxide (SO_2)	24 hours 10 minute	20 500

[a]Particulate metter 10 micro meters or less diameter
[b]Particulate metter 10 micro meters or less diameter

Table (4.3) For Small Combustion Facilities Emission Guidelines

Combustion Technology/Fuel	Particulate Matter PM_{10}[a]	Sulfur Dioxide	Nitrogen Oxides
Gas	1 Year 1-hour		40 200
Liquid	8 hour daily maximum		160
Natural gas (3-<15MW[g])	-	-	90[h] mg/Nm^3 210[i] mg/Nm^3
Natural gas (15-<50MW)	-	-	50 mg/Nm^3
Fuels other than natural gas (3-<15MW)	-	-	200[h] mg/Nm^3 310[j] mg/Nm^3
Fuels other than natural gas (15-<50MW)	-	-	150 mg/Nm^3
Gas	-	-	320 mg/Nm^3
Liquid	150 mg/Nm^3	150 mg/Nm^3	150 mg/Nm^3
Solid	150 mg/Nm^3	2,000 mg/Nm^3	650 mg/Nm^3

[a] Particulate matter 10 micrometers or less in diameter

[b] Spark ignition
[c] Milligrams per normal cubic meter at specified temperature and pressure
[d] Duel fuel
[e] Compression ignition
[f] Higher value applies if bore size >400mm
[g] Megawatt
[h] Electric generation
[I] Mechanical drive
[j] Includes biomass

Management
The following are the major factors to the dust pollution

- Supporting trucks and vehicles moving around these areas.
- Construction machineries and pile driving (construction stage; would be omitted)
- Dust emission as airborne particles during cutting, welding, spraying body paint, engine testing and wind blowing effect to the dust

Even though the project is in the operating stage, there are no base line data recorded how much dust particles in the air and how much polluted in this area both inside factory and due to the vehicles passing.

Implementing
To mitigate these impacts, it is installed good ventilation system (power fan, hood & wall mounted) inside factory especially the cutting, welding, painting section and controls the speed of vehicles and partition to the loading and unloading area. Provide mask to all workers.

	Receptor	NEQEG	Assessment
Particulate Matter (μg/m^3)	PM2.5 (24 hr)	25	21.88
	PM10 (24hr)	50	22.8
Nitrogen Oxide (μg/m^3)	(1 year)	40	-
	(1hr)	200	7.3
Sulfur Dioxide (μg/m^3)	(24 hr)	20	10
	(10 minute)	500	100

Financial Allotment	1,000,000Ks (Annual)
Responsible Group	EMP Team or SPC (Sub Project Contract)

10.4.2 Noise & Vibration Management Plan

Objectives:
To manage all significant sources of noises along the production process including engine testing, diesel power generation and air compressor running.

Policy/Guideline

The following table is shown the acceptance noise level guideline of NEQEG at day and night times at different location.

Noise Level Guidelines		
	One Hour L_{Aeq} (dBA)	
Receptor	Day time 07:00 – 22:00	Night time 22:00 – 07:00
Residential; Institutional; Educational	55	45
Industrial: Commercial	70	70

Management
Noise & vibration are definitely increase to the surrounding of the proposed project compared to the situation that before construction and operation of this project. The noise and vibration by engine testing and running of diesel generator are the worst noise impact sources usually complained by neighbors. The worst noise impact would come from vehicle moving, diesel power generator and pile driving process and the loud communication between workers during construction phase.

To mitigate these impacts, it could be managed the working schedule, (not operating in the night time) or rerouthing the traffic or installing sound proof wall to the loading, unloading area.
All construction activities are controlled to avoid impact by concerned parties. Furthermore, it should work in day time as much as possible and be avoided to work not over 8 pm in the night except special order. Usually the noise comes from air conditioners and ventilation fans which are under the acceptance standard level and no others noise and vibration would come from the hotel that could be impact to the neighbors during operation phase.

It is planned to get the required electricity from the national grid but owned diesel power generation is stand by for power cut or black out time. It would be noisy and over the acceptance level to the neighboring from this power generation. This project has planned to reserve the diesel generator for emergency only, especially for the black out time. This would make noise and other sources of noise from water pump and compressor which should be installed properly to prevent noise and vibration impact.

It is managed to reduce these impacts during normal operation phase, by limiting speed of vehicles and making partition action at engine testing area or near guest rooms by planting trees and manage the working hours or vehicle rerouting.

The following are the major factors to the noise pollution

- Supporting trucks and vehicles moving around these areas.
- Loading and unloading process
- Engine Testing, Diesel Power Generation and Air Compressor running

Implementing
To mitigate the noise from the generator set, it could be installed in sound prove housing and install exhaust silencer which could be very much useful to avoid noise impact. It should be prioritize to work in day time just as much as possible and try to avoid working not later than 8pm.

As the major cause of noise comes from vehicles moving, air compressor running and it could be controlled by good management by the controlling speed limit and using sound proof compressor.
During operation period, there will be noise coming from engine test running and others accessory in the factory. Even though, the electricity supply would be taken from the grid, the diesel generator would be running for black out time and could noise which is unavoidable.

In addition, the ear plug that prevent the noise impact should also be provided to all workers who are assigned to work nearby these generator set for long period.

Financial Allotment	500,000Ks (yearly)
Responsible Group	EMP Team or SPC (Sub Project Contract)

10.4.3 Water and Energy Management Plan

Objectives:
To manage all water and energy utilization with efficiently and to avoid loss or impact throughout production process including the operating sequence of washing machines

Policy/Guideline

There is no standard for the quality of tube well and it is in the drafting stage for energy efficiency.

Management
During regular operation stage, the domestic water supply should be made from tube well. The water sypply would be consisting of mainly to supply workshop, show room office and dormitory for shower and toilet and to supply for laundry, house keeping, cooking and general use etc. The water demand would be related directly to guests, number of vehicles produced and personal consumption. The rain harvesting system mainly for the greening program could mitigate of impact by eliminating of extraction of water from tube well and to prevent loss of water. It is needed to install smart water control system and water saving equipment such as using ultra low flush toilets & urinals, efficient spray nozzles, faucet aerators, low flow shower heads, infrared and ultrasonic sensors, water spigot and pressure control valves etc. More efficiently, water efficient or saving laundry equipments should be used for long terms opetation.
The following are the major factors to the water and energy consumption.

- The management on the operation of car washing machines and dormitory usage.
- The management on the Diesel Power Generation and Air Compressor

Implementing
As the major cause of water and energy consumption, it could be controlled by good management by the work charge or the team leader.
The most water usage in the factory is car washing process and dormitory usage.
To mitigate the impact to ground water, the recycling and reuse water is applied for the best solution. The waste water treatment system is installed and operating.
At all time, washing, toilet, kitchen and air cooled room temperature controller are the key areas that could be smart controlled on water usage pattern by using necessary of water volume and secure & turn of valve carefully to avoid leaking, so that it could developed on mitigation process by control the amount of water used.
It is well schedule to operate air conditioners only when it is needed. During lunch time, it is stop save both energy and emission.

Financial Allotment	1,000,000Ks (yearly)
Responsible Group	EMP Team + SPC (Special Purpose Contract)

10.4.4 Solid Waste Management Plan

Objectives:
To manage all solid wastes to avoid impact to the environment and the ground water including the operating sequence and system

Policy/Guideline
There is polluter pay principal in the Myanmar Environmental Policy. The company has the policy to provide waste management without harming to the environment by using 3R (Reduce, Reuse and Recycle) policy.

Management
The solid and other waste such as paper, can, bottle including kitchen waste should all be collected and stored systematically with bag before the service company come and collect or selling by lot.

The nature of project is making car assembling process which could be harmful to the environment if the solid wastes are not properly managed. The following are the solid waste that would create from normal operation and process.

c) Solid Waste from the Workshop
d) Solid Waste from kitchen, Shower and Toilets

In this operation phase, major solid wastes would be generated from main factory cleaning, kitchen, lobby and front desk and staff quarters etc. Different kinds of solid wastes such as tissue papers, packaging papers, food residues, glasses, tins, bottles, stationeries, demaged/ expired devices or appliances and other miscellaneous would be generating everyday.

Implementing
Food waste could be generated from the kitchen at domitory. These food waste can generate offensive odor and unpleasant to people which could cause health impact to guests or employees. It is important to dispose these food wastes day by day regularly and keep in a good container which keeps not only the odor or unpleasant smell but also keep out of cats and mouses. To minimize impact by these food wastes it could be sold out as (Animal) pig food to villagers. It makes not only money but also reducing the volume of waste to manage environmental friendly while supporting livestocks sector development.

The other solid wastes such as bins, bottles and cans are sperated and tried to apply recyclable process as much as possible. The solid and other waste such as paper, can, bottle including kitchen waste should all be collected and stored systematically with bag before selling to the service company to come and collect. By this management, it could be avoided the impact to the environment by these wastes. The general solid waste that could not sell is discharge to the service man by pay on amount of waste for his service.(the pay slip shown under)

For solid waste, it could be managed easily by appointing waste collector and keep properly before discharging to the MID's dumping site. This dumping site would be the land fill type with leache leak protect and possible to produce cooking gas. It could be avoided the impact by these wastes by keeping wastes systematically. Furthermore 3R (Reduce, Reuse and Recycle)system is applied as much as possible. That could definitely help the mitigation of impact to the environment. To get least impact to the environment, it is also needed the good waste management such as managing the collected solid waste, including daily waste from kitchen and dinning area, in a plastic bag or compactor bin or bin center.

The flow chart of the solid waste

The amount of waste estimated as following.

(1) solid waste 20~100 Kg per day (sold to recycle company by lot)

It would be managed for all solid wastes such as keeping carefully at a safe and separate with good bag or container if the waste is smelly and educating workers to trash systematically that could be applied to 3R system before the cleaner collect. It would be contacted to MMID or city development committee for occasionally such as septic tank is full and when hazardous waste is present.

Financial Allotment	12,000,000Ks (yearly)
Responsible Group	EMP Team or SPC (Sub Project Contract)

10.4.5 Waste Water Management Plan

Objectives:

To manage waste water to avoid impact to the environment and the ground water by the waste water treatment process including the operating sequence and system

Policy/Guideline

The guide line value for the effluent (vehicle assembling) would be as following.

Table (6) The Comparism of Assessment & guideline value of Effluent

Parameter	Unit	Guideline Value
5 day Biochemical oxygen demand	mg/l	30
Absorbable organic halogens	mg/l	1
Ammonia	mg/l	10
Cadmium	mg/l	0.02
Chemical oxygen demand	mg/l	160
Chromium (hexavalent)	mg/l	0.1
Chromium (Total)	mg/l	0.5
Cobalt	mg/l	0.5
Color	m^{-1}	7(436nm[a],yellow) 5(525nm, red) 3(620nm,blue)
Copper	mg/l	0.5
Nickel	mg/l	0.5
Oil and grease	mg/l	10
Pesticides	mg/l	0.05-0.10[b]
pH	S.U[a]	6-9
Phenol	mg/l	0.5
Sulfide	mg/l	1
Temperature increase	C°	<3[b]
Total coliform baterial	100ml	400
Total nitrogen	mg/l	10
Total phosphorus	mg/l	2
Total suspended solids	mg/l	50
Zinc	mg/l	2

Management

The nature of project is auto vehicle assembling and there is not harmful to the environment if it is properly managed. The following are the waste water that would comes from normal operation and process.

Waste water from Showers and Toilets

Waste water from the kitchen at domitory

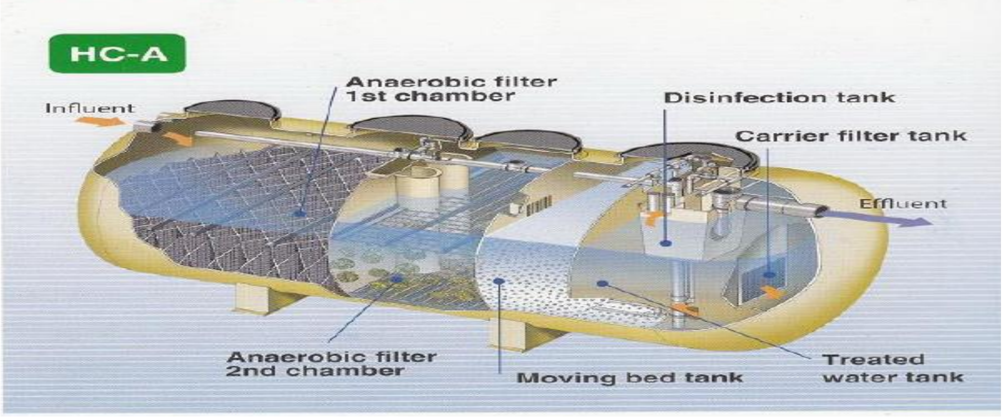
Implementing
It could be treated these waste as following,

Waste Water from Toilet	Conventional Septic Tank with bleach dosing chamber
Waste Water from Kitchen	Remove oil & grease through Grease Trap before drainage
Laundry Waste	Natural soak pit according to WHO recommendation

Among of them, the bioseptic tank with chlorination system is installed to this project. The septic tanks are installed to this project. No waste water would be discharged to the public area or sewer system. There is no waste water from the process except toilet use but the solid waste would come from every steps. There is waste water from toilet and dinning area, kitchen both construction phase and operating phase could be managed to avoid impact to the environment. Furthermore, all waste and waste water should be properly managed or apply 3 R system and treated (septic tank system) to avoid or mitigate the impacts.

