



**SCOPING REPORT AND TERMS OF REFERENCE
for
ENVIRONMENTAL IMPACTS ASSESSMENT
of
THE CONSTRUCTION AND LEASING
of
Sun City Project
at
Buu-lae Inn Village Tract, Bago Township, Bago Region
by
Sun City Bago Industrial Land Development Limited**



(Myanmar Environment Sustainable Conservation)

September, 2019



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အကျဉ်းချုပ်အစီရင်ခံစာ

ဤနယ်ပယ်အတိုင်းအတာ သတ်မှတ်ခြင်းအစီရင်ခံစာနှင့် ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်းအတွက် လုပ်ဆောင်ရမည့်လုပ်ငန်းတာဝန်များသည် Sun City Bago Industrial Land Development လီမိတက်မှ Sun City စီမံကိန်း (စက်ရုံနှင့် ရုံးခန်းအဆောက်အဦများ) တည်ဆောက်ခြင်းနှင့် ငှားရမ်းခြင်းလုပ်ငန်းအတွက် ဖြစ်သည်။

Sun City Bago Industrial Land Development လီမိတက်သည် အောက်တိုဘာလ ၂၀၁၈ ခုနှစ်တွင် မှတ်ပုံတင်ထားသော ကုမ္ပဏီတစ်ခု ဖြစ်သည်။ (ကုမ္ပဏီမှတ်ပုံတင်အမှတ်- ၁၀၇၂၄၅၅၆၁၊ ရက်စွဲ- ၁၂-၁၀-၂၀၁၈)

အဆိုပြုတင်ပြသော စီမံကိန်းနေရာသည် ညောင်အင်းလမ်းမကြီးပေါ် (ပဲခူး-တိုက်ကြီးလမ်းမ) မြေကွက်အမှတ်-၁၁၇၆၊ နဂုတ်ကြီးကွင်း၊ ဘူးလယ်အင်းကျေးရွာအုပ်စုနှင့် အကွက်အမှတ်-အိုအက်စ်အက်စ်-၇၆၊ ကြေးတိုင်ပြင်၊ ဝါးမရမ်းကျေးရွာအုပ်စု၊ ပဲခူးခရိုင်၊ ပဲခူးမြို့နယ်၊ ပဲခူးတိုင်းဒေသကြီးတွင် တည်ရှိပါသည်။

၎င်းသည် ရန်ကုန်မြို့၏ အရှေ့မြောက်ဘက် (၃၇)မိုင်နှင့် ပဲခူးမြို့၏ အနောက်တောင်ဘက် (၅.၇)မိုင်အကွာတွင် တည်ရှိပါသည်။

စီမံကိန်းနေရာ အလည်တည့်တည့်၏ ကိုဩဒိနိတ်များမှာ မြောက်လတ္တီတွဒ် ၁၇ ဒီဂရီ၊ ၁၅ မိနစ်၊ ၁၃.၉၂ စက္ကန့်၊ အရှေ့လောင်ဂျီတွဒ် ၉၆ ဒီဂရီ၊ ၂၄ မိနစ်၊ ၀၇.၄၂ စက္ကန့် ပင်လယ်ရေမျက်နှာပြင်အထက် ၈၅ ပေ ဖြစ်ပါသည်။

စီမံကိန်းနေရာ၏ စုစုပေါင်းဧရိယာမှာ ၈၃.၃ ဧကဖြစ်ပြီး အဆိုပြုစက်ရုံနှင့် ရုံးခန်းအဆောက်အဦများ တည်ဆောက်မည့်ဧရိယာမှာ ၄၉ ဧက ဖြစ်သည်။

ယခင်က မြေအမျိုးအစားမှာ ဦးပိုင်မြေနှင့် ကြေးတိုင်ပြင်မြေဖြစ်ပြီး ယခုအခါတွင် စက်မှုမြေအဖြစ် ပြောင်းလဲသွားသည်။ မြေငှားရမ်းမှုသက်တမ်းမှာ နှစ်(၅၀) (၂၀၁၉-၂၀၆၉) ဖြစ်သည်။

ခန့်မှန်းဘတ်ဂျက်မှာ အမေရိကန်ဒေါ်လာ ၂၃,၀၀၀,၀၀၀ ဖြစ်သည်။

စီးပွားရေးအမျိုးအစားမှာ Sun City Hong Kong Industrial Co., Ltd (၉၉ ရာခိုင်နှုန်း)နှင့် ဦးမျိုးအောင် (၁ ရာခိုင်နှုန်း) အကျိုးတူပူးပေါင်းသော လုပ်ငန်းဖြစ်ပါသည်။ လုပ်ငန်းအမျိုးအစားမှာ စက်ရုံနှင့် ရုံးခန်းအဆောက်အဦများ တည်ဆောက်ခြင်းနှင့် ငှားရမ်းခြင်း ဖြစ်သည်။

အဆိုပြု (၄၉)ဧကကို ဇန် (၉)ခု ပိုင်းခြားထားပါသည်။

- စက်ရုံ (၁၂)လုံး သံထည်အဆောက်အအုံ အရွယ်အစား၊ ၁၀၀ မီတာ x ၃၀ မီတာ x ၁၅ မီတာ (တစ်ခုစီ)၊
- စက်ရုံ (၂)လုံး သံထည်အဆောက်အအုံ အရွယ်အစား၊ ၈၀ မီတာ x ၃၀ မီတာ x ၁၅ မီတာ (တစ်ခုစီ)၊
- စက်ရုံ (၁)လုံး သံထည်အဆောက်အအုံ အရွယ်အစား၊ ၇၀ မီတာ x ၃၀ မီတာ x ၁၅ မီတာ၊
- L ပုံစံ စက်ရုံ (၁)လုံး သံထည်အဆောက်အအုံ အရွယ်အစား၊ ၆၄ မီတာ x ၅၆ မီတာ x ၂၃.၈ မီတာ x ၃၃ မီတာ x ၄၀.၂ မီတာ x ၂၃.၈ မီတာ၊ အမြင့် ၄ မီတာ x ၄.၅ မီတာ x ၁.၉၃၅ မီတာ (စက်ရုံအားလုံးသည် တစ်ထပ်တည်းသာ ဖြစ်ကြသည်။)
- ရုံးခန်းအဆောက်အအုံ (၁၄)လုံး၊ ကွန်ကရစ်အဆောက်အအုံ၊ အရွယ်အစား ၄.၂ မီတာ x ၃.၆ မီတာ x ၃.၆ မီတာ၊ (အဆောက်အအုံအားလုံး (၃)ထပ်၊ စုစုပေါင်းအဆောက်အအုံ (၃၀)လုံး)

စီမံကိန်းအဆိုပြုတင်ပြသူသည် စက်ရုံ (၁၆)လုံးနှင့် ရုံးခန်းအဆောက်အအုံ (၁၄)လုံးတို့ကို စက်ရုံလည်ပတ်ရန် စိတ်ဝင်စားသည့်သူများကို ငါးရမ်းမည်။ မီးခိုးမထွက်သော စက်ရုံ၊ အဝတ်အထည်စက်ရုံများ၊ ကလေးကစားစရာစက်ရုံများ အစရှိသည်တို့ကို ဦးစားပေးငါးရမ်းမည်။

SCBILD လီမိတက်သည် မည်သည့်စက်ရုံစီမံကိန်းလည်ပတ်မှုတွင်မှ မပါဝင်ပေ။ သို့ပေမယ့် ဒေသအာဏာပိုင်များဖြင့် ဆက်ဆံရန် ဤစက်ရုံစီမံခန့်ခွဲမှုကော်မတီအဖွဲ့ဝင်အဖြစ် ပါဝင်ဆောင်ရွက်မည်။

စီမံကိန်းကာလမှာ -

- အကြိုတည်ဆောက်ရေးကာလ - ၁ နှစ်
- တည်ဆောက်ရေးကာလ - ၃ နှစ်
- စီမံကိန်းလည်ပတ်စဉ်ကာလ - ၅၀ နှစ်
- စီမံကိန်းပိတ်သိမ်းချိန်/ပြန်လည်ရှင်သန်ခြင်းကာလ - ၁ နှစ် တို့ဖြစ်သည်။

တည်ဆောက်ရေးကာလအတွင်းတွင် တည်ဆောက်ရေးလုပ်သား (၁၇၆)ဦးနှင့် နိုင်ငံခြားသား (တရုတ်) (၁)ဦး အလုပ်ခန့်အပ်မည် ဖြစ်သည်။

စီမံကိန်းလည်ပတ်စဉ်ကာလအတွင်းတွင် ပထမနှစ် ဝန်ထမ်း (၂၀)ဦး (နိုင်ငံသား (၁၇)ဦးနှင့် တရုတ် (၃)ဦး) ခန့်အပ်မည်။ နောက်ဒုတိယနှစ်တွင် ဝန်ထမ်း (၄၀)ဦး (နိုင်ငံသား (၃၄)ဦးနှင့် တရုတ် (၆)ဦး) ခန့်အပ်မည်။

သွားရေးလာရေး

စီမံကိန်းနေရာသည် သွားရေးလာရေး အဆင်ပြေပြီး ပဲခူး-တိုက်ကြီးလမ်းမကြီးပေါ်တွင် ရှိပါသည်။

လျှပ်စစ်

လျှပ်စစ်ကို အစိုးရဂရစ်လိုင်းမှ ရယူသုံးစွဲမည်။ (အမှန်တကယ်တွင် ဗိုအားပြင်းလျှပ်စစ်ကြိုးလိုင်းသည် စီမံကိန်းနေရာအပေါ် အနောက်မှ အရှေ့သို့ ဖြတ်သန်းသွားပါသည်။ သို့ပေမယ့် လျှပ်စစ်ကို ဓာတ်အားခွဲရုံတစ်ခုမှ ရယူသုံးစွဲမည်။)

နှစ်စဉ် လျှပ်စစ်လိုအပ်ချက်မှာ သန်း ၂၅၀ ကီလိုဝပ် (၁၅၀၀၀ KVA) ဖြစ်သည်။

ရေ

ရေကိုအနက်ပေ (၂၈၀)ရှိ မြေအောက်ရေမှ ရယူသုံးစွဲမည်။ (၆)လက်မတွင်း (၆)တွင်း တူးမည်။ လိုအပ်လျှင် အနီးရှိ ဗိုက်ပူမချောင်းမှ ရယူမည်။

နှစ်စဉ်ရေလိုအပ်ချက်မှာ ၈၅,၂၀၄,၈၀၀ ဂါလံ (၃၂၇၈၉၄ တန်) ဖြစ်သည်။

လောင်စာဆီ

နှစ်စဉ်လိုအပ်ချက်မှာ-

- ဒီဇယ် - ၅၃၀၀ ဂါလံ
- ဓာတ်ဆီ - ၃၀၀၀ ဂါလံ
- အင်ဂျင်ဝိုင် - ၂၀ ကီလိုဂရမ်
- စက်ဆီ၊ ချောဆီ - ၂၀ ကီလိုဂရမ်တို့ ဖြစ်ပါသည်။

စီမံကိန်းအဆိုပြုတင်ပြသူသည် အဆိုပြုတင်ပြသောစီမံကိန်းအတွက် ပတ်ဝန်းကျင်ထိခိုက်မှု ဆန်းစစ်ခြင်း (EIA) အစီရင်ခံစာဆောင်ရွက်ရန် မြန်မာ့ပတ်ဝန်းကျင်ရေးရာဌာနတည်တံ့ရန်ထိန်းသိမ်းရေး ကုမ္ပဏီလီမိတက် (MESC) နှင့် သဘောတူစာချုပ် ချုပ်ဆိုခဲ့ပါသည်။ ပတ်ဝန်းကျင်ထိခိုက်မှု ဆန်းစစ်ခြင်း (EIA) ၏ အကြိုလုပ်ငန်းတစ်ခုဖြစ်သော နယ်ပယ်အတိုင်းအတာသတ်မှတ်ခြင်း ကွင်းဆင်းဆောင်ရွက်မှုကို ပြုလုပ်ခဲ့ပါသည်။ ပြီးပြည့်စုံသောလေ့လာမှုကို နယ်ပယ်အတိုင်းအတာ သတ်မှတ်ခြင်း အစီရင်ခံစာပြီးနောက် ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်း(EIA)လုပ်ငန်းတွင် ဆောင်ရွက်ပါမည်။

နယ်ပယ်အတိုင်းအတာသတ်မှတ်ခြင်းနှင့် ဆန်းစစ်ခြင်းဆောင်ရွက်ရမည့် လုပ်ငန်းတာဝန်များ သတ်မှတ်ခြင်း အစီရင်ခံစာသည် သက်ဆိုင်ရာအာဏာပိုင်အား လိုအပ်သော အချက်အလက်များကို ထောက်ပံ့ပေးသော နည်းလမ်းတစ်ခုဖြစ်ပြီး အဆိုပြုတင်ပြလာသော စီမံကိန်းကို ခွင့်ပြုချက်ပေး၊

ဆုံးဖြတ်နိုင်ရန် ဖြစ်သည်။ ဤအစီရင်ခံစာ ပြင်ဆင်ခြင်းကို သယံဇာတနှင့် သဘာဝပတ်ဝန်းကျင် ထိန်းသိမ်းရေးဝန်ကြီးဌာန- MONREC)အောက်ရှိ ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဦးစီးဌာန(ECD)မှ ချမှတ် ထားသော လမ်းညွှန်ချက်၊ အမိန့်ကြော်ငြာစာအမှတ်- ၆၁၆/၂၀၁၅ လုပ်ထုံးလုပ်နည်းများအတိုင်း ပြင်ဆင် ရေးသား ထားပါသည်။

ဤအစီရင်ခံစာ ပြင်ဆင်ခြင်းကို အထက်မှာ ရှင်းပြထားသော ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်း လုပ်ထုံးလုပ်နည်း၏ အခန်း ၄၉ (က၊ ခ၊ ဂ၊ ဃ၊ င၊ စ၊ ဆ)၊ ၅၀ (က၊ ခ) နှင့် ၅၁ (က၊ ခ၊ ဂ၊ ဃ၊ င၊ စ၊ ဆ၊ ဇ) အတိုင်း လိုက်နာရေးသား ထားပါသည်။

နယ်ပယ်အတိုင်းအတာသတ်မှတ်ခြင်း အစီရင်ခံစာနှင့် ဆန်းစစ်ခြင်းဆောင်ရွက်ရမည့် လုပ်ငန်း တာဝန်များသတ်မှတ်ခြင်းတို့ကို ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်း(EIA) အစီရင်ခံစာတစ်ခုအဖြစ်သို့ ပေါင်းစည်းရေးသား ရပါသည်။ ဆန်းစစ်ခြင်းဆောင်ရွက်ရမည့် လုပ်ငန်းတာဝန်များသတ်မှတ်ခြင်းသည် နယ်ပယ်အတိုင်းအတာသတ်မှတ်ခြင်းရလဒ်မှ တိုက်ရိုက်လိုက်နာခြင်းနှင့် အကျိုးသက်ရောက်သော ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်း(EIA) လေ့လာခြင်းလုပ်ငန်းကို နောင်လာမည့် ပတ်ဝန်းကျင်ထိခိုက်မှု ဆန်းစစ်ခြင်း(EIA) အစီရင်ခံစာတွင် လုပ်ဆောင်သွားပါမည်။

နယ်ပယ်အတိုင်းအတာသတ်မှတ်ခြင်းနှင့် ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်းဆိုင်ရာ အစီရင်ခံစာ သည် အဆိုပြုထားသော လုပ်ငန်းအတွက် သက်ဆိုင်ရာ အာဏာပိုင်အဖွဲ့အစည်းများက ဆုံးဖြတ်ချက် ချရန်၊ လိုအပ်သော သတင်းအချက်အလက်များကို ထောက်ပံ့ပေးသော နည်းလမ်းတစ်ခု ဖြစ်သည်။

ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်း(EIA)အတွက် ဆန်းစစ်ခြင်းဆောင်ရွက်ရမည့် လုပ်ငန်း တာဝန်များသတ်မှတ်ခြင်းသည် ဧရိယာ၏ ရုပ်ပိုင်းဆိုင်ရာ၊ ဇီဝပိုင်းဆိုင်ရာ၊ လူမှုစီးပွားရေးဆိုင်ရာ၊ ယဉ်ကျေးမှုဆိုင်ရာနှင့် မျက်စိပဒေသာဖြစ်သော ရှုခင်းရှုကွက်များအပေါ် ပြည့်စုံသော အခြေခံ အချက်အလက်များကို ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်း(EIA) ကွင်းဆင်းဆောင်ရွက်ချိန်အတွင်းတွင် စုဆောင်းတင်ပြမည်။

အစီရင်ခံစာတွင်ပါဝင်သည့်အကြောင်းအရာများ

အခန်း(၁)သည် စီမံကိန်းအကြောင်းအရာ ဖြစ်သည်။ အစောပိုင်းက ရှင်းပြသကဲ့သို့ Sun City Bago Industrial Land Development လီမိတက်သည် အောက်တိုဘာလ၊ ၂၀၁၈ ခုနှစ်တွင် တရားဝင် မှတ်ပုံတင်ထားသော ကုမ္ပဏီတစ်ခု ဖြစ်သည်။

SCBLD လီမိတက်သည် Sun City Hong Kong Industrial ကုမ္ပဏီလီမိတက် (၉၉ ရာခိုင်နှုန်း) နှင့် ဦးမျိုးအောင် (၁ ရာခိုင်နှုန်း)ဖြင့် အကျိုးတူပူးပေါင်းသော ကုမ္ပဏီဖြစ်သည်။

အဆိုပြုစီမံကိန်းတွင် မြေဧက ၄၉ ဧကပေါ်တွင် စက်ရုံနှင့် ရုံးခန်းအဆောက်အဦများ တည်ဆောက်ခြင်း ပါဝင်သည်။ စက်ရုံ (၁၆)လုံးနှင့် ရုံးခန်း (၁၄)လုံး စုစုပေါင်း အလုံး(၃၀)

တည်ဆောက်မည်။ စက်ရုံအားလုံးကို ငှားရမ်းမည် ဖြစ်သည်။ စီမံကိန်းအဆိုပြုတင်ပြသူသည် စက်ရုံ စီမံခန့်ခွဲမှုတွင် ပါဝင်မည်။

ဤအကြောင်းအရာကို အခန်း(၁)တွင် အကျဉ်းချုပ် ဖော်ပြထားပါသည်။ အသေးစိတ်ကို နောင်လာမည့် ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်း(EIA) အစီရင်ခံစာတွင် ထည့်သွင်းဖော်ပြမည်။

အခန်း(၂)တွင် ပတ်ဝန်းကျင်ဆိုင်ရာ မူဝါဒ၊ တရားရေးရာနှင့် ဖွဲ့စည်းပုံမူဘောင်တို့ ပါဝင်ပါသည်။ ဤအခန်းတွင် အမျိုးသားပတ်ဝန်းကျင်ဆိုင်ရာ မူဝါဒ၊ သက်ဆိုင်သောဥပဒေများနှင့် စီမံကိန်းအဆိုပြု တင်ပြသူမှလိုက်နာရန် စက်ရုံတည်ဆောက်ခြင်းအတွက် နိုင်ငံတကာစံချိန်စံညွှန်းများနှင့် လမ်းညွှန်ချက် များနှင့်အတူ အမျိုးသား ပတ်ဝန်းကျင်ဆိုင်ရာထုတ်လွှတ်မှု အရည်အသွေး(NEQEG) လမ်းညွှန်ချက်တို့ ပါဝင်ပါသည်။

ဤအကြောင်းအရာများကို နောင်လာမည့် ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်း(EIA) အစီရင်ခံစာ တွင် အသေးစိတ် ဖော်ပြပါမည်။

အခန်း(၃)သည် စီမံကိန်းအသေးစိတ်အကြောင်းအရာနှင့် အခြားဆောင်ရွက်နိုင်သော နည်းလမ်းများ ဖြစ်သည်။ ဤအခန်းတွင် ဖွံ့ဖြိုးမှု၊ စီမံကိန်းအဆိုပြုတင်ပြသူအကြောင်း၊ အတိုင်ပင်ခံ အဖွဲ့အစည်းအကြောင်း၊ စီမံကိန်းနေရာ၊ လွှမ်းခြုံမြေပုံနှင့် အဆောက်အဦအပြင်အဆင်၊ စက်ရုံတည်ဆောက် ခြင်း၊ စက်မှုဇုန်စီမံခန့်ခွဲမှု၊ အစိုင်အခဲနှင့် အရည်စွန့်ပစ်ပစ္စည်းများကို စီမံခန့်ခွဲမှုနှင့် စီမံကိန်း၏ အခြားကိစ္စရပ်များ ပါဝင်ပါသည်။ နောက်ဆုံးတွင် စီမံကိန်းဆိုင်ရာ အခြားဆောင်ရွက်နိုင်သော နည်းလမ်းများအကြောင်း ဖော်ပြထားပါသည်။

ဤအကြောင်းအရာများကို ဤနယ်ပယ်အတိုင်းအတာသတ်မှတ်ခြင်း အစီရင်ခံစာထဲတွင် အကျဉ်းချုပ်ဖော်ပြထားပြီး နောင်လာမည့် ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်း (EIA) အစီရင်ခံစာတွင် အသေးစိတ် ဖော်ပြမည်။

အခန်း(၄)သည် ပတ်ဝန်းကျင်အခြေအနေ အသေးစိတ်အကြောင်းအရာ ဖြစ်သည်။ ဤနယ်ပယ် အတိုင်းအတာသတ်မှတ်ခြင်း ကွင်းဆင်းဆောင်ရွက်ချိန်အတွင်းတွင် လျင်မြန်သော ကွင်းဆင်းဆောင်ရွက် ခြင်းတစ်ခု ဆောင်ရွက်ခဲ့ပါသည်။ ပြီးပြည့်စုံသော ကွင်းဆင်းဆောင်ရွက်ခြင်းတစ်ခုကို နောင်လာမည့် ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်း(EIA) လေ့လာမှုတွင် ဆောင်ရွက်မည် ဖြစ်သည်။ ပတ်ဝန်းကျင်၏ ရုပ်ပိုင်းဆိုင်ရာ၊ ဇီဝပိုင်းဆိုင်ရာ၊ လူမှုစီးပွားရေးဆိုင်ရာ၊ ယဉ်ကျေးမှုဆိုင်ရာနှင့် မျက်စိပဒေသာဖြစ်သော ရှုခင်းရှုကွက်ဆိုင်ရာတို့ကို လေ့လာပါမည်။

စီမံကိန်းနေရာသည် ဘူးလယ်အင်းကျေးရွာအုပ်စုနှင့် ဝါးမရမ်းကျေးရွာအုပ်စု၊ ပဲခူးမြို့နယ်တွင် တည်ရှိပါသည်။ ၎င်းသည် ပဲခူးမြို့၏ အနောက်တောင်ဘက် ၅.၇ မိုင်အကွာတွင်တည်ရှိပြီး ပဲခူး- တိုက်ကြီးလမ်းမ အရှေ့မှ အနောက်သို့ အပြိုင်ဖြစ်နေပါသည်။ စီမံကိန်းနေရာသည် ရန်ကုန်-နေပြည်တော်

အမြန်လမ်းမကြီးနှင့် ရန်ကုန်-မန္တလေးအမြန်လမ်းမကြီး၏ အကြားတစ်ဝက်တွင်ရှိပြီး အဆိုပါလမ်းများမှာ တောင်မှ မြောက်သို့ ဦးတည်နေပါသည်။

အနီးနားတွင် သဘာဝသစ်တော မရှိတော့ပေ။ ချုံနွယ်များနှင့် လယ်များသာ ရှိတော့သည်။ အရိပ်ရ အပင်များနှင့် အသီးပင်များသည် ရွာထဲနှင့် လမ်းမဘေးတစ်လျှောက်တွင်သာ တွေ့ရတော့သည်။

ဤနယ်ပယ်အတိုင်းအတာသတ်မှတ်ခြင်း အခန်းကဏ္ဍတွင် ပတ်ဝန်းကျင်အခြေအနေကို အကျဉ်းချုပ်မျှသာ ဖော်ပြထားပါသည်။ နောင်လာမည့် ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်း(EIA) လေ့လာ မှုတွင် ပတ်ဝန်းကျင်၏ ရုပ်ပိုင်းဆိုင်ရာ၊ ဇီဝပိုင်းဆိုင်ရာ၊ လူမှုစီးပွားရေးဆိုင်ရာ၊ ယဉ်ကျေးမှုဆိုင်ရာနှင့် မျက်စိပဒေသာဖြစ်သော ရှုခင်းရှုကွက်များအကြောင်းကို လေ့လာပြီး အသေးစိတ် တင်ပြပါမည်။

အခန်း(၅)တွင် ဖြစ်နိုင်ခြေရှိသော ပတ်ဝန်းကျင်သက်ရောက်မှုနှင့် ဖြေလျော့နိုင်မည့် နည်းလမ်း များကို အကျဉ်းချုပ် ဖော်ပြထားပါသည်။ ဤလျင်မြန်သော နယ်ပယ်အတိုင်းအတာသတ်မှတ်ခြင်း ကွင်းဆင်းဆောင်ရွက်ချိန်အတွင်းတွင် မျှော်လင့်ရသော သက်ရောက်မှုများမှာ တည်ဆောက်ရေးကာလ အတွင်းတွင် (၆)ချက်၊ စီမံကိန်းလည်ပတ်စဉ်ကာလအတွင်းတွင် (၈)ချက်နှင့် စီမံကိန်းပိတ်သိမ်းချိန် ကာလအတွင်းတွင် (၂)ချက်ဟူ၍ အသီးသီး ဖြစ်ပါသည်။ မြေနေရာကို တရားဝင်ရယူထားသောကြောင့် အကြို တည်ဆောက်ရေးကာလတွင် သက်ရောက်မှုမရှိပေ။

အမျိုးအစားခွဲခြားထားပြီး ဖြစ်နိုင်ခြေရှိသော သက်ရောက်မှုများမှာ-
အကြိုတည်ဆောက်ရေးကာလအတွင်းတွင်

