ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN

FOR THE PROPOSSED

CHARCOAL PROCESSING AND OPERATION OF A CHARCOAL FACTORY IN NORTHERN INDUSTRY AREA, WINDHOEK, KHOMAS REGION: NAMIBIA

ECC APP: 3522

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1.1 INTRODUCTION

Agrischoenau Charcoal Factory intends on operate a Charcoal processing plant and charcoal factory located at Elisenheim Erf RE/68, Bavaria Road, Northern Industry, Windhoek as shown in **Figure 1** below. Charcoal production is a unique and sustainable alternative for rehabilitation of degraded savannah ecosystems that have been affected by bush encroachment. This is a particularly lucrative business venture because of the high-quality charcoal that is found in Namibia.

In this respect Junior Baiano Industrial Consultants (JBIC), cc has been appointed to carry out an Environmental Assessment study to obtain an environmental clearance certificate for the proposed Charcoal processing and operation of a charcoal factory as per the requirements of the Environmental Impact Assessment Regulations of 2012

The relevant listed activities as per Environmental Impact Assessment (EIA) regulations are as follows:

2.3 The import, processing, use and recycling, temporary storage, transit or export of waste.

- The project will make use of, and process charcoal, which is a forest product.

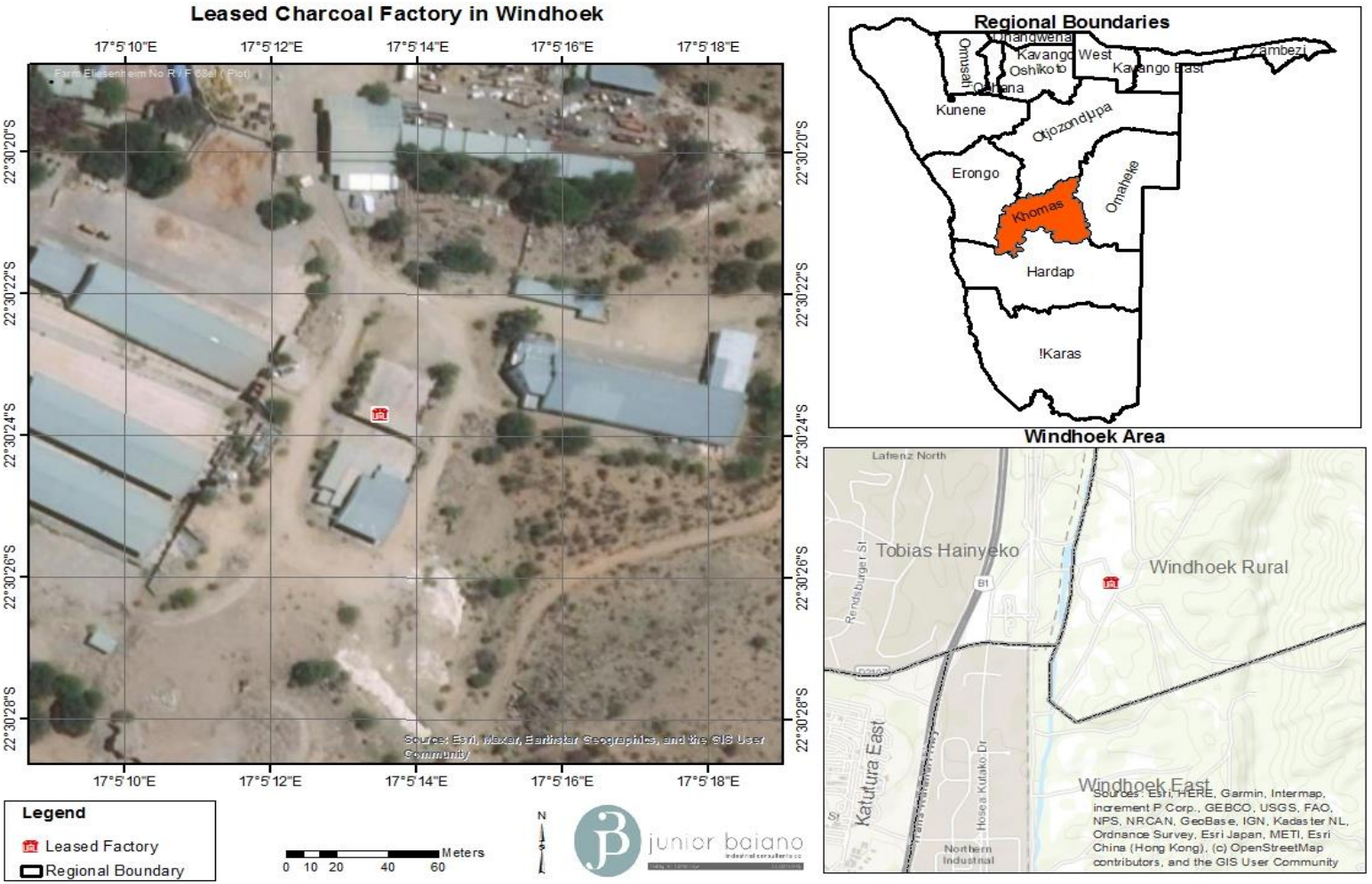

Figure 1: Locality map of the charcoal processing and packaging facility

1.2 EMP ADMINISTRATION

There is a strong need to clearly outline the roles and responsibilities of all stakeholders to ensure that the EMP is fully implemented. There is also a need for the proponent to appoint an overall responsible person (project manager) to ensure the successful implementation of the EMP as highlighted below.

Table 1: Roles and Responsibilities in EMP Implementation

ROLE	ENVIRONMENTAL RESPONSIBILITIES
Agrischoenau Charcoal Factory cc	Responsible to enforce EMP implementation to contractors
Environmental Control Officer	• Implement, review and update the EMP. • Ensure all reporting and monitoring required under EMP is undertaken, documented and distributed as needed • Conduct environmental site training (toolbox talks) and inductions with the support of an environmental consultant. • Conducts environmental audit at work site with the support of environmental consultant. • Close out all non-conformances. • Ensure materials being used on site are environmental friendly and safe.
The Department of Environmental Affairs	• Approve the EMP and any amendments to the EMP. • Approve reports of environmental issues and non-conformances as issued. • Review and approve environmental reports submitted as part of EMP implementation
