

Environment Agency permitting decisions

Bespoke permit

We have decided to grant the permit for Tilbury Docks Alternative Fuel Facility operated by SITA UK Limited.

The permit number is EPR/ZP3434EU.

We consider in reaching that decision we have taken into account all relevant considerations and legal requirements and that the permit will ensure that the appropriate level of environmental protection is provided.

Purpose of this document

This decision document:

- explains how the application has been determined
- provides a record of the decision-making process
- shows how all relevant factors have been taken into account
- justifies the specific conditions in the permit other than those in our generic permit template.

Unless the decision document specifies otherwise we have accepted the applicant's proposals.

Structure of this document

- Key issues
- Annex 1 the decision checklist
- Annex 2 the consultation and web publicising responses

Key issues of the decision

Background to the Facility

SITA UK Limited have applied for a permit for the purposes of the production of Refuse Derived Fuel (RDF) and Solid Recovered Fuel (SRF). The facility is to be located at Tilbury Docks, situated approximately 1 mile to the southwest of Tilbury and will consist of one building containing two units, numbers 32 and 33 and associated canopies.

The facility will accept up to 800,000 tonnes per year of the following waste types for the purposes of fuel production (individual list of wastes can be found within Schedule 2 of the permit):

- Commercial and Industrial Wastes (I&C) (predominately card, paper, plastics, putrescible material, metals and textiles); and
- Municipal Solid Waste (MSW) (predominately miscellaneous combustible fractions, card and paper, dense plastic, plastic film, textiles, glass and metals).

The process will be undertaken within the two units and will consist of two production lines, each processing up to 112 tonnes per hour of RDF and SRF. SITA estimate that this will equate to 50 truck deliveries per line per day, processing will be undertaken 24 hours a day, 7 days a week equating to just over 1 truck delivery every 30 minutes. SITA estimate that out of the 800,000 tonnes of waste to be accepted at the site, just under 500,000 tonnes will be processed to produce SRF/ RDF, while around 300,000 tonnes will be recycled or removed from site for onward processing.

The process

The treatment process and all associated processes, with the exception of storage of the finished product and recyclable materials, will take place within two buildings. Each building will contain a reception area which will accept the waste for the production lines. Upon unloading of the waste, the waste will be inspected for compliance with waste acceptance procedures and will be deposited within the stockpile area or the grab feeding area.

The waste will then be loaded into a pre-shredder which will contain a hopper sized appropriately for the load. After pre-shredding, a waste screen will separate out the fines which will then pass under a magnet for metal recovery. Metals will then be stored prior to being sent off site for onward processing.

The material will then pass through an 'air separator' to separate the waste into three fractions, heavy, mid-heavy and light fractions. The heavy fraction will then undergo Ballistic Separation which is a splitter device to separate the heavy fraction into two separate streams for easier management. The streams are then separated into three further fractions (2D, 3D and fines). 2D

fraction will consist of paper, plastic, film and card while the 3D fraction will consist of bottles, ferrous and non-ferrous materials.

3D fractions will undergo further processing to remove the ferrous, non-ferrous, mixed PET and mixed HDPE. Ferrous and non-ferrous are further recovered using a cross belt over-band magnet and eddy current. All remaining wastes will be passed into a Near Infra-Red separator, which detects different types of materials to ensure that all material which is suitable for recovery is removed from the process.

2D fractions which were separated via the ballistic separator are combined with the mid-heavy stream waste from the 'air separator' before being passed to the SRF processing system.

All remaining material is then conveyed to the post shredders, where they will be shredded to appropriate particle size, which can change depending on output specification required. Once shredded, the waste is then conveyed via an overband magnet to extract any further metals, to the baling and wrapping equipment.

RDF can also be produced at the facility as a product, depending on the feedstock to be processed. The RDF production does not require the same high degree of processing as SRF. Suitable material for the production of RDF will bypass the treatment system and enter the process at the post shredder, where it will be shredded and baled for onwards distribution, without any further treatment.

The RDF and SRF product will then be baled for onward transport. The baler will compress and tie the bales into rectangular bales, typically measuring 1.1 m by 1.1m. The RDF and SRF will be stored at the Tilbury Docks under the Environment Agencies Regulatory Position Statement which allows for the temporary storage of up to 10,000 tonnes of baled RDF/SRF for a total of 3 months.

Environmental Impacts

The main environmental impacts from this facility are expected to be amenity issues i.e. noise, odour and vermin due to the nature of the wastes to be accepted at the facility. These have been discussed in greater detail below.

