

Environmental and Social Screening Report

*Emerald Energy and Organic Fertilizer Pvt Ltd
Pratappur Rural Municipality – 3, Nawalparasi*

Environmental and Social Impact:

The purpose of this checklist is to identify potential environment and social issues related to subproject.

(A) Project Background

1.	Name of Proposed Project	Waste to Energy Large Scale Biogas Subproject
2.	Subproject Location	Pratappur Rural Municipality – 3, Nawalparasi, Lumbini Province Coordinates: [27° 26' 10.99" N, 83° 46' 45.7" E]
3.	Subproject objectives	CNG and Fertilizer production
4.	Subproject Developer	Emerald Energy and Organic Fertilizer Pvt. Ltd.
5.	Contact Details	Name: Vineet Kasaudhan Phone: 9857030341 Email: Emeraldenergy7@gmail.com
6.	Brief description of the subproject	<p>The subproject will be Continuous Stirred Tank Reactor (CSTR) based biogas plant for the efficient production of biogas through the continuous digestion of organic waste with an anaerobic digester.</p> <p>The organic material such as agricultural waste, animal waste (cow dung, Poultry) manure, and plants material etc. will be used as feedstock in the subproject.</p> <p>This subproject aims to establish through the technical and financial support of GoN (AEPC) and World Bank to establish a sustainable and circular economy where organic waste is transformed into valuable energy and agricultural inputs, promoting environmental, social, and economic sustainability and resource efficiency.</p>
7.	Define project's boundaries and area of influence	<p><u>Area of Influence</u></p> <p>Somani village</p> <p>Khajura Khola</p> <p>E: Khajura Khola (approx. 125 m)</p> <p>W: Somani village (approx. 500 m)</p> <p>S: Thakurpur Village (approx. 600 m)</p> <p>N: Gidaha Village (approx. 1300 m)</p>
8.	Capacity or size of the subproject	2400 m ³

Environmental and Social Screening Report

*Emerald Energy and Organic Fertilizer Pvt Ltd
Pratappur Rural Municipality – 3, Nawalparasi*

9.	Relevant E&S national requirements (assessment, threshold limits etc.)	Technology service provider is Green Plant and is preparing the Initial Environmental Examination (IEE)
10.	Relevant E&S required as per ESMF of MGEAp and World Bank	Environmental and Social Impact Assessment (ESIA)
11.	Total Project Cost	NRs. 19,86,00,000 (Approx.)

(B) Social Screening Checklist

Potential Social Impacts				
SN	Screening Questions	Yes	No	Comments (Provide information)
1.	Permanent land acquisition	✓		The proposed land for the subproject is privately owned land. As the land is agricultural, developer cultivates seasonal crops on it. During the field visit on June 16-17, 2024, the proposed land was barren and not under cultivation.
2.	Temporary land acquisition		✓	Not required as the developer's private land is sufficient than required for the development of subproject
3.	Type of land Private land ✓ Public land Government land Leasehold land	✓		The proposed site for the subproject development is implemented in private land of developer.
4.	Type of land procurement Voluntary donation Involuntary acquisition Negotiation			The proposed land is privately owned
5.	Loss of productive land	✓		The land intended for the subproject is agricultural, where developer has been cultivating the seasonal crops. However, during the field visit the land was found to be uncultivated and left barren for the purpose of biogas subproject development.
6.	Impacts on livelihoods/ economic displacement?		✓	No such impacts is envisioned
7.	Impacts on ecosystem services for local		✓	As the land is private and the subproject

Environmental and Social Screening Report

*Emerald Energy and Organic Fertilizer Pvt Ltd
Pratappur Rural Municipality – 3, Nawalparasi*

