Dust and Particulate Emission Management Plan

Brooke Energy Group Ltd

Biomass Preparation Facility

Hill Barton Business Park

Clyst St Mary

EX5 1SD

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Version	Date	Reviewed by	Change
1	June 2018	SMB	Original
2	October 2021	AS	Version 2

1. Introduction

The purpose of this Dust and Particulate Emission Management Plan D&PEMP is to show that any potential dust produced by the proposed biomass preparation facility at Stuarts Way, Clyst St Mary will be managed effectively and with no impact to the neighbouring environment. The site is located at Hill Barton Business Park, Clyst St Mary, EX5 1SD.

The site is not located within an Air Quality Management Area, nor is it within close vicinity of sensitive residential dust receptors.

This D&PEMP should be read in conjunction with the suite of Environmental Management documents and associated operational control documents for the Site. This document provides guidance and information on the additional procedures for the control of other amenity issues, routine monitoring requirements and record management.

Brooke Energy Group Ltd's ('Brooke Energy') management team is committed to manage pollution risk from the permitted activities and will ensure that the facility is operated in full compliance with the conditions stipulated within the Environmental Permit.

This commitment includes making all necessary plant and infrastructure investments required to meet the environmental permit conditions, protect the environment and human health. The proposed design for the Biomass Preparation Facility is largely driven by this desire and need to limit potential adverse effects of operations.

This D&PEMP has been written as a separate component of the Environmental Management System, so that it can be reviewed at least annually as a matter of routine and at additional times to reflect proactive improvements in management techniques. In addition, it will be reviewed following any incidents or issues identified on site.

All staff will be trained within the D&PEMP and a copy of the plan will be accessible to all staff at any time.

It should be noted that the site has limited potential to cause offsite dust emissions and impacts under normal operating conditions, due to the low dust generation of site activities and the control measures outlined within this document.

Potential emissions from the facility would only arise from the following sources as a result of abnormal events or emergency activities:

- Unloading, movement and transfer of wood material into the waste reception area;
- Movement of unprocessed wood material into stockpiles;
- Wood processing;

- Storage in external stockpiles; and
- Movement associated with export offsite.

The main areas of dust control for this site relate to:

- The wood processing area; and
- External processed wood stockpiles.

The site will have a number of dust suppression measures as well as a visual monitoring regime which is detailed within this document.

A summary of the key control measures on site are as follows:

- Stringent Pre-acceptance and Acceptance Procedures to minimise the presence of high dust content (fines) wood materials onsite;
- Mobile dust suppression units including 'Dust Boss' water cannon;
- Wheel washing is available on site for any vehicles which may require it;
- Continual visual monitoring during plant operation and daily visual inspection during site walkover procedures; and
- General site maintenance and good housekeeping measures.

Site personnel will be trained to be vigilant for dust levels on site and its potential migration and will be instructed to report any such potential or actual emissions immediately to Site Management.

1.1 Sensitive Receptors

The nearest sensitive receptors that have been identified around the site are detailed in the Table 1 overleaf and illustrated in the Figure 1.1.

The distances between the permitted site and the receptors, have been estimated using online maps of the area.

It is generally understood that the greater the distance from the site the less potential impacts of the emissions, due to 'drop out' and deposits.

