

Permitting decisions

Variation

We have decided to grant the variation for Severnside Energy Recovery Centre operated by SUEZ Recycling and Recovery UK Limited.

The variation number is [EPR/ZP3937KL/V007](#).

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 provides a record of the decision making process. It:

- highlights [key issues](#) in the determination
- summarises the decision making process in the [decision checklist](#) to show how all relevant factors have been taken into account
- shows how we have considered the [consultation responses](#)

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

Read the permitting decisions in conjunction with the environmental permit and the variation notice. The introductory note summarises what the variation covers.

Key issues of the decision

1. Introduction

The variation is to increase the quantity of waste received at the facility from 400,000 t/year to 500,000 t/year. The change is due to reflect the design capacity of the as built facility and also to allow for rejection of some of the received waste. The change is classed as a substantial variation.

2. Plant Capacity

The current permitted capacity is 400,000 t/year. This was based on a throughput 50 t/hr of waste with a nominal calorific value (CV) of 9.8 MJ/kg for 8,000 hours per year.

The plant was designed to operate with waste between 7.5 and 12.5 MJ/kg. The firing diagram shows that the plant can operate at 48.474 t/hr at 100% load with waste at the lower CV. This throughput is within the original design capacity of 50 t/hr.

The plant can operate at 110% which equates to 26.66 t/hr per line 53.32 t/hr total. If the plant operated continuously (8,760 hr/year) this would be 467,082 t/year. Some waste received will not be incinerated because it will be rejected when received or removed from the bunker. To allow for this the operator requested that the Installation be permitted to receive 500,000 tonnes per year of waste

through the weighbridge. We have specified the maximum amount of waste that can be received and the maximum that can be incinerated in tables S2.2 of the permit. We have set the maximum for receipt as 500,000 t/yr and for incineration at 467,082 t/yr. The air quality assessment was based on ~467,000 t/yr. In reality less waste will be burned because the plant can only operate at 110% for short periods.

3. Air Quality Assessment

The operator carried out revised dispersion modelling based on incineration of ~ 467,000 tonnes of waste per year and also re-modelled based on the original plant design. Although the waste throughput has increased the revised dispersion modelling showed that impacts would be reduced compared to the original permitted design. This is because of differences between the design data at the time of permitting and the as built plant as summarised below:

- The original modelling was based on two flues, modelled as a single flue with effective diameter of 3.15 m. The plant was built with two 1.76 m diameter flues, using the calculation from ASMS this would equate to an effective diameter of 2.489 m if considered as a single flue. This results in a higher efflux velocity
- The temperature of the discharge is now 154 °C compared to 140 °C in the permitted design.
- The volumetric flow (m³/hr) has reduced from the permitted design.

The higher efflux velocity and increased temperature result in increased dispersion. The reduced volumetric flow results in a lower emission rate of pollutants. These changes result in increased dispersion and lower ground level concentrations.

We checked the operator's assessment and we are satisfied that impacts from the as built plant with the increased throughput will be lower than the currently permitted plant.

The tables below show the updated impacts from the revised dispersion modelling.

Table 1 – Non metals

Pollutant	EQS / EAL		Back-ground	Process Contribution (PC)		Predicted Environmental Concentration (PEC)	
	µg/m ³			µg/m ³	µg/m ³	% of EAL	µg/m ³
NO ₂	40	1	26.13	0.47	1.18	26.6	66.5
	200	2	-	4.43	2.2	-	-
PM ₁₀	40	1	-	0.03	0.08	-	-
	50	3	-	0.1	0.20	-	-
PM _{2.5}	25	1	-	0.03	0.12	-	-
SO ₂	266	4	-	4.22	1.6	-	-
	350	5	-	2.9	0.83	-	-
	125	6	-	1.19	1.0	-	-
HCl	750	7	-	1.66	0.22	-	-
HF	16	8	-	0.007	0.04	-	-
	160	7	-	0.33	0.21	-	-
CO	10000	9	-	3.6	0.04	-	-
	30000	10	-	11.09	0.04	-	-

