600 MW Monsoon Wind Farm Project Dakcheung District, Sekong Province and Sanxay District, Attapeu Province

Environmental and Social Management and Monitoring Plan Construction Phase (ESMMP-CP) Final Version

Submitted to

Department of Environment, Ministry of Natural Resources and Environment

by

Project Developer

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Abbreviation and Definition

Abbreviation

ESIA Report	Environmental and Social Impact Assessment Report
EMMP	Environmental Management and Monitoring Plan
MONRE	Ministry of Natural Resources and Environment
DE	Department of Environment
PONRE	Provincial/Capital City Department of Natural Resources and Environment
DONRE	District Office of Natural Resources and Environment
NA	National Assembly
GOL	Government
Lao PDR	Lao People's Democratic Republic
HH	Household
ESMMP-CP	Environmental and Social Management and Monitoring Plan – Construction Phase
EMU	Environmental management Unit
UXO	Unexploded Ordnance
USD	US Dollar

Unit

km	Kilometer
m	Meter
mm	Millimeter
cm	Centimeter
ha	Hectare
km^2	Square Kilometer
m^3	Cubic Meter
m^3/min	Cubic Meter/Minute
m/s	Meter/Second
kg	Kilogram
dB(A)	Decibel
MW	Megawatt
KV	Kilovolt

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Chapter 1: Introduction

1.1 Project Background

The government of Lao PDR has set the energy policies, the capacity promotion in supplying demands and energy sustainability aiming at the rapid and stable economic and social expansion of the country, exporting of electricity and improving the living conditions of the people of Lao PDR to be better. Recently, the government of Lao PDR has the policy to promote the investment in various power projects by domestic and foreign investors. Impact Energy Asia Co., Ltd currently established as Monsoon Wind Power Company Limited, has planned to develop the wind power project with an installed capacity of 600 MW located majorly in Dakcheung District of Sekong Province and partly in Sanxay District of Attapeu Province. The company had signed the Memorandum of Understanding (MOU) with the Government since 2011 to explore the possibility of the development of the wind power plant in the area. After having conducted the measurement of wind data for over 10 years and analyzed the feasibility of the project by well-known consulting company with expertise in wind energy, both in technical and financial aspects, the company has signed the Project Development Agreement (PDA) with the Government of Lao PDR on 07 August 2015 and currently has signed the Concession Agreement on 01 December 2022. For the Wind Power Project with an installed capacity of 600 MW for a concession period of 25 years, the construction period will take 3 years, with a total investment budget of 900 million USD. This project aims at achieving a sustainable development. The project will use the wind energy to generate electricity, which is clean energy and renewable energy for sustainable environment, and to reduce dependency on fuel energy source and other kinds of energy which are limited as well as to help to reduce the greenhouse gas emissions that is one of the causes of the occurrence of Global Warming.

1.2 Reasons of the Management

To be in compliance with the Decree on Environmental Impact Assessment No. 389/GOV, dated 20 October 2022. Therefore, the management plan during the construction phase is also one of the important section of the project impact assessment process. During the construction phase, the 600 MW Monsoon Wind Farm project will focus on the key potential impacts that are expected to occur with the project during the construction of the components of the project. Those impacts will be composed of physical environment, biological and socio-economic that are within and surrounding the project area. Through the studies and surveys, it was founded that the environmental and social impacts in the project area that have the needed for remedial measures and mitigation measures , as well as management planning. The social environment and natural components that must be controlled are:

1) Physical Environment

- Impacts in the turbine installation area, roads, transmission lines and facilities in the project area : Expected to be affected during the construction phase of this wind turbine installation area, which will cause the clearing of this land for 133 turbines, in an area of 0.5 hectres/turbine. The construction of the accessing road to each area of the wind turbine will be 6 metres wide. The 35/115KV transmission lines to collect electricity. The construction of 4 internal sub-stations and 1 main station to accomodate the electricity from the wind power. The construction of each components of these projects has the needed to have the removal, surface clearing, excavation-foundation building and structurings. These activities may result in changes in the landscape and have the potential for erosion during the rainy season.
- Water Quality : During the construction phase, the water will be turbid, especially in the lower reaches water area near the construction area. There is a possibility of chemicals water contamination (especially oil and other chemicals during the construction phase, if not careful) due to the use of machinery in the construction phase by the river or near the riverside. In addition, there is also soil erosion or landslides that occur often during the construction of accessing road sinto the project area during the rainy season, especially the new pioneering roads in the area with steep slopes or in flooded areas and other places sensitive to soil erosion. If the project does not allocate land for disposing soil wastes, waste trees and crops that are well-cleared during the construction, it could cause the impact on the villages that use water near the project area as well.
- Air Quality: During the construction phase of the project, there often occur the clearing of forest areas, agricultural lands, for the preparation of the project implementation. It is expected that these area will have dusts or particles. The combustion in using heavy machineries, the uncontrolled and unrestricted burning of garbages and wastesand other particles may have a negative impact on the air quality and the health of staffs, workers including the commuters in the construction area of the project, especially in the vicinity of the construction area of the project
- Other physical environment problems that are expecte to occur.

2) Biological Environment

- Forest: It is expected that there will be losses of vegatation and forests in some certain places in the project's construction area, along the area of wind turbine installation and of the components construction of the project. Although the proposed wind power project will not have much impacts on the forests and vegetation, there is still a must for managment by reforestation and forest maintainance in appropriate areas, by basing on the principles setted by the Forestry Deparment of the Ministry of Agriculture and Forestry.
- Wildlife : Although the proposed wind power project will not widely affect the forest and wildlife, due to that the wind turbine foundation and components construction of

the project will not require much land area. Although the components contruction area of the project does not lies on main habitat area, however, these certain areas are still forest and biodiversity that are home to some wildlife. These activities all in all disrupt the habitat and food sources of the wildlife.

- Other biological environment problems that are expecte to occur.

3) Socio-Economic Environment

- The loss of people's livelihood : During the construction of this wind turbine installation area as mentioned above, the project will clear the land of the affected people, a total of 133 turbines, in an area of 0.5 hectres/turbine and will clear the land for improving the project's permanent road covering about 6 metres. Among those, there will be : construction land, paddy field, abandoned paddy field, garden lands, upland field, fish pond land, livestock land, pioneered forest and mixed forest. Therefore, the project must reasonably compensate the impact, so that the people are satisfied with project as much as possible.
- The health and safety issues of the locals and workers working on the construction of the project are also important for the project to pay attention to, as during construction period, there is a needed to use heavy machinery in the construction, road transportation, foreign labour and other construction activities.
- In addition, there will be noise pollution and vibration during the project construction. Air quality issue from the construction that cause dust, turpid water, etc…. Traffic issue of each vehicles in the project, which all have an impact on the health and safety of the labourers and of the people living in project vicinity. It is necessary to have management plan during the construction phase as a reference for the implementation of the impact prevention and mitigation as much as possible.

1.3 Overall Objectives of the ESMMP-CP

In order to be in accordance with the environmental management system following the ISO 14001 standard as a whole. In particular, in order to implement following the Appendix on the Environmental and Social Obligations of the Concession Agreement or Annex C-CA, which is approved by MONRE. Hence, the Environmental and Social Management and Monitoring Plan during the construction phase of the 600 MW Wind Farm Project or ESMMP-CP is composed of 4 overall objectives as follows:

1. To review the laws and legislations regarding the Project development, regarding the impact feasibility and mitigation measures indicated in the ESIA, ESMMP report, reports and Other plans of the Project.
2. Review the project's technical design planning or FS, the feasibility study of the Project, which is already approved by the related sectors of the Ministry of Energy and Mining, issued No. 0179/MEM.IREP, dated on 16 March 2021. Basic Design of the Project.
3. Monitor and evaluate the implementation of the components construction of the project, by adhering to the prevention and mitigation measures determined in the

ESIA, ESSMP report, reports and other relevant plans, that are being considered and reviewed by DE (MONRE), to be the norm and as an indicator the success of the management during the project's construction phase.

4. Take in the monitoring results to commend the work or any construction tasks that the project or contractor company have implemented. Criticise about any working management that the project has yet to implemented or that the project has neglected or violated the management obligations that are obligations of the project to impkement, in order for the project to improved.

1.4 Main Objectives of the ESMMP-CP

The Environmental and Social Management Plan during the construction phase or ESMMP-CP is the plan that msut be implemented with the prevention, mitigation measures according the feasibility evaluation of the impact on society and nature that are expected to occur during the construction phase. The main objectives, contents and management procedures are summarized in the table below:

Table 1: Objectives and Main Contents of the Management during the Construction Phase

Tasks	Main Objectives	Management Contents and Procedures
Natural Environment (Physical and Biological)	To ensure the implementation of the indirect and direct impacts prevention and mitigation measures. The management and monitoring to remedy the environmental impact issue determined in every components of the natural environment, which is comprised physically and biologically, that are expected to be affected during the components construction of the Project.	▪ The detailed description regarding the feasibility in avoiding and mitigating potential impacts that are expected to occur from the project's construction, the responsibility of each sections that are contracted in each tasks of the Project construction, operated according to the schedule and the determined management budget. ▪ Determine the duty of each components construction contractor of the Project. Undertanding the impacts and protective management tasks. ▪ Identify the responsibilty and working mechanism for the implementation and monitoring evaluation of the Project.
Society that uses natural resources in the Project's area.	To propose and conduct detailed analysis regarding the social relevant of the Project on the affected and set out a detailed and important necessary measures to mitigate the impacts, and pay attention to the remedy: technical activities and the managment to mitigate the impact, such as: the management to access the natural resources and the development of the livelihood, ensuring the living conditions to be in accordance with the poverty prevention goals through the sustainable development process that take into account natural environment in the project area.	▪ Detailed background information of the affected people, living conditions, assets and lands expected to be affected from the Project. ▪ Detailed background information and analysis of ethnicity, probability trends, living conditions, potential charateristics and vulnerabilities of each ethnic groups that are expected to be affected, by how much. ▪ Determine a schedule, responsibilities and budgets for each activity , including the interests of those affected that should be received from the Project development. ▪ Local development in the Project area must based on the realistic of that is to be expected to affected from the Project. Must ensure the living conditions of the people in the Project area to be better or at least not to be worse than the current living natural resources and infrastructures.

1.5 Scope of the ESMMP-CP

The scope of ESMMP-CP is the environmental and social management, along with the monitoring during the project's construction phase, which is expeted to take 3 years to complete. Therefore, the scope of the monitoring-evalation will be implemented in each area of the construction that is the component of the project, which includes: foundation construction area as an area for the wind turbine and the installation of the wind turbine, roads accessing the project construction and improvement area, transmission lines, permanent and temporary labours camp of the construction contractors and of the project owners and the areas where there will be facilities construction involved and within the project area.

1.6 Relevant Laws and Legislations

In order for the implementation of the Environmental and Social Management Plan during the construction phase to be successful, the relevant laws and legislations have the significant importance of being use as a reference for the implementation of the Project. In this issued ESMMP-CP report, indicated only, the title of the relevant laws and legislation, as the details of the sections of each title have already been determined in the Environmental and Social Impact Assessment or ESIA of the Project. As for the determined titles, relevant laws and legislations are mentioned in the table below:

Laws and Legislations

1 Law on Environmental Protection (amended, No. 29/NA, 2012)
2 Law on Electricity (amended, No. 19/NA, 2017)
3 Law on Land (No. 07/NA, 2019)
4 Law on Forestry (amended, No. 64/NA, 2019)
5 Law on Water and Water Sources (amended, No. 23/NA, 2017)
6 Law on Construction (No. 05/NA, 2009)
7 Law on Hygiene and Health Promotion (No. 73/NA, 2019)
8 Law on Labour (No. 43/NA, 2013)
9 Law on Wildlife and Aquatic Animal (No. 07/NA, 2008)
10 Law on Land Transportation (No. 036/NA, 2012)
11 Law on Domestic and Foreign Investment Promotion (No. 02/NA, 2009)
12 Law on Resettlement and Occupation (No. 45 /NA, 15/06/2018)
13 Other Applicable Laws and Regulations (Mentioned in ESIA of the project)

Relavant Decrees, Policies and Regulations

1 Decision on Endorsement and Promulgation of the List of Investment Projects and Activities Requiring for Conducting the Initial Environmental Examination or the Environmental and Social Impact Assessment (No. 8056/MONRE, dated 17 December 2013)
2 Decree on the Environmental Impact Assessment (No. 389/GOV, 20/10/2022)
3 Decree on Compensation and Resettlement of People Affected by Development Projects (No. 84/GOV, 2016)
4 Electricity Technical Standard (amended, 2018)

5 Decision the Endorsement and Promulgation of the Guide to Public Participation in the Process of Environmental Impact Assessment of the Investment Projects (No. 707/MONRE, dated 5 December 2013)
6 Decree on State Land Leasing or Concession (No. 135/PM, 2009)
7 Decision on National Environmental Standards (No. 81/GOV, dated 21 February 2017)

International Standards

1 ADB Safe Guard Policy Statement
2 IFC Performance Standards
3 Standard of ISO 14001

International Conventions and Agreements

1 United Nations Convention on Biological Diversity (1996)
2 United Nations Convention to Combat Desertification
3 United Nations Convention on Climate Change

Chapter 2: Activities Details of the Project

2.1 Location of the Project

As mentioned above, the 600 MW Wind Farm Project has the majority of its area located in Dakcheung District, Sekong Province and partly in Sanxay District, Attapeu Province. The Project developer has signed the Project development agrément withe the government of Lao PDR to survey and study the feasibility of the developing the wind power Project in the total study area of about 680 km^2 or about 68,000 hectres. The area will be used for a total of 133 wind turbine, with the coordinate as shown in Table 2 below. The area required for 1 wind turbine is about 0.5 hectres, and each wind turbine will have a permanente access road with a width of 6 metres, a drainage ditch and an underground transmission line corridor to collect electricity from the wind turbine to the sub-station with a width of 1 metre on each side and a reserve road area, totalling 11 metres. After the construction of the underground power line collection system of 35 kilovolt (kV) from all 133 wind turbines to all 4 115KV sub-stations within the Project area, there will be a 115 KV and 35 KV ground transmission line to collect electricity from all 4 sub-stations to the 500 kV main station of the project. There will be a construction of the 500 kV transmission line connecting with the 500 kV station in Thanh My, Vietnam SR, with a total lenght of 66 km, only on the border of Lao PDR, has a total lenght of 26 km.

As for the temporary construction area plan, is composed of the cleared road area, 10 metres on each side, from the permanent road of 6 metres, totalling at 26 metres (depending on the landscape of the flat road area is cleared less than 26 metres). As for the land clearing for the construction of the wind turbine foundation is about 0.5 – 1 hectres/turbine.

In addition, there is a labours camp area, stone grinding plants, concrete mixing plants and areas for placing wind turbine equipments to prepare for installation, which covers a total area of about 70.55 hectres. Most of the area is located far away from the community and is a cleared forest and grassland.

Table 2: Coordinates Showing the Power Generators (Wind Turbines) Location of 133 sets

S/N	Wind Turbine Number	Coordinates		Village	District	Province
		X	Y			
1	WA101	718044	1698027	Dak Tiem	Dakcheung	Sekong
2	WA102	718303	1697693	Dak Tiem	Dakcheung	Sekong
3	WA103	718568	1697374	Dak Tiem	Dakcheung	Sekong
4	WA104	721043	1697294	Dak Tiem	Dakcheung	Sekong
5	WA105	721008	1696528	Dak Tiem	Dakcheung	Sekong
6	WA106	720784	1696082	Dak Tiem	Dakcheung	Sekong
7	WA107	721258	1695970	Dak Tiem	Dakcheung	Sekong
8	WA108	721444	1695583	Dak Tiem	Dakcheung	Sekong
9	WA109	721747	1695326	Dak Tiem	Dakcheung	Sekong
10	WA110	722244	1694773	Dak Tiem	Dakcheung	Sekong
11	WA111	722371	1694267	Dak Tiem	Dakcheung	Sekong

S/N	Wind Turbine Number	Coordinates		Village	District	Province
		X	Y			
12	WA112	722479	1693826	Dak Tiem	Dakcheung	Sekong
13	WA113	722385	1693334	Dak Tiem	Dakcheung	Sekong
14	WA114	722272	1692946	Dak Nong	Sanxay	Attapeu
15	WA115	720900	1691892	Dak Nong	Sanxay	Attapeu
16	WA116	720927	1691441	Dak Nong	Sanxay	Attapeu
17	WA117	721004	1690992	Dak Nong	Sanxay	Attapeu
18	WA118	724996	1691016	Xieng Luang	Dakcheung	Sekong
19	WA119	725069	1690203	Dak Yok	Sanxay	Attapeu
20	WA120	725031	1689826	Dak Yok	Sanxay	Attapeu
21	WA121	722745	1690221	Dak Nong	Sanxay	Attapeu
22	WA122	722729	1689737	Dak Nong	Sanxay	Attapeu
23	WA123	722935	1689487	Dak Nong	Sanxay	Attapeu
24	WA124	722592	1688948	Dak Nong	Sanxay	Attapeu
25	WA125	723137	1688696	Dak Nong	Sanxay	Attapeu
26	WA126	725226	1689359	Dak Yok	Sanxay	Attapeu
27	WA127	723502	1685515	Dak Samor	Sanxay	Attapeu
28	WA128	723800	1685319	Dak Samor	Sanxay	Attapeu
29	WA129	724184	1684901	Dak Xuem	Sanxay	Attapeu
30	WA130	724363	1684505	Dak Xuem	Sanxay	Attapeu
31	WA131	724990	1684336	Dak Xuem	Sanxay	Attapeu
32	WA132	725081	1683912	Dak Xuem	Sanxay	Attapeu
33	WA133	725045	1683406	Dak Xuem	Sanxay	Attapeu
34	WA134	725057	1683004	Dak Xuem	Sanxay	Attapeu
35	WA201	727963	1698159	Dak Yang	Dakcheung	Sekong
36	WA202	727768	1699085	Dak Yand	Dakcheung	Sekong
37	WA203	728042	1698843	Dak Yand	Dakcheung	Sekong
38	WA204	728009	1698521	Dak Yang	Dakcheung	Sekong
39	WA205	727788	1697851	Dak Yang	Dakcheung	Sekong
40	WA206	731993	1700676	Trong Mueang	Dakcheung	Sekong
41	WA207	732310	1700191	Trong Mueang	Dakcheung	Sekong
42	WA208	732435	1699786	Trong Mueang	Dakcheung	Sekong
43	WA209	732941	1699519	Trong Mueang	Dakcheung	Sekong
44	WA210	732825	1699152	Trong Mueang	Dakcheung	Sekong
45	WA211	733098	1698963	Trong Mueang	Dakcheung	Sekong
46	WA212	733020	1696883	Trong Mueang	Dakcheung	Sekong
47	WA213	733310	1696639	Trong Mueang	Dakcheung	Sekong
48	WA214	733427	1696199	Trong Mueang	Dakcheung	Sekong
49	WA215	733682	1695821	Trong Mueang	Dakcheung	Sekong
50	WA216	731997	1695821	Xieng Luang	Dakcheung	Sekong
51	WA217	732388	1695633	Dak Treub	Dakcheung	Sekong

S/N	Wind Turbine Number	Coordinates		Village	District	Province
		X	Y			
52	WA218	732728	1695516	Dak Treub	Dakcheung	Sekong
53	WA219	732987	1695140	Dak Treub	Dakcheung	Sekong
54	WA220	733372	1694892	Dak Treub	Dakcheung	Sekong
55	WA221	733619	1694553	Dak Treub	Dakcheung	Sekong
56	WA222	734412	1694267	Dak Padook	Sanxay	Attapeu
57	WA223	734961	1694211	Dak Padook	Sanxay	Attapeu
58	WA224	735396	1693984	Dak Padook	Sanxay	Attapeu
59	WA225	734240	1693807	Dak Padook	Sanxay	Attapeu
60	WA226	734387	1693496	Dak Padook	Sanxay	Attapeu
61	WA227	734311	1693064	Dak Padook	Sanxay	Attapeu
62	WA228	734336	1692696	Dak Padook	Sanxay	Attapeu
63	WA229	734404	1692233	Dak Padook	Sanxay	Attapeu
64	WA230	734896	1691925	Dak Padook	Sanxay	Attapeu
65	WA301	740056	1712003	Tong Xieng	Dakcheung	Sekong
66	WA302	740225	1711654	Tong Xieng	Dakcheung	Sekong
67	WA303	740738	1711164	Dakcheung	Dakcheung	Sekong
68	WA304	741137	1710983	Dakcheung	Dakcheung	Sekong
69	WA305	740945	1710388	Dakcheung	Dakcheung	Sekong
70	WA306	740932	1710038	Dakcheung	Dakcheung	Sekong
71	WA307	742297	1710039	Dakcheung	Dakcheung	Sekong
72	WA308	734523	1706180	Dak Runt	Dakcheung	Sekong
73	WA309	734830	1706065	Dak Runt	Dakcheung	Sekong
74	WA310	735062	1705703	Dak Runt	Dakcheung	Sekong
75	WA311	735234	1705412	Dak Runt	Dakcheung	Sekong
76	WA312	735087	1704908	Dak Runt	Dakcheung	Sekong
77	WA313	736053	1705454	Dak Runt	Dakcheung	Sekong
78	WA314	736274	1705141	Dak Runt	Dakcheung	Sekong
79	WA315	736512	1704933	Dak Runt	Dakcheung	Sekong
80	WA316	736845	1704743	Dak Runt	Dakcheung	Sekong
81	WA317	738856	1703763	Dak Runt	Dakcheung	Sekong
82	WA318	737803	1704591	Dak Runt	Dakcheung	Sekong
83	WA319	739025	1705241	Dak Runt	Dakcheung	Sekong
84	WA320	738924	1704773	Dak Runt	Dakcheung	Sekong
85	WA321	738399	1704368	Dak Runt	Dakcheung	Sekong
86	WA322	738865	1704135	Dak Runt	Dakcheung	Sekong
87	WA323	738808	1702745	Dak Runt	Dakcheung	Sekong
88	WA324	738855	1702329	Dak Runt	Dakcheung	Sekong
89	WA325	738813	1701868	Dak Runt	Dakcheung	Sekong
90	WA330	738923	1703227	Dak Runt	Dakcheung	Sekong
91	WA401	722106	1715892	Dak Jome	Dakcheung	Sekong

S/N	Wind Turbine Number	Coordinates		Village	District	Province
		X	Y			
92	WA402	722205	1715519	Dak Jome	Dakcheung	Sekong
93	WA403	722577	1715293	Dak Jome	Dakcheung	Sekong
94	WA404	722873	1714956	Dak Jome	Dakcheung	Sekong
95	WA405	722879	1714599	Dak Jome	Dakcheung	Sekong
96	WA406	721757	1714127	Dak Jome	Dakcheung	Sekong
97	WA407	722219	1713409	Dak Kang	Dakcheung	Sekong
98	WA408	722245	1713107	Dak Kang	Dakcheung	Sekong
99	WA409	722211	1712743	Dak Kang	Dakcheung	Sekong
100	WA410	722286	1712457	Dak Kang	Dakcheung	Sekong
101	WA411	722452	1712109	Dak Kang	Dakcheung	Sekong
102	WA412	722514	1711691	Dak Kang	Dakcheung	Sekong
103	WA413	722532	1711238	Dak Kang	Dakcheung	Sekong
104	WA414	723152	1710571	Dak Kang	Dakcheung	Sekong
105	WA415	723199	1710082	Dak Kang	Dakcheung	Sekong
106	WA416	722541	1709264	Dak Kang	Dakcheung	Sekong
107	WA417	723280	1709113	Dak Kang	Dakcheung	Sekong
108	WA418	730669	1709529	Dak Xiang Ar	Dakcheung	Sekong
109	WA419	730710	1709171	Dak Xiang Ar	Dakcheung	Sekong
110	WA420	730835	1708884	Dak Xiang Ar	Dakcheung	Sekong
111	WA421	730907	1708462	Dak Xiang Ar	Dakcheung	Sekong
112	WA422	730942	1708169	Dak Xiang Ar	Dakcheung	Sekong
113	WA423	731326	1707675	Dak Xiang Ar	Dakcheung	Sekong
114	WA424	731489	1707357	Dak Xiang Ar	Dakcheung	Sekong
115	WA425	731822	1706942	Dak Xiang Ar	Dakcheung	Sekong
116	WA426	732773	1707530	Dak Runt	Dakcheung	Sekong
117	WA427	732927	1707221	Dak Runt	Dakcheung	Sekong
118	WA428	733547	1707076	Dak Runt	Dakcheung	Sekong
119	WA429	733779	1706801	Dak Runt	Dakcheung	Sekong
120	WA430	734165	1706500	Dak Runt	Dakcheung	Sekong
121	WA431	733988	1708145	Dak Dern	Dakcheung	Sekong
122	WA432	734900	1708248	Dak Dern	Dakcheung	Sekong
123	WA433	734872	1707896	Dak Dern	Dakcheung	Sekong
124	WA434	735133	1707564	Dak Dern	Dakcheung	Sekong
Location of the 9 Relocated Wind Turbines						
125	WA231	736975	1703967	Dak Runt	Dakcheung	Sekong
126	WA326	729869	1694319	Dak Treub	Dakcheung	Sekong
127	WA327	729953	1693979	Dak Treub	Dakcheung	Sekong
128	WA328	730670	1693851	Dak Treub	Dakcheung	Sekong
129	WA329	731087	1693409	Dak Treub	Dakcheung	Sekong
130	WA331	731936	1692877	Dak Treub	Dakcheung	Sekong

S/N	Wind Turbine Number	Coordinates		Village	District	Province
		X	Y			
131	WA332	732042	1692356	Dak Treub	Dakcheung	Sekong
132	WA333	728207	1694688	Dak Treub	Dakcheung	Sekong
133	WA334	728097	1694292	Dak Treub	Dakcheung	Sekong
Dakcheung District Total					103	Turbines
Sanxay District Total					30	Turbines
Total					133	Turbines

Table 3: Location of Sub-stations and Main Station

S/N	Station	Coordinate		Village	District	Province
		X	Y			
1	Sub-station 115KV #1	722704	1690978	Dak Nong	Sanxay	Attapeu
2	Sub-station 115KV #2	731290	1694512	Dak Treub	Dakcheung	Sekong
3	Sub-station 115KV #3	737299	1704580	Dak Runt	Dakcheung	Sekong
4	Sub-station 115KV #4	732317	1707058	Dak Xiang Ar	Dakcheung	Sekong
Relocated Main Station						
5	Main Station 500KV	740141	1702551	Dak Runt	Dakcheung	Sekong

Table 4: Location of the 115KV Transmission Line Poles to the Main Station

S/N	Tranmission Line Pole	Coordinate		S/N	Tranmission Line Pole	Coordinate	
		X	Y			X	Y
1	B01	740048	1702659	96	B96	739130	1701869
2	B02	740019	1702662	97	B97	739297	1701884
3	B03	739700	1702525	98	B98	739444	1701896
4	B04	739382	1702390	99	B99	739795	1701780
5	B05	739118	1702277	100	B100	739845	1701917
6	B06	738935	1702199	101	B101	739918	1702119
7	B07	738787	1702135	102	B102	739982	1702296
8	B08	738677	1702246	103	B103	740052	1702488
9	B09	738404	1702519	104	B104	725038	1691830
10	B10	738215	1702708	105	B105	725132	1691851
11	B11	738161	1702768	106	B106	725259	1691933
12	B12	738117	1703034	107	B107	725329	1691978
13	B13	738031	1703239	108	B108	725592	1692148
14	B14	737916	1703517	109	B109	725692	1692213
15	B15	737830	1703724	110	B110	725777	1692268
16	B16	737725	1703905	111	B111	725884	1692337
17	B17	737594	1704132	112	B112	726124	1692492
18	B18	737517	1704265	113	B113	726140	1692703

S/N	Tranmission Line Pole	Coordinate		S/N	Tranmission Line Pole	Coordinate	
		X	Y			X	Y
19	B19	737438	1704407	114	B114	726155	1692913
20	B20	737361	1704545	115	B115	726358	1693075
21	B21	737932	1702780	116	B116	726452	1693151
22	B22	737828	1702786	117	B117	726500	1693189
23	B23	737551	1702800	118	B118	726653	1693311
24	B24	737493	1702803	119	B119	726766	1693401
25	B25	737160	1702821	120	B120	726882	1693494
26	B26	737049	1702932	121	B121	726976	1693569
27	B27	736887	1703095	122	B122	727159	1693663
28	B28	736791	1703191	123	B123	727269	1693720
29	B29	736614	1703370	124	B124	727381	1693778
30	B30	736386	1703475	125	B125	727564	1693872
31	B31	736096	1703576	126	B126	727682	1693933
32	B32	735917	1703589	127	B127	727847	1693951
33	B33	735648	1703609	128	B128	727987	1693966
34	B34	735333	1703696	129	B129	728109	1694110
35	B35	735221	1703694	130	B130	728301	1694339
36	B36	734997	1703689	131	B131	728371	1694422
37	B37	734641	1703770	132	B132	728451	1694433
38	B38	734284	1703852	133	B133	728609	1694457
39	B39	734216	1704160	134	B134	728843	1694491
40	B40	734148	1704467	135	B135	729047	1694521
41	B41	734103	1704676	136	B136	729150	1694620
42	B42	733943	1704831	137	B137	729313	1694778
43	B43	733734	1705034	138	B138	729414	1694847
44	B44	733638	1705128	139	B139	729581	1694962
45	B45	733376	1705383	140	B140	729691	1695037
46	B46	733325	1705623	141	B141	729874	1695163
47	B47	733282	1705797	142	B142	729941	1695134
48	B48	733202	1706123	143	B143	730136	1695050
49	B49	733051	1706328	144	B144	730456	1694912
50	B50	732836	1706524	145	B145	730690	1694812
51	B51	732620	1706721	146	B146	730890	1694726
52	B52	732415	1707036	147	B147	731288	1694555
53	B53	722791	1690989	148	B148	731296	1694638
54	B54	722922	1691056	149	B149	731392	1694749
55	B55	723028	1691111	150	B150	731512	1694887
56	B56	723225	1691211	151	B151	731569	1694952
57	B57	723267	1691233	152	B152	731727	1695134

S/N	Tranmission Line Pole	Coordinate		S/N	Tranmission Line Pole	Coordinate	
		X	Y			X	Y
58	B58	723356	1691278	153	B153	731898	1695331
59	B59	723560	1691383	154	B154	731983	1695429
60	B60	723667	1691438	155	B155	732062	1695525
61	B61	723781	1691497	156	B156	732165	1695648
62	B62	723971	1691594	157	B157	732302	1695811
63	B63	735234	1698873	158	B158	732487	1696031
64	B64	735276	1698914	159	B159	732614	1696213
65	B65	735445	1699074	160	B160	732749	1696407
66	B66	735614	1699163	161	B161	732840	1696537
67	B67	735743	1699230	162	B162	732927	1696635
68	B68	735778	1699370	163	B163	733072	1696798
69	B69	735971	1699532	164	B164	733108	1696839
70	B70	736034	1699586	165	B165	733147	1696881
71	B71	736149	1699683	166	B166	733231	1696912
72	B72	736294	1699806	167	B167	733319	1696943
73	B73	724247	1691655	168	B168	733409	1696975
74	B74	736355	1699858	169	B169	733508	1697010
75	B75	736574	1700043	170	B170	733600	1697042
76	B76	736646	1700104	171	B171	733677	1697069
77	B77	736820	1700251	172	B172	733757	1697258
78	B78	736912	1700329	173	B173	733849	1697315
79	B79	737001	1700406	174	B174	733943	1697372
80	B80	737207	1700530	175	B175	733998	1697406
81	B81	737328	1700603	176	B176	734074	1697452
82	B82	737414	1700655	177	B177	734133	1697524
83	B83	737585	1700758	178	B178	734204	1697610
84	B84	724559	1691724	179	B179	734283	1697708
85	B85	737797	1700886	180	B180	734466	1697932
86	B86	738030	1701027	181	B181	734508	1697992
87	B87	738087	1701061	182	B182	734598	1698118
88	B88	738214	1701137	183	B183	734699	1698261
89	B89	738401	1701250	184	B184	734739	1698308
90	B90	738484	1701300	185	B185	734900	1698500
91	B91	738665	1701409	186	B186	735046	1698672
92	B92	738796	1701491	187	B187	735080	1698713
93	B93	738863	1701534	188	B188	735142	1698786
94	B94	739045	1701648	189	B189	735175	1698818
95	B95	724800	1691778				

Table 5: Location of the 35KV Transmission Line Pole to the Main Station

S/N	Tranmission Line Pole	Coordinate		S/N	Tranmission Line Pole	Coordinate	
		X	Y			X	Y
1	C1	728257	1707416	126	C126	723810	1709843
2	C2	729006	1706930	127	C127	723754	1709897
3	C3	732317	1707005	128	C128	723638	1710010
4	C4	732284	1706941	129	C129	723449	1710285
5	C5	731819	1706681	130	C130	737284	1704646
6	C6	731756	1706663	131	C131	739080	1707242
7	C7	732190	1706858	132	C132	739012	1707072
8	C8	730940	1706677	133	C133	738972	1706971
9	C9	727836	1707321	134	C134	738929	1706863
10	C10	727764	1707354	135	C135	738874	1706727
11	C11	727496	1707477	136	C136	738906	1706806
12	C12	727370	1707534	137	C137	738852	1706698
13	C13	726860	1707753	138	C138	738806	1706638
14	C14	726226	1708025	139	C139	738729	1706536
15	C15	726080	1708076	140	C140	738570	1706327
16	C16	725910	1708113	141	C141	738403	1706108
17	C17	725665	1708167	142	C142	738289	1705959
18	C18	725405	1708223	143	C143	738130	1705749
19	C19	724811	1708701	144	C144	738023	1705609
20	C20	724909	1708613	145	C145	737968	1705537
21	C21	724696	1708805	146	C146	737833	1705359
22	C22	724592	1708899	147	C147	737597	1705120
23	C23	723922	1709516	148	C148	737411	1704930
24	C24	723787	1709632	149	C149	737365	1704826
25	C25	723426	1709932	150	C150	737315	1704716
26	C26	732242	1706979	151	C151	737714	1705239
27	C27	732297	1707015	152	C152	739103	1707313
28	C28	732186	1706943	153	C153	739132	1707528
29	C29	731920	1706805	154	C154	739161	1707743
30	C30	730855	1706770	155	C155	739339	1707858
31	C31	730577	1706794	156	C156	739478	1707948
32	C32	730295	1706846	157	C157	741090	1709969
33	C33	730183	1706867	158	C158	741058	1709886
34	C34	730038	1706894	159	C159	740985	1709700
35	C35	729864	1706926	160	C160	740906	1709533
36	C36	729119	1707064	161	C161	740875	1709468
37	C37	728886	1707125	162	C162	740827	1709366
38	C38	728826	1707154	163	C163	740748	1709199

S/N	Tranmission Line Pole	Coordinate		S/N	Tranmission Line Pole	Coordinate	
		X	Y			X	Y
39	C39	728768	1707181	164	C164	740669	1709032
40	C40	728562	1707277	165	C165	740648	1708940
41	C41	728041	1707508	166	C166	740627	1708846
42	C42	727842	1707593	167	C167	740586	1708661
43	C43	727763	1707626	168	C168	740403	1708543
44	C44	727674	1707665	169	C169	740225	1708429
45	C45	726887	1707996	170	C170	740136	1708371
46	C46	726413	1708195	171	C171	740048	1708315
47	C47	725534	1708676	172	C172	739871	1708200
48	C48	725587	1708645	173	C173	739693	1708086
49	C49	725429	1708737	174	C174	737108	1704435
50	C50	724357	1709309	175	C175	736802	1704126
51	C51	724173	1709489	176	C176	736744	1704068
52	C52	723940	1709716	177	C177	736642	1703868
53	C53	724032	1709626	178	C178	736447	1703584
54	C54	723617	1710041	179	C179	735514	1702646
55	C55	723483	1710236	180	C180	735412	1702295
56	C56	732235	1706884	181	C181	735376	1702169
57	C57	732061	1706785	182	C182	735369	1702001
58	C58	730849	1706691	183	C183	735366	1701901
59	C59	730589	1706710	184	C184	735245	1701770
60	C60	730494	1706716	185	C185	735125	1701639
61	C61	730178	1706736	186	C186	735008	1701551
62	C62	729911	1706752	187	C187	734820	1701409
63	C63	729693	1706765	188	C188	734662	1701235
64	C64	729452	1706823	189	C189	734541	1701102
65	C65	729358	1706846	190	C190	734454	1701006
66	C66	729130	1706900	191	C191	734255	1700890
67	C67	728943	1706946	192	C192	734099	1700799
68	C68	728762	1706989	193	C193	733916	1700692
69	C69	728608	1707027	194	C194	733744	1700614
70	C70	728327	1707095	195	C195	733602	1700549
71	C71	728168	1707168	196	C196	733332	1700423
72	C72	727977	1707256	197	C197	733223	1700281
73	C73	727659	1707402	198	C198	733012	1700006
74	C74	727441	1707503	199	C199	732997	1699767
75	C75	727258	1707583	200	C200	732987	1699608
76	C76	727014	1707687	201	C201	735494	1702575
77	C77	726789	1707784	202	C202	735581	1702703

S/N	Tranmission Line Pole	Coordinate		S/N	Tranmission Line Pole	Coordinate	
		X	Y			X	Y
78	C78	726690	1707826	203	C203	735777	1702869
79	C79	726407	1707948	204	C204	736017	1703092
80	C80	726138	1708063	205	C205	736152	1703246
81	C81	725765	1708145	206	C206	736347	1703469
82	C82	725520	1708198	207	C207	733123	1700151
83	C83	725380	1708242	208	C208	735946	1703011
84	C84	725222	1708364	209	C209	736566	1703719
85	C85	725063	1708486	210	C210	736713	1704008
86	C86	724958	1708568	211	C211	736859	1704184
87	C87	724540	1708946	212	C212	736980	1704306
88	C88	724391	1709083	213	C213	737230	1704559
89	C89	724301	1709166	214	C214	724547	1709192
90	C90	724130	1709323	215	C215	724881	1709020
91	C91	724023	1709422	216	C216	725001	1708958
92	C92	723854	1709577	217	C217	725113	1708900
93	C93	723643	1709752	218	C218	725312	1708797
94	C94	723590	1709796	219	C219	725640	1708615
95	C95	723344	1710000	220	C220	725813	1708514
96	C96	723260	1710069	221	C221	725986	1708413
97	C97	732010	1706852	222	C222	726160	1708312
98	C98	731000	1706759	223	C223	731302	1706738
99	C99	730948	1706763	224	C224	731436	1706729
100	C100	730621	1706786	225	C225	731680	1706752
101	C101	730445	1706819	226	C226	731794	1706777
102	C102	729943	1706912	227	C227	731014	1706666
103	C103	729689	1706959	228	C228	731310	1706621
104	C104	729601	1706975	229	C229	731507	1706591
105	C105	729346	1707022	230	C230	731680	1706641
106	C106	729042	1707079	231	C231	731894	1706703
107	C107	728949	1707096	232	C232	724433	1709250
108	C108	728725	1707201	233	C233	724469	1709232
109	C109	728493	1707310	234	C234	724644	1709142
110	C110	728409	1707349	235	C235	724951	1708983
111	C111	728365	1707370	236	C236	725053	1708931
112	C112	727600	1707696	237	C237	725688	1708586
113	C113	727534	1707724	238	C238	726093	1708351
114	C114	727445	1707762	239	C239	731100	1706753
115	C115	727393	1707784	240	C240	731380	1706733
116	C116	727150	1707886	241	C241	731502	1706724

S/N	Tranmission Line Pole	Coordinate		S/N	Tranmission Line Pole	Coordinate	
		X	Y			X	Y
117	C117	726964	1707964	242	C242	731540	1706722
118	C118	726705	1708072	243	C243	731877	1706795
119	C119	726502	1708157	244	C244	731087	1706655
120	C120	726231	1708271	245	C245	731440	1706601
121	C121	725360	1708773	246	C246	731561	1706607
122	C122	724402	1709266	247	C247	731935	1706715
123	C123	724285	1709380	248	C248	728400	1707077
124	C124	724115	1709545	249	C249	737506	1705027
125	C125	723972	1709685				

Table 6: Location of 500KV Tranmision Line Poles to Vietnam SR

S/N	Transmission Line Pole	Coordinate		S/N	Transmission Line Pole	Coordinate	
		X	Y			X	Y
1	1	752187	1719538	36	36	746329	1712182
2	2	752457	1720122	37	37	746762	1712236
3	3	752552	1720327	38	38	747195	1712290
4	4	751844	1718925	39	39	747675	1713253
5	5	751341	1718028	40	40	740327	1702631
6	6	750835	1717125	41	41	740153	1703123
7	7	751090	1717580	42	42	740017	1703717
8	8	750037	1716178	43	43	739163	1705770
9	9	749610	1715672	44	44	739310	1706096
10	10	748780	1714219	45	45	740908	1708510
11	11	748263	1713867	46	46	740098	1703365
12	12	744274	1709693	47	47	739921	1704138
13	13	744367	1710318	48	48	739327	1705410
14	14	744702	1711084	49	49	739625	1704906
15	15	745020	1711497	50	50	739378	1706655
16	16	753466	1720697	51	51	739456	1706977
17	17	746220	1712168	52	52	741338	1708672
18	18	747698	1713706	53	53	743124	1709122
19	19	747652	1712799	54	54	743584	1709310
20	20	747641	1712591	55	55	742671	1709026
21	21	752666	1720573	56	56	742220	1708931
22	22	751569	1718435	57	57	743928	1709501
23	23	750644	1716899	58	58	739826	1707473
24	24	749881	1715993	59	59	740298	1707798
25	25	749471	1715507	60	60	739452	1705199
26	26	749545	1715284	61	61	740279	1702529
27	27	749694	1714842	62	62	740207	1702798
28	28	747936	1713774	63	63	739820	1704581
29	29	749176	1714489	64	64	739987	1703852
30	30	744447	1710719	65	65	739300	1706330
31	31	745268	1711819	66	66	739533	1707298
32	32	745464	1712074	67	67	740062	1707636
33	33	751994	1719193	68	68	740677	1708103
34	34	747629	1712345	69	69	741769	1708835
35	35	745897	1712128				

Table 7: Location of Construction Facilities Area

SN	Location Name	Area (ha)	Coordinate Value UTM Zone 48N		Village	District
			E	N		
1	Main Camp	3	739669	1702200	Dak Runt	Dak Cheung
2	Maintenance Area	3	739357	1701566	Dak Runt	Dak Cheung
3	1# Stone Grinding Plant	3.29	730409	1696562	Dak Treub	Dak Cheung
4	1# Labours Camp Area	1.91	723839	1696213	Xieng Luang	Dak Cheung
5	1# Stone Mine	15.68	721180	1696732	Dak Tiem	Dak Cheung
6	2# Stone Mine	4.97	730449	1696935	Dak Treub	Dak Cheung
7	1# Stone Exploding Area	0.5	729972	1697115	Dak Treub	Dak Cheung
8	1# Mortar Mixing Plant Area	0.98	730298	1696442	Dak Treub	Dak Cheung
9	Equipments Placement Area 1A#	7.5	707285	1691335	Ka Sang Karng	Lamarm
10	Equipments Placement Area 2A#	12.5	721144	1697430	Dak Tiem	Dak Cheung
11	Equipments Placement Area 3#	6.3	734730	1696942	Trong Mueang	Dak Cheung
12	1# Soil Waste Area – Stone Waste	0.89	718486	1698033	Dak Tiem	Dak Cheung
13	2# Soil Waste Area – Stone Waste	7.32	722038	1696219	Dak Tiem	Dak Cheung
14	3# Soil Waste Area – Stone Waste	3.22	722568	1693206	Dak Tiem	Dak Cheung
15	8# Soil Waste Area – Stone Waste	2.49	730246	1696672	Dak Treub	Dak Cheung
16	23# Soil Waste Area – Stone Waste	2.36	739432	1702599	Dak Runt	Dak Cheung

Main Camp: Covering an area of about 3 hectres, located in Dak Runt village, adjacent to Highway 16B before entering Dakcheung district urban area. The current area status is a coffee garden and cleared forest areas. There is no buidlings. Easy access to the camp, can conveniently build a camp.