- သက်ရောက်မှု မရှိပေ။

တည်ဆောက်ရေးကာလအတွင်းတွင်

- လုပ်ငန်းခွင်ကျန်းမာရေးနှင့် ဘေးအန္တရာယ်ကင်းရှင်းရေး (ဖြစ်နိုင်ခြေရှိသော လုပ်ငန်းခွင် မတော်တဆမှု)
- လေအရည်အသွေးအပေါ်သက်ရောက်မှု
- ဆူညံသံနှင့်တုန်ခါမှုကြောင့်သက်ရောက်မှု
- စွန့်ပစ်ပစ္စည်းကြောင့်သက်ရောက်မှု (တည်ဆောက်ရေးစွန့်ပစ်ပစ္စည်း)
- ဖြစ်နိုင်ခြေရှိသော လူမှုရေးပြဿနာ
- ဖြစ်နိုင်ခြေရှိသော လုံခြုံရေးပြဿနာ

တည်ဆောက်ရေးကာလအတွင်းတွင် ဖြစ်နိုင်ခြေရှိသော သက်ရောက်မှုအားလုံးသည် ၃ နှစ်သာ ဖြစ်သည်။

စီမံကိန်းလည်ပတ်စဉ်ကာလအတွင်းတွင်

- ဖြစ်နိုင်ခြေရှိသော ယာဉ်ကြောပိတ်ဆို့မှု ပြဿနာ၊
- လေအရည်အသွေးအပေါ်သက်ရောက်မှု၊
- ဆူညံသံနှင့် တုန်ခါမှုကြောင့်သက်ရောက်မှု၊
- စီမံကိန်းကြောင့်အစိုးရလှုပ်စစ်မီးအပေါ်သက်ရောက်မှု၊
- စွန့်ပစ်ပစ္စည်းများကြောင့်သက်ရောက်မှု၊
- လုပ်ငန်းခွင်ကျန်းမာရေးနှင့် ဘေးအန္တရာယ်ကင်းရှင်းရေး ပြဿနာ (လုပ်ငန်းခွင် မတော်တဆမှု)၊
- ဖြစ်နိုင်ခြေရှိသော လူမှုရေးသက်ရောက်မှု၊
- ဖြစ်နိုင်ခြေရှိသော လုံခြုံရေးပြဿနာများတို့ ဖြစ်ကြပါသည်။

သက်ရောက်မှုအားလုံးသည် ရေရှည် ဖြစ်သည်။ သို့ပေမယ့် သေချာစီမံခန့်ခွဲမှု ပြုလုပ်လျှင် အကျိုးသက်ရောက်စွာ ဖြေလျော့ နိုင်ပါသည်။

စီမံကိန်းပိတ်သိမ်းချိန်/ပြန်လည်ရှင်သန်ခြင်းကာလအတွင်းတွင်

- ဖြစ်နိုင်ခြေရှိသော လုပ်ငန်းခွင်အတွင်း မတော်တဆမှုများ၊
- ဖြစ်နိုင်ခြေရှိသော ကြွင်းကျန်သက်ရောက်မှုများ၊

ဤအရာများကို အကျိုးသက်ရောက်သော ပြန်လည်ရှင်သန်ခြင်းလုပ်ငန်း ဆောင်ရွက် ခြင်းကြောင့် ဖြေလျော့နိုင်ပါသည်။

ဖြစ်နိုင်ခြေရှိသော ကောင်းကျိုးသက်ရောက်မှုများ

တည်ဆောက်ရေးကာလအတွင်းတွင် မျှော်မှန်းရသော ကောင်းကျိုးသက်ရောက်မှုများမှာ အလုပ်သမား (၁၇၆)ဦး (၃ နှစ်) အလုပ်ရရှိမည် ဖြစ်သည်။ စီမံကိန်းသည် ဒေသ၏ စီးပွားရေးကို တိုးမြှင့် စေပါသည်။

တိုင်းပြည်အနေဖြင့် အမေရိကန်ဒေါ်လာ ၂၃,၀၀၀,၀၀၀ တိုက်ရိုက်ရင်းနှီးမြှုပ်နှံမှုကြောင့် တိုင်းပြည်၏ GDP တိုးလာခြင်း၊ အလုပ်အကိုင်ရရှိမှု မြင့်မားလာခြင်းတို့ ရရှိနိုင်ပါသည်။ နောက်ဆက်တွဲ အနေဖြင့် အကျိုးကျေးဇူးများမှာ တိုင်းပြည်၏ ဘဏ္ဍာဆီသို့ အခွန်ငွေ ရရှိစေ ပါသည်။

စီမံကိန်းလည်ပတ်စဉ်ကာလအတွင်းတွင်

ကောင်းကျိုးသက်ရောက်မှုမှာ စီမံကိန်းလည်ပတ်စဉ်ကာလအတွင်းတွင် အမြဲတန်းဝန်ထမ်း အယောက် (၄၀)ဦး အလုပ်ရရှိမည်။ သူတို့၏ လစာများမှာ ပထမနှစ်တွင် ကျပ် ၂၀၀,၀၀၀ မှ ၅၀၀,၀၀၀ ဖြစ်သည်။ (နိုင်ငံခြားသားအတွက် လစာမှာ အမေရိကန်ဒေါ်လာ ၁၀၀၀ မှ ၁၅၀၀ အထိ ဖြစ်သည်။) ဤဝန်ထမ်းများသည် အခြားဖွံ့ဖြိုးဆဲ နိုင်ငံများကဲ့သို့ စက်ရုံဝန်ထမ်း၏ အကျိုးကျေးဇူးအားလုံး ရရှိမည် ဖြစ်သည်။

ကုမ္ပဏီရှိ ပြည်တွင်းဝန်ထမ်းများသည် တရုတ်ပညာရှင်များမှ နည်းပညာနှင့် ကျွမ်းကျင်မှုအတွက် သင်ယူရန် အခွင့်အရေး ရမည်။

စီမံကိန်းအများစုသည် နိုင်ငံ၏နောက်ထပ် စက်မှုကဏ္ဍဖွံ့ဖြိုးတိုးတက်မှုကို ဖြစ်စေသည်။

စီမံကိန်းနေရာသည် ကျေးရွာဧရိယာ၏ အပြင်ဘက်တွင် တည်ရှိသောကြောင့် ပတ်ဝန်းကျင် လူမှုစီးပွားရေး အပေါ်သက်ရောက်မှု မရှိပေ။ အဆိုပြုစီမံကိန်းကြောင့် မြေနေရာယူခြင်း၊ အငြင်းပွားခြင်းနှင့် အင်အားသုံး ပြောင်းရွှေ့ခိုင်းခြင်း မရှိပေ။ စီမံကိန်းကြောင့် ယဉ်ကျေးမှုဆိုင်ရာ၊ ဘာသာရေးဆိုင်ရာ၊ သမိုင်းနှင့်ဆိုင်သော၊ ရှေးဟောင်းသုတေသနနှင့်ဆိုင်သော အရာများကို သက်ရောက်မှု မရှိပေ။

သက်ရောက်မှု တစ်ခုစီတိုင်းအတွက် ဖြေလျော့နိုင်မည့်နည်းလမ်းများသည် ပတ်ဝန်းကျင်ထိခိုက်မှု ဆန်းစစ်ခြင်း(EIA) အစီရင်ခံစာတစ်ခုတွင် အရေးပါသော အစိတ်အပိုင်းဖြစ်ပြီး ဤအကြောင်းအရာကို နောင်လာမည့် ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်း(EIA) အစီရင်ခံစာတွင် အသေးစိတ်ဖော်ပြ ပါမည်။

အခန်း(၆)သည် လူထုတွေ့ဆုံဆွေးနွေးပွဲ အကြောင်းအရာ ဖြစ်သည်။ အကြိုလူထုတွေ့ဆုံပွဲ နှစ်ပွဲကို ၁၁-၈-၂၀၁၉ ၌ ပုဂံဘိုကျေးရွာနှင့် ဝက်ကုန်းကျေးရွာတွင် ကျေးရွာအုပ်ချုပ်ရေးမှူးများ၊ အဖွဲ့ဝင်များနှင့် ရွာသူရွာသားများဖြင့် ကျင်းပခဲ့ပါသည်။

နယ်ပယ်အတိုင်းအတာသတ်မှတ်ခြင်းအဖွဲ့သည် ဒေသခံများအကြား စီမံကိန်းအား ဆန့်ကျင်မှု မကြားရ၊ မမြင်ခဲ့ရပေ။ ကုမ္ပဏီသည် ဒေသခံများနှင့် ကောင်းမွန်သောဆက်ဆံရေး ရှိပါသည်။

ဌာနဆိုင်ရာပုဂ္ဂိုလ်များနှင့် ဒေသခံများပါဝင်ပြီး ပိုမိုပြည့်စုံသော လူထုတွေ့ဆုံပွဲကို နောင်လာမည့် ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်း(EIA) ကွင်းဆင်းဆောင်ရွက်ချိန်တွင် ပြုလုပ်မည်။ ထို လူထုတွေ့ဆုံပွဲကို ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဦးစီးဌာန(ECD)မှ ချမှတ်ထားသော ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်း(EIA) ပုံစံကို လိုက်နာပြုလုပ်ပါမည်။ (ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်း လုပ်ထုံးလုပ်နည်း၊ အမိန့်ကြော်ငြာစာ အမှတ်- ၆၁၆/၂၀၁၅)

အခန်း(၇)သည် တိုတောင်းသော နိဂုံးနှင့် အကြံပြုတင်ပြချက် ဖြစ်သည်။ စီမံကိန်းအဆိုပြုသူသည် စီမံကိန်းနှင့်သက်ဆိုင်သော ဥပဒေများ၊ နည်းဥပဒေများနှင့် စည်းမျဉ်းများကို လိုက်နာရမည်။ ကုမ္ပဏီသည် ပတ်ဝန်းကျင်ထိန်းသိမ်းရေး ဦးစီးဌာန(ECD)မှ ချမှတ်ထားသော အမျိုးသား ပတ်ဝန်းကျင်ဆိုင်ရာ ထုတ်လွှတ်မှုအရည်အသွေး(NEQEG) လမ်းညွှန်ချက်များကို လိုက်နာမည်။ ဖြေလျော့နိုင်မည့် နည်းလမ်း များကို နောင်လာမည့် ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်း(EIA) အစီရင်ခံစာတွင် အသေးစိတ် ဖော်ပြ ပါမည်။

စီမံကိန်းတစ်ခုလုံးကို ခြုံကြည့်လျှင် စီမံကိန်းကြောင့် အကျိုးကျေးဇူးရရှိမှု များပြားနေသည်ကို ဖော်ပြနေပါသည်။

အခန်း(၈)သည် ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်း(EIA) လေ့လာမှုအတွက် လုပ်ငန်းတာဝန်များ သတ်မှတ်ခြင်းအကြောင်း ဖြစ်သည်။ ဤနောက်ဆုံးအခန်းသည် ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဦးစီးဌာန (ECD) (ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်း လုပ်ထုံးလုပ်နည်း၊ အမိန့်ကြော်ငြာစာအမှတ်- ၆၁၆/၂၀၁၅၊ ပုဒ်မ-၄၉၊ ၅၀၊ ၅၁)မှ ချမှတ်ထားသော လမ်းညွှန်ချက်နှင့် ပုံစံတို့နှင့်အတူ နယ်ပယ်အတိုင်းအတာ သတ်မှတ်လေ့လာခြင်း၏ ရလဒ်များကို အခြေခံ၍ လုပ်ဆောင်ထားပါသည်။

ဤဆန်းစစ်ခြင်း လုပ်ဆောင်မည့် လုပ်ငန်းတာဝန်များသတ်မှတ်ခြင်း၏ ပါဝင်သော အကြောင်းအရာ များဖြစ်သည့် အခန်းများ၊ ခေါင်းစဉ်ခွဲများ ပါဝင်သည်။ ဤပုံစံသည် နယ်ပယ်အတိုင်းအတာသတ်မှတ်ခြင်း အစီရင်ခံစာတင်သွင်းပြီးနောက် နောင်လာမည့် ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်း(EIA) အစီရင်ခံစာ ပြုစုရန်ပုံစံ ဖြစ်သည်။

EXECUTIVE SUMMARY

This is the scoping report and Term of Reference (TOR) for Environmental Impact Assessment (EIA) of the construction and leasing/renting of Sun City Project (Factories Zone/Factories Complex project) by Sun City Bago Industrial Land Development Limited.

Sun City Bago Industrial Land Development Limited (SCBILD) was registered as a private company limited by shares in October, 2018. (Document: Company Registration No.10 7245561; Dated: 12.10.2018)

The proposed project site is on the Nyaung Inn Road (Bago-Taikkyi Road) and located at Plot No.1176, Na Goke Gyi Plot, Buu-lae-inn Village Tract, and Plot No. OSS.76 Kyay Taing Pyin, War-mayan Village Tract, Bago Township, Bago District, Bago Region.

It is 37 miles north east of Yangon City and 5.7 miles south west of Bago City.

The coordinates at the centre of the site are: N. Lat. 17° 15' 13.92" and E. Long. 96° 24' 07.42" and the elevation is 85 ft asl.

The total area from the said two village tract is 83.3 acres out of which 49 acres are designated as factories zone/factories complex.

The type of land is formerly U Paing land and Kyay-taing-pyin land converted into industrial land and the lease period is 50 years (2019-2069).

The estimated budget is US\$ 23,000,000.

The type of business organization is a Joint Venture (JV) between Sun City Hong Kong Industrial Co., Ltd (99%) and U Myo Aung (1%). The type of business is the construction and leasing services of factories and office buildings.

The 49 acres factories zone/factories complex is divided into 9 zones and comprises:

- ❖ 12 factories, steel structure, dimension 100 m × 30 m × 15 m (each)
- ❖ 2 factories, steel structure, dimension 80 m × 30 m × 15 m (each)
- ❖ 1 factory, steel structure, dimension 70 m × 30 m × 15 m
- ❖ 1 L-shaped factory, steel structure, dimension (all factories have only one floor) 64 m × 56 m × 23.8 m × 33 m × 40.2 m × 23.8, height 4 m × 4.5 m × 1.935 m
- ❖ 14 (8+6) administrative offices buildings general purposes buildings, concrete structure; dimension 30 m × 20 m × 4.2 m × 3.6 m × 3.6 m, (all 3-storeyed), totalling 30 buildings.

The project proponent (SCBILD) will lease/rent all the 16 factories and 14 offices buildings to any entrepreneurs who are interested and wanted to operate a factory. Priority will be given to smoke less or eco-friendly factories such as garment/apparel/clothing factories, toys/electronic toys factories and electronic goods factories.

SCBILD will not be involved in operating any factory but will be a member of this factory zone management committee in coordination with local authority.

The life of the project:

Preconstruction Phase	:	1 year
Construction Phase	:	3 years
Operation Phase	:	50 years
Decommissioning/Rehabilitation Phase	:	1 year

During the Construction Phase 176 construction staff/workers and one foreigner (Chinese) will be employed.

During the Operation Phase 20 staffs (17 nationals and 3 Chinese) will be employed in Year 1. From Year 2 and on words 40 staffs (34 nationals and 6 Chinese) will be employed.

Accessibility

The project site is easily accessible by vehicles; it is on the Bago-Taikkyi Road.

Electricity

Electricity will be sourced from the National Gridline. (Actually the high voltage line passes over the site from west to east but electricity will be sourced from a substation).

Annual electricity requirement is estimated at 250 million KW (15000 KVA).

Water

Water will be sourced from underground water at a depth of 280 feet. 6 artesian wells with a diameter of 6 inch each will be bored. There is an additional plan for sourcing water from the nearby Bike-pu-ma Chaung if necessary.

Annual water requirement is estimated at 85,204,800 gallons (327894 tons).

Fuel oils

Annual requirements:

Diesel	:	5300 gallons
Petroleum	:	3,000 gallons
Engine oils, etc	:	20 kg
Lubricants	:	20 kg

The project proponent, SCBILD limited has contracted the consultant firm, Myanmar Environment Sustainable Conservation Co., Ltd (MESCC) to conduct Environmental Impact Assessment (EIA) for the proposed project. As a preliminary component of EIA the scoping survey and rapid assessment of the situation of the site was conducted. The full baseline study of the area will be undertaken when the EIA works commence after this scoping report.

This scoping and the preparation of the Term of Reference (TOR) for the subsequent EIA report is undertaken in accordance with the Environmental Impact Assessment Procedure (Notification No. 616/2015) prescribed by the Environmental Conservation Department (ECD) under the Ministry of Natural Resources and Environmental Conservation (MONREC).

The preparation of this report strictly follows Sections 49 (a, b, c, d, e, f, g); 50 (a, b) and 51 (a, b, c, d, e, f, g, h) of the EIA procedure mentioned above.

The scoping report and Term of Reference (TOR) are combined into single report for preliminary EIA. This ensures that TOR flows directly from the result of scoping exercise and will contribute to effective EIA study and preparation of the follow up EIA report.

The scoping and Term of Reference (TOR) report is structured in such a way that the result provides all necessary information to the relevant authority that will have to make the decision for the approval of the proposed project.

As Term of Reference (TOR) for EIA the full baseline data on the physical, biological, socio-economic, cultural and visual component of the area will be studied when this scoping and TOR report is approved and the follow up comprehensive EIA study commences.

Contents of the report

Section-1 is the context of the project. As already mentioned earlier Sun City Bago Industrial Land Development Limited was registered as a limited company in October, 2018.

SCBILD limited is a joint venture Company between Sun City Hong Kong Industrial Co., Ltd and U Myo Aung; the former owns 99% and the later owns 1% of the shares.

The proposed project involves the construction of a factories zone/factories complex on a 49 acres plot of land. 16 factories and 14 administrative offices/building, totalling 30 buildings will be constructed. All the factories will be leased to interested investors. The project proponent will be involved in the management of the factories complex.

This is briefly described in Section-1. Detail will be provided in the follow up EIA report.

Section-2 deals with overview of environmental policy, legal and institutional frame work. This section briefly covers National Environmental Policy, legal and institutional from work, applicable laws and regulations, for environmental and social standards, National Environmental Quality Emission Guideline (NEQEG) to be complied with and international standards and guideline for construction of factory/factory zone etc.

As a term of reference these will be described in detail in the follow-up EIA report.

Section-3 is about the description of the project and alternative. This section briefly encompasses development sector and subsector comprising the project proponent and about the consultant firm; project location, overview map and layout, the construction factory zone and the management of the zone, solid waste and liquid waste management, and other aspects of the project. Finally the project alternatives and addressed.

These are briefly described in this scoping report and will be described in relative detail in the following EIA report.

Section-4 is about the description of the surrounding environment. A rapid survey was conducted during this scoping survey. A comprehensive survey will be conducted in the follow up EIA study. The physical, biological, socio-economic, cultural and visual components of the surrounding environment will be studied.

The project is in the village tract areas of Buu-lae Inn Village and War-ma-yan Village Tracts, Bago Township. It is 5.7 miles south west of Bago City and on the Bago-Taikkyi Road which runs in east to west direction. The project site is about half way between the main Yangon-Nay Pyi Taw High Way and the Yangon-Mandalay High Way both of which run is a South to North direction.

There is no natural forest in the near and far vicinity, only shrub and scrub land, a few farms here and there. Trees such as shade trees and fruit trees are found only in the villages or along the side of motor roads.

In this scoping section the surrounding environment is very briefly described. In the follow up EIA study the physical, biological, socio-economic, culture and visual characteristics of the environment will be thoroughly studied and reported in technical details.

Section-5 briefly described key potential environmental impacts and mitigation measures. During this rapid scoping survey 6, 8 and 2 potential negative impacts, during the Construction Phase, Operation Phase and Decommissioning Phase, respectively, are anticipated. No impact is anticipated for the Preconstruction Phase as the plot of land was officially acquired (officially leased).

The potential impacts anticipated and identified are:

During the Preconstruction Phase

Not anticipated.

During the Construction Phase

- Occupational health and safety (potential accident at work place)
- Impact on air quality
- Noise and vibration
- Impact of waste (construction waste)

- Potential social issue
- Potential security issue

All are temporary impacts during the Construction Phase of 3 years.

During the Operation Phase

- Potential traffic issue
- Impact on air quality
- Noise and vibration
- Impact of project on gridline electricity and vice versa
- Impact of wastes
- Occupational health and safety issue (accident at work place)
- Potential social impacts
- Potential security issue

All are long term but can be mitigated effectively, if well-managed.

During the Decommissioning Phase/Rehabilitation Phase

- Potential accidents at workplace
- Potential residual impacts

Potential positive (beneficial) impacts

The positive (beneficial) impacts anticipated during the Construction Phase are the provision of jobs (3 years) for up to 176 construction workers. The project will invigorate and boost the local economy and will bring economic benefit to people who are involved in extraction/production and sale of building materials of all sorts, both raw materials and processed ones.

At national level benefit will accrue to the country as a direct investment of US\$ 23,000,000, raising the GDP, and contribute to increase earning and increase employment. Follow up benefit such as taxes, duties, royalties and revenue will go to the national coffer.

During the Operation Phase

The positive impacts during the Operation Phase are the provision of 40 permanent jobs. Their salaries will range from Ks 200,000 to Ks 500,000 in Year 1. (For the foreigners the salaries range from USD 1000 to USD 1500.) These staffs will enjoy all the benefits of a factory staff as in other developing countries.

The company local staffs will get the chance for skill and technology transfer from the Chinese technicians.

Most of all the project will contribute to the further development of the Industrial Sector of the nation.

As the site is outside the village area the impact on the socio-economic of the environment cannot be anticipated. There is no issue of land grabbing, land dispute and forced eviction by the project proponent. There are no cultural, religious, historical, archaeological etc. components to be impacted by the project.

Mitigation measures to be taken for each and every impact/potential impact will be described in technical details in the follow up EIA report.

Since impacts and mitigation measures are the essence of an EIA report these will be described in meticulous details in the follow up EIA report (It is not practical to mention the various options of mitigation measures to be taken for each and every impact in this very short scoping report.).

Section-6 is about public consultation. Two preliminary public consultation meetings were held on 11-8-2019 at the Bagan Bo Village and Wat Kone Village with Administrators, members and villagers. It was more like a pre-sensitizing visit and meeting, briefing them on the project.

The scoping team has not heard or witnessed any anti-project attitude among the locals. The company has on the whole good and cordial relation with the locals.

A more inclusive public consultation meeting involving officials concerned and local representatives from all walks of life will be held during the follow-up EIA survey. The programme for that public consultation will strictly follow the procedure for EIA as prescribed by ECD (Environmental Impact Assessment Procedure, Notification No. 616/2015).

Section-7 is the short conclusion and recommendation. The project proponent will comply with the laws, rules and regulation relevant to the project. It will also comply with the National Environmental Quality Emission Guideline (NEQEG) prescribed by ECD and will take all the mitigation measures to be prescribed in detail in the follow-up EIA report.

On the whole it can be stated that the advantages of the project will outweigh the disadvantages of the project in many aspects.

Section-8 is all about the term of reference (TOR) for the EIA study. This last section is described briefly in accordance with the instruction and format, prescribed by ECD (Environmental Impact Assessment Procedure, Notification No. 616/2015; Section-49, 50 and 51), especially the scope of work to be carried out based on the results of scoping study.

The content of this TOR simply indicates the chapters, sections, subsections, sub-heading etc, that is, the format for the follow up EIA report to be prepared and submitted after this scoping report.

1. CONTEXT OF THE PROJECT

The proposed project the Sun City Project is for the construction and leasing of the factories inside the Sun City factory zone/factory complex by the project proponent, the Sun City Bago Industrial Land Development Ltd.

The project is a Joint-venture business and the JV agreement was signed between Mr. Zuo Zhi Hai, agent of Sun City Hong Kong Industrial Co., Ltd and U Myo Aung.

First the Sun City Hong Kong Industrial Company Limited was incorporated under the Myanmar Companies Act 1949 on 10-7-2018 as a Private Company Limited by shares.

The Company Registration No. is 106355835. Then the JV Company, the Sun City Bago Industrial Land Development Limited was incorporated under the Myanmar Companies Act 1949 on 12-10-2018 as a private company.

The company registration of SCBILD limited No. is 107245561.

The project proponent (SCBILD) will construct and establish the Sun City Bago factory zone/factory complex and lease/rent the factories to any interested investors who want to operate a factory. The Construction Phase will last for 3 years.

The objective of SCBILD is to rent all the 16 factories for any entrepreneurs and to relieve them from the troubles of looking for suitable plot for investment; from all the troubles of paper works, red tapes and bureaucracy for the acquiring of the plot of land and permit for the construction and running of a factory. The factory zone/complex is a readymade factory zone for interested investors.

The project site is located at Plot No. 1176, Nga Goke Gyi Plot, Buu-lae Inn Village Tract area, Bago Township, Bago Region. The factory complex will be constructed on the 49 acres of land out of a total area of 83.3 acres.

The factory complex/zone includes 16 factories and 14 administrative and 9 multipurpose buildings. Except one building which will be the main office occupied by the project proponent all are for rent.

The main component of the site will be described in **Section-3** of this report.

The site has good access by motor road; is on the Bago-Taikkyi Road that runs from east to west and is about half way between the Yangon-Nay Pyi Taw Express High Way and Yangon-Mandalay High Way both of which run in a South-North direction.

Electricity will be sourced from National Gridline; the high voltage cable passes over the site from east to west cutting the site into one northern half and another southern half. The annual electricity requirement is 15000 KVA.

Ground water will be sourced from 6 own tube-wells at a depth of 200 feet. Annual water requirement is 85,204,800 gallons.

The annual fuel requirements for diesel, petroleum are 5,300 gallons and 3,000 gallons, respectively.

176 constructions workers will be employed during the Construction Phase of 3 years. 20 staffs (17 nationals, 3 Chinese) will be employed in Year 1 of the Operation Phase and from Year 2 and onwards 40 staffs (34 nationals, 6 Chinese) will be permanently employed. The salaries in the long term range from Ks 250,000 to Ks 600,000 for nationals staffs and USD 1500-2000 for Chinese staffs.

Detail description of the project is given in **Section-3**.

For the construction of this factory zone priority will be given to utilization of eco-friendly building materials. To remediate the impact on forest of the nation the use of timber will be minimized. All the 16 factories are steel structured buildings. 14 administrative and general purpose buildings will be brick building. Durable building materials will be used; the basic building material (sand) will be from freshwater origin. All other materials such as piping, cable ling fixture, devices etc. will be durable and top quality ones. Some will be imported, if necessary.