	communities (e.g. fishing)?			development will not obstruct in the ecosystem services of local people.
8.	Is there any household need to be relocated?		✓	The nearest settlement from the proposed subproject site is approx. 500 m away, and there are no structures on the proposed land. The subproject development does require relocation of any household.
9.	Is the resettlement site environmentally and/or culturally sensitive?		✓	The subproject development does not require the resettlement
10.	Project's construction will cause any damage to the existing local roads system?		✓	Accessible via earthen road which is accessible throughout the year.
11.	Will project activities have adverse impact on school, drinking water supply system, other facilities?		✓	There is no drinking water supply or irrigation exist in the proposed subproject area. The nearest school from the subproject site is approx. 1 km away.
12.	Will project need to use existing or open new access roads? What will be the impacts of increased traffic on communities?		✓	The subproject area has road access and the subproject does not require to open new access road. Dust and noise related impacts are envisioned which can affect the villager of Somani, due to the increased traffic during the transportation of construction materials to the subproject site. Thus, it recommended to prepare transport management plan during the ESIA study.
13.	Will project cause encroachment on historical/cultural/religious areas?		✓	There are no historical, cultural and religious area within a radius of 600-700 meters radius from the proposed subproject site. Thus the subproject activities will not impact these places.
14.	Acquisition of private land leading to loss of shelter and livelihood		✓	The developer owns approx. 5 Bigha of land, of which only about 1 Bigha will be used for purpose of subproject development. Therefore, the land used for the subproject will not result in any loss of shelter or livelihood.
15.	Involuntary land taking resulting in loss of income, livelihood, sources of livelihood, loss of access to common property resources and/or private residential and/or property resources		✓	The proposed subproject will be implemented inside developer's private land. There will be no involuntary land acquisition for the subproject.
16.	Possible conflicts with and/or disruption to local communities		✓	As the subproject site needs to be accessed via an existing road passing through Somani Village, community members may have concerns regarding dust and noise from the transportation of construction materials to the site. Therefore, it is recommended to conduct

Environmental and Social Screening Report

*Emerald Energy and Organic Fertilizer Pvt Ltd
Pratappur Rural Municipality – 3, Nawalparasi*

				an Environmental and Social Impact Assessment (ESIA) for further investigation.
17.	Is there a possibility of activities supported by the project that have impacts on international waterways? If yes, what are the potential impacts?		✓	The subproject site is located approximately 100 meters away from the nearby river. The local name of the river is Khajura Khola whereas in topo sheet of Nepal, it is named as Satbudri Khola. According to the people of Somani village, the river remains dry throughout the year except during monsoon season. Furthermore, the villagers mentioned that they have never experienced the flooding from the river. There is an existing embankment in the river side which has been able to prevent flooding from the river. Hence, E&S team recommend to conduct detail assessment during the ESIA.
18.	Is the project site located in disputed territory?		✓	The subproject area is not located in disputed territory, as land required for the subproject development is private land.
19.	Uncontrolled human migration into the area, made possibly by the subproject activities		✓	During the construction period of the subproject, approximately 30-40 labours will be employed daily for about 5-6 months. Community members have expressed their happiness knowing that they will have short-term employment opportunities coming near their villages. Additionally, the developer is willing to hire labours/staff based on their interest and qualifications from nearby communities that ensure there will be no uncontrolled human migration into the subproject area. However few skilled workers who are not available locally will be hired from out the local area.
20.	Disproportionate impacts on the poor, children and other vulnerable groups		✓	As the subproject is carried out within the confined area of private land of developer. The impacts on livelihood and private assets of community people is not anticipated. However ESIA is recommended to carry out for the details impacts.
21.	Community health and safety risks due to the transport, storage, and use and/or disposal of materials likely to create physical, chemical and biological hazards		✓	The subproject area has road access. Dust and noise related impacts are envisioned which can affect the villager of Somani, due to the increased traffic during the transportation of construction materials to the subproject site. However risk of Community health and safety to community due to the storage and disposal of material will not be as the all these activities

Environmental and Social Screening Report

*Emerald Energy and Organic Fertilizer Pvt Ltd
Pratapapur Rural Municipality – 3, Nawalparasi*

				will be with in private land of developer.
22.	Will the project potentially cause community-related impact due to temporary influx of labor?		✓	As per discussion with the developer, people from surrounding villages from the subproject site will be given priority for employment opportunities based on their skills, qualification, and availability of the preferred workforce in subproject area. It is expected that mostly the unskilled workforce will be employed from the local area as far as available which also ensure negligible impact to community due to temporary labor influx. ESIA will assess the impact in detail.
23.	Are there Vulnerable Groups (Adibasi/Janajati/Dalit/Women headed households residing within or adjacent to project site?	✓		The subproject site is located about 500 m away from the nearest village, Somani. People from different caste and ethnicities reside in the village. The majority of the residents belong to the Yadav, Das, Chaudhary, Chamar, and Chuhar caste.
24.	Community Perception toward project			During the consultation with community people of Somani, people were found positive towards the subproject development. Additionally they have few expectations from the subproject; <ul style="list-style-type: none"> • Employment opportunity during construction and operation phase • Subsidies fertilizer for the farmers • Regular maintenance of road that used by subproject

(C) Environmental setting of the project locality

Is the project located in forest area or close to forest	Yes	No <input checked="" type="checkbox"/>
If Yes,		
Name of forest		
Management regime		
Does vegetation need to be Removed for the project? Give estimate?		