Maintenance Area: Covering ann area of about 3 hectres near the Main Camp area, located in Dak Runt village, adjacent to Highway 16B before entering Dakcheung district urban area. The current area status isa coffee garden and cleared forest areas as well. There is no buildings, easy access to the area.

Labours Camp Area #1: Covering an area of about 1.91 hectres, located in Xiang Luang village, near Highway 16B before entering Dakcheung district urban area. The current area status is an old cassava garden. There is no buildings. Easy access to the camp, can conveniently build a camp.

Stone Grinding Plant Area #1: Covering an area of about 3.29 hectres, this area is located on the road seperated from Highway 16B entering Dak Brarng village, which is in Dak Treub village, the area is a garden and a cleare forest area, with no houses nearby.

Stone Mine#1: The stone ore mining area covers an area of about 15.68 hectres, this area is located in Dak Tiem village. The area is a cleared forest area, the landscape is mountainous

and there are streams nearby the soil waste, stone waste placement site, equipment placement site of the project. Easily accessible with road and near the wind turbine construction site.

Stone Mine Area #2: Covering an area of about 4.97 hectres, this area is located on the road seperated from Highway 16B entering Dak Brarng village, which is in Dak Treub village. It is a garden area and cleared forest area, no houses nearby.

Stone Exploding Area#1: Covering an area of about 0.5 hectres, this area is located on the road seperated from Highway 16B entering Dak Brarng village, which is in Dak Treub village. It is a garden area and cleared forest area, no houses nearby.

Mortar Mixing Plant Area #1: Covering an area of about 0.98 hectres, this area is located on the road seperated from Highway 16B entering Dak Brarng village, which is in Dak Treub village. It is a garden area and cleared forest area, no houses nearby.

Wind Turbine Blades Placement Area 1A#: This area is for resting the equipment before the road into the mountain to the project area. Covering an area of about 7.5 hectres, adjacent to Highway 16B, lying in Ka Sang Karng village, Lamarm district. The area is a cleared forest area and flat.

Equipments Placement Area #2: Covering an area of about 12.5 hectres, lying in Tong Lek area, Dak Tiem village. The area is suitable for easy access and is near the Stone Ore Mining area, far from the people's houses.

Equipments Placement Area #3: Located in Trong Muang village, this area is adjacent to the road, covering an area of about 6.3 hectres. It is a flat area near the road and some area is a low mountain limber pine (Mai Paek) forest area, near the project construction area and has an easy access to the construction areas of the wind power project.

Soil Waste Area – Stone Waste #1: Covering an area of about 0.89 hectres in Dak Tiem village. The landscape is a flat land, with the people gardens and a cleared forests nearby.

Soil Waste Area – Stone Waste #2: Covering an area of about 7.3 hectres, near the Stone Ore Mining area, located in Dak Tiem village. The landscape is hilly, composing of the peoples' gardens and cleared forests.

Soil Waste Area – Stone Waste #3: Covering an area of about 2.49 hectres, on the Highway to Dak Nong village, located in Dak Tiem village. The landsacape is a flat land of Pine (Paek) forest and cleared forest.

Soil Waste Area – Stone Waste #8: Covering an area of about 2.49 hectres, near the Stone Ore Mining area, located in Dak Treub village. The landscape is hilly, composing of the people gardens and cleared forests.

Soil Waste Area – Stone Waste #23: Covering an area of about 2.36 hectres, near the 500KV station and Main Camp area, located in Dak Runt village. The landscape of the location is hilly, composing of the people gardens and cleared forests.

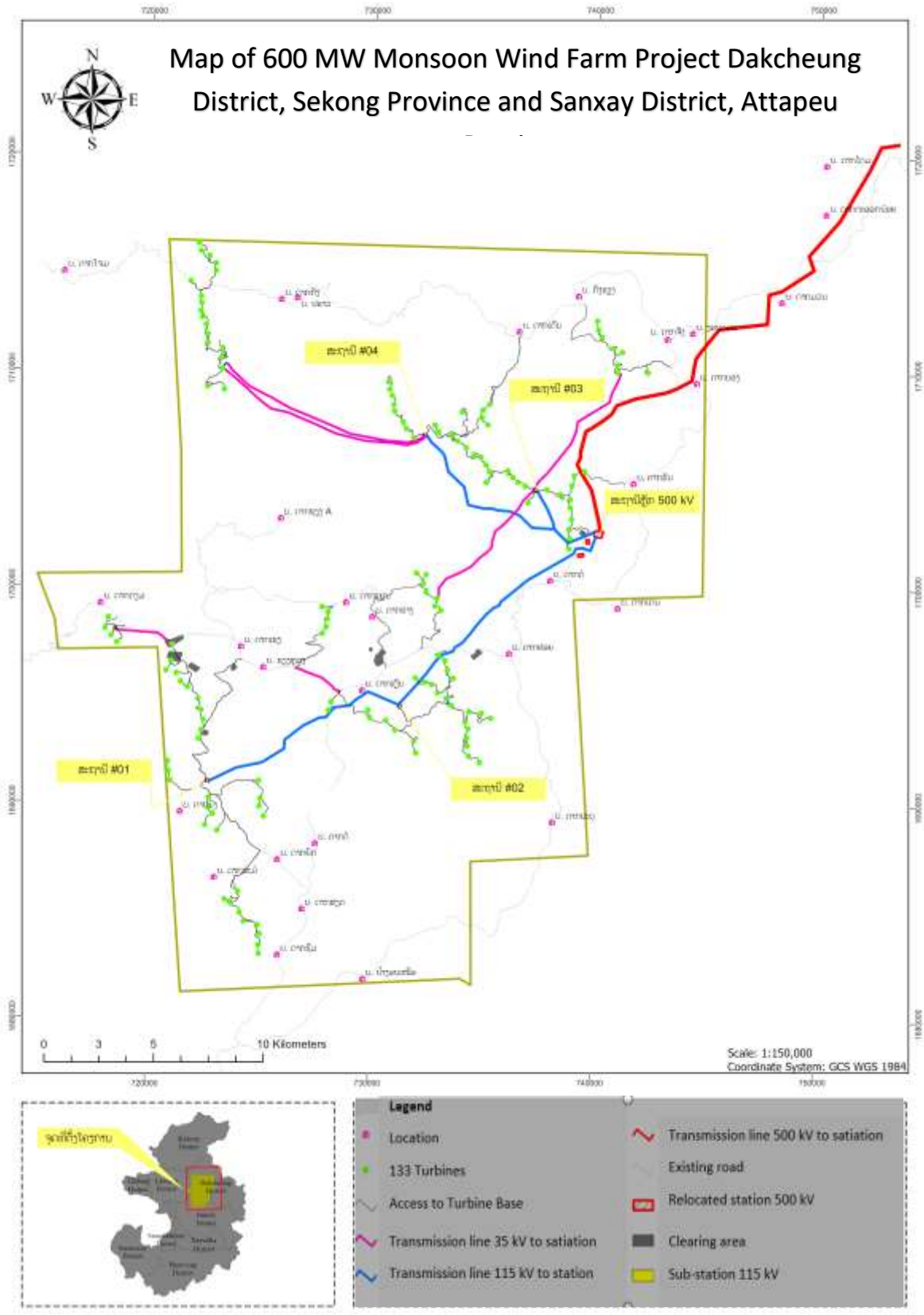

Figure 1: Location Plan and Components of the Project

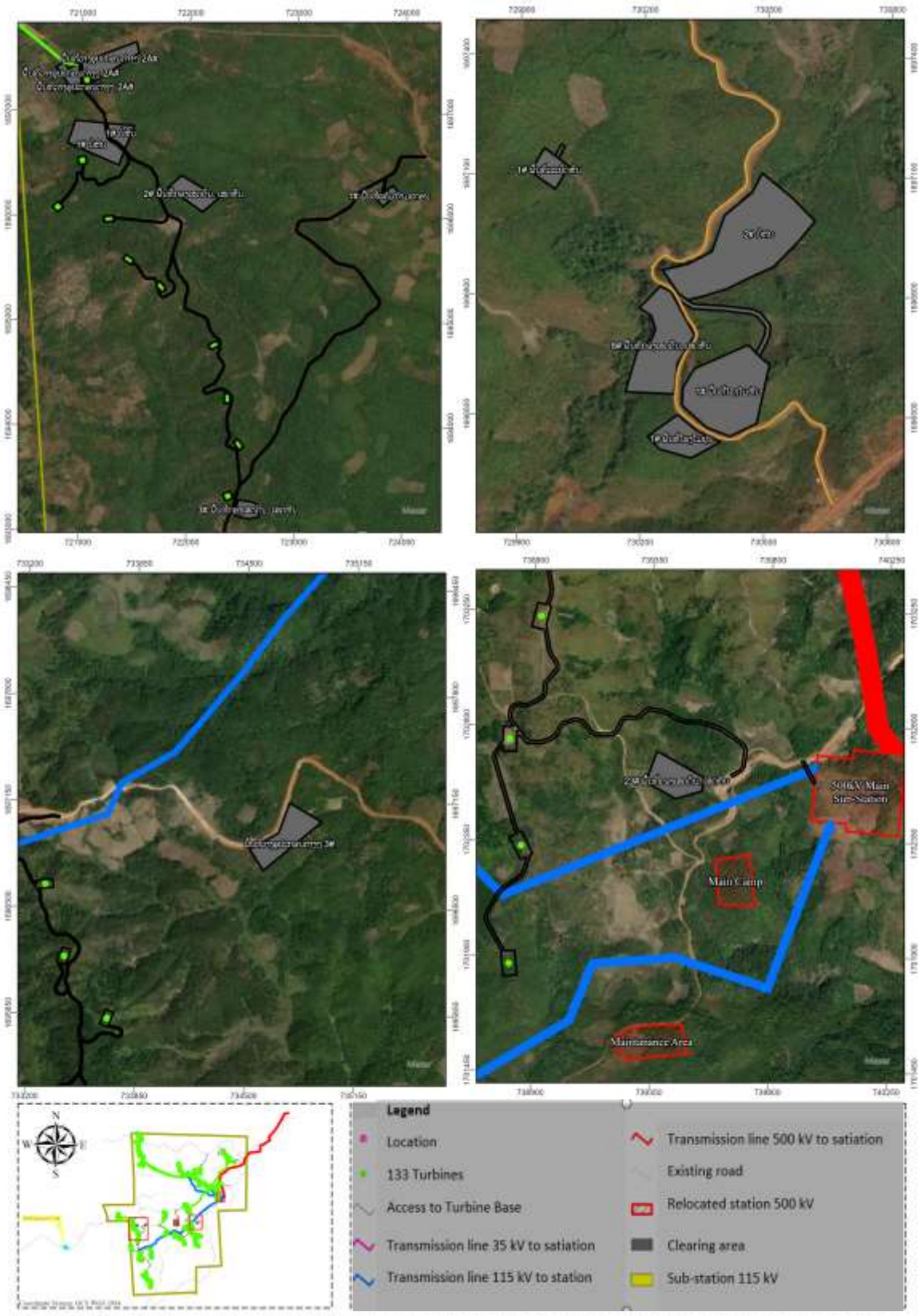

Figure 2: Construction Facilities of the Project Plan

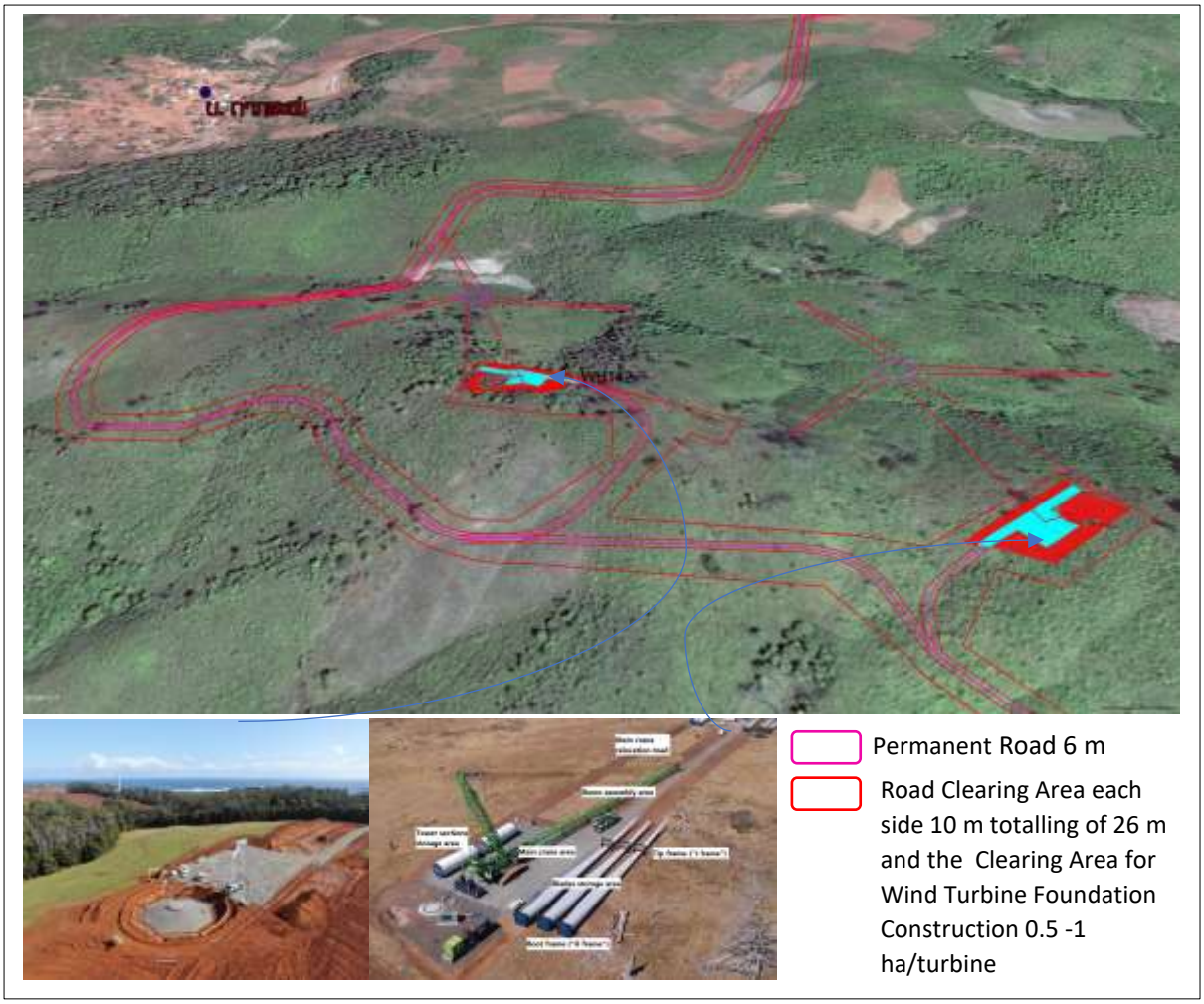

Figure 3: Map Showing the Scope of the Clearing for Construction

2.2 Duration and Construction Activities

2.2.1 Construction Activties of the Project

For conveniency and understanding on the implemenation in the monitoring and evaluation during the construction phase of Project. Therefore, the activities determination of the construction of the Project must indicates the details of each tasks that will include the Clearing and construction in each components of the Project. The 600 MW Wind Farm Project is comprised of many diferente tasks, in which those area are an important components of the Project, such as: Foundation construction task to be use as aa area for wind turbine installation, access road construction and improvement task, temporary and permanent labours camp construction task, and transportation planning, wind turbine equipment lifiting, wind turbine assembly, tranmission lines and stations contruction tasks. Determining the Project construction area and the prediction of potential clearing and construction activties, will have the details indicated in the table below:

Table 8: Determining Construction Area and Activities of the Project

Project Construction Area	Potential Activities
1. Foundation Construction, to be use as an area for wind turbine installation, Task. Steel Structure Task and the Use of Concrete.	▪ Prepearation of construction area by detailed surveying of various areas, ▪ Clearing residual ordnances, ▪ Compensation for those affected, ▪ Area clearing and removal for construction, ▪ Land excavation-filling for tower foundation construction, ▪ Stone waste and soil excavated out from the tower foundation construction area Transportation and Control ▪ Transporting of materials and equipments serving in the construction, ▪ Use of machinery and equipments into the construction, ▪ The use of steel structure to supports the grip of the wind turbine tower foundation, ▪ The construction of the wind turbine tower foundation, access roads, ▪ Foundation equipments. ▪ Suitable concrete composite design, for the different levels of concrete durability, which must ensure the ability to construct according the area conditions, ▪ Disposal of general wastes and wastes from the construction, ▪ The control and the promotion of health, and the safety in the construction of the project.
2. Construction and improvement of access road to the project Tasks	▪ Clearing residual ordnances, ▪ Area clearing and removing for road construction, ▪ Compensation for those affected, ▪ Land excavation-filling for road construction, ▪ Stone waste and soil excavated out from the ground along the road construction corridor Transportation and Control, ▪ Bridge construction for crossing creek and to accommodate transportation, ▪ The construction of machinery repairing plant construction and facilities serving the construction, ▪ Disposal of general wastes and wastes from the construction, ▪ Transporting of materials and equipments serving in the construction, ▪ Use of machinery and equipments into the construction, ▪ Soil and stone filling, road asphalting along the road receiving improvement and being reconstruct, ▪ The control and the promotion of health, and the safety in the construction of the project.

Project Construction Area	Potential Activities
3. Construction of the Permanent and Temporary Shelter Camp of the Construction Contractor and the Project Owner Tasks	▪ Clearing residual ordnances, ▪ Area clearing and removal for camp construction, ▪ Compensation for those affected, ▪ Land excavation-filling for camp construction, ▪ Stone waste and soil excavated from the permanent camp construction area, ▪ Construct machinery repairing plant and facilities serving the construction, ▪ Transporting of materials and equipments serving in the construction, ▪ Use of machinery and equipments into the construction, ▪ Disposal of general wastes and wastes from the construction, ▪ The control and the promotion of health, and the safety in the construction of the project.
4. Assembly Planning, Wind Turbine Lifting Tasks	▪ Crane and Equipments Installation ▪ Tower structure and cabinets Installation ▪ The use of machinery to lift the rest of the tower structure, ▪ The use of the lifting of the Nacelle (including the structures and supplementary equpiments) and placing in the placement area. ▪ Lifting the power generator (including structure transportation) and placing it in the equipment placement area, ▪ Lifiting the rotor set (including structure transportation and supplementary equipment) and placing it in the equipment placement area, ▪ Slowly and steadily lifting the turbine blade to be about 1-2 m above the truck, then the truck is drive away. Steadily placing the blade in the determined equipment placement area.
5.Transmission Lines and Stations Construction	▪ Unexploded Ordnances Clearance: Every construction area will be surveyed and clear unexploded ordnances for safety ▪ Clearing of area accessing the poles foundation and area for tranmission line poles construction ▪ Clearing trees in the tranmission line corridor boundaries and under the corridor conserved area ▪ Construction Materials and Equipments Transportation: Equipments will be transported via truck through Highway No.16B into the Project area. ▪ Tranmission line poles installation, attachment lines/cables

2.2.2 Schedule of Operation of each Activity

The Project construction is expected to take 3 years and the concession period is 25 years. Among these, the construction activities will begin implementing in the 3rd quarter of the first year and the activities will begin in conjunction as well, with details in the following table:

Table 9: Schedule of Operation of each Activity

S/N	Construction Activity	Duration (Day(s))	Commencement Date	Completion Date
1	Announce to Proceed	1	30-Dec-22	31-Dec-22
2	Relocate to areas to prepare for constructing, surveying and engineering design	277	07-Jan-23	11-Oct-23
3	Construct camps, concrete mixers and roads	801	01-Feb-23	12-Apr-25
4	Construct the power storage system and the sub-station 33 / 115KV	485	31-Jul-23	27-Nov-24
5	Contruct the main station 115/500KV	516	31-Jul-23	28-Dec-24
6	Construct 35, 115KV transmission line to collect power to the main station	412	31-Aug-23	16-Oct-24
7	Construct 500 KV transmission line	424	31-Aug-23	28-Oct-24
8	Pioneering the construction of foundations and pod equipment work	546	01-Feb-23	31-Jul-24
9	Transport the wind turbine equipment into the project area	332	01-Apr-23	27-Feb-24
10	Assemble and install wind turbines	423	01-Dec-23	27-Jan-25
11	Connect the transmission line to the coast of Vietnam	9	01-Jul-25	10-Jul-25
12	Test the performance of wind turbine poles	168	16-Jul-25	31-Dec-25
13	Test system readiness	151	02-Aug-25	31-Dec-25
14	The wind turbine starts to supply power	120	02-Sep-25	31-Dec-25
15	Hand over - recieve wind project	1	31-Dec-22	31-Dec-25

2.3 Environmental Issues and Mitigation Measures of the Main Activities of the Project

The main activities of the environmental issues and the Environmental and Social mitigation measures that are expected to occur during the construction phase of the 600 MW Wind Farm Project are different, in which this difference is shown physically, biologically and socio-economically. Requiring a clear and reasonable understanding of the impacts in order for the smooth implementation of the Environmental and Social Management Plan during the construction phase and to be able to be supported by the relevant state sectors, including the acceptance from all stakeholders of this Project. The 600 MW Wind Farm project construction

phase is composed of 6 main activities are mentioned in the project technicality feasibility study report or the FS report with potential impacts and have the needed to determined the mitigation measures, to be taken for implementing following the environmental management plano f the Project. The following 6 main tasks are:

1. Project Area Access Road Construction and Improvement Task
2. Construction Preparation Area Improvement Task
3. Wind Turbine Foundation Task
4. Materials and Equipments Transportation Task
5. Tower and Wind Turbine Components Installation Task
6. Electricity Tranmission System Task

The description of the table below explained each task relating to each construction activities of the Project, the feasibility of the potential impacts in each task of the Project, as well as proposing the implementation on the mitigation measures of the potential impacts. In some case, the environmental issues and mitigation measures in each task are similar and are different according to the physical, biological anbd socio-economic components. However, for the understanding on the revision and for easy implementation, there are reiterated explanations in some sections in each activity shown in table 10 below.

Table 10: Summarized Environmental Issues and Mitigation Measures of Project Area Access Road Construction Task

S/N	Project Construction Activity	Duration (Month(s))	Feasibility of Potential Impacts from the Project Task	Potential Impacts Mitigation Measure Implementation Proposal
I.	**Project Area Access Road Construction Task**			
(1)	**Physical Environment**			
	The main road that will be used in the project area is Highway 16B, which is a highway connecting Lao PDR and Vietnam SR from East to West. The current road width condition is sufficient for transporting equipments serving in the construction, such as: wind turbine components, crane for installing the wind turbine. The road accessing each project area according to the location of all 133 turbines. For accessing the wind turbine construction, there will be a construction of permanent roads with a	**30**	***Air Quality:*** During the construction of the new roads of the project, there will be dusts or PM10. The combustion of heavy machinery in the construction will produce Sulfur Dioxide SO_2, Carbon Monoxide CO and Carbon Dioxide CO_2.	***Air Quality:*** In order to mitigate the impacts on air quality that are expected tto occur from the construction of the new roads of this project, the project owner especially the construction contractor company must pay attention to some mitigation measures that have the necessary as below: ▪ In the new roads construction area of the project, especially area near community, there need be cautious in order to assist in mitigating the dispersion of dusts from the land excavation and soil pouring-land filling. ▪ Truck Exhaust Issues- The use of heavy vehicle in the roads construction area of the project must ensure not to release Carbon Dioxide from the vehicle exceeding the standard (1-hr CO 30 ppm). The project construction contractor must have a regular maintenance of every truck and heavy machinery types use in the construction of the project. ▪ Forest Conservation- The project developer jointly with the relevant state sectors must pay attention in protecting the environment of the forests in the new roads construction area to be of fertile, as to help battle the climate changes of the local.

S/N	Project Construction Activity	Duration (Month(s))	Feasibility of Potential Impacts from the Project Task	Potential Impacts Mitigation Measure Implementation Proposal
I.	**Project Area Access Road Construction Task**			
	width of 6 m, as well as drainage ditch and an underground transmission line corridor of a width 1 m each side and the conserved area, totalling at 11 m. The construction will clear the area for the construction of 10 m on each side 6 m from the permanent road. Therefore, the total area that will be cleared is 26 m wide.			▪ Must provide training and prohibited the staffs and workers from incinerating garbages and wastes that will result in air pollution.
		30	***Noise and Vibration:*** During the construction of the new road accessing this project, there may be followed by noise and vibration impacts, but it will not be severe. As the construction of this road will not include the exploding of stones. However, this impact may occur from the use of heavy machinery in excavation activities and the transportation of construction materials, which will be the the source of loud noise and vibration. Those that will be directly affected are the workers doing field works, in addition to the people near the area of the construction of the people. According to the project construction operation plan, it is determined to pause any activities that will cause loud noise at night (19:00 – 06:00). Hence, the impact assessment is only	***Noise and Vibration:*** ▪ The road construction contractor must be careful in using heavy mechanical vehicle not to be louder than the environmental standard. Must have a maintenance of machinery used in the construction to remains in good condition and ready to use. ▪ The speed of the transporting vehicle during the construction must be limited and control the speed of the construction truck not to exceed 30 km/h for entering-exiting the project, especially transporting construction materials through the village areas into the construction area of the project. ▪ Heavy Construction Period: Must pause heavy construction activities that will cause noise and vibration at night, which is a resting time for the nearby villages, all the way to wildlife around the project finding foods at night (nocturnal animal). In addition, in the event that the project need to carry out construction activities on Sunday, public holidays or important local beliefs days and religious days, especially on the 15th day (the wanning and waxing moon of the lunar cycle) of every month, the project will consult with the

S/N	Project Construction Activity	Duration (Month(s))	Feasibility of Potential Impacts from the Project Task	Potential Impacts Mitigation Measure Implementation Proposal
I.	**Project Area Access Road Construction Task**			
			conducted during the day (06:00 – 19:00) by determining the source that causes the loud noise during the construction phase, which may be causes from many types of machinery operating together, which are, Back hoe, Bull Dozer, Truck and Crane, measured 15.24 m (50 foot) from the machine. Each type of machines have a noise level of about 86.5, 96, 96 and 100 Decibel dA.	village authority to ask for permission before operating any activities. ▪ Monitoring: The environmental sector of the project must conducts monitoring by using standardized measurements, and then periodically reports to the relevant state sector as mentioned in the ESMMP of the project.

S/N	Project Construction Activity	Duration (Month(s))	Feasibility of Potential Impacts from the Project Task	Potential Impacts Mitigation Measure Implementation Proposal
I.	**Project Area Access Road Construction Task**			
			Erosion: The sedimentation and erosion can occur during the new road construction period of the project, such as the area clearing to construct road accessing the wind turbine foundation, that has a width of 26 metres. The road construction activities in some area must cut down trees, clearing the ground surface, excavating, having the possibility of sedimentation and erosion during the rainy season, especially in area with highly steep slope. Even though it is not severe, but there is still a need to have a supported measure.	***Erosion:*** ▪ Tasks planning regarding the soil during dry season, heavy rain, must pause working relating to soil work in rainy season, especially days with heavy rain. ▪ Avoid depositing excavated soil near the creek or groove in order to prevent sedimentation and erosion into water sources. ▪ Must refill excavated land and use machinery to tighten the ground to prevent the land from collapsing, ▪ Construct a soil erosion prevention at vulnerable points along the road and build a drainage system on both side of the road, and have pipes placement or constructing standardized bridges crossing the drainage ditches, to ensure no flooding in the road construction area of the project.
		30	***Water Quality:*** Although the new road construction of the wind power project will not severely impacts the surface and ground water quality. However, the road construction activities of the wind farm project have the need to use machines and equipments into the construction, subsequently having the possibility to impacts the	***Water Quality:*** ▪ Sedimentation and Turbid Water Management: The project must be careful in the road construction of the project in areas near water sources, must pause working related to land excavation during raining, in order to mitigate the erosion of soil into water sources, causing water to become turbid and affecting the quality of the water sources. ▪ Oil Stain and Chemical Contaminants Management: The project must have an agreement for fining with

S/N	Project Construction Activity	Duration (Month(s))	Feasibility of Potential Impacts from the Project Task	Potential Impacts Mitigation Measure Implementation Proposal
I.	**Project Area Access Road Construction Task**			
			water quality in the creeks within the project area (due to some of the roads are constructed near the water source – headwater in highground area). Dirty water that will causes an impact includes: sedimentation will lead to turbid water, because of the land excavation, land filling for the construction of the road to the wind turbine tower foundation. If there is construction in rainy season, it will causes oil stain and chemical contaminants from the use of machinery and construction equipments, cement stain from the construction area and cement transportation to various construction areas. Beside, various dirty water issues may occur from the habitats and the utilization of the staffs and workers coming in to work for the project construction, in large amount, difficult to control.	the project construction contractor, in order to bind the contractor not to washes vehicle or all kinds of machinery and construction materials along the river or the creek tributaries in the project area boundaries. The state sector with relevant duties must pay attention in inspecting and evaluating accordingly with the environmental management plan. The inspection require the collection of water quality samples for analysis and notifying the findings to the people utilizing the water sources for acknowledgement. ▪ Dirty Water Issues from the Habitats and Utilization of the Staffs and Workers: Hygienic bathrooms and toilets must be provided to the workers in an adequate number. When the project construction is completed, the bathrooms and toilets have to be demolish and adjust the land to previous condition. Construct a bund for draining water from the surrounding area of the permanent staffs accommodation construction area, have a drainage system into the sediments dirty water reservoir. When there is a construction of the drainage sustem and water storage system of the newly constructed buildings, the land must adjust to its previous condition and must quickly plant grasses to turn the area into a green area.

S/N	Project Construction Activity	Duration (Month(s))	Feasibility of Potential Impacts from the Project Task	Potential Impacts Mitigation Measure Implementation Proposal
I.	**Project Area Access Road Construction Task**			
				▪ The Use of Water for Construction: If the project has the need to draw creek water in the project area to serve in the construction, the project must notify the locals and coordinate with state sector at a district level for field inspection of the location where the water will be draw, in order to see whether it is suitable or not. ▪ Inspection and Evaluation: The project developer jointly with the relevant state sector must inspect and evaluate, as well as collect water quality samples for analysis as determined in the environmental management plan of the ESMMP report. The water quality analysis findings must adhered to the national environmental standards (issued No. 81/GOV, 2017).
(2)	**Biological Environment**			
	The main road that will be used in the project area is Highway 16B, which is a highway connecting Lao PDR and Vietnam SR from East to West. The current road width condition is sufficient for transporting equipments	**30**	***Forestry:*** During the road construction period of this project, there will be impact on the forests and land use of the locals, as the activities from the road construction into the project area must be completed during this construction period. As mentioned above, the wind farm project has the need of accessing road with a width	***Forestry:*** ▪ Coordinate with the relevant sectors to carry out the process in accordance with the Law on Forestry (amended, 2019) and the Law on Land (amended, 2019) ▪ The project will provide compensation by reforestation in accordance with the regulations of the Department of the Ministry of Agriculture and Forestry

S/N	Project Construction Activity	Duration (Month(s))	Feasibility of Potential Impacts from the Project Task	Potential Impacts Mitigation Measure Implementation Proposal
I.	**Project Area Access Road Construction Task**			
	serving in the construction, such as: wind turbine components, crane for installing the wind turbine. The road accessing each project area according to the location of all 133 turbines. For accessing the wind turbine construction, there will be a construction of permanent roads with a width of 6 m, as well as drainage ditch and an underground transmission line corridor of a width 1 m each side and the conserved area, totalling at 11 m. The construction will clear the area for the construction of 10 m on each side 6 m from the permanent road. Therefore, the total area		of 6 m as well as drainage ditch and underground transmission line corridor of 1 m on each side and a conserved area, totalling at 11 m. In which, the project will clear the land for construction of 10 m on each side, including the land clearing area, the total width is 26 m. Of this, include the forest areas and the lands use, the details of the information are mentioned in table 5-21 (the type of lands use that will be impact from the wind farm project) in the ESIA report of this project.	▪ In order to prevent the forest area from being heavily affected, the project must have an inspection on the construction activities of the contractor to take caution in constructing according to the designated area. Should not clear the area exceeding the boundaries, especially the forest area surrounding the road edge of the project. ▪ Before the clearing of area for construction, the project must coordinate with the relevant provincial and district sectors for the field inspection and evaluation of the area that will be affected, especially the area of the forest to be affected. ▪ Must provide training for the staffs and workers coming into work in the project construction area, to be able to understand the conservation of the forest, prohibiting the use of forests outside the project area and issuing rules for fining and expelling those who violated the rules. ▪ The project cooperates with the state sectors for the field monitoring of the contractors construction activities on a regular basis.
		30	***Wildlife:*** During the road construction period of this project, there will be many activities that will directly and	***Wildlife:*** ▪ The project must instruct the construction contractors to control the noise level of the use of machinery and transportation vehicles, by basing on the environmental

S/N	Project Construction Activity	Duration (Month(s))	Feasibility of Potential Impacts from the Project Task	Potential Impacts Mitigation Measure Implementation Proposal
I.	**Project Area Access Road Construction Task**			
	that will be cleared is 26 m wide.		indirectly impact as much as wildlife there is in the project area. Although the road construction area of the project will not lie in the main habitat area of the wildlife, but some areas still have forests and plants that are home to some of the wildlife. The construction activities of the project that will impact some of the wildlife will include: ▪ Area clearing for the road construction requires removing trees and vegetation, land excavation, all of which are the destruction of wildlife habitat. ▪ Loud noise from the use of construction machinery of the project create panic for wildlife to be afraid and escape to elsewhere. ▪ There are many workers coming into work during the construction phase, who are at risk of poaching within and around the project area for food.	standards, that there must be a control of noise not to exceed 85 decibels (dBA) in order to mitigate the disturbance and alarming of wildlife. ▪ In the event where the project has the need to carry out construction activities on the buddhist day and the 15th day (the wanning and waxing moon of the lunar cycle) of the month, which is Buddhist day or the day that the locals in the project area are respecting their beliefs, the project will have a consultation with the village authorities to ask for permission before carrying out any activities. ▪ Provide training for staffs and workers coming into work in the project construction area, to understand about the conservation of all types of wildlife, to prevent hunting and purchasing of wildlife. Issuing rules for fining and expelling those who violated the rules. ▪ According to the lessons learnt from the construction of other projects with the construction and excavation of natural area, large and rare reptiles are often found, such as: Python (Malayopython Reticulatus). If such event is found in any of the project construction area, the constructors must report the government or relevant technicians to evacuate

S/N	Project Construction Activity	Duration (Month(s))	Feasibility of Potential Impacts from the Project Task	Potential Impacts Mitigation Measure Implementation Proposal
I.	**Project Area Access Road Construction Task**			
				the animal to other forest that is safe, no to bring the founded wildlife for food. ▪ Must have a monitoring from the environmental unit of the project jointly with relevant state sectors to report and relaying information to the construction contractors of the project for the improvement of their tasks. ▪ The construction, management and monitoring activities of every parties are to take the laws related to the wildlife management mentioned in the legislation section of this report as an important reference point in the implementation.
		30	***Fish and Aquatic Animal:*** Although the road construction of the wind farm project will not pass through much of water source area, but this project construction has the potential to impact aquatic plants, animals (If the road construction passes through water source). Hence, during this project construction phase, the source of potential impacts, such as: sedimentation and erosion from land excavate and land filling into the	***Fish and Aquatic Animal:*** ▪ The project must instruct the road construction contractors to take caution about the land excavation and land filling into the river activities, not to cause too much turbidity, especially construction in the dry season, which is the season where aquatic plants and animals lay eggs and grow a lot. It is also a valuable to local livelihood. ▪ In order to mitigate the potential contamination of oil stain from construction equipments into the river, the project must have an agreement for fining with the construction contractors, in order to bind the contractors from washing every kinds of

S/N	Project Construction Activity	Duration (Month(s))	Feasibility of Potential Impacts from the Project Task	Potential Impacts Mitigation Measure Implementation Proposal
I.	**Project Area Access Road Construction Task**			
			creek (If the construction area passes through creek or near water source), will be the main cause of impacts on aquatic plants and invertebrates. If there is a leakage of oil stain and chemical contaminants from the use of machinery and and construction equipments into rivers and creek tributaries, it will impacts the water quality, which will then impact aquatic plants and animals immediately. The mentioned activities all are a source of impacts on aquatic plants and animals that seasonally grow on the water surface and water body ground. Therefore, it is required to carry out mitigation measures.	mechanical vehicle and construction equipments in the river and creek tributaries in the project area. The relevant state sectors must pay attention in the inspection and evaluation according to the environmental management plan. The inspection must collect water quality samples for analysis, including the collection of aquatic plants and animals, and must conduct scientific analysis by comparing with the preliminary data of the collected samples and records in the environmental impact assessment report of the project ▪ The implementation of the mitigation measures of the construction contractor company, the management and monitoring the relevant environmental unit of the project jointly with the relevant state sectors, every activities and procedures of the implementation of each section must be based on the relevant legislations as mentioned in the legislation section of this ESMMP.
(3)	**Socio - Economic**			
	The main road that will be used in the project area is Highway 16B, which is a highway connecting Lao PDR and Vietnam SR from East to	**30**	***The People's Land Use:*** During the road construction of this project, there will be impact on the land use in the production (upland, garden, lowland rice field), forest, old cleared forest area of the locals, as	***The People's Land Use:*** ▪ Establish a detailed compensation plan for individuals/families, those losing their lands in accordance with the regulations on compensation. ▪ The compensation of lost opportunities must considered and reimbursed to the affected villagers

S/N	Project Construction Activity	Duration (Month(s))	Feasibility of Potential Impacts from the Project Task	Potential Impacts Mitigation Measure Implementation Proposal
I.	**Project Area Access Road Construction Task**			
	West. The current road width condition is sufficient for transporting equipments serving in the construction, such as: wind turbine components, crane for installing the wind turbine. The road accessing each project area according to the location of all 133 turbines. For accessing the wind turbine construction, there will be a construction of permanent roads with a width of 6 m, as well as drainage ditch and an underground transmission line corridor of a width 1 m each side and the conserved area, totalling at 11 m. The construction will clear		the activities from the construction of access road and components of the project must be completed during this construction period. If the construction of this road is completed, the people in the project area can use the benefits as well.	based on the the results of the consultation between the committee, compensation management unit and individuals affected by cooperating with the local authorities. The environmental management and compensation committee of the project must submit the determination of the final compensation unit price for approval by the province governor. ▪ Must establish a suitable compensation packages by working closely with all stakeholders. ▪ The Project must compensate the damages on the land use that the project will return prior to the disturbance or use of the land area and must compensate in a rate acceptable to both parties. ▪ Delay the return time of the land compensation until the crops have been completely harvested. In the case of the land compensation cannot be prolong, must compensate on the damages of crops in accordance with the predicted crops values according to the market value. ▪ Establish a grievance mechanism for all those affected ▪ Organise career promotion activities that are in accordance with the needs of the people and environmental conditions. ▪ The foremost priority for recruiting staffs must be given to the people in the 27 villages in the wind

S/N	Project Construction Activity	Duration (Month(s))	Feasibility of Potential Impacts from the Project Task	Potential Impacts Mitigation Measure Implementation Proposal
I.	**Project Area Access Road Construction Task**			
	the area for the construction of 10 m on each side 6 m from the permanent road. Therefore, the total area that will be cleared is 26 m wide			farm area and 4 villages in the transmission line area, totalling at 31 villages surrounding the project, especially the 18 villages and 378 households that lost their lands to the project. ▪ Limit the infrastructures and facilities construction of the project to be within the area already transferred.
		30	***Religion and Ethnicity:*** Although the road construction of this wind farm project does not impact the resettlement, which is that there is no relocation of ethnic groups to live together. However, during this project construction phase, ethnic workers and staffs are expected to come from other localities and there may be foreigners coming to work for the project. Therefore, during this period, there will be a variety of ethnic groups coming in to stay and pass through the villages that are on the way of accessing the construction area of the project.	***Religion and Ethnicity:*** ▪ The project owner must establish a good relationships with the local and to promote and be involved in the activities of the community, including the traditional festivals and cultural ceremonies. ▪ Having other foreign ethnic groups mixing in often leads to reluctance to the local traditions and beliefs of the local ethnic groups. Hence, the project must coordinate and inform the local authorities that there are any ethnic groups or foreigners coming in to work, as to facilitate the management and mutual respect between ethnic groups. ▪ The staffs and workers of the project must acknowledge the local culture, tradition and customs practices.

S/N	Project Construction Activity	Duration (Month(s))	Feasibility of Potential Impacts from the Project Task	Potential Impacts Mitigation Measure Implementation Proposal
I.	**Project Area Access Road Construction Task**			
		30	***Health and Safety:*** The health and safety impacts during the road construcion of this project are significant and are very likely to occur. In addition to the impacts from air pollution, dusts, noise and vibration, the risks on health-safety from working in high places and doing heavy works must be paid attention to, especially workers who do direct construction have very high risk. Therefore, the Project developer must pay attention to the appropriate mitigation measures in order to reduce that risk.	***Health and Safety:*** **Management and Protection Plan of the Project mentioned in the Technical Study:** 1) General Health and Safety The project has incorporates the health and safety management systems for the inspection and management of loss with details as follows: (1) Safety in the Operation Location • Clearly defined the construction area with border indication signs, hazard warning and prohibitions signs, as well as supervising for strict compliance throughout the construction period. • Attach symbol signs and warning signs in potentially dangerous area, such as “Changing Machines”, “Dangerous”, “ Do not turn on the switch” while the signs size must meet the standards and be installed in visible area. • Provide an adequate and suitable fire extinguishing system and provide an audit plan for being ready to use. • Organise a safety officer, who is responsible for various safety inspection in the construction area, including the monitoring of staffs and workers to comply with the safety inspection.

S/N	Project Construction Activity	Duration (Month(s))	Feasibility of Potential Impacts from the Project Task	Potential Impacts Mitigation Measure Implementation Proposal
I.	**Project Area Access Road Construction Task**			
				• Instruct the contractor company to record the details of the accident in the construction area, with details and evidence documents, especially if there is a serious injury or death, must notify the project immediately. (2) Personal Safety • Specify in the hiring contract for the contractor company to clearly determine the equipment details, procedures that the contractor company must take to ensure the safety in the construction. • Attach warning signs for staffs, employees, and contractors to use personal protection equipment (PPE) to work. • Supervise the workers to strictly wear suitable personal protection equipment according the work charateristics, such as Ear Muff, Ear Plug, Helmet, Safety Shoes, Gloves, Welding lights filtering mask. • Establish training on safety for the construction workers in order to ensure the safety in the operation during construction. The project will determine the topic and details of the training. • Nursing and First Aid Management, such as Arranging First Aid equipments, arranging reserves vehicle for transferring the injured to nearby hospital.