Odour Modelling

Due to the nature and volumes of the waste to be accepted at the site (i.e. food wastes from both industrial and commercial premises as well as black bag waste), the Applicant has undertaken odour modelling to determine the likely impact of the facility at local sensitive receptors (residential receptors) in line with our H1 guidance.

SITA identified 19 different sensitive receptors consisting of commercial, recreational, industrial and residential premises within 1km of the site, for the

purposes of odour modelling 15 of these were used. The most sensitive of these receptors were the residential properties along Dock Road which would be subjected to odour approximately 23.35% of the time due to wind direction using a bench mark of 3 odour units, citing that this was in line with our H4 guidance.

We disagreed that SITA had used the appropriate benchmark and asked them to resubmit the odour modelling using the more appropriate benchmark of 1.5 odour units as the waste to be brought on site would contain a substantial amount of food wastes. This information was subsequently submitted and assessed. The result of the odour modelling predicts that there will not be an exceedence of the 3 OU_E/m^3 benchmark at sensitive receptors and that there will be no likely exceedences of the more stringent benchmark of 1.5 OU_E/m^3 .

We carried out our own check modelling analysis and sensitivity analysis which includes higher emission odour emission factors for Industrial and Commercial waste and other modelling parameters. Our check indicated that provided the applicant can maintain negative pressure within the buildings, we agree with the applicant's predictions.

We asked the applicant to provide further information regarding how negative pressure will be maintained within the building. They have adequately demonstrated how the negative pressure will be maintained to ensure that all airflow within the building will pass through the bag filter and air vents within the building, thereby minimising fugitive emissions of dust and odour.

Noise Modelling

The applicant has undertaken a noise impact assessment to determine the likely impact of noise on the nearest sensitive receptors, i.e. the residential properties off Dock Street and off Landsdowne Square, Gravesend. The noise impact assessment indicates that:

- The highest predicted noise levels from site operations would be below the lowest measured background noise levels measured during a Sunday;
- The highest predicted noise level from the site operations would not increase the existing residential noise levels;
- Using the British Standard 4142, complaints from the site operations are unlikely;
- Site noise levels would be within all relevant guidance and standards for noise, i.e. would be below the noise levels recommended by WHO guidance for night-time noise levels and below the recommended internal noise levels for sleep disturbance criteria as set out in BS8233: 2014; and
- Best practice would be applied in relation to plant operation and site noise management.

We audited the applicant's noise model using noise modelling software CadnaA (version 4.3). The applicant had not made it clear how traffic had been modelled, had used a ground absorption value of 1 which is very absorbing which we considered inappropriate for the large areas of waste between the facility and the receptors and did not include terrain in their model. When we audited the modelling we included a 2 m terrain data for all receptors, we set ground sensitivity to very reflective, included HVG movements, changed the number of reflections from 0 to 3, remodelled the main building as one noise emitting facade, added a 5db penalty for noise features and to provide a worst case and reduced the background noise levels.

Our checks shows that, even with the above factored in, while noise predictions did increase, they do no cause the BS4142 rating to go above marginal significance i.e. will not be more than 5db above the current background. We therefore agree with the operators conclusions that the facility will not cause noise pollution.

Vermin, Pests and Litter

The operator has stated that the enclosed nature of the activities and minimal residence time for the storage of untreated wastes will result in a low risk of pest infestation. However , in order to ensure activities do not result in pest infestations, the site will monitor all stored wastes that are likely to attract scavengers on a daily basis. Upon detection or notification that pests are causing a nuisance action will be taken to:

- Deter or remove scavengers from site; or
- Isolate and secure wastes attracting scavengers to prevent further scavenging.

If pests, vermin or insects become a nuisance at the site, the site will engage an appropriate contractor to address the problem. In addition the site will consider removing any wastes from site which are infested or have attracted vermin.

Flies are to be managed as per Environment Agency Guidance document 'Fly Management: How to comply with your Environmental Permit'. Fly numbers will be monitored twice weekly during April and October, all loads deemed infested with flies will be rejected, waste will be processed as quickly as possible to prevent fly infestations, the site will be kept tidy to prevent waste becoming trapped in corners, the time the external doors are kept open will be minimised and staff will be equipped and trained in the use of fly sprays.

Dust

Given the nature of the material and the shredding operations to be undertaken on site, there is potential for the site to produce dust as a result of

the activities. The building will be operated 24 hours a day, 7 days a week under negative pressure to ensure that all dust and odour remains within the building. The site will be hard surfaced and any spillages that occur during the unloading of waste will be immediately cleaned up. Any materials or fugitive materials such as dust or litter will routinely be swept up and disposed of and the site will undertake regular inspections to ensure that dust and litter is controlled so as not to cause off-site impacts. The Applicant has stated that the unloading of materials is to be undertaken within the building, thereby minimising dust emissions. The building is to be fitted with air ducts whereby extracted air will pass through a bag filter, all particulates will then be bagged for onward disposal.