Three septic tanks and one oil water tank system is installed in the under ground. No waste water would be discharged to surrounding or public sewage system or even to the sea. There is the interim drainage system built around project for rain water.

No	Description	Unit	Size
1	Septic Tank (Authentic HS-5, 4000Liters)	3	(L 3,570x W 1,660x H 1,580)
2	Waste Water Tank with grease trap	1	(L 4,380x W 2,510x H 1,810)



The waste water will be treated in the septic tank and the special purpose company would be hired to collect for the final discharge together with solid waste disposal.

To prevent impact to the surround and keep cleaning inside workshop, the following are provided in the workshop such as cleansing toilet always, providing enough water to clean, provide enough trash cans in each guest room and trash bins at any corners with color speration for designated wastes such as paper, bottle, can etc. It is also needed to clean sewage system always surrounding the factory.

It will always contact the special purpose company and organization for getting knowledge at managing ways and applying 3R method such as lowering usage to become less waste (Reduce), using again as much as possible (Reuse) & using again at any other places (Recycle) that could create less waste. The company will also follow all instructions given by the ministry of natural resources and environmental conservation.

Financial Allotment	12,000,000Ks (yearly)
Responsible Group	EMP Team or SPC (Sub Project Contract)

10.4.6 Transportation and Traffic Management Plan

Objectives:
To manage transportation and traffic safety inside and around factory

Policy/Guideline

The project has the policy to prevent traffic accident.

Management
The following are the major factors to the traffic

- To reduce speed limit of all vehicles including motor bike, supporting trucks and vehicles moving around the project areas.
- Provide parking lot for cars, motor bikes and bicycles

Implementing
There is good transportation route to and from the project site. The factory is located on Myothit Road. There is no impact to the transportation route of the nearby as the project is built in the designated plot of land.
There is no ferry bus service but the factory has provided the parking area for all motor bikes and bicycles.
There is no or additional impact to the transportation route of the nearby as the factory is built in the designated plot of land.

Financial Allotment	50,000Ks (yearly)
Responsible Group	EMP Team or SPC (Sub Project Contract)

10.4.7 Flora & Fauna Management Plan

Objectives
The plantation of trees at all spaces left after construction had been managed to support the greening program. Here are some of the places of developed as greening areas.

Management
The proposed land is in the urban area and commercial area and the workshop building would be built with full area of plot. There are some land areas left to plant trees in the whole area. All the trees and plants are planed to grow as much as they could as part of greening program.
With its greening program described in EMP, the tree plantaion would be held all the spaces available like infront of the factory.

Implementation
The plantation of trees at all spaces left after construction, has been managed to support the greening program. It has chance to manage for greening as the spaces left after buildings are occupied land space. The small plants are possible to keep in pot both inside and outside of the each show room of forming greening areas.

Financial Allotment	200,000Ks (yearly)
Responsible Group	EMP Team or SPC (Sub Project Contract)

10.4.8 Management Plan on Greening

Objective

All the big trees had been reserved in the project area.
The following trees are to be planted as under greening program.

1) All the spaces left after building construction, are constructed would be planted trees and grass.
2) Seasonal crops would be planted in any space left especially in front of factory.

Management

It is planned to plant Star Flower Tree, Indian Medlar, Mimusop elengi, gold mohar tree Poinciana regia near the entrance.
The other suitable trees such as Lagerstromia speciosa, the gum kino tree Pterocarpus macrocarpus, Banana, Mango Tree, conifer pine would also be planted where it is suitable.

Implementation

All the big trees has been reserved in the project area.
The following trees are to be planted as under greening program.

All the space left after buiding are constructed would be planted trees and grass.
Seasonal crops would be planted in any space left especially infront of factory.

The other trees such as Lagerstromia speciosa, the gum kino tree Pterocarpus macrocarpus, Banana, Mango Tree, conifer pine would have been planted.

All plants and trees are bought from nyrsary to be planted inside the factory territory as greening plan. Environmental Monitoring Team would check the nursery, plant and maintain the grass and trees as greening program to the environment. It is also appointed the gardener to keep clean campus, plant and maintain all trees and plants.

The telephone communication or messenger service should be used to get affected and most reliable to communicate each other. It is well planned to get environment better by closely watch and supervise by group manager.

Financial Allotment	300,000Ks (yearly)
Responsible Group	EMP Team or SPC (Sub Project Contract)

Social Management

10.4.9 Management Plan to Livelihood and Employment Opportunity

Objectives:

To enhence community social development and livelihood by creating the employment at the project

Policy/Guideline

To provide chances of priority to people living nearby for the employment vacancies at this project

Management

As the project is located in the industrial zone, the impact to the livelihood of the people nearby would be positive as it could create jobs and opportunities not only looking for the vacancy in factory operation but also chances of getting into entrepreneurship such as setting up food out let, coffee shop auto bike repair shop, construction material outlet & grossary stores and traditional massage etc., nearby industrial park and local residents which is indirect supporting by this factory operating.
The food vendors are also allowed to sell their food and snacks in front of factory to workers during their lunch time and before overtime work hours.

Employment Opportunity

There will be 100 vacancies at this project when it is finished the construction including 20 foreign technicians. The local people will get the first priority to fill these positions. This project will be developed the job opportunity not only the local people but also to the whole country such as interpreter.

Implementing

It is always announce when the vacancies are available. The local and nearby residents are in the priority list at the selection of workers to fill all vacancies.

The seminar or training program would be provided to workers from time to time. All other mitigation of impacts would be learnt and keep contact with MONREC and follow all instructions.

The following are the necessary training program needed regularly to provide for the capacity build up among the team members for prevention of natural environment, finding alternatives to the mitigation of impacts and environmental conservation.

- The greening program
- Mitigation of Impacts by 3R system
- The Environmental Monitoring Program
- Disaster Prepareness Program & Fire Exercise (Fire Drill)

The cooperation with Ministry of Natural Resources and Environmental Conservation for training program is needed or sending delegates to the related training program from time to time.

Financial Allotment	600,000Ks (yearly)
Responsible Group	EMP Team or SPC (Sub Project Contract)

10.4.10 Occupational Health and Safety Management Plan

Objectives:

To manage all significant sources of impacts to health and safety along the production process including diesel power generation

Policy/Guideline

The occupational health and safety guideline would be applied at all times

Air Emissions (IFC guide line)

Parameter	Unit	Guideline Value
VOCs	mg/Nm^3	2/20/50/75/100/150
Chlorine	mg/Nm^3	5
Formaldehyde	mg/Nm^3	20
Ammonia	mg/Nm^3	30
Particulates	mg/Nm^3	50
H_2S	mg/Nm^3	5
CS_2	mg/Nm^3	150

Table (4.5) **Effluent Levels (Manufacturing)**

Parameter	Unit	Guideline Value
5 day Biochemical oxygen demand	mg/l	30
Absorbable organic halogens	mg/l	1
Ammonia	mg/l	10
Cadumm	mg/l	0.02
Chemical oxygen demand	mg/l	160
Cromium (hexavalent)	mg/l	0.1

Cromium (Total)	mg/l	0.5
Cobalt	mg/l	0.5
Color	m^{-1}	7(436nm[a],yellow) 5(525nm, red) 3(620nm,blue)
Copper	mg/l	0.5
Nickel	mg/l	0.5
Oil and grease	mg/l	10
Pesticides	mg/l	0.05-0.10[b]
pH	S.U[a]	6-9
Phenol	mg/l	0.5
Sulfide	mg/l	1
Temperature increase	C°	<3[b]
Total coliform baterial	100ml	400
Total nitrogen	mg/l	10
Total phosphorus	mg/l	2
Total suspended solids	mg/l	50
Zinc	mg/l	2

[a] Nanometers
[b] 0.05 mg/l for total pesticides (organophosphorus pesticides excluded) ; 0.10 mg/l for organophosphorus pesticides
[c] Standard Unit
[d] 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

Management
The following are the major factors to OHS.

- Emission to air (Dust & Noise)
- Water & Energy Consumption
- Waste & Waste water
- Hazardous material management

The occupational health & safety is needed at all parts of the production atmosphere especially at emission to air, water & energy consumption, waste & waste water management and hazardous material management. It could be controlled by good management by the work charge or the team leader.

Implementing
Emission to Air (Dust, Noise)
The regular bloomer is working inside the factory where the cut waste at the cutting and welding section. It is also provided the good ventilation system in the factory. The chimney height is provided 50 ft for painting boot. The exhaust emission from engine test running and the diesel generator are unavoidable but use only the black-out hour of electricity.

To mitigate the noise from the generator set, it could be installed in sound proof housing and install exhaust silencer which could be very much useful to avoid noise impact. It should be prioritize to work in day time just as much as possible and try to avoid working not later than 8pm.

It is provided the diesel generator set with proper layout and silencer to reduce noise and health impact. In addition, the ear plug that prevent the noise impact should also be provided to all workers who are assigned to work nearby these generator set for long period.

Water & Energy Consumption
The good management on water usage by controlling water level could save not only water consumption but also saving electricity simultaneously.

Solid Waste & Waste Water
The solid and other waste such as paper, can, bottle including kitchen waste should all be collected and stored systematically with bag before selling to the service company to come and collect.
There is no Waste water from the production process.

The following are provided for occupational safety in the factory.

Safety for machines:
For machine safety, PPE is provided to workers such as metal glove to the fabric cutter, musk at tearing section spraying section and ear plug at compressor.
The necessary trainings are provided for all workers who are working with machines or equipments. The safety instructions are provided along with PPE for the potential risk of harmfulness as shown.

Working Environment:
The temperature, ventilation, illumination, noise, dusts all are strictly controlled for the good working environment.

Electricity Shock
All warning signs are put on the electric junction boxes. For the electrical safety, all installation of the electrical wiring was done by the qualified electrician. Only the skilled workers and responsible persons are appointed and allowed to take responsible at all restricted area.

General Care
PPE such as mask, hand glove, hear plug etc. , are provided at all risk work places such as cutting section, iron section, power generation section etc. The financial allotment would be under the factory’s regular operational expense. All these PPE are supplied enough and replace if it is wore out. Every year, workers ae checked their health by MO (medical officer) from Authorized Clinic.

Hazardeous material management
All hazardous materials such chemicals are handled carefully and stored in a ventilated room. The empty containers, cans are kept well and return to the supplier. All notice and hazardous prevention warning signage are put on the wall including no smoking and high voltage signs.

The management for hazardous waste would be described more details in the next section of hazardous waste management plan.

Health Care
The following are provided health care for workers.
The purified drinking water is provided. The toilets are provided enough for both male and female workers with clean and septic tank system.
All workers are registered for the social ware fare program at the ministry of social ware fare, disaster relieve and rehabilitation.
There is a clinic in the factory provided for all workers and employees for their health care.
The emergency aid kids are also provided.
A doctor visit regular basic and a nurse is employed full time while the trainings for first aid are provided occasionally.
The following are incentives for pregnant workers.

1. The official leave of 6 weeks before and after 8 weeks for maternity.
2. The pregnant workers are allowed to transfer work place to avoid long time standing and lifting heavy products.
3. The back sore and soft foam are provided for pregnant workers for their comfort at work.
4. The pregnant workers are allowed to leave early 5 minutes ahead of work finishing time.
5. The pregnant workers from screen printing would be transferred to other suitable place.
6. The vehicle transportation is provided for pregnant worker once a month for medical checkup at the respective hospital or clinic.

No dormitory or hostel is provided to the local workers but the foreigners as the factory is closed to the workers' resident of village. The operation is running only in the day time except working overtime for big orders.