S/N	Project Construction Activity	Duration (Month(s))	Feasibility of Potential Impacts from the Project Task	Potential Impacts Mitigation Measure Implementation Proposal
I.	**Project Area Access Road Construction Task**			
				(3) Safety regarding Tools and Machinery • Organize a staff training on how to use the tools and machinery to be in accordance with their purposes, which will result in a better productivity in working and safety for the operators or construction workers. • There must be an inspection, repairment, and fixing of machinery everytime before and after every use for normal use. (4) Safety Inspection The safety officer is responsible for the safety inspections in the construction, including the monitoring the safety inspection compliance, must immediately report abnormal situation, and present solutions to the construction supervisors for acknowledgement. 2) Fire Prevention The project has installed the protective equipments such as: Portable Fire Extinguishers will be installed at various points in suitable area, such as Control Room Building and Sub-station, in which the type, category and size installed will be in accordance with NFPA standards. As well as measures for inspecting the tools and fire prevention equipment to be in good contidition and ready to use every 3 months.

S/N	Project Construction Activity	Duration (Month(s))	Feasibility of Potential Impacts from the Project Task	Potential Impacts Mitigation Measure Implementation Proposal
I.	**Project Area Access Road Construction Task**			
				3) Emergency Action Plan The project has provided an emergency action plan shown in (Figure 3-15 Section 3, Details of the Project) in order to swiftly control and eliminate any potential emergencies and to most effeciently prevent potential danger and damage. **Additional Measures:** ▪ If the Covid 19 epidemic is still ongoing during the time of the construction of the Project, the Project owner jointly with construction contractor company must strictly adhere to the following epedimic prevention principle. The staffs and workers must be fully vaccinated as determined by the Ministry of Public Health. ▪ Arrange Personal Protection Equipment for the staffs and workers according to the working environment. Tightly and fluently wear work suits, wear protective footwear, wear a dustproof mask, wear an ear muff or ear plug to prevent loud noise and vibration, wear a helmet, wear goggles to prevent the dispersion of debris and sand. ▪ Establish an emergency hospital for the project. In addition, the project must disseminate information to hospitals, public health offices, district health care centers and nearby dispensaries, including the quality monitoring and inspection results of the environment, and the results of the compliance

S/N	Project Construction Activity	Duration (Month(s))	Feasibility of Potential Impacts from the Project Task	Potential Impacts Mitigation Measure Implementation Proposal
I.	**Project Area Access Road Construction Task**			
				with the prevention and remedial measures of the potential impact on the health of the people living in nearby villages. ▪ The project must coordinate with the district health care centers and village group dispensaries on a regular basis, in order to know the health and daily living conditions of nearby villagers whether they are affected by the project or not, as to improve the cooperation between the public health of the project and of the state sector. ▪ If the project construction impacts the safety of the lives and properties of the people in the project's vicinity, the project must then provide compensation appropriately and in accordance with the state regulations for the fairness to the people who have suffered and as to not have an impact on their mental health. ▪ Provide drinking water, utility water and hygienic bathroom-toilet adequately in various workplaces that are the construction component of the project. The contractor company of the project must apply strict measures to prevent workers from constructing toilets along the riverside and not to defecate into the river. ▪ Provide training on the working and use of machinery equipment for the workers on a regular basis in order to prevent accidents by providing pre-

S/N	Project Construction Activity	Duration (Month(s))	Feasibility of Potential Impacts from the Project Task	Potential Impacts Mitigation Measure Implementation Proposal
I.	**Project Area Access Road Construction Task**			
				working training at all times, especially heavy work and work with risks on the safety. ▪ Prepare equipment for first aid, as well as ambulance for transferring patients to the project's emergency hospital or to the nearest public hospital in case of an accident. ▪ Organise a supervisor for the works and inpsection of heavy machinery, working equipment to be in ready for working condition and for ensuring the safety. ▪ Raise awareness among the staffs and workers, to pay attention to the safety in the working by wearing personal protection equipment at all times while working. ▪ Organise a hygienic worker accommodation environments , such as organising an appropriate and environmental friendly places facilitating garbages throughout the buildings and accommodation area. ▪ Warn the drivers using the project entrance-exit road to take caution while driving though the villages along the road, ensuring the health and safety of the people living in the project vicinity sharing the roads. ▪ Train the the ore-sand and construction equipments transporting truck drivers to strictly

S/N	Project Construction Activity	Duration (Month(s))	Feasibility of Potential Impacts from the Project Task	Potential Impacts Mitigation Measure Implementation Proposal
I.	**Project Area Access Road Construction Task**			
				comply with traffic rules. If an accident occurs, must be held accountable. ▪ Promote hygiene keeping and safety in working activities. ▪ The Project must have health and safety insurance policy for the staffs and workers in accordance with the regulations of the Ministry of Labour and Social Welfare.
			Employment and Household Income: During the road construction of this project, the project has the plan to carry out the construction along with components construction of the project for at least 2-3 years. The construction tasks are in need of staffs and workers for hundreds of positions, in which during some period may require labours up to 400 workers (the construction of access roads to the project will not be less than 100). Hence, in order to promote local labours and in order to make the development of the project happens along with the local development, the project must give priority to local labours. If the locals	***Employment and Household Income:*** ▪ According to the Regulation on the Employment of Development Project on the Local People of the Ministry of Labour and Social Welfare , the project jointly with the relevant state sectors must have a policy to accept local labour, the one who want to work for the project in order to increase their household income. ▪ If the local workers do have the abilities or enough skills to work for the project, but if they wish to, the project must accept them and provide training, provide wages and social welfare to the local workers appropriately. At the same time, in addition to the people having the opportunities for employment, the trading of products and services that will be a household income will increase, as during this period, there will be many people coming in to do construction work and it is

S/N	Project Construction Activity	Duration (Month(s))	Feasibility of Potential Impacts from the Project Task	Potential Impacts Mitigation Measure Implementation Proposal
I.	**Project Area Access Road Construction Task**			
			do not have the opportunity to work with project, negative impact on the feelings of the local labourers will occur.	expected that local purchases related to income will increase.
		30	***Road and Traffic:*** Road construction activity is also one of the causes for overall impact on the transport and traffic system along highways and road areas that the project will have to use for travelling and transporting of construction materials to construct new roads.	***Road and Traffic:*** ▪ Coordinate with the state sectors, the Ministry of Public Works and Transport, Provincial, District Department of Public Works and Transport, relevant sectors in facilitating the transportation of equipment and machinery into the construction area of the project. ▪ Provide training for the drivers during the transportation of construction materials or workers to strictly comply with the traffic rules. ▪ Limit the vehicle speed in the construction area to be under 30-40 km/h. ▪ Control the mass of the truck to be in accordance with standards or laws in order to prevent the damaging of road condition. ▪ Organize a traffic system in the construction area as well as an officer maintaining the vehicle entering-exiting the construction area. ▪ Set up a maintenance and an inspection of the preparedness of machinery, vehicles, and equipments being transported in order to ensure

S/N	Project Construction Activity	Duration (Month(s))	Feasibility of Potential Impacts from the Project Task	Potential Impacts Mitigation Measure Implementation Proposal
I.	**Project Area Access Road Construction Task**			
				the safety in the transportation before every operation. ▪ All staffs must have a driver's license matching the vehicle used. ▪ Attach traffic signs along the transportation route, especially along intersections, curves, alleys, village areas. ▪ Adhere to the Law on Land Transport (Issued No. 036/NA, 12 December 2012)
		30	***Garbage and Waste Disposal:*** During the road construction of this project, there is expected to be a lot of garbage and waste, such as waste from construction activities, hazardous waste from oil-containing materials of the machinery, and wastes from the daily usage of staffs and workers coming in to do construction work. During this construction period, it is expected that at least 50 staffs and workers will come in to work for the project per day, if the average person produces garbage at least 0.5 kg/person/day, there will a total garbage of no less than 25 kg/day. These garbages will	***Garbage and Waste Disposal:*** In order to reduce the potential impact on garbage and wastes during the period of this road construction of the project, the construction contractor company must pay attention to some of the necessary mitigation measures below: ▪ Must coordinate with the district development and administration organisation to identify garbage and waste disposal areas, if the current landfill of the district does not meet the standards, then it must be improved together to meet the standards and can truly treat various garbages. ▪ The garbage must be separated and disposed in different areas, hazardous garbage must be disposed by proper burying, this type of garbage pit must be far from rivers and tributary creeks in order to prevent the impact on the river.

S/N	Project Construction Activity	Duration (Month(s))	Feasibility of Potential Impacts from the Project Task	Potential Impacts Mitigation Measure Implementation Proposal
I.	**Project Area Access Road Construction Task**			
			be disposed of in black bags and garbage bins provided adequately by the contractor company, with the authorized garbage trucks of the authorized parties coming in to dispose of them for further disposal. As for the waste caused by construction materials debris, such as stone debris, soil waste, wood, in which some parts can be sold or reused. For waste that cannot be sold, the project will instruct the contractor company to remove them from the project every day after work or to collect them in order to contact the authorized party for further disposal. Therefore, when considering this garbage disposal method, it is expected that the impact from the project will be moderate.	▪ Garbage must not be incinerated in a disorderly manner that may release CO_2, CO and SO_2 exceeding the environmental standards. If it is necessary to incinerate, they must be seperated, espcially chemical contaminated garbage, such as cables or plastics must not be incinerated. The project developer jointly the environmental consultants and relevant state sectors must provide training for the staffs and workers to understand the harmful effect of garbage, and to understand the disposal method. If anyone violate, they must be fined or expelled.
			Unexploded Ordnance Clearance: During this road construction of the project, there will be a construction area clearing and cleaning activities. Without the survey and clearance of	***Unexploded Ordnance Clearance:*** Regardless, for the safety of the construction of this project as mentioned above, prior to commencing the construction of new roads accessing the project area, the project should invite the relevant parties of the

S/N	Project Construction Activity	Duration (Month(s))	Feasibility of Potential Impacts from the Project Task	Potential Impacts Mitigation Measure Implementation Proposal
I.	**Project Area Access Road Construction Task**			
			potential unexploded ordnances, impact during this period may occur, as the construction area of the project is one of the part having unexploded ordnances from the recent Indochina war.	state to conduct field survery once more, especially area where there will be heavy construction. If unexploded ordnance debris are founded the construction, the project must inform the relevant parties to inspect and clear them to ensure the safety.
		30	***Historical and Cultural Sites:*** During the road construction of this project, there will be a lot of heavy construction activities along the road construction area, the heavy construction activities often create loud noise from running transportation trucks and form dusts, dirty water and wastes and other disturbances. Hence, even though the project will not have a direct impact on the historical sites and ancient artifacts of the locals, however, the disturbances mentioned above may cause an indirect impact on the cultural customs, traditions and beliefs of the local.	***Historical and Cultural Sites:*** ▪ The project must stop working on the buddhist day and the 15th day (the wanning and waxing moon of the lunar cycle) and other important religious days that the respected by the locals. The project must have a consultation with the locals, doing rituals according to the beliefs prior to clearing the area for construction, in which the locals consider that the mountains and natural resources where they used to depend on and find livelihood are one of the important natural ancient artifacts. ▪ The project owner must build a good relationships with the locality and promote and be involved in the activities of the community, including the traditional festivals and cultural ceremonies.

S/N	Project Construction Activity	Duration (Month(s))	Feasibility of Potential Impacts from the Project Task	Potential Impacts Mitigation Measure Implementation Proposal
I.	**Project Area Access Road Construction Task**			
		30	***Scenery-Landscape and Tourism:*** New road corridors clearing, land surface clearing, excavating-road foundation construction activities will be the be the impacts affecting the local scenery-landscape in the road construction area of the wind farm project. All of these activities will cause an impact on the scenery-landscape, potentially changing them from their original scenery In order to prevent much change in the scenery, it is necessary to carry out the mitigation measures.	***Scenery-Landscape and Tourism:*** ▪ The erosion of the excavated soil layers from the new road construction area, which is one of the components of the project, will be an important reason for changes in the scenery or the surface landscape in the construction area. ▪ The removal or cutting of trees from the road corridors must be done only in areas necessary for the construction, not to cut outside the construction area in order to mitigate the changes in the natural green scenery from its original.

Table 11: Environmental Issues and Mitigation Measures of the Construction Preparation Area Improvement Tasks

No.	Project Construction Activity	Construction Duration (Month(s))	Feasibility of Potential Environmental Issues from the Project Task	Potential Impacts Mitigation Measure Implementation Proposal
II.	**Construction Preparation Area Improvement Task:**			
(1)	**Physical Environment**			
	The area preparation for the wind turbine construction of the project will improve and level the area. The project will use a permanent area of 0.5 ha/turbine and clearing area for construction of 0.5-1 ha/turbine as a placement area for materials, equipments and parts that will be assembled to become a wind turbine, including as an area for setting up large crane to install the wind turbine and as an area for setting up small crane that serves as a grip, to pull or hold the pole or the wind turbine body while installing and assembling.	**3**	***Air Quality:*** Construction Preparation and Wind Turbine Installation Area Improvement activities will not have much impact on the air quality. In addition, there will be a removal-cutting of trees in the area of about 0.5-1 ha for 1 wind turbine to be used as an area for placing materials, equipments and parts that will be used to assemble the wind turbine, including as an area for setting up large crane to install the wind turbine and as an area for setting up small crane. The air quality may change slightly from the clearing and cutting down of trees, which cause the loss of cool shading. If the area clearing activities of the project use cars or	***Air Quality:*** In order to reduce the potential impact on air quality during the area preparation for the construction of this project, the project owner, especially the construction contractor company must pay attention to some of the necessary mitigation measures below: ▪ Car Exhaust (If using machines): Mechanical vehicle users in the construction preparation area of the project must ensure not to exhaust Carbon Dioxide from the vehicle in excess of the determined standards (1-hr CO 30 ppm). The project construction contractors must have maintenance for vehicle and heavy machinery of every kinds used in the construction area preparation of the project. ▪ Forest Conservation: The project developer jointly with the relevant state sectors must pay attention to the environmental protection of the forest in the construction preparation area to be fertile, in order to help the local climate change to be the better. There should be no clearing or cutting of trees in unnecessary area, should remove only 0.5-1 ha for 1 wind turbine as determined. If there is a needs for expansion, there must be a report to the state

No.	Project Construction Activity	Construction Duration (Month(s))	Feasibility of Potential Environmental Issues from the Project Task	Potential Impacts Mitigation Measure Implementation Proposal
II.	**Construction Preparation Area Improvement Task:**			
			machinery, it will release Sulfur Dioxide (SO_2), Carbon Monoxide (CO) and Carbon Dioxide (CO_2), even if it is only a short-term impacts, there must be an appropriate mitigation measures.	sector and locals for acknowledgement and solving together. ▪ There must be training and prohibited the staffs and workers from burning garbage and wastes that may result in air pollution.
		3	***Noise and Vibration:*** During the area preparation for the construction of this project, there may not be followed by much noise and vibration impacts . In addition, this impact may occur from the use of heavy machinery in removal activities, which will be the the source of loud noise and vibration. Those that will be directly affected are the workers doing field works, in addition to the people near the area of the construction of the people.	***Noise and Vibration:*** In order to reduce the impact on the noise level of the area sensitive to the ambient noise level of the project from the improving of the area for the construction of the project, the construction contractor company must apply some of the mitigation measures on the following preparation activities: ▪ Must take caution in the use of the heavy mechanical vehicles in the removal-clearing area, have machinery maintanence used in the construction to be in good condition ready to use and meet the standards that does not cause too much noise. ▪ Must pause area preparation activities that will cause noise and vibration at night, which is a resting time for the nearby villages, all the way to wildlife either large or small around the project finding foods at night (nocturnal animal). In addition, the

No.	Project Construction Activity	Construction Duration (Month(s))	Feasibility of Potential Environmental Issues from the Project Task	Potential Impacts Mitigation Measure Implementation Proposal
II.	**Construction Preparation Area Improvement Task:**			
				heavy construction must be paused heavy construction activities on important local beliefs days and religious days, especially on the 15th day (the wanning and waxing moon of the lunar cycle) of every month. ▪ Monitoring: The environmental sector of the project must conducts monitoring by using standardized measurements, and then periodically reports to the relevant state sector as mentioned in the ESMMP of the project.
		3	***Erosion:*** The area preparation activities for the wind turbine construction and installation have a small risk for subsequent erosion, as the activities in this period will only include trees removal and level some parts of the surface in the area of 0.5-1 ha for 1 wind turbine, as an area for placing materials, equipments and parts will be assembled to become a wind turbine, including as an area	***Erosion:*** Although the risk is small and it is only short-term from this area preparation activities for the construction, however, the construction contractor company must pay attention to ensure that erosion does not occur in this period. If the area that will be the construction and installation of wind turbine area is a forest and steep slope, there must take caution in cutting down trees in areas where there will be preparations. In addition, during this preparation period, there must be a transportation of heavy machinery and equipments to the preparation place, hence, if there is no precaution in the transportation, erosion along steep roads can occur.

No.	Project Construction Activity	Construction Duration (Month(s))	Feasibility of Potential Environmental Issues from the Project Task	Potential Impacts Mitigation Measure Implementation Proposal
II.	**Construction Preparation Area Improvement Task:**			
			for setting up large crane to install the wind turbine and as an area for setting up small crane that serves as a grip, to pull or hold the pole or the wind turbine body while installing and assembling.	
		3	***Water Quality:*** The water quality, similar to the erosion, will not have much risk in occurring during the location preparation for this construction. However, if erosion occurred from the transporting of heavy machinery and materials and equipments to the preparation site before the construction, it will lead to contaminated water quality, especially if working during raining season. Moreover, the contaminated water quality can occur from garbage and waste of the staffs and	***Water Quality:*** ▪ Sedimentation and Turbid Water Management: The project must avoid transportation in rainy season to transport heavy machinery and material-equipment to the preparation area before construction, as the road accessing the construction area will be an ordinary unpaved road and can easily cause erosion, whoch will be the cause of contaminated water flowing into the natural water sources. ▪ Oil Stain and Chemical Contaminants Management: The project must have an agreement for fining with the project construction contractor, in order to bind the contractor not to washes vehicle or all kinds of machinery and construction equipments along the river or the creek tributaries in this preparation period. The state sector with relevant duties must pay attention in inspecting and evaluating according with the set environmental management plan. The

No.	Project Construction Activity	Construction Duration (Month(s))	Feasibility of Potential Environmental Issues from the Project Task	Potential Impacts Mitigation Measure Implementation Proposal
II.	**Construction Preparation Area Improvement Task:**			
			workers who go up to work in this preparation period. If there is no good management, such as randomly throwing garbage and waste away – into the water sources or on the steep slopes during the rainy season washing the garbage into the water sources. Water can be contaminated if there is no construction of toilet in the work field that is well-hygienic.	inspection require the collection of water quality samples for analysis and notifying the findings to the people utilizing the water sources for acknowledgement (In the cause that contaminated water occur during this preparation period). ▪ Dirty Water Issues from the accommodation camp and utilization of the Staffs and Workers during the preparation period: Hygienic bathrooms and toilets must be provided to the workers in an adequate number. When the project construction is completed, the bathrooms and toilets have to be demolish and adjust the land to previous condition (If there is no continue use). Construct a bund for the surrounding area of the temporary accommodation, have a drainage system into the sediments dirty water reservoir in the accommodation camp perimeter in the preparation area. ▪ The Use of Water for Construction: If the project has the need to draw creek water in the project area to serve in the construction, the project must notify the locals and coordinate with state sector at a district level for field inspection of the location where the water will be draw, in order to see whether it is suitable or not.

No.	Project Construction Activity	Construction Duration (Month(s))	Feasibility of Potential Environmental Issues from the Project Task	Potential Impacts Mitigation Measure Implementation Proposal
II.	**Construction Preparation Area Improvement Task:**			
				Inspection and Evaluation: The project developer jointly with the relevant state sector must inspect and evaluate, as well as collect water quality samples for analysis (If it is necessary in this preparation period) as determined in the environmental management plan of the ESMMP report. The water quality analysis findings must adhered to the national environmental standards (issued No. 81/GOV, 2017).
(2)	**Biological Environment**			
	The area preparation for the wind turbine construction of the project will improve and level the area. The project will use a permanent area of 0.5 ha/turbine and clearing area for construction of 0.5-1 ha/turbine as a placement area for materials, equipments and parts that will be assembled to become a wind turbine, including as an area for setting up large crane to install the wind turbine and as an area for setting up small crane that	**3**	***Forestry:*** During the area preparation for this project construction, it will have an impact on the forest and the local people's use land, as the area preparation activities have to cut down trees (If the preparation area have trees). As mentioned previously, the wind far project requires an area of about 0.5-1 ha per wind turbine for construction and some areas have forest, therefore, the impact on	***Forestry:*** ▪ Coordinate with the relevant sectors to carry out the process in accordance with the Law on Forestry (amended, 2019) and the Law on Land (amended, 2019) ▪ The forests that will be lost in the preparation aarea for construction of the project include mixed forest, limber pine (Mai Paek) forest and cleared forest. The data details are mentioned in the Table (5-21: Type of Land Use that will be Affected from the Wind Farm Project) in the ESIA report of this project. The project will provide compensation by reforestation in accordance with the regulations of the Forestry Department of the Ministry of Agriculture and Forestry

No.	Project Construction Activity	Construction Duration (Month(s))	Feasibility of Potential Environmental Issues from the Project Task	Potential Impacts Mitigation Measure Implementation Proposal
II.	**Construction Preparation Area Improvement Task:**			
	serves as a grip, to pull or hold the pole or the wind turbine body while installing and assembling.		forestry will occur in this preparation period.	▪ In order to prevent the forest area from being heavily affected, the project must have an inspection on the cutting down trees activities in the preparation area of the construction contractors to take caution in cutting down trees for the wind turbine construction. Do not clear the land beyond the boundaries, especially forest areas surrounding the project. ▪ Before the clearing of area for constructions, the project must coordinate with the relevant provincial and district sectors for the field inspection and evaluation of the area that will be affected, especially the area of the forest to be affected. ▪ Must provide training for the staffs and workers coming into work in the project construction area, to be able to understand the conservation of the forest, prohibiting the use of forests outside the project area and issuing rules for fining and expelling those who violated the rules. ▪ The project cooperates with the government for the field monitoring of the contractors cutting down trees activities for the construction on a regular basis throughout this area preparation period.

No.	Project Construction Activity	Construction Duration (Month(s))	Feasibility of Potential Environmental Issues from the Project Task	Potential Impacts Mitigation Measure Implementation Proposal
II.	**Construction Preparation Area Improvement Task:**			
		3	***Wildlife:*** During the area preparation for this project construction, there will be surface clearing and trees cutting activities in some areas, these activities have the potential to directly and indirectly impact as much wildlife as there is in the project area. Even though the components construction area of the project will not lie in the main habitat area of wildlife, however, some of those areas also have forests and plants that are home to some of the wildlife species. The area preparation activities for the construction of the project will impact some of the wildlife species will include: ▪ The clearing of these area for the construction requires the removal of trees and vegetation, the	***Wildlife:*** • The project must instruct the construction contractors during this area preparation period to control the noise level of the use of machinery and transports, by basing on the environmental standards, that there must be a control of noise not to exceed 85 decibels (dBA) in order to mitigate the disturbance and alarming of wildlife. • In the event where the project has the need to carry out construction activities on the important local beliefs day and buddhist day, especially on the day of the 15th day (the wanning and waxing moon of the lunar cycle), the project will have a consultation with the village authorities to ask for permission before carrying out any activities. • Provide training for staffs and workers coming into work in the project construction area, to understand about the conservation of all types of wildlife, to prevent hunting and purchasing of wildlife. Issuing rules for compliancy, fining and expelling those who violated the rules. • Must have a monitoring from the environmental unit of the project jointly with relevant state sectors to report and relaying information to the construction contractors of the project for the improvement of their tasks.

No.	Project Construction Activity	Construction Duration (Month(s))	Feasibility of Potential Environmental Issues from the Project Task	Potential Impacts Mitigation Measure Implementation Proposal
II.	**Construction Preparation Area Improvement Task:**			
			leveling of the land for placing machinery and construction equipments, camps construction. All of these activities create an impact on wildlife habitat. ▪ Loud noise from the use of machinery to level the area of the project cause wildlife to panic and be afraid and escape to elsewhere. ▪ The large number of workers coming in to work during the construction are at risk of poaching within and surrounding the project area for food.	• Although the area preparation activities for the construction are short-term, however environmental management and monitoring of every parties must be carry out by taking the regulations and laws releated to wildlife management mentioned in the legislation section of this report as an important reference point in the implementation.
		3	***Fish and Aquatic Animal:*** Although the activities of the area preparation are for the construction of the wind farm project, but these activities have the potential to create an impact on aquatic plants,	***Fish and Aquatic Animal:*** • The project must instruct the road construction contractors to take caution about the area preparation activities, land excavation and land filling into nearby river, not to cause too much turbidity, especially in the dry season, which is the season where aquatic plants and animals lay eggs

No.	Project Construction Activity	Construction Duration (Month(s))	Feasibility of Potential Environmental Issues from the Project Task	Potential Impacts Mitigation Measure Implementation Proposal
II.	**Construction Preparation Area Improvement Task:**			
			animals, if there are some construction areas near the water sources with steep slopes. Furthermore, during the preparation, there will also be the transportation of heavy machinery and construction equipments along the newly- built unpaved road, some areas may pass through water sources. Hence, during this period, the potential source of impacts on aquatic plants and animals are, such as: sedimentation and erosion from surface clearing into the creek (If the construction preparation area is near the water source), will be the main cause of impacts on aquatic plants and invertebrates. Oil stain and chemical contaminants (If there is a use of machinery and and construction	and grow a lot. It is also a valuable to local livelihood. • In order to mitigate the potential contamination of oil stain from construction equipments into the river (If there is the application of machinery into the preparation area clearing), the project must have an agreement for fining with the construction contractors, in order to bind the contractors from washing every kinds of mechanical vehicle and construction equipments in the river and creek tributaries in the project area. The relevant state sectors must pay attention in the inspection and evaluation according to the environmental management plan. The inspection must collect water quality samples for analysis, including the collection of aquatic plants and animals, and must conduct scientific analysis by comparing with the preliminary data of the collected samples and records in the environmental impact assessment report of the project. • The implementation of the mitigation measures of the construction contractor company, the management and monitoring the relevant environmental unit of the project jointly with the relevant state sectors, every activities, including this preparation activities, and procedures of the

No.	Project Construction Activity	Construction Duration (Month(s))	Feasibility of Potential Environmental Issues from the Project Task	Potential Impacts Mitigation Measure Implementation Proposal
II.	**Construction Preparation Area Improvement Task:**			
			equipments in the area clearing), if there is leakage of these pollutions into rivers and creek tributaries, it will impacts the water quality, which will then impact aquatic plants and animals immediately, especially if working in rainy season. The mentioned activities all are a source of impacts on aquatic plants and animals that seasonally grow on the water surface and water body ground. Therefore, it is required to carry out mitigation measures during this area preparation period, even though it is short-term.	implementation of each section must be based on the relevant legislations as mentioned in the legislation section of this ESMMP.
(3)	**Socio - Economic**			
			The People's Land Use: During the area preparation for the construction of this project, there will be impact on the land use of the	***The People's Land Use:*** ▪ Establish a detailed compensation plan for individuals/families, those losing their lands in accordance with the regulations on compensation.

No.	Project Construction Activity	Construction Duration (Month(s))	Feasibility of Potential Environmental Issues from the Project Task	Potential Impacts Mitigation Measure Implementation Proposal
II.	**Construction Preparation Area Improvement Task:**			
			production area (upland, garden, lowland rice field), forest, old cleared forest area of the locals, as the area preparation activities for the installation of the wind turbine require an area of 0.5-1 ha/turbine. The loss of forest area and land use of the project must all be completed during this area preparation period.	▪ The compensation of lost opportunities must considered and reimbursed to the affected villagers based on the the results of the consultation between the committee, compensation management unit and individuals affected by cooperating with the local authorities. The environmental management and compensation committee of the project must submit the determination of the final compensation unit price for approval by the province governor. ▪ Must establish a suitable compensation packages by working closely with all stakeholders. ▪ The Project must compensate the damages on the land use that the project will return prior to the disturbance or use of the land area and must compensate in a rate acceptable to both parties. ▪ Delay the return time of the land compensation until the crops have been completely harvested. In the case of the land compensation cannot be prolong, must compensate on the damages of crops in accordance with the predicted crops values according to the market value. ▪ Establish a grievance mechanism for all those affected

No.	Project Construction Activity	Construction Duration (Month(s))	Feasibility of Potential Environmental Issues from the Project Task	Potential Impacts Mitigation Measure Implementation Proposal
II.	**Construction Preparation Area Improvement Task:**			
				▪ Organise career promotion activities that are in accordance with the needs of the people and environmental conditions. ▪ The foremost priority for recruiting staffs must be given to the people in the 27 villages in the wind farm area and 4 villages in the transmission line area, totalling at 31 villages surrounding the project, especially the 18 villages and 378 households that lost their lands to the project. ▪ Limit the infrastructures and facilities construction of the project to be within the area already transferred.
			Religion and Ethnicity: During this area preaparation period as well, although this wind farm project does not impact the resettlement, which is that there is no relocation of ethnic groups to live together. However, during this project construction preparation phase, ethnic workers and staffs are expected to come	***Religion and Ethnicity:*** ▪ The project owner must establish a good relationships with the local and to promote and be involved in the activities of the community, including the traditional festivals and cultural ceremonies. ▪ Having other foreign ethnic groups mixing in often leads to reluctance to the local traditions and beliefs of the local ethnic groups. Hence, the project must coordinate and inform the local authorities that there are any ethnic groups or foreigners coming in to work, as to facilitate the management and mutual respect between ethnic groups.

No.	Project Construction Activity	Construction Duration (Month(s))	Feasibility of Potential Environmental Issues from the Project Task	Potential Impacts Mitigation Measure Implementation Proposal
II.	**Construction Preparation Area Improvement Task:**			
			from other localities and there may be foreigners coming to work for the project. Therefore, during this period, there will be a variety of ethnic groups coming in to stay and pass through the villages that are on the way of accessing the preparation area of the project.	▪ The staffs and workers of the project must acknowledge the culture of the local, tradition and customs practices.
			Health and Safety: The health and safety impacts during the area preparation for the construction of this project are significant and are very likely to occur. In addition to the impacts from air pollution, dusts, noise. Doing heavy works that must be paid attention to, especially workers who do direct construction have very high risk. Therefore, the Project developer together with the	***Health and Safety:*** **Management and Protection Plan of the Project mentioned in the Technical Study:** (1) General Health and Safety The project has incorporates the health and safety management systems for the inspection and management of loss with details as follows: (2) Safety in the Operation Location • Clearly defined the construction area with border indication signs, hazard warning and prohibitions signs, as well as supervising for strict compliance throughout the construction period.

No.	Project Construction Activity	Construction Duration (Month(s))	Feasibility of Potential Environmental Issues from the Project Task	Potential Impacts Mitigation Measure Implementation Proposal
II.	**Construction Preparation Area Improvement Task:**			
			construction contractor company must pay attention to the appropriate mitigation measures in order to reduce that risk.	• Attach symbol signs and warning signs in potentially dangerous area, such as "Changing Machines", "Dangerous", " Do not turn on the switch" while the signs size must meet the standards and be installed in visible area. • Provide an adequate and suitable fire extinguishing system and provide an audit plan for being ready to use. • Organise a safety officer, who is responsible for various safety inspection in the construction area, including the monitoring of staffs and workers to comply with the safety inspection. • Instruct the contractor company to record the details of the accident in the construction area, with details and evidence documents, especially if there is a serious injury or death, must notify the project immediately. (3) Personal Safety • Specify in the hiring contract for the contractor company to clearly determine the equipment details, procedures that the contractor company must take to ensure the safety in the construction. • Attach warning signs for staffs, employees, and contractors to use personal protection equipment (PPE) to work.

No.	Project Construction Activity	Construction Duration (Month(s))	Feasibility of Potential Environmental Issues from the Project Task	Potential Impacts Mitigation Measure Implementation Proposal
II.	**Construction Preparation Area Improvement Task:**			
				• Supervise the workers to strictly wear suitable personal protection equipment according the work charateristics, such as Ear Muff, Ear Plug, Helmet, Safety Shoes, Gloves, Welding lights filtering mask. • Establish training on safety for the construction workers in order to ensure the safety in the operation during construction. The project will determine the topic and details of the training. • Nursing and First Aid Management, such as Arranging First Aid equipments, arranging reserves vehicle for transferring the injured to nearby hospital. (4) Safety regarding Tools and Machinery • Organize a staff training on how to use the tools and machinery to be in accordance with their purposes, which will result in a better productivity in working and safety for the operators or construction workers. • There must be an inspection, repairment, and fixing of machinery everytime before and after every use for normal use. (5) Safety Inspection The safety officer is responsible for the safety inspections in the construction, including the monitoring the safety inspection compliance, must

No.	Project Construction Activity	Construction Duration (Month(s))	Feasibility of Potential Environmental Issues from the Project Task	Potential Impacts Mitigation Measure Implementation Proposal
II.	**Construction Preparation Area Improvement Task:**			
				immediately report abnormal situation, and present solutions to the construction supervisors for acknowledgement. 4) Fire Prevention The project has installed the protective equipments such as: Portable Fire Extinguishers will be installed at various points in suitable area, such as Control Room Building and Sub-station, in which the type, category and size installed will be in accordance with NFPA standards. As well as measures for inspecting the tools and fire prevention equipment to be in good contidition and ready to use every 3 months. 5) Emergency Action Plan The project has provided an emergency action plan shown in (Figure 3-15 Section 3, Details of the Project) in order to swiftly control and eliminate any potential emergencies and to most effeciently prevent potential danger and damage. Preliminarily, if emergency situation occurred witjin the project area without any impact to the aarea outside the project, the emergency suspension can be controlled by the project emergency suspension team. In the event that the emergency situation occurred expands or has an impact on the nearby staffs or workers and cannot be controlled by

No.	Project Construction Activity	Construction Duration (Month(s))	Feasibility of Potential Environmental Issues from the Project Task	Potential Impacts Mitigation Measure Implementation Proposal
II.	**Construction Preparation Area Improvement Task:**			
				the emergency suspension team of the project, it is necessary to seek help from the outside agencies. **Additional Measures:** ▪ Arrange Personal Protection Equipment for the staffs and workers according to the working environment. Tightly and fluently wear work suits, wear protective footwear, wear a dustproof mask and other protection equipments that is seen necessary during this area preparation-clearing period. ▪ In this preparation period, must establish an emergency hospital for the project. In addition, the project must disseminate information to hospitals, public health offices, district health care centers and nearby dispensaries, including the quality monitoring and inspection results of the environment, and the results of the compliance with the prevention and remedial measures of the potential impact on the health of the people living in nearby villages. ▪ The project must coordinate with the district health care centers and village group dispensaries on a regular basis, in order to know the health and daily living conditions of nearby villagers whether they are affected by the project or not, as to improve the

No.	Project Construction Activity	Construction Duration (Month(s))	Feasibility of Potential Environmental Issues from the Project Task	Potential Impacts Mitigation Measure Implementation Proposal
II.	**Construction Preparation Area Improvement Task:**			
				cooperation between the public health of the project and of the state sector. ▪ If the project construction impacts the safety of the lives and properties of the people in the project's vicinity, the project must then provide compensation appropriately and in accordance with the state regulations for the fairness to the people who have suffered and as to not have an impact on their mental health. ▪ Provide drinking water, utility water and hygienic bathroom-toilet adequately in various workplaces that are the construction component of the project. The contractor company of the project must apply strict measures to prevent workers from constructing toilets along the riverside and not to defecate into the river. ▪ Provide training on the working and use of machinery equipment for the workers on a regular basis in order to prevent accidents by providing pre-working training at all times, especially heavy work and work with risks on the safety. ▪ Prepare equipment for first aid, as well as ambulance for transferring patients to the project's emergency hospital or to the nearest public hospital in case of an accident.

No.	Project Construction Activity	Construction Duration (Month(s))	Feasibility of Potential Environmental Issues from the Project Task	Potential Impacts Mitigation Measure Implementation Proposal
II.	**Construction Preparation Area Improvement Task:**			
				▪ Organise a supervisor for the works and inpsection of heavy machinery, working equipment to be in ready for working condition and for ensuring the safety. ▪ Raise awareness among the staffs and workers, to pay attention to the safety in the working by wearing personal protection equipment at all times while working. ▪ Organise a hygienic worker accommodation environments , such as organising an appropriate and environmental friendly places facilitating garbages throughout the buildings and accommodation area. ▪ Warn the drivers using the project entrance-exit road to take caution while driving though the villages along the road, ensuring the health and safety of the people living in the project vicinity sharing the roads. ▪ Promote hygiene keeping and safety in working activities. ▪ The Project must have health and safety insurance policy for the staffs and workers in accordance with the regulations of the Ministry of Labour and Social Welfare.

No.	Project Construction Activity	Construction Duration (Month(s))	Feasibility of Potential Environmental Issues from the Project Task	Potential Impacts Mitigation Measure Implementation Proposal
II.	**Construction Preparation Area Improvement Task:**			
			Employment and Household Income: Even though the period of the area preparation for the construction of this project will not use a large number of workers and is a short-term work. However, in order to promote local labours and in order to make the development of the project happens along with the local development, the project must continue to give priority to local labours. If the locals do not have the opportunity to work with project, negative impact on the feelings of the local labourers will occur.	***Employment and Household Income:*** ▪ According to the Regulation on the Employment of Development Project on the Local People of the Ministry of Labour and Social Welfare , the project jointly with the relevant state sectors must have a policy to accept local labour, the one who want to work for the project in order to increase their household income. ▪ If the local workers do have the abilities or enough skills to work for the project, but if they wish to, the project must accept them and provide wages and social welfare to the local workers appropriately. ▪ At the same time, in addition to the people having the opportunities for employment, the trading of products and services that will be a household income will also increase.
			Road and Traffic: In this area preparation for the construction of this project, there will be many activities related to the following tasks, such as: Area	***Road and Traffic:*** ▪ Coordinate with the state sectors, the Ministry of Public Works and Transport, Provincial, District Department of Public Works and Transport, relevant sectors in facilitating the transportation of

No.	Project Construction Activity	Construction Duration (Month(s))	Feasibility of Potential Environmental Issues from the Project Task	Potential Impacts Mitigation Measure Implementation Proposal
II.	**Construction Preparation Area Improvement Task:**			
			clearing, the transportation of heavy machinery and construction equipments to the construction area, the construction preparation of the shelter camp and other task that must be completed in this preparation period. All of these have an overall impact on the transport and traffic system along highways and road areas where the project will need to use for travelling and transporting construction materials. Regardless, the impact from transporting during the construction preparation is temporary. The project will seek permission from the local state agency to transport equipments and machinery for installing wind turbines due to the large size of this equipment.	equipment and machinery into the construction area of the project. ▪ Avoid transporting equipment and machinery for the wind turbines installation during rush hour (7:00–8:00 and 17:00–18:00) ▪ Provide training for the drivers during the transportation of construction materials or workers to strictly comply with the traffic rules. ▪ Limit the vehicle speed in the construction area to be under 30-40 km/h. ▪ Control the mass of the truck to be in accordance with standards or laws in order to prevent the damaging of road condition. ▪ Organize a traffic system in the construction area as well as an officer maintaining the vehicle entering-exiting the construction area. ▪ Set up a public relations in advance and informs the relevant parties in the event of the needs of a road closure in order transport large equipment, so that the villages can avoid to use other routes, preventing potential accidents. ▪ Set up a maintenance and an inspection of the preparedness of machinery, vehicles, and equipments being transported in order to ensure the safety in the transportation before every operation.

No.	Project Construction Activity	Construction Duration (Month(s))	Feasibility of Potential Environmental Issues from the Project Task	Potential Impacts Mitigation Measure Implementation Proposal
II.	**Construction Preparation Area Improvement Task:**			
				▪ All staffs must have a driver's license (Domestic driver's license for Lao nationality and International driver's license for foreign nationality). ▪ Survey transportation route and area in advance, including designing and improving the road to be of safety during the transportation by the transport engineering team. ▪ Organize a coordination team in the event of accident during the equipment transportation in order to rapidly solve potential issues. ▪ Attach traffic signs along the transportation route, especially along intersections, curves, alleys, village areas. ▪ Adhere to the Law on Land Transport (Issued No. 036/NA, 12 December 2012)
			Garbage and Waste Disposal: During the area preparation for the construction of this project, there is expected to be a lot of garbage and waste, such as waste from land surface preparation activities, hazardous waste from oil-	***Garbage and Waste Disposal:*** In order to reduce the potential impact on garbage and wastes during the period of this area preparation for the construction of the project, although it is short-term, the construction contractor company must still pay attention to some of the necessary mitigation measures below: ▪ The project owner or construction contractor company must coordinate with the district

No.	Project Construction Activity	Construction Duration (Month(s))	Feasibility of Potential Environmental Issues from the Project Task	Potential Impacts Mitigation Measure Implementation Proposal
II.	**Construction Preparation Area Improvement Task:**			
			containing materials of the machinery (If there is a repairment of field mechanical vehicle during this period), and wastes from the daily usage of staffs and workers coming in to do field preparation work.	development and administration organisation to identify garbage and waste disposal areas, if the current landfill of the district does not meet the standards, then it must be improved together to meet the standards and can truly treat various garbages. ▪ The garbage must be separated and disposed in different areas, hazardous garbage must be disposed by proper burying, this type of garbage pit must be far from rivers and tributary creeks in order to prevent the impact on the river. ▪ Garbage must not be incinerated in a disorderly manner that may release CO_2, CO and SO_2 exceeding the environmental standards. If it is necessary to incinerate, they must be seperated, espcially chemical contaminated garbage, such as cables or plastics must not be incinerated. The project developer jointly the environmental consultants and relevant state sectors must provide training for the staffs and workers to understand the harmful effect of garbage, and to understand the disposal method. If anyone violate, they must be fined or expelled.
			Unexploded Ordnance Clearance:	***Unexploded Ordnance Clearance:***

No.	Project Construction Activity	Construction Duration (Month(s))	Feasibility of Potential Environmental Issues from the Project Task	Potential Impacts Mitigation Measure Implementation Proposal
II.	**Construction Preparation Area Improvement Task:**			
			During the area preparation of this project, there will be a clearing and cleaning activities for the construction and installation of wind turbines as well as the construction of places that are the component of the project. Without the survey and clearance of potential unexploded ordnances, impact during this period may occur, as the construction area of the project is one of the part having unexploded ordnances from the recent Indochina war.	Regardless, for the safety of the project, prior to commencing the construction, there should be a survey and clearance (If found), the project should invite the relevant parties of the state to conduct field survery once more, especially area where there will be heavy construction.
			Historical and Cultural Sites: During area preparation for the construction of this project, although there are no heavy construction activities yet, however the transportation of heavy machinery for the construction can create dusts	***Historical and Cultural Sites:*** ▪ The project must stop working on the buddhist day and the 15th day (the wanning and waxing moon of the lunar cycle) and other important religious days that the respected by the locals. The project must have a consultation with the locals, doing rituals according to the beliefs prior to clearing the area for construction, in which the locals consider that the mountains and natural resources where they used

No.	Project Construction Activity	Construction Duration (Month(s))	Feasibility of Potential Environmental Issues from the Project Task	Potential Impacts Mitigation Measure Implementation Proposal
II.	**Construction Preparation Area Improvement Task:**			
			during dry season, contaminated water in rainy season along the transportation roads accessing the construction area of the project that are an unpaved road and other waste. Hence, even though the project will not have a direct impact on the historical sites and ancient artifacts of the locals, however, the disturbances mentioned above may cause an indirect impact on the cultural customs, traditions and beliefs of the local.	to depend on and find livelihood are one of the important part of the natural ancient artifacts. ▪ The project owner must build a good relationships with the locality and promote and be involved in the activities of the community, including the traditional festivals and cultural ceremonies.
			Scenery-Landscape and Tourism: The impact on the local scenery-landscape in the wind farm project construction area during this construction preparation period of the project will be caused from the activity of removing and	***Scenery-Landscape and Tourism:*** ▪ The clearing of the soil layer that will be excavated from the construction area that is a components of the project will be a significant reason for the changes in the surface scenery or landscape in the preparation area. Therefore, the construction contractor company must take caution in area clearing to be within the designated area.

