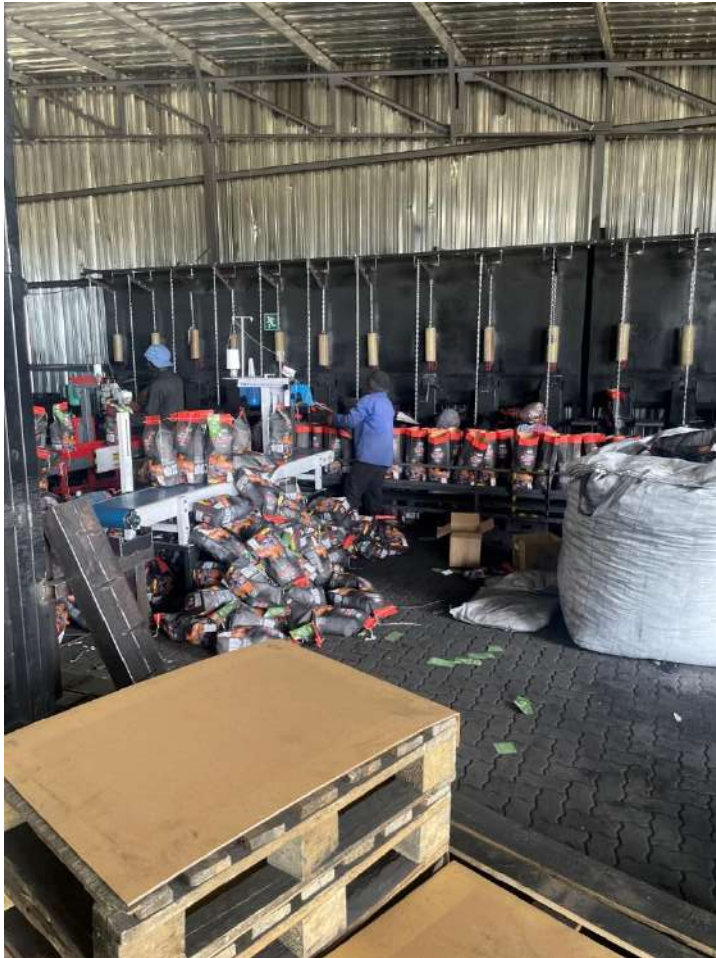


# THE OPERATION OF A BRIQUETTE PROCESSING AND PACKAGING FACILITY AT JP BRIQUETTE GLOBAL NAMIBIA CC ON PORTION 361 OF THE CONSOLIDATED FARM OKAHANDJA TOWN AND TOWNLAND NO. 277



## ENVIRONMENTAL MANAGEMENT PLAN (EMP)

*APP- 230724001780*

*05.08.2023*

## PROJECT INFORMATION SHEET

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<b>PROJECT NAME</b>	The operation of briquette processing and facility at JP Briquette Global Namibia cc on portion 361 of the consolidated farm Okahandja Town and townland no.277.
<b>STAGE OF REPORT</b>	Final Environmental Management Plan for MEFT review
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## DEFINITIONS

<b>TERMS</b>	<b>DEFINITION</b>
BID	Background Information Document
EAP	Environmental Assessment Practitioners
ECC	Environmental Clearance Certificate
EC	Environmental Consultant
ECO	Environmental Control Officer
EIA (R)	Environmental Impact Assessment (Report)
ESIA	Environmental and Social Impact Assessment
EMP	Environmental Management Plan
EMP	Environmental Management Programme
GHG	Greenhouse Gasses
ISO	International Organization for Standardization
I&Aps	Interested and Affected Parties
MEFT: DEA	Ministry of Environment, Forestry and Tourism's Directorate of Environmental Affairs
NHC	National Heritage Council
NEMA	Namibia Environmental Management Act
RA	Roads Authority
RE	Resident Engineer
ToR	Terms of Reference
UNFCCC	United Nations Framework Convention on Climate Change

## **1. CHAPTER ONE: BACKGROUND**

### **1.1. Purpose of this document**

The purpose of this document is to provide an environmental management framework for the existing briquette processing and packaging facility by JP Briquette Global Namibia cc. This is done to ensure that any potential negative impacts that could arise during operations are avoided, minimised, and mitigated as far as reasonably practicable, positive impacts resulting from the operations can be enhanced and statutory requirements and other legal obligations are fulfilled.

This report has been prepared by EnviroPlan Consulting cc. EnviroPlan's Terms of Reference set out a description of the proponent's activities and measures to comply with the Environmental Management Act No. 7 Of 2007, including how the proponent complies with national regulatory requirements and FSC standards.

### **1.2. Overview and Location**

The project entails the operation of a briquette processing and packaging Plant in Okahandja. The following activities and infrastructure are associated with the project:

- Continued operation of the existing briquette production and storage plant including the use of the onsite offices, as well as toilet facilities;
- Water is sourced from the boreholes on site;
- Electricity is supplied by the NamPower grid network; and

On-site Briquette production facility is in place wherein charcoal fines (1mm-20mm in size) will be crushed, mixed and pressed into briquettes. The briquettes will be open-dried before packaging. The production equipment warehouse, ablution block, water reticulation and a sewer reticulation system are already in existence and in use.

The plant is located on in Okahandja, Otjozondjupa Region-Namibia. The site location is shown in Figure 1.