Environmental Consultant	• Conduct and monitor actions required by the EMP if required • Conduct environmental site training (tool box talks) and inductions if assistance is required • Conducts environmental audit at work site • Ensure materials being used on site are environmental friendly and safe.
Site Technical Team	• Control and monitor actions required by the EMP. • Report all environmental issues to Environmental Control Officer. • Ensure documented procedures are followed and records kept on site. • Ensure any complaints are passed onto the management within 24 hours of receiving the complaint.

ROLE	ENVIRONMENTAL RESPONSIBILITIES
Workers	• Follow requirements as directed by site technical. • Report any potential environmental issues to site engineer/project manager, indicating spilt oil, excess waste, excessive dust generation, dirty water running off the site and other possible non-conformances

1.3 EMP Management Actions

The management actions aim to avoid potential impacts where possible. Where impacts cannot be avoided, management actions are outlined in order to minimize the significant impacts. The Environmental Management Plan (EMP) for impacts related to the proposed development is described in this section. The objectives of the EMP include to prevent negative impacts where possible; reduce or minimise the extent of impact during project life cycle; and prevent long-term environmental degradation.

The expected project area and any potentially affected nearby sites are described in the Environmental Management Plan (EMP), together with the organizational structure, planning, and monitoring for environmental protection.

1.4 LEGAL OBLIGATIONS GOVERNING THE PROPOSED ACTIVITIES

Once the EMP is developed and ECC is issued, the Proponent will continue with the operation on site. The proponent will therefore be required to operate in accordance with the management measures provided in the EMP and adhere to the ECC conditions set by the Environmental Commissioner.

Additionally, it is a requirement for the operation as well as maintenance of the charcoal sorting and packing facility and associated activities to adhere to certain local, regional, national as well as international legal framework. The legal requirements provided in the EMP are those in terms of permitting/licensing, i.e., permits or licensing that the Proponent will need to obtain prior to commencing with construction, operations and or renewal of permits throughout the operational phase of the facility. These legal requirements are provided under Error! Reference source not found.

Table 2: Applicable and required permits/authorizations/licenses for the operation of the project