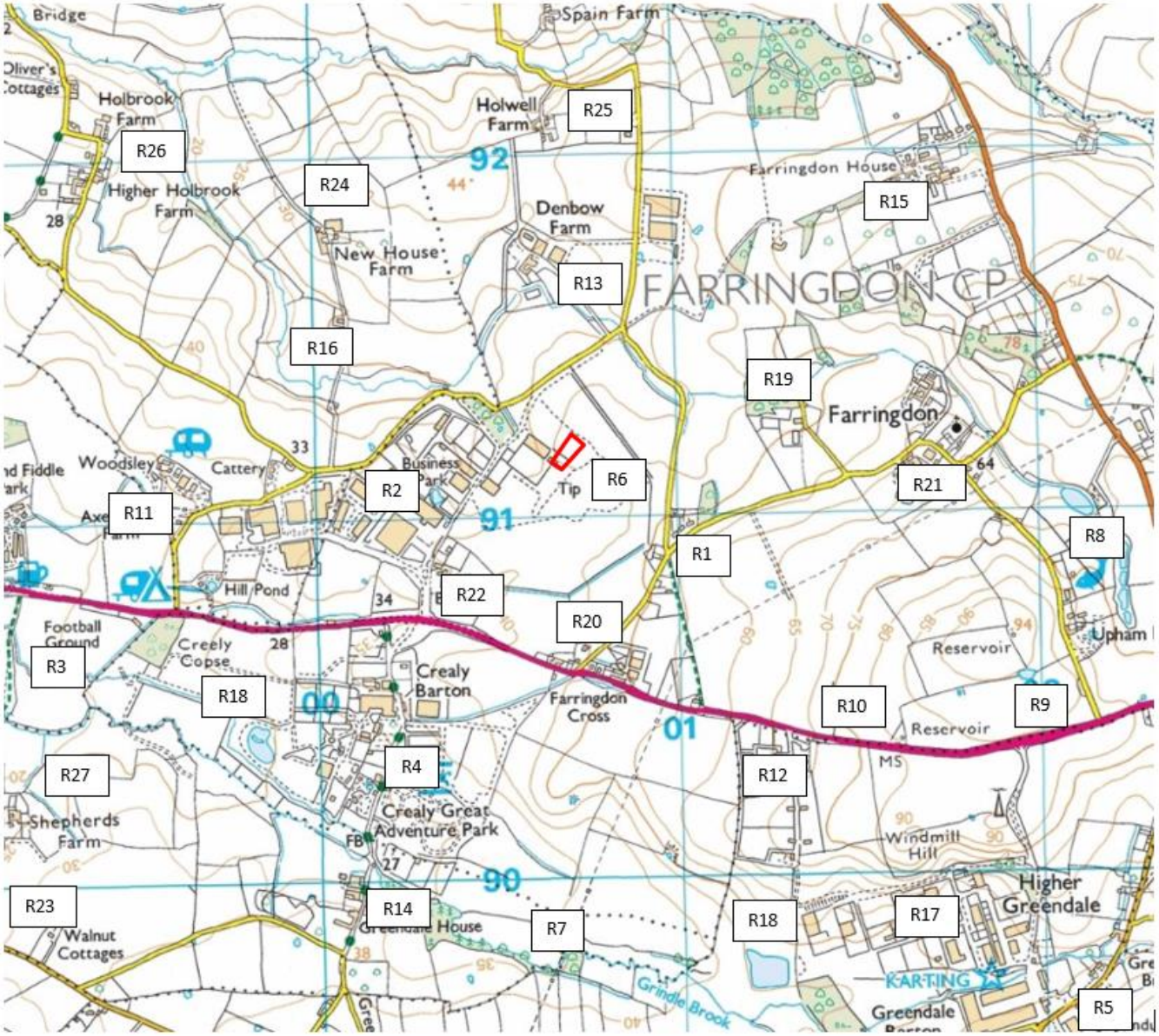
However, the operator also recognises that local ambient weather conditions and surrounding buildings can have an impact on the pathway, by causing eddy-current effects on the prevailing wind.

The site lies in a predominantly industrial setting. The closest residential development to the site are Glebe cottages located 320 m to the east of the site.

In the vicinity of the permitted site, potential emission sources comprise other industrial / commercial operations which have associated areas of unpaved/unsurfaced land and potentially dust emitting operations (e.g., CHP plant, materials recycling facility, composting site).

These sources have the potential to emit dust and will contribute to the ambient dust environment.

Table 1: Receptor Sensitivity				
Receptor No.	Receptor Name	Direction and Approximate Distance from Site	Sensitivity	Risk / Likelihood of Impact
R1	Glebe Cottages	320 m east	High Sensitivity	Medium / Low
R2	Hill Barton Business Park	Adjacent west	Low Sensitivity	Medium / Low
R3	Exeter City FC Training Ground	1.3 km southwest	Medium Sensitivity	Low
R4	Crealy Adventure Park and Resort	780m south	Medium Sensitivity	Low
R5	Mill Park Industrial Estate	2 km southeast	Low Sensitivity	Low
R6	Hill Barton Landfill	25 m southeast	Low Sensitivity	Medium / Low
R7	Grindle Brook	1.3 km south	Medium Sensitivity	Low
R8	Upham Farm Fishing Ponds	1.4 km east	Medium Sensitivity	Low
R9	Reservoir	1.4 km southeast	Medium Sensitivity	Low
R10	A3052 Road	500 m south	Low Sensitivity	Low
R11	Caravan Parks	1 km west	Medium Sensitivity	Low
R12	Greendale Farm Shop	1 km southeast	Medium Sensitivity	Low
R13	Denbow Farm	500 m north	Medium Sensitivity	Medium / Low
R14	Greendale House	1.3 km south	High Sensitivity	Low
R15	Farringdon House	1.2 km northeast	High Sensitivity	Low
R16	Unnamed stream	380 m northwest	Medium Sensitivity	Medium / Low
R17	Greendale Business Park (including Go Karting)	1.5 km southeast	Medium Sensitivity	Low
R18	Water Body	1.4 km south	Medium Sensitivity	Low
R19	Greengage & Lime Cottage Holiday Homes	620 m east	High Sensitivity	Low
R20	Halfyards (residential)	500 m south	High Sensitivity	Medium / Low
R21	Farringdon Village	970 m east	High Sensitivity	Low
R22	Residential Property on Stuart Way	350 m southwest	High Sensitivity	Medium / Low
R23	Walnut Cottages	1.9 km southwest	High Sensitivity	Low
R24	New House Farm	880 m northwest	Medium Sensitivity	Low
R25	Holwell Farm	900 m north	Medium Sensitivity	Low
R26	Holbrook Farm	1.4 km northwest	Medium Sensitivity	Low
R27	Shepherds Farm	1.7 km southwest	Medium Sensitivity	Low