The Emergency Clinic and Aids
AIDs medicines are provided by the company not only for emergency but also regular medical care to all employees.
A nurse aids boxes are installed work stations in the factory to get quick access.The necessary cares are provided to all sick, wounded and allow the maternity leaves.

PREVENTION MEASURES ON PANDEMIC CORVID 19
Due to the instruction by the ministry of sport and health, the factory management has provided all the necessary preventive measures on pandemic Corvid 19 as following.

1 The social distancing layout plans (Entrance & Exit gate, All hand wash areas, Time Card Machine, Workers Canteen Basin Area, Factory Clinic, Production Areas etc.)
2 The temperature check at the factory entrance
3 Providing Handwash Stations with food press water control and sterilizing liquid
4 Providing masks to all workers and PPE to temperature checker.

At factory gate, Social distancing, Temperature Check & Handwash are managed as instructed.
The social distancing is applied at dining table and washing area.Handfree wash faucets are prvided

The fund for OHS is allocated as 3~5 lakhs MMKs and it is including emergency health care. If the fund is not enough, the additional funding would be authorized to use by the decision at the nearest BOD meeting.

Financial Allotment	500,000Ks (yearly)
Responsible Group	EMP Team or SPC (Sub Project Contract)

10.4.11 Hazardous Waste Management Plan

Objectives:
To manage all significant sources of hazardous waste along the production process including chemical use, wastewater generation and painting process

Policy/Guideline

The prevention of Hazardous from Chemical and Related Substances Law

Management
The following are the management to the hazardous from Chemical and Related Substances

- Transportation of Chemicals
- Loading and unloading of Chemicals
- Storage

As the major cause of hazardous waste that comes from chemical transport, loading, unloading and storage could be controlled by good management by the work charge or the team leader.
Among the impacts, health care to all visitors and guests are important during their visit the show room and service center. The most common impacts are sliping, tripping and falling at stairs and bathroom. To avoid or minimize these risks, it is necessary to keep clean everywhere in the plant and even outdoor greening and landscaping areas including show room area. Moreover, the emergency first aid kit should be kept and standby car is needed to send patient nearby clinic or hospital within a few minutes in case of incident happen. As the front desk is operating during office hours it is always ready to assist any health care not only to the guests but also to all employees.

Risk Identification and Assessment
As it is just the vehicle assembling plant there are less-hazard risk area subject to no hazards and threats with employees and visitors to the show room due to the levels of exposure and vulnerability to these threads.
The risk assessment and threat are checked in the previous chapter.

Hazard Management
Eventhough Myothar has at risk to sectors such as geological, hydrological and meteorological conditions, the proposed projct would be more concerned the human induced hazard which is significantly threatened to this employees and visitor during normal operation.

Implementing
The management team could manage not only all environmental and social impacts caused by its normal operation, by mitigation effort or avoiding the impact such as controlling dust, noise, waste, waster water etc., but also the natural impact with cooperation with concerned parties.

It could be easily monitor and mitigate to all impacts by following this heritage management plan and mitigation program.

Category	Item	Hazard Management Plan (Mitigation and Consideration Measures) in Operation Phase	Responsibility
Others	Disaster Relief	-Cooperate with the management committee of Myothat Industrial park and the regional government to follow the Disaster Risk Management Plan	Developer
Hazard	Social	-Giving information about the possible accidents at factory and sites to all visitors especially the foreigners -Do's and Don'ts information should be provided to all visitors and foreigners at easy access (labeling in the vicinity area or providing leaflets, booklet in guest rooms) -Restrict the area zone that visitors are not allowed	Developer

All chemicals required to use in the production are purchased locally and transport to factory just the required amount for 3 months at a time.
All empty containers are kept carefully and resell to the supplier. No hazardous waste is available.

Financial Allotment	100,000Ks (yearly)
Responsible Group	EMP Team or SPC (Sub Project Contract)

10.4.12 Emergency (Prepareness & Evacuation) Management Plan

Objectives:
To prevent and manage all stages of emergency situation and evacuation plan and procedures

Policy/Guideline
The disaster management law 2013

Management
The emergency or evacuation plan should be drawn as following at pre construction, during construction and operation stages.
The followings are based on the emergency plan management with the organized management team.

Fire
Natural Diasters (Water, Land, Wind, Earthquake & Tsunami)

It has installed the emergency evacuation plan by installation the clear signs and designated areas.
The following are the major factors for the disaster stage (Fire, Earthquake, Weather etc.)

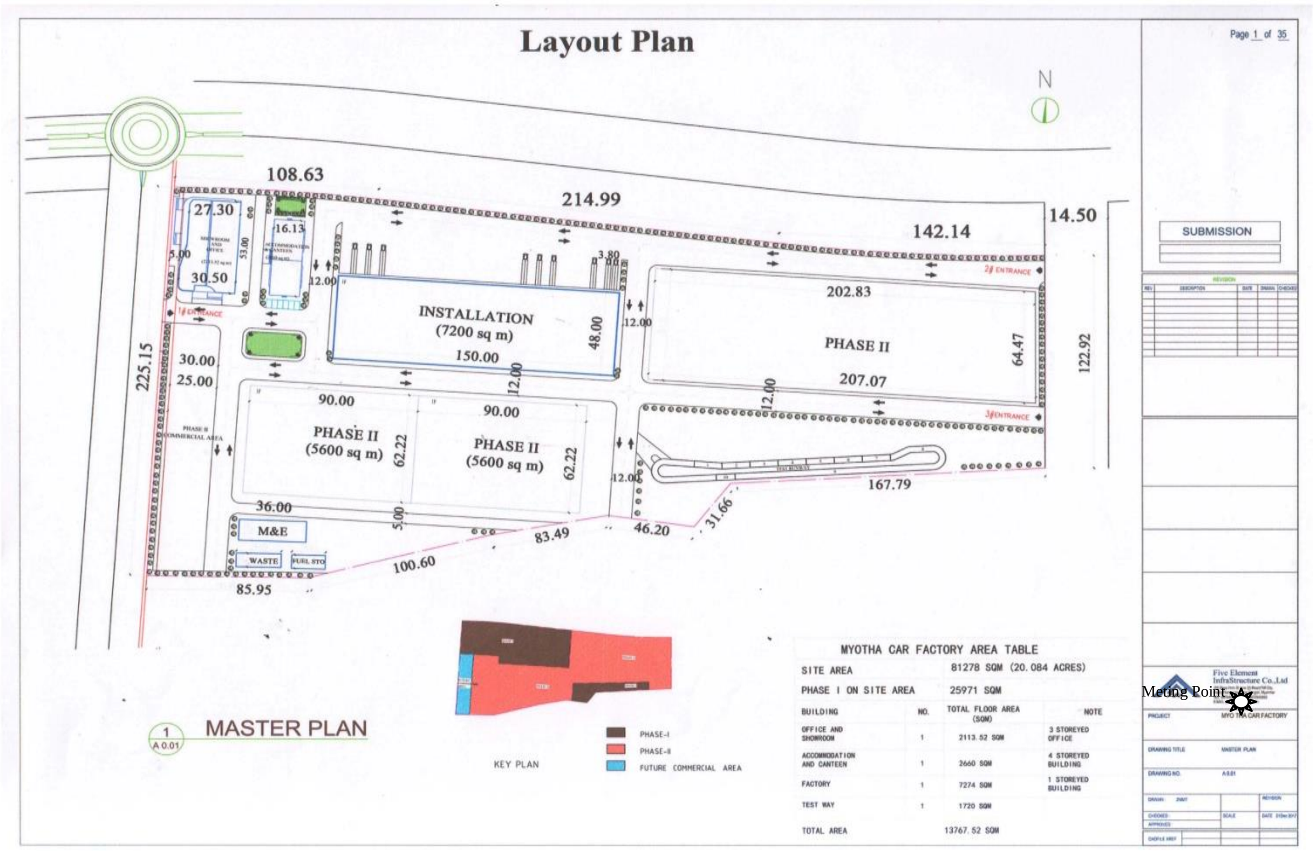
- Preparatory and preventive measures for natural disaster risk reduction in pre-disaster period
- Emergency response including search and rescue during natural disaster
- Rehabilitation and reconstruction activities for improving better living standard in post disaster period and conservation of the environment that has been affected by natural disaster

Implementing
The emergency or evacuation plan should be drawn as following at pre construction, during construction and operation stages. (This report covers only operating stage as the construction is completed.)
The followings are based on the emergency management plan with the organized management team.

1) Fire
2) Natural Disaster (Water, Land, Wind & Earthquake)

The factory has installed the emergency evacuation plan by installation the clear signs, fire extinguisher fire hydrant and designated meeting areas as shown.

Fig 8 **The direction for fire evacuation in the factory & the Hydrant Layout**



Safety Management Team would be organized as following.

<u>Safety Management Team,</u>

A. Operation Manager	Team Leader
B. Manager (Admin)	Deputy Team Leader
C. Security	Member
D. Assistant Manager	Secretary

<u>Fire Prevention</u>

Objective

To prevent lossess caused by un-nessary fire broke out and to be able to get control the fire immediately that any time could happen.

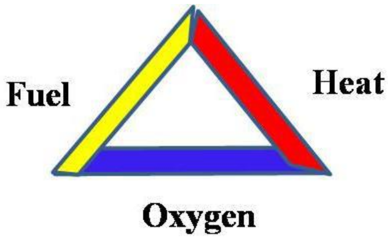
- The good management for fire prevention that could prevent in the factory
- The cleaning program that keeps always clean such as the management to the waste that could easily caught fire.
- To keep clean and store systematically all fuel such as storing, filling, utilizing and trashing etc.
- All electric wiring and using should be under the instruction and technics that lay down by the Myanma Electric Coporation.
- To install earthing and antenna (optional) at all buildings
- The water jug for fire fighting, Sand bag, Fire Extinguisher and emergency alarm should be installed. The building would be constructed by RC and steel structure which could prevent and not easily caught fire. Tree leaves, bushes and all bio waste should be cleaned near the factory.

Management
"No smoking" sign would be hanged on the wall near car park and in the factory that could be easily seen. The vehicle fueling, fuel storing and engine test running should be restricted at the parking lot.

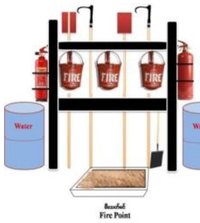
Prevention of Fire brokeout and fire fighting should be followed the instruction shown under.

1) Fire fighting water jugs, Fire Extinguishers, Fire Hosts should be provided in the factory compound where it is suitable.
2) Automatic fire alarm and Steel bar for signal are to be provided
3) Fire Alarm System should be installed
4) Priority Fire fighting spot should be designed
5) Appoint fire security every day and night
6) The emergency evacuation door and ladders should be provided in the factory

Fire Prevention Program



1) Causes of fire brokeout and fire fighting program
2) Precaution Material and Equipments
3) Project Condition
4) Worker Forces
5) Security Forces
6) Water availability
7) Fire Prevention Method, Fire prevention team organizing and duties
8) Handling with electrical appliances
9) Fuel Usage
10) Fuel Oil Storage and Usage
11) Training and Inspection
12) Fire during Working Hours
13) Fire during Off Working Hours
14) Management and Logistics
15) Command and Communication



Implementing
The Fire Prevention and Fire Fighting Program are organized based on the mentioned above and needed education and fire exercises or fire drill is needed sometimes at any conveniences.

The detailed programs are as following.

1) Causes of fire brokeout and fire fighting program
   1.1) Improper storage of Vehicles and Fuel, extensive temperature could caused fire brokeout
   1.2) Duedeligence
   1.3) Fire to the bushes or solid waste
   1.4) Less attention during vehicle fueling

1.5) The left fire at cooking place, gas leaks and electri wire short by extensive heat are the causes of fire

Fire fighting program

a)The company employees are most responsible to fight fire if the fire brokeout during working hours on weekdays. It is also needed to call fire center or nearest co fire bridgage simultaneously.

b)If fire brokeout on the off working hours or weekend, the security or duty officer has to lead the workers or workers family and fight as soon as noticed the fire broking out. It should also needed to call fire center or nearest co fire bridgage simultaneously.

2) Precaution Material and Equipments

The precaution material and equipments are classified as following that could easily fire due to negliance of employees and workers during operation stage.

I. Fuel and Lubricant
II. Papers for office use
III. All in the storage
IV. Electric Appliances
V. Solid Waste
VI. Vehicles
VII. Dried Grass and bushes

3) Project Condition

It is in the operation stage with full forces and overtime operation in the evening.