Pollutant	EQS / EAL		Back-ground	Process Contribution (PC)		Predicted Environmental Concentration (PEC)	
	$\mu\text{g}/\text{m}^3$			$\mu\text{g}/\text{m}^3$	$\mu\text{g}/\text{m}^3$	% of EAL	$\mu\text{g}/\text{m}^3$
TOC	5	1	-	0.03	0.60	-	-
PAH	0.00025	1	-	0.0000003	0.12	-	-
NH ₃	180	1	-	0.03	0.02	-	-
	2500	10	-	1.66	0.07	-	-
PCBs	0.2	1	-	0.00002	0.01	-	-
	6	10	-	0.00083	0.01	-	-

TOC as 1,3 butadiene

PAH as benzo[a]pyrene

- 1 Annual Mean
- 2 99.79th %ile of 1-hour means
- 3 90.41st %ile of 24-hour means
- 4 99.9th ile of 15-min means
- 5 99.73rd %ile of 1-hour means
- 6 99.18th %ile of 24-hour means
- 7 1-hour average
- 8 Monthly average
- 9 Maximum daily running 8-hour mean
1-hour maximum
- 10 1 hour maximum

Table 2 - Metals

Pollutant	EQS / EAL		Back-ground	Process Contribution		Predicted Environmental Concentration	
	$\mu\text{g}/\text{m}^3$			$\mu\text{g}/\text{m}^3$	$\mu\text{g}/\text{m}^3$	% of EAL	$\mu\text{g}/\text{m}^3$
Cd	0.005	1	0.00026	0.00017	3.4	0.00043	8.6
Hg	0.25	1		0.00017	0.07		
	7.5	2		0.00832	0.11		
Sb	5	1		0.00166	0.03		
	150	2		0.08318	0.06		
Pb	0.25	1		0.00166	0.66		
Cu	10	1		0.00166	0.02		
	200	2		0.08318	0.04		
Mn	0.15	1	0.01092	0.00166	1.11	0.01258	8.39
	1500	2		0.08318	0.01		
V	5	1		0.00166	0.03		
	1	3		0.08318	8.32	0.08318	8.32
As	0.003	1	0.00081	0.00166	55.33	0.00247	82.3
Cr (II)(III)	5	1		0.00166	0.03		
	150	2		0.08318	0.06		

Pollutant	EQS / EAL		Back-ground	Process Contribution		Predicted Environmental Concentration	
	$\mu\text{g}/\text{m}^3$			$\mu\text{g}/\text{m}^3$	$\mu\text{g}/\text{m}^3$	% of EAL	$\mu\text{g}/\text{m}^3$
Cr (VI)	0.0002	1	0.00263	0.00166	830.00	0.00429	2145.0
Ni	0.02	1	0.00661	0.00166	8.30	0.00827	41.4

- 1 Annual Mean
- 2 1-hr Maximum
- 3 24-hr Maximum

4. Human Health Risk Assessment (HHRA)

As discussed above ground level concentrations are lower than the permitted plant. This includes the level of dioxins and dioxin like PCBs. Therefore the intake from dioxins via the food chain will also be lower than the permitted plant.

5. Noise

There are no changes to the incineration equipment or operating techniques. There will be a small increase in the number of waste deliveries. Our noise screening tool indicated that a noise risk assessment or noise management plan would not be required. We are satisfied that the changes will not cause an increased noise risk.

6. Odour, dust and fire risk

There will be no change in the odour risk due to the increased waste throughput, the maximum amount stored is not increasing.

The amount of bottom ash will increase, however the operator stated that this would be no more than was stated in the original permit application. This is because the plant produces less bottom ash than was originally anticipated. On this basis the risk of dust from the bottom ash storage and processing will be no more than in the original permit application.

The amount of waste stored is not increasing and so a fire prevention plan is not required with this variation because the fire risk is not increasing.