The 6, 8 and 2 negative/potential negative impacts anticipated and identified during the Construction Phase, Operation Phase and the Decommissioning Phase, respectively, are mentioned in **Section-5** (No impact is anticipated for the Preconstruction Phase). These negative/potential negative impacts and the a variety of options for mitigation measures to be taken for each and every impact will be described in technical and meticulous details in the follow up EIA report.

The Environmental Management Plan (EMP) and Monitoring Plan (MP) will be also described in technical detail in the follow up EIA report.

So far, there are no key findings of previous technical, economic and social studies for the area. So all the information and data in this report and the upcoming EIA report are all primary data, with the exception of meteorological data (secondary data) obtained from the Meteorological Department, Yangon Region. A few socio-economic secondary data, such as demography and socio-economic profile of the village will be also obtained from Key Informant Interview (KII). These will be included in the follow-up EIA report.

2. OVERVIEW OF THE ENVIRONMENTAL POLICY, LEGAL AND INSTITUTIONAL FRAME WORK

2.1 Environmental policy of Myanmar

The environmental policy is to protect and conserve the environment while striving for national development. In other word to aim for sustainable development.

The National Environmental Policy (1994) is:

- to achieve harmony and balance between socio-economic, natural resources and environment through the integration of environmental considerations into the development process enhancing the quality of life of all its citizens

In short, the policy covers three strategic areas:

- (a) Clean environment and health, functioning ecosystem
- (b) Sustainable development, and
- (c) Mainstreaming environmental protection and management.

Myanmar is cooperating with the international community to draft a national environment policy and adopt its main tasks in order to contribute to sustainable development policies, strategies and work programmes relating to climate change, a framework for a green economy and strategies and work programmes for waste management.

The nation is in the process of formulating a new and comprehensive national environmental policy. Since 2015 United Nations Development Programme (UNDP) has been supporting the government to formulate a new national environmental policy that places environmental consideration at the centre of efforts to promote economic and social development, reduce poverty and mitigate and adapt to climate change and natural disasters.

This national environmental policy will ensure environmental protection and sustainable development across the country.

The pragmatic aim is to integrate environmental governance into the national economic development programme. This is indeed a new multifaceted national environmental policy and strategic frame work that address new challenges.

2.2 Legal and institutional frame work

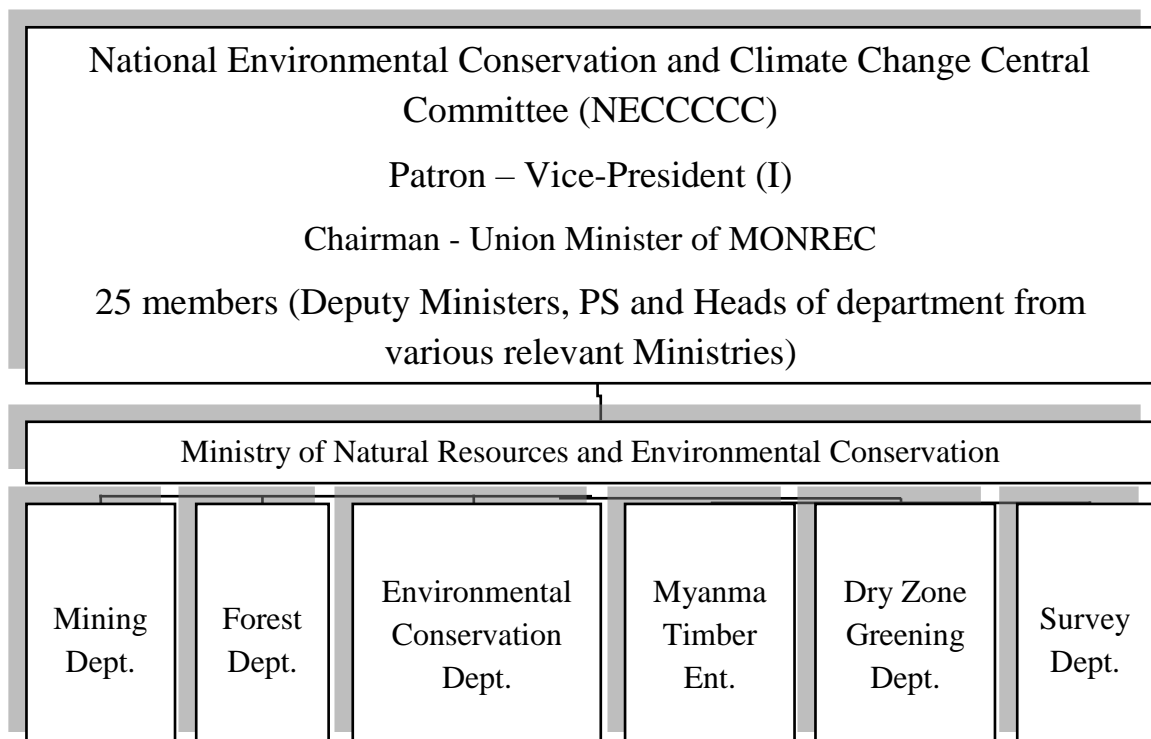
Article 42 of Myanmar Constitution (2008) clearly states that "The Union shall protect and conserve national environment".

Environmental conservation is an obligation of every citizen of Myanmar as per the Myanmar constitution (2008). Section-8, Article 390 of the Constitution states that "Every citizen has the duty to assist the Union in carrying out the following matter: (b) environmental conservation.

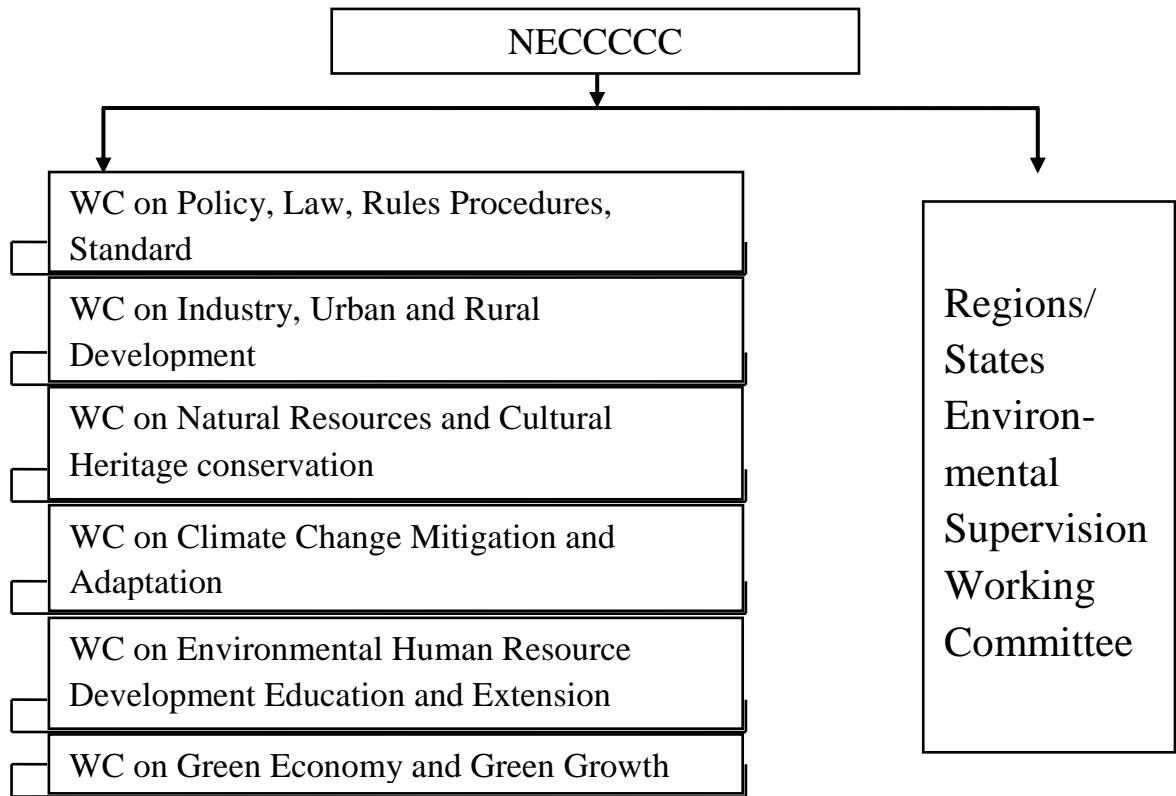
The conservation of the environment was/is one of the priorities of successive governments.

The National Environmental Conservation Committee (NECC) was formed in 2011 with the aim to achieve sound environmental management in the country. It is enlarged and reorganized as National Environmental Conservation and Climate Change Central Committee (NECCCCC).

The institutional organization of NECCCCC is as follow:

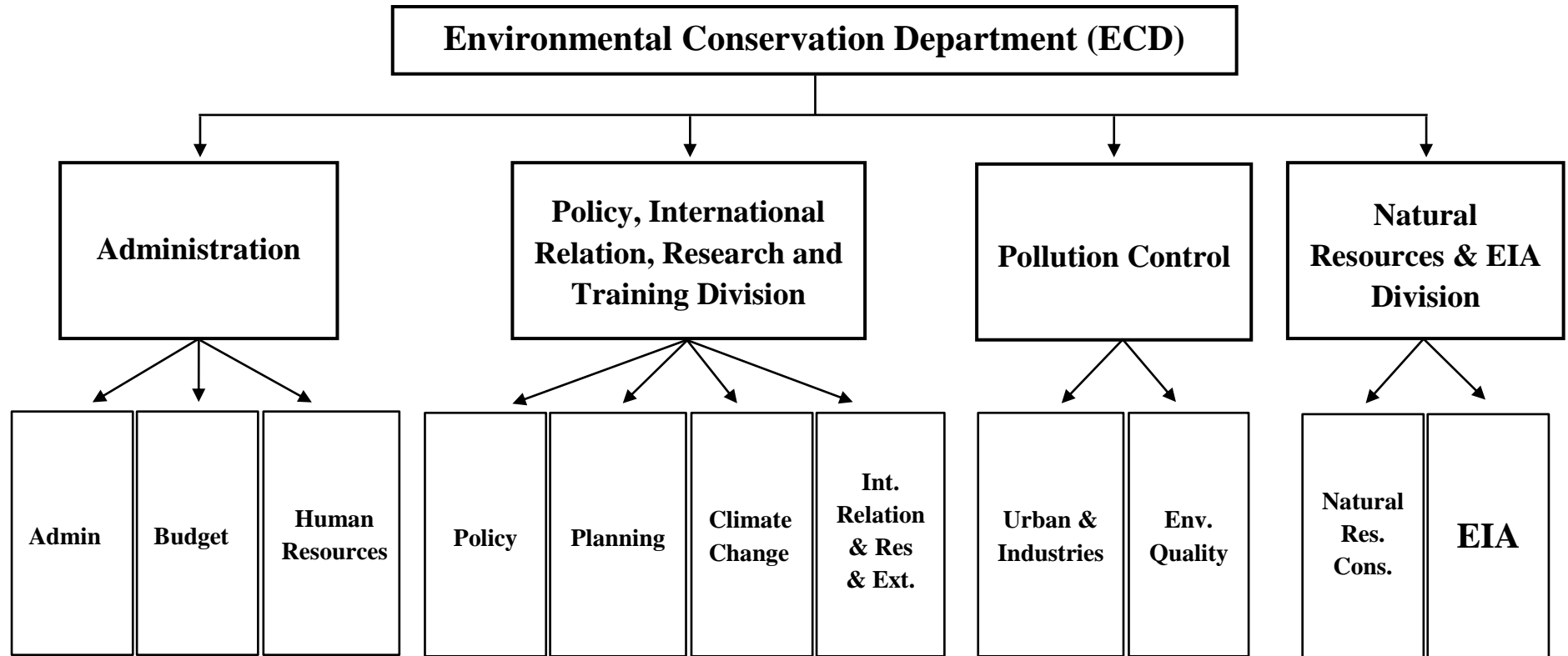


There are six Working committees under NECCCCC and supervision WC at 14 states and Regions.



Institutional organization of ECD

ECD is a major department under MONREC and is headed by a director general. Under the Director General are one Deputy Director General and 4 Directors at the directorate. ECD is the focal and coordinating agency for the overall environmental management of the country. It is also directly responsible for all the management of IEE, EIA, EMP etc. activities taking places all over the country.



These four departments are each headed by a director.

The main tasks of ECD include:

- implementing environmental conservation policy
- designing and implementing monitoring programmes
- prescribing environmental quality standards and,
- conducting activities relating to waste management and conducting environmental impacts assessments

Recently various Environmental Conservation Departments at States and Regional levels under the Directorate were established in all the 14 States and Regions of the nation. This will surely greatly enhance the conservation of the environment and especially the management of the environment of the country.

Institutional arrangement (organization chart) of SCBILD Limited

National staff (Operation Phase/Permanent staffs)

Senior Managers	2 Persons
Professionals/experts	5 Persons
Technicians	5 Persons
Advisors	2 Persons
Skilled workers	10 Persons
Workers	<u>10 Persons</u>
Sub Total	<u>34 Persons</u>
<u>Foreign staff</u>	
Managers	3 Persons
Professionals/experts	<u>3 Persons</u>
Sub Total	<u>6 Persons</u>
Total	<u>40 Persons</u>

2.3 Applicable laws and regulations

Sun City Bago Industrial Land Development Limited (SCBILD) will comply with the following laws:

1. The Environmental Conservation Law, 2012
2. The Environmental Conservation Rules, 2014
3. Myanmar Investment Law, 2016
4. Myanmar Investment Rules, 2017
5. The Factories Acts, 1974
6. Labour Organization Law, 2011
7. Minimum Wages Law, 2013
8. The Payment of Wages Law, 2016
9. Myanmar Insurance Law, 1993
10. Fire Brigade Law, 2015
11. Occupational Health and Safety Law, 2018
12. Yangon Region City Development Committees Law, 2018
13. Private Industrial Enterprise Law, 1990
14. The Conservation of Water Resources and Rivers Law, 2006
15. Employment and Skill Development Law, 2013
16. Leaves and Holiday Act, 1951
17. Shop and Establishment Law, 2016
18. Underground Water Act, 1930
19. Myanmar Engineering Council Law, 2013
20. The Related Laws enacted by Bago Region Hluttaw and Rules issued by Bago Region Government
21. Environmental Impact Assessment Procedure, 2015 by ECD
22. National Environmental Quality Emission Guideline (NEQEG), 2015 by ECD

The above-mentioned laws and guidelines are directly or indirectly related to factory zone business. The company will comply with all these laws. Since these laws cover a very wide

spectrum and various aspects, the company is not in a position to read and study all these laws. The company, therefore, has hired a legal expert to deal with the details of these laws.

When implementing the project the company authority will apply the common sense and simple logics not to pollute the air, water, land and the community. When it comes to details the legal expert hired by the company will assist the company to comply with these laws, accordingly.

Staffs will be educated and trained for environmental awareness and for maintenance of environmental performance during the entire life of the project.

2.4 International Finance Corporation (IFC), Policy on Environmental and Social Sustainability (2012)

There are eight performance standards for a big company to do business in a new area. These 8 standards are simply enumerated as follow:

1. Assessment and Management of Environmental and Social Risks and Impacts
2. Labour and Working Conditions
3. Resource Efficiency and Pollution Prevention
4. Community Health, Safety and Security
5. Land Acquisition and Involuntary Resettlement
6. Biodiversity Conservation and Sustainable Management of living Natural Resources
7. Indigenous Peoples
8. Cultural Heritage

2.5 National Environmental Quality Emission Guideline by Environmental Conservation Department (ECD)

NEQEG prescribed by ECD will be complied with and International Standards and Guidelines will be referred to as practical as possible. These will not be mentioned in this scoping report. As regard "good engineering practice" and "good safety practice" International Standards and Guideline will be followed as practical as possible.

The main policy of the company is to auto parts assembly plant in such a way that it is socially sustainable, environmentally sound and economically viable and functional.

Sun City Bago Industrial Land Development Limited (SCBILD) will also do its best to refer to the International guidelines and standards as practical as possible.

NEQEG (emission and effluent) guideline values prescribed by Environmental Conservation Department (ECD) will be complied with.

(a) Air quality

Sun City Bago Industrial Land Development Limited (SCBILD) will follow the general National Environmental Quality Emission Guideline values (Code No. 1.1) for air emission (NEQEG guidelines) as prescribed by the Environmental Conservation Department (from Notification No. 615/2015, December 2015, by ECD, then under the Ministry of Environmental Conservation and Forestry (MOECAAF), now MONREC.

Parameter	Averaging Period	Guideline Value $\mu\text{g}/\text{m}^3$
Nitrogen dioxide	1-year	40
	1-hour	200
Ozone	8-hour daily maximum	100
Particulate matter $\text{PM}_{10}^{\text{a}}$	1-year	20
	24-hour	50
Particulate matter $\text{PM}_{2.5}^{\text{b}}$	1-year	10
	24-hour	25
Sulfur dioxide	24-hour	20
	10-minute	500

^a Particulate matter 10 micrometers or less in diameter

^b Particulate matter 2.5 micrometers or less in diameter

(b) Water quality

Sun City Bago Industrial Land Development Limited (SCBILD) will follow the general National Environmental Quality Emission Guideline values (Code No. 1.2) for waste water and others, NEQEG Guidelines as prescribed by the Environmental Conservation Department (from Notification No. 615/2015, December 2015, by ECD, then under the Ministry of Environmental Conservation and Forestry (MOECAAF), now MONREC.

(Waste water, storm water runoff, effluent and sanitary discharges (general application))

Parameter	Unit	Guideline value
5 day biochemical oxygen demand	mg/l	50
Ammonia	mg/l	10
Arsenic	mg/l	0.1
Cadmium	mg/l	0.1
Chemical oxygen demand	mg/l	250
Chlorine (total residual)	mg/l	0.2
Chromium (hexavalent)	mg/l	0.1
Chromium (total)	mg/l	0.5
Copper	mg/l	0.5
Cyanide (free)	mg/l	0.1
Cyanide (total)	mg/l	1
Fluoride	mg/l	20

Heavy metals (total)	mg/l	10
Iron	mg/l	3.5
Lead	mg/l	0.1
Mercury	mg/l	0.01
Nickel	mg/l	0.5
Oil and grease	mg/l	10
pH	S.U. ^a	6-9
Phenols	mg/l	0.5
Selenium	mg/l	0.1
Silver	mg/l	0.5
Sulphide	mg/l	1
Temperature increase	°C	<3 ^b
Total coliform bacteria	100 ml	400
Total phosphorus	mg/l	2
Total nitrogen	mg/l	10
Total suspended solids	mg/l	50
Zinc	mg/l	2

^a Equivalent continuous sound level in decibels

(c) Noise level

Sun City Bago Industrial Land Development Limited (SCBILD) will follow the general National Environmental Quality Emission Guideline values (Code No. 1.3) for noise, NEQEG Guideline as prescribed by the Environmental Conservation Department (from Notification No. 615/2015, December 2015, by ECD, then under the Ministry of Environmental Conservation and Forestry (MOECAAF), now MONREC.

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

^a Equivalent continuous sound level in decibels

Note: Noise level at work place must not exceed 85-90dBA. (Provide PPE, ear muff, ear protection for workers exposed to high noise level for long period. The ideal level not interfere with health is 45dBA.)

(d) Odour

NEQEG Standard Guideline for odorant unit is between 5 and 10.

2.6 National and International Standards and Guidelines

SCBILD will comply with Myanmar National Building Code (2016) prescribed by Myanmar Engineering Council.

SCBILD will also refer to the following international standards and guidelines as practical as possible.

1. EHS guideline for food and beverage. Document.worldbank.org
2. EIA for ALHARAM-MIGM, a factory for electronic goods and toys. <https://www.miga.org>WBG>
3. Environmental - BTHA (British Toys and Hobby Association). <https://www.btha.co.uk>gu>
4. Guideline for Sustainable Industrial Area (SIA). <https://tuewas.asia.org>2017>
5. IEC. Standards. www.electrical-installation.org
6. IFC. Performance Standards on Environmental and Social Sustainability; A Guide Book. <https://firstforsustainability.org>ifc>
7. IFC. Environmental, Health and Safety guideline. (General Guideline – 2017)
8. IFC. Engagement in the Apparel and Textiles Sectors in emerging market. <https://www.ifc.org>publication>
9. IFC. Food and beverage processing. <https://www.ifc.org>connect>
10. IFC. Remediation Financing in a Bangladesh Ready Made Garment Sector. <https://www.ifc.org>publication>
11. Industrial Development Design, Standards and Guidelines. www.louisville.co.gov.home
12. Industrial Development Rules and Regulations. <https://www.moe.gov.b7>
13. Information Management for factory – planning and design. Diva-Portal. <https://www.diva-portal.org>>
14. ISO Quality Standards in Construction. <https://scelibrary.org>doi>
15. ISO Quality Standards in Construction. <https://www.resarchgate.net>2379>

As a TOR for EIA this section (**Section-2**) will be described in detail in the coming EIA report. More relevant documents will be submitted in the follow up EIA report. In addition the "National Environmental Quality Emission Guidelines for emission, effluent, noise level etc," issued by ECD/MOECAP will be included in the EIA report as pragmatic guidelines in implementing the project.

3. PROJECT DESCRIPTION AND ALTERNATIVES

3.1 Development sector and subsector

The project will contribute to the development of the Industrial Sector of the nation, especially to the development of the garment industry and so toys and electronic goods industry. It will also contribute to the development of the marketing and export of readymade garment/apparels as well as electronic goods.

At the national level and benefit of the project will accrue to the nation as the result of the direct investment of including US\$ 23,000,000. The country will benefit from increase in investment, increase in employment, increase in earning, increase in taxes, duties, and revenues etc.

Project objectives

- To offer ready to invest plots of land and factories for business men who want to set up factories and run their business, relieving them from the troubles of acquiring land and permit for construction of factories for doing their business.
- To rent/lease the plot of land and readymade factories at reasonable prices for mutual benefit.
- To contribute to the further development of the garments industry and toys industries and contribute to a steady and sustainable market.

About the project proponent (the JV project proponent)

Sun City Bago Industrial Land Development (SCBILD) limited is incorporated as a limited company is October, 2018. The type of business is the construction and leasing service of factories and office buildings.

Name of Project Proponent : Sun City Bago Industrial Land Development Limited

Address (Head office) : No. 39/40, Room 9, D-1, 9th Floor, Hledan Street, No.8 Quarter, Kamaryut Township, Yangon City.

Telephone : 09 961136666

Email : 200601911@qq.com

Contact person : Daw May Theingi Han

Telephone : 09 962053214

Email : mimihanlove@gmail.com

Location of project site : Plot No. 1176, Na Goke Gyi Plot, Buu-lae Inn Village Tract, and Plot No. OSS. 76 Kyay Taing Pyin, War-mayan Village Tract, Bago Township, Bago District, Bago Region.

The principal organization is Sun City Hong Kong Industrial PTE Ltd

Address : 13A, Mackenzie Road, Singapore.

The JV project proponent, the Sun City Bago Industrial Land Development (SCBILD) Limited, (incorporated in October, 2018) is the joint venture between the Sun City Hong Kong Industrial Co., Ltd (incorporated in Myanmar in July, 2018) and U Myo Aung.

Location of project site : Plot No.1176, Na Goke Gyi plot, Buu-lae Inn Village Tract and Plot No. OSS-76, Kyay Taing Pyin, War-mayan Village Tract, Bago Township, Bago District, Bago Region.

Particulars of executive and administrative body

Name	Nationality & National Registration Card No.	Usual Residential Address	Designation	Other Business Occupation
Mr. Zuo Zhi Hai	Pass Post No. 106355835	No. (39/40), Room 9 D1, 9 th Floor, Hledan street, No.8 Quarter, Kamayut Township, Yangon.	Managing Director	Developer
U Myo Aung	NRD. 12/Ta.ma.na (N) 052173	Room No. (B-504) between Bogyoke Aung San street and Wartan street, Lanmataw Township, Yangon.	Director	Merchant

List of shareholder in JV

1. Sun City Hong Kong Industrial Co., Ltd : 99 % of shares

2. U Myo Aung : 1 % of shares

Amount of foreign capital to be brought in : 22,770,000 USD

Amount of local capital to be contributed : 230,000 USD

Total : 23,000,000 USD

Investment period : 50 years.



ကုမ္ပဏီမှတ်ပုံတင်လက်မှတ်
Certificate of Incorporation

SUN CITY BAGO INDUSTRY LAND DEVELOPMENT LIMITED
Company Registration No. 107245561

မြန်မာနိုင်ငံကုမ္ပဏီများဥပဒေ ၂၀၁၇ အရ
SUN CITY BAGO INDUSTRY LAND DEVELOPMENT LIMITED
အား ၂၀၁၈ ခုနှစ် အောက်တိုဘာလ ၁၂ ရက်နေ့တွင်
အစုရှယ်ယာအားဖြင့် တာဝန်ကန့်သတ်ထား သည့် အများနှင့်မသက်ဆိုင်သောကုမ္ပဏီ
အဖြစ် ဖွဲ့စည်းမှတ်ပုံတင်ခွင့်ပြုလိုက်သည်။

This is to certify that
SUN CITY BAGO INDUSTRY LAND DEVELOPMENT LIMITED
was incorporated under the Myanmar Companies Law 2017 on 12
October 2018 as a Private Company Limited by Shares.

ကုမ္ပဏီမှတ်ပုံတင်အရာရှိ
Registrar of Companies

ရင်းနှီးမြှုပ်နှံမှုနှင့်ကုမ္ပဏီများညွှန်ကြားမှုဦးစီးဌာန
Directorate of Investment and Company Administration



Figure-1: Certificate of Incorporation

About the consultant firm, Myanmar Environment Sustainable Conservation Co., Ltd (MESC)

Myanmar Environment Sustainable Conservation, MESC is a consultant firm officially registered in 2014 as a limited company (a consultant/service company) at the Ministry of National Planning and Economic Development. Document: YaKa-8(Ga) 001/2014(004720), dated: 6th June, 2014. Registration No. 830/2014-2015, (20-5-2014). The new company registered number is 110649193.

The Transitional Registration/License No. of the consultant firm, MESC is No. 0003, ECD, Dated 1st July 2017.