Legislation/Policy/Guideline	Relevant Provision	Implication for the Project
Environmental Management Act (EMA) No. 7 of 2007	The Act requires that projects with significant environmental impacts are subject to an environmental assessment process (Section 27). The Act details principles that are to guide all EAs.	The EMA and its regulations should inform and guide this EA process. Should the ECC be issued to the Proponent, it may be required by the MEFT to be renewed every 3 years, counting from the date of issue. Contact details at the Department of Environmental Affairs and Forestry (DEAF), Ministry of Environment and Tourism (MET) **Office of the Environmental Commissioner** Tel: +264 (0) 61 284 2701
Environmental Impact Assessment (EIA) Regulations Government Notice 28-30 (Government Gazette 4878))	Details requirements for public consultation within a given environmental assessment process (Government Notice 30 Section 21). Details the requirements for what should be included in a Scoping Report (Government Notice 30 Section 8) and an Assessment Report (Government Notice 30 Section 15).	
Public and Environmental Health Act (Act 1 of 2015)	Provide a framework for a structured uniform public and environmental health system in Namibia; and to provide for incidental matters.	Section 77 (cx) elaborates on the need for keeping of clean environment and free from health nuisance so as not to endanger the public health;
Pollution Control and Waste Management Bill of 1999	Prevent and regulate discharge of pollutants in the air, water and land; regulate noise, dust and odour pollution; establish a system of waste planning and management	All disturbance, effluent and pollution resulting from the charcoal sorting and packing activities will be required to be in strict accordance with the regulations outlined in the Pollution Control and Waste Management Bill.

Legislation/Policy/Guideline	Relevant Provision	Implication for the Project
Forestry Act (Act No. 12 of 2001	The Act provides for the management and use of forests and forest products. Section 22. (1) provides: "Unless otherwise authorised by this Act, or by a licence issued under subsection (3), no person shall on any land which is not part of a surveyed erven of a local authority area as defined in section 1 of the Local Authorities Act, 1992 (Act No. 23 of 1992) cut, destroy or remove - (a) vegetation which is on a sand dune or drifting sand or on a gully unless the cutting, destruction or removal is done for the purpose of stabilising the sand or gully; or (b) any living tree, bush or shrub growing within 100 m of a river, stream or watercourse."	The proponent will apply for the relevant permit under this Act if it becomes necessary.
Labour Act 11 of 2007 Health and Safety Regulations (HSR) GN 156/1997 (GG 1617).	Adhere to all applicable provisions of the Labour Act and the Health and Safety regulations	**Division of Labour Services** at the Ministry of Labour, Industrial Relations and Employment Creation. Tel: +264 61 206 6111
Local Authorities Act No. 23 of 1992	To provide for the determination, for purposes of local government, of local authority councils; the establishment of such local authority councils; and to define the powers, duties and functions of local authority	The Windhoek Urban constituency office is the responsible Local Authority of the area, and therefore, should be consulted and informed once the ECC is granted and nature of the factory.

Legislation/Policy/Guideline	Relevant Provision	Implication for the Project
	councils; and to provide for incidental matters	
Water Act 54 of 1956	• The Water Resources Management Act 11 of 2013 is presently without regulations; therefore, the Water Act No. 54 of 1956 is still in force: • Prohibits the pollution of water and implements the principle that a person disposing of effluent or waste has a duly of care to prevent pollution (S3 (k)). • Provides for control and protection of groundwater (S66 (1), (d (ii)). Liability of clean-up costs after closure/abandonment of an activity (S3 (l)).	The protection (both quality and quantity) of water resources should be a priority.
Soil Conservation Act (Act 76 of 1969)	The Act makes provision for the prevention and control of soil erosion and the protection, improvement and conservation of soil, vegetation and water supply sources and resources, through directives declared by the Minister	Duty of care must be applied to soil conservation and management measures must be complied with.

Legislation/Policy/Guideline	Relevant Provision	Implication for the Project
The Road Traffic and Transport Act No. 52 of 1999 and its 2001 Regulations	Provides for the control of traffic on public road and the regulations pertaining to road transport, including the licensing of vehicles and drivers.	(Roads Authority- specialist Road legislation), Tel: +264 (0) 61 284 7072

1.5 OPERATIONAL PHASE MANAGEMENT ACTIONS

The table below outlines the management actions to be undertaken during the construction and operation phase of the project to ensure compliance with the EMP.

Table 3: Construction and Operation EMP

Impact	Description	Effects	Class	Time frame	Responsibility	Action	Phase
Noise pollution	• Noise will be generated through: • Construction activities - Moving vehicles.	• The health of working personnel could be disturbed. • Community residents could be disturbed by the noise. • General annoyance - Driving away of local animals' species near • the project site	Environmental	Throughout the facility operational phase	• Environmental Control Officer • Site Manger	• A construction interval will be established, used and adhered to. - Workers will be issued earplugs to protect them from excessive noise. • Work activities will be conducted during daytime. • -Site notices will be erected on, around the site-notifying visitors, and nearby residents of different hazards on site. -No go areas marked as sensitive environments, especially for birds needs to be avoided during operation.	**Operation**
Dust Generation	Dust will accumulate because of the land preparation, onsite movements of vehicles and machines, wind blowing on loose material during operational	• Can lead to respiratory illnesses especially to those working in the area. • General air pollution. • Nuisance to nearby residents • The process can also drive away	Environmental	Throughout operational phase	• Environmental Control Officer • Site Manager	• Dust suppression will be done through watering dust sources surfaces. • Watering down dusty surfaces, • Ensure that protective equipment such as respirators are distributed to employees, and ensure their use. • Site notices to be erected on and around the site to inform visitors and surrounding residents.	**Operation**