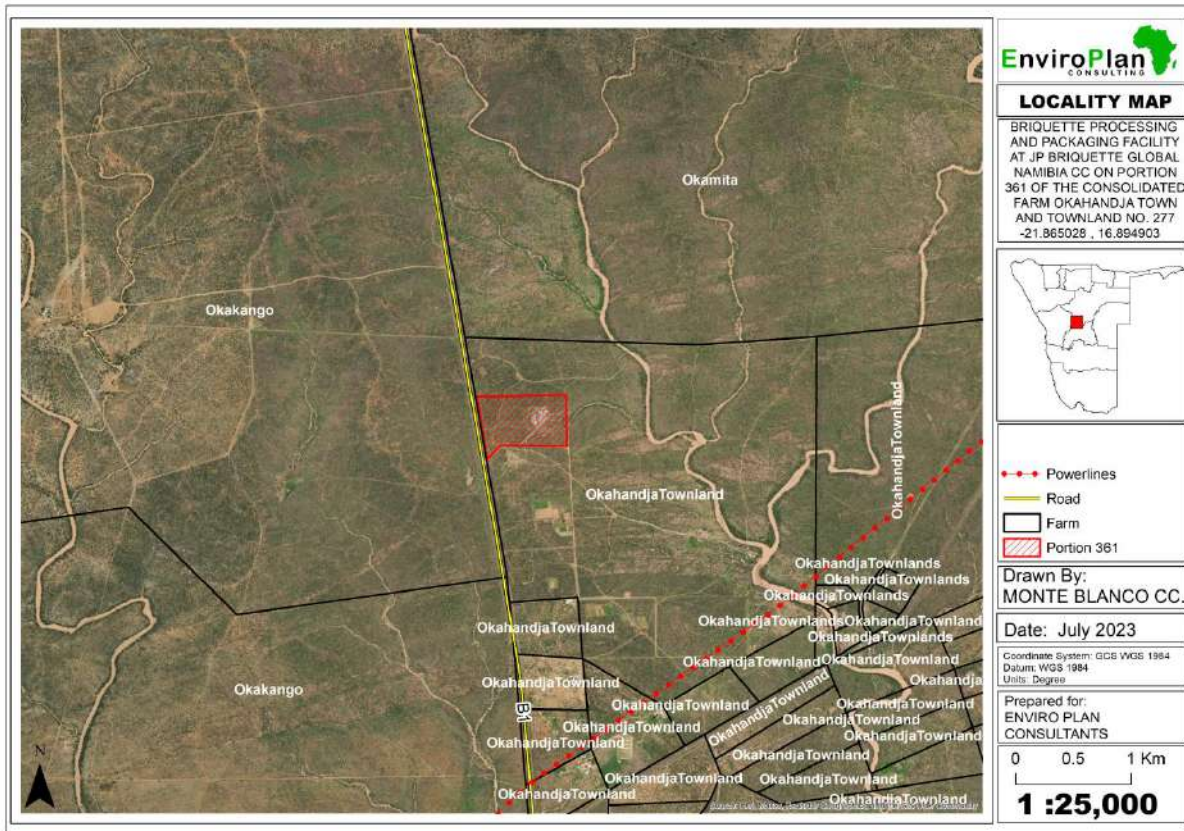


Figure 1: JP Charcoal Locality



## **2. CHAPTER TWO: THE PROPOSED ACTIVITY AND DESCRIPTION**

### **2.1. The Packaging Facility**

The facility including the office and the employee's facilities sits on a 30 hectare plot. Charcoal fines are received from 3-4 FSC clients. Charcoal fines are then crushed goes into the mixer with water and starch added. Briquettes is produced and stored on-site before it is processed, packaged, palletised and loaded into containers. They have 62 employees and about 80% of them belong to a Union. Everyone has contracts and they only work 45 hours per week. Monday-Friday from 07:00 to 16:00 with 1hour lunch and Saturday 07:00 to 12:00.

#### **2.1.1. Machinery:**

- Bagging Machine (Fills bags with charcoal fines with a specific predefined weight)
- Conveyors
- Pallet shakers
- Pallet wrappers
- Forklifts
- Pallet jacks
- Filters that clean charcoal dust
- Briquette storage is an outdoor warehouse (with open sides) to store charcoal and protect it from rain.
- The site has ablution facilities and showers as well as an office and a tea room.

### **2.2. Sieving Facility**

At this site briquettes are sieved into the different sizes i.e. briquette grades and filled into bulk bags for storage.

#### **2.2.1. Machinery**

- Charcoal Sieve (Vibrating Screen)
- Forklifts
- Crusher
- Mixer
- Moulder
- Tunnel

### **2.3. Briquette Press**

Briquettes are made here i.e. charcoal dust is mixed with starch and water, then pressed into briquettes and dried on open sails for about four days before packaging.

## 2.4. Ancillary services and resource requirements

### 2.4.1. Water

Borehole water is already being used to supply all water requirements of the plant's operations. The unsustainable use or wasting of water must be prohibited.

### 2.4.2. Sewer

A soak away sewer system is being used on site for all drainage purposes.

### 2.4.3. Electricity

A powerline connecting to the plot provides for all electrical requirements of the facility.

### 2.4.4. Employees Facilities

No employees reside on the plot site and there no employee accommodations in place. All employees come from Okahandja and other nearby settlements where. However, the plot has a dining room, locker room and showers for the employees on site.