No.	Project Construction Activity	Construction Duration (Month(s))	Feasibility of Potential Environmental Issues from the Project Task	Potential Impacts Mitigation Measure Implementation Proposal
II.	**Construction Preparation Area Improvement Task:**			
			cutting down trees from the area where there will be a construction and installation of 133 wind turbines, each turbine requires a permanent area of 0.5 ha/turbine and an area clearing for the construction of 0.5 – 1 ha/turbine (based on the preliminary design of the project). Moreover, there will be an area clearing for the construction of the internal electricity station to accommodate electricity from the wind power and the construction of these components. There is a need for removing-cutting down trees, land surface clearing to accommodate the construction area. All of these activities will impact the scenery – landscape potentially changing them from their original. In order to	The removal or cutting of trees must be done only in areas necessary for the construction, should not cut outside the construction area in order to mitigate much changes in the natural green scenery from its original.

No.	Project Construction Activity	Construction Duration (Month(s))	Feasibility of Potential Environmental Issues from the Project Task	Potential Impacts Mitigation Measure Implementation Proposal
II.	**Construction Preparation Area Improvement Task:**			
			prevent the scenery from changing too much, it is necessary carry out mitigation measures.	

Table 12: Environmental Issues and Mitigation Measures of the Wind Turbine Tower Foundation Task

S/N	Project Construction Activity	Construction Duration (Month(s))	Feasibility of Potential Environmental Issues from the Project Task	Potential Impacts Mitigation Measures Implementation Proposal
III.	**Wind Turbine Tower Foundation Task :**			
(1) Physical Environment				

S/N	Project Construction Activity	Construction Duration (Month(s))	Feasibility of Potential Environmental Issues from the Project Task	Potential Impacts Mitigation Measures Implementation Proposal
III.	**Wind Turbine Tower Foundation Task :**			
	The foundation task of each wind turbine tower will first has an opening and leveling of the ground, then there will be an excavation into the ground characterising an octagonal shape, with a depth of about 4.2 metres and a width of about 11-18 metres at each wind turbine installation point, subjecting to changes according to the nature and amount of water in the ground of each point. The foundation construction of the wind turbine will open the ground to the width and depth according to the designing of the steel structure and pour in concrete to make the foundation strong and able to support the weight and cross-sectional force while the wind turbine is working.	**16**	***Air Quality:*** There will not be much impact on the air quality during the period of the wind turbine tower foundation excavation for the project construction. In addition to the combustion in the use of heavy machinery into the construction will release Sulfur Dioxide SO_2, Carbon Monoxide CO and Carbon Dioxide CO_2, dust particle or PM10 will not occur much as the underground excavation will be wet.	***Air Quality:*** In order to reduce the potential impact on the air quality (Though there are not many risks) during this wind turbine tower foundation excavation of the project, the project owner, especially the construction contractor company must pay attention to some of the necessary mitigation measures below: ▪ In areas with excavation for the wind turbine tower base construction, if this location is close to community area, a fence of about 2-3 metres high must be built around in order to reduce the dispersion of smell and smoke that may potentially occur from the use of machinery. ▪ Machine users must ensure not to release Carbon Dioxide from the vehicle exceeding the specified standard (1-hr CO 30 ppm). The project construction contractor must have a maintenance of every types of vehicles and heavy machinery used in the excavation for the project construction on a regular basis. ▪ At the same time, there must be a training and prohibition of staffs and workers from burning garbage and wastes that will subsequently cause air pollution during this foundation excavation period.
			Noise and Vibration:	***Noise and Vibration:***

S/N	Project Construction Activity	Construction Duration (Month(s))	Feasibility of Potential Environmental Issues from the Project Task	Potential Impacts Mitigation Measures Implementation Proposal
III.	**Wind Turbine Tower Foundation Task :**			
			During this wind turbine tower foundation excavation period, noise and vibration impacts may subsequently follow, as this impacts may occur from the use of heavy machinery in excavation activities, ground levelling and storing of soil excavated from the ground. Those that will be directly affected are the workers doing field works, in addition to the people near the area of the construction of the people. According to the project construction operation plan, it is determined to pause any activities that will cause loud noise at night (19:00 – 06:00). Hence, the impact assessment is only conducted during the day (06:00 – 19:00) by determining the source that causes the loud noise during the construction	▪ According to the Study – Design Plan of the project, in order to reduce the impact on the noise level in area sensitive to receiving the project's ambient noise level from the construction of the project. The project organizes a construction of a temporary sound barrier with a height of no lower than 2.5 metres. Therefore, when the project has constructs the temporary sound barrier prior to the project construction commencement, according to the details above, the construction of the project will result in the general noise level (Leq 24 hours) in area sensitive to the project's noise level reduced from the original. ▪ Must have a maintenance of machinery used in the construction to remains in good condition, ready to use and meet the standard not causing too much loud noise. ▪ Should pause heavy construction activities that will cause noise and vibration at night, which is a resting time for the nearby villages, all the way to wildlife around the project finding foods at night (nocturnal animal). Heavy construction must be paused on important local beliefs days or buddhist days, especially on the 15th day (the wanning and waxing moon of the lunar cycle) of every month. ▪ Monitoring: The environmental sector of the project must conducts monitoring by using standardized measurements, and then periodically

S/N	Project Construction Activity	Construction Duration (Month(s))	Feasibility of Potential Environmental Issues from the Project Task	Potential Impacts Mitigation Measures Implementation Proposal
III.	**Wind Turbine Tower Foundation Task :**			
			phase, which may be causes from many types of machinery operating together, which are, Back hoe, Bull Dozer, Truck and Crane, measured 15.24 m (50 foot) from the machine. Each type of machines have a noise level of about 86.5, 96, 96 and 100 Decibel dA.	reports to the relevant state sector as mentioned in the ESMMP of the project.
		16	***Erosion:*** Even though the wind farm project is not construted or located along the river, however sedimentation and erosion can occur during the period of excavation for the construction of the project, especially excavating in rainy season.	***Erosion:*** ▪ Task planning regarding soil during dry season. When there is heavy rain, soil related work must be paused in rainy season, especially on days when it is raining heavily. ▪ Avoid piling excavated soil next to the creek or ditch in order to prevent sedimentation and erosion into water source. ▪ Excavated land must be refilled and tightly flatten using machine to prevent collapsing of soil. ▪ Planting grasses and trees in various construction sites of the project. ▪ If the wind turbine tower is located on steep areas, there should be a construction to prevent the erosion of the tower foundation,

S/N	Project Construction Activity	Construction Duration (Month(s))	Feasibility of Potential Environmental Issues from the Project Task	Potential Impacts Mitigation Measures Implementation Proposal
III.	**Wind Turbine Tower Foundation Task :**			
		16	***Water Quality:*** If there is working in rainy season, sedimentation will lead to turbid water, because of the land excavation, land filling for the construction of the road to the wind turbine tower foundation. Land excavation in rainy season will causes oil stain and chemical contaminants from the use of machinery and construction equipments, cement stain from the construction area and cement transportation to various construction areas. Beside, various dirty water issues may occur from the habitats and the utilization of the staffs and workers coming in to work for the project construction, in large amount, difficult to control.	***Water Quality:*** ▪ Sedimentation and Turbid Water Management: The project must be careful in the road construction of the project in areas near water sources, must pause working related to land excavation during raining, in order to mitigate the erosion of soil into water sources, causing water to become turbid and affecting the quality of the water sources. ▪ Oil Stain and Chemical Contaminants Management: The project must have an agreement for fining with the project construction contractor, in order to bind the contractor not to washes vehicle or all kinds of machinery and construction materials along the river or the creek tributaries in the project area boundaries. The state sector with relevant duties must pay attention in inspecting and evaluating accordingly with the environmental management plan. The inspection require the collection of water quality samples for analysis and notifying the findings to the people utilizing the water sources for acknowledgement. ▪ The Cement Mixing Plant area (If exists in the field) for the construction of the tower foundation and vehicle or machinery repair area of the project must be located away from the waterside in order to

S/N	Project Construction Activity	Construction Duration (Month(s))	Feasibility of Potential Environmental Issues from the Project Task	Potential Impacts Mitigation Measures Implementation Proposal
III.	**Wind Turbine Tower Foundation Task :**			
				avoid and reduce the flow of water contaminated with chemicals (machine oil) into the river easily. ▪ Dirty Water Issues from the Habitats and Utilization of the Staffs and Workers: Hygienic bathrooms and toilets must be provided to the workers in an adequate number. When the project construction is completed, the bathrooms and toilets have to be demolish and adjust the land to previous condition. Construct a bund for draining water surrounding the area of the tower base foundation construction, have a drainage system to prevent erosion that may lead to contaminated water. ▪ The Use of Water for Construction (If any): If the project has the need to draw creek water in the project area to serve in the construction, the project must notify the locals and coordinate with state sector at a district level for field inspection of the location where the water will be draw, in order to see whether it is suitable or not. ▪ Inspection and Evaluation: The project developer jointly with the relevant state sector must inspect and evaluate, as well as collect water quality samples for analysis as determined in the environmental management plan of the ESMMP report. The water quality analysis findings must

S/N	Project Construction Activity	Construction Duration (Month(s))	Feasibility of Potential Environmental Issues from the Project Task	Potential Impacts Mitigation Measures Implementation Proposal
III.	**Wind Turbine Tower Foundation Task :**			
				adhered to the national environmental standards (issued No. 81/GOV, 2017).
		16	***Wildlife:*** During the foundation excavation for this project construction, there will be many activities directly and indirectly impact wildlife. Even though the components construction area of the project will not lie in the main habitat area of wildlife, however, some of those areas also have forests and plants that are home to some of the wildlife species. The activities that will impact some of the wildlife species will include the following: ▪ Loud noise from the use of machinery to construct the tower foundation of the project cause wildlife to panic and be afraid and escape to elsewhere.	***Wildlife:*** ▪ The project must instruct the construction contractors to control the noise level of the use of machinery and transportation vehicles, by basing on the environmental standards, that there must be a control of noise not to exceed 85 decibels (dBA) in order to mitigate the disturbance and alarming of wildlife. ▪ Must pause heavy work on the days with 15th day (the wanning and waxing moon of the lunar cycle), which is Buddhist day or the day that the locals in the project area are respected and believed. ▪ Provide training for staffs and workers coming into work in the project construction area, to understand about the conservation of all types of wildlife, to prevent hunting and purchasing of wildlife. Issuing rules for fining and expelling those who violated the rules. ▪ According to the lessons learnt from the construction of other projects with the construction and excavation of natural area, large and rare reptiles are often found, such as: Python (Malayopython Reticulatus). If such event is found in any of the project construction area, the constructors must report the government or relevant technicians to evacuate the animal to

S/N	Project Construction Activity	Construction Duration (Month(s))	Feasibility of Potential Environmental Issues from the Project Task	Potential Impacts Mitigation Measures Implementation Proposal
III.	**Wind Turbine Tower Foundation Task :**			
			• The workers coming in to work during the construction are at risk of poaching within and surrounding the project area for food.	other forest that is safe, not to bring the founded wildlife for food. ▪ Must have a monitoring from the environmental unit of the project jointly with relevant state sectors to report and relaying information to the construction contractors of the project for the improvement of their tasks. ▪ The construction, management and monitoring activities of every parties are to take the laws related to the wildlife management mentioned in the legislation section of this report as an important reference point in the implementation.
(3) Socio - Economic				
	The foundation task of each wind turbine tower will first has an opening and leveling of the ground, then there will be an excavation into the ground characterising an octagonal shape, with a depth of about 4.2 metres and a width of about 11-18 metres at each wind turbine installation point, subjecting to changes according to the nature and amount of water	**16**	***Health and Safety:*** The health and safety impacts from the land excavation activities for the construction of this project are significant and are very likely to occur. In addition to the impacts from air pollution, noise and virbration, doing heavy works that used machinery, especially workers who do direct construction have very high risk. Therefore,	***Health and Safety:*** ▪ Arrange Personal Protection Equipment for the staffs and workers according to the working environment. Tightly and fluently wear work suits, wear protective footwear, wear a dustproof mask and other protection equipments that is seen necessary during this area preparation-clearing period. ▪ Establish an emergency hospital for the project. In addition, the project must disseminate information to hospitals, public health offices, district health care centers and nearby dispensaries, including the quality monitoring and inspection results of the

S/N	Project Construction Activity	Construction Duration (Month(s))	Feasibility of Potential Environmental Issues from the Project Task	Potential Impacts Mitigation Measures Implementation Proposal
III.	**Wind Turbine Tower Foundation Task :**			
	in the ground of each point. The foundation construction of the wind turbine will open the ground to the width and depth according to the designing of the steel structure and pour in concrete to make the foundation strong and able to support the weight and cross-sectional force while the wind turbine is working.		the Project developer together must pay attention to the appropriate mitigation measures in order to reduce that risk.	environment, and the results of the compliance with the prevention and remedial measures of the potential impact on the health of the people living in nearby villages. ▪ The project must coordinate with the district health care centers and village group dispensaries on a regular basis, in order to know the health and daily living conditions of nearby villagers whether they are affected by the project or not, as to improve the cooperation between the public health of the project and of the state sector. ▪ If the project construction impacts the safety of the lives and properties of the people in the project's vicinity, the project must then provide compensation appropriately and in accordance with the state regulations for the fairness to the people who have suffered and as to not have an impact on their mental health. ▪ Provide drinking water, utility water and hygienic bathroom-toilet adequately in various workplaces that are the construction component of the project. The contractor company of the project must apply strict measures to prevent workers from constructing toilets along the riverside and not to defecate into the river.

S/N	Project Construction Activity	Construction Duration (Month(s))	Feasibility of Potential Environmental Issues from the Project Task	Potential Impacts Mitigation Measures Implementation Proposal
III.	**Wind Turbine Tower Foundation Task :**			
				▪ Provide training on the working and use of machinery equipment for the workers on a regular basis in order to prevent accidents by providing pre-working training at all times, especially heavy work and work with risks on the safety. ▪ Prepare equipment for first aid, as well as ambulance for transferring patients to the project's emergency hospital or to the nearest public hospital in case of an accident. ▪ Organise a supervisor for the works and inpsection of heavy machinery, working equipment to be in ready for working condition and for ensuring the safety. ▪ Raise awareness among the staffs and workers, to pay attention to the safety in the working by wearing personal protection equipment at all times while working. ▪ Organise a hygienic worker accommodation environments , such as organising an appropriate and environmental friendly places facilitating garbages throughout the buildings and accommodation area. ▪ Warn the drivers using the project entrance-exit road to take caution while driving though the villages along the road, ensuring the health and

S/N	Project Construction Activity	Construction Duration (Month(s))	Feasibility of Potential Environmental Issues from the Project Task	Potential Impacts Mitigation Measures Implementation Proposal
III.	**Wind Turbine Tower Foundation Task :**			
				safety of the people living in the project vicinity sharing the roads. ▪ Promote hygiene keeping and safety in working activities. ▪ The Project must have health and safety insurance policy for the staffs and workers in accordance with the regulations of the Ministry of Labour and Social Welfare, such as: ensuring the safety of the laborer in the working site, risk evaluation of the working site environment, danger and risk mitigation measures, accident prevention method, injury prevention and career-related disease and making the working sites to be of safety.

Table 13: Environmental Issues and Mitigation Measures of Materials and Equipments Transportation Task

S/N	Project Construction Activity	Construction Duration (Month(s))	Feasibility of Potential Environmental Issues from the Project Task	Potential Impacts Mitigation Measures Implementation Proposal
IV.	**Materials and Equipments Transportation Task:**			
(1) Physical Environment				
	The main route in the project area is Road Number 16B, which connects Lao PDR to Thailand and Vietnam from West to East, with a distance of about 108 km from	**8**	***Air Quality:*** During the time of the project construction, there will be dust or PM10 caused from the transportation of materials, to serve the construction, that	***Air Quality:*** In order to reduce the potential impact on air quality from this equipments and materials transportation activities, the project owner, especially the construction contractor company must pay attention to some of the necessary mitigation measures below:

S/N	Project Construction Activity	Construction Duration (Month(s))	Feasibility of Potential Environmental Issues from the Project Task	Potential Impacts Mitigation Measures Implementation Proposal
IV.	**Materials and Equipments Transportation Task:**			
	Sekong Province urban area to the project location. The road condition is a paved road. The first alternative: from Lao – Vietnam border to the area, The second alternative: from Lao – Thai border to the area. There are two alternatives for the transporting the components of the wind turbines to the project area. The first alternative is to transport from Vietnam Port Tien Sa via Yet kieu Road, Cach Mang thang tam Road, to the Nam Giang – Dak Taorknoy border gate and to the project site along 16B road, approximately 300 kilometres from the port. The second alternative is to transport from Laem Chabang Port in Thailand		are transported from outside passing through the urban area and villages into the construction areas. The combustion in heavy transport vehicles will release Sulfur Dioxide SO_2, Carbon Monoxide CO and Carbon Dioxide CO_2. Noise and vibration from the transportation. The ones that will be directy impacted are the workers doing field work. In addition, there will be people living by the roads that have transportation for the construction of the project.	▪ Vehicle Speed Reduction: In order to reduce the dust that may be caused from the transporting of construction materials into the construction areas of the project. Hence, it is necessary to limit and control the speed of vehicles entering and exiting the area of the project to not exceed 60 km/h, especially passing through the village areas, the speed must be reduced to 30 km/h. Road asphalting along the road entering and exiting the area of the project, if the project has not yet paved the road and the road is still an unpaved road, it needs to be watered at least twice a day: morning and evening, especially the road that passes through the village area and the road entering and exiting within the construction area of the project. If there is two waterings per day, dust can be reduced by up to 50 percent. ▪ Car Exhaust Issues: Every types of vehicles users entering and exiting the construction area of the project must ensure not to exhaust Carbon Dioxide from the vehicle in excess of the determined standards (1-hr CO 30 ppm). The project construction contractors must have maintenance for vehicle and heavy machinery of every kinds used in the construction area preparation of the project.

S/N	Project Construction Activity	Construction Duration (Month(s))	Feasibility of Potential Environmental Issues from the Project Task	Potential Impacts Mitigation Measures Implementation Proposal
IV.	**Materials and Equipments Transportation Task:**			
	through Ubon Ratchathani Prefacture, Thailand, Pakse to Sekong Province and to the project site along 16B road, the total distance from Laem Chanbang Port is approximately 900 kilometres. **The Transportation Plan of the Project during the Construction Period:**			▪ Construction Materials Transportation trucks must be covered, especially transporting sand and sandstone entering and exiting the construction area, water must be sprayed onto the wheels that enter and exit every time. When there is mud or dirt falling off from the transporting truck, it must be collected or completely swept out immediately. ▪ There must be training and prohibited the staffs and workers from burning garbage and wastes that may result in air pollution.
	The project construction is expected to take 3 years, the transportation during the construction of the project consists of 2 parts: The transportation of construction materials and equipments, workers and the the transportation of equipments and machinery for the installation of wind turbines, which will take a total transport time of about 8 months. The project has		***Noise and Vibration:*** Noise and Vibration impacts can occur from the transportation, environment and society that will be impacted are small or lagre wildlife living near the project transportation area, religious sites, dispensaries, schools of the villages along the road where heavy transportation will take place.	***Noise and Vibration:*** In order to reduce the impact on the noise level of the area sensitive to the transportation of the project. Hence, there must be an appropriate mitigation measures: ▪ Must have a maintenance of machinery used in the construction of the project to be good condition, ready to use and meet the standards to not cause too much noise. ▪ The speed of the transporting vehicle during the construction: Must limit and control the speed of the construction truck not to exceed 30 km/h for entering-exiting the project, especially transporting

S/N	Project Construction Activity	Construction Duration (Month(s))	Feasibility of Potential Environmental Issues from the Project Task	Potential Impacts Mitigation Measures Implementation Proposal
IV.	**Materials and Equipments Transportation Task:**			
	mentioned the details of the transportation as follows: The transportation of construction equipments and materials and workers, the construction equipments and materials and the workers will travel to the project area by trucks with maximum transport frequency of about 15 trips/day. The travel into the project area, Highway 16B is the main route before entering the next project area. The transportation of equipments and machinery for the installation of the wind turbines, which are consisted of the Rotor Blade, Nacelle and Tower, will be transported by a special type of trailer trucks as shown in the figure below. The maximum transport			construction materials through the village areas into the construction area of the project. ▪ Heavy Construction Period: Must pause heavy construction activities that will cause noise and vibration at night, which is a resting time for the nearby villages, all the way to wildlife around the project finding foods at night (nocturnal animal). In addition, the project must pauses heavy transportation on an important local beliefs days or buddhist days, especially on the the 15th day (the wanning and waxing moon of the lunar cycle) of every month. ▪ Monitoring: The environmental sector of the project must conducts monitoring by using standardized measurements, and then periodically reports to the relevant state sector as mentioned in the ESMMP of the project.

S/N	Project Construction Activity	Construction Duration (Month(s))	Feasibility of Potential Environmental Issues from the Project Task	Potential Impacts Mitigation Measures Implementation Proposal
IV.	**Materials and Equipments Transportation Task:**			
	frequency is about 10 trips/day for 1 wind turbine (50 trips/day). The transportation of machinery will be transported by trucks, with a mamixum transport frequency of about 25 trips/day. The travel into the project area will use Highway 16B as the main route before entering the next location point of each tower.			
			Road and Traffic: During the transportation for the construction of the project, there is a risk of impact on the road use of the general public, especially in areas with congested traffic, community areas, curves and small roads. As some construction materials types may be long in length, such as blades and tower of the wind turbines, which require long	***Road and Traffic:*** ▪ Coordinate with the state sectors, the Ministry of Public Works and Transport, Provincial, District Department of Public Works and Transport, relevant sectors in facilitating the transportation of equipment and machinery into the construction area of the project. ▪ Avoid transporting equipment and machinery for the wind turbines installation during rush hour (7:00–8:00 and 17:00–18:00) ▪ Provide training for the drivers during the transportation of construction materials or workers to strictly comply with the traffic rules.

S/N	Project Construction Activity	Construction Duration (Month(s))	Feasibility of Potential Environmental Issues from the Project Task	Potential Impacts Mitigation Measures Implementation Proposal
IV.	**Materials and Equipments Transportation Task:**			
			vehicle to transport these equipments.	▪ Limit the vehicle speed in the construction area to be under 30-40 km/h. ▪ Control the mass of the truck to be in accordance with standards or laws in order to prevent the damaging of road condition. ▪ Organize a traffic system in the construction area as well as an officer maintaining the vehicle entering-exiting the construction area. ▪ Set up a public relations in advance and informs the relevant parties in the event of the needs of a road closure in order transport large equipment, so that the villages can avoid to use other routes, preventing potential accidents. ▪ Set up a maintenance and an inspection of the preparedness of machinery, vehicles, and equipments being transported in order to ensure the safety in the transportation before every operation. ▪ All staffs must have a driver's license matching the used vehicle type. ▪ Survey transportation route and area in advance, including designing and improving the road to be of safety during the transportation by the transport engineering team. ▪ Organize a coordination team in the event of accident during the equipment transportation in order to rapidly solve potential issues.

S/N	Project Construction Activity	Construction Duration (Month(s))	Feasibility of Potential Environmental Issues from the Project Task	Potential Impacts Mitigation Measures Implementation Proposal
IV.	**Materials and Equipments Transportation Task:**			
				▪ Attach traffic signs along the transportation route, especially along intersections, curves, alleys, village areas. ▪ Adhere to the Law on Land Transport (Issued No. 036/NA, 12 December 2012)

Table 14: Environmental Issues and Mitigation Measures of the Wind Turbine Tower and Components Installation Task

S/N	Project Construction Activity	Construction Duration (Month(s))	Feasibiity of Potential Environmental Issues from the Project Task	Potential Impacts Mitigation Measures Implementation Proposal
V.	**Wind Turbine Tower and Components Installation Task:**			
(1) Physical Environment				
	The assembly of the wind turbine can be divided into 4 parts: 1) Wind Turbine Tower, which has a height of 110 metres, will be disassembled into parts, and then will be assembled using crane to be set up on top of the foundation. 2) Wind Turbine Body consisted of electricity production equipments, such as power generator, will be assembled on the ground before being lifted up to be installed on the top of the wind turbine by large crane; 3) Blades and Rotor Blade will be lifted by large		***Air Quality:*** The tower and components installation of the wind turbine system will not cause severe impact on the air quality, which will not cause much dust or PM10. As the earthwork related to the foundation, excavation, and the transportation are already completed in the previous phase. Apart from slight combustion in the use of heavy machine, which is the crane, to move and install tower base and body, install equipments and components of the wind turbine. The use of this machine activities may release Sulfur Dioxide SO_2, Carbon Monoxide CO and Carbon Dioxide CO_2, however these pollutants will not	***Air Quality:*** Although the air quality will not be heavily impacted from these activities, however the project owner, especially the construction contractor company must pay attention to some of the necessary mitigation measures as below: ▪ Car Exhaust: Heavy Machine users for the installation of the wind turbines must ensure not to exhaust Carbon Dioxide from the vehicle in excess of the determined standards (1-hr CO 30 ppm).Must have maintenance for vehicle and heavy machinery of every kinds used in these activities. ▪ Forest and Green Area Conservation: The project developer jointly with the relevant state sectors must pay attention to the environmental protection of the forest in the construction and wind turbine installation area to be fertile, in order to help the local climate change to be the better.

S/N	Project Construction Activity	Construction Duration (Month(s))	Feasibiity of Potential Environmental Issues from the Project Task	Potential Impacts Mitigation Measures Implementation Proposal
V.	**Wind Turbine Tower and Components Installation Task:**			
	crane to be assembled with the wind turbine tower and nacelle during the construction. The foundation supporting the crane must be constructed to be strong and stable in order to withstand the weight of the crane. Other parts of the wind turbine wil be assembled, incuding the installation of cable system and other signal cables.		disperse in large amount if well controlled.	
			Noise and Vibration: Much noise and vibration will not be caused by such activities, apart from slight loud noise from the use of machine, which is the crane, to move and install tower base and body, install equipments and components of the wind turbine.	***Noise and Vibration:*** ▪ In order to reduce the impact on the noise level in area sensitive to receiving the ambient noise of the project. The project organizes a construction of a temporary sound barrier with a height of no lower than 2.5 metres. Therefore, when the project has constructs the temporary sound barrier prior to the project construction commencement, according to the details above, the construction of the project will result in the general noise level (Leq 24 hours) in area sensitive to the project's noise level reduced from the original. ▪ Staffs using crane must have a maintenance of the machine used in the construction to remains in good condition, ready to use and meet the standard not causing too much loud noise. ▪ Must pause activities using heavy machinery that will cause noise and vibration at night, which is a resting time for the nearby villages, all the way to wildlife large or small around the project finding foods at night (nocturnal animal). In addition, heavy construction must be paused on important local beliefs days or buddhist days, especially on the the

S/N	Project Construction Activity	Construction Duration (Month(s))	Feasibiity of Potential Environmental Issues from the Project Task	Potential Impacts Mitigation Measures Implementation Proposal
V.	**Wind Turbine Tower and Components Installation Task:**			
				15th day (the wanning and waxing moon of the lunar cycle) of every month. ▪ Monitoring: The environmental sector of the project must conducts monitoring by using standardized measurements, and then periodically reports to the relevant state sector as mentioned in the ESMMP of the project.
			Health and Safety: The health and safety impacts during this installation of the tower and componentes of the wind turbine system of the Project are significant and are likely to occur. If there is no caution, such as potential risks from the use of heavy machinery into the lifting-craning equipments of the wind turbine tower, risks from working in high places and doing heavy work must be paid attention to, especially worker who do direct installation has very high risk. Therefore, the Project	***Health and Safety:*** **Management and Protection Plan of the Project mentioned in the Technical Study:** (1) General Health and Safety The project has incorporates the health and safety management systems for the inspection and management of loss with details as follows: (2) Safety in the Operation Location • Clearly defined the construction area with border indication signs, hazard warning and prohibitions signs, as well as supervising for strict compliance throughout the construction period. • Attach symbol signs and warning signs in potentially dangerous area, such as “Changing Machines”, “Dangerous”, “ Do not turn on the

S/N	Project Construction Activity	Construction Duration (Month(s))	Feasibiity of Potential Environmental Issues from the Project Task	Potential Impacts Mitigation Measures Implementation Proposal
V.	**Wind Turbine Tower and Components Installation Task:**			
			contractor must pay attention to the planned mitigation measures with caution in order to reduce that risk.	switch" while the signs size must meet the standards and be installed in visible area. • Provide an adequate and suitable fire extinguishing system and provide an audit plan for being ready to use. • Organise a safety officer, who is responsible for various safety inspection in the construction area, including the monitoring of staffs and workers to comply with the safety inspection. • Instruct the contractor company to record the details of the accident in the construction area, with details and evidence documents, especially if there is a serious injury or death, must notify the project immediately. (3) Personal Safety • Specify in the hiring contract for the contractor company to clearly determine the equipment details, procedures that the contractor company must take to ensure the safety in the construction. • Attach warning signs for staffs, employees, and contractors to use personal protection equipment (PPE) to work. • Supervise the workers to strictly wear suitable personal protection equipment according the work charateristics, such as Ear Muff, Ear Plug,

S/N	Project Construction Activity	Construction Duration (Month(s))	Feasibiity of Potential Environmental Issues from the Project Task	Potential Impacts Mitigation Measures Implementation Proposal
V.	**Wind Turbine Tower and Components Installation Task:**			
				Helmet, Safety Shoes, Gloves, Welding lights filtering mask. • Establish training on safety for the construction workers in order to ensure the safety in the operation during construction. The project will determine the topic and details of the training. • Nursing and First Aid Management, such as Arranging First Aid equipments, arranging reserves vehicle for transferring the injured to nearby hospital. (4) Safety regarding Tools and Machinery • Organize a staff training on how to use the tools and machinery to be in accordance with their purposes, which will result in a better productivity in working and safety for the operators or construction workers. • There must be an inspection, repairment, and fixing of machinery everytime before and after every use for normal use. (5) Safety Inspection The safety officer is responsible for the safety inspections in the construction, including the monitoring the safety inspection compliance, must immediately report abnormal situation, and present solutions to the construction supervisors for acknowledgement.

S/N	Project Construction Activity	Construction Duration (Month(s))	Feasibiity of Potential Environmental Issues from the Project Task	Potential Impacts Mitigation Measures Implementation Proposal
V.	**Wind Turbine Tower and Components Installation Task:**			
				6) Fire Prevention The project has installed the protective equipments such as: Portable Fire Extinguishers will be installed at various points in suitable area, such as Control Room Building and Sub-station, in which the type, category and size installed will be in accordance with NFPA standards. As well as measures for inspecting the tools and fire prevention equipment to be in good contidition and ready to use every 3 months. 7) Emergency Action Plan The project has provided an emergency action plan shown in (Figure 3-15 Section 3, Details of the Project) in order to swiftly control and eliminate any potential emergencies and to most effeciently prevent potential danger and damage. Preliminarily, if emergency situation occurred witjin the project area without any impact to the aarea outside the project, the emergency suspension can be controlled by the project emergency suspension team. In the event that the emergency situation occurred expands or has an impact on the nearby staffs or workers and cannot be controlled by the emergency suspension team of the project, it is necessary to seek help from the outside agencies.

S/N	Project Construction Activity	Construction Duration (Month(s))	Feasibiity of Potential Environmental Issues from the Project Task	Potential Impacts Mitigation Measures Implementation Proposal
V.	**Wind Turbine Tower and Components Installation Task:**			
				Additional Measures: ▪ In order to eliminate the risks on health and safety from the construction and installation of wind turbine with a large size and a height up to 110 metres (according to the design of the project), the installation contractor must strictly comply with the technical procedures of the installation, crane or machinery used oin the installation must ensure safety at a high level. ▪ Arrange Personal Protection Equipment for the staffs and workers according to the working environment. Tightly and fluently wear work suits, wear protective footwear, wear a dustproof mask, weak plug or ear muff against loud noise and vibration (If necessary), wear helmet, wear welding light fitering goggle (If there is a welding of steel). ▪ Establish an emergency hospital for the project. In addition, the project must disseminate information to hospitals, public health offices, district health care centers and nearby dispensaries, including the quality monitoring and inspection results of the environment, and the results of the compliance with the prevention and remedial measures of the potential impact on the health of the people living in nearby villages.

S/N	Project Construction Activity	Construction Duration (Month(s))	Feasibiity of Potential Environmental Issues from the Project Task	Potential Impacts Mitigation Measures Implementation Proposal
V.	**Wind Turbine Tower and Components Installation Task:**			
				▪ The project must coordinate with the district health care centers and village group dispensaries on a regular basis, in order to know the health and daily living conditions of nearby villagers whether they are affected by the project or not, as to improve the cooperation between the public health of the project and of the state sector. ▪ If the project construction impacts the safety of the lives and properties of the people in the project's vicinity, the project must then provide compensation appropriately and in accordance with the state regulations for the fairness to the people who have suffered and as to not have an impact on their mental health. ▪ Provide drinking water, utility water and hygienic bathroom-toilet adequately in various workplaces that are the construction component of the project. The contractor company of the project must apply strict measures to prevent workers from constructing toilets along the riverside and not to defecate into the river. ▪ Provide training on the working and use of machinery equipment for the workers on a regular basis in order to prevent accidents by providing pre-working training at all times, especially heavy work and work with risks on the safety.

S/N	Project Construction Activity	Construction Duration (Month(s))	Feasibiity of Potential Environmental Issues from the Project Task	Potential Impacts Mitigation Measures Implementation Proposal
V.	**Wind Turbine Tower and Components Installation Task:**			
				▪ Prepare equipment for first aid, as well as ambulance for transferring patients to the project's emergency hospital or to the nearest public hospital in case of an accident. ▪ Organise a supervisor for the works and inpsection of heavy machinery, working equipment to be in ready for working condition and for ensuring the safety. ▪ Raise awareness among the staffs and workers, to pay attention to the safety in the working by wearing personal protection equipment at all times while working. ▪ Organise a hygienic worker accommodation environments , such as organising an appropriate and environmental friendly places facilitating garbages throughout the buildings and accommodation area. ▪ Promote hygiene keeping and safety in working activities. ▪ The Project must have health and safety insurance policy for the staffs and workers in accordance with the regulations of the Ministry of Labour and Social Welfare.

S/N	Project Construction Activity	Construction Duration (Month(s))	Feasibiity of Potential Environmental Issues from the Project Task	Potential Impacts Mitigation Measures Implementation Proposal
V.	**Wind Turbine Tower and Components Installation Task:**			
			Garbage and Waste Disposal: During the wind turbine installation project, it is expected to have garbage and waste to some extent, such as waste from installation activities, hazardous waste from oil-containing materials of the machinery, waste from the enveloping of equipmwnts of the wind turbine and wastes from the daily usage of the staffs and workers coming in to work during this period. According to the technical report, during this installation period, it is expected that there will be staffs and workers coming in to work for the project no less than 150 people per day within 14 months (according to the work plan), if an average person produces garbage of at least 0.5 kg/person/day, there will a	***Garbage and Waste Disposal:*** In order to reduce the potential impact on garbage and wastes during the wind turbine installation of the project, the project owner, especially the construction contractor company must still pay attention to some of the necessary mitigation measures below: ▪ The project owner or construction contractor company must coordinate with the district development and administration organisation to identify garbage and waste disposal areas, if the current landfill of the district does not meet the standards, then it must be improved together to meet the standards and can truly treat various garbages. ▪ The garbage must be separated and disposed in different areas, hazardous garbage must be disposed by proper burying, this type of garbage pit must be far from rivers and tributary creeks in order to prevent the impact on the river. ▪ Garbage must not be incinerated in a disorderly manner that may release CO_2, CO and SO_2 exceeding the environmental standards. If it is necessary to incinerate, they must be seperated, espcially chemical contaminated garbage, such as cables or plastics must not be incinerated.

S/N	Project Construction Activity	Construction Duration (Month(s))	Feasibiity of Potential Environmental Issues from the Project Task	Potential Impacts Mitigation Measures Implementation Proposal
V.	**Wind Turbine Tower and Components Installation Task:**			
			total garbage of no less than 75 kg/day.	▪ The project developer jointly the environmental consultants and relevant state sectors must provide training for the staffs and workers to understand the harmful effect of garbage, and to understand the disposal method. If anyone violate, they must be fined or expelled. ▪

Table 15: Environmental Issues and Mitigation Measures of Electricity Transmission System Task

S/N	Project Construction Activity	Construction Duration (Month(s))	Feasibiity of Potential Environmental Issues from the Project Task	Potential Impacts Mitigation Measures Implementation Proposal
VI.	**Electricity Transmission System Task:**			
(1) Physical Environment				
	The electricity transmission system task of the project consists of the construction of the 35 kilovolts (kV) underground transmission line system, in which the	**9**	***Air Quality:*** During the construction for burying transmission line system underground for this wind power project, these activities may cause dust or PM10 (If there is construction in dry season), from the transportation of equipments to serve in this	***Air Quality:*** In order to reduce the potential impact on air quality during the construction of the underground transmission line of this project, the project owner, especially the construction contractor company must pay attention to some of the necessary mitigation measures below: ▪ Vehicle Speed Reduction: In order to reduce the dust that may be caused from the transporting of construction materials into the construction areas of

S/N	Project Construction Activity	Construction Duration (Month(s))	Feasibiity of Potential Environmental Issues from the Project Task	Potential Impacts Mitigation Measures Implementation Proposal
VI.	**Electricity Transmission System Task:**			
	construction process will carry out the excavation opening a ground surface of 1.5 metres wide and 1 metre deep. When the construction is completed, the area will be covered as well as adjusting the area condition to be similar to its original environment. The underground transmission line corridors will be paralleled with the roads in order to transfer electricity from the 133 4-4.5 megawatts wind turbines to the 4 115KV substations within the project area. There will then be an		construction, that are transported from outside, passing through the city area and villages into each construction areas along each points. The combustion in the use of heavy machinery for digging the corridor for burying the transmission line will produce Sulfur Dioxide SO_2, Carbon Monoxide CO and Carbon Dioxide CO_2.	the project. Hence, it is necessary to limit and control the speed of vehicles entering and exiting the area of the project to not exceed 60 km/h, especially passing through the village areas, the speed must be reduced to 30 km/h. Road asphalting along the road entering and exiting the area of the project, if the project has not yet paved the road and the road is still an unpaved road, it needs to be watered at least twice a day: morning and evening, especially the road that passes through the village area and the road entering and exiting within the construction area of the project. If there is two waterings per day, dust can be reduced by up to 50 percent. ▪ Car Exhaust Issues: Every types of vehicles users entering and exiting the construction area of the project must ensure not to exhaust Carbon Dioxide from the vehicle in excess of the determined standards (1-hr CO 30 ppm). The project construction contractors must have maintenance for vehicle and heavy machinery of every kinds used in the construction area preparation of the project. ▪ Green Area: In the wind turbine transmission line corridor area, buildings and constructions area, including the internal transmission line station area. Grasses and flowers must be planted in areas, where

S/N	Project Construction Activity	Construction Duration (Month(s))	Feasibiity of Potential Environmental Issues from the Project Task	Potential Impacts Mitigation Measures Implementation Proposal
VI.	**Electricity Transmission System Task:**			
	overground 115 KV and 35 KV transmission line to collect electricity from all 4 sub-stations to the 500KV main station of the project. For the sub-stations in the project, it will be equipped with a 115/500 kV transformer and it will be a station service inside the power plant.			construction is completed, in order to help absorb air pollution and to be environmental friendly. ▪ Materials Construction trucks must be properly covered, especially sand and sandstone trucks entering and exiting the construction area, the truck wheels must be watered everytime. When there is a falling off of mud or dirt, it must be completely collected or swept away immediately. ▪ There must be training and prohibited the staffs and workers from burning garbage and wastes that may result in air pollution.
	Within the sub-stations, consisting of necessary equipments in carrying out the operation according to the standards, such as main electricity transformer, switch gear, breaker and a switch for disconnection. After that, the 500 kV transmission line will	**9**	***Noise and Vibration:*** During the construction for the burying of the underground transmission line system for this wind power project, there will be many activities related to these construction that may cause noise and vibration impacts, but it will not be severe. As the construction of this road will not include the exploding of stones. However, this impact may occur from the use of heavy machinery	***Noise and Vibration:*** In order to reduce the impact on the noise level of the area sensitive to ambient noise level from the construction of the project. This construction has the need to excavate and transport construction materals, therefore the additional measures are required as follows: ▪ Must have a maintenance of machinery used in the construction of the project to be good condition, ready to use and meet the standards to not cause too much noise. ▪ The speed of the transporting vehicle during the construction: Must limit and control the speed of the

S/N	Project Construction Activity	Construction Duration (Month(s))	Feasibiity of Potential Environmental Issues from the Project Task	Potential Impacts Mitigation Measures Implementation Proposal
VI.	**Electricity Transmission System Task:**			
	be connected to Thanh My 500 kV station, Vietnam SR, with a total transmission line corridor of approximately 66 km, a total length of approximately 26 km on Lao PDR side.		in excavation activities and the transportation of construction materials, which will be the the sources of loud noise and vibration. Those that will be directly affected are the workers doing field works, in addition to the people near the area of the construction of the people. According to the project construction operation plan, it is determined to pauses any activities that will cause loud noise at night (19:00 – 06:00). In the case where the project needs to carry out construction activities at night, the project will have a consultation with the village authorities first, in order to ask for permission or to inform before carrying out any activities. Hence, the impact assessment is only conducted during the day (06:00 – 19:00) by determining the source that causes the loud	construction truck not to exceed 30 km/h for entering-exiting the project, especially transporting construction materials through the village areas into the construction area of the project. ▪ Heavy Construction Period: Must pause heavy construction activities that will cause noise and vibration at night, which is a resting time for the nearby villages, all the way to wildlife around the project finding foods at night (nocturnal animal). In addition, the project must pauses work on an important local beliefs days or buddhist days, especially on the 15th day (the wanning and waxing moon of the lunar cycle) of every month. ▪ Monitoring: The environmental sector of the project must conducts monitoring by using standardized measurements, and then periodically reports to the relevant state sector as mentioned in the ESMMP of the project.

S/N	Project Construction Activity	Construction Duration (Month(s))	Feasibiity of Potential Environmental Issues from the Project Task	Potential Impacts Mitigation Measures Implementation Proposal
VI.	**Electricity Transmission System Task:**			
			noise during the construction phase, which may be causes from many types of machinery operating together, which are, Back hoe, Bull Dozer, Truck and Crane, measured 15.24 m (50 foot) from the machine. Each type of machines have a noise level of about 86.5, 96, 96 and 100 Decibel dA.	
			Erosion: If the undeground tranmission line corridor of the wind farm project pass along the riverside or natural streams, sedimentation and erosion can occur during the construction period of the project (especially if constructs during rainy season). All of these activities must cut down trees in some areas, clearing the ground surface, excavating, which have the possibility of sedimentation and erosion during the rainy	***Erosion:*** ▪ Tasks planning regarding the soil during dry season, heavy rain, must pause working relating to soil work in rainy season, especially days with heavy rain. ▪ Avoid depositing excavated soil near the creek or groove in order to prevent sedimentation and erosion into water sources. ▪ Must refill excavated land and use machinery to tighten the ground to prevent the land from collapsing, ▪ Grasses and tress must be planted in the underground transmission line corridor cosntruction sites and internal transmission line sub-stations in the Project, ▪ Construct a soil erosion prevention at vulnerable points along the road and build a drainage system on

S/N	Project Construction Activity	Construction Duration (Month(s))	Feasibiity of Potential Environmental Issues from the Project Task	Potential Impacts Mitigation Measures Implementation Proposal
VI.	**Electricity Transmission System Task:**			
			season. Even though it is not severe, but there is still a need to have a supported measure to reduce these impacts.	both side of the road, and have pipes placement or constructing standardized bridges crossing the drainage ditches, to ensure no flooding in the road construction area of the project.
		9	***Water Quality:*** Although the wind power project underground transmission line corridor construction will not severely impacts the surface and ground water quality. However, these construction activities have the need to use machines and equipments into the construction, subsequently having the possibility to impacts the water quality in the creeks within the project area (If the project has construction near the water source – headwater in highground area). Therefore, the project, especially the construction contractor must pay attention to the mitigation measures and find prevention methods, as the water quality is	***Water Quality:*** ▪ Sedimentation and Turbid Water Management: The project must avoid constructing underground transmission line corridor near water sources, must pause working related to land excavation during raining, in order to mitigate the erosion of soil into water sources, causing water to become turbid and affecting the quality of the water sources. ▪ Oil Stain and Chemical Contaminants Management: The project must have an agreement for fining with the project construction contractor, in order to bind the contractor not to washes vehicle or all kinds of machinery and construction materials along the river or the creek tributaries in the project area boundaries. The state sector with relevant duties must pay attention in inspecting and evaluating accordingly with the environmental management plan (If necessary). The inspection require the collection of water quality samples for analysis and notifying the findings to the people utilizing the water sources for acknowledgement.