Receptor No.	Receptor Name
R1	Glebe Cottages
R2	Hill Barton Business Park
R3	Exeter City FC Training Ground
R4	Crealy Adventure Park & Resort
R5	Mill Park Industrial Estate
R6	Hill Barton Landfill
R7	Grindle Brook
R8	Upham Farm Fishing
R9	Reservoir
R10	A3052
R11	Caravan Park(s)
R12	Greendale Farm Shop
R13	Denbow Farm
R14	Greendale House
R15	Farringdon House
R16	Unnamed stream
R17	Greendale Business Park
R18	Water body
R19	Greengage Cottage & Lime Cottage Holiday Homes
R20	Halfyards
R21	Farringdon Village
R22	Stuart Way
R23	Walnut Cottages
R24	New House Farm
R25	Holwell Farm
R26	Holbrook Farm
R27	Shepherds farm

Figure 1.1: Closest Sensitive Properties

1.2 Weather Conditions

The prevailing wind conditions at the site are predominantly from the southwest. The site location, close to the coast in the south west, is also considered to be in an area with high precipitation.

Wind direction will determine the distribution of dust if emitted. As such, the processed wood piles will be located so as to take advantage of the screening effects of adjacent buildings and bunds. Daily checks of the weather conditions will be undertaken as will visual monitoring of the stockpiles as part of the daily site walkover.

2 Operations at Brooke Energy Biomass Preparation Facility

2.1 Waste Wood Deliveries Brooke Energy Biomass Preparation Facility

The transport of waste wood into the facility and deposit of materials during delivery has the potential to result in dust emissions in some cases such as;

- the direct escape of material from vehicles;
- the process of unloading vehicles; and
- deposits on roads via the wheels when the vehicle leaves the site.

All of these sources are prevented and minimised at site through the following measures;

- Prior to wood fuel receipt, inspections are completed by the management team to ensure the quality of wood is acceptable in accordance with site waste pre-acceptance procedures. No inherently dusty or fines materials will be accepted at the site.
- All wood delivered to site via road will be in walking floor transporters or skips, which are covered to prevent any material escape and mechanically deposit the material at slow speed and at low tipping height, reducing potential for dust release and migration;
- Every load received onsite is subject to inspection by trained operations staff. Loads will be rejected in the event of the material being particularly dusty.
- The process of unloading will be monitored and mobile dust suppression (water sprays or canon) will be deployed if necessary;
- None of the materials processed at site will be deposited on site roads or tracked over by vehicles; and
- All roads are constructed of sealed concrete hardstanding, which avoids dust generated from un-paved surfaces during dry weather.

As part of the pre-acceptance / acceptance procedures, no potential dry/fines containing loads will be accepted on site. All wastes accepted on site are subject to stringent waste acceptance criteria in accordance with the site environmental management plan and associated procedures:

- Pre-acceptance Procedure;
- Waste Acceptance Procedure; and
- Waste Rejection Procedure.

All waste materials will be accepted on site in accordance with the procedures outlined above. If any waste is inspected and found to contain fines, powders or excessively dusty materials above the contracted acceptance specification, then the load will be immediately rejected off site in accordance with site procedures.

Incoming loads are reported to the site manager and respective staff by the weighbridge personnel upon arrival and will be directed to the waste reception area via the designated access route. A check will be made that the waste load has be Pre-accepted in accordance with the relevant procedure and the load is inspected for any non-conforming materials.

Details including the following are recorded for each load:

- Date and time of delivery
- Details and description of the vehicle delivering the waste, drivers name and vehicle operator; and
- Description of the waste including type and quantity.

Please refer to Table 2.1 which identifies all waste materials accepted at the site.

Table 2.1: Typical Waste Types brought to Brooke Energy Biomass Preparation Facility

Table 2.1 Typical waste types				
European Waste Code (EWC)	Product Description	Tonnes/year	Destination within Facility	Process
03 01 01 03 01 05 03 03 01 15 01 03 17 02 01 19 05 03 19 12 07 19 12 10 20 01 38	Mixed Waste Wood	35,000	Waste Wood will be stored within dedicated stockpiles prior to processing	Sorting, screening and shredding to specification prior to export off site

