

## **NON TECHNICAL SUMMARY**

wardell-armstrong.com

ENERGY AND CLIMATE CHANGE  
ENVIRONMENT AND SUSTAINABILITY  
INFRASTRUCTURE AND UTILITIES  
LAND AND PROPERTY  
MINING AND MINERAL PROCESSING  
MINERAL ESTATES  
WASTE RESOURCE MANAGEMENT



**VIRIDOR WASTE MANAGEMENT LTD**

**RUNCORN ENERGY FROM WASTE FACILITY**

**NON-TECHNICAL SUMMARY**

**AUGUST 2018**

*your earth our world*



**DATE ISSUED:** August 2018  
**JOB NUMBER:** ST16660  
**REPORT NUMBER:** R001  
**VERSION:** V0.2  
**STATUS:** Final

**VIRIDOR**

**RUNCORN ENERGY FROM WASTE FACILITY**

**NON-TECHNICAL SUMMARY**

**AUGUST 2018**

**PREPARED BY:**

Alison Cook Associate Director



---

**APPROVED BY:**

Luke Prazsky Technical Director



---

*This report has been prepared by Wardell Armstrong LLP with all reasonable skill, care and diligence, within the terms of the Contract with the Client. The report is confidential to the Client and Wardell Armstrong LLP accepts no responsibility of whatever nature to third parties to whom this report may be made known.*

*No part of this document may be reproduced without the prior written approval of Wardell Armstrong LLP.*



## CONTENTS

1	INTRODUCTION .....	1
2	ENVIRONMENTAL PERMIT APPLICATION .....	2
3	PROPOSED ACTIVITIES .....	2
4	MONITORING OF EMISSIONS TO AIR.....	3
5	CHANGES TO THE PERMIT .....	5
6	ENVIRONMENTAL RISK AND MITIGATION .....	5
7	ENVIRONMENTAL MANAGEMENT SYSTEM.....	6

## **1 INTRODUCTION**

- 1.1 This non-technical summary has been prepared to support the application for a substantial variation to the existing Environmental Permit, reference EPR/EP3731XL, for the Runcorn Energy from Waste Facility (EfW).
- 1.2 The Runcorn EfW facility is permitted to accept refuse derived fuel (RDF) and a range of non-hazardous, combustible household, commercial and industrial wastes. These are burnt on site in four moving grate furnaces with the resultant heat being utilised to produce electricity and raise steam for export to the adjacent chemical works or to the National Grid.
- 1.3 This variation application seeks to increase the quantity of permitted waste that can be accepted on site from 850,000 tonnes per annum to 1,100,000 tonnes per annum, an increase of 250,000 tonnes a year. This will result in 1,040,000 tonnes of waste per year being processed through the four lines at the plant, with the remainder being largely moisture which evaporates from the bunker before the waste is treated.
- 1.4 As this increase in itself represents an increase of more than 3 tonnes an hour, and is therefore over the threshold for a Part A1 activity, under chapter 5.1 of Schedule 1 of the Environmental Permitting Regulations, this variation is likely to involve significant assessment by the Environment Agency and has been classified as a 'substantial change'.
- 1.5 The variation will allow the plant to optimise use of the furnaces, generating additional renewable energy and diverting more residual waste from landfill.
- 1.6 In addition, the application seeks to amend the emission limit for carbon monoxide, as discussed and agreed with the Environment Agency and to revise compliance with the emission standards so that it applies to an average across each of the four flues within the stack. Neither of these changes will result in any increase in emissions to air with local air quality remaining fully protected.
- 1.7 As the site accepts combustible waste the substantial change will trigger the requirement to prepare a Fire Prevention Plan in accordance with the Environment Agency's guidance. A Fire Prevention Plan has been prepared and is included in the application.

1.8 This permit variation application was discussed with the EA inspecting officer Alex Sutherland on 28<sup>th</sup> June 2018. At this meeting the proposed changes, type of variation, application fees, application contents and assessments were agreed.

## **2 ENVIRONMENTAL PERMIT APPLICATION**

2.1 The application comprises:

- Parts A, C2, C3 and F1 of the application form;
- a Non-Technical Summary;
- an Addendum to the Application showing:
  - revised figures for usage of raw materials, water and energy
  - impact on emissions to water
  - a revised greenhouse gas assessment
  - an assessment of the control of fugitive emissions from the site and
  - any necessary changes to the risk assessment and risk management measures that may be required as a result of the variation
- a new Air Quality Impact Assessment, quantifying the impacts of the additional waste throughput on emissions to air and demonstrating that the impact on local air quality will be insignificant and
- a Fire Prevention Plan.