Decision checklist

Aspect considered	Decision
Receipt of application	
Confidential information	A claim for commercial or industrial confidentiality has not been made.
Identifying confidential information	We have not identified information provided as part of the application that we consider to be confidential. The decision was taken in accordance with our guidance on confidentiality.
Consultation/Engagement	
Consultation	The consultation requirements were identified in accordance with the Environmental Permitting Regulations and our public participation statement. The application was publicised on the GOV.UK website. We consulted the following organisations: <ul style="list-style-type: none"> • Bristol Council • South Gloucestershire Council • Public Health England and director of public health • Food standards agency • Health and Safety Executive • National Grid The comments and our responses are summarised in the consultation section
The site	
Biodiversity, heritage, landscape and nature conservation	The application is within the relevant distance criteria of a site of heritage, landscape or nature conservation, and/or protected species or habitat. We consider that the application will not affect any sites of nature conservation, landscape and heritage, and/or protected species or habitats identified. Impacts are reducing relative to the permitted plant. We have not consulted Natural England. The decision was taken in accordance with our guidance.
Environmental risk assessment	
Environmental risk	We have reviewed the operator's assessment of the environmental risk from the facility. The operator's risk assessment is satisfactory.

Aspect considered	Decision
Operating techniques	
Operating techniques	There are no changes to the operating techniques.
Permit conditions	
Emission limits	No emission limits have been added, amended or deleted as a result of this
Monitoring	Monitoring has not changed as a result of this variation.
Operator competence	
Management system	There is no known reason to consider that the operator will not have the management system to enable it to comply with the permit conditions.
Growth Duty	
Section 108 Deregulation Act 2015 – Growth duty	<p>We have considered our duty to have regard to the desirability of promoting economic growth set out in section 108(1) of the Deregulation Act 2015 and the guidance issued under section 110 of that Act in deciding whether to grant this permit.</p> <p>Paragraph 1.3 of the guidance says:</p> <p>“The primary role of regulators, in delivering regulation, is to achieve the regulatory outcomes for which they are responsible. For a number of regulators, these regulatory outcomes include an explicit reference to development or growth. The growth duty establishes economic growth as a factor that all specified regulators should have regard to, alongside the delivery of the protections set out in the relevant legislation.”</p> <p>We have addressed the legislative requirements and environmental standards to be set for this operation in the body of the decision document above. The guidance is clear at paragraph 1.5 that the growth duty does not legitimise non-compliance and its purpose is not to achieve or pursue economic growth at the expense of necessary protections.</p> <p>We consider the requirements and standards we have set in this permit are reasonable and necessary to avoid a risk of an unacceptable level of pollution. This also promotes growth amongst legitimate operators because the standards applied to the operator are consistent across businesses in this sector and have been set to achieve the required legislative standards.</p>

Consultation

The following summarises the responses to consultation with other organisations, our notice on GOV.UK for the public, and the way in which we have considered these in the determination process.

Responses from organisations listed in the consultation section

Response received from
Public Health England
Brief summary of issues raised
<ol style="list-style-type: none">1. No significant concerns over public health2. Recommend the Environment Agency consider whether the original application documents are still valid.3. Environmental risk assessment and accident plans not submitted.4. Reason for flue gas velocity change is not clear.5. Crook's Marsh farm not included in list of receptors.6. Little information on dust and odour control.
Summary of actions taken or show how this has been covered
<ol style="list-style-type: none">1. No action required.2. The original operating technique documents are still valid. The risk assessment were updated where required.3. An updated air risk assessment was submitted. There will be no change to the operating techniques and so an updated accident plan was not required.4. The flue gas velocity was due to changes in the design of the plant, including the flue diameter and emissions temperature. Further details are in the key issues section.5. The operator predicted the maximum ground level impacts. Impacts at specific receptors will be lower than the maximum and so no further assessment is required.6. Dust and odour risk is not increasing and so new risk assessments were not required.

Response received from
South Gloucestershire Council
Brief summary of issues raised
No concerns
Summary of actions taken or show how this has been covered
No action required