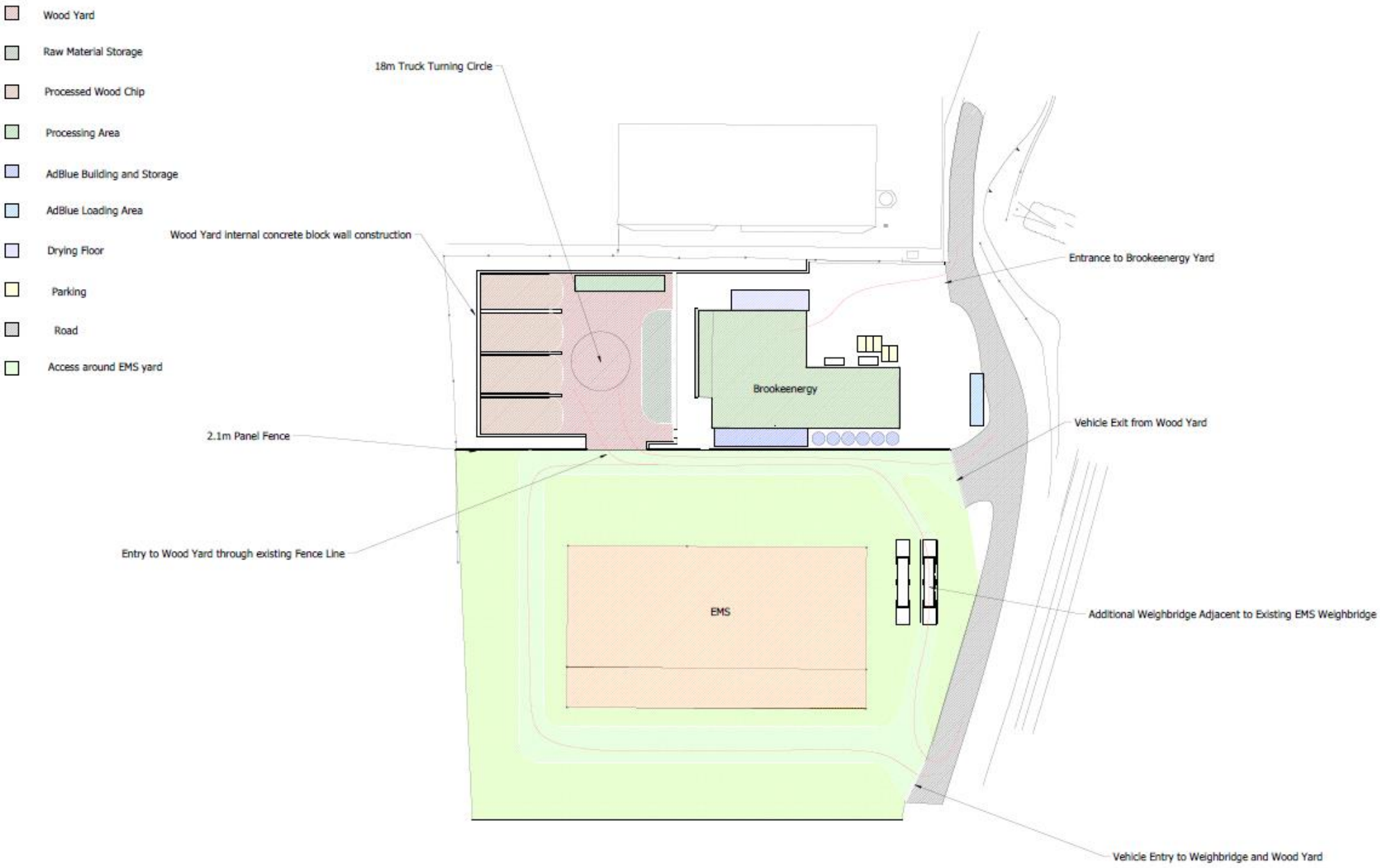
2.2 Overview of Wood Processing and Dust Controls

The site layout includes the following key areas:

- Wood Reception Area: all wood materials will be delivered to site via road and weighed at the EMS weighbridge prior to being directed onto site and to the external reception and storage area for unloading.
- Unprocessed Wood Storage Area: In accordance with the Environment Agency guidance and sector best practice, Brooke Energy segregate all unprocessed material and store it in unprocessed form for as long as possible prior to shredding and processing.
- Processing: Processing equipment is mobile and will therefore move around site to process material in situ for the minimisation of double handling. All wastes will be sorted and shredded to meet the fuel specification. All metals, plastics and other contaminants are removed and separated from the processed fuel materials. Waste is dampened in the shredder in line with BAT 25 of the Waste Treatment BREF.
  Future plans for the site are for the processing line to be fixed and electric powered rather than diesel. When this layout is achieved a cover will be built over the line to further aid dust suppression.
- Processed Wood Storage Area: All processed material is kept in dedicated stockpiles in preparation for collection and export offsite.

Along the southeastern boundary of the site runs a 17m embankment as part of the landfill boundary, which acts as a natural barrier between the site and sensitive receptors. To the north of the site lies a CHP plant, a Waste Materials Recovery Facility lies to the east and a composting facility to the west. Buildings associated with these adjacent uses provide additional barriers around the site.

Please refer to the site layout below which identifies the key areas mentioned above.


Wood Yard
Raw Material Storage
Processed Wood Chip
Processing Area
AdBlue Building and Storage
AdBlue Loading Area
Drying Floor
Parking
Road
Access around EMS yard
18m Truck Turning Circle
Wood Yard internal concrete block wall construction
Entrance to Brookeenergy Yard
Brookeenergy
Vehicle Exit from Wood Yard
2.1m Panel Fence
Entry to Wood Yard through existing Fence Line
EMS
Additional Weighbridge Adjacent to Existing EMS Weighbridge
Vehicle Entry to Weighbridge and Wood Yard

The processing activity (screening and shredding) is typically the major source of dust at wood processing sites.

The processing of wood at the Brooke Energy Site utilises the following items of equipment:

- Shredder;
- Trommel; and
- Eddy Current Separator (ECS).