Contact Address : Room no. (B -5), Building no.72, Marlar-Myaing 6th Street, 16 Ward, Hlaing Township, Yangon Region

Contact person : Myint Kyaw Thura
95 9 420105071

Contact number : 95 9 73044903

E-mail : myanmar.esc@gmail.com

Facebook website : www.myanmar.environment.sustainable.conservation.com

Members of MESC who are IEE/EIA appraisers, or IEE/EIA practitioners or who are involved in this IEE/EIA project are as follows:

Name	Nationality & National Registration Card No.	Registration/license No. by ECD	Designation
U Myint Kyaw Thura M.Sc (Zoology)	Myanmar 12/Da Ga Ta (N)028349	0006	Managing Director, Biodiversity Specialist (Fauna), EIA practitioner and EIA Appraiser
U Saw Han Shein B.Sc (Botany) M.Sc (Marin Biology)	Myanmar 10/Ma La Ma(N)008173	0007	Retired Professor, EIA Practitioner and Appraiser
Dr. Thiri Dawe Aung Ph.D (Zoology)	Myanmar 12/Da La Na (N) 029433	0008	Biodiversity Specialist (Ornithologist)
U Tin Tun Aung B.Sc (Engineering)	Myanmar 12/U Ka Ma (N)172111	0009	Engineer and EIA practitioner
Daw Khin Nhwe Naing M.Sc (Botany)	Myanmar 9/Pa Kha Ka (N)001252	00010	Biodiversity Specialist (Flora), Environment Researcher

U Than Soe Oo M.Sc (Forestry)	Myanmar 9/Ma Na Ma (N) 050808	00011	EIA practitioner
U Oakka Kyaw Thu B.Sc (Geology)	Myanmar 7/Ya Ta Ya (N) 090371	00012	Geologist
Daw Thin Thin Yee B.Sc (Chemistry)	Myanmar 12/Tha Ga Ka (N)039292	00013	Chemical Environment Researcher, Computer Programmer
Dr. Hnin Ngwe Phyu M.B.B.S, Dr. Med.Sc	Myanmar 10/Ma La Ma (N) 111953	Part time/Freelance	HIA practitioner
Daw Hnin Nu Nu Aung B.E (Mat & Met) Dip (Env.M)	Myanmar 8/Ma Ka Na (N) 204370	Part time/Freelance	Environmental Engineer
Daw Thi Thi San L.L.B	Myanmar 12/Tha Ka Ta (N) 150424	Part time/Freelance	Legal Expert

- U Myint Kyaw Thura is involved in fauna study, EIA practicing and appraising and writing of report, in part.
- U Saw Han Shein is involved in EIA practicing appraising and report writing (chief report writer).
- Dr. Thiri Dawe Aung involved in avifauna study writing part of report.
- U Tin Tun Aung is involved in the EIA practicing and aspects of the report and provision of information, data and facts and writing part of the report.
- Daw Khin Nhwe Naing is involved in flora study and writing report, in part.
- U Than Soe Oo is involved in EIA practicing and part of the report writing especially on the socio-economic aspect,
- U Oakka Kyaw Thu is involved in the geological and geographical aspects by conduction desktop survey and gathering of secondary information on local geology.
- Daw Thin Thin Yee is involved in the physical aspects, especially ambient air, water quality, noise and vibration and soil etc and compilation of data on the physical components; including secondary information on weather.
- Dr. Hnin Ngwe Phyu is an HIA practitioner and involved in the overall health impact assessment of the project.

- Daw Hnin Nu Nu Aung is an environmental engineer and involved in the environmental engineering aspects of this EIA report.
- Daw Thi Thi San is a legal expert and involved in the legal aspects of this EIA report.

Actually members of MESC always work together wholly as a tight-knit group in writing of each and every EMP/IEE/EIA report.

MESC has also part time members working as free lances.

The firm is not in a position to employ all its part time members on a permanent basis.

These are botanists, zoologists, ornithologists, ecologists, aquatic ecologists, social scientists, engineers and geologists working with this firm.

For the physical and chemical environmental studies MESC has to hire experts, say for example, from the Health Department and from registered laboratory in Yangon. Since portable test kits are sometime not reliable, experts from the Health Department have to be hired for the analysis of air quality. Experts from a registered laboratory were hired for the analysis of water (or samples have to be sent to the laboratory).

Members of MESC have quite a lot of experiences with IEE, EIA and SIA works.

So far, starting from 2014 MESC has been involved in IEE, EIA, SIA and EMP projects: such as limestone minings/quarries; gold and copper minings; tin and tungsten minings; coal minings; cement factories; Iron and steel factory; hotel and housing projects; fuel storage tank farms; fuel storage and distribution terminal; cigarette factory, paper factory, electronic parts factory, ear-phone factory, saw mill/lumbering project, motorcycle and spare parts factory, sugar factory, hydro power electricity project, coal fired thermal plant, water boom park, zip line project, seed processing plant, specific taxonomic and ecological study of herpetofauna, specific biodiversity and ecological survey of forest and parts etc projects.

MESC is now involved in the on-going project such as private hospital project, biomass power plant, assembly and installation of lifts, escalators and elevator, transmission line, shopping center project, villa project, assembling/marketing car projects, concrete transmission poles, soft drinks and drinking water and sugar mill. Some members have also participated in road construction (air quality) project, herpetological survey in association with foreign experts.



REPUBLIC OF THE UNION OF MYANMAR

Ministry of Natural Resources and Environmental Conservation



CERTIFICATE FOR TRANSITIONAL CONSULTANT REGISTRATION

(ကြားကာလအကြိမ်ပေးလုပ်ကိုင်သူမှတ်ပုံတင်ခြင်းအထောက်အထားလက်မှတ်)

No. ၈၀၀၃ Date ၂၀၁၈ JUL ၂၀၁၇

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

(ပတ်ဝန်းကျင် ထိခိုက်မှုဆန်းစစ်ခြင်းဆိုင်ရာ လုပ်ထုံးလုပ်နည်း၊ အမိန့်ကြော်ငြာစာအမှတ်၊ ၅၁၆/၂၀၁၅ အရ သယံဇာတနှင့် သဘာဝပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဝန်ကြီးဌာနသည် ဤအထောက်အထားလက်မှတ်ကို အဖွဲ့အစည်းအား ထုတ်ပေးလိုက်သည်။)

- (a) Name of Organization Myanmar Environment Sustainable Conservation-MESC
(b) Name of the representative in the organization U Myint Kyaw Thura
(c) Citizenship of the representative in the organization Myanmar
(d) Identity Card /Passport Number of the representative person in the organization 12/ Da Ga Ta (N) 028349
(e) Address of organization Room No. B-5, Building No.72, Marlar Myaing 6th street, 16 Ward, Hlaing Township, Yangon.
(f) Type of Consultancy Organization
(g) Duration of validity 31 March 2018



၂၀၁၈ ဇူလိုင် ၂၀

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

Areas of Expertise Permitted
(ခွင့်ပြုသည့် ကျွမ်းကျင်မှုနယ်ပယ်များ)

1. Air Pollution Control
2. Ecology and Biodiversity
3. Facilitation of Meeting
4. Geology and Soil
5. Land use
6. Modeling for Water Quality
7. Socio-Economy
8. Water Pollution Control



Figure-2: Certificate of consultant firm

3.2 Project location, overview map and layout plan

The proponent project site is located at Plot No. 1176, Nga Goke Gyi Plot, Buu-lae Inn Village Tract and Plot No. OSS-76, Kyay Taing Pyin, War-mayan Village Tract, Bago Township, Bago District, Bago Region.

The total area of the project site, comprising two village traces area is 83.3 acres. There are 5 small plots in Buu-lae Inn Village Tract area and one large plot in War-mayan Village Tract area. The type of land is the "factory land".

The list of plots is as follows:

Sr. No.	Village Tract Area	Plot No. & Name	U Paing No.	Type of Land	Area Permitted (acres)	Area to be utilized (acres)	Means of Permit
1	Buu-lae Inn	1176 Na Goke Gyi Kwin	1	Factory land	11.90	11.90	Factory land
2	Buu-lae Inn	1176 Na Goke Gyi Kwin	4	Factory land	8.97	8.97	Factory land
3	Buu-lae Inn	1176 Na Goke Gyi Kwin	1/27	Factory land	1.85	1.85	Factory land
4	Buu-lae Inn	1176 Na Goke Gyi Kwin	N/27	Factory land	19.66	19.66	Factory land
5	Buu-lae Inn	1176 Na Goke Gyi Kwin	N/29	Factory land	4.42	4.42	Factory land
6	War-mayan	OSS-76 Kyay Taing Pyin	-	Factory land	36.50	2.2	Factory land
Total					83.3	49.0	

Of the total 83.3 acres, 46.80 acres are within the Buu-lae Inn Village Tract area and the remaining 36.50 acres within the War-mayan Village Tract area. Out of the 83.3 acres permitted, 49.0 acres will be utilized for the establishment of the factory zone. The remaining 36.50 acres will be utilized later.

There are several separate documents for each plot of land and these will be provided in the follow up EIA report.

The proposed project site is on the Nyaung Inn Road (Bago-Taikkyi Road) which runs in an east to west direction between and joining the Yangon-Nay Pyi Taw Express High Way and the Yangon-Mandalay High Way both of which run in a south to north direction. The former High Way is about 3.5 miles in the west while the later is about 3.6 miles in the east.

The site is about 5.7 miles south west of Bago City and about 37 miles north east of Yangon City. The coordinates at the site are: N. Lat. 17° 15' 13.92" and E. Long. 96° 24' 07.42" and the elevation is 85 ft asl. The site is bounded in the north by the plot of land owned by U Myo Aung; in the east by the plot of land owned by U Wa Ko; in the south by the Nyaung Inn Road (the Bago-Taikkyi Road) and in the west by the plot of land owned by U Than Soe.

The village in the vicinity are Wat Kone village 1.5 miles in the south east and Bagan Bo village 1.9 miles in the south west.

The Hantharwady Air Port project site is 2.5 miles in the northeast and the Bago University is about 3.7 miles in the east.

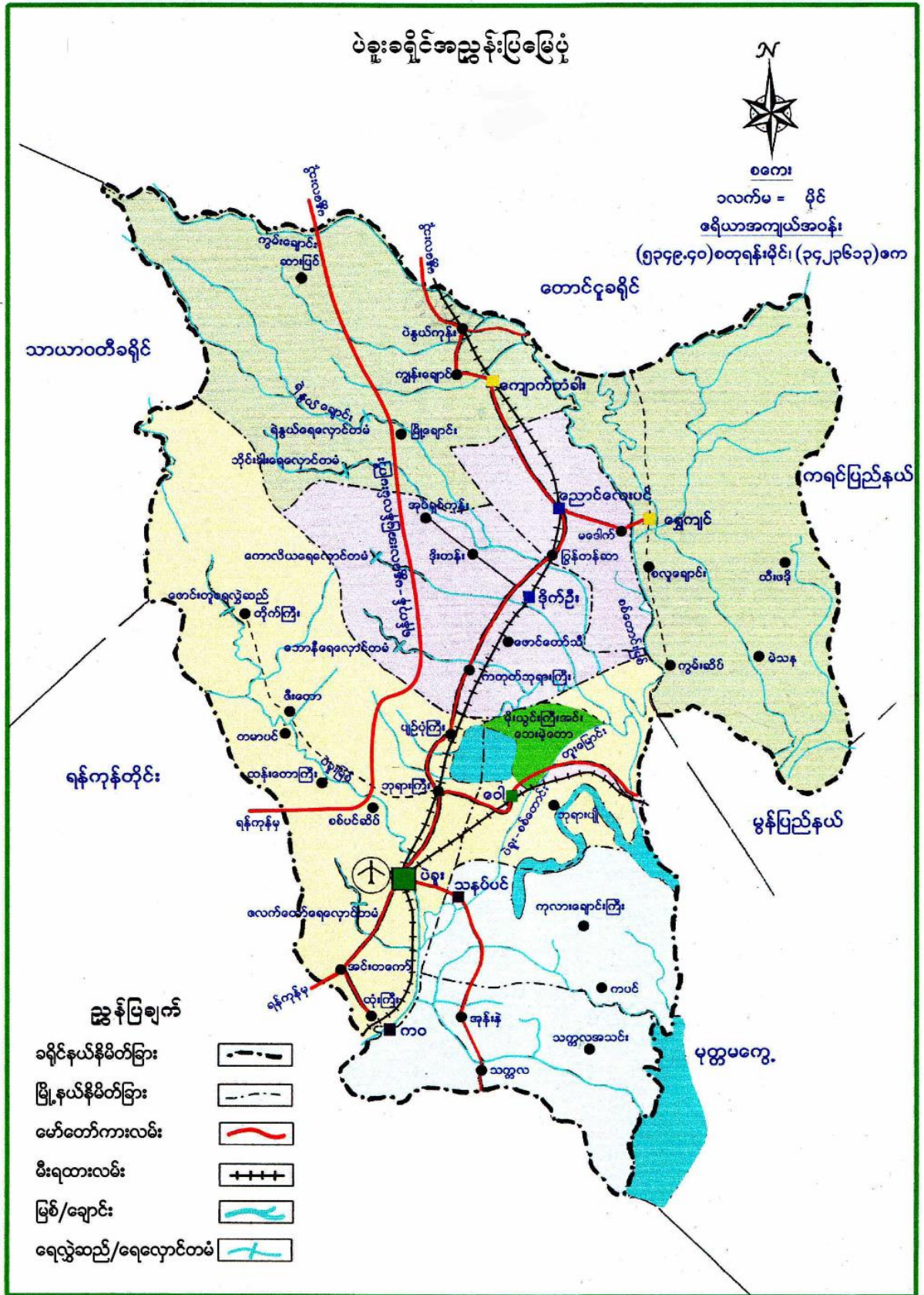


Figure-3: Map of Bago Township

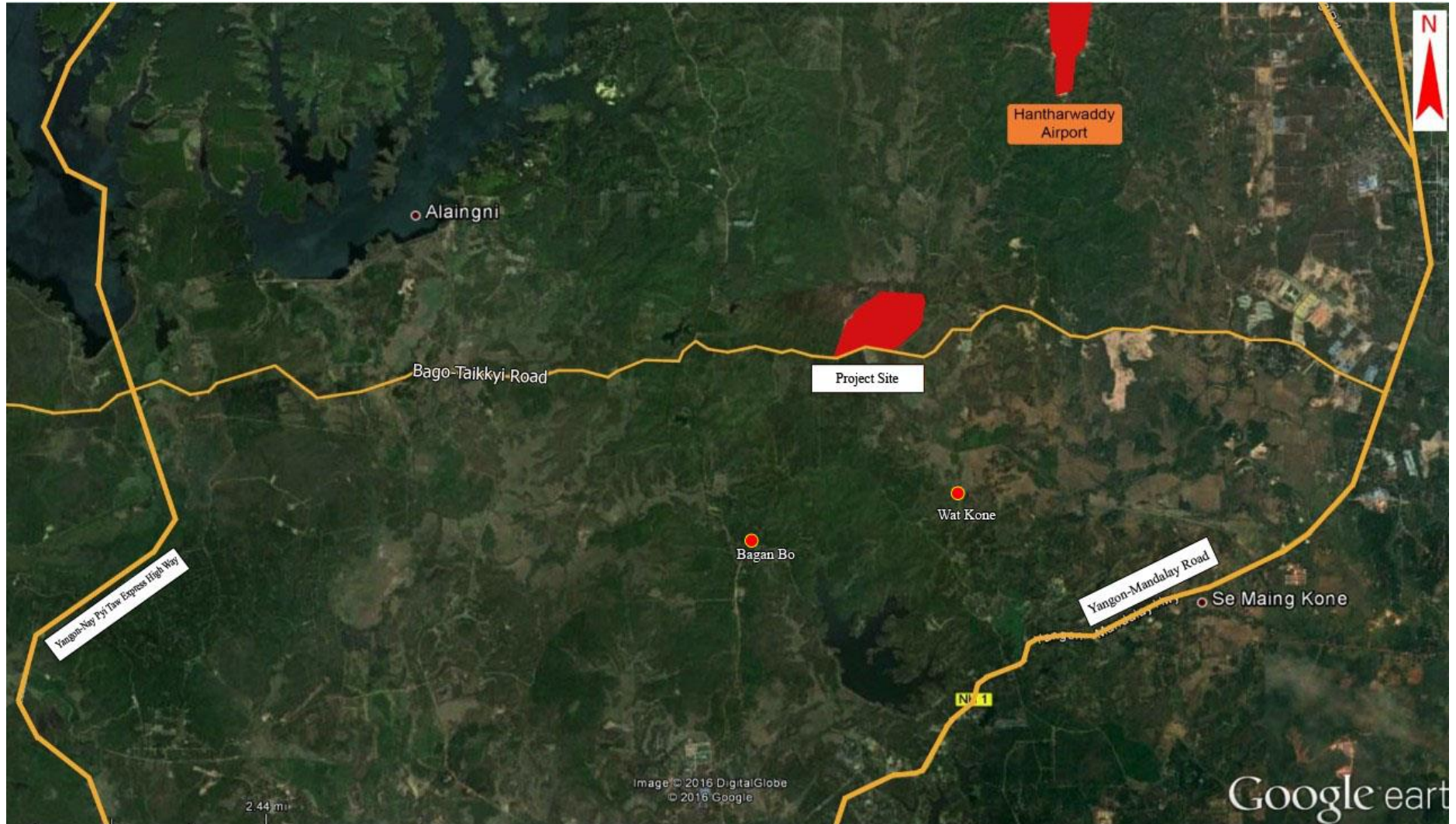


Figure-4: Satellite image of project site and its environs

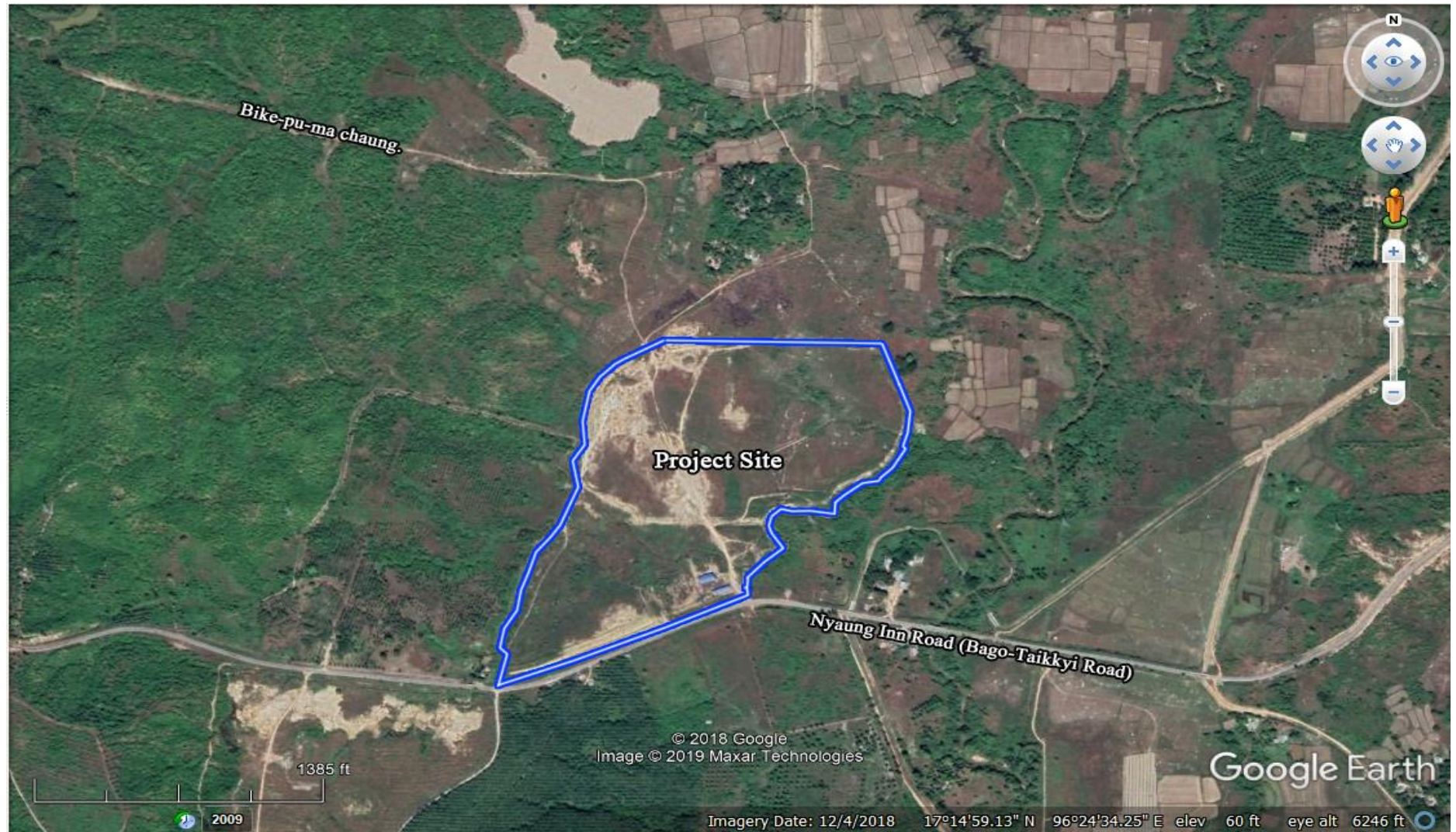


Figure-5: Satellite image showing project site



Legend:




-  Stream/rivulet
-  Township border line/State border line
-  Village

Figure-6: Map of part of Bago Township showing project site



Figure-7: Proposed project site

မြေစာရင်းပုံစံ - ၁၀၅



2018 - 089442

သက်သေခံ မှန်ကန်ကြောင်း သောလက်ရှိမြေပုံတွင် ယခုနှစ်အသုံးပြုသော ဦးပိုင်မြေပုံ

DALMS



စကေး-၁၆လက်မ=၁ပိုင်

တိုင်းဒေသကြီး/ပြည်နယ်	မန္တလေး
ခရိုင်	မုံရွာ
မြို့နယ်/မြို့နယ်ခွဲ	မုံရွာ
ရပ်ကွက်/ကျေးရွာအုပ်စု	ဘူးလယ်ဘတ်ကျေးရွာ
ကွင်း/အကွက်အမှတ်နှင့်အမည်	၁၁၇၆ / ဒုတိယကြီးကွင်း
ဦးပိုင်အမှတ်/မြေကွက်အမှတ်	၁

ဦးပိုင်အမှတ်	အခွန်စည်းကြပ်ခံရသူ/ပိုင်ရှင်/ဂရန်ရှင်/အငှားဂရန်ရှင်အမည်	ပိုင်ဆိုင်ခွင့်	မြေမျိုးနှုန်းအတန်း	ဧရိယာ (ဧက)	မှတ်ချက်
၁	ဦးမျိုးဘောင်	-	စက်မှုမြေ	၁၁.၉၀	မဟိုလယ်လာမြေစီမံ ဦးစွဲမှုစာရွက်စာတမ်းအရ ၆၄.၂၀၂.၂၀၁၆.၁၅၉ ဝန်ကြီးဌာနမှတ်တမ်း/လယာ-၃၀၉ပြန်/၂၀၁၆) အရ အခြေခံဓာတ်မြေလက်မှတ်ပေးချက်ဖြင့် ရေကန်အဖြစ်ပြန်လဲခဲ့ခြင်း ဖြစ်ပါသည်။
ရေးကူးပေးသည့်အကြောင်းအရာ			MIC အိုင်ဇာဒ်		

(အထက်ဖော်ပြပါအကြောင်းအရာအတွက်သာ အသုံးပြုနိုင်ပါသည်။)

လျှောက်ထားသူအမည် - ဦးမျိုးဘောင်

လျှောက်လွှာတင်သည့်နေ့စွဲ - ၁၀.၄.၂၀၁၉

လျှောက်ထားသူသို့ထုတ်ပေးသည့်နေ့စွဲ - ၁၁.၄.၂၀၁၉

ယခုအထက်တွင်ပြဆိုသောမြေပုံမှာ မှန်ကန်သောရေကန် ရေးကူးထားသော (၂၀၁၉)ခုနှစ် အတွက် နောက်ဆက်တွဲတိုင်းဖြင့် မြေပုံဖြစ်ကြောင်း သက်သေခံလက်မှတ် ရေးထိုးပါသည်။

အမှုတွဲထိန်း/မြေတိုင်းစာရေးလက်မှတ် - မေ့စွဲ

မြို့နယ်လယ်ယာမြေစီမံခန့်ခွဲရေးနှင့် စာရင်းအင်းဦးစီးဌာန ပဲခူးမြို့

တိုက်ဆိုင်စစ်ဆေးပြီး မှန်ကန်ပါသည်။ လက်ထောက်ဦးစီးမှူးလက်မှတ် - မေ့စွဲ

လက်ထောက်ဦးစီးမှူး မြို့နယ်လယ်ယာမြေစီမံခန့်ခွဲရေးနှင့် စာရင်းအင်းဦးစီးဌာန ပဲခူးမြို့

စိစစ်အတည်ပြုပါသည်။ မြို့နယ်လယ်ယာမြေစီမံခန့်ခွဲရေးနှင့် စာရင်းအင်းဦးစီးဌာနမှတ်တမ်းဦးစီးဌာန ပဲခူးမြို့

12 2 APR 2019

Figure-8: Document of plot of land which is part of project site



မြေစာရင်းပုံစံ - ၁၀၅

2018 - 089440

သက်သေခံ
မှန်ကန်ကြောင်း သောလက်ရှိမြေပုံတွင် ယခုနှစ်အသုံးပြုသော ဦးပိုင်မြေပုံ

DALMS



စကေး-၁၆လက်မ= ၁မိုင်

တိုင်းဒေသကြီး/ပြည်နယ်	ပဲခူး
ခရိုင်	ပဲခူး
မြို့နယ်/မြို့နယ်ခွဲ	ပဲခူး
ရပ်ကွက်/ကျေးရွာအုပ်စု	ဘူးလယ်ဘဝင်း
ကွင်း/အကွက်အမှတ်နှင့်အမည်	၁၁၇၆ / နဂုတ် ဇွဲ ကွင်း
ဦးမိုင်အမှတ်/မြေကွက်အမှတ်	၁၄၇ ၁၄၆ ၁၄၅