Any material likely to generate dust will be assessed and managed with local dust sprays if these are considered to be required. The site will also ensure good housekeeping methods are employed with hard standings being kept clean and a road sweeper being employed when necessary.

Annex 1: decision checklist

This document should be read in conjunction with the Duly Making checklist, the application and supporting information and permit/ notice.

Aspect considered	Justification / Detail	Criteria met
		Yes
Consultation		
Scope of consultation	The consultation requirements were identified and implemented. The decision was taken in accordance with RGN 6 High Profile Sites, our Public Participation Statement and our Working Together Agreements.	✓
Responses to consultation, and web publicising	The web publicising and consultation responses (Annex 2) were taken into account in the decision. The decision was taken in accordance with our guidance.	✓
Operator		
Control of the facility	We are satisfied that the applicant (now the operator) is the person who will have control over the operation of the facility after the grant of the permit. The decision was taken in accordance with EPR RGN 1 Understanding the meaning of operator.	✓
European Directives		
Applicable directives	All applicable European directives have been considered in the determination of the application.	✓
The site		
Extent of the site of the facility	The operator has provided a plan which we consider is satisfactory, showing the extent of the site of the facility. We have reproduced two maps for the site, one shows the discharge points for air emissions and the site boundary, the second map shows the site in relation to the wider environmental setting to give points of reference. A plan is included in the permit and the operator is required to carry on the permitted activities within the site boundary.	✓
Site condition report	The operator has provided a description of the condition of the site.	✓

Aspect considered	Justification / Detail	Criteria met
		Yes
	<p>We consider this description is satisfactory. The decision was taken in accordance with our guidance on site condition reports and baseline reporting under IED–guidance and templates (H5).</p>	
<p>Biodiversity, Heritage, Landscape and Nature Conservation</p>	<p>The application is within the relevant distance criteria of sites of nature conservation and protected species and habitats.</p> <p>A full assessment of the application and its potential to affect the species and habitats has been carried out as part of the permitting process.</p> <p>There are a number of protected species and habitats within 500 m of the site. However we consider that the operation will not impact upon any protected species or habitat given that all processes will be undertaken within a fully enclosed building and the production of SRF/RDF is not expected to generate any leachates beyond what is within the material when it is brought onsite. The production of SRF/RDF does not require water in the process and any leachates generated by the waste will be either reused within the process to dampen down dusty material within the building or disposed of appropriately to a treatment facility. It should be noted however that the processed SRF and RDF material will be stored dockside outside of the permitted boundary under a Regulatory Position Statement, The operator has provided information that demonstrates that the RDF and SRF will be compacted to create rectangular bales measuring 1100mm high x 1100mm wide x variable length. The bales will be wrapped in a polyethylene UV protected, minimum 25 micron thick, film or suitable equivalent. The bales will have a minimum of 6 wraps. We are satisfied that this will avoid contaminated surface water runoff.</p> <p>We have assessed the operator’s risk assessments and have determined, as per the ‘Key Issues’ section of this document, that potential impacts from the operation will be limited to noise, odour, pests/vermin and litter. We have also assessed the operators management plans which specify how these potential impacts will be controlled. We consider that there are sufficient management techniques in place to control discharges of contaminants to air, water and land from the facility.</p> <p>There are no habitats near the site that could be impacted by noise therefore the operations will not adversely affect the protected species or habitats.</p>	<p>✓</p>

Aspect considered	Justification / Detail	Criteria met
		Yes
	<p>There is one Special Protection Area – The Thames Estuary and Marshes, one RAMSAR site – The Thames Estuary and Marshes and two local wildlife sites within relevant distance of the facility. As demonstrated within the application, all processes will be undertaken inside a building and the operator has management plans in place to manage all risks from the facility such that we do not consider that the site will impact on the SPA, RAMSAR or local wildlife sites.</p> <p>We have not formally consulted on the application. The decision was taken in accordance with our guidance.</p>	
Environmental Risk Assessment and operating techniques		
Environmental risk	<p>We have reviewed the operator's assessment of the environmental risk from the facility.</p> <p>The operator's risk assessment is satisfactory. This is discussed in the 'Key Issues' section above.</p>	✓
Operating techniques	<p>We have reviewed the techniques used by the operator and compared these with the relevant guidance notes. The SGN for this sector is TGN S5.06 'Guidance on the Recovery and Disposal of Hazardous and Non Hazardous Waste' and 'How to comply'. The key relevant sections of TGN S5.06 which apply to this process are:</p> <ul style="list-style-type: none"> - Waste pre-acceptance - The composition of the waste will be assessed prior to acceptance to site which will include information about the processes producing the wastes, predicted quantities, the form of the waste and any hazards associated with the wastes. Their suitability for treatment or storage prior to acceptance at the facility will be assessed. - Waste acceptance – On arrival the loads will be weighed at the weighbridge and all documents checked. Waste will be visually inspected at point of discharge and during the processing of wastes. Any non conforming wastes will be deposited in the quarantine area pending removal to an appropriate facility. Written details will be taken of quarantine wastes, including actions taken to prevent re-occurrence. The waste acceptance procedures are detailed in the operating techniques table (Table S1.2) in the permit. • Waste storage – All wastes accepted to the site will 	✓