Impact	Description	Effects	Class	Time frame	Responsibility	Action	Phase
		wild animals within the project area surroundings					
Loss of Biodiversity	• Vegetative plants on site will be removed • Habitat destruction for both ground dwelling species and tree dwelling species. • Soil disturbance on and around the site.	• The clearing of vegetation will result in the breaking of the ecosystem processes in the area. • Loss of aesthetic value of the proposed project area. • The few small animals still habiting the place such as small rodents and birds will be forced away.	Environmental	Construction phase	• Environmental Control Officer • Site Manager	• The proposed project area is already disturbed, hence there is little vegetation to be affected by the development. • Ground disturbance will only be limited to the boundary area to avoid affecting a large area. • Upon completion of construction activities more regreening of the construction footprint affected area is recommended. A local landscaper can be engaged.	**Construction**
Greenhouse gas emissions	Green House Gasses (GHGs) emissions will be	• Global climate change • Air pollution	Environmental	Operational phase	• Environmental Control Officer • Site Manager	• Adopt the use of ethanol blended fuels wherever necessary.	**Operation**

Impact	Description	Effects	Class	Time frame	Responsibility	Action	Phase
	produced from the following activities: • Fuels combustion for (construction vehicles and equipment) • Ground excavation releases phosphorus found underground and releases particulate matter into the atmosphere.				• Department of Environmental Affairs.	• Design an operation system that cuts on fuel consumption. • Use of solar energy system during construction for lighting and other minor energy needs.	
Waste Generation	• Construction and operation are associated with a lot of raw material and activities that results in pollution • The construction and maintenance activities may generate e-waste and this needs to be disposed of in a sustainable manner.	• Pollution from oil spills resulting from the handling of various machineries used during the construction phase • Construction rubble, empty packaging containers/bags and materials remnants.	Environmental	Throughout Operational phase	• Environmental Control Officer • Site Manager	• Ensure that all waste from construction activities is stored and contained in designated containers and transported to an approved waste disposal site. • Bulky waste such as building rubbles must be collected and disposed of for landfilling. • Visual inspections monitoring	
Safety and Health risks	Construction related Safety and Health hazards •	• Injuries to workers such as Occupational dermatitis, slips	Health and safety	Throughout Operati	• ECO	• Equip workers with Personal Protective Equipment (PPE), provide trainings on how to effectively use the PPE.	**Construction and operation**

Impact	Description	Effects	Class	Time frame	Responsibility	Action	Phase
		and fall of humans and objects, musculoskeletal disorders, etc.		onal phase		• Provide platforms for briefings and meetings about possible safety and health hazards in the work place • Provide site signs warning and informing about different hazards on site.	
Safety and Health risks	Electrical hazards	-Fatalities and fires	Health and safety	Construction and operation	ECO	• Employees should be trained on electrical safety before working on site. • Safety representative with training on electrical hazards emergency management should be station on site always during construction	**Construction and Operation**
						• Safety signs during construction and operation should be put on site, no go areas should be labelled, PPE specifications should be clear to maintenance personnel.	

Impact	Description	Effects	Class	Time frame	Responsibility	Action	Phase
					•	minimum amount and intensity of lighting allowed under FCC regulations. • Minimize the tower 'footprint' on newly constructed tower. • If the tower is decommissioned, it should be removed as soon as possible. • Use visual daytime markers in areas of high diurnal birds. • Security lighting for on-ground facilities should be minimized, point downwards or be down-shielded. • Conduct on-site bird fatalities monitoring on the tower at least every month. • The use of white strobes results in less circling behavior by nocturnal migrants and thus fewer mortalities than red pulsating lights.	