S/N	Project Construction Activity	Construction Duration (Month(s))	Feasibiity of Potential Environmental Issues from the Project Task	Potential Impacts Mitigation Measures Implementation Proposal
VI.	**Electricity Transmission System Task:**			
			highly significant to the usage benefits of the locals, to the fishes and aquatic living things. Dirty water that will causes an impact includes: sedimentation will lead to turbid water, because of the land excavation, land filling for the construction of the underground transmission line corridor and the construction of the relevant components, especially sub-stations. If there is construction in rainy season, it will causes oil stain and chemical contaminants from the use of machinery and construction equipments, cement stain from the construction area and cement transportation to various construction areas (If cement is used in the construction in some areas). Beside, various dirty water issues may occur from the habitats and the utilization of the staffs and workers coming in to work for the project	▪ Inspection and Evaluation: The project developer jointly with the relevant state sector must inspect and evaluate, as well as collect water quality samples for analysis as determined in the environmental management plan of the ESMMP report. The water quality analysis findings must adhered to the national environmental standards (issued No. 81/GOV, 2017).

S/N	Project Construction Activity	Construction Duration (Month(s))	Feasibiity of Potential Environmental Issues from the Project Task	Potential Impacts Mitigation Measures Implementation Proposal
VI.	**Electricity Transmission System Task:**			
			construction, in large amount, difficult to control.	
(2) Biological Environment				
	The electricity transmission system task of the project consists of the construction of the 35 kilovolts (kV) underground transmission line system, in which the construction process will carry out the excavation opening a ground surface of 1.5 metres wide and 1 metre deep. When the construction is completed, the area will be covered as well as adjusting the area condition to be similar to its original environment. The underground	**9**	***Forestry:*** During the underground transmission line corridor construction of this wind farm project, there will be no impact on the land use of the locals, as the land will be refilled after the completion of the burying of transmission line. Tress must be cut down in some areas before digging ditch, in order to bury the transmission line to all the 4 sub-stations. There will then be an overground transmission line of 115KV and 35KV to collect electricity from all 4 sub-stations to the 500 KV main station of the project and the 500 KV transmission line to send to Vietnam SR.	***Forestry:*** ▪ Coordinate with the relevant sectors to carry out the process in accordance with the Law on Forestry (amended, 2019) and the Law on Land (amended, 2019) ▪ If the forest will be lost from the underground transmission line corridor construction area of the project, the project will provide compensation by reforestation in accordance with the regulations of the Forestry Department of the Ministry of Agriculture and Forestry. ▪ In order to prevent the forest area from being heavily affected, the project must have an inspection on the construction activities of the contractor take caution in adjusting the area for the transmission line corridor construction of the project. Should not clear the area exceeding the boundaries, especially the forest area surrounding the project where transmission line passes through. ▪ Before the clearing of area for the construction of the transmission line corridor and transmission line stations, the project must coordinate with the relevant provincial and district sectors for the field inspection

S/N	Project Construction Activity	Construction Duration (Month(s))	Feasibiity of Potential Environmental Issues from the Project Task	Potential Impacts Mitigation Measures Implementation Proposal
VI.	**Electricity Transmission System Task:**			
	transmission line corridors will be paralleled with the roads in order to transfer electricity from the 133 4-4.5 megawatts wind turbines to the 4 115KV substations within the project area. There will then be an overground 115 KV and 35 KV transmission line to collect electricity from all 4 sub-stations to the 500KV main station of the project. For the sub-stations in the project, it will be equipped with a 115/500 kV transformer and it will be a station service inside the power plant. Within the sub-stations, consisting of			and evaluation of the area that will be affected, especially the area of the forest to be affected. ▪ Must provide training for the staffs and workers coming into work in the project construction area, to be able to understand the conservation of the forest, prohibiting the use of forests outside the project area and issuing rules for fining and expelling those who violated the rules. The project cooperates with the state sectors for the field monitoring of the contractors construction activities on a regular basis.
		9	***Wildlife:*** During the construction period of this project, there will be many activities that will directly and indirectly impact as much as wildlife there is in the project area. Although the components construction areas of the project will not lie in the main habitat area of the wildlife, but some areas still have forests and plants that are home to some of the wildlife species. The	***Wildlife:*** ▪ The project must instruct the construction contractors to control the noise level of the use of machinery and transportation vehicles, by basing on the environmental standards, that there must be a control of noise not to exceed 85 decibels (dBA) in order to mitigate the disturbance and alarming of wildlife. ▪ In the event where the project has the need to carry out any construction activities on the buddhist and the 15th day (the 15th day of the wanning and waxing moon of the lunar cycle), which is Buddhist day or the day that the locals in the project area are respecting their beliefs, the project will have a consultation with

S/N	Project Construction Activity	Construction Duration (Month(s))	Feasibiity of Potential Environmental Issues from the Project Task	Potential Impacts Mitigation Measures Implementation Proposal
VI.	**Electricity Transmission System Task:**			
	necessary equipments in carrying out the operation according to the standards, such as main electricity transformer, switch gear, breaker and a switch for disconnection. After that, the 500 kV transmission line will be connected to Thanh My 500 kV station, Vietnam SR, with a total transmission line corridor of approximately 66 km, a total length of approximately 26 km on Lao PDR side.		construction activities of the project that will impact some of the wildlife species will include: ▪ Area clearing for the road construction requires removing trees and vegetation (If the transmission line corridor passes through forest and land use areas), land excavation, all of these activties are the destruction of wildlife habitat. ▪ Loud noise from the use of construction machinery of the project create panic for wildlife to be afraid and escape to elsewhere. ▪ There are many workers coming into work during the construction phase, who are at risk of poaching in and around the project area for food.	the village authorities to ask for permission or to inform before carrying out any activities. ▪ Provide training for staffs and workers coming into work in the project construction area, to understand about the conservation of all types of wildlife, to prevent hunting and purchasing of wildlife. Issuing rules for fining and expelling those who violated the rules. ▪ According to the lessons learnt from the construction of other projects with the construction and excavation of natural area, large and rare reptiles are often found, such as: Python (Malayopython Reticulatus). If such event is found in any of the project construction area, the constructors must report the government or relevant technicians to evacuate the animal to other forest that is safe, not to bring the founded wildlife for food. ▪ Must have a monitoring from the environmental unit of the project jointly with relevant state sectors to report and relaying information to the construction contractors of the project for the improvement of their tasks. The construction, management and monitoring activities of every parties are to take the laws related to the wildlife management mentioned in the legislation section of this

S/N	Project Construction Activity	Construction Duration (Month(s))	Feasibiity of Potential Environmental Issues from the Project Task	Potential Impacts Mitigation Measures Implementation Proposal
VI.	**Electricity Transmission System Task:**			
				report as an important reference point in the implementation.
		9	***Fish and Aquatic Animal:*** Although it is expected that the construction of the transmission line corridor of the wind farm project will not have much impact on the fishes and aquatic animals, however, the construction of this project have the potential to create an impact on aquatic plants, animals, if the construction passes through or is near the water body. Therefore, during this project construction period, the potential source of impacts on aquatic plants and animals are, such as: sedimentation and erosion from the excavation, and the filling of land into creeks (If the construction area is near the water source) will be the main cause of impacts on aquatic plants and invertebrates. Oil stain and chemical contaminants	***Fish and Aquatic Animal:*** • The project must instruct the road construction contractors take caution about the area preparation activities, land excavation and land filling into nearby river, not to cause too much turbidity, especially in the dry season, which is the season where aquatic plants and animals lay eggs and grow a lot. It is also a valuable to local livelihood. • In order to mitigate the potential contamination of oil stain from construction equipments into the river, the project must have an agreement for fining with the construction contractors, in order to bind the contractors from washing every kinds of mechanical vehicle and construction equipments in the river and creek tributaries in the project area. The relevant state sectors must pay attention in the inspection and evaluation according to the environmental management plan. The inspection must collect water quality samples for analysis, including the collection of aquatic plants and animals, and must conduct scientific analysis by comparing with the preliminary data of the collected samples and records in the environmental impact assessment report of the project.

S/N	Project Construction Activity	Construction Duration (Month(s))	Feasibiity of Potential Environmental Issues from the Project Task	Potential Impacts Mitigation Measures Implementation Proposal
VI.	**Electricity Transmission System Task:**			
			If there is leakage of oil stain and chemical contaminants into rivers and creek tributaries, it will impacts the water quality, which will then impact aquatic plants and animals immediately. The mentioned activities all are a source of impacts on aquatic plants and animals that seasonally grow on the water surface and water body ground. Therefore, it is required to carry out mitigation measures during this area preparation period, even though it is short-term.	• The implementation of the mitigation measures of the construction contractor company, the management and monitoring the relevant environmental unit of the project jointly with the relevant state sectors, every activities, including this preparation activities, and procedures of the implementation of each section must be based on the relevant legislations as mentioned in the legislation section of the ESIA, ESSMP reports of the 600 MW wind farm project.
(3) Socio - Economic				
	The electricity transmission system task of the project consists of the construction of the 35 kilovolts (kV) underground transmission line system, in which the construction process	**9**	***The People's Land Use:*** During the construction of the underground transmission line corridor of this wind farm project. Even though no impacts will be caused on the land use for the production of the locals, as the land will be refilled after the completion of burying the transmission line and the people	***The People's Land Use:*** ▪ Establish a detailed compensation plan, determining individuals/families, those losing their lands. ▪ The compensation of lost opportunities must considered and reimbursed to the affected villagers based on the the results of the consultation between the committee, compensation management unit and individuals affected by cooperating with the local authorities. The environmental management and compensation committee of the project must submit

S/N	Project Construction Activity	Construction Duration (Month(s))	Feasibiity of Potential Environmental Issues from the Project Task	Potential Impacts Mitigation Measures Implementation Proposal
VI.	**Electricity Transmission System Task:**			
	will carry out the excavation opening a ground surface of 1.5 metres wide and 1 metre deep. When the construction is completed, the area will be covered as well as adjusting the area condition to be similar to its original environment. The underground transmission line corridors will be paralleled with the roads in order to transfer electricity from the 133 4-4.5 megawatts wind turbines to the 4 115KV substations within the project area.		can use the land as before, however if the project does not attach caution and does not has a good management during the construction, subsequent impacts will be made on the people's land use.	the determination of the final compensation unit price for approval by the province governor. ▪ Must establish a suitable compensation packages by working closely with all stakeholders. ▪ The Project must compensate the damages on the land use that the project will return prior to the disturbance or use of the land area and must compensate in a rate acceptable to both parties. ▪ Delay the return time of the land compensation until the crops have been completely harvested. In the case of he land cannot be prolong, must compensate on the damages of crops in accordance with the predicted crops values according to the market value. ▪ Establish a grievance mechanism for all those affected ▪ Organise career promotion activities that are in accordance with the needs of the people and environmental conditions. ▪ The foremost priority for recruiting staffs must be given to the people in the 31 villages surrounding the project, especially the 18 villages and 396 households that lost their lands to the project.
	There will then be an overground 115 KV and 35 KV transmission line	**9**	***Religion and Ethnicity:*** Although the underground transmission line corridor of the	***Religion and Ethnicity:*** ▪ The project owner must establish a good relationships with the local and to promote and be involved in the

S/N	Project Construction Activity	Construction Duration (Month(s))	Feasibiity of Potential Environmental Issues from the Project Task	Potential Impacts Mitigation Measures Implementation Proposal
VI.	**Electricity Transmission System Task:**			
	to collect electricity from all 4 sub-stations to the 500KV main station of the project. For the sub-stations in the project, it will be equipped with a 115/500 kV transformer and it will be a station service inside the power plant. Within the sub-stations, consisting of necessary equipments in carrying out the operation according to the standards, such as main electricity transformer, switch gear, breaker and a switch for disconnection. After that, the 500 kV transmission line will be connected to Thanh My 500 kV station,		this wind farm project does not impact the resettlement, which is that there is no relocation of ethnic groups to live together. However, during this project construction preparation phase, ethnic workers and staffs are expected to come from other localities and there may be foreigners coming to work for the project. Therefore, during this period, there will be a variety of ethnic groups coming in to stay and pass through the villages that are on the way of accessing the construction area of the project.	activities of the community, including the traditional festivals and cultural ceremonies. ▪ Having other foreign ethnic groups mixing in often leads to reluctance to the local traditions and beliefs of the local ethnic groups. Hence, the project must coordinate and inform the local authorities that there are any ethnic groups or foreigners coming in to work, as to facilitate the management and mutual respect between ethnic groups. ▪ The staffs and workers of the project must acknowledge the culture of the local, tradition and customs practices.
		9	***Health and Safety:*** The health and safety impacts during the tranmission line construction of this Project are significant as well and are likely to occur. Apart from impacts from the air pollution, dust, noise and vibration, the risks on	***Health and Safety:*** **Management and Protection Plan of the Project mentioned in the Technical Study:** 1) General Health and Safety The project has incorporates the health and safety management systems for the inspection and management of loss with details as follows:

S/N	Project Construction Activity	Construction Duration (Month(s))	Feasibiity of Potential Environmental Issues from the Project Task	Potential Impacts Mitigation Measures Implementation Proposal
VI.	**Electricity Transmission System Task:**			
	Vietnam SR, with a total transmission line corridor of approximately 66 km, a total length of approximately 26 km on Lao PDR side.		the health – safety from doing heavy work must be paid attention to, especially workers who do direct construction have very high risk. Therefore, the Project developer must pay attention to the appropriate mitigation measures in order to reduce that risk.	(1) Safety in the Operation Location • Clearly defined the construction area with border indication signs, hazard warning and prohibitions signs, as well as supervising for strict compliance throughout the construction period. • Attach symbol signs and warning signs in potentially dangerous area, such as “Changing Machines”, “Dangerous”, “ Do not turn on the switch” while the signs size must meet the standards and be installed in visible area. • Provide an adequate and suitable fire extinguishing system and provide an audit plan for being ready to use. • Organise a safety officer, who is responsible for various safety inspection in the construction area, including the monitoring of staffs and workers to comply with the safety inspection. • Instruct the contractor company to record the details of the accident in the construction area, with details and evidence documents, especially if there is a serious injury or death, must notify the project immediately. (2) Personal Safety • Specify in the hiring contract for the contractor company to clearly determine the equipment

S/N	Project Construction Activity	Construction Duration (Month(s))	Feasibiity of Potential Environmental Issues from the Project Task	Potential Impacts Mitigation Measures Implementation Proposal
VI.	**Electricity Transmission System Task:**			
				details, procedures that the contractor company must take to ensure the safety in the construction. • Attach warning signs for staffs, employees, and contractors to use personal protection equipment (PPE) to work. • Supervise the workers to strictly wear suitable personal protection equipment according the work charateristics, such as Ear Muff, Ear Plug, Helmet, Safety Shoes, Gloves, Welding lights filtering mask. • Establish training on safety for the construction workers in order to ensure the safety in the operation during construction. The project will determine the topic and details of the training. • Nursing and First Aid Management, such as Arranging First Aid equipments, arranging reserves vehicle for transferring the injured to nearby hospital. (3) Safety regarding Tools and Machinery • Organize a staff training on how to use the tools and machinery to be in accordance with their purposes, which will result in a better productivity in working and safety for the operators or construction workers. • There must be an inspection, repairment, and fixing of machinery everytime before and after every use for normal use.

S/N	Project Construction Activity	Construction Duration (Month(s))	Feasibiity of Potential Environmental Issues from the Project Task	Potential Impacts Mitigation Measures Implementation Proposal
VI.	**Electricity Transmission System Task:**			
				(4) Safety Inspection The safety officer is responsible for the safety inspections in the construction, including the monitoring the safety inspection compliance, must immediately report abnormal situation, and present solutions to the construction supervisors for acknowledgement. 2) Fire Prevention The project has installed the protective equipments such as: Portable Fire Extinguishers will be installed at various points in suitable area, such as Control Room Building and Sub-station, in which the type, category and size installed will be in accordance with NFPA standards. As well as measures for inspecting the tools and fire prevention equipment to be in good contidition and ready to use every 3 months. 3) Emergency Action Plan The project has provided an emergency action plan shown in (Figure 3-15 Section 3, Details of the Project) in order to swiftly control and eliminate any potential emergencies and to most effeciently prevent potential danger and damage. Preliminarily, if emergency situation occurred witjin the project area without any impact to the aarea outside the project, the emergency suspension can be controlled by the project emergency suspension team. In the event that the emergency situation occurred expands

S/N	Project Construction Activity	Construction Duration (Month(s))	Feasibiity of Potential Environmental Issues from the Project Task	Potential Impacts Mitigation Measures Implementation Proposal
VI.	**Electricity Transmission System Task:**			
				or has an impact on the nearby staffs or workers and cannot be controlled by the emergency suspension team of the project, it is necessary to seek help from the outside agencies. **Additional Measures:** ▪ Arrange Personal Protection Equipment for the staffs and workers according to the working environment. Tightly and fluently wear work suits, wear fireproof footwear, wear a dustproof mask, weak plug or ear muff against loud noise and vibration, wear helmet, wear protective goggles against the dispersion of stone debris and dirt. ▪ Establish an emergency hospital for the project. In addition, the project must disseminate information to hospitals, public health offices, district health care centers and nearby dispensaries, including the quality monitoring and inspection results of the environment, and the results of the compliance with the prevention and remedial measures of the potential impact on the health of the people living in nearby villages. ▪ The project must coordinate with the district health care centers and village group dispensaries on a regular basis, in order to know the health and daily living conditions of nearby villagers whether they are affected by the project or not, as to improve the

S/N	Project Construction Activity	Construction Duration (Month(s))	Feasibiity of Potential Environmental Issues from the Project Task	Potential Impacts Mitigation Measures Implementation Proposal
VI.	**Electricity Transmission System Task:**			
				cooperation between the public health of the project and of the state sectors. ▪ If the project construction impacts the safety of the lives and properties of the people in the project's vicinity, the project must then provide compensation appropriately and in accordance with the state regulations for the fairness to the people who have suffered and as to not have an impact on their mental health. ▪ Provide drinking water, utility water and hygienic bathroom-toilet adequately in various workplaces that are the construction component of the project. The contractor company of the project must apply strict measures to prevent workers from constructing toilets along the riverside and not to defecate into the river. ▪ Provide training on the working and use of machinery equipment for the workers on a regular basis in order to prevent accidents by providing pre-working training at all times, especially heavy work and work with risks on the safety. ▪ Prepare equipment for first aid, as well as ambulance for transferring patients to the project's emergency hospital or to the nearest public hospital in case of an accident.

S/N	Project Construction Activity	Construction Duration (Month(s))	Feasibiity of Potential Environmental Issues from the Project Task	Potential Impacts Mitigation Measures Implementation Proposal
VI.	**Electricity Transmission System Task:**			
				▪ Organise a supervisor for the works and inpsection of heavy machinery, working equipment to be in ready for working condition and for ensuring the safety. ▪ Raise awareness among the staffs and workers, to pay attention to the safety in the working by wearing personal protection equipment at all times while working. ▪ Organise a hygienic worker accommodation environments, such as organising an appropriate and environmental friendly places facilitating garbages throughout the buildings and accommodation area. ▪ Warn the drivers about using the project entrance-exit route and to take caution while driving through villages along the roads, ensuring the health and safety of the people living in the Project vicinity sharing the roads. ▪ Provide traning to the sandstone truck and construction materials drivers to strictly comply with traffic rules, must take responsibility if accident occurs. ▪ Promote hygiene keeping and safety in working activities with principles. ▪ The Project must have health and safety insurance policy for the staffs and workers in accordance with the regulations.

2.4 Environmental Issues and Mitigation Measures of the Wind Turbine and Station Relocation Point

As proposed, the 600 MW Wind Farm Project areas mostly lie within Dak Cheung District, Sekong Province and partly in Sanxay District, Attapeu Province. The project has carried out the Environmental and Social Impact Assessment, including the Enironmental Management and Monitoring Plan and was accredited by the Ministry of Natural Resources and Environment according to the Environmental Certificate, Issued No. 2134/MONRE, dated 28 July 2022, including accrediting the Annex documents on Environmental and Socal Obligations of the Concenssion Agreement or Annex C-CA. However, after this accredition, the project has changed the map plan of the project in order to address the impacts of overlapping with other development projects. The project has relocated 9 wind turbines and the location of the 500 KV station from the overlapping area with the Bauxite Ore Mining Project and the establishment of the Aluminium Production Factory of Viet Phuong Investment Group (VPG). The details of the relocation points are shown in the map in Figure 5 below. Therefore, the project developer jointly with the consultanting company has cooperated with the relevant provinicial and district parties to conduct field data collection, analyse social and environment impacts, including determining the measures to address, the mitigation measures and the monitoring measures, which can be summarized as follows:

2.4.1 Current Conditions of Relocated Area

- The new 500 KV station area is relocated from Tong Nuem area, Dak Runt village to the west area of Dak Runt village, by Highway 16B before reaching Dak Runt village, Dak Cheung district. The area condition is an original village area, no buildings, there are abandoned coffee garden of the people and cleared forest area, does not overlap with any project that signed an agreement with the government and Sekong province, according to the report of Sekong province, Issued No. 105/SK, dated 04/11/2022.
- The 9 wind turbines area is relocated from Tong Nuem area, Dak Dent village to Dak Treub village, Dak Cheung district. The area condition is a upland field land, abandoned coffee garden of the people and cleared forest area.

Figure 4: Relocated Wind Turbines Area

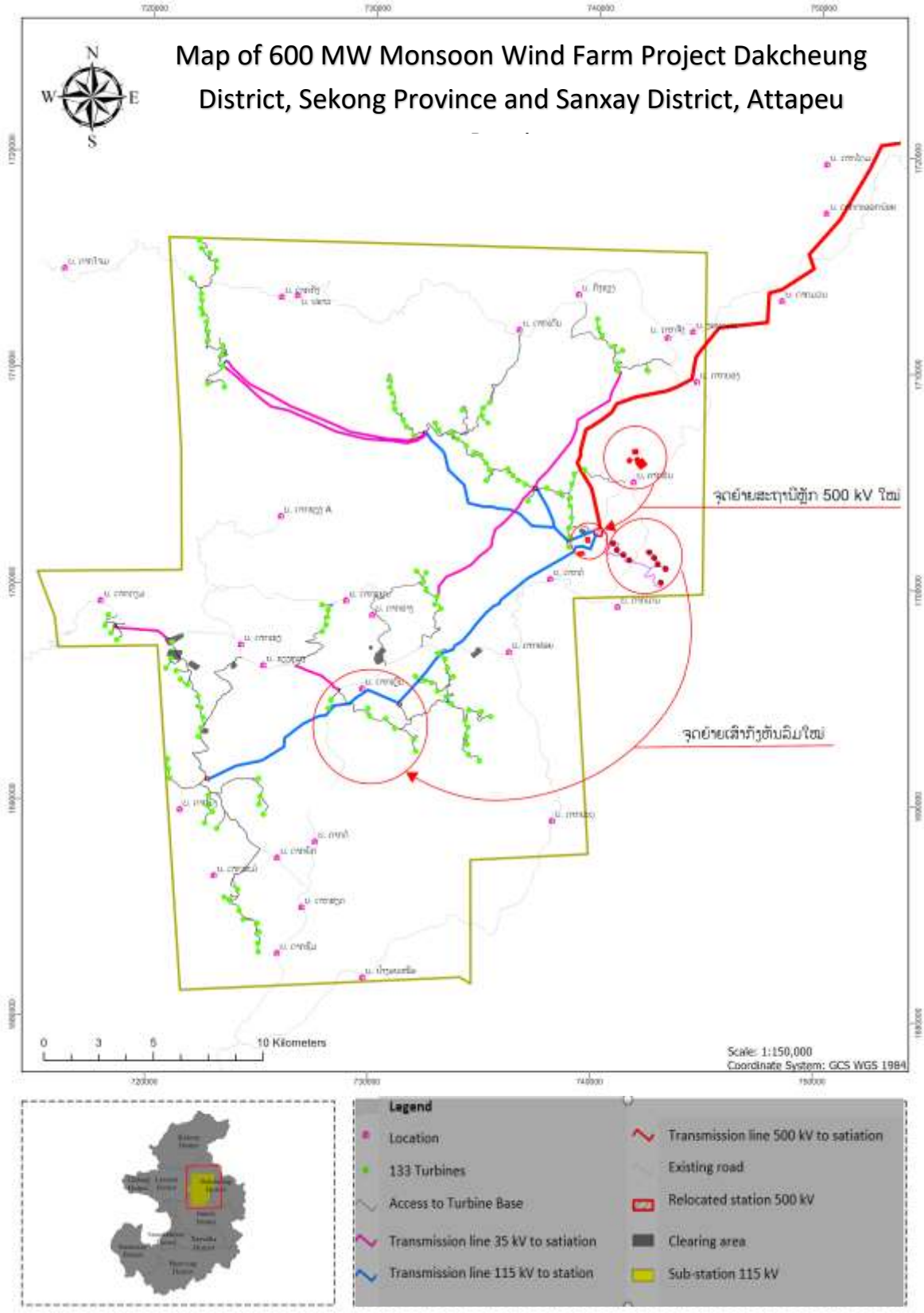

Figure 5: Map showing the relocation point of the 9 wind turbines and 500 KV station area

2.4.2 Impacts and Mitigation Measures

1) Social Impact

The relocation of the 9 wind turbines and the 500 KV station from the overlapped area with the project of Viet Phuong Investment Group will impact the land use of 49 families in 2 villages, which are Dak Runt and Dak Treub village. These two villages already have the activities of the project, with 38 families affected from the wind turbine area and 11 families affected from the station area.

Table 16: Number of Families affected in the Relocated Area

No.	Villages	Amount of Impacts from the Loss of Land and Property		Total
		Relocated 9 Wind Turbines	500 kV Main Station Area	
I. Dak Cheung District				
1	Dak Runt		11	**11**
2	Dak Treub	38		**38**
Total		**49**		

The relocated area of the 9 wind turbines and the location area of the 500KV station will have an impact on the private land in 2 villages of Dak Cheung district. The number of affected households is 49, others are the public land of the village. Among the private land affected are garden land, abandoned garden, upland field land, forest reserved land, which have the details as follows:

Table 17: Types of Private Land Affected

S/N	Types of Land Use	Land Area Affected (m^2) Relocated 9 Wind Turbines	Land Area Affected (m^2) 500 kV Main Station Area
I. Dak Cheung District			
A	**Dak Runt**		
1	Abandoned Coffee Garden	-	19,900
2	Coffee Garden	-	40,022
3	General Garden	-	1,392
4	Reserved Development Land	-	21,261
B	**Dak Treub**		**-**
1	Abandoned Garden	1,480	
2	Reserved Development Land	113,747	
3	Abandoned Coffee Garden	6,491	
4	Cassava Garden	4,195	
5	Upland Rice Field	20,575	
6	Coffee Garden	1,608	
7	Cardamom Garden	656	
Total (m^2)		**148,752**	**82,575**
Total (Hectare)		**14.88**	**8.26**

Table 18: Types of Buildings and Property Affected

S/N	Types of Buildings Affected	500 kV Main Station	Relocated 9 Wind Turbines	Total	Unit
		Dak Runt Village	Dak Treub Village		
1	Barbed Wire Fence	116	102	**218**	m
2	Garden Hut (Farmhouse)	12	-	**12**	m^2
3	Mortar Core	10	-	**10**	core
4	Wooden Fence	-	716	716	m

Table 19: Types of Tree and Crops Affected

S/N	Types of Crops and Trees Affected	500 kV Main Station	9 Wind Turbines	Total	Unit
		Dak Runt Village	Dak Treub Village		
1	Abandoned Catimor Coffee	6,804	1,054	7,858	Tree
2	Catimor Coffee	10,632	120	10,752	Tree
3	Indian Gooseberry Tree	52	-	52	Tree
4	Jack Fruit Tree	24	-	24	Tree
5	Zinged Pricky Ash Tree (ton mark mard)	90	-	90	Tree
6	Rattan Tree	55	-	55	Tree
7	Yang Bong Tree	63	-	63	Tree
8	Mango Tree	10	-	10	Tree
9	Indiqn Ivy-rue Tree	53	-	53	Tree
10	Black Yang Bong Tree	28	-	28	Tree
11	Orange Tree	20	-	20	Tree
12	Guava Tree	79	-	79	Tree
13	Aquatic Dipterocapus/Macrocapus	2	-	2	Tree
14	Shaddo Tree	10	6	16	Tree
15	Dipterocapus/Macrocapus	51	-	51	Tree
16	Wild Frangipanil	32	-	32	Tree

S/N	Types of Crops and Trees Affected	500 kV Main Station	9 Wind Turbines	Total	Unit
		Dak Runt Village	Dak Treub Village		
17	Sour Lychee	9	-	9	Tree
18	Water Chestnut Tree	40	-	40	Tree
19	Cardamom	150	656	806	Tree
20	Siamese Rosewood	150	-	150	Tree
21	Lychee Tree	10	-	10	Tree
22	Siamese Redwood Hai Lam	200	-	200	Tree
23	Longan Tree	10	-	10	Tree
24	Bamboo (ko phai)	7	-	7	Bush
25	Lemon Grass	7	-	7	Bush
26	Banana Tree	41	-	41	Bush
27	Rattan	66	-	66	Bush
28	Bamboo (ko sang phai)	9	-	9	Bush
29	House Bamboo	3	-	3	Bush
30	Pineapple	200	-	200	Kg
31	Upland Field Rice	-	7,312	7,312	Kg
32	Cassava	-	6,124	6,124	Kg

Measures for compensation to the families affected from the relocated area of the 9 wind turbines and the location area of the 500KV station are based on the compensation values of each type of property affected and calculated according to the unit value officially approved by the governors of both Sekong province and Attapeu province.

The evaluation of the compensation value of the affect properties in Dak Cheung district, Sekong province is based on the decision of the Sekong province governor on the approval of the compensation price from the wind farm project, including the transmission line of the 600 MW wind farm project, Issued No. 32/PG.SK, dated 16 May 2022.

The calculation of the compensation value of the affected properties in Sanxay district, Attapeu province is based on the decision of Attapeu province governor on the approval of the calculation of the compensation unit price from the 600 MW wind farm project, issued No. 601/PG.AP, dated 23 May 2022.

Table 20: Estimated Compensation Budget

S/N	Types of Impacts in Each Village	Compensation Budget (Kip) Relocated 9 Wind Turbines	Compensation Budget (Kip) 500 kV Main Station
I. Dak Cheung District			
A	**Dak Runt**		
1	Land		235,860,000
2	Crops		1,274,999,000
3	Buidlings		1,380,000
B	**Dak Treub**		
1	Land	169,721,100	
2	Crops	98,167,620	
3	Buidlings	4,090,000	
	Total (Kip)	**271,978,720**	**1,512,239,000**
	Total (Kip)	**1,784,217,720**	

2) Environmental Impact

The relocated area of the 9 wind turbines and the location area of the 500KV station is mostly in the production area of the people. There is no natural forest areas and is not the main habitat area of wildlife. Therefore, the impact level is low.

Figure 6: Field Inspection of the Relocated Station and the 9 Wind Turbines Area

3) Impact from the Construction Activities of the 9 Wind Turbines Area and 500 KV Station Location Area

The relocated area of the 9 wind turbines and the location area of the 500 KV station are in the same area with the overall map plan of the project. The construction activities and tasks lie in the construction plan . Therefore, the details of the impact assessment and the mitigation measures from the activities of the project are presented in the sections 2.2 and 2.3 above.

Chapter 3: Environmental Management and Monitoring Plan

3.1 Management Implementation Map Plan

Social and Natural Environment Management Task is one of the task that must be carried out along with the construction of the 600 MW Monsoon Wind Farm Project. This implementation plan began from Ministry of Natural Resources and Environment, which is a ministry that is directly related. The departments and divisions under this ministry that have the tasks related to the management, are consisted of the Department of Environment and Other relevant departments. In addition to this ministry, there will be various relevant ministries, especially the Ministry of Enegry and Mines, which is directly related to the power development project. The Ministry of Agriculture and Forestry is directly involved in the management of the project.

In general, the environmental social and natural management will consist of two parts: the project part and the relevant state sectors. The project developer jointly with construction contractor of the project will be directly responsible for the implementation of the management plan, with the environmental consulting company as a consultant and advisor regarding the impact and mitigation methods in order to report to the state sector at each level. The state sector will be the part that monitors, evaluates and provides additional guidance, in order for the project developer jointly with the construction contractor of the project to improve. Sekong province and Attapeu province, as well as Dak Cheung district and Sanxay district, and all surrounding villages in the project area will be responsible for the implementation of the social and natural environment management plan directly jointly with the project developer.

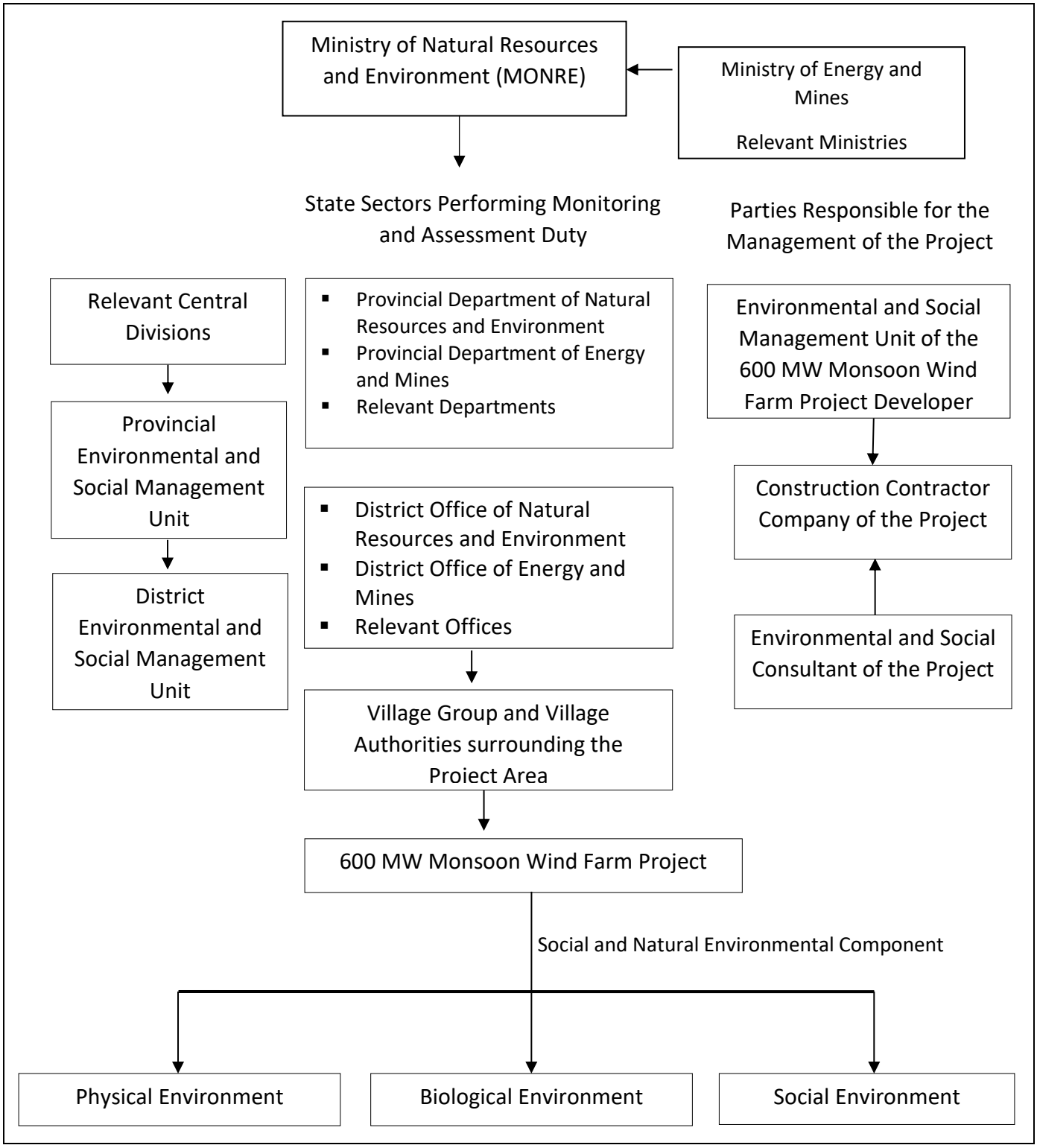

Figure 7: Environmental and Social Management Implementation Organization Plan

3.2 Responsibility to the Environmental Management Plan

The organisation who is directly responsible for the Environmental and Social Management Plan - Construction Phase or ESMP – CP of the project is the Environmental Management Office of the Project Developer. This office has the duty in guiding the Construction Contractor of the project.

The Environmental Management Unit of the State Sector has the duty to conduct monitoring and assessment, provides advices and warnings to the project developer, in order for the project developer to give instructions to the construction contractors (In the case if it is found that the impact is caused from the tasks of the construction contractor who neglected the Environmental Management Plan implementation).

There are some tasks that the Environmental Management Unit of the State Sector will cooperates with the Environmental Management Office of the company in the environmental management together, such as water source management, forest, wildlife, biodiversities around the project area management. Therefore, there are some environmental management tasks,the two parties of the state organization and of the company must jointly conduct inspection and assessment which is called Internal Monitoring.

The Environmental Management Office of the Company jointly with the Environmental Consulting Company have the responsible for the technical planning in the implementation of the environmental impact mitigation measures, including the planning and restoration from the environmental impacts. The Environmental Management Office of the Company must also ensure that the construction contractors must met all the obligations in the agreement on Environmental Management. The company still has the responsibility to make an Environmental Management Report in order to report to the Central, Provinical, District Environmental Management Unit for acknowledgement in order to closely work with state sectors and other relevant organizations of the government as needed.

The construction contractor of the project must be responsible for the mitigation measures implementation in order to prevent and reduce the environmental and social impact, especially impact on the health of the people and the general workers. The construction contractor will still be required to adopt quality insurance procedures according to the national environmental standards that has been referenced, must comply with the environmental management system ISSO 14001. All of this must be under the monitoring and evaluation from the project deveoper, from the relevant state sectors under the advice of the environmental technicians of the project.

Under the guidance of the Ministry of Natural Resources and Environment, on behalf of the government, will need to establish an environment management unit of the provincial and district sector (The same sectors as mentioned above). These two sectors will be responsible in the implementation in the environmental components management according to the determined concession agreement with the government. This environmental management unit will be organized and appointed to serves the working for this project only.

The parties that will form the committee and perform this duty at the provincial unit level will consist of the relevant provincial sectors (Provincial Office, Department of Natural Resource and Environment, Department of Agriculture and Forestry, Department of Energy and Mines and the relevant departments of the province). At the district unit level will consist of the relevant provincial sectors (District Office, Office of Natural Resources and Environment, Office of Agriculture and Forestry, Office of Energy and Mines and the relevant offices of the district). These environmental management unit will also be responsible for the implementation of some of the impact mitigation measures, such as the joint management and forest and species restoration promotion, as well as the implementation of the various plans that are the obligations of the project. Furthermore, there is the duty to strictly enfore regulations and laws against wildlife poaching and trading violator, illegal logging in the forest areas surrounding the project. Facilitate the improvement of the livelihoods of the villages still living in the project area, in order to reduce poverty through sustainable development model.

In addition to the management task, the provinicial and district environmental management unit will still have the duty to review the report on the monitoring and evaluation plan of the project throughout the construction phase. The monitoring and evaluation task will decide the performance of the environmental management and social development of the project.

3.3 Responsibility to the Social Management Plan

The 600 MW Monsoon Wind Farm Project has most of its areas located in Dak Cheung district, Sekong province and partly in Sanxat district, Attapeu province. There are 27 villages within and around the wind farm project and 4 villages within the tranmission line corridor area, with a total of 31 villages. 23 villages are under Dak Cheung district, Sekong provinnce and 8 villages are under Sanxay district, Attapeu province. As the project does not relocate the villages from the construction areas of the project, therefore there are not many social obligations of the project, the project can handle and address.

The villages located in the project area are different in ethnicity, religion and beliefs. Some of the villages livelihood mainly rely on nature, the livelihoods are sensitive. For these villages relying on the nature, the project jointly with the relevant state sectors must paid attention to. Therefore, the state sector must be involved in the social development management as a leader under the budget support of the project. In order to response to such working requirements, a comprehensive organizational structure regarding the social management must be established. As the project construction in some respect have had a significant impact related to the social impact issues, therefore the social management will need to establish committee and units at each level to take joint responsibility.

3.4 Committee Responsible for the Management

The committee must be established and approved by the central or provincial level, with the province governor or deputy governor of Sekong province (The province Where the project is located) as the committee’s chairman. The committee must be consisted of the relevant ministry representatives, relevant department representatives of the province. This

committee will has the overall responsibility in leading the monitoring and compensation process management from the construction and operation of the project.

This proposed project will employ the socio-environmental management committee and address the impacts according to the decision of Sekong province governor, Issued No. 160/PG.SK, dated 26/11/2020 for Sekong province. For Attapeu province is the committee according to the agreement of the province governor, Issued No. 307/PG.AP, dated 07 March 2022.

3.4.1 Responsibility of the Committee

Establish policies related to the social impact of the project. Prepare and issue regulations based on the ministry's technical guidelines on Compensation from Development Project and the decree on Compensation and Resettlement (No. 84/GOV, 2016), domestic requirements for the project, in order for each party to be able to participate in the implementation on the compensation and restoration procedures. The details are specified in the decision of Sekong province governor, Issued No. 160/PG.SK, dated 26/11/2020, for Sekong province, and the decision of the province governor, Issued No. 307/PG.AP, dated 07 March 2022, for Attapeu province.

- Prepare and guide the social and environmental management unit in the joint plan preparation and determination of policies related to the social and environmental obligation process, in order to ensure and achieve the goals of the determined management.
- Coordinate with the sectors of the government related with the social and environmental management, from the village level to the central level of each relevant ministries.
- Establish roles and responsibilities for each party involved in the social and environmental management process as a whole, have a management unit, district management implementation unit and the village management committee.
- The government and the company both monitor and oversee the responsibilities in the implementation by adhering to the protection and restoration management process, including the revision and approval (according to the consideration of the management committee as seen appropriate) of the management plan that need to be implemented, with the management unit, management office, and other state agencies, and other agencies that the government and the project developer recognize.
- Facilitate for transparency in the management of budget and activities that are under the guidance of the social and environmental management committee of the project.
- Coordinate with external organizations related to the social and environmental management of the project.
- Resolve disputes (If any) regarding the compensation between state authorities and the project, including the potential disputes between the social environmental management units. If either party is concerned with the decision of the management committee, they must inform within 7 days. The concerned party may make a notice

to the other party and demand by taking that concerned as an important issue and that issue must be addressed in accordance with the process of consultation and joint resolving of disputes. If any party is concerned, however has not issue any notice, it will be considered that there is no isse and must implement according to the agreement of the social and environmental management committee.