Aspect considered	Justification / Detail	Criteria met Yes
	<p>be stored within an enclosed building. The surfacing within the building will be concrete. Completed RDF/SRF storage will be on the Tilbury Dock, in accordance with the Regulatory Position Statement.</p> <ul style="list-style-type: none"> • Point source emissions to air – There are two point source emissions to air from the odour ventilation stacks. The collected air is discharged through one of the two stacks. The odour dispersion modelling concludes that there is unlikely to be an exceedance of the odour benchmark of $1.5\text{ou}_E/\text{m}^3$ as specified in our H4 Odour Management guidance at receptor locations. • Fugitive emissions to air – All waste processing will take place within the building with enough space within the building for vehicles to enter and the roller shutter doors to be closed prior to emptying of the vehicle. Fugitive emissions to air will be minimised by all operations and waste storage is undertaken within the building. Mitigating measures are in place to reduce the impact of dust on sensitive receptors e.g. mist sprays, internal dust extraction system and road sweepers. • Odour – No waste will be stored or processed outside the building. The building is fitted with fast acting doors which will only be open for vehicles to enter and leave the building. The building will be operated under negative pressure which will draw fresh air into and through the building and discharge the collected air through one of two ventilation stacks. • Fugitive emissions to surface water and land – There are no sub-surface storage structures for fuel or liquids. The surfacing within the building will be concrete. All fuels or lubricants will be stored in above ground tanks and within a bund, weekly visual inspections will be undertaken. • Raw materials/ waste minimisation/ water use – Raw materials used on site are limited to fuels and oils for site plant and process equipment. The opportunities for waste minimisation are limited given the nature of the installation. Water use is limited to wash water, mist sprays and fire water. Wash water will be re-used where possible. • Waste recovery/ disposal – The majority of the received wastes are either recovered or recycled 	

Aspect considered	Justification / Detail	Criteria met Yes
	<p>(approximately 500 tonnes will be used to produce RDF/SRF, while the remaining will be recycled off site). The site estimates that approximately 400 tonnes per year of rejected fines will be produced (200 tonnes per processing line), 400 tonnes of loose RDF will be produced (200 tonnes per processing line) with a with a maximum of 3000 tonnes of material stored at any one time for processing (1500 tonnes per line). All wastes from the site are destined for recovery. This is in accordance with the waste hierarchy referred to in Article 4 of the Waste Framework Directive.</p> <ul style="list-style-type: none"> • Accidents – An Accident Management Plan has been submitted which identifies the hazards, associated risks and measures required to reduce the risks at the facility. A Fire Risk Assessment has been submitted in accordance with TGN7.01 ‘Reducing Fire Risk at sites storing combustible materials’. • Noise – Good practice measures are proposed to reduce noise and vibration at the facility. These include the storage and treatment of wastes within a building, maintenance of plant and equipment, fitting of vehicle exhaust silencers and white noise beacons for reversing. <p>The proposed techniques for priorities for control are in line with the benchmark levels contained in the TGN and we consider them to represent appropriate techniques for the facility. The permit conditions ensure compliance with relevant BREFs and BAT Conclusions.</p>	
The permit conditions		
Waste types	<p>We have specified the permitted waste types, descriptions and quantities, which can be accepted at the regulated facility.</p> <p>Since the application was made, the operator has reviewed the list of wastes to be accepted at the facility as concerns were raised that some of the wastes applied for were not suitable for SRF/RDF production. The operator has since revised the list of wastes to be accepted in accordance with our concerns. We are satisfied with all proposed wastes with the exception of two waste codes involving metal wastes as follows:</p> <ul style="list-style-type: none"> • 02 01 10 – metal wastes, and 	✓