Impact	Description	Effects	Class	Time frame	Responsibility	Action	Phase
Soils	Site soils (land) disturbance No visible oil spills on the ground or contaminated/pollution spots owing to	• All possible trenches • spillage of any type of waste (hazardous, non-hazardous, fuels etc.) on the ground	Environment	Through out the operational phase	SHE Officer/Proponent	• Backfilling equipment • Adequate disposal site for contaminated soils • All possible trenches excavated for renovation on site should be backfilled. • -Avoid disposal or spillage of any type of waste (hazardous, non-hazardous, fuels etc.) on the ground • -In an event that any of the substances mentioned above, spill on the soil, the contaminated soil should be cleaned up immediately and dispose of in designated hazardous waste bins and then to an approved landfill site	**Operational**
Positive Impacts		•	•		•	•	

Impact	Description	Effects	Class	Time frame	Responsibility	Action	Phase	
Employment creation							The development provides an opportunity of outsourcing work	Im dis inc tho em the imr far
Business linkages	Raw materials acquiring and contracting companies provide an opportunity for businesses.	• Local suppliers will be presented with an opportunity to empower their businesses. • Construction workers can be provided with accommodation, food and services from the local community increasing business activities.	Socioeconomic	Construction phase	Site Manager	The proponent will outsource most of its materials and services from the city.	Construction and operation	

Impact	Description	Effects	Class	Time frame	Responsibility	Action	Phase
Infrastructure development	The development presents a unique opportunity for infrastructure development in the region.	• Improvement in connectivity. • Development of the facilities will also pave way for future developers to grow interests in the area and result in ripple effects and quick growing of the area.	Socioeconomic	Construction phase	Site Manager	The new tower should cover a larger area, and they should also consider provision of infrastructure platform to other smaller companies such as security companies.	Construction and operation
		•					

1.6 ENVIRONMENTAL MONITORING PLAN

Monitoring is very important for identifying the success of mitigation measures formulated for the significant impacts identified. Monitoring of activities will identify impacts that have not been foreseen and give enough time to analyse the situation and formulate measures to minimise impacts. Survey records and results must be maintained for these monitoring and inspections, highlighting any problems and the measures taken to address it.

Prior to site preparation and construction activities, the main contractor should present an environmental monitoring plan (including, *inter alia*, location of construction camp and toilet facilities, location of material storage areas, solid waste management plan, dust control measures, activity schedule, etc.) for review and approval by the DEA, the environmental control officer and the project manager. The developer should present a landscape plan and the trees/vegetation earmarked for protection should be flagged and hoarded by the contractor.

The entity selected to carry out environmental monitoring of the construction works should then prepare an environmental monitoring programme based on the above, the requirements of the EIA, and conditions of the development permit. The major elements of the environmental impact monitoring programme to be implemented during the construction phase of the project are as follows:

- Site clearance to ensure that trees marked for protection are left untouched and that large areas of soil are not left exposed and uncovered for extended periods of time.
- Site drainage and surface runoff, especially during and shortly after major rainfall events, to ensure there is no flooding, ponding and runoff of surface water Compliance of construction works with site management and landscape plans.
- Ensure transportation of earth materials is done by covered trucks and from approved sites.
- The contractor must immediately and completely clean up spills of materials in public areas.
- Solid waste disposal practices to ensure appropriate on-site management and final disposal at approved dump.

2 CONCLUSION AND RECOMMENDATIONS

The Environmental Management Plan for the charcoal processing and operation of a charcoal factory in northern industry area, Windhoek, Khomas region: Namibia was prepared in accordance to the Environmental Management Act 2007 and EMA Regulation 2012. Further consideration was given to relevant legislation throughout the entire process to ensure a successful assessment process.

Impacts likely to occur during project phases (operation) were assessed depicting a positive outlook despite limited details of the magnitude of the proposed development. Based on the assessment, the overall project is less damaging to the environment demonstrating improved service provision, high job creation opportunities and community development. Impacts with negative effects were also identified and summarized in a form of environmental management plan to ensure sustainable implementation.

The site has access to services such as electricity and roads for accessibility. Adding on the site has minimal vegetation such that very few or no trees will be removed during the Operational phase. It is important that the proponent observe and maintain accountability to both socio-economic and environmental sensitive activities from the project, such that the project is harmonized with policy, regulations, administrative frameworks and social interface with the public as proposed in the environmental management plan. Failure to observe these measures will significantly affect the local environment and lead to non-compliance. Therefore, implementation environmental protection measures should be executed in consultation with the key stakeholders.

JBIC cc hereby recommends that MET: DEA grant the environmental clearance certificate for the charcoal processing and operation of a charcoal factory in northern industry area, Windhoek, Khomas region: Namibia, under the condition of full implementation of the project’s EMP.

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APPENDICES

Appendix A: Public Consultation Documents

1. Background Information Document
2. Newspaper Adverts
3. Site Notice
4. Meeting Attendance Register
5. Meeting Presentation
6. Questionnaires

Appendix B: Site Information

1. Approval to lease

Appendix C: Consultancy Team resumes