- Guide the distribution of the benefits to individuals affected from the project, must be in accordance with the determined policies (Response under justice process) and in response to the opinions of the affected, which is an important goal in the planning of the project to be of appropriateness.
- Approve the budget plan for all management plans with the participation of the project developer in the social and environmental management on the basis of funds source from the project developer to be in accordance with the work plan and policies mentioned above.
- Provide guidance in the efficient and transparent distribution of budget, and to every parties understanding, can be audited and evaluated satisfactorily.
- Perform other duties that are in line with the main objectives of the social and environmental management as determined by the management committee in each phase of the management during the construction and production operation phase of the project until the end of the project.

3.4.2 Rights and Duites of the Committee

The social and environmental management committee has the right to review and approve all management tasks that lie in the quartely, semi-annual or annual installment plan, or a specific plan prepared by the social and environmental management unit and the specific plan of the project, by being in accordance with one another before this work can be implemented.

3.4.3 Plan Reporting

Every plans that the social and environmental management unit and the project developer submit to the social and environmental management committee for consideration must be implemented to accord with the relevant budgets. In each period, it must be in accordance with the figures determined in the officially approved budget plan.

3.4.4 Allowance Rates and Facilities

In the case of the social and environmental management unit, the necessary funding for the activities of the social and environmental management committee, provincial management unit, district management implementation unit, village committee and other sectors of the state must be detailed as follows:

- The toal cost associated with the implementation of the social and environmental management work that have already been approved, including the allowances for staffs doing field management work (These allowances will be preset at a different levels by the social and environmental management committee).
- Daily allowance rate (In order to use as an allowance for the meeting participant fees, accomodation, travel expenses and daily expenses as appropriate), the number of

days or part of the number of days are related and depend on the social and environment management task.

- Facilities for the social and environmental management committee, provincial and district management implementation unit, village committee and other state agencies, including the office vehicles and telecommunition tools, office tools for the provincial and sirtict management unit as seen appropriate.
- In the event that the social and environmental management committee, who on behalf of the government, sees that the project developer or the management office, the provincial and district management implementation unit, village committee or any other organizations have the flaws in the implementation of the obligations to the management plan, the social and environmental management committee. In order to ensure that these relevant obligations are implemented satisfactorily and reasonably on the social and environmental management.

3.4.5 Provincial Management Unit

Under the guidance of the social and environmental management committee, this unit will be responsible for the joint working of the social and environmental office of the company and other tasks. Collaborate with social and environmental management office in the planning and social and environmental process implemention of the project. Coordinate with the social and environmental management office on a daily basis about the management to be in accordance with the overall policies of the social and environmental management that have the specific guidance from the overall management committee of the project.

This unit will need to be consisted of sub-units, such as the technical and administration unit, the unit responsible for the infrastructures, career unit of the people and the trainings, the social service unit, the unit responsible for the consultation, the detailed re-survey unit of property land and the handover of land rights that has received compensation from the project (In the case of land for land compensation form), provincial monitoring and evaluation unit. These sub-units will need to work closely with the social and environmental management unit and committee. The social and environmental management unit, on behalf of the provincial state sector, must has the following responsibilities:

- Collaborate with social and environmental management office in the planning and the implementation of this process of the project.
- Coordinate with social and environmental management office on a daily basis about the social and environmental management process to be in accordance with overall policies of the social and environmental management and the specific guidance from the social and environmental management committee.
- Organize, coordinate and facilitate the state agencies participation in the social and environmental management planning, including the socio-economic survey of the affected people, consultation with the affected villages, natural potential survey and the development in the career alternatives and identifying the assistance for the disadvantaged families.

- Carry out consultations with the public and those interested throughout the social and environmental management process, in order to identify the needs and the solutions to the potential issues and generally continue to provide the people with information about the social and environmental management process.
- Manage the use of budget provided to the government for implementing the social and environmental management process.
- Provide and allocate the social and environmental management budget to the district social and environmental management implementation committee, and through this committee to the people of the village in the project area or through to other organizations (state or private) that are directly related to the social and environmental management process implementation.
- Provide guidances and organize training from various institutions of the state authorities participated in the social and environmental management process.
- Organise and facilitate with support from the social and environmental management office for the involvemeny of the people through the village team and support.
- Monitoring the implementation of each party in the obligations implementation in the social and environmental management process (including the practical progress in the of all components of the social and environmental management work) and ensure that the plan is completed within the determined timeline and agreed time.
- Carry out the duties jointly with the district social and environmental management operation unit, coordinate with the social and environmental office about the construction unit., organize a technical training from various organizations for the villagers in the project area.
- Ensure that the Lao Women's Union has the opportunity to participate in facilitation the social and environmental management process, especially assisting women in the development and creating activties to generate income that targeted the women group.
- Ensure that the Lao Front for National Development has the opportunity to participate in the social and environmental management process, in order to deepen and address minority issues.
- Participate in the grievance process, as required from all affected parties (In case of grievance)
- Be responsible for other activities as determined by the social and environmental management committee in each phase.
- In addition, the social and environmental management unit must receive approval or comments that are not against the plan and total activity budget and receive approval procurements before passing through to the implementation.
- The social and environmental management unit will need to employ general technicians and public organization periodically in order to promote the social and environmental management implementation process.

- The social and environmental management unit will need to coordinate with the social and environmental office, prepare a semi-annual report to submit to the Social and Environmental Management Committee, Ministry of Natural Resources and Environment, Project Developer, Social and Environmental Consultanting Committee, and other organizations involved in the implementation and monitoring of the social and environmental targets, as well as to consider and inform of potential feedback from these organizations.

3.4.6 District Management Unit

The district management unit will has direct responsibility in the social and environmental management, as it is a district where the project located. Unde rthe guidances from the provincial sector, this unit will work actively in the restoration of the impacted society and environment, the compensation activities, the development activities that the project will provide support and other important activities. The detailed tasks of this unit include:

The designated district social and environmental management unit will be established in Dak Cheung village, Sekong province and Sanxay district, Attapeu province, which are the districts where the project is located.

The district social and environmental management unit is responsible for the tasks, under the guidances of the provincial social and environmental unit and the support from the project developer, to implement the management, restoration of forests and land use affected, the compensation and the development within its district as mentioned below:

- Promote the village team to carry out consultation on the rights of the people who use the natural resources within the project area (The components area of the project).
- Organize and facilitate processes and procedures, provide information and assist the technicians in identifying areas that need management and monitoring.
- Promote the implementation of the career plan of the people in the village and organize relevant training for the people in their village under the conditions and feasibility of support from the project.
- Evaluate and supply fixed materials and employment for the people in the village affected in the land area of the project, in accordance with the rights that should be granted according with consente of the government and the project developer through the consultation with the affected families.
- Summarize and make a report for the social and environmental management unit within the project scope within their own district.
- Guide and describe the tasks under the responsibilties of the district to the village social and environmental management committee in the project area.

3.4.7 Village Management Committee

The state sector, through the village management committee that will be appointed unanimously in each village in the area of the project, is named: The Village Social and

Environmental Management Committee. Under the guidance of the district social and environmental management to the village management committee, must be responsible for the following works: Actively represent the common interests of the village. Carry out consultation within one's own village on the areas related to the social and environmental management process. Collaborate with the public organization within one's own village in order for involvement in the management.

Review and form comments actively on the village development plan under the conditions and support budget from the project developer. Monitor, inspect and evaluate the social and environmental management process related to one's own village boundaries. Participate in the grievance alleviation process of the people (If there is grievance), especially issues related to the impacts, based on the issues addressing method according to the specified regulations and procedures.

3.4.8 Management Office of the Project

The Management Office of the Project must work closely together with the Social and Environmental Management Committee of the Central Government, the Provincial and District Social and Environmental Management Unit. The project developer must establish an office of the project depending on the province and district (where the project is under) to be responsible for all the social and environmental works, especially the implementation of the mitigation measures and the development and restoration tasks related to the social and environmental management that are the obligations of the management office. The project developer must provide the financial budget, implement and monitor the obligations implementation of the project in areas related to the environmental and social management process.

By cooperating with the social and environmental management unit, make a quarterly and semi-annual report. Report to the local and central state sectors, to the social and environmental management committee, the social and environmental consulting committee, and other organizations involved in the social and environmental target implementation and monitoring. Response to the potential feedback from the offices and organizations mentioned above.

Coordinate closely with the social and environmental management unit in the planning and implementation of the management process actively. Cooperate sincerely with the various state sector responsible for the social and environmental management at all levels, as well as to take into consideration the comments of the affected people in the planning and designing of the project appropriately. Request for an approval/feedback from the social and environmental management committee for every activities that the project hass agreed with for the development and restoration to be along with the implementation.

Implement according to the guidelines, policies and guidance from the social and environmental management committee periodically, by being in accordance with the policies on the environmental and social management of this project. Ensure that the consultation process, the involvement of the people and the implementation must focus on gender inequality, ethinic group issues and the underpriviledged, in order to make every families and

individuals receive equal opportunities. Take into consideration the local opinions and experiences into the development and restoration system that are suitable with the needs of those affected by the project regarding the environmental condition and to avoid bias towards the project and state agencies.

Provide support to the organizations and offices of the state sector that contribute to the social and environmental management process for the development of human resources and capacity of sustainable development, self-reliance and self-sufficiency after the end of the project. Provide information related to the project in a systemic and timely manner to the social and environmental consulting committee, state agencies at every levels responsible in the monitoring and evaluation.

3.5 Monitoring and Evaluation Plan

Monitoring and evaluation are a process of the environmental and social management of the development projects which have conducted the Environmental and Social Impact Assessment. Monitoring activities will start from the construction phase of the project and continue throughout the operation phase of the project. Monitoring is a method which will assists the project developer to give attention to deal with the environmental and social impacts from the construction and operation activities for which the project shall be responsible. Sectors which have the duty of monitoring consist, apart from the Project Envrionmental Unit, of the environmental units of the State agencies of each level, including district, provincial and central level. In addition, there is also the external independent monitoring. The time period of monitoring of each agency is different from one to another as prescribed in each heading below:

3.5.1 Monitoring by Project Owner

The project development company shall appoint qualified and specialized staff and establish the environmental and social management unit in its company. This unit shall be responsible for representing the project in monitoring the potential environmental and social impacts fron the construction and operation activities of the project. The monitoring of this unit is called: 'Project Internal Monitoring'. This monitoring shall, for certain task, be conducted on a daily basis and shall monthly be reported to the Project Administration Office for information and then to the state party for consideration and approval on a monthly, quarterly, semi-annual and annual basis or as specified in the conditions stipulated in the Environmental Compliance Certificate.

3.5.2 Monitoring by State Agency of District Level

Dakcheung District and Sanxay District are the districts where the Wind Power Project is located. Therefore, the District Office of Natural Resources and Environment of these districts shall have the leading role and shall give attention to perform the monitoring in close collaboration with the project developer. The monitoring of the District State Agencies shall be conducted 3-4 times per year during the construction phase.

3.5.3 Monitoring by State Agency of Provincial Level

Sekong Province and Attapeu Province are the provinces where the Wind Power Project is located. Therefore, the Provincial Department of Natural Resources and Environment of these

provinces shall have the leading role and shall give attention to perform the monitoring in close collaboration with the district level and the project developer company. The monitoring of the Provincial State Agencies shall be conducted 3 times per year during the construction phase.

3.5.4 Monitoring by State Agency of Central Level

The Ministry of Natural Resources and Environment is the Ministry which has the overall responsibility for the Environmental Management Plan as this Wind Power Project is a project which has conducted the Environmental and Social Impact Assessment (ESIA) to be approved by the Department of Environment of this Ministry. The monitoring by State Agency of ministerial level shall be performed by the Department of Pollution Control and Monitoring of the Ministry of Natural Resources and Environment. This Department will conduct the monitoring in collaboration with the State Agencies of provincial and district levels. The leaders of the Department shall participate in joint meeting and listen to the reports of various agencies which have already carried out the monitoring and evaluation. Furthermore, in case of emergency event, the Ministry will conduct the collection of air quality samples for analysis of the impact by comparing with the results obtained from the monitoring of other agencies. The frequency of monitoring of the central level is 1-2 times per year in normal case. In case of occurrence of emergency event, it is necessary to jointly work to find the solution.

3.5.5 External Independent Monitoring

The external independent monitoring is a part of the environmental and social management of the project. Independent monitoring must be neutral and acceptable to all parties. The independent monitoring agency shall have no function related to the project or have not previously worked for the project. Apart from the collection of environmental quality samples, the task of the independent monitoring shall consist of discussion and listening to the opinion of the affected peoples, comparison of data obtained from the project internal monitoring and the monitoring of the relevant State Agencies.

The independent monitoring agency shall, thereafter, write the report for submitting to the project and the State Agencies for information about their findings. The report shall specify: What are the tasks that can be implemented by project or the construction contractors and what are the tasks that need to be improved in order to be suitable with the mitigation measures identified in the management plan or the ESMMP-CP. In addition, the report will also mention the achievements and constraints of certain tasks that the project has performed the management jointly with the State Agencies of all levels. In general, the independent monitoring will create the trust in the implementation of the environmental and social management plan of the project which is acceptable to all relevant parties of the project.

3.6 Reporting

The report on the implementation of the Environmental and Social Management and Monitoring Plan shall be submitted to the relevant government agencies of district, provincial and central levels that the project owner regularly reports on the results of monitoring of the

environmental activities implementation to the sector in charge of investment project and the natural resources and environment sector on a monthly, quarterly, semi-annually and annual basis as determined in the conditions stipulated in the Environmental Compliance Certificate. In case it is found that there is a risk of occurrence of accident, emergency event or violation of any obligation that will cause severe impact to the environment, it is required to report on the event immediately and shall send the initial report on the occurring event in writing within 24 hours.

The report on the results of monitoring of the implementation of environmental activities of the project have the following contents:

- Progress, violation or constraints in the implementation of environmental obligations, conditions of the Environmental Compliance Certificate, Environmental Management and Monitoring Plan, Compensation Plan.
- Quaity measurement, such as: water quality, air quality, noise presented in the forms of diagrams, charts and modelling by comparing with the baseline prior to the project and to the values of the National Environmental Standards.
- Difficulties in the implementation of environmental activities of the project.

3.7 Requesting Procedure of the Affected Person

1) The Objective of the Requesting Procedure of the Affected Person

In the case where the project does not comply with the social and environmental obligations, does not provide compensation completely, the village committee or the people within the village can write a request to the project. This requesting procedure is to provide an opportunity for those affected by the project and for those who believe they were wronged in the environmental and social management process reasonably. Regarding this requesting issues, the social and environmental management office of the project developer company collaborate with the environmental and social management committee, which is an important organization, in the consideration to address this issues. The consideration must ensure the following:

- The basic rights and interests of the affected person must be protected reasonably.
- The proposal of the affected people because of the environmental and social management process must be appropriately considered with the obligations on the actual impacts that occurred.
- The rights that the village or the affected people shall be granted must be responsed in a timely manner in accordance with concession agreement.

2) The Course to the Requesting Procedure

The state sector has the policies to ensure to provide welfare to the village or affected people without calculating any fees in the justice system (The requesting) mentioned above. The compensation must be based on the Decree on Compensation and Resettlement (No. 84/GOV, 2016). Therefore, the village or affected people, every parties can request for a consultation and for a support from the environmental and social management unit, with the

expenses supported by the project for those affected. If the request is reasonable, suitable compensation will be provided according to the issued regulations of the government.

3) Organisational Structure of the Requesting Procedure of the Affected Person

SN	Steps
1	Step 1: The affected person can file his/her concerns regarding the compensation to the mediation committee at a village level. This committee will hold a meeting with requester to listen and address the issues at the village office.
2	Step 2: If the issues of the affected person cannot be resolve within 5 days at a village level or did not receive any reply from the village mediation committee, the affected person can file his/her grievance to the mediation committee at a district level. The district mediation committee will hold a meeting with the requester and address the issues within 10 days after receiving the request letter.
3	Step 3: If the affected person is not satisfy with the decision of the district mediation committee or did not receive a reply from this committee, he/she can make a grievance request to the mediation committee at a provincial level to make a decision on the issues within 10 days.
4	Step 4: Lastly, if the affecte person is not satisfy with the decision of the provincial mediation committee or did not receive a reply from this committee, he/she can make grievance request to the Regional Court of Justice. The court judgement will be the final decision.

3.8 Sub-Plans for the Management and Monitoring

In order to mitigate the negative environmental and social impacts from the development project, the sub-plans (SP) for management and monitoring are drafted for using as guidelines for the project developer, especially for construction contractors, which are the components of the project, who are directly responsible for the management of potential impacts from their project construction activities. Therefore, the sub-plans below will provide directions and support during the implementation and management of impacts which are expected to arise directly and indirectl during the construction phase. With a view to facilitating the review and implementation of the environmental and social impact management plan, the making of sub-plans for this 600 MW Monsoon Wind Power Project will only make the sub-plans for the actual impacts which are expected to occur from this project.

3.8.1 Sub-Plan SP1: Control of Soil Erosion

SP1: Control of Soil Erosion		
SN	**Objectives to be Achieved**	**Description of Implemention**
1	Project Phase	Construction Phase of the Project
2	Locations that will cause soil erosion.	▪ Access road which is cleared for constructing new road;

SP1: Control of Soil Erosion		
SN	**Objectives to be Achieved**	**Description of Implemention**
		▪ Locations of construction of the project (tower foundation construction sites, camp construction site and other project components construction sites); ▪ Soil and rock debris from digging, pumping and land filling; ▪ Unstable transportation road.
3	Issues related to social and natural environment	Erosion of soil into natural stream, especially during the rainy season that causes turbid and dirty water.
4	Impact on physical, biological and socio-economic environmental system.	▪ Soil erosion may be caused by construction activities undertaken at the places not covered by plants or grass. Soil erosion is mostly caused by soil digging, levelling, filling work during the rainy season or constructioin site located in the water sources and water channel ; ▪ Soil erosion and land-slide occur during the construction of access road to the project site during the rainy season, especially newly-cleared road in area with slope or in waterlogged area and places which are sensitive and vulnerable to erosion.
5	Project construction activities that will cause potential impacts.	▪ Clearance of forest area, areas which are covered by grass and plants ; ▪ Dumping of rock and soil debris in a disorderly manner ▪ Piling the material temporarily without taking into account of the security; ▪ Use of temporary road by using heavy vehicles for transporting construction materials may cause damage and erosion to road easily.
6	Potential impacts to the environmental system.	▪ Loss of ecosystem of water sources affected by the erosion of soil into the streams ; ▪ Destruction of habibat of animals living under the water, obstructing the sunlight to reach the newly growing plants, reduction of light synthesis that cause persistence of pollution, such as: suspended sediments, heavy metals and chemical contaminated substances which are used in the construction of the project; ▪ Erosion of soil over the production areas of the people which are under the construction area; ▪ Damage of road – damage from transportation, causing erosion of soil and sedimentation into the river; ▪ Causing difficulty to water drainage due to obstruction by the flow of soil as a result of negligence in construction without paying attention to this issue ; ▪ Change of landscape or topography of land surface caused by soil erosion.

SP1: Control of Soil Erosion		
SN	**Objectives to be Achieved**	**Description of Implemention**
7	Characteristics of Impacts.	soil erosion impacts may occur in the short term, long term, with direct and indirect impact; minimal, significant impact and severe impact, exceeding the specified National Environmental Standard.
8	Control/Management of Impact Mitigation Measures.	▪ Make effort to minimize the impact from soil erosion through good management and compliance with the design – plan made in the beginning; ▪ Take the precaution while working at the place which has the risk of erosion by arranging the work in the dry season only, avoiding undertaking the work during the rainy season, especially the earthworks; ▪ Undertake the earthworks specifically within the limit of the project area only, ensure that there is no erosion of soil into nearby agricultural area of the people; ▪ The pile of the construction materials that can be easily eroded must be kept far from the flow way of natural river and the water way of at least 30 meters; ▪ The construction materials must be kept in the storage or in secured place, ensure that they are not causing obstruction or kept on land surface that will cause potential soil erosion; ▪ Avoid the place with high slope land area by making the land surface secured, compacted and strengthened by constructing suitable drainage system that can drain water efficiently; ▪ The erosion and sedimenation control at the outset, after commencing the clearance and soil opening work; ▪ Monitoring must be conducted to inspect the erosion control facilities to ensure whether there is the protection and maintenance; ▪ The existing forest area must be preserved as much as possible in order to reduce the ratio of severe run-off water; ▪ Plants must be replanted at suitable places as soon as possible after completing the forest clearance or backfilling work; ▪ Avoid the digging and removing of soil to pile at the sides of the stream or canal in order to prevent sedimentation and erosion into the water sources; After the soil digging, conduct the backfilling and compacting by using heavy machinery to prevent the collapse of the soil ; plant the grass and trees at the location of construction of the project;

SP1: Control of Soil Erosion		
SN	**Objectives to be Achieved**	**Description of Implemention**
		▪ Undertake the erosion protection construction of the tower foundation in case the wind turbine tower and electrical tower are located at the slope area. Undertake the construction of water drainage system at both sides of the road to facilitate the draining of water, install the culvert and build standard bridge across the water drainage canal to ensure that there is no stagnant water in the area of construction of the project.
9	Monitoring and Evaluation Methods.	▪ Visual observation for area with high slope, areas where there are digging and backfilling activities, and area where there is clearance of forest and plants for the construction of the project; ▪ Conduct the monitoring of the Total Suspended Solids (TSS) in the areas of water sources surrounding the project.
10	Period of Implementation.	Starting from the commencement of the construction and ending at the end of the construction, with the completion of the construction works and the replanting of grass and trees.
11	Frequency of Monitoring.	Monitoring through visual observation and the total suspended solids in every week during the dry season, and more frequently during the rainy season.
12	Training	Training for the inspection of the soil erosion and sedimentation control system.
13	Responsible Parties	▪ The contractor of the project construction shall be responsible for the soil erosion management measures; ▪ The contractor (Director of the Company) must certify the Soil Erosion Control Plan; ▪ The contractor must create a unit or develop its technical staff for environmental management within the company; this unit shall perform internal monitoring for reporting to the relevant State agencies.
14	Budget Expenditure.	▪ The expenditure budget for the implementation of the erosion impact mitigation measures shall be taken charge by the project owner/contractor who are responsible for the budget and the implementation by themselves. ▪ The expenditure budget for the monitoring conducted by the relevant State agencies shall be taken charge by the project developer who will be responsible and provide as specified in this ESMMP-CP Report.

3.8.2 Sub-Plan SP2: Control of Water Quality

SP2: Control of Water Quality		
SN	**Objectives to be Achieved**	**Description of Implemention**
1	Project Phase	Construction Phase of the Project
2	Locations of water use and control of pollution.	▪ Sites of construction of project components; ▪ Construction workers camps and permanent camps; ▪ Machinery repair site for project construction
3	Issues related to social and natural environment	Water quality, health and safety.
4	Impact on physical, biological and socio-economic environmental system.	▪ Change of quality of surface water and groundwater when wastewater is released without standard treatment. ▪ Impact on workers health from supply of contaminated water and drinking water. ▪ Impact on land and water ecosystem.
5	Project construction activities that will cause potential impacts.	▪ Sedimentation will make water to become turbid due to soil digging, pumping and filling for the construction; ▪ Impact on water source from the use by the construction activities, such as: repair of heavy construction machinery, constructions, temporary and permanent camps and others; ▪ Contamination of surface water and groundwater in the area of release of wastewater without treatment; ▪ Release of contaminated water from stone crusher and concrete mixer (if any) for serving the construction of the project; ▪ Pollutants in the water source exceed the specified standards, such as: BOD, fecal Coliform, oil. Grease, from construction workers camps and permanent camps; ▪ Lack of clean water and proper hygiene.
6	Potential impacts to the environmental system.	▪ Negative impacts to aquatic and terrestrial animals and human health, especially staff and workers who work for the project ; ▪ Contamination of soil and natural water sources.
7	Characteristics of Impacts.	Water quality and water use impacts may occur in the short term, long term, with direct and indirect impacts; minimal, significant impact and severe impact, exceeding the specified National Environmental Standard.
8	Control/Management of Impact Mitigation Measures.	▪ Control of sedimentation and water turbidity: The project must avoid to undertake the construction and installation of wind turbine towers and the construction of the project components near the water

SP2: Control of Water Quality		
SN	**Objectives to be Achieved**	**Description of Implemention**
		sources, and must halt the work related to the digging and removing of soil during the time of rainfall in order to reduce the mud and the flow of dirty water into the water sources. ▪ Control of oil and grease residuals: The project must enter into contract on the imposition of fine with the construction contractor in order to bind and prevent the contractor from washing vehicles of all types and construction equipment at the side of the rivers or streams in the project area. ▪ Resolving water use problem: As already mentioned about the situation of water use of the people in the project area, even the villages in Dakcheung District and Sanxay District mostly use the gravity-fed water system, but the rivers and streams are still valuable for the water use of the people. Thus, when the water become turbid or contaminated with chemical substances due negligent control of construction work, it will cause potential severe impacts. The solution to this problem consists of notifying the people not to take water from rivers and streams for drinking directly, especially in the area located in the proximity of the project construction sites. When the people notice that the water is dirty, they shall report to the relevant Authority and the project in order to find preventive measures in a timely manner. ▪ The site of the construction equipment repair workshop of the project must be designed to have a sufficiently large treatment system with the capacity to practically treat the wastewater. This treatment system must be conformed with the environmental engineering techniques and, most importantly, it must be located far from the side of the river in order to avoid and reduce the flow of chemical contaminated water into the river. ▪ Potential problem of wastewater from residence and from domestic use of staff and workers: Make the arrangement to provide water closets & toilets for workers and in area of construction supervision building with the installation of proper wastewater treatment system. After completing the construction, demolish the water closets & toilets and restore the land area into norman condition; build the drainage ditch around the residence of the electrical staff who

SP2: Control of Water Quality		
SN	**Objectives to be Achieved**	**Description of Implemention**
		will stay permanently and there must be the system of water drainage into the wastewater collection system. After completing the construction of new drainage system and wastewater collection system for the new building, the land surface must be restored and the grass shall be planted to make the area to become green as quickly as possible. ▪ Use of water for construction: In case it is necessary for the project to pump water from the stream in the project area for using in the construction, it must inform the local people and coordinate with the District and Provincial Authorities for inspecting whether the point of water pumping is suitable or not, and shall prepare the water use plan for submitting to the relevant agency.
9	Monitoring and Evaluation Methods.	▪ Visual observation of the place of repair, place and method of fuel filling, place of keeping hazardous materials, such as: used lubricating oil, grease and hydraulic oil; ▪ Water quality monitoring will be immediately started upon the commencement of the construction of the project to control the waterwater that will potentially be released to the natural water sources; ▪ Water quality monitoring will be performed at the places where water is supplied for use and consumption continuously; ▪ Water quality shall be monitored at the lower side of the construction areas and at the place where the wastewater from workers camps (treated water) is released to the natural water sources.
10	Period of Implementation.	From the start of the construction to the completion of the construction of the project
11	Frequency of Monitoring.	▪ The Project Environmental Unit will regularly conduct the monitoring on a monthly basis for reporting to the State Authorities. ▪ The Monitoring unit of the State agency will conduct the monitoring of the implementation of the project on a quarterly basis.
12	Training on Water Quality Environment of the Project.	▪ Training on monitoring of wastewater treatment including the repair and maintenance of wastewater treatment system;

SP2: Control of Water Quality		
SN	**Objectives to be Achieved**	**Description of Implemention**
		▪ Training on utilization of the system of treatment of water for drinking and for domestic use including the monitoring; ▪ Training on method of water samples collection and basic analysis of water quality; ▪ Provide and present regular training on environmental activities and awareness to all staff and workers who work for the project.
13	Equipment.	Use the tools and equipment to analyze the quality of contaminated water and the quality of water in general for consumption and for domestic use.
14	Legal and Environmental Standards References.	▪ Law on Water and Water Resources, 2017; ▪ Law on Hygiene, Disease Prevention and Health Promotion (amended) No. 73/NA, 2019 National Environmental Standards No. 81/GOV, 2017
15	Responsible Parties.	▪ The construction's contractor shall be responsible for water quality management measures; ▪ The Project Environmental Unit shall conduct regular monitoring on a monthly basis for reporting to the State Authorities ; ▪ The State agency shall conduct the monitoring of the implementation of the project on a quarterly basis.
16	Budget Expenditure.	▪ The expenditure budget for the implementation of the water quality impact mitigation measures shall be taken charge by the project owner/contractor who are responsible for the budget and the implementation by themselves. ▪ The expenditure budget for the monitoring conducted by the relevant State agencies shall be taken charge by the project developer who will be responsible and provide as specified in this ESMMP-CP Report.

Table 21: Identification of Samples Collection Points and Water Quality Parameters

Samples Collection Points	Parameters	Monitoring Frequency
Upper and lower sides of the place of rain water drainage at every construction site of the project.	Temperature	Once every 3-6 months
	pH	
	Dissolved oxygen (DO)	
	Biological Oxygen Demand (BOD5)	
	Total Suspended solids (TSS)	
	Total and Total Dissolved	
	Oil and Grease	
	Faecal coliforms	
Upper and lower sides of the place of drainage of wastewater from workers and staff camps.	Temperature	Once every 3-6 months
	pH	
	Dissolved oxygen (DO)	
	Chemical Oxygen Demand (BOD5)	
	Suspended solids (SS)	
	Total Phosphorous (TP)	
	Total Kjeldahl Nitrogen (TKN)	
	Nitrate Nitrogen (NO_3)	
	Oil and Grease	
	Faecal Coliforms	
Working place where there is the repair of vehicles or machinery in the proximity of river within a distance of 300 meters.	Temperature	Once every 3-6 months
	pH	
	Dissolved oxygen (DO)	
	Suspended solids (SS)	
	Oil and Grease	
	pH	
	Dissolved oxygen (DO)	
	Suspended solids (SS)	
	Discharge rate	
Release of wastewater from the tank of treatment of wastewater from the toilets	Temperature	Once every 3-6 months
	pH	
	Dissolved oxygen (DO)	
	Biological Oxygen Demand (BOD5)	
	Total Suspended solids (TSS)	
	Total Dissolved solids (TDS)	
	Total Phosphorous (TP)	
	Total Kjeldahl Nitrogen (TKN)	
	Nitrate Nitrogen (NO_3)	
	Oil and Grease	
	Fecal Coliforms	
Water for consumption and for domestic use in	Temperature	Once every 3-6 months
	pH	

Samples Collection Points	Parameters	Monitoring Frequency
construction camps of the project.	Color	
	Odor	
	Turbidity	
	Electrical Conductivity	
	Total Suspended solids (TSS)	
	Total Dissolved solids (TDS)	
	Total Hardness	
	Chlorines Residual	
	Fecal Coliforms Bacteria	
	Sulfate	

Note: The results of value of the water quality parameters obtained from each measurement shall be compared with the values of the water quality standards specified in the National Environmental Standards No. 81/GOV, 2017 and with other relevant standards.

3.8.3 Sub-Plan SP3: Control of Dust and Air Pollution

SP3: Control of Air Pollution		
SN	**Objectives to be Achieved**	**Description of Implemention**
1	Project Phase	Construction Phase of the Project
2	Locations that Will Cause Potential Air Pollution.	▪ Construction sites of the project (sites of construction of tower foundations, construction of transmission line sub-station, construction of workers camps, construction of access roads and construction of other components of the project; ▪ Earth digging and filling by using heavy machinery ; ▪ Transportation road to and from the project area.
3	Issues related to social and natural environment	Dust, air quality, health and safety of staff and workers who work for the project including the general public who are passers-by in the project area.
4	Impact on physical, biological and socio-economic environmental system.	Particulate matter and other particles from the construction activities may cause negative impact on health and quality of live of the staff and workers who are working and residing in the project area.
5	Project construction activities that will cause potential impacts.	▪ Combustion from the use of heavy machinery in the construction; ▪ Dust or particulate matter of less than 10 microns (PM10) that occurs from the transportation of materials for serving the construction;

SP3: Control of Air Pollution		
SN	**Objectives to be Achieved**	**Description of Implemention**
		▪ Burning of rubbish and wastes without control and segregation.
6	Potential impacts to the environmental system.	Negative impact on air quality and health of staff and workers including passers-by in the project area where construction is going on.
7	Characteristics of Impacts.	Adverse air quality impact may occur in the short term, long term, with direct and indirect impacts; minimal, significant impact and severe impact, exceeding the specified National Environmental Standard.
8	Control/ Management of Impact Mitigation Measures.	In order to mitigate the potential air quality impact during the construction phase of the project, the project owner, especially the construction's contractor, must give attention to certain necessary mitigation measures as below: ▪ Reduce the speed of vehicles: In order to mitigate the potential occurrence of dust from the transportation of construction materials to the project construction site, it is required to limit and control the speed of vehicles arriving to and leaving the project area at not exceeding 30 km/hour. ▪ The roads within the project area must be asphalted. If the project has not yet paved the road or the road is still red soil road, it is required to regularly spray water on the road at least two times per day, such as: in the morning and evening, especially the road that passes through the villages and the access roads to the construction sites of the project. If water spray is carried out two times per day, it can reduce the dust by 50 percent. ▪ In the area of construction of the project components, especially the construction of tower foundations which are located near the community area, it is required to build the fence around the site with a height of about 2 meters to help in reducing dust dispersion from soil digging, removing, dumping and filling works. ▪ Problem of vehicles exhaust: Users of vehicles of all types arriving to and leaving the project construction sites must ensure that they do not release the Carbon Dioxide from the vehicles in excess of the specified standard (1-hr CO 30 ppm). The construction's contractor must regularly undertake the maintenance of vehicles and heavy

SP3: Control of Air Pollution		
SN	**Objectives to be Achieved**	**Description of Implemention**
		machinery of all types which are used in the construction of the project. ▪ Vehicles transporting the construction materials must be properly covered, particularly the transportation of soil, sand and gravel to the construction site. It is also required to spray water on the wheels of the vehicles every time; and when the mud or soil fall down from the transport vehicles, they must be collected or swept immediately. ▪ Training must be organized and staff and workers must be prohibited from burning rubbish and wastes that will cause potential air pollution.
9	Monitoring and Evaluation Methods.	▪ Use the method of visual observation of particulate matter pollution; ▪ Air quality monitoring and particles monitoring by using the air quality measurement equipment.
10	Period of Implementation.	From the start of the construction to the end of the construction with the completion of the construction work and the planting of grass and trees.
11	Training	▪ Training for staff on driving the heavy vehicles; ▪ Build awareness and enforce the rule on putting protective equipment appropriately (putting the mask, wearing safety cloth and other equipment) in the area where there is a high risk of pollution; ▪ Training and building of awareness to prevent staff and workers from burning rubbish and wastes.
12	Equipment.	Tools for monitoring the air pollution (can be moved conveniently).
13	Legal and Environmental Standards References.	▪ Law on Construction (No. 05/NA, 2009); ▪ Law on Hygiene, Disease Prevention and Health Promotion (amended) No. 73/NA, 2019; ▪ National Environmental Standards No. 81/GOV, 2017
14	Responsible Parties.	▪ The construction's contractor of the project shall be responsible for the air pollution management measures; ▪ The contractor must establish its own Environmental Management Unit within the company. This unit shall be charge with internal monitoring for preparing the report to the relevant State agencies.
15	Budget Expenditure	▪ The budget expenditure for the implementation of the air quality impact mitigation measures shall be taken

SP3: Control of Air Pollution		
SN	**Objectives to be Achieved**	**Description of Implemention**
		charge by the project owner/contractor who are responsible for the budget and the implementation by themselves. The budget expenditure for the monitoring conducted by the relevant State agencies shall be taken charge by the project developer who will be responsible and provide as specified in this ESMMP-CP Report.

Table 22: National Environmental Standards of Air Quality

Parameters	Measurement Method	Standard Value	Unit
Total Suspended Particulate (TSP)	High Volume Sampler	0.33	mg/m^3
Particulate Matter < 10 µm (PM_{10})	High Volume Sampler	0.12	mg/m^3
Sulphur dioxide (SO_2)	Pararosaniline method	0.05	ppm
Nitrogen dioxide (NO_2)	TGS ANSA method	0.02	ppm
Carbon dioxide (CO_2)	time-weighted average (TWA) at 9,000 mg/m^3	5,000	ppm

3.8.4 Sub-Plan SP4: Control of Noise and Vibration

SP4: Control of Noise and Vibration		
SN	**Objectives to be Achieved**	**Description of Implemention**
1	Project Phase	Construction Phase of the Project
2	Locations that Cause Potential Noise and Vibration.	▪ Construction sites of the project (sites of construction of tower foundations, construction of transmission line sub-station, construction of workers camps, construction of access roads to construction sites and construction of other components of the project; ▪ Earth digging and filling by using heavy machinery; ▪ Transportation road to and from the project area.
3	Issues related to social and natural environment	Noise and vibration problems, health and safety of the staff and workers who work for the project including the general public who are the passers-by in the project area.
4	Project construction activities that will cause potential impacts.	In the construction phase, there will be many activities related to the construction of various project components that may cause the noise and vibration impacts. However, these impacts will not be significant because the construction of wind power project is not required to explode the rocks as in the case of dam construction project. These impacts may be caused by the use of heavy machinery in the activities of digging, removing of soil and

SP4: Control of Noise and Vibration		
SN	**Objectives to be Achieved**	**Description of Implemention**
		transportation of construction materials which will be the sources of noise and vibration. The direct impact receivers are field workers and the people residing in the project surrounding areas.
5	Potential impacts to the environmental system.	Disturbance and impact on health of workers who perform the construction work of the project. The noise and vibration will cause disturbance to the community and wildlife in the project area, if the construction sites are located near the community and the forest where wild animals live.
6	Characteristics of Impacts.	Noise impact may occur in the short term, long term, with direct and indirect impact; minimal, significant impact and severe impact, exceeding the specified National Environmental Standard.
7	Control/Management of Impact Mitigation Measures.	In order to prevent the potential noise and vibration impact, it is required to give attention to certain necessary mitigation measures as below: ▪ Construction activities which are the project components, especially the activities that will cause loud noise and vibration must be carried out during daytime only by observing the working time starting from 8:00 AM to 5:00 PM as set out by the Ministry of Labour and Social Welfare; ▪ Make the arrangement to build the fence around the construction sites, especially the sites of construction and installation of wind turbine towers which are located near the residential areas of the community in order to reduce the noise to outside; ▪ Ensure the maintenance of the machinery which are used in the construction to keep them in working condition and complying with the specified standards, not causing too loud noise and too strong vibration. ▪ Speed of construction vehicles: The speed of the transport vehicles for the construction must be limited and controlled at not exceeding 30 km/hr for vehicles arriving to and leaving the project area, especially when

SP4: Control of Noise and Vibration		
SN	**Objectives to be Achieved**	**Description of Implemention**
		transporting the construction materials through the villages to the construction site of the project ▪ Heavy construction work: It is required to stop heavy construction work that will cause noise and vibration at night time which is the relaxation time of the people in nearby villages, including small and large wild animals living in the project surrounding areas which are out to look for food during night time. In addition, heavy construction activities shall not be performed on important days of the religion, particularly on *Van Sinh* days (the 15th day of the wanning and waxing moon of the lunar cycle).
8	Monitoring and Evaluation Methods.	Use standard equipment for noise and vibration measurement. For the determination of measurement points, it is required to take the place of heavy work, area of heavy transportation, village areas surrounding the project.
9	Period of Implementation.	From the start of the construction to the end of the construction with the completion of the construction work of the project.
10	Training	▪ Training for staff on driving the heavy vehicles, lifting the materials up and down; ▪ Training on measurement of noise and vibration.
11	Equipment.	▪ Tool for noise and vibration pollution monitoring (can be moved conveniently); ▪ Laboratory analysis tool and equipment; ▪ Noise and vibration environmental expert for conducting the review and providing the reasons; ▪ Establishment of Environmental Management Unit consisting of personnel specialized in this field.
12	Legal and Environmental Standards References.	▪ National Environmental Standards No. 81/GOV, 2017; ▪ Law on Hygiene, Disease Prevention and Health ▪ Promotion (amended) No. 73/NA, 2019
13	Responsible Parties	▪ The construction's contractor of the project shall be responsible for the noise pollution management measures; ▪ Establish its own Environmental Management Unit within the company. This unit shall be charged with

SP4: Control of Noise and Vibration		
SN	**Objectives to be Achieved**	**Description of Implemention**
		internal monitoring for preparing the report to the relevant State agencies.
14	Budget Expenditure.	▪ The budget expenditure for the implementation of the impact mitigation measures shall be taken charge by the project owner/contractor who are responsible for the budget and the implementation by themselves. ▪ The budget expenditure for the monitoring conducted by the relevant State agencies shall be taken charge by the project developer who will be responsible and provide as specified in this ESMMP-CP Report.

3.8.5 Sub-Plan SP5: Wastes Control

SP5: Wastes Control		
SN	**SN**	**SN**
1	Project Phase	Construction Phase of the Project
2	Locations that will cause potential wastes.	▪ Construction sites of the project (sites of construction of tower foundations, construction of transmission line sub-station, construction of workers camps, construction of access roads to construction sites and construction of other components of the project); ▪ Project machine repair workshop area; ▪ Workers camps which dump rubbish disorderly causing the dispersion of rubbish to outside area.
3	Issues related to social and natural environment	Rubbish and wastes, health and safety of the staff and workers who work for the project including the general public who are the passers-by in the project area. Occurrence of water washing the rubbish that affects surface water and groundwater.
4	Impact on physical, biological and socio-economic environmental system.	Wastes from the construction activities may cause impact to the environment and human health. The most appropriate method of sustainable wastes management is reduction of wastes, re-use of wastes and recycling of wastes.
5	Project construction activities that will cause potential impacts.	During the construction phase, it is expected to have a large volume of rubbish and wastes, such as: wastes from construction activities, hazardous wastes from materials containing oil of machinery and solid wastes from daily consumption of staff and workers who come to do construction works. During the construction phase, it is

SP5: Wastes Control		
SN	**SN**	**SN**
		expected that the number of staff and workers who come to work for the project will be at least 250 persons per day (in certain period, the number may reach 400 persons); and if each person generates the waste, on average, of 0.5 kilogram/worker/day, the total waste generated will be not less than 125 kilograms/day that will be sent out from the project. It is therefore necessary to have a proper method of disposal and a proper site for dumping these rubbish and wastes.
6	Potential impacts to the environmental system.	▪ Wastes may cause contamination of surface water and groundwater from the overflow or leakage during the storage, transportation and cause harzard to the environment; ▪ Impact to health from improper disposal of (hazardous) wastes; ▪ Air pollution when the wastes are burned disorderly without segregation; ▪ Occurrence of various diseases from vectors due to contamination of hazardous rubbish and wastes.
7	Characteristics of Impacts.	▪ General wastes: Rubbish including household wastes and wastes from daily consumtion; ▪ Construction wastes: consist of unwanted materials produced directly or incidentally by the construction. These include debris of wood, cement, stone, brick, steel and other debris. ▪ Hazardous wastes: These wastes are potentially harmful to the environment and human health. They can be liquids, solids, solidified materials. The contamination of soil from fuel or lubricating oil must be managed in the same manner as the hazardous wastes. Certain hazardous materials have side effects in the long term due to the accumulation impact of the chemicals, substances that cause severe disease or genetic disorder. Chemical wastes, such as: used oil and grease, batteries and electronic equipments are classified as hazardous wastes.
8	Control/Management of Impact Mitigation Measures.	▪ The project owner or the construction's contractor must coordinate with the District Development Administration Authority to determine the area for dumping the rubbish and wastes. If the existing district wastes disposal site is sub-standard, it is required to

SP5: Wastes Control		
SN	**SN**	**SN**
		jointly undertake the improvement to make it a standard landfill site with the capacity to treat the rubbish efficiently. ▪ Rubbish must be separated and delivered for disposal in separate sites. Hazardous rubbish requires a proper burying method and the burying place for this category of rubbish must be located far from the river and stream to avoid impact to the river. ▪ The wastes must not be burned in a disorderly manner as it may cause the occurrence and emissions of CO_2, CO and SO_2 in excess of the environmental standards. In case, it is necessary to burn the wastes, they must be separated, particularly the wastes which are contaminated with chemicals, such as: electric wire or plastic items shall not absolutely be burned. ▪ The project developer shall coordinate with the environmental consultant and the relevant State Authority to provide training to staff and workers to enable them to have the understanding about the harmful effects of the rubbish and the disposal method. Offenders must be subject to fine or dismissal from work.
9	Monitoring and Evaluation Methods.	▪ Conduct the observation of the construction sites of the project; ▪ Inspect the place of keeping the rubbish in each place of the construction area and residential area; ▪ Inspect the method of transportation of rubbish for disposal; observe the wastes disposal site to find out whether it is a proper and standard site or not?
10	Period of Implementation.	During the construction phase, monitoring must be conducted monthly by the Project Environmental Unit.
11	Training	▪ Dissemination of information to staff and workers as well as to the people residing in the project surrounding areas to allow them to have the understanding about the harmful effects of rubbish and wastes; ▪ Dissemination of the law and regulation on environmental protection, the rules and methods of wastes disposal in a properly manner.