The shredder in use at the site is an electric powered Untha – XR3000C mobile shredder. This is currently powered by a diesel generator but will be connected to the mains supply from Autumn 2021. The trommel is a diesel pwered Terex Finlay 883+, and the ECS is an electric powered Eriez machine. This is also powered by a diesel generator but will be connected to the mains supply when implemented.

A mobile Dust Boss water canon with 60 m spray reach is on site for use where required to ensure full coverage of operations.

Conveyors at the site can be fitted with covers / chutes if deemed appropriate, which will remove the possibility of wind catching any dust during transportation.

If any visible dust is observed migrating from the site, it will be immediately investigated and processing ceased if necessary, until such time that additional dust suppression can be sourced, deployed and operational.

A conventional road sweeper can be used on site where required. This will usually be available at short notice. Once weekly the wider Hill Barton Business Estate is serviced by a road sweeper which can be utilised on site if required.

The site has a plentiful water supply for dust suppression equipment, with mains water at the associated CHP plant at the site entrance and additional supply from the attenuation lagoon located to the northwest, and hydrants in the wider business park.

The site will pre-emptively use dust suppression equipment wherever prevailing conditions (i.e. prolonged hot and dry conditions with strong or consistent winds) dictate that offsite emissions may occur. This should allow processing activities to take place during these conditions though, should visible dust be observed migrating from the site, then processing activities will be immediately investigated and ceased if necessary.

Site sweeping, good housekeeping measures and use of a water cannon and bowsers will be used to suppress dust in external storage areas and roadways.

The trigger for dampening stockpiles will be observation of dust migrating beyond the site boundary by site staff.

Visual monitoring of the site will be undertaken daily as part of the site walkover, and will include dust sources in the waste reception area, waste processing area and all storage areas. Constant visual monitoring will be undertaken during processing activities.

All site infrastructure, including dust suppression systems will be inspected at least daily and records kept as part of the site routine maintenance inspection programme/procedures.

Site roadways will also be inspected during the daily site walkover and if required a road sweeper will be employed.

For worker, site safety and dust minimisation issues, vehicle speeds will also be limited to 5 mph at all times.

In the event that dust emissions are observed or reported to be leaving the site (i.e. causing nuisance to the sites neighbours), the operation causing the emission will be ceased immediately. This ceasing of operations on site will ensure that the site does not continue to create a nuisance to any nearby receptors.

For fire safety purposes, the processed material stockpile turnover rate is less than 2 weeks. This strategy removes the need to rotate the pile and hence eliminates the need for double handling, thus minimising dust generation.

Please refer to Table 2.2 which identifies the wastes removed from site.

Table 2.2: Typical Destination for Residual Wastes

Table 2.1 Typical Destination for Recovered and Residual Materials: Export from Brooke Energy Biomass Preparation Plant			
European Waste Code (EWC)	Product Description	Average yearly tonnage	Material End Use
19 12 07	Fuel Grade Waste Wood (chipped and prepared)	35,000	Reclaimed and reused offsite
19 12 04	Waste Plastics (< 1%)	350	Reclaimed and reused offsite
19 12 02 19 12 03	Waste Metals (<1%)	350	Reclaimed and reused offsite
16 10 02	Interceptor sediments	-	Physico-chemical treatment and disposal

3 Dust and Particulate (PM_{10}) Management

3.1 Responsibility for Implementation of the D&PEMP

The Site Manager is responsible for the D&PEMP and making sure that the site is compliant at all times.

The technically competent site management team will provide formal training to ensure all site staff are aware of the D&PEMP. Each staff member will receive refresher training on the D&PEMP annually.

The D&PEMP is 'live' and will be reviewed at least annually and after any environmental incidents, significant change to the site activities, or at the request of the Environment Agency (EA).

3.2 Sources and Control of Fugitive Dust / Particulate Emissions

Diffuse emissions from the wood processing facility may arise from site roads, loading and unloading areas, wood processing and storage piles as detailed below:

- *Vehicles entering and/or leaving the site with mud and debris on wheels, and tracking dust on to or off the site.*
  All vehicles entering site will be directed directly to the waste reception area where they will unload

  The site is hard paved only which is a recognised method of reducing dust on site from vehicle movements.

  A site speed limit of 5 mph will be enforced via signage and site staff and management.

  Wheels will be checked via site staff prior to leaving the site and the use of a water jet for wheel washing will be employed where necessary.

- *Wood dust when unloading waste wood from vehicles*
  All vehicles delivering wood to site will be covered walking floor transporters. These vehicles push the material at low level and at low speed into the storage areas. There will be no 'high level' tipping.

  The dust generated by this process is minimal and managed adequately via site sweeping and / or the water bowser. Loads can be dampened with the mobile dust suppression equipment where required.

- *Vehicles and plant moving around the site generating dust*
  Please see above comments regarding emissions from vehicles entering and leaving site.

  A site speed limit of 5 mph will be enforced via signage and site staff and management.