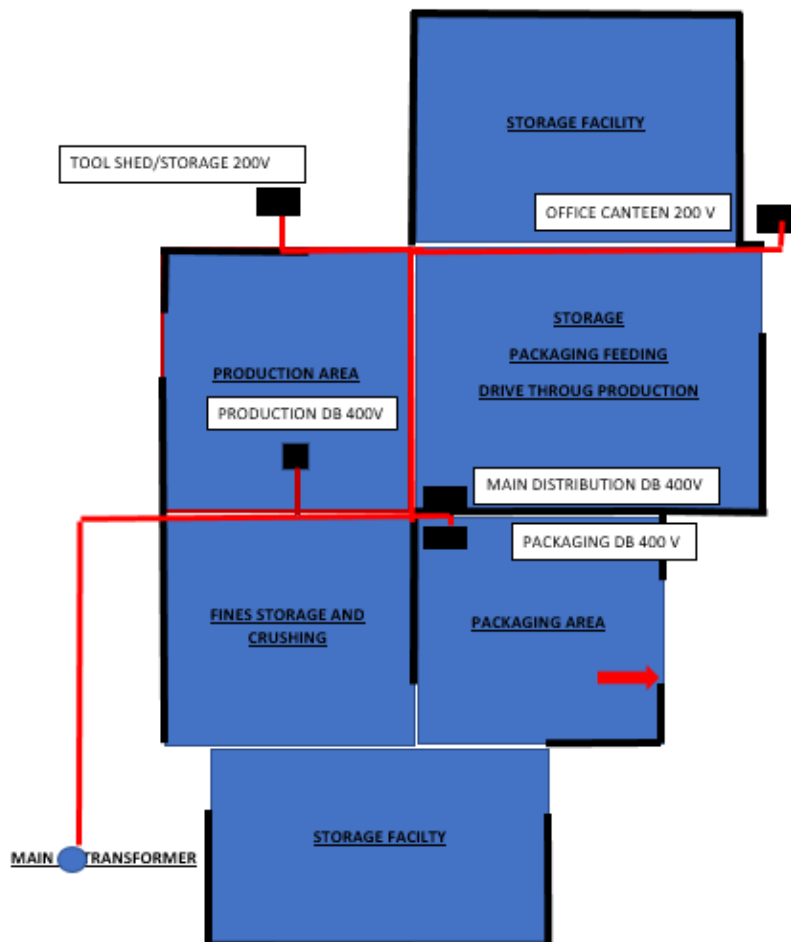
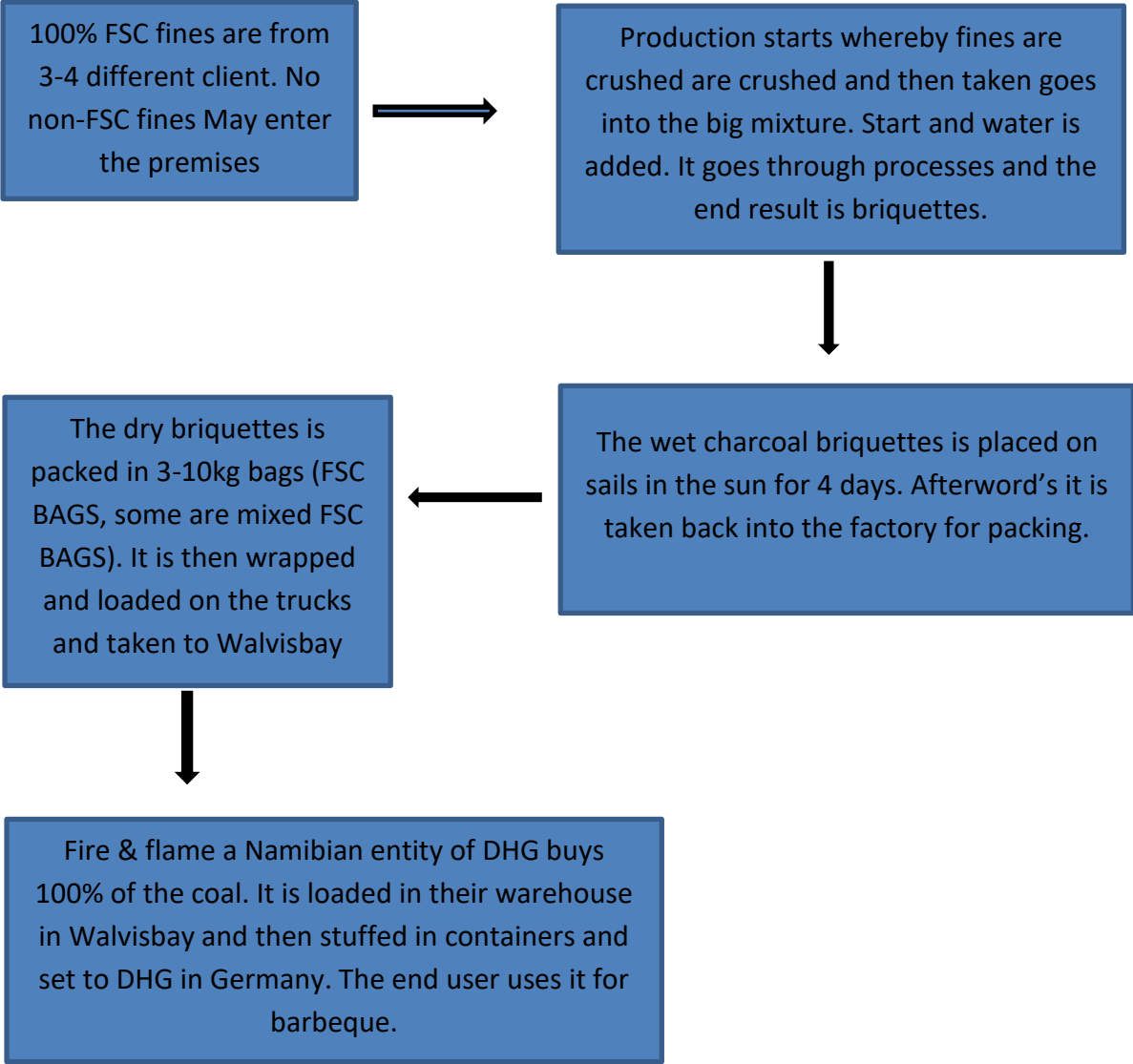


Figure 2: Site layout plan

**2.5. 2.2 Production flow chart**



### **3. CHAPTER THREE: RECEIVING ENVIRONMENT**

This section provides a brief overview of the general environment since this will be of limited benefit to determine the project environmental sensitivities.

#### **3.1. General Environmental Sensitivities**

The proposed project site is currently in a transformed state since the charcoal processing plant is in existence and is surrounded by occupied land. It is already showing signs of human inference. In particular, all support infrastructure and equipment requirements are in place as well as vegetation that were cleared in order to accommodate other uses. All large trees that exist on the project site would be incorporated in the development to enhance the aesthetic value of the area. No protected trees may be removed without a permit. Any removal of vegetation that arises naturally should be done within a properly managed, planned and responsible manner in order to avoid destruction of unnecessary ground cover.