Environmental and Social Screening Report

*Emerald Energy and Organic Fertilizer Pvt Ltd
Pratappur Rural Municipality – 3, Nawalparasi*

Permission to operate in the forest?		
Is the project located in the protected area or any protected area in	Yes	No <input checked="" type="checkbox"/>
Vicinity		
Is yes, please provide details on		
(a) name of PA		
(b) area to be acquired		
(c) distance to PA from the Project site		
(d) access from the project to the PA		
1. Water sources/water bodies		
Area there any water sources/water bodies in and around the Project site	Yes	No <input checked="" type="checkbox"/>
If yes provide details on		
Location/Type		
Use of water		
Potential impact by the project		
2. Air pollution		
Number and type of vehicles to be used per day	3, mostly for transporting substrate from various locations	
Capacity of vehicles	10 – 15 tons	
Condition of the road (asphalted, earthen)	Good. Pakadi to Pipra Road 200m from highway	
3. Land use		

Environmental and Social Screening Report

*Emerald Energy and Organic Fertilizer Pvt Ltd
Pratappur Rural Municipality – 3, Nawalparasi*

Land required for the project and type of land use: 12.43 Bighas; currently owned by one of the developers			
Facilities	Required Area	Land use type	Location
(1) Biogas Plant	12 Katha (43740 Square feet)	Private	Pratappur-3, Nawalparasi, (Bardaghat Susthawaste.
4. Impact due to land use change			
a) Loss of private land: Yes b) Loss of agricultural product: Seasonal Crop (Paddy, wheat, Sugarcane, Red lentils etc) c) Loss of private structures/community structures: No d) Loss of Forest and vegetation: No e) others: No			
5. Waste input for the project			
Define waste (type)	Press mud, and Cattle Manure		
Quantity of waste	65 tons per day		
Location of collection	Nawalparasi, Rupandehi		
Workers involved	14 (1 plant manager, 1 electrical engineer, 1 mechanical engineer, 1 marketing manager, 1 admin manager, 2 operators and 7 skilled workers)		
Legal clearance required	No		
6. Technology			
Type	CSTR		
Capacity	Digester Volume: Total 4,000 cu.m (Nos. 2)		
Gas production	Gas Production: 2400 m ³ per day		
Slurry production	Slurry Production: 135 tonnes per day		

Environmental and Social Screening Report

*Emerald Energy and Organic Fertilizer Pvt Ltd
Pratappur Rural Municipality – 3, Nawalparasi*

7. Waste from the project implementation		Yes	No
Generation of solid waste? If yes,.....			<input checked="" type="checkbox"/>
Are any wastes required to be stored on-site either for reuse or off-site disposal? If yes,			<input checked="" type="checkbox"/>
Are effluents required to be discharged to a sewer or combined drainage system? If yes,.....			<input checked="" type="checkbox"/>
8. Health and Safety Issues		Yes	No
a. Does project intervention affect health and safety condition?		<input checked="" type="checkbox"/>	
b. List out likely health and safety issues during construction period <ul style="list-style-type: none"> ○ Construction related accidents ○ Emissions of dust and noise pollution 			
c. List out likely health and safety issues during implementation period <ul style="list-style-type: none"> ○ Handling of slurry (with pathogens) ○ Effluence from substrate store ○ Vehicle emissions from transport of slurry ○ Accidents associated with firing and explosion ○ Spreading of diseases due to increased disease vectors, flies, mosquitoes etc. ○ COVID-19 infection 			
9. Other observations			
Can vector disease spread to the adjoining settlements?	No		
Can foul odor affect the adjoining settlement?	No		
Slurry use(proposed)	Organic fertilizer		
Climate Benefits			
Will project activities contribute in the reduction of GHG emissions?			
Description on the activities that			

Environmental and Social Screening Report

*Emerald Energy and Organic Fertilizer Pvt Ltd
Pratappur Rural Municipality – 3, Nawalparasi*