4) Worker Forces

There will be 100 workers at normal operation. (At present 33 locals & 2 Foreign Experts are working.)

5) Security Forces

It is expected to appoint one security officer and 20 securities. These securities should take not only security but also responsible to the fire prevention by doing regular check as round check and supprise check.

6) Water Availability

The tube well is running well for all domestic use and reserve for fire fighting as designed.

7) Fire Prevention Method, Fire prevention team organizing and duties

Fire prevention should be prioritized. It is necessary to all workers and employees about fire prevention, fire fighting by chart or seminar and workshop how to install the warrenty and green light to the environment.

It is to be organized the fire prevention team as following to prevent fire and monitoring.

<u>Fire Prevention Team,</u>

A. Operation Manager	Team Leader
B. Manager (Admin)	Deputy Team Leader
C. Security	Member
D. Assistant Manager	Secretary

It is obligation to all employees in principle, to fight together if the fire brokeout together with the following.

1) All company employee
2) All local residents and fire brigates
3) The authorites from township or division

The duties for the fire prevention team are as following.

1) To follow the fire prevention program
2) All electrical wiring and electric appliances in company should be checked with technicians and make sure fire prevention
3) To make announcement and check each & every steps of the regulation and proper usage of electricity
4) To check and record the inspection on fire prevention and warning activities as 3 times daily for the building
5) Daily warning by the team for storage of fuels and checking remaining fire at kitchen if the charcoal stove use

8)Handling with electrical appliances

The handling with electrical appliances should be as following

1) It should be informed to the technicians for repairing of electricity system of appliance brokeout. It should not fix by itself.
2) It should not use the exceed power than allowed by officially.
3) It should be installed the auto sercuit breaker and or safty for all electrical appliances

9)Fuel Usage

The fuel usage should be done as following

1) Do not bring the matches or spark maker near to the fuel storages and chemical storage
2) Fire Warning Sign should be put on view that easily seen by public near fuel and chemical storages
3) No fuel, chemical or radio active materials should be kept in the individual’s room or office

10)Fuel Oil Storage and Usage

Fuel Oil Storage and Usage should be done as following

1) “No Smoking” sign should be installed near and or around the fuel storage.
2) Keep always clean with dry bushes, grass and paper waste near fuel storage tank
3) No spark making units should be allowed near fuel storages
4) To stop fuel charging while unloading the fuel tank boxer

11)Training and Inspection

1) The training and demonstration for the usage of fire extinguisher and fire fighting
2) The fire prevention team should be done the following
    - Fire waning announcement should be done done in the dry and hot season
    - Check the fire system of office and building
    - Check wiring system whether adequate or not
    - Check fire prevention demonstration program in place or not
    - Check fire fighting demonstration program in place or not

Fire Extinguisher Storage

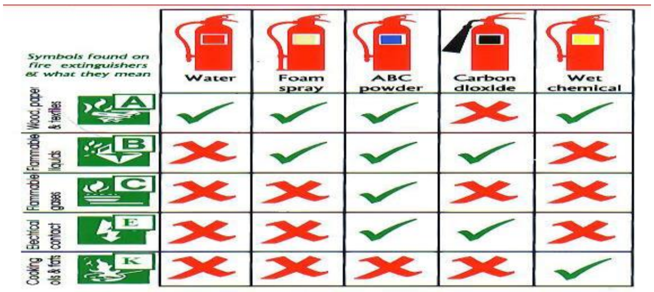
The fire extinguishers should be kept for fire fighting based on the following

- Store Place: The nearest and easy place that potentialy fire brokeout
- Easy Access Keep Clear way to get these extinguisher easily

- Sign　　The sign should be clearly marked due to the level of fire on these extinguisher and fire hydrant and pipe
- Hanging　　All extinguishers should be kept at accessable space. (10 feet distance away between extinguishers)
- Inspection　　Check the expired date of the extinguishers always

Table (21) The type and usage of extinguisher

Extinguisher Type / Fire Classes	Water	Dry Chemical Powder B(E)	Dry Chemical Powder AB(E)	Carbon Dioxide	Foam	WFT Chemical
Class B *Flammable Liquid*	X	✓	✓	✓	✓	X
Class C *Flammable Gases*	X	✓	✓	X	X	X
Class E *Flammable Hazzards*	X	✓	✓	✓	X	X



The boundary of fire fighting
The boundary of the fighting would be Near building or Factory, office, staff quarter, car parking and all direction from the factory.

Fire Extinguisher and water supply
The following should be arranged to get the fire extinguisher and water supply

1) Fire Hydrant 1 nos., Fire Extinguisher 34 nos, and Fire Fighting Jugs 20nos.
2) Water Tank (2500gal)
3) Water Drum (5,00 gal, 8Nos)

12)Fire during Working Hours
The following procedure should be taken if the fire broke out in working hour

1) It should make sound continuously and shout “Fire, Fire, Fire” by who notice or see the fire broking out first in the factory premis or wastes.
2) It should inform immediately to the nearest or concerned fire department by who heared the sound of fire alarm or the sound of “Fire, Fire,Fire”.
3) Move the fire priority immediately if the fire brokeout in the company premis and try to destruct the building if it is possible to stop fire spread out.
4) By carring the fire fighting jugs and hangers, manage to fight the fire immediately by leaving just one person for security at office or department.
5) Inform all nearest fire bridgates or fire station immediately about fire.
6) Direct or assist to all fire fighting cars coming from outside to the place that fire brokeout.
7) Assist Fire bridgade to be able to cut the electrical system of the area that fire brokeout

13) Fire during Off Working Hours

The following are the procedures for the fire brokeout during off working hours in the company's premises

1) The duty officer or someone else who notice or see the fire broking out first in the factory premis or wastes should make sound continuously and shout "Fire, Fire, Fire" continuously until someones reach to assist.
2) The duty officer should imeediately contact or call to inform about the fire if he himself see the fire or hear the sound of fire alarm or someones shout.
3) Ask for help for the fire engine and to get assistant from nearest fire station.
4) Manage at fire fighting, not to spread out fire and the evacuation and moving goods from the place to the safty area.
5) Direct or assist to all fire fighting cars coming from outside to the place that fire brokeout.
6) Assign enough security to the area after sealed fire and before official inspection.

14)Management and Logistics

1) Manage for the smooth and fast vehicle movement without any delay including fire engine and water boxer.
2) The security team or department should take the control such as not lost and robbering.
3) Try to assist and send who got hurt during fire brokeout immediately to the nearest clinic or hospital.
4) All report should be made to the authority and company's head office on timely basic.

15)Command and Communication

All management level such as general manager, manager and assistant manager are responsible to be participated and close assistant in fire fighting and other necessary measures together with duty officer and security.

Any mode of communications such as telephone, messanger or even making sound as fire warning should be done.

Financial Allotment	1,000,000Ks (yearly)
Responsible Group	EMP Team or SPC (Sub Project Contract)

10.4.13 Preparness for the natural diasastes (Water, Land Slide, Storm, Earthquake etc.)

Objective:

It is to be prepared for all disaster resistant and relief even though it is not easy for all time.

To inform any loss & damage to the authority about due to incident happened. During evacuation from fire or disaster situation, it is to be taken necessary measures such as immediately sending the people who got hurt to the nearby clinic or hospital and provide further assistance to them as necessary.

Management

The following are the emergency plan for this occasion to claim the loss and assistant.

1) The environmental conservation team, the environmental monitoring team, the fire prevention team are needed to assist or solve together for all emergency situation at all time.
2) To find the exit or safe place is the most important evacuation procedures for all time.
3) Need to contact the township or regional level organizations for further arrangement based on the situation.
4) The concerned team must provide first aid or emergency treatment until nurses or rescue team come and send the wounds or seriously injured persons to the nearest clinic or hospital and provide the necessary treatment as soon as possible.

5) Need to inform authority about the losses and get advice or assistant

Implementing
The fire training and exercise of preventing, fighting and evacuation are periodically done by the assistant from the township level fire department. The signage for emergency exit doors is installed both on floor and wall by lamp. It is designated the evacuation escape routes and the final meeting point. The emergency care unit and rest room are provided in the factory and it would be planned for further medical treatment at nearby hosipital.

The Emergency Clinic and Aids
An AIDs medicines are provided by the company not only for emergency but also regular medical care to all employees.A nurse aids boxes are installed at work stations in the factory to get quick access.

The practical team are also formed by names is mentioned as "Emergency Plan" by grouping as

1. Fire Fighting Group
2. Water Supply Group
3. Communication Group
4. Evacuation Group
5. Security Group etc.

Financial Allotment	500,000Ks (yearly)
Responsible Group	EMP Team or SPC (Sub Project Contract)

<u>The Emergency Contact Phone Numbers</u>

1. Ngnzun Township General Administration Office 061-2043985, 60261
2. Ngnzun Police Station 061-65199, 60503
3. The Emergency Fire Station 191, Ngnzun 60191
4. Central Fire Station (Yangon) 01-252011, 01-252022

The Emergency Clinic and Aids
For emergency and regular medical assistant to all employees are provided by factory management. It is sent to nearby clinic or hospital if it is needed further assistant. A nurse aids boxe is provided to get quick access for emergency care.

10.4.14 Summary of Environmental Management Plan (Operation Phase)

Table (11) **Summary of Environmental Management Plan (Operation Phase)**

Category	Item	Environmental Management	Responsible Group
Pollution	Air Quality	-Cleaning dust in the factory always -In case that a tenant live in the domitory which may cause exhaust gas pollution such as intensive cooking. -Speed limiting to all vehicles and service machines	EMP team/SPC
	Water Quality	-Smart control such as water saving ultra low flush toilet, spray nozzles, urinals and low flow shower heads etc., for water system should be applied for water usage. -No impacts to the surface and ground water as the septic tank is istalled	EMP team/SPC
	Noise	Install Sound Proof Generator and Compressor, Avoid construction and operation at night time, Speed limit for drivers, Provide ear plug for operator. Buffer zone for sound-proving to the	EMP team/SPC

		diesel generator using at black out time. (The engine has installed the silencer) The silent split type air conditioners should be installed instead of window type	
	Water & Energy Consumption	Check tube wells, water usage and water quality, Reuse of water, stop airconditioner during lunch time to save electricity	EMP team/SPC
	Waste Water	-Install oil and grease trap should be installed -Ensure no waste water shoud be released from the project area to public area especially without treatment. -Install septic tank and frequent check	EMP team/SPC
	Traffic Management	Control speed limit to all vehicles, Provide parking lot for motor bikes and bicycles	Developer
	Solid Waste	Management on solid wastes to implement 3R for all wastes, keep all solid wastes systematically store before selling out to buyer or trash by contacting city development committee, -Waste collector bins should be placed enough both inside workshop, show room, office and domitory. -Food waste and bio waste should be collected and dispose daily systematically	Developer
	Soil Contamination	-Ban on infiltrate liquid waste onto the ground.	EMP team/SPC
	Ground Subsidence	-Check consumption of ground water and monitoring of ground subsidence.	EMP team/SPC
	Offensive Odor	-Offensive odor which might be generated by the tenants would be strictly controlled.	EMP team/SPC
	Bottom Sediment	-Not applicable as no discharge to river or stream	EMP team/SPC
Natural Environment	Flora, Fauna Management	-Planting and Maintenance of trees, vegetation , lawn in the public space such as road, retention pond and other open spaces.	Developer
	Management on Greening	Monitor and maintain all plants to keep green, plant a new trees as much as possible	EMP team/SPC
Social Environment	Livelihood	Providing priority to all local and nearby residents for all vacancies at the project, Continuous training programs are planned for capacity development	Developer
	Occupational Health and Safety Management	Follow OHS working condition and guideline such as EHS by IFC, Installed ventilation for temperature & dust control (power fan, hood & wall mounted), Manage efficiently generator operation hours, Use soundproof gen set and compressor to reduce noise and provide ear plug to operator, Avoid night time operation, Manage water usage by controlling water level at dying/washing machine Chemicals are kept, handled and used well, The empty containers of chemicals are stored carefully and resell to the supplier, Hazardous waning including no smoking and high voltage signages are put on the necessary place, A nurse aids boxes are installed work stations in the factory to get quick access The purified drinking water is provided. The necessary health cares are provided to all sick, wounded and allow the maternity leaves.	Developer
	Risk and Infectious disease such as	-Measures of infectious disease will be implemented as follows; • Plan for prevention of infectious	EMP team/SPC

	AIDS/HIV	disease from spreading. • Training plan for workers	
Others	Accident	-Accident prevention measures inside and outside the project area will be planned.	EMP team/SPC
	Global Warming	-Energy Saving devices such as LED lamps, door lock and switch card to be used to reduce energy consumption -Minimization of GHGs emission by construction machines and vehicle will be planned	EMP team/SPC
	Hazardeous Waste Management	-The empty bottles and containers of Hygence and bleach used in laundry, Kitchen and spa are kept separately before disposal at special purpose company or cleansing department of city development council.	Developer
	Emergency & Evacuation Management	Emergency Plan and Groups are formed Periodic training is provided, All emergency relief equipments such as fire extinguishers are placed as fire department standard, The evacuation maps and signs to way out are drawn on the floor, fire alarm are installed, The emergency contact numbers are informed	Developer
	Preparaness for natural disaster	An AIDs medicines are provided by the company not only for emergency but also regular medical care to all employees. A nurse aids boxes are installed at work stations in the factory to get quick access.	Developer
Storage and Handling of Materials	Kitchen	-Store in different refrigerators for meats, vegetables and foods & beverages -Check daily for expire for all food -Provide all storages and shelves from flood water at any time -Check and prevent rottan and other insect from entering into the kitchen	EMP team/SPC
	Fuel	-All fuels lubricants should be store under fire prevention system including placing of fire extinctguishers -Extra care is needed to spill out fuels and lubricants to the ground	EMP team/SPC

10.4.15 Monitoring Program

Methodology

It is needed to follow the best practices by preventing the harmful to the environment and mitigation if the project is to be built at NEQEG standard garment manufacturing factory.