ဦးမိုင်/မြေကွက်အမှတ်	အရွက်စည်းကြပ်ခံရသူ/ပိုင်ရှင်/ဂရန်ရှင်/အငှားဂရန်ရှင်အမည်	ပိုင်ဆိုင်ခွင့်	မြေမျိုးနှုန်းအတန်း	ဧရိယာ (ဧက)	မှတ်ချက်
၁၄၇				၁.၅၅	ပဲခူးတိုင်းစစ်ဓါတ်
၁၄၆	ဒေါက်တာစင်ခင်ဖြူ	-	စက်မှုဓါတ်	၃.၃၀	အေးချမ်းသာယာရေးနှင့် ဖွံ့ဖြိုးရေးကောင်စီပေးမြေခွင့် (၃၁.၁.၂၀၁၁) ဈာန်ပြင်
၁၄၅				၇.၄၂	အကျယ်ပို ၄/၆ - ၄.၁၅၂၆ စာအုပ်အကျဉ်းချုပ်စာအုပ် လက်အကျဉ်းပေးမြေခွင့်

ရေးကူးပေးသည့်အကြောင်းအရာ **MIC သို့တစ်ဖြာရန်** **၃၆.၆.၂၀၁၉**

(အထက်ဖော်ပြပါအကြောင်းအရာအတွက်သာ အသုံးပြုခွင့်ရှိသည်)

လျှောက်ထားသူအမည် - ဦးမျိုးစောအောင်

လျှောက်လွှာတင်သည့်နေ့စွဲ - ၂၀.၄.၂၀၁၉

လျှောက်ထားသူသို့ထုတ်ပေးသည့်နေ့စွဲ - ၂၅.၄.၂၀၁၉

ယခုအထက်တွင်ပြဆိုသောမြေပုံမှာ မှန်ကန်သောချာစွာ ရေးကူးထားသော (၂၀၁၉) ခုနှစ် အတွက် မြေပုံစာရင်းတွင် တိုင်းပြင် မြေပုံဖြစ်ကြောင်း သက်သေခံလက်မှတ် ရေးထိုးပါသည်။

အမှုတွဲထိန်း/မြေတိုင်းစာရေးလက်မှတ် - မြို့နယ်လယ်ယာမြေစီမံခန့်ခွဲရေးနှင့် စာရင်းအင်းဦးစီးဌာန ပဲခူးမြို့

တိုက်ဆိုင်စစ်ဆေးပြီး မှန်ကန်ပါသည်။ လက်ထောက်ဦးစီးမှူးလက်မှတ် - မြို့နယ်လယ်ယာမြေစီမံခန့်ခွဲရေးနှင့် စာရင်းအင်းဦးစီးဌာန ပဲခူးမြို့

စိစစ်အတည်ပြုပါသည်။ မြို့နယ်လယ်ယာမြေစီမံခန့်ခွဲရေးနှင့် စာရင်းအင်းဦးစီးဌာန ပဲခူးမြို့

122 APR 2019

Figure-9: Document of plot of land which is part of project site

မြေစာရင်းပုံစံ - ၁၀၅



2018 - 089441

မှန်ကန်ကြောင်း သက်သေခံ
 သက်သေ သောလက်ရှိမြေပုံတွင် ယခုနှစ်အသုံးပြုသော ဦးပိုင်မြေပုံ

DALMS



စကေး-၁၆လက်မ = ၁ပိုင်

တိုင်းဒေသကြီး/ပြည်နယ်	ပဲခူး
ခရိုင်	ပဲခူး
မြို့နယ်/မြို့နယ်ခွဲ	ပဲခူး
ရပ်ကွက်/ကျေးရွာအုပ်စု ဘူးလယ်အင်း	
ကွင်း/အကွက်အမှတ်နှင့်အမည် ၁၁၇၆ / ၄၇၀၇ (ဦး.ကွင်း)	
ဦးပိုင်အမှတ်/မြေကွက်အမှတ် ၄	

ဦးပိုင်အမှတ်	အခွန်စည်းကြပ်ခံရသူ/ပိုင်ရှင်/ဂရန်ရှင်/အငှားဂရန်ရှင်အမည်	ပိုင်ဆိုင်ခွင့်	မြေမျိုးနှင့်အလားအနီး	ဧရိယာ (ဧက)	မှတ်ချက်
၄	ဦးမျိုးဘောင်	-	ထပ်၍မြေ	၁-၉၂	ပယ်ဖျက်ထားပြီးဖြစ်သောမြေပုံအဖြစ် ၂၀၁၅.၂.၁၅ ရက်နေ့တွင် ပြန်လည်ထူထောင်ထားပြီး ၂၀၁၅.၂.၁၅ ရက်နေ့တွင် ပြန်လည်ထူထောင်ပြီး ၂၀၁၅.၂.၁၅ ရက်နေ့တွင်

ရေးကူးပေးသည့်အကြောင်းအရာ **MIC ဆိုက်မြေပုံ** ၃၉.၆၄၅.၇၆၆

(အထက်ဖော်ပြပါအကြောင်းအရာအတွက်သာ အသုံးပြုခွင့်ရှိသည်)

လျှောက်ထားသူအမည် - ဦးမျိုးဘောင်
 လျှောက်လွှာတင်သည့်နေ့စွဲ - ၁၀.၄.၂၀၁၉
 လျှောက်ထားသူသို့ထုတ်ပေးသည့်နေ့စွဲ - ၂၂.၄.၂၀၁၉

ယခုအထက်တွင်ပြဆိုသောမြေပုံမှာ မှန်ကန်သောရွာရွာ ရေးကူးထားသော (၂၀၁၉)ခုနှစ် အတွက် နောက်ဆုံးတွဲတိုင်းခြင်း
 မြေပုံဖြစ်ကြောင်း သက်သေခံလက်မှတ် ရေးထိုးပါသည်။

အမှုတွဲထိန်း/မြေတိုင်းစာရေးလက်မှတ် - **မြို့နယ်လယ်ယာမြေစီမံခန့်ခွဲရေးနှင့်**
 နေ့စွဲ - **စာရင်းအင်းဦးစီးဌာန**
ပဲခူးမြို့

တိုက်ဆိုင်စစ်ဆေးပြီး မှန်ကန်ပါသည်။
 လက်ထောက်ဦးစီးမှူးလက်မှတ် - **မြို့နယ်လယ်ယာမြေစီမံခန့်ခွဲရေးနှင့်**
 နေ့စွဲ - **စာရင်းအင်းဦးစီးဌာန**
ပဲခူးမြို့

စိစစ်အတည်ပြုပါသည်။
မြို့နယ်လယ်ယာမြေစီမံခန့်ခွဲရေးနှင့် စာရင်းအင်းဦးစီးဌာနမှူးလက်မှတ်
 နေ့စွဲ **22 APR 2019**
ပဲခူးမြို့

Figure-10: Document of plot of land which is part of project site

မြေစာရင်းပုံစံ - ၁၀၅



2018 - 089439

မှန်ကန်ကြောင်း သက်သေခံ သောလက်ရှိမြေပုံတွင် ယခုနစ်အသုံးပြုသော ဦးပိုင်မြေပုံ

DALMS



စကေး-၁၆ လက်မ = ၁ပိုင်

တိုင်းဒေသကြီး/ပြည်နယ်	ပဲခူး	
ခရိုင်	ပဲခူး	
မြို့နယ်/မြို့နယ်ခွဲ	ပဲခူး	
ရစ်ကွက်/ကျေးရွာအုပ်စု ဘူးလယ်ဒောင်း		
ကွင်း/အကွက်အမှတ်နှင့်အမည် ၁၁၇၆ - နိုဂုတ်ကြီးကွင်း		
ဦးပိုင်အမှတ်/မြေကွက်အမှတ် ၁/၂၇		

ဦးပိုင်အမှတ်	အခွန်စည်းကြပ်ခံရသူ/ပိုင်ရှင်/ဂရန်ရှင်/အမှတ်ဂရန်ရှင်အမည်	ပိုင်ဆိုင်ခွင့်	မြေမျိုးနှုန်းအလန်း	ဧရိယာ (ဧက)	မှတ်ချက်
၁/၂၇	ဦးမျိုးအောင်	-	ဆီဂူဇေ	၁.၈၅	ဝါးစရမ်းကျေးရွာအုပ်စု၊ ဧရိယာ ၁.၈၅ ဧက၊ မြေပုံအမှတ် ၁၁၇၆ - နိုဂုတ်ကြီးကွင်း၊ ပဲခူးမြို့နယ်၊ ပဲခူးခရိုင်၊ ပဲခူးတိုင်းဒေသကြီး

ရေးကူးပေးသည့်အကြောင်းအရာ **MIC သို့မဟုတ်** ဝန်ထုပ်ပေးရန်

(အထက်ဖော်ပြပါအကြောင်းအရာအတွက်သာ အသုံးပြုခွင့်ရှိသည်)

လျှောက်ထားသူအမည် - ဦးမျိုးအောင်
 လျှောက်လွှာတင်သည့်နေ့စွဲ - ၀၀.၄.၂၀၁၉
 လျှောက်ထားသူထံထုတ်ပေးသည့်နေ့စွဲ - ၂၂.၄.၂၀၁၉
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အမှုတွဲထိန်းမြေတိုင်းစာရေးလက်မှတ် - မြို့နယ်လယ်ယာမြေစီမံခန့်ခွဲရေးနှင့် စာရင်းအင်းဦးစီးဌာန ပဲခူးမြို့။
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Figure-11: Document of plot of land which is part of project site

Master Layout

The 49 acres project site is irregular in shape, rather like the skull of an ape when look from the left side. It is bounded in the south by the Nyaung Inn Road which is a portion of Bago-Taikkyi Road. The high tension or high voltage National Electric Gridline which runs from west to east crossing over the site at about the centre almost cutting the site into northern half and southern half.

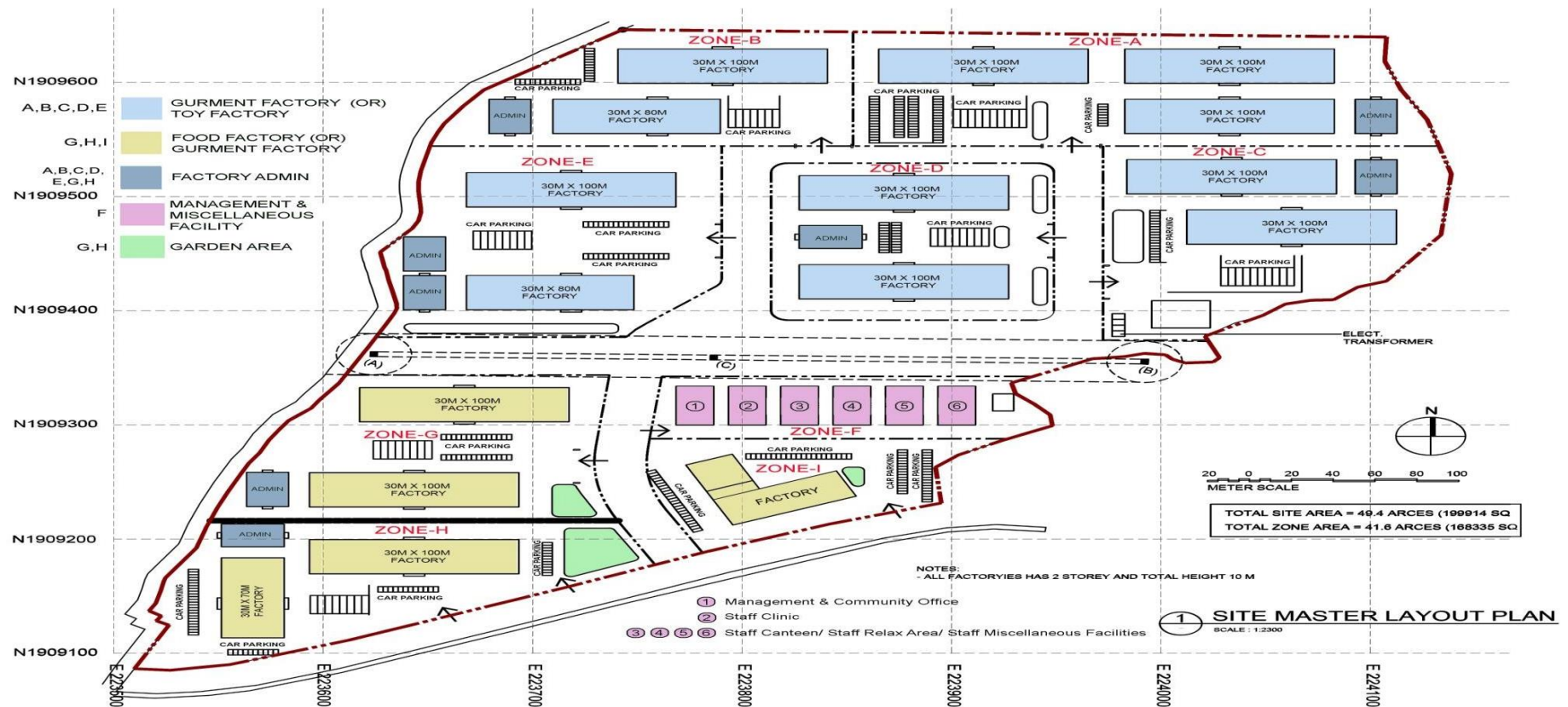


Figure-12: Site master layout plan

The site is divided into 9 zones; Zone A, B, C, D and E are in the northern half while Zone F, G, H and I are in the southern half (See Figure).

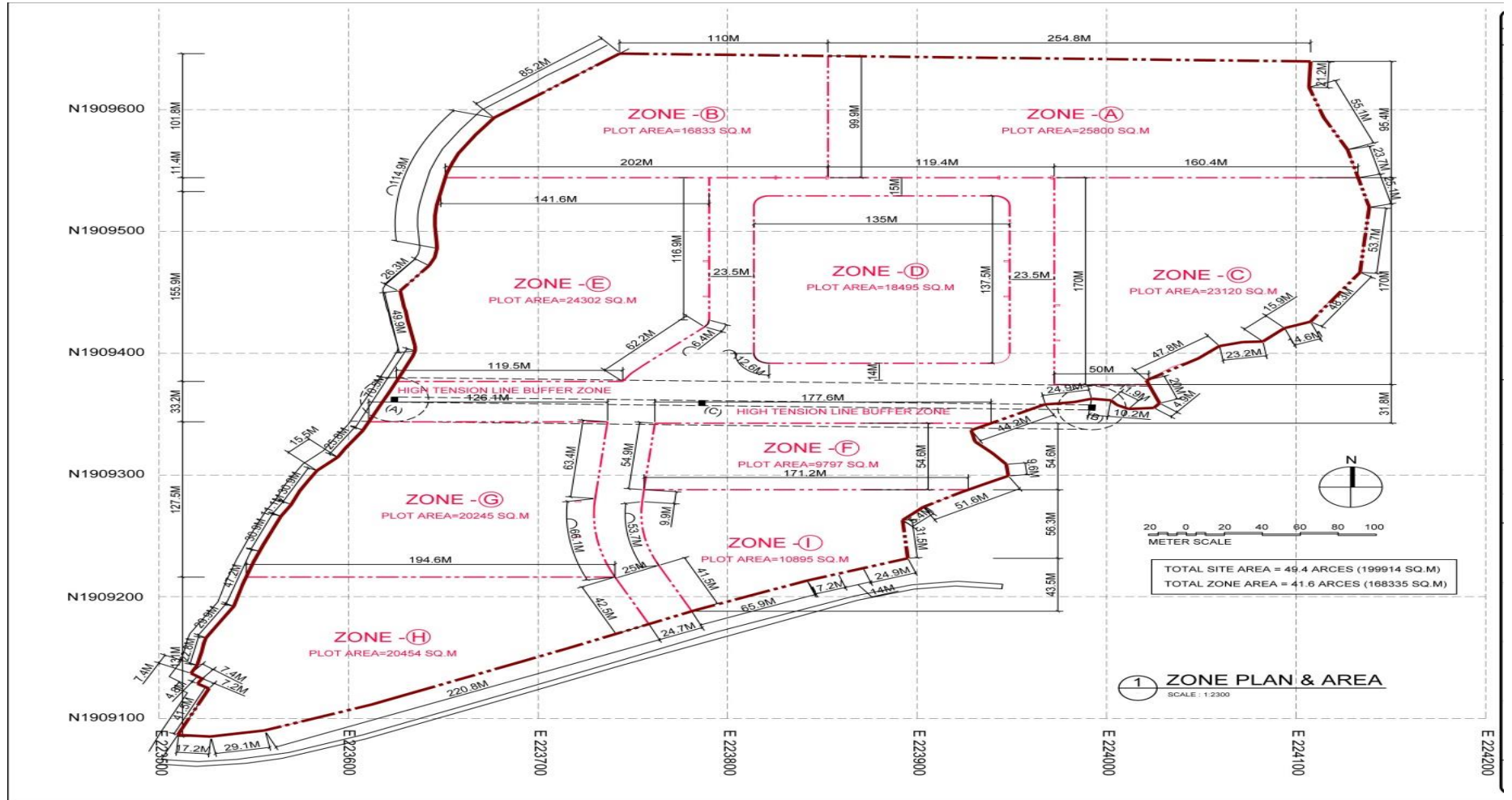


Figure-13: Zoning of project site

3.3 Description of the project

Project Life

As mentioned earlier the 4 phase of the project are:

Preconstruction Phase	:	1 year
Construction Phase	:	3 years
Operation Phase	:	50 years
Decommissioning/Rehabilitation Phase	:	1 year

Estimated budget is USD 23,000,000.

Zoning of the site

In the northern part of the site, Zone A is in the northeast corner; in the west is Zone B. South of Zone A and B are, from east to west, Zone C, Zone D and Zone E.

In the southern half of the site, Zone F is in the northeast and in the adjacent south is Zone I. In the west, from north to south are Zone G and Zone H.

The area for each plot or each zone is:

A 25800m²; B 16833m², C 23120m², D 18495m², E 24302m², F 9797m², G 20245m², H 20454m² and I 10895m². There will be wide road between every two zones.

The width of the buffer zone for the overhead the width tension line is 31.8m. There will be no buildings/structures in this buffer zone.

Layout for each zone

With the exception of Zone F which is designated for only administrative building all the remaining zones will accommodate factories and administrative office buildings.

The layout plan for factories and administrative buildings for each zone is as follow:

Sr. No.	Zone	Factory and Admin building	Area (m)	No. of floor	Structure
1.	A	Factory	100 × 30	1 floor	Steel Structure
		Factory	100 × 30	1 floor	Steel Structure
		Factory	80 × 30	1 floor	Steel Structure
		Admin building	30 × 20	3 floors	Steel Structure
2.	B	Factory	100 × 30	1 floor	Steel Structure
		Factory	100 × 30	1 floor	Steel Structure
		Admin building	30 × 20	3 floors	Steel Structure
3.	C	Factory	100 × 30	1 floor	Steel Structure
		Factory	100 × 30	1 floor	Steel Structure
		Admin building	30 × 20	3 floors	Steel Structure
4.	D	Factory	100 × 30	1 floor	Steel Structure
		Factory	100 × 30	1 floor	Steel Structure
		Admin building	30 × 20	3 floors	Steel Structure
5.	E	Factory	100 × 30	1 floor	Steel Structure
		Factory	80 × 30	1 floor	Steel Structure
		Admin building	30 × 20	3 floors	Steel Structure
		Admin building	30 × 20	3 floors	Steel Structure
6.	F	6 Admin buildings only	30 × 20 each	3 all 3 floor	Concrete Structure
7.	G	Factory	100 × 30	1 floor	Steel Structure
		Factory	100 × 30	1 floor	Steel Structure
		Admin building	30 × 20	3 floors	Steel Structure
8.	H	Factory	100 × 30	1 floor	Steel Structure
		Factory	70 × 30	1 floor	Steel Structure
		Admin building	30 × 20	3 floors	Steel Structure
9.	I	one L-shaped factory	64 × 56 × 23.8 × 33 × 40.2 × 23.8	1 floor	Steel Structure

Total - 16 factories
- 14 Admin buildings

Zone A has 3 factories and 1 admin, building each. Zone B, C, D, G and H have 2 factories and 1 admin building each (3 storeys).

Zone E has 2 factories and 2 admin buildings. (3 storeys).

Zone F has only 6 admin buildings (3 storeys).

Zone I has one L-shaped factory only.



Figure-14: Site layout plan

Break down for factories and administration office buildings

No.	Description	Number
1.	<u>Factory</u>	
	(1) 100m × 30m	12 buildings
	(2) 80m × 30m	2 buildings
	(3) 70m × 30m	1 building
	(4) 64m × 56m × 23.8m × 33m × 40.2m × 23.8m	1 building
2.	<u>Factory Admin building</u>	
	1 30m × 20m (3 floors)	14 buildings

There are separate car parking at all the 9 zones. Every zone will be furnished with green landscaping; more over there will be special green area at Zone G, H and I, The largest garden will be in Zone H.



Figure-15: Entrance view



Figure-16: Factory, 100 m x 30 m x 15 m



Figure-17: Factory, 80 m x 30 m x 15 m



Figure-18: Factory, 70 m x 30 m x 15 m



Figure-19: Office/administrative three storeyed building, 30 m x 20 m x 4.2 m x 3.6 m x 3.6 m



Figure-20: L - shaped factory

Installation and infrastructure

The Construction Phase is subdivided into 3 sub phases, in accordance with Investment Phases.

- Phase 1 investment will be started from Year 1 and the construction period for phase 1 is 12 months.
- Phase 2 investments will be started from Year 2 and the construction period for phase 2 is 23 months.
- Phase 3 investment will be started from Year 3.

Main Construction Materials

With a view to conservation, the use of timber woods is minimized as far as possible to minimize the environmental impact on the forest. All 16 factories are steel structure, while 6 of the 14 administrative buildings are concrete structure.

High quality and durable construction materials will be used. Some of them will be imported. To ensure durability only quality raw materials such as sand, gravel, cement will be procured from reputed vendors. (Sand will be only from freshwater source; sand from marine origin has corrosive effect.)

The project proponent will hire a reputed building contractor for the construction of the factories complex.

Sourced of electricity

Electricity will be sourced from the National Electricity Gridline, either from a Sub-station during the Construction Phase and from Bago Electrical Station, 5 miles away in the east during the Operation Phase. The project proponent will liaise with the electricity authority.

Annual electricity requirement is 120 million KW (1500 KVA). A Sub-station with 33 KV/11 KV 15 MVA (Onan Oil Type out door transformer) will be built. 11 KVA underground lines will be up for distribution to the 9 zones.

Backup generator will be also installed for use in emergency cases such as power outage.

Electrical distribution layout is shown in following **Figure**.

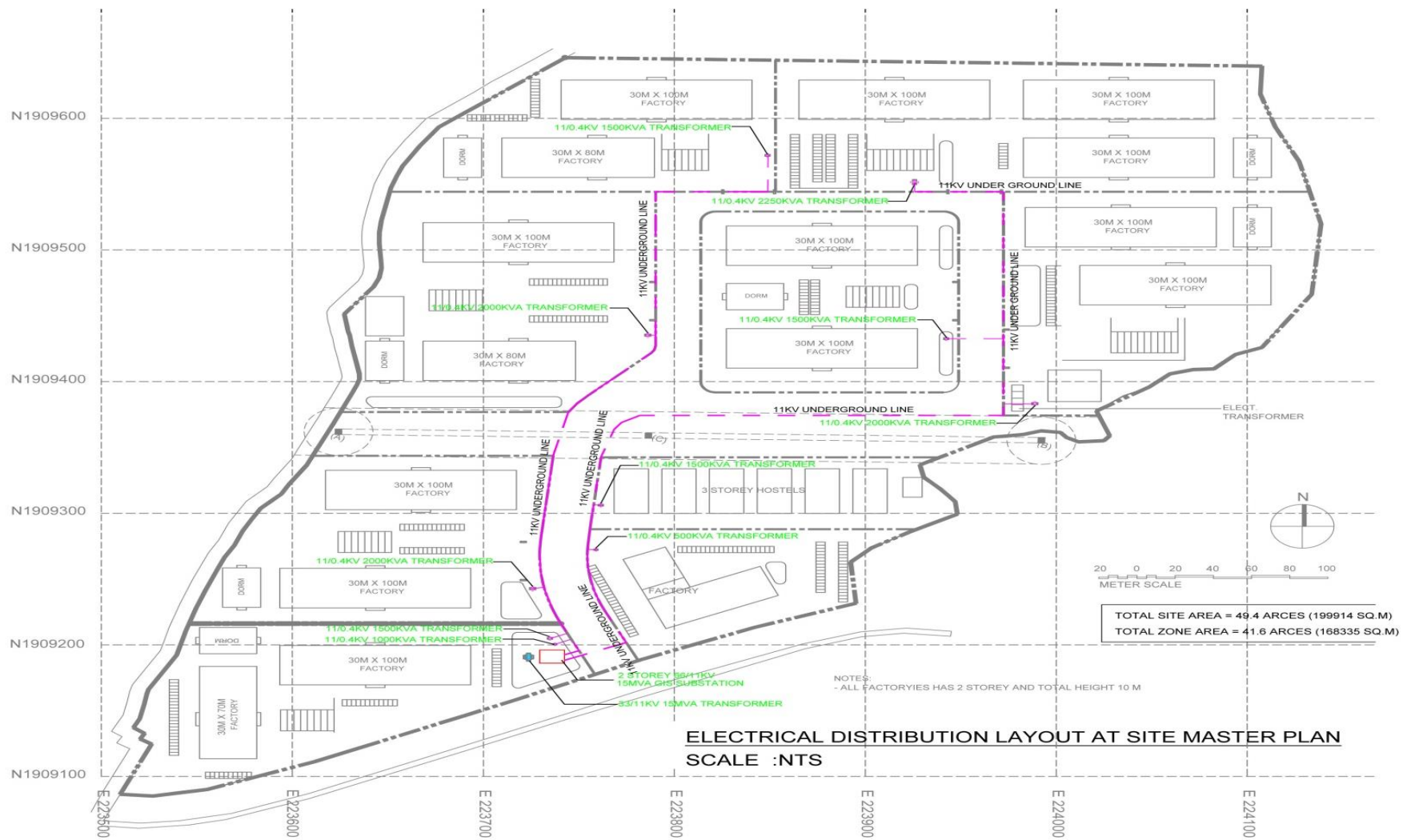


Figure-21: Electrical distribution layout plan

The electrical plan comprises factory use, office use, general uses, domestic uses, lighting and CCTV system, PA system, telephone network system etc.