SP5: Wastes Control		
SN	**SN**	**SN**
12	Equipment.	▪ Wastes disposal requires equipment sufficiently, such as: waste collection containers, garbage trucks and other tools to be used in the disposal of rubbish and wastes.
13	Legal and Environmental Standards References.	▪ Law on Enviromental Protection; ▪ National Envrionmental Standards NO. 81/GOV, 2017; ▪ Law on Hygiene, Disease Prevention and Health Promotion (amended) No. 73/NA, 2019.
14	Responsible Parties	▪ The construction's contractor of the project shall be responsible for the wastes disposal management measures; ▪ The contractor must establish its own Environmental Management Unit within the company. This unit shall be charge with internal monitoring for preparing the report to the relevant State agencies.
15	Budget Expenditure	▪ The budget expenditure for the implementation of the impact mitigation measures shall be taken charge by the project owner/contractor who are responsible for the budget and the implementation by themselves. ▪ The budget expenditure for the monitoring conducted by the relevant State agencies shall be taken charge by the project developer who will be responsible and provide as specified in this ESMMP-CP Report.

3.8.6 Sub-Plan SP6: Clearance of Forest and Land Use Area

SP6: Clearance of Forest and Land Use Area		
SN	**Objectives to be Achieved**	**Description of Implemention**
1	Project Phase	Construction Phase of the Project
2	Locations that will cause the loss of forest and plant species	Construction sites of the project (sites of construction of tower foundations, construction of transmission line sub-station, transmission line route, construction of workers camps, construction of access roads to construction sites and construction of other components of the project);
3	Issues related to social and natural environment	The Wind Power Project will not cause large-scale impact to the forest because the construction of tower foundations and other components of the project does not require large area and clearance of large forest area. Even the forest and vegetation areas are not significantly

SP6: Clearance of Forest and Land Use Area		
SN	**Objectives to be Achieved**	**Description of Implemention**
		affected, but they have natural environmental value of providing refreshing atmosphere. Management and impact mitigation measures are the best method to assist the project to become sustainable.
4	Impact on physical, biological and socio-economic environmental system.	During the project construction phase, there will be the impact to the forest and land use of the local people because the activities of construction of wind turbine towers, sub-station, access roads and various components of the project must be undertaken and completed during this construction phase.
5	Project construction activities that will cause potential impacts.	The area clearance activities are conducted for the construction of tower foundations, sub-station and transmission line route, access roads to the project site and project workers camps. All these activities require the clearance of forest and vegetation areas which are the green areas from tne construction sites.
6	Potential impacts to the environmental system.	Decrease and loss of green forest and vegetation areas which are the places that absorb Carbon Dioxide (CO_2).
7	Characteristics of Impacts.	Even though the Wind Power Project which is proposed to be constructed in Dakcheung District and Sanxay District will not cause significant impact to the forest and vegetation areas, but the loss of green forest and vegetation areas from the sites of construction of various components of the project will be felt. In the construction sites, trees and plants cannot grow, and the ecosystem and refreshing atmosphere in the construction areas will be lost if there is no management of green area in the surrounding areas of the project.
8	Control/Management of Impact Mitigation Measures.	▪ Coordinate with the relevant sector to take actions in accordance with the process prescribed in the revised Law on Forestry (2019) and the revised Law on Land (2019). ▪ The forest area will be lost due to the project construction. This includes the areas of mixed deciduous forest, pine forest and unstocked forest. The project will provide the compensation through undertaking the reforestration in accordance with the regulations set out by the Forestry Department of the Ministry of Agriculture and Forestry.

SP6: Clearance of Forest and Land Use Area		
SN	**Objectives to be Achieved**	**Description of Implemention**
		▪ In order to prevent significant impact to forest areas, the project shall conduct the inspection of the construction activities of the contractors to ensure that they take precaution in undertaking the site preparation for construction of wind turbine towers and project components, and must not clear the area outside the construction area, especially the forest area surrounding the project. ▪ Before undertaking the site clearance for construction activities, the project must coordinate with the relevant State Authorities of the province and district to conduct the inspection and assessment of the actual affected area, especially the forest areas which will be potentially affected. ▪ Provide the training to staff and workers who go to work in the project construction site to allow them to have the understanding about forest conservation; forbid them to enter for using the forest outside the project area and issue the rules for implementation; and offenders of the rules must be subject to fine and immediate dismissal from work. ▪ The project shall cooperate with the State Authority to conduct regular monitoring of the construction activities of the contractors.
9	Monitoring and Evaluation Methods.	▪ Conduct the observation of the construction sites of the project; ▪ Review the actual implementation of the project owner or construction's contractors, whether they have complied with all steps of the mitigation measures prescribed in the ESIA Report of the project or not. In case of non-compliance, it is required to give advices and warnings to the construction's contractors to perform in accordance with the EMMP Report; ▪ The clearance of forest and vegetation area is carried out in compliance with the plan and the design or not ? If the cutting or clearance is conducted outside the defined limit, the project's contractor must be responsible for undertaking the restoration. ▪ The relevant State agencies must be invited to take part in the monitoring to make the inspection to become official and may be approved.
10	Period of Implementation of	Before starting the construction, the project must report to the relevant State agencies to allow them to prepare for

SP6: Clearance of Forest and Land Use Area		
SN	**Objectives to be Achieved**	**Description of Implemention**
	the Management and Monitoring.	conducting the monitoring from the beginning. The period or frequency of monitoring of the State Environmental Unit shall be once in every three months, whereas the Project Environmental Unit must conduct the monitoring on a monthly basis for reporting to the State agencies as specified in the EMMP Report.
11	Training.	The construction's contractor must provide the training to staff and workers, particularly the groups which are in charge of the cutting and area clearance to prepare for the construction in order to enable them to know the line and limit of the project and avoid the the clearance outside the defined boundaries.
12	Relevant Legal References.	▪ Law on Forestry (2019); ▪ Regulation on Implementation of Decree on Compensation and Resettlement of the People Affected by Development Project N0. 84/GOV, 2016; ▪ Law on Wildlife and Aquatic Animals (No. 07/NA, 2008)
13	Responsible Parties.	▪ The construction's contractor shall be responsible for the management of the area clearance and the management of other measures relating to forest and vegetation, especially during the construction phase; ▪ The construction's contractor (Director of the Company) shall certify the Forest Area Clearance Plan for submitting to the relevant State agency for approval through the project owner; ▪ The construction's contractor must create its Environmental Management Unit within the company; this unit shall be charge with internal monitoring for reporting to the relevant State agencies.
14	Budget Expenditure.	▪ The budget expenditure for the implementation of the impact mitigation measures shall be taken charge by the project owner/contractor who are responsible for the budget and the implementation by themselves. ▪ The budget expenditure for the monitoring conducted by the relevant State agencies shall be taken charge by the project developer who will be responsible and provide as specified in this ESMMP-CP Report.

3.8.7 Sub-Plan SP7: Restoration of Affected Forest

SP7: Restoration of Affected Forest		
SN	**Objectives to be Achieved**	**Description of Implemention**
1	Project Phase	Construction Phase of the Project
2	Locations that require to conduct the restoration and maintenance of forest and vegetation.	Within and surrounding the areas of constructions of the project (area of construction of tower foundations, construction of sub-station and transmission line route, construction of access roads to the construction sites and other sites that are the components of the project).
3	Issues related to social and natural environment	Even though the Wind Power Project in Dakcheung District and Sanxay District will not cause significant impact to the forest and vegetation, but the restoration and maintenance of forest and plant species are essential and must be implemented in order to have green areas surrounding and everlastingly existing side by side with the project
4	Control/Management of Impact Mitigation Measures.	The restoration and maintenance of forest and plant species require guidance from the relevant State agencies and the actual participation of the local people. The trees and plants to be planted must be of local species to facilitate the maintenance and ensure rapid growth. The planting and maintenance of forest in the project surrounding areas will not cause impact to the wind energy for generating the electricity because the wind turbine tower has a height of 110 meters. On the contrary, the maintenance of forest and plant species will have favourable effects to the project by helping to make land surface stable and prevent soil erosion in the project area.
5	Monitoring and Evaluation Methods.	To ensure the realization of good results in the restoration and maintenance of forest and plant species, it is required to conduct the monitoring. The monitoring must be conducted by the forest technical group who will give advices on the appropriate method of planting and maintenance.

SP7: Restoration of Affected Forest		
SN	**Objectives to be Achieved**	**Description of Implemention**
6	Period of Implementation.	From the searching and nursing of saplings, the process of planting the trees and plants, the process of maintenance until the planted trees can grow naturally.
7	Training.	Provide training to staff and workers who come to work with the project as well as the people residing in the project surrounding areas to allow them to become responsible for the restoration and maintenance of forest. Provide training on method of maintenance without destruction. If the planted tree is dead, it shall be replaced by a new sapling.
8	Relevant Legal References.	▪ Law on Forestry (2019); ▪ Law on Wildlife and Aquatic Animals (No. 07/NA, 2008).
9	Responsible Parties.	▪ The construction's contractor shall be responsible for the management of the area clearance and the management of other measures relating to forest and vegetation, especially during the construction phase; ▪ The Project Developer shall certify the Forest Area Clearance Plan for submitting to the relevant State agency for approval through the project owner; ▪ Establish its Environmental Management Unit within the company; this unit shall be charge with internal monitoring for reporting to the relevant State agencies.
10	Budget Expenditure.	▪ The budget expenditure for the implementation of the impact mitigation measures shall be taken charge by the project owner/contractor who are responsible for the budget and the implementation by themselves. ▪ The budget expenditure for the monitoring conducted by the relevant State agencies shall be taken charge by the project developer who will be responsible and provide as specified in this ESMMP-CP Report.

3.8.8 Sub-Plan SP8: Management of Wildlife and Biodiversity

SP8: Management of Wildlife and Biodiversity		
SN	**Objectives to be Achieved**	**Description of Implemention**
1	Project Phase	Construction Phase of the Project
2	Locations that will cause the loss to biodiversity.	Construction sites of the project (sites of construction of tower foundations, construction of transmission line sub-station, transmission line route, construction of workers camps, construction of access roads to construction sites and construction of other components of the project);
3	Issues related to biodiversity	Even though the Wind Power Project will have many activities that will affect wildlife, transit routes, food sources and wildlife adaptation, this will not cause large-scale impact to the forest because the construction of tower foundations and other components of the project do not require large area. Although the construction areas of the project components do not lie in the main wildlife habitat, some of these areas still have forests and biodiversity that are home to some species, all of which disrupt wildlife habitats and food sources. Thus, rare or endangered wildlife, especially large animals such as serows, deers, muntjacs, tigers, gibbons and other rare animals, reptiles, amphibians and birds are not found or endangered, they will go to live in the deep thick forest where the area is prohibited, in areas near village or where people can go on for finding food, base on the interview of villagers' in the project on local residents and wildlife habitat, the part where the traces are founded are thick forest near rivers, high hill areas, the animals which are often seen in farmland are mostly wild pigs, wai mouses, mongooses, sunda colugos, ground squirrels. However, the construction activities of the Wind Power Project will have minimal opportunity to cause the impact. The potential impact may exist only during the construction phase, if there is a lack of good management. The causes of potential impact on biodiversity and specific rare wildlife consist of the following: ▪ Area clearance for the construction requires the cutting of trees and plant species, digging and pumping up of soil. All these activities cause destruction of wildlife habitats. ▪ Noise from the use of construction machinery of the project causes panic to wild animals which are frightened and left to live in other places. ▪ Workers coming to work during the construction phase are in large number and cause the risk of illegal hunting of wild

SP8: Management of Wildlife and Biodiversity		
SN	**Objectives to be Achieved**	**Description of Implemention**
		animals which are living within and surrounding the project are for food.
4	Control/ Management of Impact Mitigation Measures.	Considering the activities during the construction of the project, it will have an impact on the migration and disturbance of the wildlife, but when considering the relationship between the wildlife and the habitat, it is found that the project area is surrounded by agricultural and forest areas that do not lie in the protected forest area which are thick forest which is the habitat of wildlfe. These surrounding areas provide a natural link between project areas and other types of areas. All the wildlife found in the study area has space for breeding or migration to agricultural and other forest areas that are suitable for wildlife living, which has a large area, so it has the carrying capacity of a large population which make population adapt and use those areas again. In order to implement the plan effectively, project owners, especially construction companies, must pay attention to some of the necessary mitigation measures as follows: • Advertise and disseminate the relevant laws and regulation to workers, especially the Law on Forestry, Law on Environment Protection, Law on Water and Water Resources and Law on Wildlife and Aquatic Animals to enable the community and workers to be aware of the importance of the forest resources and the biodiversity, the prohibitions and punishment measures for offenders; • Formulate internal rules and prohibitions for workers to prevent them from using wood, hunting and purchasing wild animals and collecting non-timber forest products in prohibited areas; • Advertise and build the awareness to staff, workers who come to work in the project on the conservation of endangered wildlife and aquatic animals, forest and plant species; • Clearance for construction must be limited to the areas required and necessary for the project components only, in order to avoid damaging the ecosystems of the streams and rivers in the vicinity of the project area through the implementation of measures to reduce erosion, waste management measures, measures to reduce the impact on water quality and others.

SP8: Management of Wildlife and Biodiversity		
SN	**Objectives to be Achieved**	**Description of Implemention**
		• The project should instruct construction contractors to control the noise, the use of machinery and trucks, in accordance with environmental standards, to control the noise to no more than 85 decibels (dBA) to reduce the disturbance and alarming of wildlife. • When constructing and installing wind turbines, and when testing turbine blades, must take caution and monitor the flight of birds to see if any birds are flying through and can be dangerous, if any, when of the day, and should be monitored and recorded in order to seek for mitigation measures properly. • According to the construction lessons of other projects that have been construct and excavated in natural areas, large and rare reptiles such as Python (Malayopython Reticulatus) are often found. If such a case is found in any construction of project area, the constructors must report to the government or the relevant technical authority to move the animal to another safe place in the forest, not to bring the wild animal found for food. • There must be monitoring by the project environmental unit in collaboration with the relevant government departments to report and send information to the project contractors to improve their framework.
5	Monitoring and Evaluation Methods.	The method of implementation of the monitoring and evaluation of the impacts and the management of biodiversity shall be relied on the technical staff who have the expertise in the field of physical environment. The tools and methods of monitoring shall be in accordance with the environmental issues prescribed in Clauses on Water Quality, Sedimentation and Erosion, Wastes Disposal, Noise, Cutting and Clearing of Trees and Vegetation because these issues cause impact on biodiversity, especially during the construction phase of the project.
6	Period of Implementation.	Management and monitoring shall focus on the period of the beginning of the clearance because during this period, the construction activities have opportunity to cause significant impact to the biodiversity.
7	Training.	To ensure the management of the existing biodiversity and wildlife in the project surrounding areas, the project must provide training to staff and workers who work directly for the project to allow them to have the awareness about biodiversity which is the base for the ecosystem and protect it from destruction by their construction activities.

SP8: Management of Wildlife and Biodiversity		
SN	**Objectives to be Achieved**	**Description of Implemention**
8	Legal and Environmental Standards References.	▪ Law on Wildlife and Aquatic Animals (No. 07/NA, 2008) ▪ Law ond Forestry, amended (2019) ▪ Law on Water and Water Resources, 2017 ▪ Law on Hygiene, Disease Prevention and Health Promotion (amended) No. 73/NA, 2019; ▪ National Environmental Standards No. 81/GOV, 2017
9	Responsible Parties.	▪ The construction's contractor shall be responsible for the biodiversity management measures; ▪ Create its own Environmental Management Unit within the company; this unit shall be charge with internal monitoring for reporting to the relevant State agencies.
10	Budget Expenditure.	▪ The budget expenditure for the implementation of the impact mitigation measures shall be taken charge by the project owner/contractor who are responsible for the budget and the implementation by themselves. ▪ The budget expenditure for the monitoring conducted by the relevant State agencies shall be taken charge by the project developer who will be responsible and provide as specified in this ESMMP-CP Report.

3.8.9 Sub-Plan SP9: Unexploded Ordnance (UXO) Survey and Disposal

SP9: Unexploded Ordnance (UXO) Survey and Disposal		
SN	**Objectives to be Achieved**	**Description of Implemention**
1	Project Phase	Pre-Construction Phase of the Project (Preparation Phase)
2	Locations required to undertake the survey	Tower foundation construction sites, access road construction sites, sub-station and transmission line construction sites, including project components construction sites.
3	Issues related to social and natural environment	If the unexploded ordnances (UXOs) are found in the construction sites of the project and if these ordnances are still dangerous. When the construction activities are conducted, there will be risk of accident and loss, especially to workers who directly perform on the ground and underground works.
4	Control/ Management of Impact Mitigation Measures.	▪ When the project is approved and before undertaking the construction, the project shall coordinate with the concerned party of the Provincial UXOs Clearance Office to review whether UXO survey and clearance was already conducted in the project area, especially the construction sites of the project or not?

SP9: Unexploded Ordnance (UXO) Survey and Disposal		
SN	**Objectives to be Achieved**	**Description of Implemention**
		▪ If UXO survey and clearance was not yet conducted or there is some doubts in certain areas, the project will request for the survey and clearance to be performed to ensure safety of the project. ▪ UXO survey and clearance must be undertaken by the technical staff of the relevant agency. ▪ In case the survey is not wholly undertaken and the construction activities are started, if the UXO or an object suspected to be the UXO is found during the construction, the project shall urgently report to the relevant agency for information and taking action immediately.
5	Monitoring and Evaluation Methods.	▪ Invite the technical staff who has the knowledge and understanding in the field of UXO survey and clearance of the relevant agency to give guidance and perform the monitoring; ▪ Use the UXO clearance tools which are designed in detail; ▪ The Project Environmental and Social Unit shall perform the monitoring with the relevant technical staff to obtain the information for reporting to the project and the relevant State agencies.
6	Period of Implementation.	Give attention to the management and monitoring during the project construction phase because the site clearance, soil digging and levelling for construction will be undertaken during this period. If survey is not conducted, there will be a risk of occurrence of accident.
7	Frequency of the survey and monitoring.	▪ The UXO survey of the relevant technical staff shall be carried out continually (prior to the construction) in all places of the project area , especially the construction sites. ▪ After that, the Project Environmental Unit shall conduct the monitoring on a monthly basis.
8	Training.	▪ In order to ensure safety, the project must give attention to this issue seriously. Even the project area has low risk and opportunity to find the UXO, but as the project area was a part of the battlefield in Laos, it is better to take precaution to ensure safety for the project. ▪ The project must provide training to staff and workers to allow them to have the understanding and beware of the UXO and to report immediately in case of finding suspected object.

SP9: Unexploded Ordnance (UXO) Survey and Disposal		
SN	**Objectives to be Achieved**	**Description of Implemention**
9	Legal and Environmental Standards References.	▪ Law on Hygiene, Disease Prevention and Health Promotion (amended) No. 73/NA, 2019; ▪ Law on Environmental Protection (amended), 2012; ▪ Law on Labour (amended) No. 021/NA, dated 24 December 2013; ▪ Law on Construction (No. 05/NA, 2009); ▪ National Environmental Standards No. 81/GOV, 2017
10	Responsible Parties.	▪ The Project developer/construction's contractor of the project shall be responsible for the UXO survey management measures; ▪ Establish their own Environmental Management Unit within the company. This unit shall be charge with internal monitoring for preparing the report to the relevant State agencies
11	Budget Expenditure.	▪ The budget expenditure for the implementation of the impact mitigation measures shall be taken charge by the project owner/contractor who are responsible for the budget and the implementation by themselves. ▪ The budget expenditure for the monitoring conducted by the relevant State agencies shall be taken charge by the project developer who will be responsible and provide as specified in this ESMMP-CP Report.

3.8.10 Sub-Plan SP10: Construction, Management of Workers Camps and the Use of Labour

SP10: Construction and Management of Workers Camps		
SN	**Objectives to be Achieved**	**Description of Implemention**
1	Project Phase	Construction Phase of the Project
2	Locations that require to undertake the construction and management.	▪ Location of the constructions of the project, ▪ Camp for technical staff of the contractor, camp for workers of the project in all 3 places.
3	Issues related to social and natural environment	▪ Risk to health and safety of the construction; ▪ Risk to health due to lack of good hygiene and sanitation system; ▪ Causing the problem of dirty water from the residential place due to lack of good treatment tank, and problem of disorderly dumping of wastes and rubbish.

SP10: Construction and Management of Workers Camps		
SN	**Objectives to be Achieved**	**Description of Implemention**
		▪ Reduce the use of foreign labor and increase employment opportunities for the local people around the project. ▪ If local people do not have the opportunity to work on the project, a negative impact on the perception of local workers will occur.
4	Control/ Management of Impact Mitigation Measures.	▪ *Management of discipline and security:* 1. All staff and workers residing in the project camps must follow the rules on entry and exit, rules on staying and eating and shall be responsible for the protection of natural environment and the surrounding atmosphere of the project area; 2. In order to ensure security during the construction phase, the project must collect information on the number of all employed workers and labour force and coordinate for reporting such information to the nearby Village Administrative Authority for information, especially workers from other localities who reside in the construction workers camp to enable the Village Authority to monitor the number of all workers and facilitate the maintenance of security; 3. Control and issue rules to prevent construction workers to behave in the manner to create troubles to the local people. ▪ *Control of potential problem of dirty water from residential place and from water use of staffs and workers:* 1. Make the arrangement to provide water closets & toilets for workers and for construction control building area and install proper sewage treatment system. 2. After the construction, it is required to demolish the water closets & toilets and conduct the restore the land condition; build the water drainage ditch around the area of construction of residential building for permanent electrical employees that can release waste water into sewage retention pond. ▪ *Control of wastes:* 1. The project owner or the construction's contractor must coordinate with the Development Administration Authority of Dakcheung District and Sanxay District to determine the disposal area of the rubbish and wastes. If the existing district wastes disposal sites are sub-standard, it is required to jointly undertake the

SP10: Construction and Management of Workers Camps		
SN	**Objectives to be Achieved**	**Description of Implemention**
		improvement to make them standard landfill sites with the capacity to treat the rubbish efficiently. 2. Waste diposal site must be planned to be located at the place that cause minimal impact. It must be located farfrom rivers or tributary streams and far from residential places and camps of staff and workers in the field at various construction sites of the project. 3. Rubbish must be separated and delivered for disposal in separate sites. Hazardous rubbish requires a proper burying method and the burying place for this category of rubbish must be located far from the river and stream to avoid impact to the river. 4. The wastes must not be burned in a disorderly manner as it may cause the occurrencence and emissions of CO_2, CO and SO_2 in excess of the environmental standards. In case, it is necessary to burn the wastes, they must be separated, particularly the wastes which are contaminated with chemicals, such as: electric wire or plastic items shall not absolutely be burned. During the construction phase of the Project foundation, the project is planned to run for at least 2-3 years, the construction work is in need of hundreds of staff and workers or internal workers, some of which may need up to 700 workers. ▪ In accordance with the regulations of development project employment on local people, the Ministry of Labor and Social Welfare, the project, in conjunction with the relevant government sector, must have a policy of accepting local workers, those who wish to work for the project in order to increase their household income; ▪ In the initial phase, the company will mobilize technical staff from outside to directly manage, at the same time, the company will recruit a number of internal staff and provide training to improve the technical capacity to train them to become technical staff and to promote the use of staff from local people. ▪ The project must give priority to unemployed local workers to be project workers, which is the purpose of the project policy to encourage people to have a job and have a family income;

SP10: Construction and Management of Workers Camps		
SN	**Objectives to be Achieved**	**Description of Implemention**
		▪ If local workers are unskilled or unskilled enough to work for the project, but if they want to work on the project, they must be accepted and trained, with appropriate wages and benefits for local workers; ▪ At the same time, in addition to the opportunity for employment, the sale of goods and services generated household income will also increase, as more people will come to work in construction during this period and local income-related purchases are expected to increase; ▪ The hiring process must be fair, transparent and wages should be commensurate and appropriate with the combination of experiences and qualifications.
5	Monitoring and Evaluation Methods.	▪ Monitoring of the number of workers and the orderliness; ▪ Monitoring of the water quality which shall be immediately conducted at the start of the construction of the project to control the potential release of wastewater to the natural water source; ▪ Conduct monitoring of water quality at the places of continuous water use for consumption and for domestic use; ▪ The wastewater monitoring programme must be implemented as a routine work and the samples collection points, the measurement values must be analyzed in detail as specified in the National Environmental Standards and international standards. ▪ Water quality must be monitored at all stations where wastewater (treated wastewater) is released to the natural water sources; ▪ Conduct the inspection of the waste keeping place at each construction site and in the residential areas; ▪ Conduct the inspection of the method of transportation of wastes for disposal and of the waste disposal site in order order to find out whether it is located at a appropriate location or is a standard site or not? ▪ Collect the waste washing water for analysis and identify accurate results and seek the solution methods.
6	Period of Implementation.	From the start of the construction of the project until the completion of the construction.

SP10: Construction and Management of Workers Camps		
SN	**Objectives to be Achieved**	**Description of Implemention**
7	Frequency of Monitoring.	Regarding the frequency of the monitoring, the Project Environmental Unit must conduct the monitoring on a monthly basis for reporting to the relevant State agencies. Whereas the relevant State agency shall conduct the monitoring once in every 3 months.
8	Training on water quality environment of the project.	▪ Disseminate the information to the staff and workers and to the people living in the project surrounding areas to allow them to understand the harmful effects of rubbish and wastes; ▪ Disseminate the laws and regulations on environmental protection , the rules and method of proper disposal of wastes; ▪ Provide and present regular trainings on environmental activities and awareness to all staff and workers who work for the project.
9	Equipment.	▪ Wastes disposal requires equipment sufficiently, such as: waste collection containers, garbage trucks and other tools to be used in the disposal of rubbish and wastes.
10	Legal and Environmental Standards References.	▪ Law on Construction (No. 05/NA, 2009); ▪ Law on Hygiene, Disease Prevention and Health Promotion (amended) No. 73/NA, 2019; ▪ Law on Labour (No. 021/NA) ▪ National Environmental Standards No. 81/GOV, 2017
11	Responsible Parties.	▪ The construction's contractor of the project shall be responsible for wastewater and wastes disposal management measures; ▪ Establish its own Environmental Management Unit within the company. This unit shall be charge with internal monitoring for preparing the report to the relevant State agencies
12	Budget Expenditure.	▪ The budget expenditure for the implementation of the impact mitigation measures shall be taken charge by the project owner/contractor who are responsible for the budget and the implementation by themselves. ▪ The budget expenditure for the monitoring conducted by the relevant State agencies shall be taken charge by the project developer who will be responsible and provide as specified in this ESMMP-CP Report.

3.8.11 Sub-Plan SP11: Control of Hazardous Waste

SP11: Control of Hazardous Waste		
SN	**Objectives to be Achieved**	**Descripition of Implementation**
1	Project Phase	Construction Phase of the Project
2	Locations that require to undertake the construction and management.	▪ Construction sites of the project (sites of construction of tower foundations, construction of transmission line sub-station, construction of workers camps, construction of access roads to construction sites and construction of other components of the project), ▪ Project machine repair workshop area ▪ Construction materials and equipements of the project warehouse.
3	Issues related to social and natural environment.	Hazardous substances when become rubbish and wastes will have a risk and impact on the health and safety of the staff and workers who work for the project including the general public living near the project area. Hazardous substances that are chemical contaminants when contact with water or rain will have an impact on the surface water and groundwater, and on aquatic organisms that depend on water.
4	Impact on physical, biological and socio-economic environmental system.	Objects or materials that may cause an impact on the environmental system, may inflict injury or death if not well-managed. The procedures and methods in managing, storing, transporting, moving and destroying of hazardous materials must be stored and managed appropriately. When the hazardous susbstances cannot be re-use and must be correctly destroy, but it is still stored, those materials are still dangerous.
5	Construction and operation activities of the project that will cause potential impacts.	▪ Leaking of hazardous substances (during usage or storage) ▪ Incorrect and Inappropriate planning and management of waste disposal. ▪ Liquid Chemicals and objects that are significantly and severely dangerous that are expected to be used in activities during the construction of the project include: o Oil products such as motor oil, oil and lubricants, o Cement or glue mixtures,

SP11: Control of Hazardous Waste		
SN	**Objectives to be Achieved**	**Descripition of Implementation**
		○ Color and Mixed Compound Liquid ○ Explosives (If any), ○ Asphalt (If any) and etc.
6	Consequences on the environment system	Contamination of surface water and groundwater from the overflow or leakage during the application, storage, transportation and disposal. The impacts on environment and health from the incorrect and inappropriate storage of hazardous substances leaving hazardous substances residue and continuing to cause severe consequences.
7	Charateristics of Impacts	The impacts from hazardous can occur at any time throughout the construction phase
8	Control/Management of Impact Mitigation Measures.	▪ Hazardous substances must be disposed based on the most suitable implementation method, ▪ Oil contaminated wastes will be regarded as hazardous wastes and must be disposed appropriately, ▪ Oil and lubricants must be stored away from water source, lids must be tightly closed and placed on a supporting layer, ▪ Vehicle maintenance must be far from water source, especially the location (machinery repairment site) in places with cement ground in order to prevent the contamination of soil and water, ▪ Every machinery repairment workshops must be equipped with an efficient oil filtering sink, ▪ The storage, disposal and control of used oil must be restored into the container or into a tight bag, attached with a warning sign, such as “Used Oil” in relevant letters that the workers can understand and with warning symbol, ▪ Oil wastes must be disposed or reused effectively and valuably, ▪ Hazardous substances must be stored in a suitable storage attached with a suitable understandable symbols,

SP11: Control of Hazardous Waste		
SN	**Objectives to be Achieved**	**Descripition of Implementation**
		▪ There must be no explosion sites permitted within 50 m radius of the storage and must be attached with signs “Hazardous Substances Storage” and “No Smoking”. Signs must be attached in controlled or oil storage area in both Laos and English or Chinese, if the workers can read and understand, ▪ Hazardous substances or chemicals container must be attached with: “Hazardours Substanc”s, storage date, scientific name and brand and the physical state of matter, such as gas, solid, liquid, charaterisitics of danger (rustable, toxin, reactive, flammable), danger on the user (toxic, combust, etc.), ▪ Hazardous substances must be used, stored and disposed in a correct manner, which will help limited the negative impacts on environment system, ▪ Must have an equipments preventing the leakage and overflow and must have an oil absorption cloth in a place where hazardous substances are handled and stored, ▪ If there is an overflow, it must be contained and cleaned as fast as possible, ▪ Information regarding the movement of hazardous sustances from the storage and to the disposal area, it must be registered for accuracy and ease of tracking, ▪ The storage sites, including the machinery repair workshops must have a supporting layer for washing, spraying and the overflowing can flow and combine to be properly disposed of. ▪ Used oil and other wastes must have a drainage ditches that flow into the oil seperation or treatment site before being released into the nature, ▪ Store hazardous substances above the surface level in a container with lid. ▪ Prohibited the disposal of chemical contaminants into the surrounding environment, especially water source or natural stream,

SP11: Control of Hazardous Waste		
SN	**Objectives to be Achieved**	**Descripition of Implementation**
		▪ Hazardous substances must be stored and managed based on the information specified in safety documents of the substance, ▪ The transportation procedure must be prepared based on an accredited international standards, ▪ The storage of all containers must be attached with signs or warning posters with a caution message and necessary signs, ▪ The storage area must be keyed and limited to the staff, ▪ If there is an explosive, it must be stored in a protected area, such as in the ground or in an area with fence, ▪ If there is an explosive, appropriate posters and warning signs must be attached and the storage area must be attached with posters and signs “Explosive Storage Area” and “No Smoking”. The signs must be in relevant lanaguages (Laos, English), ▪ Any movement of explosives or flammable materials, the amount and types of those dangers and the name of the parts being used and the date must be registered and detailed recorded, (If any) ▪ Have an adequated fire prevention equipments in explosive, flammable and hazardous substances storage sites, ▪ Respond to and enforce the use of personal protection equipment (PPE), ▪ Prepare fire extinguishers and hose equipments for emergencies.
9	Monitoring and Evaluation Methods.	▪ Conduct the observation of the construction sites of the project; ▪ Inspect the storage place of the hazardous substances of each of the construction area and the workers residential area; ▪ Inspect the method of transportation of hazardous substances for disposal; observe the wastes disposal site to find out whether it is a standard site or not?

SP11: Control of Hazardous Waste		
SN	**Objectives to be Achieved**	**Descripition of Implementation**
10	Period of Implementation	During the construction phase, monitoring must be conducted monthly by the Project Environmental Unit. The environmental unit of the state agency must conducts monitoring at least once every 3 months.
11	Training	▪ Disseminate the information to the staff and workers and to the people living in the project surrounding areas to allow them to understand the harmful effects of hazardous substances and wastes; ▪ Disseminate the laws and regulations on environmental protection, the rules and method of proper disposal of hazardous wastes; ▪ Provide trainings to environmental staffs on the monitoring method and the implementation instructions.
12	Resonspible Parties	▪ The construction's contractor shall be responsible for the management measures on the disposal of hazardous wastes or substances; ▪ The construction's contractor (Director of the Company) shall certify the the hazardous waste disposa plan, ▪ The construction's contractor must create its Environmental Management Unit within the company; this unit shall be charge with internal monitoring for reporting to the relevant State agencies.
13	Budget Expenditure.	The budget expenditure for the monitoring conducted by the relevant State agencies shall be taken charge by the project developer who will be responsible and provide as specified in the EMMP Report of the project . The budget for the consulting company is up to agreement between the project and the consultant.

3.8.12 Sub-Plan SP12: Soil-Stone Mines Management

SP12: Soil-Stone Mines Management		
SN	**Objectives to be Achieved**	**Description of Implemention**
1	Project Phase	Construction Phase of the Project

SP12: Soil-Stone Mines Management		
SN	**Objectives to be Achieved**	**Description of Implemention**
2	Locations require to be controlled	▪ Stone mines, Soil and Sandstone mining for serving in the components construction of the project. According to the preliminary prediction of the project, there are 2 mines: Soil-Stone Mine #1, an area of about 3 ha (X=736763, Y=1699606, Dak Dor Village, Dak Cheung District) and Soil-Stone Mine #2, an area of about 9 ha (X=720950, Y=1696711, Dak Tiem Village, Dak Cheung District) ▪ The excavation of soil-stone from the construction area, ▪ The transportation of stone and soil from the mines.
3	Issues related to social and natural environment	▪ Create an excavated holes in soil-stone excavation area, ▪ Create dusts, air pollution during transportation, ▪ Sedimentation and erosion in raining season, causing contaminate water into the natural water sources, ▪ Impacts on water utilisation,
4	Control/Management of Impact Mitigation Measures.	▪ The soil-stone mines must coordinate with the relevant sectors to acquire permission in accordance with the procedures and is certified before the mining. ▪ The soil-stone mines after mining, the surface must be adjusted and levelled in order to not leave holes. If it is a steep slope, it must be adjusted into a stairs in order to not be easily eroded, plant grasses and tress for the nature. ▪ The soil-stone mines must be chosen at an area where impact on the topography is low. Mining in remote areas to reduce its visibility. Must not excavate too deep, so as not to cause an impact on the biodiversities and affect the livelihoods of the surrounding people. ▪ The filling of soil, stone must be done at a flat area, area with no risk of landslides in rainy season, shall not be done at an area of steep slope or near streams and creeks, ▪ The excavated and pumped soil from the construction areas must be compactly refilled after cosntruction,

SP12: Soil-Stone Mines Management		
SN	**Objectives to be Achieved**	**Description of Implemention**
		▪ The soil and stone fills, when not use in the construction, must have a levelling of the surface, planting of grasses and vegetations to cover in order to prevent erosion, ▪ Do not fill up stone and soil in agricultural area or private land, unless permitted or agreed.
5	Monitoring and Evaluation Methods.	The environmental unit of the project and of the state sector must conduct field monitoring on a regular basis. The monitoring must based on the management plan and the mitigation measures specified above. In addition, the monitoring must also based on the applicable laws, regulations and legislations. In the case if the water is turbid due to the excavation of stone and soil, or erosion flowing from the stone and soil fills, the water quality samples must be collected for analysis.
6	Period of Implementation.	Pay attention to the management and monitoring during the project construction, as there will be stone and soil excavation to serve in the construction and as well as the digging and pumping of soil from the construction area to carry out the foundation construction.
7	Frequency of the Monitoring	The monitoring shall be conducted by the Project Environmental Unit every month. The state sector environmental unit shall conduct field monitoring at least once every 3 months (as determined in the ESMMP report).
8	Training	The environmental unit of the project shall provides traning for the staffs and workers, especially the parties doing earthworks and transportation of soil, stone and soil filling in order for them to be responsible to the tasks, to strictly comply with the mitigation measures. In addition, the unit must also provides training to the environmental staffs to understand the potential environmental impacts, train them to be able to use samples collection equipment for analysis.
9	Resonspible Parties	▪ The construction’s contractor shall be responsible for the management measures on soil-stone mining for construction;

SP12: Soil-Stone Mines Management		
SN	**Objectives to be Achieved**	**Description of Implemention**
		▪ The construction's contractor (Director of the Company) shall certify the the soil-stone mining for construction control plan , ▪ The construction's contractor must create its Environmental Management Unit within the company; this unit shall be charge with internal monitoring for reporting to the relevant State agencies.
10	Budget Expenditure.	The budget expenditure for the monitoring conducted by the relevant State agencies shall be taken charge by the project developer who will be responsible and provide as specified in this ESMMP-CP Report. The budget for the consulting company is up to agreement between the project and the consultant.

3.8.13 Sub-Plan SP13: Management of Stone Debris and Soil Fills from the Construction

SP13: Management of Stone Debris and Soil Fills from the Construction		
SN	**Objectives to be Achieved**	**Description of Implemention**
1	Project Phase	Construction Phase of the Project
2	Locations require to be controlled	▪ Digging-Pumping up of soil from the construction area and temporary filling it up outside the construction area, ▪ Areas of sandstone, soil and stone fills
3	Issues related to the social and natural environment	▪ Cause dusts and air pollution, ▪ Sedimentation and erosion in rainy season, causing contaminated water into the natural water souces,
4	Control/Management of Impact Mitigation Measures.	▪ Soil, stone and sandstone fills must be placed on a flat land, area with no risk of landslides in rainy season, shall not be placed at steep slope or near streams and creeks, ▪ The excavated and pumped soil from the construction areas must be compactly refilled after cosntruction, ▪ The soil and stone fills, when not use in the construction, must have a levelling of the surface, planting of grasses and vegetations to cover in order to prevent erosion,

SP13: Management of Stone Debris and Soil Fills from the Construction		
SN	**Objectives to be Achieved**	**Description of Implemention**
		▪ Do not fill up stone and soil in agricultural area or private land, unless permitted or agreed.
5	Monitoring and Evaluation Methods.	The environmental unit of the project and of the state sector must conduct field monitoring on a regular basis, especially during rainy season. The monitoring must based on the specified management plan and the mitigation measures.
6	Period of Implementation.	Pay attention to the management and monitoring during the project construction, as there will be digging and pumping of soil from the construction area to carry out the foundation construction.
7	Frequency of the Monitoring	The monitoring shall be conducted by the Project Environmental Unit every month. The state sector environmental unit shall conduct field monitoring at least once every 3 months.
8	Training	The environmental unit of the project shall provides traning for the staffs and workers, especially the parties doing earthworks and transportation of soil, stone and soil filling in order for them to be responsible to the tasks, to strictly comply with the mitigation measures.
9	Resonspible Parties	▪ The construction's contractor shall be responsible for the management measures on soil-stone mining for construction; ▪ The construction's contractor (Director of the Company) shall certify the the soil-stone mining and filling, ▪ The construction's contractor must create its Environmental Management Unit within the company; this unit shall be charge with internal monitoring for reporting to the relevant State agencies.
11	Budget Expenditure.	The budget expenditure for the monitoring conducted by the relevant State agencies shall be taken charge by the project developer who will be responsible and provide as specified in this ESMMP-CP Report. The budget for the consulting company is up to agreement between the project and the consultant.

3.8.14 Sub-Plan SP14: Control of Traffic Entering – Exiting the Project Area

SP14: Control of Traffic Entering – Exiting the Project Area		
SN	**Objectives to be Achieved**	**Description of Implemention**
1	Project Phase	Construction Phase
2	Location requiring the management	Access roads of the project including the highway that the project has used for transportation.
3	Issues related to social and natural environment.	During the construction phase, there will be many construction activities which are the components of the project and may take not less than 3 years to complete all the construction works, such as: construction of tower foundations and transmission line sub-station, construction of camps and facilities of the project, construction of roads and transmission line route. All these construction activities will cause impact to the general transportation and traffic system on public road and other roads that the project will use for traffic and transport of construction materials.
4	Potential impacts from the project traffic/ transportation activities.	▪ Transportation of heavy load without leading officer vehicle, driving with excessive speed and neglecting traffic rules; ▪ Emission of air pollution caused by transportation of materials if there is no maintenance of vehicles and no spraying of water on red-dirt road, especially during the dry season; ▪ Transport will cause impact to the traffic of the local people, such as: slow traffic due to the process of transport vehicles running to and from the project.
5	Control/ Management of Impact Mitigation Measures.	▪ Contact and coordinate with the Ministry of Public Works and Transport, the Provincial Department of Public Works and Transport and the District Office of Public Works and Transport and the relevant authorities for providing facilities in the transportation of equipment and machinery to the construction sites of the project; ▪ Avoid transporting the equipment and machinery for the installation of wind turbines during rush hours (7:00 – 8:00 and 17:00 – 18:00); ▪ Provide training to drivers for transport of construction materials or transport of construction workers to ensure that they strictly follow the traffic rules; ▪ Limit the speed of vehicles running within the construction area not to exceed 30-40 km/hour;

SP14: Control of Traffic Entering – Exiting the Project Area		
SN	**Objectives to be Achieved**	**Description of Implemention**
		▪ Control the truck load to ensure compliance with applicable standards or law in order to prevent damage to the road; ▪ Organize the traffic system in the project area and provide staff to supervise vehicles arriving to and leaving the construction area; ▪ Make advance announcement to the public and notification to relevant authorities for information in case it is required to close the road for transportation of large equipment, so that the villagers could be able to use alternative routes. This is to prevent the potential occurrence of accident. ▪ It is required to undertake the maintenance and check the condition of the machine, vehicles and equipment every time before use to ensure safety in transportation. ▪ All drivers must have driving license in accordance with assigned vehicles. ▪ A survey of road and area must be performed prior to transportation including the design for improving the road by the transport engineering team to ensure safety in transportation. ▪ Provide a coordinating team in case of occurrence of accident during the transportation of equipment to ensure that the problem will be solved in a timely manner. ▪ Attach the traffic signs along the transportation route, especially at the cross-roads, curving road, side road, village areas. ▪ Comply with the Law on Road Transportation (No. 036/NA, dated 12 December 2012).
6	Monitoring and Evaluation Methods.	The Project Environmental Unit and the Environmental Unit of the relevant State agency must conduct field monitoring regularly, especially during the rainy season or during the period of heavy transportation. The monitoring must based on the mitigation management and monitoring plan specified above and on applicable laws, regulations and other legislations. In case of occurrence of accident, action shall be taken to resolve it and lesson shall be learned to prevent the repetition of the case.