It is instructed by the Ministry of Natural Resources and Environmental Conservation to be compiled with evidence and references for the environmental management plan, monitoring plan wich is committed by the project proponent.

The inspection would be followed as necessary for the NEQEG standards, the work safety and environmental friendly to this project.

It is also necessary to well organize and implement to close watch on all necessary measures to prevent and mitigate all impacts to the environment.

In this monitoring program, the following are needed to complete monitoring.

- The quality of air, noise, water & energy consumption, waste water effluent are included together with continuous study or capacity building.
- The waste management

- Safety, Operation and Administration Practice
- Storage and Handling of fuels and chemicals

Monitoring (Pre Construction)

It is obmitted as construction was completed

Monitoring (During Construction)

It is obmitted as construction was completed.

Monitoring (Operation Period)

The environmental monitoring program during operation period after construction is responsible to the project proponent. The responsible team should be organized as following. The detailed monitoring program and parameters are described in the following table with the specific responsible. It would be reported regularly to the Ministry for the environmental management plan and monitoring plan as instructed. The report would be submitted to the concerned department and Cc to the project office with the data collected and finding.

The committent about the monitoring report by the project proponent

The project proponent has committed that the monitoring report will be submitted to the ministry at least once in a 6 month or as instruct by the ministry regarding to the regulation para 108 of environmental assessment procedure.

Environmental Monitoring Team,

The Environmental Monitoring Team would be organized as following.

(Environmental Monitoring Team)

A. Manager (Operation Dept.)	Group Leader
B. Asst; Manager (Operation Dept.)	Member
C. Engineer (Engineering & Maintenance Dept.)	Member
D. Security (Chief)	Member

The telephone communication or messenger service should be used to get affected and most reliable to communicate each others.

It is well planned to get environment better by closely watch and supervice by group manager.

This monitoring team will be reporting to the environmental management team for all finding such as development and mitigation program for new impact findings with evidence and data collected and also the status of nursery, plant and maintain the grass and trees as greening program to the environment. It is also needed to support the environmental conservation team (EMP) for the report to be submitted to the ministry.

Safety Management Team,

The Safety Management Team would be organized as following.

A. Security (Chief)	Team Leader
B. Manager (Admin)	Co-Leader
C. Engineer	Member
D. Manager (Operation Department)	Member

Environmental Monitoring Plan which is part of the Environmental Management Plan is needed to specify the parameter and the program to distinguish the anticipated changes. To get monitored, the projects also needed the base line data and standards and functioned properly.

Monitoring Program and Parameters

The following table shows the parameter, method and program for the point that is to be measured.

Air

No	Point of Pollution Monitoring (Lat/Long)	Cause	Affected	Parameter (Temp;humidity PM_{10},NO,SO_2,CO)	Indication	Method	Person	Duration
1	Factory							
2	Car Parking							
3	Surrounding							

Noise

No	Point of Pollution Monitoring(Lat/Long)	Cause	Affected	Parameter (db)	Indication	Method	Person	Duration
1	Factory							
2	Car Parking							
3	Surrounding							

Water & Waste Water

No	Point of Pollution Monitoring(Lat/Long)	Cause	Affected	Parameter (T^o,pH,DO,BOD_5, COD,TSS,NH_4,Cl,Oil and Grease)	Indication	Method	Person	Duration
1	Factory							
2	Car Parking							
3	Surrounding							

Solid Waste

No	Point of Pollution Monitoring(Lat/Long)	Cause	Affected	Parameter (Volume or Weight)	Indication	Method	Person	Duration
1	Factory							
2	Car Parking							
3	Surrounding							

The following table shows the detailed information on how the parameter, method and program for the point that is to be measured.

Air

No	Point of Pollution Monitoring(Lat/Long)	Cause	Affected	Parameter	Indication	Method	Person	Duration
1	Inside Factory and/or Surrounding	Emission, Exhaust(Machines ,Vehicle,etc.)	Air	Exhaust Air (Temp/Pressure)	(Temp;humidity PM_{10},NO,SO_2,CO) Ordor level	Lab Analysis	Person In charge	Daily, Weekly, Monthly

Noise

No	Point of Pollution Monitoring(Lat/Long)	Cause	Affected	Parameter	Indication	Method	Person	Duration
1	Surrounding of Project Area	Traffic(Car Parking, loading/Unloading)	Noice	Sound Level	dB	Sound Level Meter		Daily

Water & Waste Water

No	Point of Pollution Monitoring(Lat/Long)	Cause	Affected	Parameter	Indication	Method	Person	Duration
1	Surrounding	Drain/Car Wash,etc.	Waste Water	Flow rate	BOD, COD	Lab Analysis	Person In charge	Monthly

Solid Waste

No	Point of Pollution Monitoring(Lat/Long)	Cause	Affected	Parameter	Indication	Method	Person	Duration
1	Surrounding	Tree leaves	Solid Waste	Volume/Weight	Volume	Visual, Weight Measurement	Person In charge	Daily, Weekly, Monthly

The data to be collected, locations, periods and the data collectors all should be managed pre construction, during construction and normal operation period respectively.

(Remarks, It could be omitted the pre-construction and during construction stage as the project is in the operation stage.)

10.4.16 The Monitoring Plan (Operation Phase)

Table (12) **Monitoring Plan (Operation Phase)**

Category	**Item**	**Location (Lat/Long)**	**Frequency**	**Financial Allotment (ks)**	**Responsible Organization**
Air Quality	VOC, HCHL, $PM_{2.5}$, PM_{10}	Construction Site (In factory and surrounding)	Twice a year	2,000,000	Sub Project Contractor
Water Quality	pH, SS, DO, BOD, COD, oil & grease, chromium	Construction Site(In factory and surrounding)	Once a year	200,000	SPC
Waste	Amount of solid waste Management of solid waste including domestic and industrial waste	Each tenant (In factory and surrounding)	Once/6month	200,000	EMP team
Soil Contamination	Status of control of solid and liquid waste which causes soil contamination	Each tenant (In factory and surrounding)	Once a year	200,000	EMP team
Noise and Vibration	Noise & Vibration level	Each tenant (In factory and surrounding)	Once (peak period)	500,000	SPC
Ground Subsidence	Ground elevation	Preservation site	Once a year	500,000	SPC
Offensive Odor	Status of offensive odor control by tenants	Each tenant (In factory and surrounding)	Twice per year	1,000,000	EMP team
Bottom Sediment	Combine with water quality	Preservation site	Once a year	500,000	SPC
Hydrology	Consumption of ground water amount	Preservation site	Once a year	500,000	SPC
Water Usage Hydrological Situation	Combine with ground subsidence monitoring	Preservation site (In factory and surrounding)	Once a year	500,000	SPC
Risk for infectious disease such as AIDS/HIV	Status of measures of infection disease	Each tenant/Worker	Once/month	1,000,000	SPC/Tenants
Working conditions (including occupational safety)	Working condition with safety and health	Work site	Once /month	1,000,000	SPC
Accident	Existence of accident	Work Site	As occasion arises	1,000,000	Tenants

The find out data should be checked with National Environmental Quality (Emission) Guidelines mentioned as following.

Indicative Guideline for Treated Sanitary Sewage Discharge (National Environmental Quality (Emission) Guidelines2015)

Table (4.5) **Effluent Levels (Manufacturing)**

Parameter	Unit	Guideline Value
5 day Biochemical oxygen demand	mg/l	30
Absorbable organic halogens	mg/l	1
Ammonia	mg/l	10
Cadumm	mg/l	0.02
Chemical oxygen demand	mg/l	160
Cromium (hexavalent)	mg/l	0.1
Cromium (Total)	mg/l	0.5
Cobalt	mg/l	0.5
Color	m^{-1}	7(436nm[a],yellow) 5(525nm, red) 3(620nm,blue)
Copper	mg/l	0.5
Nickel	mg/l	0.5
Oil and grease	mg/l	10
Pesticides	mg/l	0.05-0.10[b]
pH	S.U[a]	6-9
Phenol	mg/l	0.5
Sulfide	mg/l	1
Temperature increase	C°	<3[b]
Total coliform baterial	100ml	400
Total nitrogen	mg/l	10
Total phosphorus	mg/l	2
Total suspended solids	mg/l	50
Zinc	mg/l	2

[a] Nanometers

[b] 0.05 mg/l for total pesticides (organophosphorus pesticides excluded) ; 0.10 mg/l for organophosphorus pesticides

[c] Standard Unit

[d] 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

Table (4.4)Air Emissions (WHO Ambient Air Quality guide line)

Parameter	Unit	Guideline Value
Sulfur dioxide (SO_2)	mg/Nm^3	500
Nitrogen dioxides (NO_2)	mg/Nm^3	600
Particulate matter PM_{10}	mg/Nm^3	100
Particulate matter $PM_{2.5}$	mg/Nm^3	30
Ozone	mg/Nm^3	160

[a]Total metals are Arsenic, Lead, Cobalt, Chromium, Copper, Manganese, Nickel, Vanadium and Antimony

Table (4.2) **Air Emissions** (EQEG) (Environmental Quality Effluent Guide line)

Parameter	Average Period	Guideline Value mg/Nm^3
Nitrogen dioxides (NO_2)	1 Year 1-hour	40 200
Ozone	8 hour daily maximum	160
Particulate matter PM_{10}	1 year 24 hour	20 50
Particulate matter $PM_{2.5}$	1 year	10

	24 hour	25
Sulfur dioxide (SO_2)	24 hours 10 minute	20 500

[a]Particulate metter 10 micro meters or less diameter
[b]Particulate metter 10 micro meters or less diameter

Table (14) For Small Combustion Facilities Emission Guidelines

Combustion Technology/Fuel	Particulate Matter PM_{10}[a]	Sulfur Dioxide	Nitrogen Oxides
Gas	1 Year 1-hour		40 200
Liquid	8 hour daily maximum		160
Natural gas (3-<15MW[g])	-	-	90[h] mg/Nm^3 210[i] mg/Nm^3
Natural gas (15-<50MW)	-	-	50 mg/Nm^3
Fuels other than natural gas (3-<15MW)	-	-	200[h] mg/Nm^3 310[j] mg/Nm^3
Fuels other than natural gas (15-<50MW)	-	-	150 mg/Nm^3
Gas	-	-	320 mg/Nm^3
Liquid	150 mg/Nm^3	150 mg/Nm^3	150 mg/Nm^3
Solid	150 mg/Nm^3	2,000 mg/Nm^3	650 mg/Nm^3

[a] Particulate matter 10 micrometers or less in diameter
[b] Spark ignition
[c] Milligrams per normal cubic meter at specified temperature and pressure
[d] Duel fuel
[e] Compression ignition
[f] Higher value applies if bore size >400mm
[g] Megawatt
[h] Electric generation
[I] Mechanical drive
[j] Includes biomass