Water supply

Water will be sourced from underground water at a depth of 280 ft. 6 tube wells/artesian wells will be bored, each with a diameter of 6 inches.

The company has also an alternative plan for sourcing water from Bike-pu-ma weir (on Bike-pu-ma stream), about 850 feet away in the north.

Annual water requirement is estimated at 82,204,800 gallons (387,294 tons). Water consumption per day is 232,800 gallons.

One underground tank with a capacity of 280,000 gallons and one elevated tank with a capacity of 140,000 gallons will be constructed; both will be Reinforced Concrete (RC) tanks. Water at these two main tanks will be kept full 24 hours a day with the aid of automatic water level regulator/controller (sensors and pumps).

Water from the elevated tank will be distributed to all areas of the project site through a network of pipe lines of 8 inch diameter and then to all the 9 zones with pipe lines of 4 inch diameter.

For common water used (watering plants, clearing) hydrants with diameter $\frac{3}{4}$ inch will be installed along the driveway inside the premise.

For piping and plumbing steel pipes will not be used; only High Density Polyethylene (HDPE) flexible plastic pipes will be used.

Fuel requirement

Annual requirement are as follows:

Diesel	:	5,300 gallons
Petroleum	:	3,000 gallons
Engine oils, etc	:	20 kg
Lubricants	:	20 kg

If possible high sulphur content diesel will be avoided.

Fuel requirement is just for Construction Phases only; during the long Operation Phase each separate factory will have its own requirement, depending on the nature of factory.

3.4 Environmental, health and safety management in brief

The project will lease/rent the 16 factories to any entrepreneurs who are interested and want to operate a factory in this area. But priority will be given to only eco-friendly business; in other words, factories that are environmentally sound factories (those that are smoke less or noise less if that is possible). Factories that emit substantial smoke, high level noise and

generate bad odour will not be allowed to operate in this factory zone. Priority will be given to garment/apparel/clothing factories, toy factories and electronic goods factories.

The project proponent on its part will not be involved in operation of any factory but will only involve in management of the factory zone under the directives of the local authority. The project proponent will be the landlord while the companies doing business in this factory zone will be the tenants.

Lighting protection system in brief

For prevention of lightning strikes lightning protection system will be installed.

For lightning protection system for all the buildings and structures Myanmar National Building Code (MNBC) 2016 and Singapore Standard, IEC Standard will be complied with.

Air Terminal Network System will be applied and earthing points will be installed around all buildings and structures. Electrical earthing will be set up according to TT (Terre-Terre) earthing system and there will be earth bonding system for all medium voltage and low voltage electricity.

Lighting earth and electrical earth will be placed at least 5 meters apart.

Fire prevention and fire fighting

Automatic fire alarm system involving smoke detector will be installed. (Heat detector will be considered later.)

All buildings will have emergency exit and a manual break glass call point (together with alarm bell) will be installed at a distance of 30 meters from all emergency exit.

An underground fire fighting water pond (capacity 100,000 gallons) will be constructed and water will be distributed to all fire hydrants through centralized system. The fire fighting pond will be filled with water all the time.

Fire alarm system will be installed at all the 9 factories zones and in addition Sub Alarm Panel (SAP) will be also installed. All these SAPs will be connected with the Main Alarm Panel (MAP) inside the Management Committee's fire command center. All the cables will be fire resistant insulated cables.

Smoke detectors will be the photoelectric type and will be placed at an interval of 10 m. Call points and associated alarm bells will be placed at 30 m interval, at a height of 1.4 m.

Fire fighting system comprises Fire Hose Reel System, Wet and Dry Riser/Hydrant System and portable Fire Extinguisher System.

Fire Hose Reel System for sprinkling of water contains a hose reel pipe 30 m long with a diameter of 25 mm. Hose Reel System will be installed at 30 m intervals.

Wet and Dry Riser/Hydrant system will be also installed to enable easy availability of water at all levels. Wet Riser system comprising Galvanized Iron (GI) pipes of 150 mm diameter at every level together with 65 mm landing valve. In the Dry Riser system water will not be

filled in advance but will be available only when needed. There will be fire hydrants at intervals of 100 m in the whole compound area.

For convenient small fire fighting portable extinguisher will be also deployed. The extinguishers are 4 kg AB type and will be placed at 15 m interval inside each factory.

Waste management

(a) Solid wastes

The design for solid waste (industrial waste/factory waste) is based from Myanmar National Building Code (MNBC) 2016, and Singapore standards. Specific temporary solid waste bins will be placed inside the compound for all 16 factories. From there each factory will take the responsibility of disposing their solid wastes. The project proponent will liaise with the local authority, particularly Bago City Development Committee, for the establishment of a main common landfill for disposal of solid wastes. The approved landfill will be managed by the city development committee and the project proponent.

Domestic waste generated from admin building of each zone and from the 6 admin building complex will be managed in the same way.

(b) Liquid wastes

The water distributed from the centralized water supply system (comprising one 280,000 gallons ground tank and 140,000 gallons elevated tank) is only raw water. As mentioned earlier both tanks will be RC tanks and all water pipes will be HDPE plastic pipe; galvanized steel pipes will not be used.

Depending on the nature/type of the factories each factory zone (Zone A to I) will have its own separate water treatment system.

Industrial waste water treatment system design will depend on the type of industrial waste water generated from the 16 factories. The bottom line though, is that the waste water quality value must not be greater than 20 BOD (biological oxygen demand). It is not practical to draw designs now; this will be done promptly when what types of factories to operate in this factory zone are known.

Rain water/storm water will drain from the roofs through the rain water drain pipes into the external main drainage. The project proponent has at the moment, no plan for harvesting rain water or storm water. Availability of water is not an issue now; one day in the future it might be necessary to harvest rain water or storm water. The project proponent will be always ready for any change in plan.

Sanitary waste water treatment design comprises the application of Sewage Treatment Plant system, the system involves a variety of devices and tanks such as screen, membrane module; equalization tank, anoxic tank, aerobic tank, sludge storage tank, chemical tank, permeate tank, inspection chamber and final discharge. A variety of pumps have to be deployed and so too is a blower.

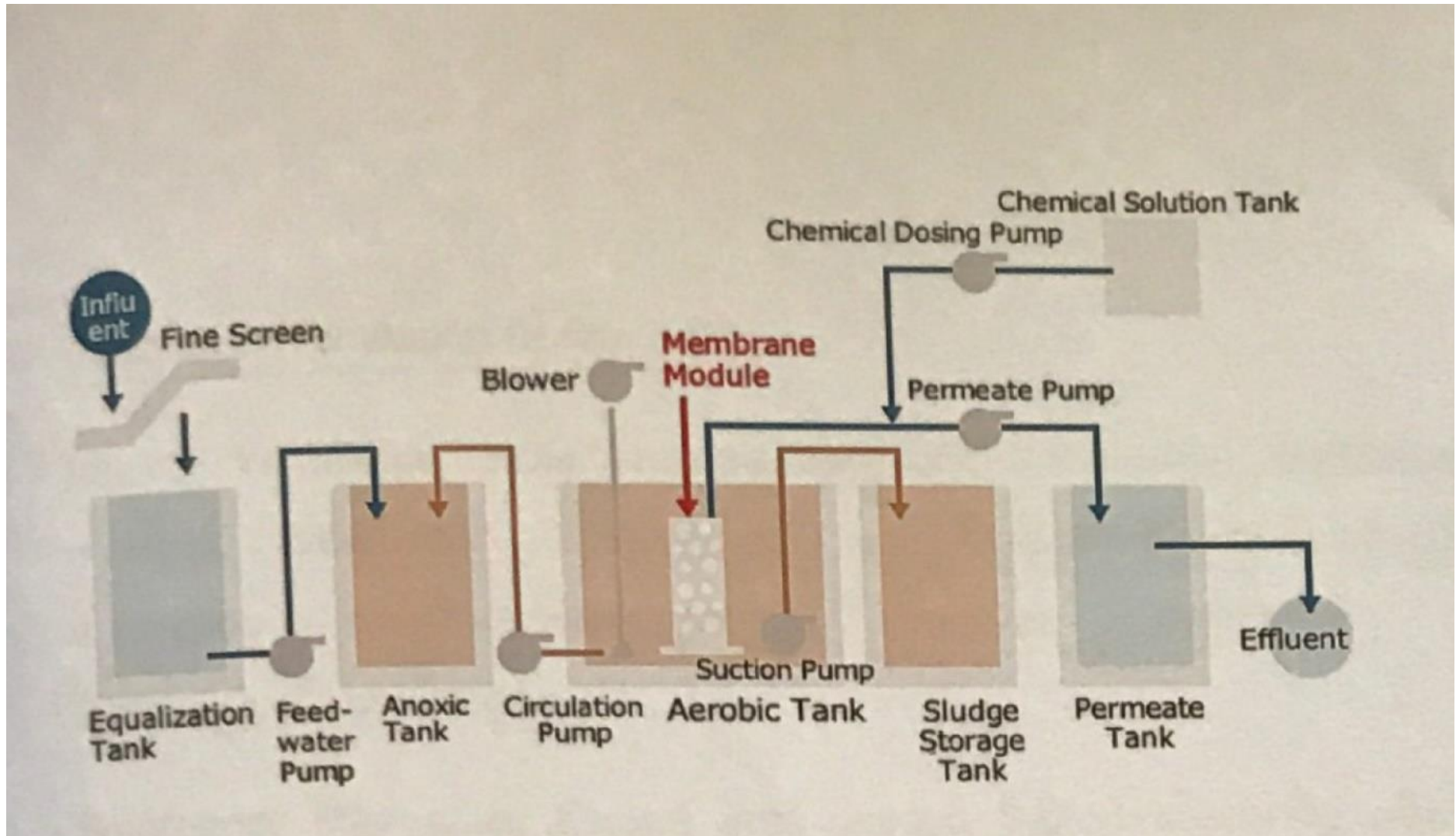
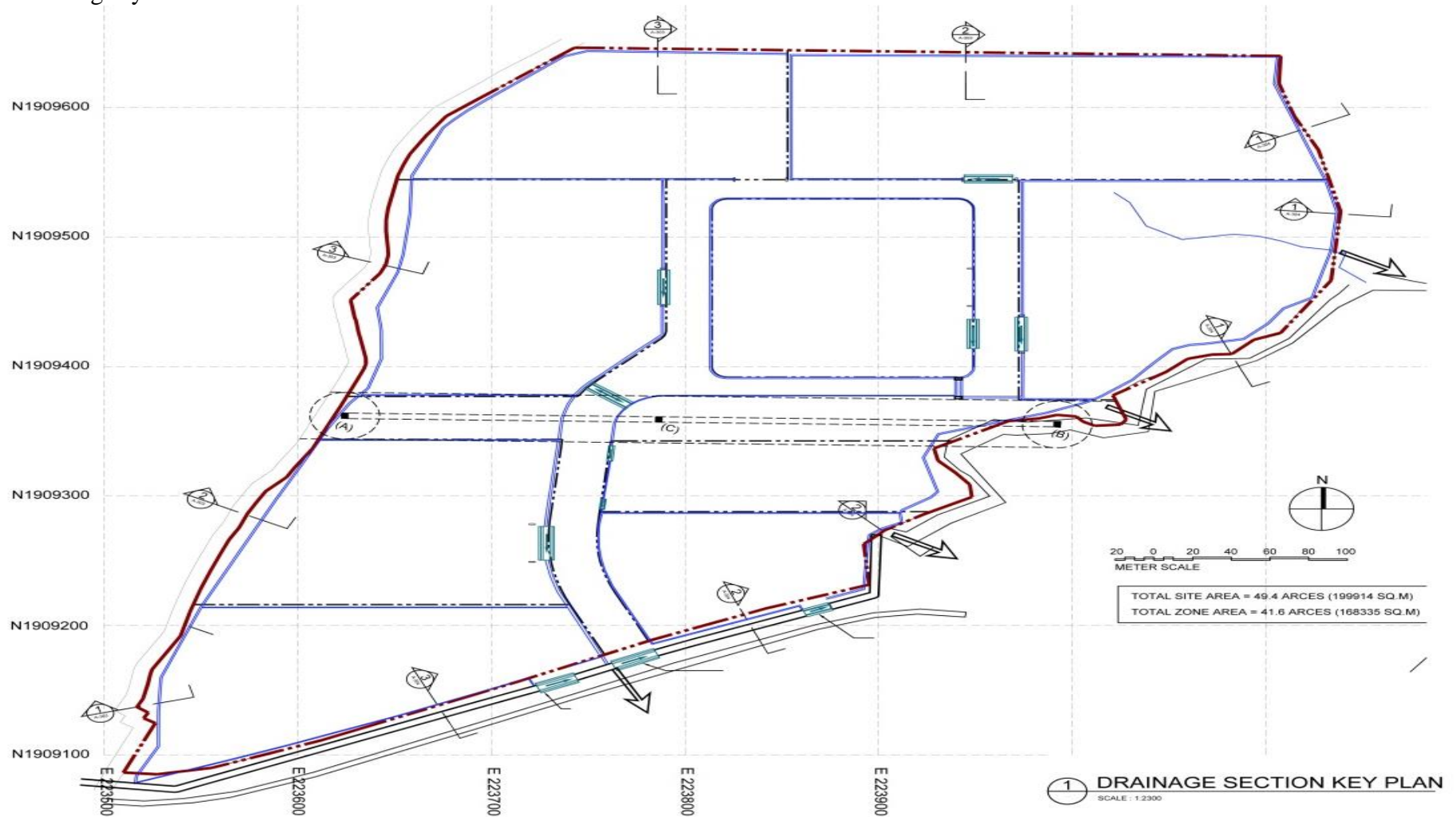


Figure-22: Waste water/sewage treatment plan

The drainage system is as follows:



3.4.1 Other aspects of the project

Staff organization

Because the main tank of this project is the construction of 16 factories 14 administration office building during the Construction Phase there will be more employees during the Construction Phase of 3 years. There will be 176 employees.

Local staff organization is as follow. (Construction Phase)

1. Manager (Administration planning)	1 person
2. Manager (Finance)	2 persons
3. Manager (Marketing)	2 persons
4. Architect	2 persons
5. Senior Management	1 person
6. Experts/Technicians	3 persons
7. Advisor	2 persons
8. Engineer (steel and mechanical)	4 persons
9. Engineer (civil)	7 persons
10. Excavator Operator	3 persons
11. Crane Driver	2 persons
12. Welders	8 persons
13. Electricians	5 persons
14. Skilled Workers	20 persons
15. Unskilled Workers	85 persons
16. Office Staff	15 persons
17. Cleaners	5 persons
18. Security Personnel	6 persons
19. Drivers	3 persons
Total	176 persons
Foreigner Manager	1 person

During the long Operation Phase there will be 40 permanent employees.

Staff organization (Operation Phase)

The works during the long Operation Phase will be management works, fewer staffs are required.

Local staff

1) Senior Manager	2 persons
2) Professioners/experts	5 persons
3) Technicians	5 persons
4) Advisors	2 persons
5) Skilled workers	10 persons
6) Workers	<u>10 persons</u>
Sub Total	<u>34 persons</u>

Foreign staff

Manager	3 persons
Expert	<u>3 persons</u>
Sub Total	<u>6 persons</u>
Total	<u>40 persons</u>

Note: During Year 1 there will be only 20 staffs, but from Year 2 onwards there will be 40 staffs.

The working hours are 8 hours/day, and 40 hours/week. For the local staff the salaries range from Ks 200,000 to Ks 500,000 in Year 1. From Year 2 onwards the salaries will range from Ks 250,000 to Ks 600,000. For foreigners staff the salaries range from USD 1000 – USD 1500 in Year 1 and from Year 2 onwards the salaries will be USD 1500 to USD 2000.

3.5 Project alternatives and selection of preferred alternative

Site location alternative

The project proponent, SCBILD, has selected the site because it is devoid of the six undesirable attributes (inside or close to protected area and wildlife sanctuary, etc. historical, archeological site; lake or reservoir of drinking water sources for a city; inside agricultural land; prone to disaster; and have issues of land disputes).

Bago Region is not as crowded as Yangon Region for setting up of a factory zone. The former is preferred to the later.

The site is easily accessible by motor road; it can have easy access to electricity and water.

There is no better alternative envisaged at the moment.

Construction material alternative

The eco-friendly construction materials rather than conventional materials are selected. The used of timber is minimized as a means of conservation of forest. All the 16 factories and 8 administrative buildings will be steel structure. Only 6 admin buildings will be concrete ones. Eco-friendly and durable construction materials are preferred to conventional ones. Sand and pebbles from fresh water origin rather than marine origin will be selected as basic construction; the later is corrosive in nature.

Orientation alternatives

The site is irregular in shape and the high tension cable passes over from west to east cutting the site into almost two halves. The space is quite limited and moreover buffer zone has to be considered along the high tension cable line area; little is left for manoeuver for orientation. The northern half have to be allocated for Zone A-E while the southern half for Zone F-I.

No better orientation alternative can be envisaged.

Operation/technology alternative

With environmental awareness always in mind the project proponent (SCBILD) prefers to lease the plots to eco-friendly/environmentally sound factories rather than conventional factories. Therefore priority is given to garments/apparel/clothing factories and toys/electronic factories where there will be less smoke (or no smoke) and noise less (or low level noise) generated.

Environmentally friendly factories are preferred to environmentally unfriendly ones that generate smoke, high level noise and bad odour.

Energy alternative

As mentioned earlier the site has easy access to gridline electricity and the company takes the advantage of this. But as an alternative for energy during power failure or power outage the company will install one 2000 KVA generator, as a backup system.

As regards fuel oil the company has no chance to select sulphur free diesel but to procure diesel that is available in the country. Diesel will be used for machinery and equipment only.

Demand alternative

In the future the company will consider for the application of solar panels (solar energy) for some lighting and for some domestic uses as a means of conservation of electricity to certain extent.

Supply alternative

For the consumption of water, fuel and energy the company will adhere to the principle of conservation rather than using them extravagantly; conservation is preferred to extravagance.

Water, fuel and energy will be conserved as practical as possible and their uses will be minimized as far as possible. Staff/workers will be educated and trained for conservation of water, fuel and energy.

Activities alternative

The company will educate, train and supervise its staff for good working practice, good safety practice and good environmental practice rather than follow the traditional/conventional way in performing their jobs.

The company will educate and train them to "work smarter" rather than "work harder".

Will educate them to walk or ride bicycle rather than riding car when commuting to and from workplace to conserve fuel and to contribute to emission reduction

The "no go alternative" or "no project alternative"

This is out of the question. The company (SCBILD) has already spent a lot of money for this project and works are progressing quite well. The company will duly implement is project.

The "no go alternative" will mean the area will remain unproductive and backward as before. The no go alternative/no project alternative will also mean no more development in the socio economic aspects of the local area and the region. None of the benefits to be generated from this project will be realized by the company, the local people and the region. This no go alternative cannot contribute anything to the development of the industry and development of the local area. The 176 persons to be employed temporary (3 years) during the Construction Phase and another 40 person to be employed permanently during the long Operation Phase will lose their employment opportunities if this project is not implemented.

As the project can also boost the local economy in many ways all these chance will be lost if the "no projects alternative/no go alternative" happen.

The direct investment of including US\$ 23,000,000 by SCBILD Ltd will not materialize and this cannot contribute to the increase in the GDP of the nation if the "no project alternative" prevails. There will be also no chance for an increase in earning for nation in the form of taxes, duties, loyalty, revenue etc. if the "no project alternative" happens.

4. DESCRIPTION OF THE SURROUNDING ENVIRONMENT

4.1 Setting the study limits

As already mentioned earlier the proposed project site is on the Nyaung Inn Road (part of Bago-Taikkyi Road) and located at Plot No.1176, Na Goke Gyi Kwin, Buu-lae Inn Village Tract area, and also on Plot No. OSS. 76, Kyay Taing Pyin, War-mayan Village Tract Area, Bago Township, Bago Region.

Of the 83.3 acres of land acquired by SCBILD, 47 acres in the south is within the Buu-lae Inn Village Tract area while 36.3 acres in the north is within the War-mayan Village Tract area. The 47 acres (in Buu-lae Inn area) plus 2 acres (in War-mayan area), 49 acres is designated as project site.

The EIA study area encompasses the project site (49 acres) and the surrounding area within a radius of 2 miles (12.6 sq. miles). As all the medium size factories will be smoke less and relatively quiet ones (garment factories and toys factories) the impacts, if any can be felt or seen at most only within 1 mile radius; the outer 1 mile will be the buffer zone.

The site is bounded in the north by the plot of land owned by U Myo Aung; in the east by the plot of land owned by U Wa Ko; in the south by the Nyaung Inn Road (the Bago-Taikkyi Road) and in the west by the plot of land owned by U Than Soe.

Two villages within the 2 miles radius are Wat Kone south east of the project site and Bagan Bo further south west. New Hope Hatchery is one mile south west while another small hatchery is about one mile in the east. Both hatcheries produce chicks from chicken eggs. The newly hatched chicks are immediately sent to customers. 1.8 miles in the northwest is a medium size brick factory.

Bike-pu-ma weir is about 800 feet away in the northwest. There are small plots of rubber plantations here and here. But generally the whole area is dominated by bush and shrubs land. There is no forest in the area and virtually no natural big tree. Shade trees and fruits trees are found only in the village area.

The coordinates at the centre of the site are: N. Lat. 17° 15' 13.92" and E. Long. 96° 24' 07.42" and the elevation is 85 ft asl.



Figure-24: Bago-Taikkyi Road (the project site is on the right)



Figure-25: The project site environs



Figure-26: A small rubber plantation in the background

4.2 Physical characteristics

4.2.1 Climate

The climate is tropical monsoon with a dry season (premonsoon), a rainy season with moderate rainfall (monsoon) and a cool season (postmonsoon).

The hot dry season is from March to June; the rainy season is from June to September and the cool season is from November to the end of February. This is just the generalized picture of the climate of lower Myanmar.

In the follow up EIA study the meteorological conditions, namely, monthly temperature, rainfall, relative humidity and prevailing wind etc will be gathered from the Meteorology Department, Yangon. These information and data will be incorporated into the EIA report.

4.2.2 Topography

The whole area is generally a flat terrain of shrub land, paddy fields, and rubber plantation and village area. At the 49 acres project site the elevation in the west and northwest part is slightly higher than in the east and south east part.

The elevation at the centre of the site is 85 ft asl.

4.2.3 Basic geology

The study area is situated in the southern part of the Central Cenozoic Belt which is one of the four tectonic provinces of Myanmar.

The area is underlain by the Miocene Epoch Sedimentary rocks (23-5.3 million years ago) and the younger Quaternary Period (2.5-0.5 million years ago) sediments.

Although, the area is covered by recent alluvial sediments, there are a few isolated linear small hill-locks and hill rocks made up of dominantly laterite.

Lithographically the area is also made up of Kyaukok Formation of Lower Miocene Age (Epoch), Obogone Formation of Middle Miocene Age (Epoch) and Ayeyarwaddy Formation of Mid-Pliocene Age (Epoch).

The North-South trending Sagaing Fault is about 5 miles in the east (within the Bago City area) extending further south wards to the Andaman Sea.

The soil of the area is diluvial soil type. The soil are yellowish brown, sandy and silty clay to clayey and silty sand, the soil can be gravelly or gritty as it is nearer to certain elevated spots. The laterite clay can be also seen at certain elevations.

As a TOR during the follow up EIA study trip soil samples will be collected for analysis.

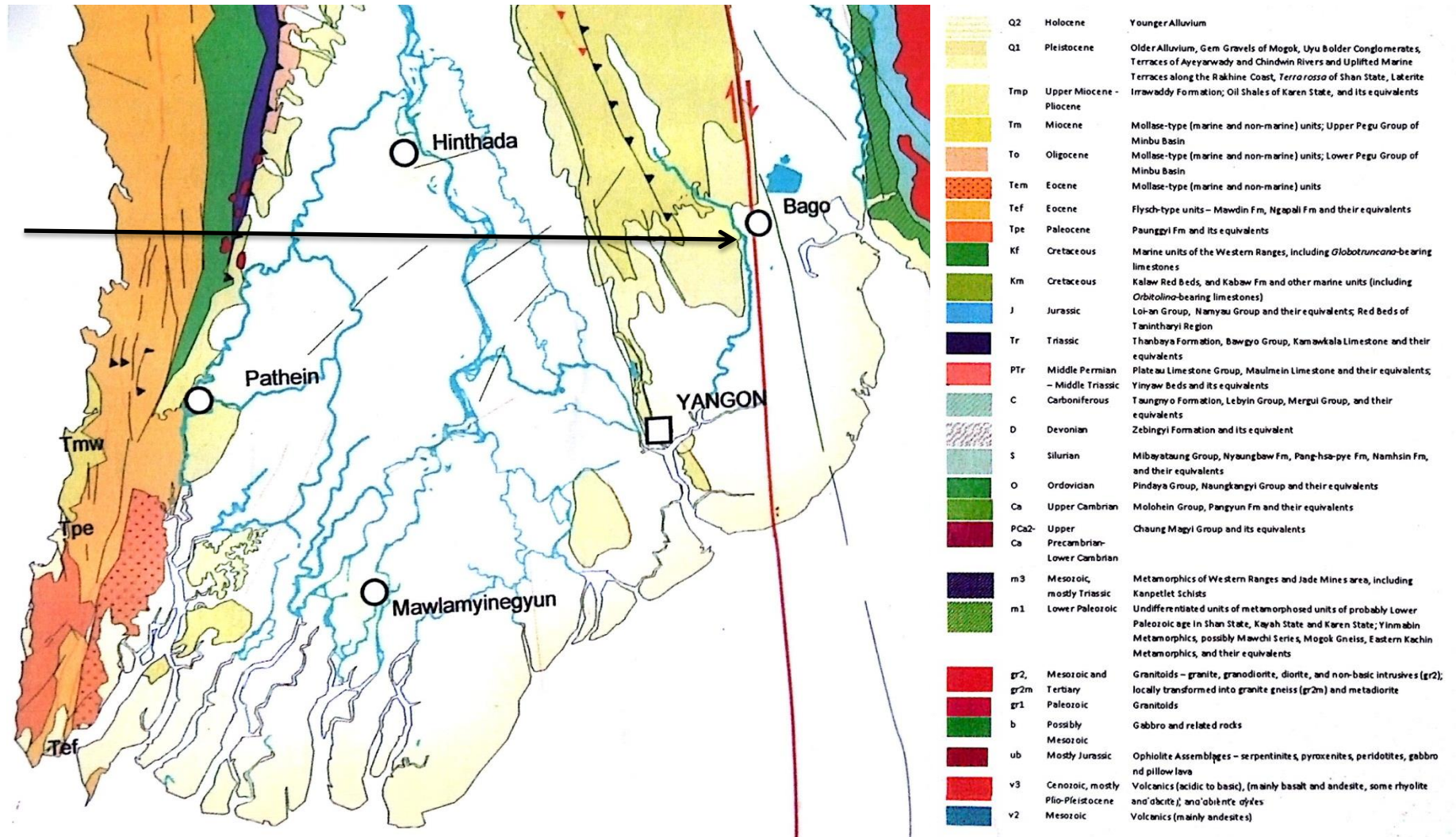


Figure-27: General geology of the region

Other physical characteristics/parameters

Since the scoping study is a preliminary and rapid assessment study other physical characteristics such as ambient air quality, dust, smoke, noise and vibration as well as water quality are not investigated during the scoping study. These will be thoroughly investigated during the follow-up EIA study. These baseline data will be collected, documented, recorded and analyzed during the comprehensive EIA study. In the same way baseline data/information on water quality will be conducted during the follow-up EIA study and incorporated in the subsequent EIA report. The results will be compared with NEQEG guideline values.