No animals were observed on the site during site assessment. Operational activities that may affect animals through noise, dust or pollution will be adequately addressed in the EMP.

The Otjozondjupa Region where the JP Briquette Global Namibia facility is located presents an average annual temperature that varies between 20°C and 22°C. The hot season lasts for 4 months, from September to January, with an average daily high temperature of 32 - 34°C. The hottest month of the year is October when maximum temperatures exceed 34°C. Average minimum temperatures range between 4 and 8°C with the coldest month being July. The cool season lasts for three months, from May to July, with an average daily high temperature below 26°C (Mendelsohn et al., 2002).

The study area has a semi-arid climate and receives between 400 – 450 mm rainfall per annum with a variation coefficient of <30%. Rainfall events are limited to the summer months, mainly between November and April, in the form of sudden thunderstorms often associated with heavy downpours. Potential evaporation can reach 1,960 mm per year. Relative humidity is low, rarely exceeding 20% in winter but may reach 85% in summer before or after thunderstorm build-up. The number of rainy days per annum (>1mm) is 45 – 50 (Mendelsohn, et al., 2002).

It should be noted that none of the larger trees/shrubs, especially the protected and endemic species, are exclusively associated with the proposed project area. Furthermore, no animals are within immediate proximity with the site. Various bird species do however exist in the general area.

**Table 1: Ecological profile**

Vegetation type	Thornbush shrubland (Acacia Treeand-shrub Savanna Biome)
Vegetation structure type	Sparse shrubland
Diversity of higher plants	Low medium plus (Diversity rank = 5 [1 to 7 representing highest to lowest diversity)
Number of plant species	100 -150
Percentage tree cover	0.1-1
Percentage dwarf shrub cover	3.6
Dwarf shrub height (m)	0.5
Grass height (m)	0.5
Dominant plant species 1	Extremely diverse:
Dominant plant species 2	<i>Rhigozum trichotomum-s2</i>
Dominant plant species 1	Extremely diverse:
Dominant plant species 2	<i>Rhigozum trichotomum-s2</i>
Dominant plant species 1	Extremely diverse:
Dominant plant species 2	<i>Rhigozum trichotomum-s2</i>
Dominant plant species 1	Extremely diverse:
Dominant plant species 2	<i>Rhigozum trichotomum-s2</i>
Dominant plant species 1	Extremely diverse:

### 3.2. Environmental Sensitivities

The site is characterized by relatively flat topography and there are no identified riverbeds in its immediate proximity. The site has no identified culture and heritage sites that may be potentially affected by the operations of the briquette plant facility. A more detailed description of the environment of the current state of the project site is provided on the table below;

ENVIRONMENTAL MANAGEMENT PLAN (EMP): THE OPERATION OF A BRIQUETTE PROCESSING AND PACKAGING FACILITY AT JP BRIQUETTE GLOBAL NAMIBIA CC ON PORTION 361 OF THE CONSOLIDATED FARM OKAHANDJA TOWN AND TOWNLAND NO. 277

Borehole site and Solar panels for water supply to plant and ablutions.



Fire extinguisher.



Crusher closed off to minimize dust emissions.



Emergency Assembly point.



fuel storage facility,  
bunding needed ASAP!



Briquette packaging  
warehouse.



Soak away sewer reticulation system,  
serving plant and residence.



Presser for briquettes.

The following environmental sensitivities require specific mitigation:

**Table 2: Sensitivities that must be mitigated**

<b>Environmental feature</b>	<b>Description</b>
<b>Project specific</b>	<ul style="list-style-type: none"> <li>• Communicate with the local community– inform neighbours on project operation and about employment opportunities.</li> </ul>
<b>Socio-economic</b>	<ul style="list-style-type: none"> <li>• Employment opportunities for local people.</li> </ul>
<b>Air Quality</b>	<ul style="list-style-type: none"> <li>• Dust fallout during screening, sorting and packaging process</li> <li>• Noise during operation.</li> </ul>
<b>Flora and fauna</b>	<ul style="list-style-type: none"> <li>• Protection of all Camel-Thorn Trees and Buffalo-Thorn Trees</li> <li>• Protection of all trees that are not in the way of the project operations.</li> <li>• Protection of local fauna and flora from pollution and disturbances</li> <li>• Marked trees should not be removed.</li> </ul>
<b>Soils / groundwater</b>	<ul style="list-style-type: none"> <li>• Avoidance of pollution, especially via hydrocarbon and sewer contamination.</li> <li>• Fuelling station needs bunding to avoid leakages going into soil</li> </ul>
<b>Terrain</b>	<ul style="list-style-type: none"> <li>• The proponent is only to process and package briquette and to not debush on the plot, unless if a license and an EIA for such is in place.</li> <li>• Use I traffic warning measures on the access road.</li> </ul>

## **4. CHAPTER FIVE: POLICY, LEGAL AND ADMINISTRATIVE FRAMEWORK**

### **4.1. Introduction**

An important part of the EMP is identifying and reviewing the administrative, policy and legislative situation concerning the proposed activity, to inform the proponent about the requirements to be fulfilled in the project development and implementation. This section looks at the legislative framework within which the proposed project will operate under. The focus is on compliance with the legislation during the planning, construction and operational phases. All relevant legislation, policies and international statutes applying to the project are highlighted in table 3 below as specified in the Environmental Management Act, 2007 (Act No.7 of 2007) and the regulations for Environmental Impact Assessment as set out in the Schedule of Government Notice No. 30 (2012).

The pursuit of sustainability by an Organisation is operationalised by a sound policy and legislative framework that gives operating parameters within its sphere of operation. In this section, relevant legal instruments as well as their relevant provisions are identified and analysed on their relevance to the proposed project. A concise explanation is given on applicability on each of the identified piece of legislation as well as how Roads Authority is supposed to implement environmental compliance to the project.