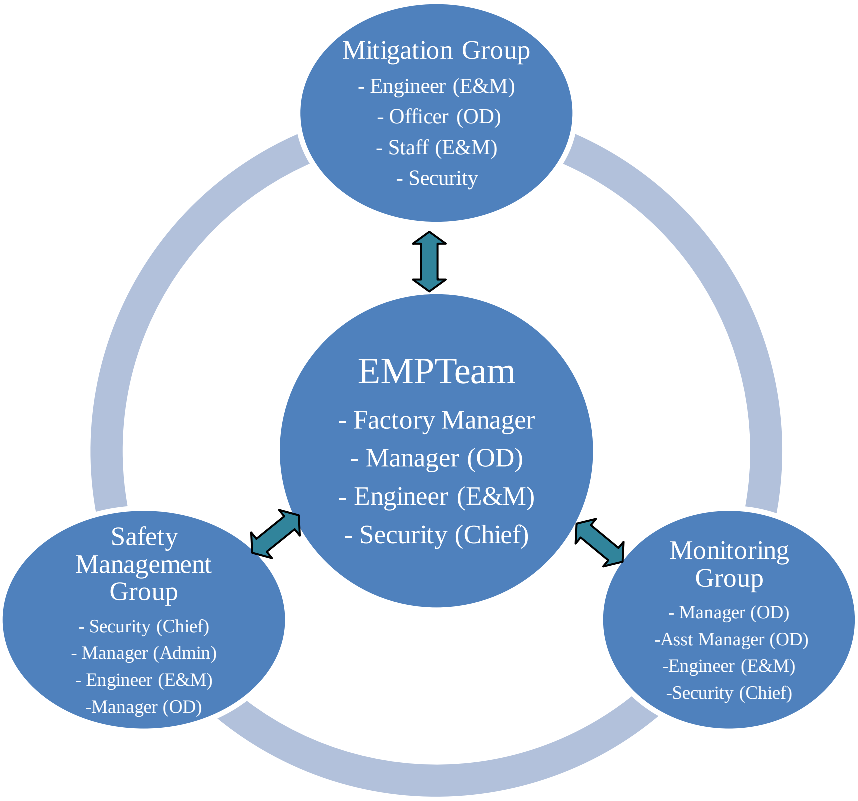
Table (15) Work Safty Standards

Social Environment	
Air Quality at Works	As shown above
Noise & Vibration at works	As shown above
Solid Wastes & Hazardous Waste	Not available yet
Drinking Water	Not available yet
Safety Management	Not available yet
Communicative diseases including HIV/AIDS	Not available yet

10.5 Responsible Authorities for Implementation of EMP and Monitoring,

The responsible authorities are organized as following to oversea environmental and social management.

Fig.8



EMP Team – (Mitigation, Monitoring, Safety and Reporting)

The Environmental Management Team would be consisting of Mitigation Group, Monitoring Group and Safety Management Group respectively. It is organized as following.

A. Factory Manager	Chairman
B. Manager (Operation Dept.)	Member (Monitoring Group Leader)
C. Security (Chief)	Member (Safety Management Group Leader)
D. Engineer (Engineering & Maintenance)	Secretary (Mitigation Group Leader)

This structured team with resource personals as shown above should be the most responsible to implement this Environmental Management Plan, Mitigation, Monitoring, Safety Management and Reporting.

Duty and Responsibility of EMP team

The team is responsible to submit regular report to concerned parties such as ECD including MIC (Ayarwaddy) on Environmental Management Plan, Monitoring Program, the Implementation, New finding during implementation, the mitigation to those impacts and program with evidences and references.

The team should be ready to disseminate all finding and monitoring reports to local communities if it is necessary.

The team is the communication channel and coordinator between the factory and local communities for all environmental and social affairs including CSR program.

Duty and Responsibility of EMP team members

A. Factory Manager (Chairman)

He is the leader of the team and responsible to all environmental affairs from A to Z. He is the key person to get contact with other group of EMP team (Mitigation group, Monitoring Group and Safety Management group etc.) all the time. He needs to appoint the officials or sub contract to take care of all environmental affairs including regular reporting to all authorities and concerned parties.

B. Manager (Operation Dept.) (Member)

He is the member of the team and responsible to take assignment of all environmental affairs assigned by the chairman. He also need to feed back all find out and completion of assignment to chairman or through the secretary.

C. Security Chief (Member)

He is the member of the team and responsible to take assignment of all environmental affairs assigned by the chairman. He also needs to check & feed back all find out and completion of assignment to chairman or through the secretary.

D. Engineer (Engineering & Maintainence Dept.) (Secretary)

He is the co-leader of this team and responsible to assist the groups' chairman all environmental affairs from A to Z. As he is also the group leader of Mitigation Group, he has always needed to check the real situation, the progress of assignment to the team members who are the leaders of the respective group and their feedback while closly contact to the chairman for updated information and situation. He is the key person to get contact with other group leaders & members of EMP team (Mitigation group, Monitoring Group and Safety Management group etc.) all the time. He needs to prepare for all regular reports as it is scheduled at reporting section.

(1) Mitigation Group –

This structured mitigation team with resource personals as shown below should be the most responsible to implement all mitigation procedures mentioned in this Environmental Management Plan.

A. Engineer (Engineering & Maintenance Dept.)	Group Leader
B. Officer (Operation Dept.)	Member
C. Staff (Engineering & Maintenance Dept.)	Member
D. Security	Member

Duty and Responsibility of Mitigation Group

The group is responsible to implement regularly for all mitigation procedures mentioned in this Environmental Management Plan.The regular implementation, new finding during implementation, the mitigation to those impacts and program would be regularly recorded with evidences and references.

The team will report all finding to EMP team regularly or imediately if it is needed.

The group also needed to support to EMP team for their regular reporting or whenever it is needed.

Duty and Responsibility of Mitigation Group members

A. Engineer (Engineering & Maintenance Dept.) (Group Leader)

He is the leader of the team and responsible to all mitigation measures from A to Z. He is the key person to get cooperate with other group of EMP team (Monitoring Group and Safety Management group) all the time.

B. Officer (Operation Dept.) (Member)

He is the member of the team and responsible to take assignment of all mitigation measures assigned by the group leader. He also need to feed back all find out and completion of assignment to the group leader.

C. Staff (Engineering & Maintenance Dept.) (Member)

He is the member of the team and responsible to take assignment of all mitigation measures assigned by the group leader. He also needs to check & feed back all find out and completion of assignment to the group leader.

D. Security (Member)

He is responsible to assist the group leader and members at all mitigation measures from A to Z. He is always needed to check the real situation, the progress of assignment to the team members and their feedback while closly contact to the members for updated information and situation.

(2) Monitoring Group –

This structured group with resource personals as shown below should be the most responsible to implement this Environmental Management Plan.

A. Manager (Operation Dept.)	Group Leader
B. Asst; Manager (Operation Dept.)	Member
C. Engineer (Engineering & Maintenance Dept.)	Member
D. Security (Chief)	Member

Duty and Responsibility of Monitoring Group

The group is responsible to monitor all points of environmental conservation and submit regular report as mentioned in this Environmental Management Plan.

The group also needed to support to EMP team for their regular reporting or whenever it is needed.

Duty and Responsibility of Monitoring Group team members

A. Manager (Operation Department) (Group Leader)

He is the leader of the team and responsibility to all environmental affairs from A to Z. He is the key person to get contact with other group of EMP team (Mitigation group, Reporting Group and Safety Management group etc.) all the time.

B. Asst; Manager (Operation Dept.) (Member)

He is the member of the team and responsible to take assignment of all environmental affairs assigned by the chairman. He also need to feed back all find out and completion of assignment to chairman or through the secretary.

C. Engineer (Engineering & Maintance) (Member)

He is the member of the team and responsible to take assignment of all environmental monitoring affairs assigned by the group leader. He also needs to check & feed back all find out and completion of assignment to chairman or through the secretary.

D. Security (Chief) (Member)

He is responsible to assist the group leader for all environmental monitoring affairs from A to Z. He is always needed to check the real situation, the changes or irregularites while closly contact to the group leader for updated information.

(3) The Safety Management Group-

The Safety Management Group would be organized as following.

E. Security Chief	Group Leader

F. Manager (Admin) Co-Leader
G. Engineer Member
H. Manager (Operation Department) Member

Duty and Responsibility of Safety Management Group

The group is responsible to monitor all points of environmental conservation and submit regular report as mentioned in this Environmental Management Plan.

The group also needed to support to EMP team for their regular reporting or whenever it is needed.

This safety management group will be reporting to the environmental conservation team as mentioned with the program, development and new impact findings with evidence and data collected. It is also needed to support the environmental management team for the report to be submitted to the ministry.

Duty and Responsibility of Safety Management team members

A. Security Officer (Group Leader)

He is the leader of the team and responsibility to all safety management including prevention, evacuation from A to Z especially at the disaster situation. He is the key person to get contact with other group of EMP team (Mitigation group & Monitoring Group) all the time.

B. Manager (Admin) (Co-Leader)

He is the co-leader and responsible to cooperate with the leader for all safety preventation assigned by the chairman. He also need to feed back all find out and completion of assignment directly to the factory manager who would be the chairman of EMP team or through the secretary.

C. Engineer (Engineering & Maintance) (Member)

He is the member of the team and responsible to take cooperation at safety procedures especially at disaster situation. He also needs to check & feed back all find out to the group.

D. Manager (Operation Department) (Member)

He is the member of the team and responsible to take cooperation at safety procedures especially at disaster situation. He also needs to check & feed back all find out to the group.

Instruction for EMP team

The EMP team is responsible to submit regular report on Environmental Management Plan, Monitoring Program, The implementation, new impact finding during implementation and program with evidences and references.

The EMP team should be ready to disseminate at all findings and monitoring reports to local communities if it is needed.

The EMP team is the key coordinator to implement and feed back between all other groups of the EMP team for all environmental and social affairs including CSR program.

10.6 The Financial Allotment for EMP

The company has allocated 2% of net profits to use as the fund for the committee CSR and expense for the environmental management. The financial allotment for the EMP including monitoring should be described with agreement which is to be allowed the said allotment is not enough.

Table (16) **Environmental Management Plan Finance (During Construction and Operation Stage)**

Category	Item	Environmental Management	Responsible Group	Frequency/Financial Allotment(Ks)
Pollution	Air Quality	-Cleaning dust in the factory always -In case that a tenant live in the domitory which may cause exhaust gas pollution such as intensive cooking. -Speed limiting to all vehicles and service machines	EMP team/SPC	Check Daily/ (1,500,000/ 3months) For air quality check
	Water Quality	-Smart control such as water saving ultra low flush toilet, spray nozzles, urinals and low flow shower heads etc., for water system should be applied for water usage. -No impacts to the surface and ground water as the septic tank is istalled	EMP team/SPC	Check Daily/ (500,000/ 3months) For water quality check
	Noise	Install Sound Proof Generator and Compressor, Avoid construction and operation at night time, Speed limit for drivers, Provide ear plug for operator. Buffer zone for sound-proving to the diesel generator using at black out time. (The engine has installed the silencer) The silent split type air conditioners should be installed instead of window type	EMP team/SPC	Check Daily/ (500,000/ 3months) For Noise check
	Water & Energy Consumption	Check tube wells, water usage and water quality, Reuse of water, stop airconditioner during lunch time to save electricity	EMP team/SPC	Check Daily/ (1,500,000/ 3months)
	Waste Water	-Install oil and grease trap should be installed -Ensure no waste water shoud be released from the project area to public area especially without treatment. -Install septic tank and frequent check	EMP team/SPC	Check Daily/ (1,500,000/ 3months) For waste water leak check
	Traffic Management	Control speed limit to all vehicles, Provide parking lot for motor bikes and bicycles	Developer	50,000/yr
	Solid Waste	Management on solid wastes to implement 3R for all wastes, keep all solid wastes systematically store before selling out to buyer or trash by contacting city development committee, -Waste collector bins should be placed enough both inside workshop, show room, office and domitory. -Food waste and bio waste should be collected and dispose daily systematically	Developer	200,000/yr
	Soil Contamination	-Ban on infiltrate liquid waste onto the ground.	EMP team/SPC	200,000/yr
	Ground Subsidence	-Check consumption of ground water and monitoring of ground subsidence.	EMP team/SPC	200,000/yr
	Offensive Odor	-Offensive odor which might be generated by the tenants would be strictly controlled.	EMP team/SPC	200,000/yr
	Bottom Sediment	-Not applicable as no discharge to river or stream	EMP team/SPC	-
Natural Environment	Flora, Fauna Management	-Planting and Maintenance of trees, vegetation , lawn in the public space such as road and other open spaces.	Developer	200,000/yr
	Management on Greening	Monitor and maintain all plants to keep green, plant a new trees as much as possible	EMP team/SPC	300,000/yr
Social Environment	Livelihood	Providing priority to all local and nearby residents for all vacancies at the project, Continuous training programs are planned for capacity development	Developer	600,000/yr
	Occupational Health and Safety Management	Follow OHS working condition and guideline such as EHS by IFC, Installed ventilation for temperature & dust control (power fan, hood & wall mounted), Manage efficiently generator operation hours,	Developer	500,000/yr