4.3 Biological characteristics

The whole area is dominated by shrub land and bush and literally there are no big trees. Big trees (such as shade trees and fruit trees) can be found only in village area and along the road site. There is no forest and no big wild life.

However a rapid study on the natural and artificial plants --- eg. Fruits trees, shade trees, ornamental trees, flowering trees and the common urban birds found in the area was conducted.

The plants (both natural and artificial vegetation) found are: *Acacia auriculiformis* A.Cunn. (Malaysia-padauk), *Ageratum conyzoides* L. (Khway-thay-pan), *Albizia saman* (Jacq.) Merr (Kokko), *Alstonia scholaris* (L.) R.Br (Taung-mayo), *Alysicarpus vaginalis* (L.) DC. (Thanmanaing-kyaukmanaing), *Butea frondosa* Aroxb. (Pauk-pin), *Colocasia affinis* Schott. (Pein), *Eupatorium odoratum* L. (Taw-bizet), *Ficus auriculata* Lour. (Tha-phan), *Ficus retusa* L. (Nyaung-ok), *Jasminum multiflorum* (Burm.f.) Andrews (Taw-sabe), *Lagerstromia speciosa* (L.) Per. (Pyin-ma), *Mangifera indica* L. (Tha-yet) and *Mimosa pudica* L. (Hti-Ka-yone).

As regards avian fauna the birds found are:

- Little Green Bee-eater *Merops orientalis*, White Wagtail *Motacilla alba*, Red-vented Bulbul *Pycnonotus cafer*, Little Egret *Egretta garzetta*, Rock pigeon *Columba liva*, Spotted Dove *Streptopelia chinensis*, House Swift *Apus affinis*, Indian Roller *Coracias benghalensis*, Common Black Drongo *Dicrurus macrocercus*, Common Myna *Acridotheres tristis*, Pied Bushchat *Saxicola caprata* and House sparrow *Passer domesticus*.

As for herpetofauna, Common Toad *Duttaphrynus melanostictus*, Painted Common Bull *Kaoula pulchra*, the Paddy Frog *Fejervarya limnocharis*, Flying Frog *Polypedates leucomystax*, House Gecko *Hemidactylus brokii*, Garden Fence Lizard *Calotes versicolor*, Blue-crested Lizard *Calotes mystaceus*, Common Sun Skink *Eutropis multifasciata* and Chequered Water Snake *Xenochrophis piscator*.

Regarding mammalian fauna only small rodent eg. House Rat *Rattus rattus* and Asian House Mouse *Mus musculus* were found during scoping study.

Bike-pu-ma stream and the weir are the only small water course and small water body existing in the area. The small stream cannot support even a small scale fishery.

The information on aquatic animals (fish) is secondary data obtained from the local.

The fish known to inhabit the stream and weir are:

- Mostly *Puntius chola* and *Puntius stigma* (nga-kone-ma); others are *Mystus vittatus* (nga-sin-yaing); *Channa striata* (nga-yant) and *Channa gachua* (nga-yant-gaung-toe); *Ambassis baculi* (nga-zin-zart); *Ompok rato* (nga-nu-thann), and *Lapidocephalichthys guntea* (nga-tha-lei-doe).

As a term of reference (TOR) for EIA a detail study on the flora and fauna, at the vicinity of the site will be conducted in the follow up EIA study and the finding will be incorporated in the follow up EIA report.

4.4 Socio-economic characteristics

A rapid preliminary assessment of the socio-economics of the area was carried out applying desktop survey (from available information), visual inspection and Key Information Interview (KII) on the Wat Kone and Bagan Bo Villages.

Table-1: Socio-economic attributes

Socio-economic attributes	Wat Kone Village	Bagan Bo Village
Households	89	178
Population	358	613
<u>Ethnicity %</u>		
Bamar	90 %	100 %
Kayin	10 %	-
<u>Religion %</u>		
Buddhist	100 %	100 %
Christian	-	-
<u>Main occupation (% of households)</u>		
- Farmer (paddy)	50 %	5 %
- Seasonal farmer/planter	15 %	-
- Seasonal job	10 %	-
- Working in factories	5 %	8%
- Odd jobs	20 %	10 %
- Working in Rubber plantations	-	72 %
- Motor cycle carrier	-	5 %
<u>Government employees</u>		
- Teachers	2	2

Sources: From KII and secondary source

- Rice is the main crops; others crops are bitter gourd, bean, cucumber and betel vine/leaf.
- Daily wages range from Ks 7000-Ks 8000.
- On the average one household annual incomes range from Ks 300,000 to Ks 600,000 according to rough estimation by the local elders.



Figure-28: Paddy field near the village



Figure-29: Many villagers work as motorcycle carriers

Infrastructure and services

Both villages are south of the Nyaung Inn Road which is a portion of the Bago-Taikkyi Main Road and are easily accessible by vehicles. Both villages are almost half way between the Yangon-Nay Pyi Taw Express High Way in the west and the Yangon-Mandalay High Way in

the east, (both major high ways run in a south-north direction). Both villages are easily accessible by vehicles to both major high ways.

Both villages do not have access to gridline electricity. 100 % of household of both villages have solar panels for lighting at night.

In both villages, water is sourced from ground water at a depth of 280-300 feet. In Bagan Bo Village, there are 6 tubes wells while in Wat Kone village almost 70 % of the village household have a tube well each. In Bagan Bo, there are also two community water ponds, concrete structure.



Figure-30: Bagan Bo Village



Figure-31: Wat Kone Village



Figure-32: One of the community water ponds at Bagan Bo Village



Figure-33: A tube well at Wat Kone Village

Table-2: Data on infrastructure and services

Sr. No.	Infrastructure and services	Wat Kone Village	Bagan Bo Village
1.	<u>Accessibility</u> - Motor road - Rail way	Bago-Taikkyi Road	Bago-Taikkyi Road
		x	x
2.	<u>Access to gridline electricity</u> - solar panel (solar energy)	x	x
		100 % of household	100 % of household
3.	<u>Source of water (ground water at a depth of 280-300 feet)</u> - surface water/rain water	tube wells	tube wells
		x	2 community water ponds
4.	<u>Type of houses (%)</u> - Brick house with corrugated iron roofing	40 %	5 %

	- Wooden house with corrugated iron roofing	50 %	80%
	- Wood/bamboo house with nypa leaf thatch roofing	10 %	15 %
5.	<u>Education facilities</u>		
	- school	primary school	post primary school
	- number of students	77	177
	- number of teachers	5	6
	- graduate villagers	1	8
6.	<u>Village Library</u>	x	x
7.	<u>Health facilities</u>		
	- village clinic	x	1 clinic
	- number of nurse/mid wives medical staff	x	1 nurse
	The nearest hospital in the Bago Regional Hospital in Bago City, 5 miles away. The common ailments/diseases of the area are malaria, fever and seasonal influenza.		
8.	<u>Material possession</u>		
	Television set %	- 70 % of household have TV	- 50 % of household have TV
	Hand Phone %	- 100 % of household have hand phone	- 100 % of household have hand phone
	Motor cycle %	- 90 % of household have motor cycle	- 100 % of household have motor cycle
	Private car (number)	3	x
	Three wheeler cars (numbers)	2	x

Sources: From inspection and primary source and KII and secondary source.



Figure-34: Post Primary School at Bagan Bo Village



Figure-35: Primary school at Wat Kone Village



Figure-36: Clinic at Bagan Bo Village

4.5 Cultural/religious characteristics

100 % of the villagers of both villages are Buddhist.

In Wat Kone 90 % of villagers are Bamar while 10 % are Kayin ethnic people. In Bagan Bo 100 % are Bamar.

At Wat Kone there is one village monastery, the Shwe Nyaung Bin (Bodi-Man-Taing) Taw-ya monastery with only one monk.

At Bagan Bo there is one village monastery, the Thar-Tha-nar-Zaw-ti monastery with 5 monks.

Myanmar Buddhists still worship nat spirit and the locals are not an exception. The Buddhists believe in the 31 abodes of life. The lowest abode of nat spirit is close to that of human being and these nat are worshiped. Many still keep this tradition of worshipping or rather propitiating the nat while the main faith is Buddhism. Offertory (Hnget-pyaw-pwei, Ohn-pwei) for the nat spirits usually included one coconut and three or five combs of bananas arranged on a receptacle, usually a large bowl or a tray. Or the offertory could be a coconut (nat-ohn-thee) hung up at a place as offering to the nat.

In Wat Kone Village there are many who worship the Nat spirit simply as a tradition; but there few nat worshippers in Bagan Bo Villages.

There is no known annual or seasonal festival for nat spirit in the area.

Regarding cultural heritage there is no historical monuments, no archaeological site or site of natural or spiritual values in the area. There are no sacred sites, sacred rocks, sacred trees etc in the area.

The construction workers shall be instructed to report back promptly if they accidentally find any archaeological evidences or UXO while doing the construction work.

The project cannot have any negative impact on the cultural component of the surrounding environment.

As a TOR for EIA these will be described in detail in the follow up EIA report.



Figure-37: Thar-tha-nar-zaw-ti monastery, Bagan Bo Village



Figure-38: Bodi-man-taing Taw Ya monastery, Wat Kone Village

4.6 Visual components of the surrounding environment

As the whole area is generally dominated by shrub land, and also encompasses paddy fields, rubber plantations and village areas. There is no outstanding landmark such as mountain or rock. There are also no scenic spot of aesthetic beauty for tourist attraction.

There are no large historical monuments or building in the area. There are also no large and prominent structures.

However, after the Construction Phase, 16 medium size factories together with 14 administrative buildings will stand out prominently in this 49 acres plot of land. There will be a real alteration of landscape from a previously a shrub/bush and into a modern factory complex.

The project proponent has plan for landscaping and greening of the factory zone. Moreover trees will be planted along the road and the periphery. The planting of trees and grass and creation of green landscape will mitigate the impact on the visual component and will enhance the aesthetic beauty of the area.

As for lighting at night the project proponent will conserve electricity and will not use electricity more than necessary.

At night time the project proponent will use dim light only for security reason so as not to have any offensive light (light pollution) to the locals and to avoid the attraction of insects at night.

As a TOR for EIA this section of this report will be addressed and reported in details the follow up EIA report.

5. KEY POTENTIAL ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

5.1 Methodology and approach

The impacts assessment methodology is based on prediction and anticipation and also based from personal practical experience and theoretical knowledge.

In other word the methodology is the so-called Experts Judgement methodology. This Expert Judgement method is practiced worldwide and is an internationally accepted practice. The method is practical and workable and can be applied even when all the required data are not available. Although the method may not be so accurate it is reliable and will never go wrong. (The sophisticated up-to-date method that involves mathematical/computer modelling involves the works of multidisciplinary teams work and can sometime go wrong if all required data are not available or not reliable.)

The methodology will follow the internationally accepted practices. Desktop study, actual comprehensive field study, application of tools and instruments for measuring the physical parameters eg- air, noise, water, soil and general geology for baseline data; biological (taxonomic and ecological) study for baseline data and gathering of socio-economic and cultural information and data through specially designed interviews and through visual inspection etc.

A full baseline investigation will be made during the follow up EIA study. These baseline data can be compared with the actually impacted data later.

The visual inspection of the project site and its environs is necessary for the prediction and identification of the impacts in advance.

5.2 Identification of environmental impacts

No negative impacts are anticipated for the Preconstruction Phase. The plot of land is officially acquired and officially leased for 50 plus years. Formerly the southern portion of the site in the Buu-lae Inn Village Tract area (47 acres) belonged to four owners. The north portion (36.3 acres) is the OSS, Kyay Taing Pyin in the War-mayan Village Tract area.

The six negative/potential negative impacts predicted anticipated and identified during the Construction Phase are:

- Occupational health and safety issue (potential accident at work place).
- Impact on air (due to construction activities).
- Noise and vibration (due to construction activities).
- Impact of waste (construction waste; can be significant).

- Potential social issue (Ill social behaviour and quarrel, and brawl among workers, or/and between workers and local) if not well-managed.
- Potential security issue (In the form of theft and vandalism).

All these negative/potential negative impacts during the Construction Phase are transient or temporary. All these impacts will cease after the completion of construction works and subsequent clearing and tidying up of the site.

The eight negative/potential negative impacts predicted anticipated and identified during the Operation Phase are:

- Potential traffic issue (due to vehicular activities of vehicles of 16 factories).
- Impact on air quality (due mainly to vehicular movements; impacts from 16 smokeless factories will be on the whole insignificant).
- Noise and vibration (insignificant, all factories are either noise less or emitting low level noise only)
- Impact of project on gridline electricity and vice versa (potential over consumption can have impact on national gridline, consumption will be within stated work frame, i.e 120 million KW (15000 KVA); power outage or power load shedding of gridline can impact the project).
- Impact of waste solid and liquid wastes, (industrial waste in the form of shreds and strips of cloths when cloths are cut to make garments/apparels etc.; the impact can be quite significant due to the magnitude of production work. Another, industrial wastes will be bits and pieces of plastic materials if plastic toys are manufactures or less quantity of electronic wastes if electronic toys and goods are produced. The domestic wastes generated from 14 administrative building can be insignificant; but if the 6 three-storeyed buildings are partially used as dormitories the domestic waste can be quite significant). Garment and toys factories do not generate waste water of any significance. Domestic wastes water from the 14 administrative buildings can be substantial.
- Occupational health and safety issue (potential accident at work place; workers will be educated and trained for good working practices and good safely practised). It is difficult to predict this impact.
- Potential social impacts (not likely during Operation Phase because staffs are well disciplined construction workers during Operation Phase). However, the project proponent will be always on the alert.
- Potential security issue (only in the form of theft and vandalism). Actually this will have only negligible impact. The project proponent will have security personnel deployed 24 hours a day. In addition Closed Circuit Television (CCTV) Cameras will be set up inside the factories complex. Each factory will has its own CCTV set up.

The two negative/potential negative impacts predicted anticipated and identified during the Decommissioning Phase/Rehabilitation Phase are:

- Potential accidents at workplace (accidents can happen during the tearing down/dismantling down of the factory, after Operation Phase building become old building and prone to collapse during dismantling).
- Potential residual impacts (if not systematically decommissioned and tidied up; rehabilitation is essential to restore the ecology to its quasi original situation).

Positive (beneficial) impacts

During the Construction Phase

The positive (beneficial) impacts anticipated during the Construction Phase are the provision of job (3 years) for up to 176 construction workers. The project will invigorate and boost the local economy and will bring economic benefit to people who are involved in extraction/production and sale of building materials of all sorts, both raw materials and processed ones.

At national level benefit will accrue to the country as a direct investment including US\$ 23,000,000, raising the GDP, and contribute to increase earning and increase employment. Follow up benefit such as taxes, duties, royalties and revenue will go to the national coffers.

During the Operation Phase

The positive (beneficial) impacts are: the provision of 40 permanent jobs. Their salaries will range from Ks 200,000 to Ks 500,000 in year 1. These staffs will enjoy all the benefits of a factory staff as in other developing countries.

The company local staffs will get the chance for skill and technology transfer from the Chinese technicians.

Most of all, the project will contribute to the further development of the Industrial Sector of the nation, especially the Garment Industry and Toys Industry.

As a TOR for EIA all the negative/potential negative as well as positive impacts will be assessed and described in technical and meticulous details in the follow up EIA report.

5.3 Key impacts, mitigation measures and residual impacts

The Preconstruction Phase already passed smoothly and no polarization of locals into anti- and pro-project groups has materialized. There was no protest or public outcry.

The hiking of the price of land and property is just a normal phenomenon in this country.

Construction Phase

Of the 6 impacts anticipated during the Construction Phase (mentioned earlier), occupational health and safety issue can become significant, if not well-managed. Accident can happen

during the Construction Phase due to the nature of work. But this can be prevented or at least mitigated if these are well-managed.

Impact of solid waste is quite significant given the fact that large quantities of construction tailings, left over construction materials and debris are generated. But this impact is transient and ceased after construction period. The debris are all cleared after Construction Phase.

The construction contractor and party will do the clearing and tidying of the site after the completion of the project. The surplus construction materials and left over construction materials, if any and some useable and saleable construction tailings will be sold to anyone who want them. Those that are not useable and saleable will be systematically disposed at the landfill, approved by Bago City Development Committee.

Operation Phase

Of the 8 impacts anticipated during the long Operation Phase, impact of wastes (solid and liquid) and the occupational health and safety issue can be significant if not well-managed in time.

The solid wastes, such as cutting wastes (shreds and strips of cloths) from the garment factories and bits and pieces of plastics or other materials from the toys/electronic factories, will be generated in relatively large quantity. Each and every factory will systematically collect these solid industrial wastes in the waste bins provided by the project proponent, who will be responsible for the overall disposal of the wastes at the approved landfill. The open burning of these solid wastes will be avoided at all costs.

Garments and toys factories generally do not generate industrial liquid waste. However, if the fabrics/cloths have to be dyed or printed there will be industrial waste water (dyed out water/used water). This has to be treated until the colour of the waste water become clear water before discharge. The project proponent has a meticulous plan treatment of any waste water (already mentioned briefly earlier). There will be domestic liquid water (sanitary waste water, sewage) and there will be duly treated before discharge. (As already shown earlier in layout plan for pipes and drainage system there will be each separate water treatment system for every factory and a large common treatment plant for the whole site.) The daily consumption of water from this factory complex is estimated at 232,800 gallons. About 50,000 gallons can end of up as various kinds of liquid wastes, mostly domestic waste water.

There will be solid wastes in the form of packing materials, plastic, old cupboards, wooden boxes etc and domestic wastes but this issue can be tackled. These will be separated into reuseable/recycleable and non-reuseable/non-recycleable and the later will be systematically disposed at the approved landfill for the factory complex.

Accidents can happen at any factory if the workers are not skilled and well-trained, and if they are careless. The project proponent will ask all the factories owners to educate and train their workers for good working practices, good safety practices and good health and hygiene practices.

The project proponent has a plan for requesting officers from Occupational Health and Environmental Health Division of the Department of Public Health to give lectures and educate all workers on occupational health and safety aspects. Officers from Township Fire Brigade and Township Red Cross Society will be also requested for providing trainings on fire fighting and First Aid training, respectively.

As regards potential traffic issue, the vehicles from 16 factories combined can result in a considerable increase in the traffic on the Bago-Taikkyi Road. But this cannot be regarded as significant given the fact that the factories are medium size and each will not have large number of vehicles. The project proponent will schedule the overall vehicular movements to avoid peak traffic hours.

The impact of the project on gridline electricity and vice versa can be considerable but not significant. The annual electricity requirement is 12 million KW (15000 KVA) and this will not be a great burden on the National Gridline. Gridline Power failure or power outages can have significant impact on the project but the project proponent has plan for installation of reliable backup generators for use in case of gridline power failure.

Potential social impact and potential security issues are quite difficult to gauge but can be mitigated if well-managed in the first place. Therefore it can be simply stated that most of the impacts during this phase are, on the whole, are insignificant and can be mitigated.

Decommissioning/Rehabilitation Phase

The two impacts anticipated during the Decommissioning Phase, namely, potential accident at work place and potential residual impact can be also termed insignificant and both can be mitigated.

As this phase is a short duration one it can be stated that on the whole the impacts during the Decommissioning Phase can be termed insignificant and can be effectively mitigated.

Mitigation measures

As a term of reference (TOR) for EIA the mitigation measures to be put in place for each and every negative/potential negative impact will be addressed in detail and incorporated in the follow up EIA report.

Regarding mitigation measures to be taken for each and every impact it is not practical to describe them in this short scoping report. For each and every negative impact there are many options of mitigation measures to be put in place. Depending on the different nature and source of an impact there can be a variety of mitigation measures to be put in place for that impact.

There are at least 5 options of mitigation measures to be taken for each and every negative impact/potential negative impacts and all these different options for each impact will be described in technical details in the subsequent EIA report.

Regarding residual impact there can be no residual impact after the Construction Phase. All the construction tailings, debris, left overs will be removed. Those that are useable or saleable will be put up for sale; those that are to be disposed of will be disposed at an approved landfill. Soil contaminated by small oil spills will be removed and disposed of. The site will be tidied up before operation of the factory.

There can be also no residual impact during the long Operation Phase as wastes (solid and liquid) will be managed and disposed of routinely. A variety of methods will be applied. This will be discussed in detail in the follow up EIA report.

There can be also no residual impact during the Decommissioning Phase as a decommissioning contractor will be hired to tidy up the site. Materials that are still usable or saleable will be put up for sale; those that are not, will be disposed of at a landfill.

The soil will be restored to its original situation as practical as possible.

The last stage will be the rehabilitation of the project site in the form of replanting of trees and restoration of the site to its original situation.

As a term of reference (TOR) for EIA this whole section/chapter will be described in detail in the follow up EIA report.

6. PUBLIC CONSULTATION MEETING

Public consultation is an integral part of EIA, IEE and EMP. Involving the public participation in the EIA/IEE/EMP work is fundamental to increasing the understanding and acceptance of the project.

Public consultation and participation should be started at early as possible in the preparation of EIA. And it has to be a continuous process, especially during the Operation Phase, carry out from time to time.

6.1 Preliminary public consultation meetings during the scoping study

Two preliminary public consultation meetings were held, one at Bagan Bo Village and another at Wat Kone Village; Bago Township.

(a) Public consultation meeting at Bagan Bo Village

Date - 11-8-2019
Time - 08:00 hours to 10:00 hours
Venue - At village Post-Primary school
Attendees - 16 persons

(The village has 178 household; one member from each household was invited. The rate of attendance was low.)

The meeting was attended by the village administrator and elders, the responsible officer of the project proponent the EIA team, and interested persons.



Figure-39: Preliminary public meeting



Figure-40: KII interview

Minutes of Meeting

U Myint Kyaw Thura the team leader of MESC delivered an address and explained to the audience about the project.

U Myint Kyaw Thura (MESC): Mingalarbar to all. My name is Myint Kyaw Thura. Thank you all for giving your time and attending this meeting. Our organization is Myanmar Environment Sustainable Conservation (MESC). Our organization is neither on the side of the company nor the side of the government, but a Third Party. We are coming to assess the advantages and disadvantages associated with the project. We have to study the flora and

fauna of the area, and record our finding. We will test the quality of air, water and soil. It takes 24 hours for testing ambient air especially to know the particulate matters and other parameters. The water and soil samples have to be collected and analysed at officially registered laboratories in Yangon. In this way we collect baseline data on plant, animal, air, water and soil before the construction of the project. These data will be compared with those collected after the Operation Phase and tackled any issue regarding environmental. Impacts, if any will be mitigated as far as possible. There will be described in the follow up EIA report.

In some regions there arise some problems between the project proponent and local community due to smoke emission from factories. In this proposed factories complex/zone all factories will be smoke less factories and emission will not be an issue. In this era of environmental awareness and transparency the project proponent has an obligation to inform the public. There were/are precedent of public outcries in the country due to lack of transparency. With this in mind we come here to know the local community. We come here to give information and explain to you about the project prior to its implementation. During the long term operation the project proponent and the local community will be in contact and there is a need to have good understanding and good relation. I invite you to ask questions and give comments and express your views and opinions frankly regarding this proposed project. All the minutes of this meeting will be described in this scoping report and also in the follow up EIA reports.

Village administrator: I invite you to ask questions and express your views in a candid manner.

U San Thein, a village elder: I want to know the types of factories to be constructed and to be operated.

Daw May Theingi Han (responsible officer of the project): Our Company, Sun City Bago Industrial Land Development (SCBILD) will construct and establish this factories zone/factories complex and most of the factories will be garment/apparel factories, toys factories and probably food factories. Our company will not be involved in the operation of any factories; we will only lease/rent the factories and plot of lands to any interested investors.

U San Thein, a village elder: It is very good to have a factories zone here. There is good employment opportunities for our villagers and the local economy will develop to some extent and there will be gradual development for the local area.

U Nyunt Hlaing, a village elder: Many of our villagers are working in factories. Prior to the emergence of factories in this region there used to be high unemployment rate. Now as factories are coming into existence more jobs are available now. We have some villagers who have experience working in factories. When your project is in operation I want you to employ our villagers.

Daw May Theingi Han (responsible officer of the project): When operation we will prioritize employing the local people. Locals will be employed according to their skill and experience.

U Myint Kyaw Thura (MESC): Thank You all for giving your time attending this meeting.

The meeting has come to a close at 10:00 hours.

(b) Public consultation meeting at Wat Kone Village

- Date - 11-8-2019
- Time - 13:00 hours to 14:30 hours
- Venue - At village monastery
- Attendees - 46 persons

(The village has 89 household; one member from each household was invited. The percentage of attendance is 50 %.)

The meeting was attended by the village administrator and elders, the responsible officer of the project proponent the EIA team, and interested person.



Figure-41: Preliminary public meeting



Figure-42: KII interview

Minutes of Meeting

U Myint Kyaw Thura the team leader of MESC delivered and addresses and explained to the audients about the project.