**Table 3: Policies, legal and administrative regulations**

Aspect	Legislation
<b>The Constitution</b>	Namibian Constitution First Amendment Act 34 of 1998
<b>Archaeology</b>	National Heritage Act 27 of 2004
	National Monuments Act of Namibia (No. 28 of 1969) as amended until 1979
<b>Environmental</b>	Environmental Management Act 7 of 2007
	EIA Regulations GN 57/2007 (GG 3812)
	National Solid Waste Management Strategy
	Pollution and Waste Management Bill (draft)
	National Waste Management Policy
	Soil Conservation Act 76 of 1969
	Hazardous Substance Ordinance (No. 15 of 1973)
	Atmospheric Pollution Prevention Ordinance, 1976
	National Policy on Climate Change for Namibia, 2010
	National Biodiversity Strategy and Action Plan (NBSAP2)
<b>Forestry</b>	Forest Act 12 of 2001
<b>Water</b>	Water Act 54 of 1956
	Water Resources Management Act, 2013 (Act No. 11 of 2013)
<b>Health and Safety</b>	Labour Act (No 11 of 2007) in conjunction with Regulation 156, 'Regulations Relating to the Health and Safety of Employees at work'.
	Public Health and Environmental Act, 2015
<b>Services and Infrastructure</b>	Road Ordinance 1972 (Ordinance 17 Of 1972)

## 5. CHAPTER SEVEN: ENVIRONMENTAL MANAGEMENT PLAN (EMP)

### 5.1. EMP Organisation, Responsibility And Authority

This section describes the key functionaries in the planning, implementation and monitoring of the EMP. Copies of this EMP shall be kept at the site office and will be distributed to all senior contract personnel. All senior personnel shall be required to familiarise themselves with the contents of this document.

The implementation of this EMP requires the involvement of several stakeholders, each fulfilling a different but vital role to ensure sound environmental management during each phase.

### 5.2. Project Management Personnel

The proponent shall provide a project team to oversee the operational activities of the plant, which shall be composed of the proponent’s personnel or possible contractors. A nominated role shall be identified to ensure the management and implementation of this EMP throughout the duration of the project, which shall be supported by the proponent.

### 5.3. Organisational Structure, Roles And Responsibilities

The proponent shall be responsible for:

- Ensuring all members of the project team, including contractors, comply with the procedures set out in this EMP;
- Ensuring that all personnel are provided with sufficient training, supervision, and instruction to fulfil this requirement; and
- Ensuring that any persons allocated specific environmental responsibilities are notified of their appointment and confirm that their responsibilities are clearly understood.
- Contractors shall be responsible for ensuring and demonstrating that all personnel employed by them are compliant with this EMP, and meet the responsibilities listed above. The key personnel and environmental responsibilities of each role through the project life are presented in Table 4.

### 5.4. Roles and Responsibilities

**Table 4: Roles and Responsibilities**

Role	Responsibilities And Duties
General Manager	<ul style="list-style-type: none"> <li>▪ Responsible for ensuring compliance with this EMP</li> <li>▪ Ensuring employees understand and comply with the requirements of this EMP</li> <li>▪ Ensuring that all personnel are provided with enough training, supervision and instruction to fulfil this requirement</li> <li>▪ Ensuring compliance with this EMP including overseeing the day-to-day activities during operations, and routine and non-routine maintenance works during operations</li> <li>▪ Ensure the environmental policy is communicated to all personnel</li> </ul>

	<ul style="list-style-type: none"> <li>▪ Responsible for providing the required resources (including financial and technical) to complete any required tasks</li> <li>▪ Responsible for the management, maintenance and revisions of this EMP</li> <li>▪ Maintain a community issues and concerns register and keep records of complaints</li> <li>▪ Maintain an up-to-date register(s) of employees who have completed the site induction</li> <li>▪ Ensuring that best environmental practice is undertaken throughout the operations of the plant</li> <li>▪ Notifying relevant regulatory authorities if serious environmental incidents occur as soon as possible;</li> <li>▪ Being responsible for all management plans and environmental monitoring; and</li> <li>▪ Receiving and responding to environment-related complaints received from the public or other stakeholders.</li> </ul>
<p>Plant Supervisor (PS)/ Appointed Environmental Compliance Officer (ECO)</p>	<p>JP Briquette Global Namibia cc plant supervisor will be responsible for the implementation of the EMP for the plant, as the plant's appointed She or he will be the responsible person. The plant supervisor will be available, as required, throughout the operations of the plant and is responsible for the following roles:</p> <ul style="list-style-type: none"> <li>▪ Ensuring all personnel have undertaken a site induction and are conversant with the requirements of this EMP;</li> <li>▪ Bearing authority and independence to demand reasonable steps as required to avoid or minimise unintended or adverse environmental impacts, and failing the effectiveness of such steps, to direct that relevant operation activities be ceased immediately should an adverse impact on the environment be likely to occur;</li> <li>▪ Monthly EMP checklist must be completed by the Plant supervisor. Findings are to be submitted to the general manager;</li> <li>▪ Internal compliance certificate must be completed monthly by the Plant supervisor incorporating the checklist' findings. This certificate must be submitted to the general manager;</li> <li>▪ Provisioning of environmental awareness/management training and inductions;</li> <li>▪ Ensuring that best environmental practice is undertaken throughout the operations of the plant;</li> <li>▪ Timely distribution of any relevant environmental documentation, including revisions to this EMP to all staff; and;</li> <li>▪ Reporting of any operations and conditions that deviate from the EMP or any non-compliant issues or accidents to the proponent.</li> </ul>
<p>Employees / Contractors</p>	<p>Any contractors hired during the operation or maintenance activities at the plant shall be compliant with this EMP, and shall be responsible</p>

as well as visitors where applicable	<p>for the following:</p> <ul style="list-style-type: none"> <li>▪ Undertaking activities in accordance with this EMP as well as relevant policies, procedures, management plans, statutory requirements, and contract requirements;</li> <li>▪ Implementing appropriate environmental and safety management measures</li> <li>▪ Reporting environmental issues, including actual or potential environmental incidents and hazards, to the proponent; and</li> <li>▪ Ensuring appropriate corrective or remedial action is taken to address all environmental hazards and incidents reported by employees and subcontractors.</li> </ul>
--------------------------------------	--