		Use soundproof gen set and compressor to reduce noise and provide ear plug to operator, Avoid night time operation, Manage water usage by controlling water level at dying/washing machine Chemicals are kept, handled and used well, The empty containers of chemicals are stored carefully and resell to the supplier, Hazardous waning including no smoking and high voltage signages are put on the necessary place, A nurse aids boxes are installed work stations in the factory to get quick access The purified drinking water is provided. The necessary health cares are provided to all sick, wounded and allow the maternity leaves.		
	Risk and Infectious disease such as AIDS/HIV	-Measures of infectious disease will be implemented as follows; • Plan for prevention of infectious disease from spreading. • Training plan for workers	EMP team/SPC	200,000/yr
Others	Accident	-Accident prevention measures inside and outside the project area will be planned.	EMP team/SPC	200,000/yr
	Global Warming	-Energy Saving devices such as LED lamps, door lock and switch card to be used to reduce energy consumption -Minimization of GHGs emission by construction machines and vehicle will be planned	EMP team/SPC	500,000/yr
	Hazardeous Waste Management	-The empty bottles and containers of Hygence and bleach used in laundry, Kitchen and spa are kept separately before disposal at special purpose company or cleansing department of city development council.	Developer	1,000,000/yr
	Emergency & Evacuation Management	Emergency Plan and Groups are formed Periodic training is provided, All emergency relief equipments such as fire extinguishers are placed as fire department standard, The evacuation maps and signs to way out are drawn on the floor, fire alarm are installed, The emergency contact numbers are informed	Developer	1,000,000/yr
	Preparaness for natural disaster	An AIDs medicines are provided by the company not only for emergency but also regular medical care to all employees. A nurse aids boxes are installed at work stations in the factory to get quick access.	Developer	500,000/yr
Storage and Handling of Materials	Kitchen	-Store in different refrigerators for meats, vegetables and foods & beverages -Check daily for expire for all food -Provide all storages and shelves from flood water at any time -Check and prevent rottan and other insect from entering into the kitchen	EMP team/SPC	100,000/yr
	Fuel	-All fuels lubricants should be store under fire prevention system including placing of fire extinctguishers -Extra care is needed to spill out fuels and lubricants to the ground	EMP team/SPC	100,000/yr

Table (8.6) The Financial Allotment Cost Estimate for EMP (Yearly)

No.	Description		Budget Allotments (Ks)/year
1	The Environmental Management Plan	Air Quality Management	1,000,000
		Noise Management	500,000
		Water & Energy Management Plan	1,000,000
		Waste Water Treatment	12,000,000
		Traffic Management	50,000

		Solid Waste Management	200,000
		Flora and Fauna Management	200,000
		Management on Greening	300,000
2	The Social Management Plan	The Livlihood	600,000
		Occupational Health & Safety Management	500,000
		Hazardous Management	100,000
		Emergency & Evacuation Management	1,000,000
		Preparness for the natural disasters	500,000
3	The Monitoring (for twice a year)		300,000
4	Reporting (for twice a year)		200,000
		Total	17,100,000

Remarks
If the allotted fund is not enough, the project proponent would be use additional fund by getting approval from the nearest board of director meeting.

Cost Estimate for monitoring
There should be expected 2 types of monitoring cost such as (1) for measuring air, noise, dust, waste water etc. (2) miscellaneous such as sampling cost, logistic etc.

Table (17) The Financial Allotment Cost Estimate for monitoring (twice a year)

Category	Item	Location (Lat/Long)	Frequency	Financial Allotment (ks)	Responsible Organization
Air Quality	VOC, HCHL, $PM_{2.5}$, PM_{10}	Construction Site (In factory and surrounding)	Twice a year	2,000,000	Sub Project Contractor
Water Quality	pH, SS, DO, BOD, COD, oil & grease, chromium	Construction Site(In factory and surrounding)	Once a year	200,000	SPC
Waste	Amount of solid waste Management of solid waste including domestic and industrial waste	Each tenant (In factory and surrounding)	Once/6month	200,000	EMP team
Soil Contamination	Status of control of solid and liquid waste which causes soil contamination	Each tenant (In factory and surrounding)	Once a year	200,000	EMP team
Noise and Vibration	Noise & Vibration level	Each tenant (In factory and surrounding)	Once (peak period)	500,000	SPC
Ground Subsidence	Ground elevation	Preservation site	Once a year	500,000	SPC
Offensive Odor	Status of offensive odor control by tenants	Each tenant (In factory and surrounding)	Twice per year	1,000,000	EMP team
Bottom Sediment	Combine with water quality	Preservation site	Once a year	500,000	SPC
Hydrology	Consumption of ground water amount	Preservation site	Once a year	500,000	SPC
Water Usage Hydrological Situation	Combine with ground subsidence monitoring	Preservation site (In factory and surrounding)	Once a year	500,000	SPC
Risk for infectious disease such as AIDS/HIV	Status of measures of infection disease	Each tenant/Worker	Once/month	1,000,000	SPC/Tenants
Working conditions (including occupational safety)	Working condition with safety and health	Work site	Once /month	1,000,000	SPC
Accident	Existence of accident	Work Site	As occasion arises	1,000,000	Tenants

Table (18) The miscellaneous item such as sampling cost, logistic etc.

No.	Description	Budget Allotments (Ks)/one package	Budget Allotments (Ks)/twice a year
1	Sampling Cost including containers	10,000	20,000
2	Logistics	40,000	80,000
	Total	150,000	300,000

The allotted funds as shown above should be revised if it is not enough to implement by the decision made at board of directors meeting.

10.7 Reporting Requirement

The reporting is needed about the progress of the environmental management plan, the environmental monitoring plan with the test or assessment data recorded and necessary document to be sent to the ministry as instructed.

Responsible Organization to The Report

This environmental management plan (EMP) team as mentioned above will be reporting to the environmental management team with the program, development and mitigation program for new impact find out with evidence and data collected. It is also needed to communicate & support to all groups organized in the environmental management team for the report which is to be submitted to the ministry.

The reporting would be consisting of following.

- Monitoring in operation stage and inspection.
- Reporting to the small things to all accident and emergency matters.
- All activities should be recorded with guide line values and needed to take action due to these guide line value.
- Capacity Building

The report should be submitted following guide line frequency.

Table (19) Types of Reports

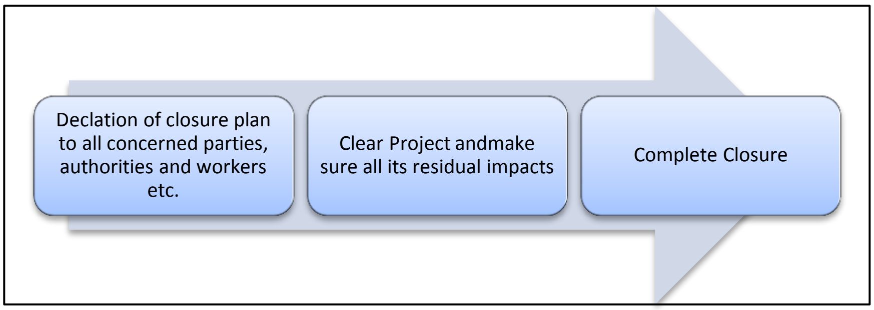
No	Types of Report	Frequency	Remarks
1	Monitoring and Inspection	Twice a Year	
2	Reporting on any small things, accidents and emergency	At the time of occurances	(*)
3	Report with reference at every environmental conservation time	Each time	
4	Capacity Building or Training Reports	Each time	

Remarks, (*) ECC Holder should report to the authority as soon as possible if accident or emergency matter occurs as mentioned on the ECC Certificate.

10.8 Factory Clousure Plan

Even though the factory is planned for the long term operation, it should be planned and followed the factory closure plan if it is to be closed due to any reasons. It should be informed to the related authorities and the closure plan would be done based on the country's laws and policies.

Fig.9



(1) It is the most important to declare the closure plan to all concerned parties, authorities and workers as soon as the management has decided to do so with the reasonable preparation time ahead for each parties.
(2) Preparation on clearing wastes and impacts should be done before the complete stop of operation and should be continued to make it sure all its residual impacts.

Remarks;
It should be informed the closure plan to the authorities including township general administration and MONREC at least one month ahead.

10.9 Capacity Development and Training

The following are the necessary training program needed regularly to provide for the capacity build up among the team members for prevention of natural environment, finding alteranatives to the mitigation of impacts and environmental conservation.

- The greening program
- Mitigation of Impacts by 3R system
- The Environmental Monitoring Program
- Diasaster Preparness Program & Fire Excersise (Fire Drill)

The cooperation with Ministry of Natural Resources and Environmental Conservation for training program is needed or sending delegates to the related training program from time to time.

10.10 The CSR program & environmental management financial allocation

Environmental Management Plan is one of the key factors to be in line with Myanma Environmental Policy and it is mandatory to get Environmental Compliance Certificate (ECC) from ECD that all projects and activities are needed to hold as legal certificate.
Hence, it is recommended to have a good Environmental Management Plan and follow as mentioned and committed such as Organizing, Monitoring and Reporting with continuously.
In general, it is less environmental and social impact or negligible to the surrounding and nature. However the copany has committed to use 2% of annual profit to expense for the environmental conservation with well organized team as mentioned in Environmental Management Plan.

The detailed organization structure and program are mentioned in the Environmental Management Plan report as shown below.

CSR Fund

The company will be organized the CSR team and will cooperate with others for monitoring. This sub committee would be reporting for all implementations from time to time.
The funding is allocated to use 2% of the annual net profit by spending as following.

1. Environmental Conservation Works (50%)
2. Social Development (10%)
3. Education (15%)
4. For elderly people(10%)
5. For orphanage and religious affairs (15%)

The Environmental Conservation Fund

In general, most of the hotel industry, it is found out less or no impacts to the environment by this project implementation if it is managed properly but there will be positive impacts to social sector by creating the employments.

The environmental conservation team would be organized as mentioned in the chapter 7 while the funding is allocated to use 2% of the annual net profit by spending as following.

1. Environmental Conservation Works (50%)

(Mitigation Measures, Implementing, Safeguard, Training and etc.,)

2. Environmental Monitoring Works (50%)
   (Monitoring Consultant, Supervision and Laboratory test etc.,)

These funds would be managed with the guidance of regional government.

Cost for Monitoring (Lab test estimate)

The measurement and test in laboratory during construction and operation stage would be as following.

Phase	Item	Frequency & Location	Expected Cost	Responsible Organization	Remarks
Construction Phase	Air, Noise, Waste Water	See table in Chapter 6	US$1,5000 /Yr	Contractor	(1)For measurement and lab tests only (2) The allotment should be readjusted with actual situation such as price changes etc.
Operation Phase	Air, Noise, Waste Water	See table in Chapter 6	US$1,5000 /Yr	Special Purpose Contractor (SPC)	(1)For measurement and lab tests only (2) The allotment should be readjusted with actual situation such as price changes etc.

11.Public Consultation Meeting & Disclosure

As it is changing politically, economically and socially in Myanmar due to present political multiple party system since 2010, citizens of Myanmar are enjoying the freedom of expression and more interest to participate at all developing process in Myanmar especially in their region.
Public are more getting acquainted to the public meeting and stakeholders meeting which would be organized and held with the guide line and regulation of Myanmar Environmental Law. Most of them are not only participating the meeting but also willing to involve all the process of Environmental and Social Impact Assessment, Mitigation , Monitoring etc.
It is seen that the people living nearby project are willingly to attend the public consultation meeting and ready to help project that they believed this project could create better environment to their livelihood.

11.1 The Objectives and Aims of the Public Consultation

It is to ensure that the views and interests and concerns by the stakeholders are to be taken into account during the potential impact assessment and design of mitigation measures. In addition, the public consultation aims to get and improvement of communication between the project proponent and vulnerable and impact affected people and interested people and groups to this project implementation.
The following are the main focus.