Aspect considered	Justification / Detail	Criteria met
		Yes
	<ul style="list-style-type: none"> 15 01 04 – metallic packing <p>All wastes with the exception of 02 01 10 and 15 01 04 are acceptable as they are wastes which are suitable for the production of RDF and SRF. We have since spoken to the operator and verbally agreed that metal waste will be excluded from the waste list in Schedule 2. Wastes accepted onto site shall be for the sole purpose of RDF/SRF production and not recovery of recyclable wastes. Wastes to be accepted at the site for RDF/SRF production are listed in Schedule 2 of the permit.</p>	
Pre-operational conditions	<p>Based on the information in the application, we consider that we need to impose pre-operational conditions.</p> <p>We have included a pre-operational condition within the permit (Reference 1) which requires the operator to submit a summary of the EMS for the facility prior to the commencement of commissioning. We recognise that certification of the EMS cannot take place until the Installation is operational.</p>	✓
Improvement conditions	<p>Based on the information on the application, we consider that we need to impose improvement conditions.</p> <p>We have imposed improvement conditions to ensure that:</p> <ul style="list-style-type: none"> - appropriate management systems and management structures are in place and that sufficient financial, technical and manpower resources are available to the operator to ensure compliance with all the permit conditions. - the performance of the facility and procedures developed during commissioning demonstrate compliance with permit conditions. An assessment shall be made of the environmental performance of the plant as installed against the design parameters set out in the Application. 	✓
Incorporating the application	<p>We have specified that the applicant must operate the permit in accordance with descriptions in the application, including all additional information received as part of the determination process.</p> <p>These descriptions are specified in the Operating Techniques table in the permit.</p>	✓

Aspect considered	Justification / Detail	Criteria met
		Yes
Operator Competence		
Environment management system	There is no known reason to consider that the operator will not have the management systems to enable it to comply with the permit conditions. The decision was taken in accordance with RGN 5 on Operator Competence.	✓
Technical competence	Technical competency is required for activities permitted. The operator is a member of an agreed scheme.	✓
Relevant convictions	The National Enforcement Database has been checked to ensure that all relevant convictions have been declared. Relevant convictions were found and declared in the application. A post conviction plan was submitted by the operator and assessed as satisfactory. The operator satisfies the criteria in RGN 5 on Operator Competence.	✓
Financial provision	There is no known reason to consider that the operator will not be financially able to comply with the permit conditions. The decision was taken in accordance with RGN 5 on Operator Competence.	✓

Annex 2: Consultation and web publicising responses

Summary of responses to consultation and web publication and the way in which we have taken these into account in the determination process. (Newspaper advertising is only carried out for certain application types, in line with our guidance.)

Response received from
Thurrock Council Public Protection Department
Brief summary of issues raised
Noise of dust extraction system, The noise mitigation plan, Odour, and Dust and Pest control
Summary of actions taken or show how this has been covered
<p>We are satisfied, through the applicant's modelling which we have audited, that the applicant can operate the site in accordance with all relevant standards and legislation with regards to noise, see 'Key Issues' section for more detail.</p> <p>We are satisfied that the operator has appropriate controls in place to ensure that noise will be adequately controlled. The unloading of wastes, waste treatment, storage of fines and loose RDF and SRF will occur within a building and all unloading of materials will also occur within the building. The operator has specified in the application that doors are to remain closed when not accepting truck deliveries and all fixed plant will be installed within the buildings. Vehicles will enter via the Northern side of the buildings and exit via the southern side of the building. All ventilation openings will be attenuated to match the acoustic performance of the existing walls and roof. The building will be under negative pressure to ensure that odour generated by the activities stays within the building and is vented through the dedicated air vents. We have assessed the odour impact of air being discharged through these air vents on nearby sensitive receptors and are satisfied that the odour levels will comply with our most stringent benchmarks as per our H4 guidance and therefore will not cause a nuisance.</p> <p>We have assessed the likely impacts of pests from the activity. The nature of the wastes to be accepted at the site are a mixture of industrial and commercial, and residential wastes and will include food and biodegradable wastes with the potential to attract pests. We have assessed the operator's proposals and are satisfied that sufficient management systems are in place to manage pests i.e. daily monitoring of wastes, quick turnaround of wastes, removal of infested or particularly pest attractive wastes from site, site maintenance procedures and the use of an exterminator.</p> <p>All unloading of materials, processing of materials and storage of loose fines will occur inside the building. The site will be operated under negative pressure to ensure that dust generated from the activities will remain within the building. The air vents to be placed at each end of the building (two air vents in total) will be fitted with bag filters to ensure that dust does not escape the permitted boundary.</p>

Response received from
Port of Tilbury London
Brief summary of issues raised
No issues raised
Summary of actions taken or show how this has been covered
n/a