  A Sennebogen 821 electric grab loader is used for loading wood into the shredder, and a CAT 950k

loading shovel is used for transferring wood around the site and into the trommel. These vehicles rarely leave the site. Prior to any movements off site the wheels will be checked by site staff and use of a jet wash employed for wheel washing where necessary.

Site roadways will be assessed as part of the daily site walkover and a road sweeper employed from an external contractor should the need arise.

- *Processing waste wood - shredders*
  The processing activity (shredding) is typically the major source of dust at wood processing sites. The processing of wood at the Brooke Energy Facility will consist of shredding and by screening.

  Mobile dust suppression equipment (cannon and sprays) will be positioned nearby processing activities during processing operations and utilised upon the initial detection of dust emissions from the process. Waste is dampened while being shredded in line with BAT 25 of the Waste Treatment BREF.

- *Processing waste wood – screeners / conveyors*
  The waste wood is screened using an eddy current separator to remove any metals contained within the waste materials. Metals will be separated using an overband magnet and segregated into a dedicated container.

  All screeners / conveyors on site will have the ability to be fitted with covers / chutes if deemed necessary. This would remove the possibility of wind catching dust and result in dust collection from the chute into a container for offsite removal. It would also prevent the possibility of waste dropping from conveyors.

  Mobile dust suppression is also present should it be required.

- *Management of Fines*
  Fines separated by the trommel will be minimal and removed offsite via covered container.

- *Residual Dust*
  Daily cleaning of the equipment in the processing area will ensure that there is no build up of dust in the processing area.

- *Waste storage in stockpile*
  Dust will not tend to be generated by the stockpile due to the very low content of fines, however if this is seen to be a source of dust, dust suppression equipment will be deployed to dampen the stockpiles and prevent dust migration beyond the site boundary.

- *Site Surfaces*
  The site is hard paved only which is a recognised method of reducing dust on site from vehicle

movements.

A site speed limit of 5 mph will be enforced via signage and site staff and management.

Surfaces will be swept and dampened with a water bowser where necessary.

- *Loading processed material onto vehicles*
  Dust suppression equipment will be deployed during this operation to reduce dust from the loading if there is an observed risk of dust migrating off site.

- *Particulate emissions from the exhaust of vehicles/ machinery on site.*

  This will not be an issue with regard to off-site emissions. All equipment used on site will be incorporate the latest low emission types of engine ensuring lowest possible levels of particulate arising from this source. The machinery used on site will be subject to a regular preventative inspection and maintenance programme to maintain fuel efficient operations and avoid interruption to processing.

The dust sources on site, pathways, receptors and measures proposed to interrupt those pathways are summarised in Table 3.2.

Table 3.1: Control of Dust / Particulates (PM_{10})

Abatement Measure	Description / Effect	Overall Consideration and implementation
Preventative Measures		**Low Cost Options**
Speed Limit	Vehicle speeds will be limited to 5 mph on site which is a recognised method of controlling dust.	• Fully Implemented
Type of Vehicle and Minimising Drop Heights of Waste	All vehicles delivering wood to site will be covered walking floor transporters. These vehicles push the material at low level and at low speed into the processing area. There will be no 'high level' tipping.	• Fully Implemented
Type of Material Stored on Site	All incoming materials are free from fines and dusts as far as possible and accepted onto site in accordance with a strict specification. Material will be stored in unprocessed form for as long as possible and stored in processed form for no longer than one month. Minimal fines are generated at site and will be transported offsite in covered containers.	• Fully Implemented
Inspection	All plant will be regularly maintained, inspected and kept clean to avoid a build-up of material, which may lead to spillage and emissions.	• Fully Implemented
Visual monitoring	Daily site checks in the form of a walkover will include monitoring for dust around the site, roadways, storage and processing areas, taking note of the weather conditions. Visual monitoring will be undertaken continuously during processing operations by site staff.	• Fully implemented
Road Surfaces	The entire site is constructed of concrete, there will be no unsurfaced roadways, resulting in dust being minimal. This also makes the roads easy to clean. Roads and surfaces are inspected daily and road sweeping may be undertaken by hire in contractors if required.	• Fully Implemented
Preventative Measures		**Medium Cost Options**
Ceasing operations during adverse weather conditions	Mobilization of dust and particulates is likely to be greater during periods of strong winds. Ceasing operation during these times will reduce peak pollution events. Weather will be monitored throughout the day	• Fully implemented
Covers / chutes for screening & conveyor systems	Covering the screening and conveying equipment at the site reduces the risk of dust capture by wind during transport and processing. Instead, dust is collected in a container at the bottom of the chutes for offsite removal.	• Can be implemented
Preventative Measures		**High Cost Options**
N/A		

Remedial Measures		Low Cost Options
Wheel Washing	• All vehicles will be inspected prior to leaving the site. Should dust / mud / debris be present, a vehicle wheel wash will be utilized to clean wheels before the vehicle leaves site, thereby reducing the risk of dust being tracked offsite.	• Fully implemented
Remedial Measures		**Medium Cost Options**
Mobile dust suppression (canon and bowsers with sprays) and Site Sweeping	• Mobile dust suppression will be utilised across site, primarily in the processing area and to dampen roadways and stockpiles. • There is plentiful supply of water to the site, from the mains and additionally the attenuation pond. • Roadways will be swept and dampened where required. • Site surfaces will be inspected at least twice daily and dampening/sweeping employed where required • Visual inspection will be undertaken continuously during processing and in the event of any visible dust emissions potentially migrating offsite works will be immediately ceased until such time as effective dust suppression measures can be in place.	Fully implemented
Remedial Measures		**High Cost Options**
N/A		