2.2 These reports conclude that the site will, in the main, be able to operate within the parameters described in the original application, that the existing infrastructure and management procedures remain appropriate and that there will be no significant increase in environmental impacts.

## **3 PROPOSED ACTIVITIES**

3.1 The facility is currently permitted to accept up to 850,000 tonnes of waste per annum, based on the information provided in the original application. However, in practice, the incineration lines have operated well and less downtime, than expected, is required to maintain them it has also been possible to increase the rating of the furnaces, allowing them to burn slightly more waste. Finally the calorific value (CV) of the incoming waste is slightly lower than initially expected and is expected to reduce further, due to improved recycling of plastics. These three factors mean that it is possible to process more waste through the incineration lines than originally

anticipated. This application is therefore being made to divert further waste from landfill and maximise energy recovery at the plant.

- 3.2 No changes are required to the existing turbine, it will simply work at an optimised rate over a longer period, optimising energy recovery.
- 3.3 The operational aspects of the facility will not change as a result of this increase in tonnage inputs. The existing bunker, has sufficient capacity to accommodate the additional waste inputs, indeed because waste can be fed to the lines at an increased rate there should be little change in the quantity of waste stored in the bunker. Likewise the ash and air pollution control residue handling systems have sufficient spare capacity to manage any associated increase in production of these materials.
- 3.4 The abatement equipment currently installed at the facility is sufficient to be able to manage the slight increase in pollution loading that will occur as a result of the increased waste throughput. This has been demonstrated via the new Air Quality Model that has been completed and is included within the application as well as by ongoing emissions monitoring during a trial, sanctioned by the Environment Agency, to take an increased quantity of waste.

#### **4 MONITORING OF EMISSIONS TO AIR**

- 4.1 Annex VI, Part 8 of the Industrial Emissions Directive sets out the criteria for determining compliance with emission limit values at Waste Incineration Plants. For carbon monoxide compliance can be determined by either:
- demonstrating that all of the half hour average values measured during a 24 hour period comply with the limit (100mg/Nm<sup>3</sup>) *or*
  - demonstrating that 95% of ten minute averages of a 24 hour period comply with the limit (150mg/Nm<sup>3</sup>).
- 4.2 Currently the permit for Runcorn stipulates that the half hourly average limit must be met. This has led to some non-compliance because occasional short term peaks in CO have had a disproportionate impact on the average. These peaks are extremely short

lived and will not impact on air quality. They pose no risk to human health or to the environment.

- 4.3 As part of this application Viridor would like to change the compliance limit from the half hourly average limit to the alternative 10 minute average limit. This will enable them to be fully compliant with their permit and with the requirements for chapter IV and Annex VI of the Industrial Emissions Directive.
- 4.4 It is noted that the Environment Agency has agreed to this alternative method of measurement for Viridor's EfW facilities at Lakeside, Bolton, Ardley and Trident Park.
- 4.5 In addition the four lines are vented through four individual flues which are combined into one common 105m stack. Currently each individual flue must be fully compliant with the emission limits.
- 4.6 Under the Industrial Emissions Directive the approach for large combustion plants is to apply emission limits to the common stack. This means that where there are multiple flues within one stack the emission limits apply to the average across the flues within the stack rather than to each individual line.
- 4.7 It is requested that the permit is varied to allow a similar approach to the Runcorn EfW facility. That is, that the emission limits for emissions to air apply to an average reading across the four flues. This would continue to provide the same level of protection for local air quality, as should there be slightly higher readings within one flue the others would necessarily have to be well within the emission limit in order to meet the overall emission standard.
- 4.8 This is considered to be consistent with the regulation of combustion plants that may have a similar environmental impact. As all four flues at Runcorn discharge to air at the same location, there would be no change to the environmental impacts and local air quality would continue to be fully protected.

## 5 CHANGES TO THE PERMIT

- 5.1 To achieve the changes set out above Viridor are seeking the following variations to the permit:
1. Schedule 1, Table S1.2 – update the table to reference the amendments to the Operating Techniques set out in this application;
  2. Schedule 2, Table S2.2 - amend the maximum quantity to 1,100,000 tonnes per annum;
  3. Schedule 3, Table S3.1 - amend the limit for carbon monoxide from 100mg/m<sup>3</sup> half hour average, to 150mg/m<sup>3</sup> 10 minute average, with a footnote to say that 95% of readings must be compliant;
  4. Include a footnote to Table S3.1 to say that compliance limits must be met as an average across the four flues that contribute to the emission to air;
  5. Update referencing in the permit to a modern template (removing reference to WID etc...); and
  6. Consolidate the previous variations in to a single permit.