D) Conclusion

<p>E&S Risk Category of the Subproject (High, Medium, Low):</p>	<p>Select one of the following based on the guidance provided below.</p> <p>() High-risk: Subprojects that is likely to have significant adverse environmental and/or social impacts that are sensitive, diverse, or unprecedented. These impacts may affect an area broader than the sites or facilities subject to physical works. Any subproject that needs an EIA according to GoN regulations shall be classified as high risk.</p> <p>(✓) Medium Risk: Subprojects that involve potential adverse environmental or social impacts on human populations or environmentally important areas-including wetlands, forests, grasslands and other natural habitats-are less adverse than those of high risk projects. These impacts are site-specific, reversible; and in most cases mitigation measures can be designed more readily than for high risk projects. Moreover, a proposed subproject is classified as medium risk that displaces less than 50 families in the mountain region, less than 75 families in the hills, and less than 100 families in the Terai plains due to involuntary land acquisition (unless such impacts are, in the judgement of AEPC, are exacerbated by other contributing factors). A project can be classified as medium risk regardless of whether it needs IEE as per GoN regulations.</p> <p>() Low Risk: Subprojects that likely to have minimal or no adverse environmental and social impacts. Moreover, a proposed subproject does not displace any family and none of affected person loses more than 10% of their productive assets.</p>
<p>Main reasons/justification for the selection of E&S risk category above</p>	<p>Subprojects will have minimal or no adverse environmental and social impacts. Further, the proposed subproject does not displace any family and community people will not lose their productive assets. However, as per the capacity of the subproject, IEE required to be done in accordance of GoN regulations and due to size of subproject, it is classified as Medium Risk. Therefore, as provisioned of ESMF of MGEAP, a subproject classified as Medium Risk needs to undergo an ESIA. Thus, it is recommended to carry out the ESIA to identify further risk associated with the subproject.</p>
<p>E&S Instruments to be prepared for the Subproject</p>	<p>Recommended to carry out ESIA</p>

Environmental and Social Screening Report

*Emerald Energy and Organic Fertilizer Pvt Ltd
Pratappur Rural Municipality – 3, Nawalparasi*

(ESIA, ESMP, RAP, Biodiversity Management Plan, OHS plan, Cultural Heritage Management Plan etc)	
Beneficial impacts and augmentation opportunities for any issues? Etc.	<ul style="list-style-type: none"> • Cheap Availability of fertilizer • Creation of short term employment during the construction and operation phase of subproject • Increase the prospect of energy based enterprises
The outcome of screening summarizing entire table's information with assessor's candid opinion on way forward and future actions limiting in one paragraph.	<p>The subproject will be Continuous Stirred Tank Reactor (CSTR) based biogas plant for the efficient production of biogas through the continuous digestion of organic waste with an anaerobic digester. Organic material such as agricultural waste, animal waste (cow dung, Poultry), manure, press mud, and plants material etc. will be used as feedstock in the subproject.</p> <p>The subproject is accessible throughout the year and does not require to construct separate access road. Similarly, the project will be constructed on private land owned by subproject developer and does not require to obtaining land from community people. Furthermore, the subproject will not require to relocation people and any infrastructure.</p> <p>In addition, subproject is not located in ecologically sensitive area.</p> <p>Thus, based on the field observation the impact on environmental and social aspects due to the implementation of the subproject is seems negligible. However, as per the subproject categorized as Medium Risk. Thus the study team recommends to conduct ESIA to identify the potential risk and its mitigations measures in detail.</p>

E&S Screening Team

1. Shreejan Ram Shrestha,
Climate and Carbon Specialist
AEPC/MGEAP
2. Shiva Hari Budhathoki
Social Safeguard Specialist
AEPC/MGEAP

Environmental and Social Screening Report

*Emerald Energy and Organic Fertilizer Pvt Ltd
Pratappur Rural Municipality – 3, Nawalparasi*

Annex 1: Subproject area map



Environmental and Social Screening Report

*Emerald Energy and Organic Fertilizer Pvt Ltd
Pratappur Rural Municipality – 3, Nawalparasi*

Annex: II Photographs



Somani Village which is approx. 500 meters from propose subproject site



People from Somani village during the consultation



Proposed land for the development of biogas Subproject



Environmental and Social Screening Report

*Emerald Energy and Organic Fertilizer Pvt Ltd
Pratappur Rural Municipality – 3, Nawalparasi*



Earthen access road to reach the subproject site



Road that passes through Somani village to reach the subproject site