Table 3.2: Source – Pathway – Receptor Routes

Source/Activity on Site	Pathway	Receptor	Type of Impact	Measures to break Source-Receptor Pathway can be interrupted
Mud/Dust from vehicles entering and leaving site	Tracking mud on wheels of vehicles	Residential Properties / Roads	Visual Soiling Resuspension as PM_{10}	• The carriage of mud from the site onto the public highway is unlikely to occur due to the material types handled and concrete hard-paving proposed for the entire site. • Vehicles wheels are inspected prior to leaving the site and wheels are washed where required. • All vehicles passing through the weighbridge will be stopped and inspected. Any debris or other fugitive material to be removed from the wheels. • Regular housekeeping on site will ensure mud and dust levels are controlled via sweeping and / or dampening of surfaces. • Should it become apparent that debris from site is being deposited on the public highway, sweeping of the haul roads and other relevant areas of the site will be organized immediately to prevent further mud emissions to the public highway. • Site surfaces will be inspected daily by site staff. • The trigger for any repairs will be where any areas become damaged or worn to the extent which require diversion by site traffic. Any repairs will be undertaken by suitable contractors.
Dust generated when Unloading	Atmospheric Dispersion (Inhalation and Deposition)	Residential, Commercial and Industrial Premises (Humans and Property)	Respiratory irritation, surface soiling and nuisance	• Dampening of vehicles loads during unloading using mobile dust suppression equipment where deemed necessary. • Material will be delivered in walking floor trailers offering full enclosure until delivery, minimizing loss of material on surrounding road network prior to entering or upon exiting site. • Material will be unloaded at slow speed and with low tipping height. • Any spillages of material will be internal and cleared by the loading shovel or manually by site operatives.
Dust generated during Vehicle Movements on Site	Atmospheric Dispersion (Inhalation and Deposition)	Residential, Commercial and Industrial Premises (Humans and Property)	Respiratory irritation, surface soiling and nuisance	• Entire site hard paved as above. • Regular housekeeping will ensure mud and dust levels are controlled via sweeping / dampening. • Site speed limit of 5mph enforced via signage and site management.

				• Vehicle movements are minimized on site via the usual operational need for efficiency and reduction of fuel use.
Dust generated during processing	Atmospheric Dispersion (Inhalation and Deposition)	Residential, Commercial and Industrial Premises (Humans and Property)	Respiratory irritation, surface soiling and nuisance	• Conveyors and screening equipment can be covered reducing opportunity for wind catching dust if required. • Mobile dust suppression equipment is located primarily wherever processing is to take place and will be used where necessary. • Daily cleaning of shredder equipment will prevent accumulation of dust in processing area. • Continuous visual assessment of dust generation during processing activities.
Dust generated from stockpiles	Atmospheric Dispersion (Inhalation and Deposition)	Residential, Commercial and Industrial Premises (Humans and Property)	Respiratory irritation, surface soiling and nuisance	• Material will be stored in unprocessed form for as long as possible. Processed materials will not be stored for longer than 2 weeks. • In addition, dust will not tend to be generated by the stockpile or its forming, due to the material size and low content of fines. • If dust is noted at levels which could migrate offsite, dust suppression equipment will be used to dampen the stockpiles and mitigate the risk.
Dust generated during loading of processed materials onto vehicles	Atmospheric Dispersion (Inhalation and Deposition)	Residential, Commercial and Industrial Premises (Humans and Property)	Respiratory irritation, surface soiling and nuisance	• Mobile dust suppression equipment will be used to reduce the potential for dust from loading processed material into vehicles.
Particulate from exhausts of equipment and vehicles on site	Atmospheric Dispersion (Inhalation and Deposition)	Residential, Commercial and Industrial Premises (Humans and Property)	Respiratory irritation, surface soiling and nuisance	• All equipment on site will incorporate the latest low emission types of engine. • All machinery will be subject to a routine inspection and preventative maintenance programme to ensure smooth efficient running and avoid unnecessary emissions.
Litter	Atmospheric Dispersion (Deposition)	Residential Properties, commercial and Industrial Premises	Visual Soiling Resuspension as PM10	• The primary control measure proposed for litter is picking. This will be undertaken when required as identified by the daily site walkover inspections.

3.3 Dust Monitoring

Monitoring of dust will be undertaken at the site consisting of regular visual inspections of the site operations.

3.3.1 Visual Monitoring

Visual monitoring will be carried out as part of the daily site checks, with results recorded on Daily Site Checklist. Any incidents of dust appearing to leave the site boundary will be recorded and immediately reported to Site Management.

The recorded checks will take place twice per day, however site staff will be monitoring dust throughout the day. Any dust emissions with the potential to migrate from site will be reported to site management immediately.