### 5.5. Employment

The proponent and all contractors shall comply with the requirements of the Regulations for Labour, Health and Safety and any amendments to these regulations. The following shall be complied with:

- In liaison with local government, community, stakeholders and relevant authorities the proponent shall ensure that local people have access to information about job opportunities and are considered first for construction/maintenance contract employment positions;
- The number of job opportunities shall be made known together with the associated skills and qualifications;
- The maximum length of time the job is likely to last for shall be clearly indicated;
- Foreign workers with no proof of permanent legal residence shall not be hired;
- Every effort shall be made to recruit from the pool of unemployed workers living in the local area; and
- Every employee hired must be provided with a valid employment contract stating, the position hired for, the hourly remuneration offered.

### 5.6. Communication And Training

It is also important that regular communications are maintained with all the stakeholders and that stakeholders are made aware of potential impacts and how to minimise or avoid them. This section sets out the framework for communication and training in relation to the EMP.

#### 5.6.1. Communications

The proponent shall communicate any environmental issues to the project team through the following means (as and when required):

- Site induction;
- Internal and external audits and site inspections;
- Toolbox talks, including instruction on incident response procedures; and
- Briefings on key project-specific environmental issues.

This EMP shall be distributed to the operational team including any contractors and personnel working on the site to ensure that the environmental requirements are adequately

communicated. Key activities and environmentally sensitive operations shall be briefed to workers and contractors.

During the operational activities, communications between the management team shall include discussing any complaints received and actions to resolve them, any inspections, audits or non-conformance with this EMP, and any objectives or target achievements.

#### **5.6.2. Complaints Handling And Recording**

The proponent shall maintain a complaint's register that will detail the name and contact details of the complainant, date and time of the complaint, nature of the complaint, the action(s) taken to resolve issues.

### **5.7. Environmental Inspections And Compliance Monitoring**

#### **5.7.1. Daily Compliance Monitoring**

A copy of this EMP shall be on-site at all times and shall be available upon request. It is the responsibility of the plant supervisor to enforce the provisions within this EMP and equally ensure that this EMP is complied with by all personnel on site through their daily roles. Daily, weekly and monthly inspections will be undertaken. Any environmental problems or risks identified shall be relayed to the manager and actioned as soon as is reasonably practicable.

#### **5.7.2. Monthly Compliance Monitoring**

Monthly inspections shall be undertaken by the ECO to check that the standards and procedures set out in this EMP are being complied with and pollution control measures are in place and working correctly.

Any non-conformance shall be recorded, including the following details: a brief description of non-conformance, the reason for the non-conformance, the responsible party, the result (consequence), and the corrective action taken and any necessary follow up measures required.

#### **5.7.3. Reporting**

There shall be a requirement to ensure that any incident or non-compliance, including any environmental issue, failure of equipment or accident, is reported to the manager.

#### **5.7.4. Relevant Permits**

In addition to an environmental clearance certificate, the proponent will ensure that all documentation, permits and measures are in place for their sewage disposal system on site before discharge occurs, including obtaining the relevant effluent discharge permit in terms of the Water Act to be applied for at the Ministry of Agriculture, Water and Land Reform (MAWLR). The proponent will be responsible for the reticulation and treatment of sewerage water discharged into the environment.

#### **5.7.5. NON-COMPLIANCE**

Where it has been identified that works are not compliant with this EMP, the proponent shall employ corrective actions so that the works return to being compliant as soon as possible. In instances where the requirements of the EMP are not upheld, a non-conformance and corrective action notice shall be produced.

The notice shall be generated during the inspections and the general manager shall be responsible for ensuring a corrective action plan is established and implemented to address the identified shortcoming.

A non-compliance event / situation, for example, is considered if:

- There is evidence of a contravention of this EMP and associated indicators or objectives;
- The Plant supervisor or contractor has failed to comply with corrective or other instructions issued by the manager or qualified authority; or
- The Plant supervisor or contractor fails to respond to complaints from the public.
- Activities shall be stopped in the event of a non-compliance until corrective action(s) has been completed.
- The Plant supervisor must ensure that an accident and incident (including minor or near miss) reporting system is maintained so that all applicable statutory requirements are covered. For any serious incident involving a fatality, or permanent disability, the incident scene must be left untouched until witnessed by a representative of the police. This requirement does not preclude immediate first aid being administered and the location being made safe.
- The Plant supervisor must investigate the cause of all work accidents and significant incidents and must provide the results of the investigation and recommendations on how to prevent a recurrence of such incidents. A formal root-cause investigation process should be followed.

## 6. CHAPTER EIGHT:ENVIRONMENTAL MANAGEMENT PLAN

### 6.1. Operational Phase

Objective	No.	Monitoring				Project Stage
		Mitigation and Management Measures	Timeframe	Executing Party	Monitoring Party	
Ensure that the proponent is aware of the required management measures stipulated in the EMP.	1)	This EMP must form part of the operational procedures at all times	Daily	General Manager (GM)	Plant Supervisor (PS)	Operational
Ensure all employees and staff are familiar with the Environmental awareness Plan.	2)	-The PS is expected to have safety “tool box” talks in accordance with the risks and trends associated with the project. Proof of these talks shall be kept on site.	Daily	PS	Environmental Control Officer (ECO)	Operational
	3)	- The contractor will develop a specific emergency procedure and plan.	Once Off	PS	ECO	Operational
Increase employment Opportunities.	4)	Labour (skilled and unskilled) and contractors employed for the proposed project should be sourced locally.	Once Off	GM	GM	Operational
Minimise the impact on surrounding land uses and employees due to dust emissions.	5)	-Briquette dust must be contained in the processing plant area, such that it does not affect neighbouring AREAS <b>-Dust fallout monitoring system has been proposed for installation.</b>	Monthly	ECO	GM	Operation