SP14: Control of Traffic Entering – Exiting the Project Area		
SN	**Objectives to be Achieved**	**Description of Implemention**
7	Implementation period.	Pay attention to the management and monitoring during the period of transportation of wind turbine equipment, because in this period, there will be a large number of transportation and traffic to and from the project to serve the construction activities.
8	Frequency of monitoring.	The Project Environmental Unit must conduct the monitoring on a monthly basis. Whereas the Environmental Unit of the relevant State agency shall conduct the monitoring at least once in every 3 months (as prescribed in the EMMP Report).
9	Training.	The Project Environmental Unit shall provide training to staff and workers, especially those who are in charge of transportation & traffic work to ensure that they strictly comply with the traffic impact mitigation measures. In addition, training shall be provided to environmental staff to enable them to have the understanding about the environmental problems that may arise from traffic.
10	Responsible agencies.	▪ The construction's contractor of the project shall be responsible for the traffic and transportation management/control measures; ▪ Establish its own Environmental Management Unit within the company. This unit shall be charge with internal monitoring for preparing the report to the relevant State agencies.
11	Budget expenditure.	▪ The budget expenditure for the implementation of the impact mitigation measures shall be taken charge by the project owner/contractor who are responsible for the budget and the implementation by themselves. ▪ The budget expenditure for the monitoring conducted by the relevant State agencies shall be taken charge by the project developer who will be responsible and provide as specified in this ESMMP-CP Report.

3.8.15 Sub-Plan SP15: Training and Awareness Building on Environment

SP15: Training and Awareness Building on Environment		
SN	**Objectives to be Achieved**	**Description of Implemention**
1	Project Phase	Construction Phase of the Project
2	Target groups which are required to	▪ Staff and workers who work for the project;

SP15: Training and Awareness Building on Environment		
SN	**Objectives to be Achieved**	**Description of Implemention**
	received training and awareness building.	▪ Village peoples residing in the proximity area of the project; ▪ Pupils/students, children of the people in the proximity area of the project.
3	Natural and social environment required for the training.	▪ Disseminate the law and regulations and other legal instruments relating to the environment; ▪ Protection of natural environment (forest and plant species, fish and aquatic animals, ecosystem); ▪ Health and safety; ▪ Control of dirty water and disposal of wastes from the construction and from daily usage.
4	Causes of potential impacts.	▪ Staff and workers or group of persons and people living in the project surrounding areas have no knowledge and understanding about the protection of environment; ▪ Having knowledge and understanding, but lack of awareness; being negligent and doing intentionally without caring about the consequential impacts; perform, in hiding, improper dumping or disposal, such as: dumping the wastes disorderly, piling the wastes at the side of the river and in the proximity of the residential place, releasing sewage to the water sources, creating the toilet near the side of the river or toilet without treatment tank; ▪ Neglecting health and sanitation, causing occurrence of illness and contagious diseases to groups of workers and staff and community in the project surrounding areas; ▪ Staff and workers as well as people in surrounding areas are negligents and intentionally engaged in illegal logging and hunting, violating and disobeying the rules of the project, not complying with the laws, regulations and other legislations issued by the State.
5	Control/ Management of awareness building-related Mitigation Measures.	The implementation of the control/management of impact mitigation measures in relation to the environmental training and awareness-building shall be based on the mitigation measures prescribed in various topics of the sub-plans, from SP1 to SP14. All staff and workers as well as people in surrounding areas must be aware and have the conscience about the natural and social environment, must be responsible for their own duties and tasks during the various phases of the project.

SP15: Training and Awareness Building on Environment		
SN	**Objectives to be Achieved**	**Description of Implemention**
		People who are qualified to give training to staff and workers including the people shall be: ▪ The specialized technical staff who have the experiences and indept knowledge and understanding of each environmental topic of the sub-plans (SP) to provide training to various groups of persons who directly and indirectly involve in this development project; ▪ In addition, staff supervisors, workers foreman are also able to provide training and awareness-building to their members/subordinates, such as: the foreman must regularly provide training to workers who are to go to perform their work in each day, each week or each month, as necessary. For example, give the training to workers to enable them to have the awareness about the safety in their work; train them to wear safety suit until it becomes a normal practice.
6	Monitoring and evaluation method	In order to know whether this project has the training and awareness-building or not, it is required to apply the the method of monitoring and evaluation as follows: ▪ Review and examine the plan and read the mitigation measures relating to the project which are specified in the ESIA Report and the EMMP Report of the project. After that, conduct the inspection and observation the construction and actual implementation in order to find out whether the project or the construction's contractors have complied with the plan and measures fully or not or to what extent they have complied with the plan and measures; for examples, the construction of toilets, construction of treatment ponds, provision of equipment for wastes keeping are correct and suitable or not? ▪ Monitoring the allocation and preparation of personal and public protective equipment, such as: medical equipment, first-aid kits for using in incidental cases, including the fire fighting equipment and the personal protective equipment, whether they are prepared or not? ▪ Inspect the actual working behaviour of the workers, the livelihood of the workers and staff; observe who much they give attention to their health and safety? ▪ The inspection of certain environmental problems requires to use measurement tools and collection of

SP15: Training and Awareness Building on Environment		
SN	**Objectives to be Achieved**	**Description of Implemention**
		samples for analysis, such as: analysis of water quality samples, air quality samples and analysis of living things residing in the forest and river sources in the project area in order to find out whether they have received the impact or not? ▪ The examples of monitoring method mentioned above will indicate the success of the awareness-building tasks of the project.
7	Implementation period.	The Project Environmental Unit is required to conduct the monitoring on a monthly basis; whereas the Environmental Unit of the State agencies shall conduct the monitoring at least once in every three or six months as specified in the ESMMP-CP Report of the project.
8	Legal and Environmental Standards References.	▪ Law on Environmental Protection, 2012; ▪ Law on Forestry (2019); ▪ Law on Wildlife and Aquatic Animals (No. 07/NA, 2008); ▪ Law on Hygiene, Disease Prevention and Health Promotion (amended) No. 73/NA, 2019; ▪ Law on Water and Water Resources, 2017; ▪ National Environmental Standards No. 81/GOV, 2017.
9	Responsible agencies.	▪ The construction's contractors of the project shall be responsible for building the awareness for their own staff and workers; ▪ Establish their own Environmental Management Unit within the company. This unit shall be charge with internal monitoring for preparing the report to the relevant State agencies.
10	Budget expenditure.	▪ The budget expenditure for the implementation of the impact mitigation measures shall be taken charge by the project owner/contractor who are responsible for the budget and the implementation by themselves. ▪ The budget expenditure for the monitoring conducted by the relevant State agencies shall be taken charge by the project developer who will be responsible and provide as specified in this ESMMP-CP Report.

3.8.16 Sub-Plan SP16: Management of Health and Safety

SP16: Management of Health and Safety		
SN	**Objectives to be Achieved**	**Description of Implemention**
1	Project Phase	Construction Phase of the Project
2	Locations requirement the management	▪ Sites of construction of various components of the project; ▪ Sites of access road to the project and of project camps; ▪ Other sites related to the project.
3	Issues related to social and natural environment	▪ Health and safety of the staff and workers who work for the project; ▪ Health and safety of the people residing in nearby areas who pass in the project area; ▪ Safety of the biodiversity existing in the project area and in the project surrounding areas.
4	Project construction activities and operations that will cause potential impacts.	The health and safety impact during the construction phase of the project is significant and the risk of occurrence is very high. Apart from the potential impacts caused by air pollution, dust, noise and vibration, there are also the risks from working at high place and doing heavy work that require to be given attention, especially Workers who directly perform the construction work are exposed to high risk. The project development shall, therefore, give attention to suitable mitigation measures in order to reduce these risks.
5	Control/Management of Impact Mitigation Measures.	▪ Construction and installation of the wind turbine towers which have large size and a height of 110 m can pose the risk. Therefore, the contractor must strictly follow the technical procedure of the installation. The derrick and crane or machinery that will be used in the installation must be ensured of high level of safety. ▪ Provide the personal protective equipment to staff and workers according to the working environment, make sure that they wear the working suit properly, put safety boots, dust protection mask, ear plugs or earmuffs to protect from noise and vibration, helmet, goggles to protect from dispersion of stone and soil debris. ▪ Ensure that all machinery and vehicles receive maintenance and services in accordance with the maintenance schedule as instructed by the manufacturer. ▪ Provide regular training on work and use of machinery and equipment to workers to prevent the accident

SP16: Management of Health and Safety		
SN	**Objectives to be Achieved**	**Description of Implemention**
		and always organize training before performing the tasks, especially heavy tasks which have the risk to safety. ▪ Appoint a foreman to supervise the work and check the machinery and equipment to keep them in working condition and ensure high level of safety. ▪ Build the awareness to staff and workers to allow them to become conscious of safety in work by always putting personal protective equipment while working. ▪ Prepare the first-aid kit and prepare ambulance for transporting patient to emergency hospital of the project or transferring to the nearest public hospital in case of accident. ▪ Drivers who use project access road must be informed and warned to take precaution when driving through the villages situated at the road sides in order to ensure health and safety of the people residing in the vicinity of the project who use the same road. ▪ The project must have the policy of health and safety insurance for staff and workers in accordance with the regulations set out by the Ministry of Labour and Social Welfare.
6	Monitoring and Evaluation Methods.	▪ The unit involving with the monitoring and evaluation of all relevant parties shall review the mitigation measures relating to health and safety on environment and social impact in order to find out whether the project or the construction's contractors have complied with the mitigation measures or not? ▪ Observe along the access road to the project, whether the traffic signs are fully installed or not; and observe the quality of the construction of road, whether there are water drainage ditches and the erosion protection is ensured or not? ▪ In the construction sites, whether the warning signs are installed to communicate the danger of performing the work with risk to allow workers to take care of their health. ▪ In the residential places, whether there is sufficient provision of water for drinking and for use including facilities for hygiene and sanitation which are deemed necessary; ▪ Furthermore, the person in charge of monitoring must have the expertise in environment and in the field of

SP16: Management of Health and Safety		
SN	**Objectives to be Achieved**	**Description of Implemention**
		health and safety in order to be able to perform the monitoring and give effective advices to be used by the project or the construction's contractors for further improvement.
7	Period of Implementation.	During the project construction and operation phases, the Project Environmental Unit must conduct the monitoring on a monthly basis ; whereas the Environmental Unit of the State agencies must conduct the field monitoring at least once in every three months.
8	Trainings.	▪ Disseminate the information to the staff and workers as well as the people in the project surrounding areas by emphasizing and giving attention to their health and safety; ▪ Disseminate the laws and regulations on health care and safety related to construction; ▪ Provide training to staff and workers who directly perform the construction work to allow to become conscious of safety and always put safety equipment while on work.
9	Legal and Environmental Standards References.	▪ Law on Hygiene, Disease Prevention and Health Promotion (amended) No. 73/NA, 2019; ▪ Law on Labour (amended) No. 021/NA, dated 24 December 2013.
10	Responsible Agencies.	▪ The construction's contractor of the project shall be responsible for the measures of management/ control of health and safety of their staff and workers; ▪ Establish their own Environmental Management Unit within the company. This unit shall be charge with internal monitoring for preparing the report to the relevant State agencies.
11	Budget Expenditure.	▪ The budget expenditure for the implementation of the impact mitigation measures shall be taken charge by the project owner/contractor who are responsible for the budget and the implementation by themselves. ▪ The budget expenditure for the monitoring conducted by the relevant State agencies shall be taken charge by the project developer who will be responsible and provide as specified in this ESMMP-CP Report.

3.8.17 Sub-Plan SP17: Emergency Response Preparedness Plan

SP17: Emergency Response Preparedness Plan		
SN	**Objectives to be Achieved**	**Description of Implemention**
1	Project Phase	Construction Phase
2	Locations that require response preparedness to potential occurrence of emergency event.	▪ Sites of construction of various components of the project (tower foundation construction sites, sub-station and transmission line construction sites); ▪ Sites of access road to the project and of project camps; ▪ Other sites related to the project.
3	Issues related to emergency events.	▪ Emergency event that may occur to staff and workers who work directly for the project; ▪ Emergency event that may occur to the people living nearby who pass in the project area and may receive the accident; ▪ Emergency event that may occur to the natural environment existing in the project area and in the project surrounding areas, such as: flood, severe erosion, fire, etc.
4	Project construction activities and operations that will cause potential occurrence of emergency event.	▪ Staff and workers who perform heavy work, work at high place which have the risk of occurrence of accident easily; ▪ Vehicles transporting construction materials which run on the public road, access road, curving area, slope area that may cause accident easily; ▪ Emergency event may occur from sickness of staff and workers in their daily living and in case it is necessary to get the treatment urgently.
5	Control/Management of Mitigation Measures relating to the emergency response preparedness of the project.	The project must have the emergeny response preparedness plan during the construction phase: ▪ Have the vehicle and medical equipment and permanent medical staff for responding to potential emergency event caused by working with risk and so on; ▪ Prepare and install extinguishers at residential place, inflammable materials storage; ▪ Heavy machinery, such as: crane, backhoe-bulldozer, transport vehicles, must be used with precaution; when parking or stopping, it is required to ensure the stability to prevent the sliding or falling; ▪ Install the loud speaker system, sound system for giving warning to staff and workers to know and escape the danger in case of occurrence of emergency event;

SP17: Emergency Response Preparedness Plan		
SN	**Objectives to be Achieved**	**Description of Implemention**
		▪ Make the arrangement and install other necessary danger warning systems.
6	Monitoring and Evaluation Methods.	▪ Conduct the monitoring of the construction sites and production operation places whether there is the preparation and installation of safety equipment to respond to emergency event or not; ▪ Enquire and inspect each construction site, whether it has the vehicle and medical equipment for providing first-aid treatment in case of emergency.
7	Training.	▪ Disseminate the information to the staff and workers as well as the people in the project surrounding areas to allow them to understand the emergency warning system; ▪ Provide the training to staff and workers to allow them to know how to use the protection tools or equipment, such as: use of extinguisher, use of water hose or pipe for fire fighting.
8	Legal and Environmental Standards References	▪ Law on Environmental Protection, 2012; ▪ Law on Construction, 2009; ▪ Law on Hygiene, Disease Prevention and Health Promotion (amended) No. 73/NA, 2019; ▪ National Environmental Standards No. 81/GOV, 2017.
9	Responsible agencies.	▪ The construction's contractor of the project shall be responsible for the measures of management/ control for emergency response; ▪ Establsih their own Environmental Management Unit within the company. This unit shall be charge with internal monitoring for preparing the report to the relevant State agencies.
10	Budget expenditure.	▪ The budget expenditure for the implementation of the impact mitigation measures shall be taken charge by the project owner/contractor who are responsible for the budget and the implementation by themselves. ▪ The budget expenditure for the monitoring conducted by the relevant State agencies shall be taken charge by the project developer who will be responsible and provide as specified in this ESMMP-CP Report.

Table 23: Environmental Quality Monitoring Measures during the Construction Phase

Activities and The Parties Responsible for the Monitoring Implementation	Period of Implementation	Budget (USD)
Project Owner/Construction Contractor		
1. Soil erosion: Observe the condition of the area to ensure to take into account the erosion that will happen.	– Contractors conduct daily monitoring; – Project Environmental Unit conducts monthly monitoring.	10,000
2. Dust and air quality: Observe the construction activities along the route, is there watering, maintenance of construction machinery to be in working condition, there is garbage burning or not and collect air quality samples every 6 months, namely: TSP, PM10, SO2, NO2 and CO2.	– Contractors conduct daily monitoring; – Project Environmental Unit conducts monthly monitoring.	10,000
3. Noise: Collect samples every 6 months by measuring the noise level in the form of Leq-24 hours, Leq-1 hours, Lmax and L90-5 minutes.	– Contractors conduct daily monitoring; – Project Environmental Unit conducts monthly monitoring.	10,000
4. Water quality: Observe and monitor the water quality treatment system in accordance with the standard and whether can truly treat the contaminated water or not, maintenance, water collection 6 points for 6 months and etc.	– Contractors conduct daily monitoring; – Project Environmental Unit conducts monthly monitoring.	15,000
5. Wastes: The residents of the staff and workers is clean or not, there are waste bins in the camp where the project construction site or not, and there are garbage transport vehicles on a regular basis or not.	– Contractors conduct daily monitoring; – Project Environmental Unit conducts monthly monitoring.	15,000
6. Clearance forest areas and plant species for construction: Observe that the clearance of forests and plant species lie within the limits necessary for real construction or not. Monitor the designed standards to prevent soil erosion	– Contractors conduct daily monitoring; – Project Environmental Unit conducts monthly monitoring.	10,000

7. Wildlife Management and Conservation: Field observations ensure that all staff and workers are trained on environment issue. Also monitor whether all parties are involved in the management and conservation of wildlife. Establish patrols along the access road to prevent illegal logging and poaching.	– Contractors conduct daily monitoring; – Project Environmental Unit conducts monthly monitoring.	10,000
8. Maintenance and repair of construction machinery: Inspect and observe the storage area of waste oil, motor oil and other oils used. Are the containers stored and are the oil reused or disposed of recklessly?	– Contractors conduct daily monitoring; – Project Environmental Unit conducts monthly monitoring.	10,000
9. Traffic/Transportation on the road to the project construction area: Observe the actual traffic route. To ensure that along the route there are traffic warning signs installed wherever necessary along the route, especially speed limit signs. Check that the truck is not overloaded, the truck has been technically inspected or not. Monitor other security aspects.	– Contractors conduct daily monitoring; – Project Environmental Unit conducts monthly monitoring.	10,000
10. Project Safety (Environmental Training for Workers. Residential Area. Health Protection Plan): monitor whether all staff and workers have been trained in safety. Is the housing clean, well-equipped, and well-maintained?	– Contractors conduct daily monitoring; – Project Environmental Unit conducts monthly monitoring.	10,000
11. Labor management: Observe the cleanliness of acommodation, maintenance, cleanliness of kitchens and bathrooms, drainage systems and etc.	– Contractors conduct daily monitoring; – Project Environmental Unit conducts monthly monitoring.	5,000
12. Personal safety equipment: Make sure that all employees and workers pay attention to wearing personal protective equipment completely. In the past, have there been people who have been harmed or killed by negligence who did not wear protective clothing while performing their duties?	– Contractors conduct daily monitoring; – Project Environmental Unit conducts monthly monitoring.	5,000

State Organisations		
1. Monitor the implementation of the mitigation measures of the project, the occurred impacts, implementation measures and measures resolving the occurred impacts	– Central Level, 1 time/year – Provincial Level, 3 times/year – District Level, 3-4 times/year	Displayed in the section 3.9.2 below
2. Implementation of the conditions specified in the Environmental Certificate		
3. Obligations Implementation and Budgets		
4. Monitor the implementation of the sub-plans in the environmental management		
5. Provide suggestions regarding the implementation of the social and environmental management works of the project		
6. Monitor the involvement of the project with the locals		

3.9 Environmental Monitoring and Management Budget

3.9.1 Environmental Monitoring and Management Budget of the Project Owner

According to the prediction of the potential social and environmental impacts, the project developer has estamited the budget for the social and environmental management and monitoring works implementation of the project as follows:

Table 24: Monitoring and Management Budget of the Project Owner (Construction Phase)

SN	Budget Description	Overall Budget (3 Years Construction Phase) (USD)	Responsible Parties
1	Management and Monitoring of Impacts on Air Quality, Loud noise and Vibration	30,000	Project Owner/Contractors are Responsible for the Budget and Implementation by themselves
2	Management and Monitoring of Soil Erosion and Water Quality	15,000	Project Owner/Contractors are Responsible for the Budget and Implementation by themselves
3	Garbages and Hazardous Wastes Disposal from the Construction	15,000	Project Owner/Contractors are Responsible for the Budget and Implementation by themselves
4	Workers Camps Management	15,000	Project Owner/Contractors are Responsible for the Budget and Implementation by themselves
5	Health and Safety of the Workers and Community	15,000	Project Owner/Contractors are Responsible for the Budget and Implementation by themselves
6	Environmental Training	10,000	Project Owner/Contractors are Responsible for the Budget and Implementation by themselves
10	Emergencies Response Budget	50,000	Project Owner/Contractors are Responsible for the Budget and Implementation by themselves
Total Budget		**150,000 US Dollar**	

3.9.2 Budget for the Monitoring and Capacity Building for the State Sectors

The provision of the budget for the environmental monitoring works mentioned is of great signifance. In order for the impacts assessment works to happen, for the monitoring, in order to be in accordance with environmental management plan mentioned above. The budget requires for the monitoring tasks of the prediction regarding the potential impacts and the scale of the impacts of the relevant sectors throughout the construction and operation phase. The project has agreed to provide the budget for the monitoring at a total of 514,008 US Dollar (Wind Farm $383,848 and Tranmission Line $130,160). Among these, the budget for the monitoring and capacity building during the 3 years construction phase of the project is 141,258 US Dollar. The description are shown in environmental

management and monitoring plan of the previously certified Environmental Impact Assessment report of the Project.

Chapter 4: Conclusion and Recommendations

4.1 Summary

The Social and Environmental Management and Monitoring plan of the 600 MW Monsoon Wind Farm Project in Dak Cheung District, Sekong Province and Sanxay District, Attapeu Province of the Monsoon Wind Power Co.,Ltd will emphasize on the management and monitoring on the potential social and environmental impacts from the project activities during the construction phase, as well as placing measures to prevent, address, mitigate, manage and monitor the potential impacts during the construction phase include:

- ✓ Impact on air quality causes by particulate matter from the land clearance activities for the construction of access roads, wind turbine towers area, transmission line, stations, components construction activities and from trucks transporting through dirt roads during the construction
- ✓ Loud noise and vibration cause by the project construction activities
- ✓ Impact on natural water quality, especially surface water quality in the project vicinity that is caused by the erosion/sedimentation of soil and contaminated water from the workers camps
- ✓ Wastes from the construction, staffs and workers of the project
- ✓ Health and safety of the staffs, workers and community who may receive accidents during the working period, which may cause injury and loss of life, including causing career related diseases
- ✓ Traffic accidents of the project's vehicles applied in the materials and equipments transportation during the construction phase and others along roads through the community area,
- ✓ Impacts on the socio-economic, traditional and landscape components during the project construction phase.

4.2 Recommendations for the Project

In order for the implementation of the environmental management and monitoring during the construction phase achieves the targets, the 600 MW Monsoon Wind Farm Project in Dak Cheung District, Sekong Province and Sanxat District, Attapeu Province of the Monsoon Wind Power Co., Ltd, must pay attention to the implementation as follows:

- ✓ Ensure the implementation of every prevention, management and impact mitigation measures that are completely and effectively determined in this ESMMP – CP report, including the overall ESMMP report of the project.
- ✓ Ensure a sufficient budget for the implementation of the prevention, management and mitigation measures of the potential social and environmental impacts throughout the construction phase of the project
- ✓ Ensure to not cause severe social and environmental imapcts during the construction phase

- ✓ Cooperate with and facilitate state sectors in the monitoring and implementation of the social and environmental management and monitoring wokrs of the project throughout the construction phase.
- ✓ Prior to the commencement of the construction and during the project construction, must closely coordinate with the local authorities, such as Sekong Province, Attapeu Province, Dak Cheung District, Sanxay District, and the 31 village authorities in the project area vicinity.
- ✓ Ensure the coordination and communication with village authorities regarding the operation plan and project activities throughout the construction phase.
- ✓ Ensure the receiving and addressing of grievance from the surrounding community throughout the construction phase.

Annex-1: Field Inspection and Consultation Meeting to Pass the Social and Environmental Management and Monitoring Plan during the Construction Phase Report (ESMMP-CP) of the 600 MW Wind Farm Project, dated 5-6 January 2023.






Annex-2: Consultation Meeting Minute, dated 6 January 2023.

ສາທາລະນະລັດ ປະຊາທິປະໄຕ ປະຊາຊົນລາວ
ສັນຕິພາບ ເອກະລາດ ປະຊາທິປະໄຕ ເອກະພາບ ວັດທະນະຖາວອນ

ບົດບັນທຶກ

ກອງປະຊຸມປຶກສາຫາລື ເພື່ອຜ່ານແຜນຄຸ້ມຄອງ ແລະ ຕິດຕາມ ກວດກາສິ່ງແວດລ້ອມ ໄລຍະກໍ່ສ້າງ (EMMP-CP) ຂອງ ໂຄງການຜະລິດໄຟຟ້າຈາກກັງຫັນລົມ 600 ເມກາວັດ ເມືອງດາກຈຶງ ແຂວງເຊກອງ ແລະ ເມືອງຊານໄຊ ແຂວງອັດຕະປື ສະບັບເດືອນທັນວາ 2022 ໃນຄັ້ງວັນທີ 6 ມັງກອນ 2023 ທີ່ແຂວງເຊກອງ

ໃນວັນທີ 6 ມັງກອນ 2023 ກົມສິ່ງແວດລ້ອມ ໄດ້ສົມທົບກັບ ພະແນກຊັບພະຍາກອນທຳມະຊາດ ແລະ ສິ່ງ ແວດລ້ອມ ແຂວງເຊກອງ, ແຂວງອັດຕະປື ແລະ ບໍລິສັດ ມອນຊຸນ ວິນພາວເວີ ຈຳກັດ ຈັດກອງປະຊຸມປຶກສາຫາລື ເພື່ອຜ່ານແຜນ ຄຸ້ມຄອງ ແລະ ຕິດຕາມ ກວດກາສິ່ງແວດລ້ອມ ໄລຍະກໍ່ສ້າງ (EMMP-CP) ຂອງໂຄງການຜະລິດໄຟຟ້າຈາກກັງຫັນລົມ 600 ເມກາວັດ ຢູ່ເມືອງດາກຈຶງ ແຂວງເຊກອງ ແລະ ເມືອງຊານໄຊ ແຂວງອັດຕະປື ສະບັບເດືອນທັນວາ 2022 ໂດຍການເປັນ ປະທານຮ່ວມຂອງທ່ານ ອໍລະທັນ ບຸນຍະພາລົມ, ຮອງຫົວໜ້າກົມສິ່ງແວດລ້ອມ, ທ່ານ ບຸນລິດ ສັກບົວວົງ, ຮັກສາການຫົວໜ້າ ພະແນກຊັບພະຍາກອນທຳມະຊາດ ແລະ ສິ່ງແວດລ້ອມ ແຂວງເຊກອງ, ທ່ານ ໄວສອນ ມິດສຸວັນ, ເຈົ້າເມືອງດາກຈຶງ ແລະ ທ່ານ ສາຍທະລາ ໄຊທິດາ, ຮອງເຈົ້າເມືອງຊານໄຊ ຊຶ່ງມີຜູ້ຕາງໜ້າຈາກພາກສ່ວນກ່ຽວຂ້ອງຂັ້ນສູນກາງ, ແຂວງ, ເມືອງ, ເຈົ້າຂອງໂຄງການ ເຂົ້າຮ່ວມທັງໝົດ 74 ທ່ານ (ລາຍຊື່ຜູ້ເຂົ້າຮ່ວມໄດ້ຄັດຕິດມາພ້ອມນີ້).

ໃນກອງປະຊຸມ ໄດ້ຮັບຟັງການລາຍງານກ່ຽວກັບສະພາບລວມໂດຍຫຍໍ້ຂອງໂຄງການ, ຂໍ້ມູນດ້ານເຕັກນິກຂອງໂຄງການ ລວມທັງເນື້ອໃນແຜນຄຸ້ມຄອງ ແລະ ຕິດຕາມ ກວດກາສິ່ງແວດລ້ອມ, ກິດຈະກຳ ແລະ ມາດຕະການແກ້ໄຂຫຼຸດຜ່ອນຜົນກະທົບ, ບັນດາແຜນຍ່ອຍຕ່າງໆ ແລະ ບັນຫາອື່ນໆທີ່ຄາດວ່າຈະເກີດຂຶ້ນຈາກການກໍ່ສ້າງໂຄງການ ຈາກເຈົ້າຂອງໂຄງການ ແລະ ບໍລິສັດທີ່ປຶກສາ. ຫຼັງຈາກນັ້ນ ທີ່ປະຊຸມກໍ່ໄດ້ມີການປຶກສາຫາລື ແລະ ປະກອບຄຳຄິດເຫັນຕໍ່ແຜນຄຸ້ມຄອງ ແລະ ຕິດຕາມ ກວດກາສິ່ງແວດລ້ອມໂຄງການດັ່ງກ່າວ ຊຶ່ງມີຫຼາຍຄຳຖາມ ແລະ ຄຳເຈາະຈີ້ມທີ່ກອງປະຊຸມໄດ້ຍົກຂຶ້ນນັ້ນ ເຈົ້າຂອງໂຄງການກໍ່ໄດ້ມີການອະທິບາຍ ແລະ ຊີ້ແຈງຄືນຢ່າງລະອຽດ ແລະ ຈະແຈ້ງສົມຄວນ. ແຕ່ຢ່າງໃດກໍ່ຕາມເພື່ອຮັບ ປະກັນໃຫ້ເນື້ອໃນແຜນຄຸ້ມຄອງ ແລະ ຕິດຕາມ ກວດກາສິ່ງແວດລ້ອມໄລຍະກໍ່ສ້າງ ມີເນື້ອໃນຄົບຖ້ວນສົມບູນ, ກອງປະ ຊຸມໄດ້ເຫັນດີເປັນເອກະພາບກັນ ສະເໜີໃຫ້ເຈົ້າຂອງໂຄງການ ນຳເອົາຄຳເຫັນກອງປະຊຸມໄປປັບປຸງແຜນດັ່ງກ່າວຄືນອີກດັ່ງລຸ່ມນີ້:

1. ໃຫ້ເຈົ້າຂອງໂຄງການໃຫ້ບຸລິມະສິດແຮງງານທ້ອງຖິ່ນ ເພື່ອເຂົ້າເຮັດວຽກນຳໂຄງການ ໂດຍໃຫ້ສົມທົບກັບຂະແໜງແຮງງານ ແລະ ສະຫວັດດີການ ໃນການຈັດສັນແຮງງານ ແລະ ຄຸ້ມຄອງແຮງງານຕາມກົດໝາຍ ແລະ ລະບຽບການ;
2. ໃຫ້ເຈົ້າຂອງໂຄງການ ບຸລິມະສິດໃຫ້ກຳນົດແຜນຄວາມຕ້ອງການສະບຽງອາຫານໃຫ້ພະນັກງານກຳມະກອນ ໃນຊ່ວງໄລຍະກໍ່ສ້າງຖາຍໃຫ້ແຂວງ ແລະ ເມືອງໃນເຂດໂຄງການ ໃນການຜະລິດ ແລະ ສະໜອງເຄື່ອງອາຫານໃຫ້ແກ່ໂຄງ ການ ເພື່ອເປັນການສ້າງເສດຖະກິດຂອງປະຊາຊົນ;
3. ໃຫ້ເຈົ້າຂອງໂຄງການປະສານສົມທົບກັບຂະແໜງການທີ່ກ່ຽວຂ້ອງແຂວງ ແລະ ເມືອງ ເພື່ອປຶກສາລະອຽດກ່ຽວກັບການທົດແທນດິນປ່ຽນດິນ ເປັນຕົ້ນ: ໜອງປາ, ນາ, ສວນ ແລະ ອື່ນ ລວມທັງກຳນົດແຜນພັດທະນາ ແລະ ສົ່ງເສີມອາຊີບໃຫ້ປະຊາຊົນທີ່ໄດ້ຮັບຜົນກະທົບ;
4. ໃຫ້ເຈົ້າຂອງໂຄງການ ພິຈາລະນາສະໜອງທຶນການສຶກສາໃຫ້ແກ່ນັກຮຽນທີ່ຮຽນຈົບ ມ7 ຂອງເມືອງ ທີ່ໂຄງການຕັ້ງຢູ່ເພື່ອໄດ້ໄປຮຽນວິຊາຊີບ ແລ້ວສາມາດມາເຮັດວຽກກັບໂຄງການໄດ້;
5. ໃຫ້ເຈົ້າຂອງໂຄງການກວດກາລະອຽດຄືນ ກ່ຽວກັບ ຜົນກະທົບຈາກເສົາກັງຫັນລົມ ເຂດແຂວງອັດຕະປື ເນື່ອງຈາກວ່າຂໍ້ມູນທີ່ທາງແຂວງຮັບຮອງ ແລະ ຂໍ້ມູນທີ່ເຈົ້າຂອງໂຄງການກຳນົດໃນແຜນບາງຈຸດຍັງບໍ່ຕົງກັນ;

6. ໃຫ້ເຈົ້າຂອງໂຄງການ ສົມທົບກັບກົມຊັບພະຍາກອນນ້ຳ ສ້າງແຜນການນຳໃຊ້ນ້ຳເຂົ້າໃນກິດຈະກຳຂອງໂຄງການ ຕື່ມ.

ປະທານສະຫຼຸບ:

ຜ່ານການດຳເນີນກອງປະຊຸມ ເຫັນວ່າ ໄດ້ບັນລຸຕາມຈຸດປະສົງ ຄາດໝາຍທີ່ວາງໄວ້ ແລະ ການປະກອບຄຳຄິດຄຳເຫັນ ຂອງຂະແໜງການທີ່ກ່ຽວຂ້ອງສູນກາງ ແລະ ທ້ອງຖິ່ນ ລວມທັງການຊີ້ແຈງຂອງເຈົ້າຂອງໂຄງການ ໂດຍລວມເຫັນດີເປັນເອກະພາບຕໍ່ການດຳເນີນໂຄງການ ແລະ ການກຳນົດມາດຕະການແກ້ໄຂ ແລະ ຫຼຸດຜ່ອນຜົນກະທົບຕໍ່ສິ່ງແວດລ້ອມສັງຄົມ ແລະ ທຳມະຊາດ ໃນໄລຍະກໍ່ສ້າງໂຄງການ ແຕ່ໃຫ້ເບິ່ງຄືນຕື່ມອີກໃຫ້ກຳນົດທຸກກິດຈະກຳທີ່ຈະມາໃຫ້ເກີດຜົນກະທົບເປັນຕົ້ນ: ການນຳໃຊ້ເສັ້ນທາງ, ການປັບປຸງເສັ້ນທາງ, ການຂົນສິ່ງວັດສະດຸເຂົ້າເຂດກໍ່ສ້າງ, ເຂດບໍ່ດິນ-ບໍ່ຫີນ, ການຄຸ້ມຄອງສິ່ງເສດເຫຼືອທົ່ວໄປ, ສິ່ງເສດເຫຼືອອັນຕະລາຍ, ການເຊາະເຈື່ອນ ແລະ ການຕິກຕະກອນຂອງດິນ, ການກຳຈັດສິ່ງເສດເຫຼືອ ແລະ ອື່ນໆ ລວມທັງ ບໍລິສັດ ຕ້ອງສະແດງໃຫ້ເຫັນບັນດາມາດຕະການທີ່ຕິດພັນກັບແຕ່ລະກິດຈະກຳ ພ້ອມນັ້ນ ໃຫ້ເຈົ້າຂອງໂຄງ ການ ນຳເອົາຄຳຄິດ ຄຳເຫັນທີ່ຂະແໜງການກ່ຽວຂ້ອງຈາກສູນກາງ ແລະ ທ້ອງຖິ່ນ ທີ່ໄດ້ຍົກຂຶ້ນໃນກອງປະຊຸມຄັ້ງນີ້ ໄປພິຈາ ລະນາ ແລະ ປັບປຸງແຜນດັ່ງກ່າວໃຫ້ສົມບູນ ສຳລັບ ຄຳເຫັນລະອຽດ ກົມສິ່ງແວດລ້ອມ ຈະນຳສົ່ງເປັນທາງການໃຫ້ອີກພາຍຫຼັງສຳເລັດກອງປະຊຸມ ພາຍຫຼັງປັບປຸງແລ້ວ ໃຫ້ນຳສົ່ງມາຍັງ ກົມສິ່ງແວດລ້ອມ ທົບທວນສຸດທ້າຍ ແລະ ສະເໜີການນຳ ກະຊວງຊັບພະຍາກອນທຳມະຊາດ ແລະ ສິ່ງແວດລ້ອມ ພິຈາລະນາຮັບຮອງຕາມລະບຽບການ.

ກອງປະຊຸມໄດ້ປິດລົງຢ່າງເປັນທາງການຂອງວັນດຽວກັນ.

ທີ່ແຂວງເຊກອງ, ວັນທີ 6 ມັງກອນ 2023

ບໍລິສັດ ມອນຊູນ ວິນ ພາວເວີ ຈຳກັດ

NAROT BOAKADOHN

ຜູ້ບັນທຶກ

ນ. ມະນີວອນ ຄົງສະຫວັນ

ປະທານກອງປະຊຸມ

ອໍລະທັນ ບຸນຍະພາລົມ

Annex-3: Consultation Meeting regarding the Improvement of the Environmental Management and Monitoring Plan during the Construction Phase (ESMM-CP) of the 600 MW Wind Farm Project, dated 23 January 2023.

ສາທາລະນະລັດ ປະຊາທິປະໄຕ ປະຊາຊົນລາວ
ສັນຕິພາບ ເອກະລາດ ປະຊາທິປະໄຕ ເອກະພາບ ວັດທະນະຖາວອນ

ບົດບັນທຶກ

ກອງປະຊຸມປຶກສາຫາລື ກ່ຽວກັບ ການປັບປຸງແຜນຄຸ້ມຄອງ ແລະ ຕິດຕາມ ກວດກາສິ່ງແວດລ້ອມ ໄລຍະກໍ່ສ້າງ ຂອງ ໂຄງການຜະລິດໄຟຟ້າຈາກກັງຫັນລົມ 600 ເມກາວັດ ເມືອງດາກຈຶງ ແຂວງເຊກອງ ແລະ ເມືອງຊານໄຊ ແຂວງອັດຕະປື

ໃນວັນທີ 23 ມັງກອນ 2023 ພະແນກຄຸ້ມຄອງສິ່ງແວດລ້ອມພະລັງງານ ໃນນາມຕາງໜ້າກົມສິ່ງແວດລ້ອມ ໄດ້ ລົມທຶບກັບ ບໍລິສັດ ມອນຊຸນ ວິນພາວເວີ ຈຳກັດ ແລະ ບໍລະສັດທີ່ປຶກສາສິ່ງແວດລ້ອມ ປະຊຸມປຶກສາຫາລືເພື່ອປັບປຸງ ຜ່ານ ແຜນຄຸ້ມຄອງ ແລະ ຕິດຕາມ ກວດກາສິ່ງແວດລ້ອມ ໄລຍະກໍ່ສ້າງ (ESMMP-CP) ຂອງໂຄງການຜະລິດໄຟຟ້າຈາກກັງຫັນ ລົມ 600 ເມກາວັດ ເມືອງດາກຈຶງ ແຂວງເຊກອງ ແລະ ເມືອງຊານໄຊ ແຂວງອັດຕະປື ໂດຍການເຂົ້າຮ່ວມຂອງ ທ່ານ ນາງ ມະນີວອນ ຖີງສະຫວັນ, ຫົວໜ້າພະແນກຄຸ້ມຄອງສິ່ງແວດລ້ອມພະລັງງານ, ຄະນະພະແນກ, ວິຊາການພາຍໃນພະແນກ, ຕາງໜ້າເຈົ້າຂອງໂຄງການ ແລະ ບໍລິສັດທີ່ປຶກສາເຂົ້າຮ່ວມ (ລາຍຊື່ຜູ້ເຂົ້າຮ່ວມໄດ້ຄັດຕິດມາພ້ອມນີ້). ໃນກອງປະຊຸມ ໄດ້ເອ ກະພາບກັນເພື່ອໃຫ້ເຈົ້າຂອງໂຄງການປັບປຸງບາງຈຸດດັ່ງນີ້:

1. ໜ້າທີ 6 ຂໍ້ 1.6 ໃຫ້ເພີ່ມຄຳໝາຍວ່າດ້ວຍການຈັດສັນພຸມລຳເນົາ ແລະ ອາຊີບ ແລະ ປັບປຸງ ຂໍ້ຕົກລົງວ່າດ້ວຍການ ຮັບຮອງ ແລະ ປະກາດໃຊ້ມາດຕະຖານເຕັກນິກໄຟຟ້າຂອງລາວ ສະບັບປີ 2014 ເປັນສະບັບປີ 2018 ແລະ ດຳລັດວ່າ ດ້ວຍການປະເມີນຜົນກະທົບຕໍ່ສິ່ງແວດລ້ອມແບບລະອຽດ ສະບັບເລກທີ 21 ເປັນສະບັບເລກທີ 389;
2. ປະສານສົມທົບກັບກົມຊັບພະຍາກອນນ້ຳ ເພື່ອປຶກສາຫາລືກ່ຽວກັບການອະນຸຍາດການນຳໃຊ້ນ້ຳຂອງໂຄງການ;
3. ໃນພາ 2 ໃຫ້ເພີ່ມຂໍ້ໜຶ່ງສະເພາະ ກ່ຽວກັບ ຂໍ້ມູນຜົນກະທົບຕໍ່ສິ່ງແວດລ້ອມ ຈາກການຍ້າຍເສົາກັງຫັນລົມ ແລະ ສະຖານີໄຟຟ້າ ເຂົ້າໃນແຜນຄຸ້ມຄອງ ແລະ ຕິດຕາມ ກວດກາສິ່ງແວດລ້ອມ ໄລຍະກໍ່ສ້າງຂອງໂຄງການ.

ເຈົ້າຂອງໂຄງການຍິນດີ ນຳເອົາຄຳເຫັນດັ່ງກ່າວໄປປັບປຸງເຂົ້າໃນແຜນຄຸ້ມຄອງ ແລະ ຕິດຕາມ ກວດກາສິ່ງແວດລ້ອມ ໄລຍະກໍ່ສ້າງຂອງໂຄງການ ແລະ ພາຍຫຼັງສຳເລັດຈະນຳສົ່ງໃຫ້ກົມສິ່ງແວດລ້ອມ ເພື່ອທົບທວນ ແລະ ພິຈາລະນາຮັບຮອງຕາມ ລະບຽບການ.

ກົມສິ່ງແວດລ້ອມ, ວັນທີ 23 ມັງກອນ 2023

ບໍລິສັດ ມອນຊຸນ ວິນ ພາວເວີ ຈຳກັດ	ພະແນກຄຸ້ມຄອງສິ່ງແວດລ້ອມພະລັງງານ
NARUT BOAKAJORN	ນ. ມະນີວອນ ຖີງສະຫວັນ