The visual monitoring will be undertaken all around the site perimeter, with particular focus on the areas downwind of any area which had been viewed as a potential source of off-site dust emissions. (The precise location of the downwind monitoring points would move dependent on wind direction; hence it is not possible to mark these monitoring points on a site plan). Results will be recorded on the Daily Site Checklist.

All plant and equipment will be subject to daily inspections and usual checks to ensure that all dust controls are effective. This monitoring will take place during those activities which could give rise to dust emissions specifically unloading, processing and loading of processed materials onto vehicles.

Site staff will be able to judge whether there is a risk of dust migrating from site and report it accordingly to Site Management. Site staff will be trained by the Biomass Manager in undertaking their responsibilities for dust monitoring. All records for training will be held on site. The relevant procedures in which staff will be trained are:

- *Environmental Records*
- *Environmental Management and Monitoring*
- *Infrastructure Management and Monitoring*

Site staff will also be trained in recording observations on the Daily Site Checklist and any remedial actions undertaken will also be recorded in the site diary. Refresher training on these and any other relevant procedure will be undertaken on at least an annual basis.

3.3.2 Trigger for Enacting Dust Suppression / Control Measures

The trigger for enacting further control measures will be observations by site staff of dust emissions with the potential to migrate beyond the site boundary. This in turn will depend upon the volume of dust present, the location of the dust on site and current weather conditions.

In any event, site staff will alert site management to areas where dust is being released on site, so that these can be monitored for dust migration and need for control.

A brief visual check (<1 minute) at each location will be carried out to determine dust levels. This combined with the visual checks throughout the day by operations personnel will efficiently identify any dust emissions from site. The site will be manned at all times during processing, deliveries and collections. Any obvious signs of dust will be reported to the site management immediately.

If there is a potential for dust beyond the site boundary, the relevant activity will be ceased immediately to allow investigation by Site Management and appropriate dust control measures to be implemented.

4 Actions when alarm is triggered

Should any activities be seen to be generating dust which, combined with weather conditions, could result in its migration off site, the operation shall be ceased until adequate measures are in place to prevent further dust emissions. The Site Manager has the ability to cease operations at any time in order to achieve this control.

Control measures used on site and this D&PEMP will be reviewed at least annually by Brooke Energy Ltd Management, or after any incident of dust migration off site. The EA will be notified of any changes to site arrangements or permit documentation.

The visual monitoring regime will identify any dust emissions. Should any visible dust emissions be seen emanating from the site, or in the event of a substantiated dust complaint, the site will immediately investigate the source and initiate remedial action.

Any operations on site which are observed to have the potential for dust migration beyond the site boundary will be ceased until adequate control measures are in place (i.e., to prevent migration beyond the boundary).

5 Reporting and Complaints Response

Any instance of visible dust emissions or occurrence of any external complaint will be actioned immediately and responded to within 2 working days.

In the event that any ongoing significant off-site dust problem is identified which the site cannot control by other means, the operations will be reduced or ceased until such a time as other control or mitigation measures can be put in place; or the circumstances have changed to reduce impact as identified in this plan.

In addition to the above, all incidents, accidents and complaints will be recorded and all relevant site managers and where necessary the EA will be informed.

5.1 Engagement with the Community

Neighbours will be advised of the most effective method of communicating with the site and site contact details will be presented on the site notice board.

Brooke Energy Group Ltd will engage proactively with neighbours and complaints will be responded to effectively and dealt with as a matter of priority.

5.2 Reporting of complaints

Compliments, complaints or environmental incidents received at the site will be processed using the relevant complaints form and procedures.

5.3 Management Responsibilities

The Biomass Manager will be responsible for delivery of the actions and controls included within this Plan.

Emission complaints will be taken seriously and regarded as providing a useful insight into public perception and concerns. They will be used to inform the annual review of the Management System to aid the development of site controls. All complaints will be investigated immediately and action taken swiftly following the assessment.

Clear feedback will be given to the informant via the nominated single point of contact. All staff will be fully trained in the feedback process and how to handle complaints to ensure swift and appropriate action is taken.

5.4 Summary

The control measures presented in this Dust Management Plan reduce the potential for emissions from the Brooke Energy site to a point where there is very low risk of nuisance or exposure of the local receptors.

This document is ‘live’ and will be reviewed at least annually and also after any environmental incidents or at the request of the Environment Agency.

Appendix A Site Plans

Appendix B Dust Complaint Form

Customer Details	
Customer Name	
Address	
Postcode	
Customer Contact Details	
Tel	
Email	
Date	
Complaint Reference Number	
Complaint Details	
Investigation Details	
Investigation carried out by	
Position	
Date and time of investigation	
Weather conditions	
Wind direction and speed	
Investigation Findings	
Feedback given to EA and / or LA	
Date feedback given	
Review and Improve	
Improvements needed to prevent reoccurrence	
Proposed date for completion of improvement works	
Actual date of completion	
If different, reason for delay	
Does the dust management plan need updating	
Date of D&PEMP update	
Closure	
Site Manager review date	
Site manager signature	