Objective	No.	Monitoring				Project Stage
		Mitigation and Management Measures	Timeframe	Executing Party	Monitoring Party	
	6)	Ensure optimum ventilation to keep the work area as a safe environment.	Continuous	PS	ECO	Operation
	7)	Collected briquettes dust will be reused to make briquettes/ packaged for export.	Continuous	PS	ECO	Operation
	8)	Solid waste will be removed from site frequently so as to prevent the accumulation of waste on site.	Continuous	PS	ECO	Operation
	9)	Divert water used to clean structures to a septic tank if not biodegradable.	Continuous	PS	GM	Operation
Minimise the potential exposure of employees and neighbouring operations to diseases.	10)	-Dust suppression and provision of PPE will be prioritised to prevent dust related illnesses such as Bronchitis. -Prior to employment, employees should be medically tested for fitness.	When Required	PS	GM	Operation
	11)	Clean overalls, safety shoes and face protection PPE will be provided for.	Continuous	PS	GM	Operation
Minimise the impact of migrant workers and possible crime increase.	12)	No recruitment "at the gate" will be allowed.	Daily	PS	GM	Operation
Reduce misconduct by	13)	No alcohol /drugs are permitted on the	On going	PS	GM	Operation



Objective	No.	Monitoring				Project Stage
		Mitigation and Management Measures	Timeframe	Executing Party	Monitoring Party	
employees on site.		construction site.				
	14)	No firearms allowed on site, unless used by security personnel.	On going	PS	GM	Operation
Prevent incidents posing a risk to the health and safety of employees.	15)	Correct Personal Protective Equipment (PPE) must be worn at all times by the personnel on site. Personnel must be trained on the use of PPE.	Daily	PS	GM	Operation
	16)	Each contractor will employ their own Safety Officer to monitor the safety conditions during the construction phase.	Daily	PS	GM	Operation
	17)	No unauthorised ignition sources will be permitted on site and debris/waste shall not be burnt under any circumstances.	Daily	PS	GM	Operation
	18)	Erect suitable warning and information signage near any hazardous storage facility. Handling of hazardous chemicals must only be done by trained personnel.	On-going	PS	GM	Operation
	19)	All provisions of the Labour Act Nr 11 of 2007 in conjunction with Regulation 156, 'Regulations Relating to the Health and Safety of Employees at work' must be complied with	On-going	PS	GM	Operation

Objective	No.	Monitoring				Project Stage
		Mitigation and Management Measures	Timeframe	Executing Party	Monitoring Party	
Prevent sterilisation of soils as a result of hydrocarbon / chemical / waste contamination.	20)	No foreign matter such as rubble, waste or hazardous material will be mixed with the topsoil or used to backfill excavation.	Daily	PS	GM	Operation
	21)	Spills will be cleaned up immediately after the incident. Contaminated soil will be disposed of as hazardous waste at a licensed hazardous landfill facility.	Daily	PS	GM	Operation
	22)	Drip trays or a Polyvinyl chloride (PVC) lining shall be provided for equipment utilising hydrocarbons.	Daily	PS	GM	Operation
	23)	No waste will be buried or burned on site.	Daily	PS	GM	Operation
Prevent contamination of surface water resources and onsite erosion as a result of contained runoff.	24)	No project infrastructure will be located within the 1:100 year flood lines or within 100 m of any perennial tributaries.	Daily	PS	GM	Operation
	25)	Storm water systems will be inspected and repaired timeously.	Weekly	PS	GM	Operation
	26)	No waste or refuse will be allowed to access the storm water infrastructure.	Daily	PS	GM	Operation
	27)	The development footprint will be landscaped in order to prevent pooling	Once Off	PS	GM	Operation

Objective	No.	Monitoring				Project Stage
		Mitigation and Management Measures	Timeframe	Executing Party	Monitoring Party	
		of water.				
	28)	No hazardous chemical must be discarded in the sewage or storm water system.	Daily	PS	GM	Operation
Prevent the pollution of the surrounding environment as a result of waste generation, incorrect waste disposal and housekeeping.	29)	Waste will be sorted at source.	Daily	PS	ECO	Operation
	30)	Waste receptacles will be kept closed at all times when not in use.	Daily	PS	ECO	Operation
	31)	Littering on site is forbidden and the site must be cleared of litter at the end of each working day.	Daily	PS	ECO	Operation
Prevent the impact on water and soil resources through the accidental spillage or leakage of waste or the incorrect storage/handling of hazardous substance.	32)	An inventory of all chemicals on site must be kept together with the respective SDS.	Weekly	PS	ECO	Operation
	33)	Cleaning and repairs of equipment/vehicles should be done in a designated area to prevent soil and water pollution.	Weekly	PS	ECO	Operation
	34)	Storage areas containing hazardous substances/materials are to be clearly demarcated and labelled.	Daily	PS	ECO	Operation
	35)	Remediation of spillages must be conducted as far as practically reasonable.	On-Going	PS	ECO	Operation

Objective	No.	Monitoring				Project Stage
		Mitigation and Management Measures	Timeframe	Executing Party	Monitoring Party	
	36)	All hazardous substances will be stored in a bunded area with the capacity to store 110% of the contents volume;	Daily	PS	ECO	Operation
	37)	The above ground fuel storage tanks should be well bunded and monitored to prevent spillages and release of hydrocarbons into the environment.	Weekly	PS	ECO	Operation
Prevent possible sedimentation of water resources as a result of runoff from cleared areas.	38)	No alterations to banks or beds of watercourses is allowed (a dry gully is also recognized as a water course);	On-going	PS	ECO	Operation
	39)	The storm water drainage system must be adequately designed based on site conditions in order to ensure the free flow of surface run-off.	Daily	PS	ECO	Operation
Prevent possible groundwater contamination as a result of hazardous waste spillage and uncontrolled waste handling.	40)	No equipment or tools with oil or grease is allowed to be placed on bare ground, these must always be placed on a lined surface.	Weekly	PS	ECO	Operation
	41)	Waste water will be contained to prevent the ingress into the groundwater system.	Weekly	PS	ECO	Operation
	42)	Sewage facilities will be maintained and kept in a good order to prevent any sewage spills.	Weekly	PS	ECO	Operation