- Stakeholders identification and analysis on all impacts;
- Type of consutation activities to be undertaken with each category of stakeholders
- Principles and ground rules guiding consultation with local communities
- The program for consultation to ensure timely notification of consultation activities and to tie in with key stages in the EIA process.
- Information disclosure, specifically the provision of timely and meaningful information that is accessible to all stakeholders

The review, publication and disclosure of the EIA will include;

- Public meetings to clarify the project and present the assessed impacts, mitigation measures and management
- To receive public comments and recommendation on the impacts and mitigation measures
- Distribution of EIA report to ECD-MONREC, MIC and other interested groups

The report would be attached all discussions in the stakeholder meetings, impact assessments, mitigation measures and management plan of including monitoring and reporting program with photos and test results at all stages if it is available.

Table (21) Summary of Consultation Plans and Activities to be undertaken

No	Phase/Date	Consultation Plan	Location/Venue
1	Scoping Phase	Initial Meeting with Project Proponent with construction designers and contractors	Project Office (done)
2	Impact Assessment Phase	• Face to face with authorities of township and district levels • Face to face at all levels of stakeholders and vulnerable and project affected people	• Project Office (done) • Monestry of Villages (done)
3	Construction Phase (I)	Face to face at all levels of stakeholders and vulnerable and project affected people	• Project Affected Areas* (done)
4	Construction Phase (II)	Face to face at all levels of stakeholders and vulnerable and project affected people	• Project Affected Area*
5	Disclousure Phase	Solicit final comments from public comments and stakeholders	• Project Affected Area*

* 3 miles radius measures from the center of project

11.2 The Methodology and Approach

a) Methodology and Approach
The following were proceeded accordingly which is also to be inline with any guidance for the public consultations procedures.
   1. Preparation of consultation meeting
      (choose tentative date, time and vanue are and confirmed after getting the green light from all parties and authorities etc.)
   2. Invitation to the meeting
      (Hard and soft copies of invitations were sent to all stakeholders and the venyle poster was installed infront of the project site, on 10 days advance of meeting date.)
   3. Registration for the attendance
      All attendees are reguested to sign on the list of attendance at the entrance of meeting room.
   4. Explanation about the project
      (During the meeting the detailed information about the project, the project proponent, the nature of project, the implementation schedule, potential impacts and mitigation procedures etc. were clearly informed by the help of power point, graphs and pictures by responsibled persons.)
   5. Open to all for Questions and Answers and recording
      (After comprehensive explanation about the project by respective parties, it was opened to floor for their questions for clearification and advices without any restriction and time limimit.)
   6. Cencus during meeting and vote recording
      (After the explanation and Q&A secion, the attendees were requested for the census and their personal idea/request/advice and free to submit the votes.)
   7. Conclution and further announcement if it is needed

b) Brief about discussion and Implementation
At all meetings, the brief about project, implementation and potential impacts should be clearly explain before discussion and enough time would be provided for Q&A.

c) Meeting Outcomes
The meeting outcomes would be recorded.

d) Information disclousure
During consultation, the outcome from the stakeholders and discussions would be publized to be acknowledged by all levels.

11.3 The summary of public consultation meeting

The public consultation was coorganizged with KKS Engineering Co.,Ltd and Gold AYA Motors International Group Co.,Ltd at the meeting hall of MMID zone office on July 5,2018. The invitations were sent one week in advance and the announcement written on venyle was installed at the project site for all who are concerned to this project. At the meeting all are welcomed and registered. The introduction, description of project, the potential impact and its mitigation were presented at the meeting with concerned personals such as third party, project proponent, the local administerator and project developer of MMID. All detailed discussions are attached on the annex.

Preparation of Stakeholders Meeting

Public consultation or stakeholders meeting is a key aspect of the EIA process that could make cruicial to make decision by the authority. It also provides stakeholders to get opportunities to comment on the proposed project(s) as well as on the reports that are produced during each phase of the EIA. It is enables the affected

communities to actually be a part of the solutions when it comes to mitigating impacts or implementing management measures.

After getting agreement on the date, time and the vanue to be performed the public consultation meeting, among the project proponent and the consultant, firstly it was informed to the authorities. Then the printing invitation and distribution started after getting the acknowledgement and the approvement from the concerned departments such as township/village general administration office and the management of MMID. The public transportationa were also provided to the vanue for those needed to attend the meeting.

The invitation, the public announcement vinyle, the meeting backdrop, the attendance list and the stakeholders input forms are attached to the annex.

<u>The public consultation and declaration</u>

The assessment trip was made to Myotha project side with concerned authorities from project proponent side and the assessments weres taken placed on May.4,2018 and July.5,2018 including public consultation with stakeholders and local villagers.

During assessment study, it could get the base line environmental data, the potential impacts which could be affected by the project implementation and interviewed with government authorities of Nganzun township level and local villagers.

The public consultation meeting was held as following
Table (1.12) Summary of Consultation Activities Undertaken

No	Date	Description	Venue
1	May.4,2018	Government Officials of Ngazun township and all people who concerned the project	Ngazun township general administration office
2	July.5,2018	Public Consultation with Local resident, CSO, NGO, Government Officials of Ngazun township and all people who concerned the project	MMID meeting room

Attendance at Stakeholders Meeting
The meeting was open to all and not limited to the ones who had attended the meeting from far and nearby. Furthermore, it was also announced to participate not only in the scheduled consultation meetings, but also provided the access to project office, third party office and the general administration office or ECD offices. The project affected people and the focal of invitation to the stakeholders meeting while local and traditional leaders, representatives of the community potential vulnerable groups such as women and youth were consulted to understand their specific issues and concerns. The government officials, NGOs and political parties were among the invitation list. Pls find the list of attendees on the attachments.

Stakeholders Meeting
There were numbers of times of stakeholders meetings if it is possible to get remarks to this project with official official scheduled meetings and individual.

Eventhough the meeting place or venues are differ from each other among conference style or individual office, the meeting agenda are always based on the methodology of explaining about the meeting, the nature of project and what impacts would be expected and how to mitigate or find alternatives.

Meeting at General Administration Department, Nganzun Township, Myinchan District, Mandalay Division Region

Deliverable that will be presented in public meetings shall include power point presentations in traditional language(s) with key messages including,

- The detailed explanation of project
- The explanation about potential impacts and detailed management plan to avoid or mitigate
- Expectations management around capacity building (employment, purchasing, contracting)
- Corporate Social Responsibility and emergency evacuation

Then it always provided Q&A sections and comments or suggestions from their points of view. In conclusion, the sensus is taken by the assessment team by answering the formatted questions at IFC performance standard guideline and recorded officially.

Remarks and Comments at Stakeholders Meeting

All discussions, comments, questions, suggestion, remarks and agreements are recorded officially and compiled with the Scoping and EIA report as part of the contents.

A combination of various types of consultation techniques will be used such as face to face individual meeting, focus group discussions (women, youth and indigenous people.,etc), public meetings and sample household socioeconomic surveys.

For this project, overall public consultations were designed by deviding project affected people of 3 miles radius of the project site including land owners and township & district level of authorites in Myingyan Township and District level in Mandalay Division Region.

11.4 Meeting Outcomes, (the discussion points and the company's commitments)

All detailed discussions and answers are recorded and attached to this report on annex. Among the discussion in summary, the employment or job creation by this project is widely concerned.This project would affect neighbors both positive and negative. The mitigation of impacts is possible.There won't affect negative social impact. It could create more job opening, positive impact to the economic development by increasing GDP and export earning by this project.

From the proponent site, all discussions are accepted and committed. It is committed to announce the job vacancies and employ priority to the nearby residents. It is also announced and committed to allocate the CSR fund and environmental fund.

Meeting Outcomes
During consultation, the most outcome is no rejection by the stakeholders and also support the project as they all realized this project is beneficial to all not only the project proponent but also local and national levels.

Table (22) The discussion points or request at the meetings and the company's commitments & progress

No.	Discussion points or request	Agreement or Commitment by Project Proponent	Progress
1	To acknowledge the vacancies at the factory reserve the priority right to the local residents	Agreed to announce the vacancies well ahead and give priority to the local residents	Done
2	To provide regular capacity training for local residents	Agreed as it is allocated the CSR fund	Coordination with MONREC & local authority
3	To sell vehicles to local residents with bank loan program	Agreed to sell vehicles with bank loan	Discussion with banks

In addition, the development program to the people affected by this project implementation
The following are the commitment for the community development and project affected people by the implementation of this project.

(1) To give priority of appointing to the people for geeting employment if there are vacencies.
(2) To use prevention measures on mitigation of impacts as much as possible and to promote community development.
(3) To promote CSR activities always.

If the allotted fund is not enough, the project proponent would be use additional fund by getting approval from the nearest board of director meeting.

11.5 The Information Disclousure

The EIA report with the information about the project plan, implementation, the potential impact, mitigation, monitoring, environmental management plan including the public consultation meeting would be publized on the web site of both project proponent and environmental consultant's website accordingly to be acknowledged by all levels enthusiatics & concerned.

The Website reference:

www.kaungkyawsay.com
www.goldayamotors.com

Furthermore, the hard copy would be available at project office when it is approved by MONREC.

12.Conclusion

This project is the type of aiming for the industrial development and incresement of nation's income generation development.

To be inlined with environmental law, it was conducted and submitted this EIA report for all findings and plans on environmental and social economy for this project. The aim of the study and this report are intended to identify the potential impacts at during construction & operation stages and to inform about committements and the plans on mitigation and environmental management.

Due to the changes in politic and social which is practicing transparency to projects effected impacts to environment and social by project implementation, Gold A Y A Mtors Iternational Group Co.,Ltd is following the environmental law for the impact assessment with the legal support from Kaung Kyaw Say Engineering Co.,Ltd.

Kaung Kyaw Say Engineering Co.,Ltd is providing this report not only for profit but also obligation after taking assessment and public consultation with local residents, stakeholders, CSO and non government organization done by systematically at international standard.

Based on the nature of business it is found out that it would be both positives and neglecgible negative impacts. With the workforce to this project is needed there are emplolyment opportunities and it could definitely creates the positive impacts in social. It is also found out the potential impacts during the assessment but there are many ways on mitigation of impacts to develop no impacts or least impacts by exercising the good practices such as noise controlling, the waste collection and management and fire & diasaster prevention (as shown in EMP report details).

This report has provided a full picture of all potential environmental and social impacts which could be associated by this project and could be managed mitigation measures during construction and operation stages. At these stages, most of the impact findings are minors and controllable such as dust, air pollution, noise, waste generation, water pollution, occupational health and safety etc.

Not only plan on the mitigation of negative impacts is developed there will be positive impacts by this proposed project which will generate local employment opportunities and also to enhance their capabilities and work skill that would be resultant to the improvement of their social economic condition. It is not an issue that the government will be benefitted to increase a certain amount of revenue by this project.

This report has provided comprehensive good practices to the environmental and social management including emergency response and disaster relief program with the instruction of reporting schedule.

The following recommendations would be taken into account for further development and sustainability of this projct.

1. Should always abide the environmental policy, law and other related laws as mentioned in chapter 5.
2. Should implement and always check on waste water treatment and 3Rs program.
3. Should always do the implementation of EMP report such as monitoring, reporting and capacity building at all levels especially with the new employees.
4. Occupational Health and Safty is also needed while fully implementing of CSR is an obligation so as to be regarded as good investor to the neighborhood and to get sustainable support.

The capacity building to the employees would be arranged together ECD of MONREC by trainings and courses when it is necessary.

There were public participation and support during assessment and consultation meeting as they all realized this project would provide positive impact to them due to the nature of job. By creation of jobs, it is the positive impact to their social and livelihood and expected to get employed.

It could be verified this project as no significant negative or adverse impacts. It is the project that could help GDP, the SME sector development and productivity in the region as well as generate direct and indirect employment in the area. It is already allocated funds for environmental and social conservation which is 2% of the annual profit. It is environmentally and socially sustainable if it complies with this environmental management and monitoring program in due course of the time.

In conclusion, Gold A Y A Motors International Group Co., Ltd's the proposed project has prospective for the regional development and poverty reduction while increasing income generation and national revenue. This project could be sustainable to the development by increasing employment opportunity and in come generation. This project aims to develop Motor Assembling Plant (Gold A Y A Motors International Group Co.,Ltd) located at Plot No.B-1-1 of Block Factory Area Zone 2C, Myotha Industrial Park Between Myotha and Nabu Ain village, total land area (20.10)Acres in Ngazun Township, Myingyan District of Mandalay Division Region with foreigner investment law is planned to develop not only for the region but also to increase of GDP. It would be definitely benefitted to all sorts of corners. Hence, it is needed not only for the region but also for the country as a supporting project to economic sector development.

Annexes

Project Description and all supporting informations such as photos, charts and test results would be attached in this section.