U Myint Kyaw Thura (MESC): Mingalarbar to all. My name is Myint Kyaw Thura. Thank you all for giving your time and attending this meeting. Our organization is Myanmar Environmental Sustainable Conservation (MESC). Our organization is neither on the side of the company nor the side of the government, but a Third Party. We are coming to assess the advantages and disadvantages associated with the project. We have to study the flora and fauna of the area, and record our finding. We will test the quality of air, water and soil. It takes 24 hours for testing ambient air especially to know the particulate matters and other parameters. The water and soil samples have to be collected and analyze at officially registered laboratories in Yangon. In this way we collect baseline data on plant, animal, air, water and soil before the construction of the project. These data will be compared with those collected after the Operation Phase and tackled any issue regarding environmental. Impacts, if any will be mitigated as far as possible. There will be described in the follow up EIA report.

In some regions there arise some problems between the project proponent and local community due to smoke emission from factories. In this proposed factories complex/zone all factories will be smoke less factories and emission will not be an issue. In this era of environmental awareness and transparency the project proponent has an obligation to inform the public. There were/are precedent of public outcries in the country due to lack of transparency. With this in mind we come here to know the local community. We come here to give information and explain to you about the project prior to its implementation. During the long term operation the project proponent and the local community will be in contact and there is a need to have good understanding and good relation. I invite you to ask questions and give comments and express your views and opinions frankly regarding this proposed project. All the minutes of this meeting will be described in this scoping report and also in the follow up EIA reports.

Daw May Theingi Han (responsible officer of the project): Our Company, Sun City Bago Industrial Land Development (SCBILD) will construct and establish this factories zone/factories complex and most of the factories will be garment/apparel factories, toys factories and probably food factories. Our company will not be involved in the operation of any factories; we will only lease/rent the factories and plot of lands to any interested investors.

U Nyein Aung (village administrator): These factories will have no stack as there will be no smoke generated; and we need not worry for this. But I also want to know if any other negative impacts exist and if so how to mitigate/remediate these impacts.

Daw May Theingi Han (responsible officer of the project): There cannot be any significant negative impacts, but there can be only minor ones. There are two methods in the making of garments/apparels; one that involves simple tailoring only and another one involve dyeing/printing (of fabrics) and tailoring. There can be impact if the second method is applied. However, in this era of environmental awareness modern method involving the recycle of dyed-out water have been applied. Even if the dyed-out water cannot be 100% recycled the discharged water will be clear water. A factory cannot discharge waste/used water indiscriminately in an irresponsible manner.

U Nyein Aung (village administrtor): Just two furlongs away there is emission of dust (rock dust) due to the operation of a brick factory. The dust and the smell are really bad and have health issue for the locals. We are worried that such factories will increase in the area.

U Myint Kyaw Thura (MESC): The proposed factories in this factory zone will be smoke less and dust free factories. Garment factories can create a lot of works for the local. Even through there is no forest there are vegetation in this area which can absorb dust and odour. The impact, if any can be minimized. The issue of dust and odour from that brick factory should be tackled by that company. Authority should be informed.

U Kyaw Than (a local elder): We have few educated people in our village. Owing to the arrival of new factories we have more employment opportunities, better steady income and improvement in livelihoods. The standard of living will surely getting a bit higher and our children will have a better chance for education. There can be an overall development for our community.

U Htay Aung (a local): There are construction materials (brick) production and husbandry (chick production) business in our vicinity. Waste and odour generated are really bad and will have impacts on the community health. Unlike the other former enterprises this project is transparent and hold such consultation meeting and explain to us about the project. We can also express our views and wishes frankly. This is very good for our local community.

U Myint Soe (a local): I want to know whether you have any plan for employing our villagers when the Construction Phase of your project commence.

Daw May Theingi Han (responsible officer of the project): We will need a lot of workers when the constructions begin. Experts and technicians will be hired from elsewhere, but for hiring construction workers priority will be given to your villagers. When the project is in the process of implementation we will hire employees according to their skills and experience. As there will be various types of jobs we will need a large number of employees. We wish to carry on our work in cooperation and coordination with the locals.

U Myint Kyaw Thura (MESC): Thank you all for giving your time for attendance.

The meeting was over at 14:30 hours.

Result of public consultation meetings

(a) At Bagan Bo Village

- As usual the team leader of EIA scoping team explained to the locals about the proposed project in brief.
- One local, U San Thein, want to know the types of factories to be built.
- Daw May Theingi Han replied that these will be mainly probably garments/toys factories.
- U San Thein Than spoke in favour of the project; that there is employment opportunities for the villagers and that there can be improvement in local economy.
- U Nyunt Hlaing, a village elder said many villagers are working in factories in this region; that they have experience and that he wanted the company to employ their villagers.
- Daw May Theingi Han replied that, that is what the company will exactly do.

The meeting has ended in a friendly and cordial manner. There was no one expressing his/her view against the proposed project; the acceptance of the project can be construed as good. No one has expressed his/her concern for air, water and land pollution.

There was no issue of land disputes, land grabbing and forced eviction and relocation.

(b) At Wat Kone Village

As usual the team leader of MESC, U Myint Kyaw Thura explained the participants about the project and the work of the scoping team. How the impacts due to the implementation of the project will be mitigation. He also invited the participants to express their views and opinions frankly.

- U Nyein Aung, the village administrator said that he realized that. These garment factories will not emit smoke. But he wanted to know if there are any other impacts.
- Daw May Theingi Han, the responsible officer that if the factory is a simple garment factory there will be no issue. But if the factory also involved dyeing/printing there can be impact of waste water/dyed out water. The waste water will be at least treated (if not 100% recyclable) until it becomes clear water again before discharge.
(Most factories will be garment factories simply involve in tailouring/sewing).
- The issue of dust and odour from a factory was raised by U Nyein Aung. Actually the owner of that factory is responsible for this. Authority should be informed by the villagers to solve this problem.
- U Kyaw Than, a local spoke in support of the project, such as employment opportunities, steady income and improvement of living standards.

- U Htay Aung, a local, also raised the two said issues, dust and odour. He said that there was also a nursery (chick production) in the vicinity and odour from that nursery was really bad. However he praised this proposed project proponent for holding public consultation meeting in a transparent manner.

(The nursery operator is responsible for the bad odour; the village administrator and elders should inform the authority about this issue).

- One local, U Myint Soe, wanted to know if the company has any plan for employing the villagers.

The answer was definitely yes.

The meeting has ended in a friendly atmosphere. There was no local speaking against the implementation of the project. Some of them have spoken in favour of the project as a job provider.

Two locals have made complaints regarding the brick factory and hatchery but that were beyond the scope of this scoping study. Only the township authority can tackle these two issues.

There was/is no issue of land disputes, land grabbing and forced eviction and relocation.

Information disclosure

The project proponent has already met with the village administrator and village elders for a few times and they are already familiar with this project. In this meeting Daw May Theingi Han, the responsible officer, has given lengthy explanation of the project and by now all villagers are familiar with this project.

Information disclosure in the form of press release will be made after the follow up EIA trip. Finally, when the subsequent EIA report is approved part of the report (eg. Executive Summary) will be launched at the website of the consultant firm www.myanmareenvironmentsustainableconservation.com. Copies of approved EIA report will be kept at the company office for any interested person for perusal.

A Grievance Redress Mechanism (GRM) will be set up when the Construction Phase commence. It will be practical and effective, not a mere formality.

Corporates Social Responsibility (CSR)

As regards CSR programme the company has pledged to raise a fund (the CSR fund) for community assistance and community development. The official policy of the company is 2% of the net profit will go to the CSR fund. The company has pledged to raise the fund ever before the company has realized any profit yet. This is done merely for the benefit of the villagers.

7. CONCLUSIONS AND RECOMMENDATIONS

Sun City Bago Industrial Land Development (SCBILD) Limited has contracted the consultant firm, MESC for conducting EIA study and for the submission of EIA report for the construction and leasing of Sun City project (factories zone/factories complex) on Nyaung Inn Road, at Plot No. OSS, Kyay Taing Pyin, War-mayan Village Tract area, Bago Township, Bago Region.

Environmental Impact Assessment is mandatory and has to be duly conducted prior to the implementation of any developmental project taking place in the country. And as a statutory requirement the scoping study has to be conducted and scoping report together with term of reference (TOR) have to be submitted prior to the actual EIA work.

This is the scoping report and TOR for the follow up EIA study and subsequent report for the proposed project.

This scoping report anticipates no serious environmental fatal flaws during this scoping study. Of course, negative/potential negative impacts (both significant and insignificant) were predicted or anticipated during the project life as mentioned earlier. But virtually all can be effectively mitigated or minimized.

Of the 8 negative/potential negative impacts predicted or anticipated during the Operation Phase two impacts, namely, occupational health and safety and impact of waste (solid, liquid) disposal can be termed quite significant if not well-managed. The mitigation measures to be put in place and EMP programme will be addressed in detail in the follow-up EIA report. Actually these two impacts can be also effectively mitigated or minimized.

The potential negative impacts predicted or anticipated during the Construction Phase such as impact of waste (in the form of construction tailing and debris) can be significant. But this impact will cease after Construction Phase because all the construction wastes and tailings will be cleared and the site tidied up when the Construction works has completed. Accidents at work place can be prevented if well-managed in the first place

Sun City Bago Industrial Land Development Limited (SCBILD) will conduct the follow up EIA study after the authority has approved the scoping report and the term of reference. The EIA study will strictly follow the guidelines, procedures and format of EIA as prescribed by the Environmental Conservation Department (ECD), of the Ministry of Natural Resources and Environmental Conservation (MONREC); (EIA procedure notification No.616/2015, Section 62 and 63, subsection 1-10.)

The project proponent will comply with the laws, rules and regulation mentioned in **Section-2** (overview of the environmental policy, legal and institutional frame works) which will be elaborated in detail in the follow up EIA report. The project proponent will also comply with the National Environmental Quality (Emission and Effluent) Guideline prescribed by ECD. The project proponent shall strictly follow and implement mitigation measures which will be addressed and described in meticulous and technical details in the follow up EIA report. And lastly the project proponent will implement the Environmental Management Plan (EMP) and Monitoring Plan (MP) which will be described in the follow-up EIA report.

8. TERMS OF REFERENCE (TOR) FOR EIA

I. Introduction

This is the terms of reference for conducting EIA for the afore-mentioned proposed project.

The purposes of the TOR are:

- To prepare and conduct an effective and meaningful EIA for the proposed project.
- To disseminate information for relevant authorities and the locals concerning the proposed project and suggestion for any better alternative where possible.
- To gather information and provide rapid assessment.
- To enable the EIA team to anticipate issues not usually raised and addressed the concern of the locals.
- To make utmost effort such that the resulting EIA report is useful to the decision makers, or in other word, to provide all necessary information in the EIA for the authority and decision makers who will have to make usually hard decision for the approval of the project.

This TOR is prepared in accordance with the EIA Procedure, Notification No. 616/2015 (29 December, 2015) by ECD of MONREC (Sections: 49, (a, b, c, d, e, f, g); 50 (a, b) and 51(a, b, c, d, e, f, g, h); 52 and 53).

1) Study area, area of influence, time boundaries, project phases, and potential stakeholders

Study area

The proposed project site is located at Plot No. 776, Na Goke Gyi Plot, Buu-lae Inn Village Tract, Bago Township, Bago Region.

The project site is bounded in the north by plot of land owned by U Myo Aung; in the east, south and west are plot of lands owned by other local people.

Bush and shrub dominate the area but there are small paddy fields and rubber plantation here and there.

Area of influence and time boundaries

The designated EIA study area encompassed the project site of 49 acres and surrounding area within a radius of 2 miles (12.6 sq. miles). As all the 16 factories are medium size factories and smokeless factories (garment factories, toys factories). The impact can be felt or seen at most within 1 mile radius. The outer 1 miles radius can be termed as buffer zone.

Two Villages within the 2 miles radius are, Wat Kone Village, south east of the project site and Bagan Bo Village further southwest. New Hope Hatchery (chick production) is one mile southwest while another small hatchery is about 1 mile in the east. About 1.8 miles in the northwest is medium size brick factory. Bike-pu-ma weir is about half miles away in the north.

As a part of social impact assessment Wat Kone Village and Bagan Bo Village are incorporated into the study area.

Project Phases

The estimated duration of the project life:

- i) Preconstruction Phase : 1 year
- ii) Construction Phase : 3 years
- iii) Operation Phase : 50 years (land lease is 50 years)
- iv) Decommissioning/Rehabilitation Phase : 1 year

Potential Stakeholders

The immediate potential stakeholders are local communities in the vicinity and the villagers of Bagan Bo and Wat Kone Villages. Authorities at villages and township levels and Community Based Organizations (CBO), if any, can be also termed stakeholders.

2) Applicable laws, regulations and standards

Applicable laws are:

1. The Environmental Conservation Law, 2012
2. The Environmental Conservation Rules, 2014
3. Myanmar Investment Law, 2016
4. Myanmar Investment Rules, 2017
5. The Factories Acts, 1974
6. Labour Organization Law, 2011
7. Minimum Wages Law, 2013
8. The Payment of Wages Law, 2016
9. Myanmar Insurance Law, 1993
10. Fire Brigade Law, 2015

11. Occupational Health and Safety Law, 2018
12. Yangon Region City Development Committees Law, 2018
13. Private Industrial Enterprise Law, 1990
14. The Conservation of Water Resources and Rivers Law, 2006
15. Employment and Skill Development Law, 2013
16. Leaves and Holiday Act, 1951
17. Shop and Establishment Law, 2016
18. Underground Water Act, 1930
19. Myanmar Engineering Council Law, 2013
20. The Related Laws enacted by Bago Region Hluttaw and Rules issued by Bago Region Government
21. Environmental Impact Assessment Procedure, 2015 by ECD
22. National Environmental Quality Emission Guideline (NEQEG), 2015 by ECD

The standards refer to are:

1. EHS guideline for food and beverage. Document.worldbank.org
2. EIA for ALHARAM-MIGM, a factory for electronic goods and toys. <https://www.miga.org>WBG>
3. Environmental - BTHA (British Toys and Hobby Association). <https://www.btha.co.uk>gu>
4. Guideline for Sustainable Industrial Area (SIA). <https://tuewas.asia.org>2017>
5. IEC. Standards. www.electrical-installation.org
6. IFC. Performance Standards on Environmental and Social Sustainability; A Guide Book. <https://firstforsustainability.org>ifc>
7. IFC. Environmental, Health and Safety guideline. (General Guideline – 2017)
8. IFC. Engagement in the Apparel and Textiles Sectors in emerging market. <https://www.ifc.org>publication>
9. IFC. Food and beverage processing. <https://www.ifc.org>connect>

10. IFC. Remediation Financing in a Bangladesh Ready Made Garment Sector. <https://www.ifc.org>publication>
11. Industrial Development Design, Standards and Guidelines. www.louisville.co.gov.home
12. Industrial Development Rules and Regulations. <https://www.moe.gov.b7>
13. Information Management for factory – planning and design. Diva-Portal. <https://www.diva-portal.org>>
14. ISO Quality Standards in Construction. <https://scelibrary.org>doi>
15. ISO Quality Standards in Construction. <https://www.researchgate.net>2379>

The guidelines to comply with are:

The following National Environmental Quality (Emission and Effluent) Guideline by ECD, 2015, will be complied with:

(a) Air quality

Sun City Bago Industrial Land Development Limited (SCBILD) will follow the general National Environmental Quality Emission Guideline values (Code no. 1.1) for air emission (NEQEG guidelines) as prescribed by the Environmental Conservation Department (from Notification No. 615/2015, December 2015, by ECD, then under the Ministry of Environmental Conservation and Forestry (MOECAAF), now MONREC.

Parameter	Averaging Period	Guideline Value µg/m³
Nitrogen dioxide	1-year	40
	1-hour	200
Ozone	8-hour daily maximum	100
Particulate matter PM ₁₀ ^a	1-year	20
	24-hour	50
Particulate matter PM _{2.5} ^b	1-year	10
	24-hour	25
Sulfur dioxide	24-hour	20
	10-minute	500

^a Particulate matter 10 micrometers or less in diameter

^b Particulate matter 2.5 micrometers or less in diameter

(b) Water quality

Sun City Bago Industrial Land Development Limited (SCBILD) will follow the general National Environmental Quality Emission Guideline values (Code no. 1.2) for waste water and others, NEQEG Guidelines as prescribed by the Environmental Conservation Department (from Notification No. 615/2015, December 2015, by ECD, then under the Ministry of Environmental Conservation and Forestry (MOECAAF), now MONREC.

(Waste water, storm water runoff, effluent and sanitary discharges (general application))

Parameter	Unit	Guideline value
5 day biochemical oxygen demand	mg/l	50
Ammonia	mg/l	10
Arsenic	mg/l	0.1
Cadmium	mg/l	0.1
Chemical oxygen demand	mg/l	250
Chlorine (total residual)	mg/l	0.2
Chromium (hexavalent)	mg/l	0.1
Chromium (total)	mg/l	0.5
Copper	mg/l	0.5
Cyanide (free)	mg/l	0.1
Cyanide (total)	mg/l	1
Fluoride	mg/l	20
Heavy metals (total)	mg/l	10
Iron	mg/l	3.5
Lead	mg/l	0.1
Mercury	mg/l	0.01
Nickel	mg/l	0.5
Oil and grease	mg/l	10
pH	S.U. ^a	6-9
Phenols	mg/l	0.5
Selenium	mg/l	0.1
Silver	mg/l	0.5
Sulphide	mg/l	1
Temperature increase	°C	<3 ^b
Total coliform bacteria	100 ml	400
Total phosphorus	mg/l	2
Total nitrogen	mg/l	10
Total suspended solids	mg/l	50
Zinc	mg/l	2

^a Equivalent continuous sound level in decibels

(c) Noise level

Sun City Bago Industrial Land Development Limited (SCBILD) will follow the general National Environmental Quality Emission guideline values (Code no. 1.3) for noise, NEQEG Guideline as prescribed by the Environmental Conservation Department (from Notification No. 615/2015, December 2015, by ECD, then under the Ministry of Environmental Conservation and Forestry (MOECAAF), now MONREC.

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

^a Equivalent continuous sound level in decibels

Note: Noise level at work place must not exceed 85-90dBA. (Provide PPE, ear muff, ear protection for workers exposed to high noise level for long period. The ideal level not interfere with health is 45dBA.)

(d) Odour

NEQEG Standard Guideline for odorant unit is between 5 and 10.

3) Provisional identification of environmental impacts

(a) During the Preconstruction Phase

Environmental impact not anticipated

(b) During the Construction Phase

1. Occupational health and safety (potential accident at work place)
2. Impact on air quality
3. Noise and vibration
4. Impact of waste (construction waste)
5. Potential social issue
6. Potential security issue

(c) During the Operation Phase

1. Potential traffic issue
2. Impact on air quality
3. Noise and vibration
4. Impact of project on gridline electricity and vice versa
5. Impact of wastes
6. Occupational health and safety issue (accident at work place)
7. Potential social impacts
8. Potential security issue

(d) During the Decommissioning Phase

1. Potential accidents at workplace
2. Potential residual impacts

4) Depth and breadth of the subsequent EIA investigation

EIA work involved the visual inspection of the area, the surveying work and collection of baseline environmental and social data.

The methodology comprises desktop survey, field study, consultation meeting and the gathering of information and data and report writing.

Assessment is based from Expert Judgment method after discussion and deliberation among EIA appraisers and practitioners until a consensus is reached. It is practical and workable, may not be so accurate, but reliable.

Desktop survey covers the reviewing of all available report and literature in the country or EIA reports downloaded from the internet.

These are actually internationally accepted methods practiced worldwide.

(a) Physical parameters

The physical data such as air quality, particulate matter (PM), SO₂, NO₂ and noise were all primary data, collected through field survey. The data for water and soil analysis were also primary data. Basic geological data is secondary data from previous geological data.

All geological data are secondary information from the findings of geologists in previous studies. The methodology involved Satellite image analysis, geological outcrop mapping, litho-geo-chemical survey, gravity investigation etc it was learnt. Analysis work was conducted in Yangon.

All meteorological data, monthly rainfall, monthly maximum and minimum temperature, humidity, wind speed etc. were secondary data. They were obtained from Yangon Meteorology Office.

In some cases experts or technicians from other governmental department or from private companies have to be hired for measuring certain physical, chemical and geological parameters.

(b) Biological parameters

The data on the biological components particularly flora were all primary data. All data on flora, birds, reptiles, amphibian as well as the large majority of aquatic organisms, if present, were collected through this field surveys.

As wildlife are non-existence in this area the flora remain the main biological component for study. The flora study involved the overall view of the vegetation and classification of vegetation type; distribution pattern, if possible, transect walk and on the spot identification of the species. There is no forest in the vicinity to study.

(c) Socio-economic parameters

As regards socio-economic data most were secondary data. These were gathered by means of conducting Key Informant Interview (KII) and also from certain Secondary Source (SS). Certain primary data were acquired by means of visual observation, inspection, transect walks and focal group discussion (FGD).

Desktop survey is also sometimes applied if there are previous data and information regarding the socio-economic aspects of the area.

(d) Cultural/religion parameter

As for cultural components there were no important cultural, religious, historical and archaeological monuments or sites in the area. Each village has one monastery. There is no likelihood to be impact by the activities of the project.

(e) Visual component parameter

In the case of visual component there is no visual component to be impacted by the project.

There are no outstanding landmark and site of aesthetic beauty and scenic spots to be impacted. The only prominent visual components are the existing village with houses and shade tree/fruit tree inside and around the village.

5) Provision of opportunity for relevant authorities, project proponent and stakeholders etc to express their views and concerns

This will be conducted in the form of public consultation meetings during the scoping stage and later follow up EIA study period. The consultation meeting during the EIA trip will be a comprehensive one where all relevant authorizes, organizations, societies and stakeholders

and representatives from different walks of life will be invited. Public consultations will be something like a continuous process to be carried out from time to time during the long Operation Phase.

During the meeting the participants and stakeholders are always encouraged to express their views, opinions and concerns, and to file complaint if any, frankly. A piece of paper is distributed to every participant to express his/her views and opinion frankly in written statement if he/she feels reluctant to speak in front of others.

6) Enable an efficient and comprehensive assessment process that save time, resources, and costs and avoid delays

As mentioned above the impact assessment process will be based on Expert Judgment Method (practical, workable, even without complete data) where deliberation among EIA appraisers and practitioners will be made until a consensus is reached.

The project proponent has chosen a competent consultant firm of good reputation to carry out the efficient and comprehensive assessment process in accordance with the guideline and procedures prescribed by the Environmental Conservation Department (ECD). The project proponent will not unnecessarily waste its time and money.

7) Identify potentially affected communities and other stakeholders with an interest in the project

The project proponent will duly do this as a priority, especially for the villagers of Wat Kone Village and Bagan Bo Village, if there is any effected community. So far the project proponent has not anticipated any serious impacts on the communities of this village. The project proponent will be always on the alert regarding probable impact on the socio-economic life of the communities. Prompt and generous compensations will be made if there is any loss or damage of properties, lands, farms, drinking water resources and other natural resources.

Actually no serious impacts are anticipated as the project involves only medium size factories, virtually all will be smokeless factories. (No substantial smoke, dust and loud noise.) The major industrial waste will be shreds and strips of fabrics (for making garment) and will be well-managed. If dyeing and printing of fabric is applied then there can be industrial waste water (dyed out water). This will be treated until the water before discharge has return to clear water without any colour from the dyes.

II. Public consultation and participation process

The project proponent, Sun City Bago Industrial Land Development Limited (SCBILD), will ensure that public consultation and participation process is carried out. Officers of the project proponent together with members of the consultant firm, MESC, had already held two public consultation meetings with the local communities during this scoping study. Prior to this meeting the officers of the project proponent, have already held various unofficial meetings with the locals regarding this project.

The consultation meeting during the scoping study is something like a preliminary consultation meeting. A more comprehensive public consultation meeting will be duly held during the EIA survey. Relevant authorities, organizations, societies, stakeholders etc and representatives from different walks of life will be duly invited to the meeting. The meeting will be a meaningful one as far as possible. More public consultation meetings will be held occasionally or from time to time during the long Operation Phase. Public consultation meeting is a continuous process throughout the Operation Phase.

1) Information disclosure about the proposed project

As mentioned above the project proponent has already met several times with the locals and they are already familiar with this project. The signboard was already set up when the land was cleared and the fence was built.

Information disclosure in the form of press release will be made during the follow up EIA trip to be commenced, after the approval of this Scoping Report by the authority.

The project proponent used to release such information in the daily newspaper, The Voice Daily. The project proponent will duly carry out this work as a duty. Part of the EIA report (eg. Executive summary) will be disclosed after the EIA report is approved by the authority. Copies of the approved EIA reports will be kept at the company office for perusal for all who are interested in the report.

2) Arrange the required complement of consultation meetings as advised by the Ministry

Consultation meetings with local communities, potential PAPs, local authorities, CBOs, and Civil Society, will be held when this Scoping Report is approved and EIA Study commences. These organizations/people will be invited and provided with appropriate and timely explanation.

(In its previous projects implemented the project proponent, always used to invite local communities, local authorities, CBOs and Civil Society, if any, and explained to them about that project. However the project proponent has not yet conducted press conference and media interviews. This will be taken into consideration.)

III. Content of the scoping report

The project proponent has prepared this Scoping Report according to the following contents as prescribed by ECD:

- (a) Executive summary
- (b) Context of the project
- (c) Overview of the environmental policy, legal and institutional framework
- (d) Project description and alternatives

- (e) Description of the surrounding environment (together with maps in proper scales indicating all relevant features, images, aerial photos and satellite images)
- (f) Key potential environmental impacts and mitigation measures
- (g) Public consultation meeting
- (h) Conclusion and recommendation

The follow up EIA report will be prepared and written according to the format and procedures prescribed by ECD (Environmental Impact Assessment Procedure Notification No. 616/2015, Section 62 and Section 63, sub-section 1-10).

As a TOR for EIA the content of the follow up EIA report according to Section 63, sub-section 1-10 comprises:

- Acronyms and abbreviation
- Executive summary (in Myanmar and English)
- Introduction
- Environmental policy, legal and institutional frame work
- Project description and alternative selection
- Description of the surrounding environment
- Impacts and risks assessment and mitigation measures
- Cumulative impacts assessment
- Environmental management plan
- Public consultation and information disclosure
- Conclusion
- References
- Annex
- List of tables
- List of figures



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