Objective	No.	Monitoring				Project Stage
		Mitigation and Management Measures	Timeframe	Executing Party	Monitoring Party	
		-The soak away tanks will always be maintained and emptied when required. All sewerage waste is under the Management of the municipality.				
Reduce the environmental and health impacts as a result of dust and emissions generated.	43)	-At times of high winds, periodic dust suppression techniques will be employed on cleared areas generating dust. -During briquettes processing and packaging, all dust suppression measures will be employed to prevent briquette dust affecting neighbours.	Daily	PS	ECO	Operation
	44)	Fallout dust measurement will be conducted on site (inside the plant shell and outside dust PPM)	Quarterly	PS	ECO	Operation
Reduce the impact of noise on surrounding land uses and employees.	45)	Operational activities should be restricted to 07:00hrs to 17:00hrs during weekdays and 08:00hrs to 13:00hrs during weekends.	Daily	PS	ECO	Operation
	46)	Machinery will be kept in good working order to reduce noise emissions.	Daily	PS	ECO	Operation
	47)	Any noise complaints received must be recorded in the Complaints Register.	Daily	PS	ECO	Operation
	48)	Waste will be stored in designated	Daily	PS	ECO	Operation

Objective	No.	Monitoring				Project Stage
		Mitigation and Management Measures	Timeframe	Executing Party	Monitoring Party	
		areas.				
	49)	Waste bins will be labelled for their designated use.	Daily	PS	ECO	Operation
Minimise the impact on the visual character of the surrounding areas by the construction of the plant infrastructure.	50)	Artificial lighting will be restricted to areas under operational activities. Yellow sodium lights will be recommended on site as they do not attract as many invertebrates at night and will not disturb the wildlife.	Once Off	PS	ECO	Operation
	51)	Natural vegetation, wherever possible, must be retained.	On-going	PS	ECO	Operation
Minimise the safety risks due to increased possibility of crime and safety conditions of employees.	52)	Clear sign boards should be erected at the entrance to the site to indicate that the area is being entered and safety precautions should be followed;	Once Off	PS	ECO	Operation
	53)	Notification signs must be posted around the site warning residents and visitors about the hazards around the construction site;	Once Off	PS	ECO	Operation
	54)	Workers should be adequately trained to follow all safety procedures and wear protective equipment where required;	Continuous	PS	ECO	Operation
Prevent the impacts resulting from traffic	55)	Reduce the amount of trucks entering the premises by transporting larger	Continuous	PS	ECO	Operation

Objective	No.	Monitoring				Project Stage
		Mitigation and Management Measures	Timeframe	Executing Party	Monitoring Party	
movement to and from the Site.		loads;				
	56)	Speed limits will be restricted at the around the site to 10 km/h.	Continuous	PS	ECO	Operation
	57)	Investigate the installation of renewable energy – such as solar or wind power – to the operations.	Continuous	PS	ECO	Operation
	58)	The operational footprint will be kept as small as possible. All disturbed areas will be rehabilitated.	Continuous	PS	ECO	Operation

## **7. CHAPTER NINE: CONCLUSION AND RECOMMENDATIONS**

### **7.1. Conclusion**

Arising from the analysis by the consultants, the proposed project has land cover/use impacts on the proposed project site. Because land must develop, but with land development, there should not be environmental degradation, thus the EMP provides guidelines for the sustainable operation of the existing briquette processing and packaging facility.

### **7.2. Recommendations**

In order to alleviate any negative impacts that may emanate from the operation of the briquette packaging and processing facility, the proponent should follow recommendations as follows:

#### **7.2.1. Environment Management Plan Recommendations**

In order to ensure a healthy and safe environment in the proposed site and its environs, a plan for environmental management has to be instituted through monitoring. This involves the collection and analysis of relevant environmental data as well as periodic documentation and reporting.

### **7.3. External Auditing**

The key to a successful EMP is appropriate monitoring and review to ensure effective functioning of the EMP and to identify and implement corrective measures in a timely manner. In the event that discrepancies are identified, the problem must be investigated and attended to. All the results obtained during environmental monitoring must be documented for audit purposes.

An audit of the environmental management actions undertaken is essential to ensure that it is effective in operation, meets specified goals, and performs according to relevant regulations and standards. Audits should be conducted during the operational phase of the facility to ensure adherence to the management measures contained in the EMP. Every quarter from the awarding of the Environmental Clearance Certificate a report will be compiled on environmental performance. This will be followed with bi-annual reports to MEFT: DEA on project operations during construction and operational phases. It is imperative to understand a clearance certificate is valid for 3 years only, after which a renewal will have to be applied for along with performance report over the past years in terms of environmental compliance to existing legislation and this EMP.

### **7.4. Recommendation to MEFT**

Having looked at the potential impacts of the proposed project development, the risks associated with development and the mitigation measures contained in this EMP, EnviroPlan Consulting cc hereby recommends that the Ministry of Environment, Forestry and Tourism: Department of Environmental Affairs (MEFT:DEA) approve the proposed Operation of the briquette processing and packaging facility on the operation of a briquette processing and packaging facility at JP Briquette Global Namibia cc on portion 361 of the consolidated farm Okahandja town and townland no. 277.



, Okahandja and issue an Environmental Clearance Certificate (ECC) on condition that the proponent will ensure complete compliance to the developed Environmental and Social Management Plan (ESMP).

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