## 6 ENVIRONMENTAL RISK AND MITIGATION

- 6.1 In order to assess the impact of the increased waste throughput a new air quality model has been provided. This allows for increased flow through the system and therefore an increase in the overall mass emissions from the Installation. The Air Quality Report, which is included in this application, demonstrates that there are no predicted exceedances of short term or long term EALs at the point of maximum ground level impact. Emission levels remain well within the statutory and recommended air quality limits and the impact is considered to be “not significant”.
- 6.2 The best practicable means will continue to be applied to the management of odour. There has been no discernible increase in odour during the Environment Agency sanctioned trial during which greater quantities of waste were accepted and processed. It is therefore considered appropriate that the measures outlined in the original permit application and the environmental management plan will continue to be applied.
- 6.3 There is not expected to be any increased odour from the additional waste placed in the bunker because the waste will be loaded to the furnaces more quickly and the overall quantity in the bunker at any one time is likely to be unchanged. Thus odour

from incoming wastes will continue to be controlled via the use of air from the bunker as combustion air alongside good housekeeping.

- 6.4 Dust will continue to be controlled via the existing measures with enclosed delivery systems and sealed storage for air pollution control residues. Bottom ash will continue to be stored in the ash bunker. Unloading of waste will continue to take place within the waste reception hall, which is kept under slight negative pressure to prevent fugitive emissions.
- 6.5 There will be a slight increase in raw material usage and in waste production compared to current operations. These aspects of the site operation will continue to be reviewed on a regular basis to ensure that waste is minimised. Current containment and handling systems remain sufficient to manage raw materials and waste on site in a manner that prevents emissions.
- 6.6 It is noted that current operation of the site is, on the whole, more efficient than was anticipated at the time of the application and so it is likely that in most cases raw material usage and residue production will remain within the figures set out in the original application.

## **7 ENVIRONMENTAL MANAGEMENT SYSTEM**

- 7.1 The site will continue to be operated according to the operator's management procedures and Environmental Management System (EMS) which is accredited to ISO9001, ISO14001, ISO5001 and OHSAS18001.
- 7.2 Existing measures to control pollution such as noise, dust, pests and vermin, will continue to be employed and no changes to the operating procedures are anticipated to be required.

wardell-armstrong.com

**STOKE-ON-TRENT**  
Sir Henry Doulton House  
Forge Lane  
Etruria  
Stoke-on-Trent  
ST1 5BD  
Tel: +44 (0)178 227 6700

**BIRMINGHAM**  
Two Devon Way  
Longbridge Technology Park  
Longbridge  
Birmingham  
B31 2TS  
Tel: +44 (0)121 580 0909

**CARDIFF**  
22 Windsor Place  
Cardiff  
CF10 3BY  
Tel: +44 (0)292 072 9191

**CUMBRIA**  
Marconi Road  
Burgh Road Industrial Estate  
Carlisle  
Cumbria  
CA2 7NA  
Tel: +44 (0)122 856 4820

**EDINBURGH**  
Great Michael House  
14 Links Place  
Edinburgh  
EH6 7EZ  
Tel: +44 (0)131 555 3311

**GLASGOW**  
2 West Regent Street  
Glasgow  
G2 1RW  
Tel: +44 (0)141 433 7210

**LONDON**  
46 Chancery Lane  
London  
WC2A 1JE  
Tel: +44 (0)207 242 3243

**MANCHESTER (City Centre)**  
76 King Street  
Manchester  
M2 4NH  
Tel: +44 (0)161 817 5038

**MANCHESTER (Greater)**  
2 The Avenue  
Leigh  
Greater Manchester  
WN7 1ES  
Tel: +44 (0)194 226 0101

**NEWCASTLE UPON TYNE**  
City Quadrant  
11 Waterloo Square  
Newcastle Upon Tyne  
NE1 4DP  
Tel: +44 (0)191 232 0943

**SHEFFIELD**  
Unit 5  
Newton Business Centre  
Newton Chambers Road  
Thorncliffe Park  
Chapelton  
Sheffield  
S35 2PH  
Tel: +44 (0)114 245 6244

**TRURO**  
Baldhu House  
Wheal Jane Earth Science Park  
Baldhu  
Truro  
TR3 6EH  
Tel: +44 (0)187 256 0738

International offices:  
**ALMATY**  
29/6 Satpaev Avenue  
Regency Hotel Office Tower  
Almaty Kazakhstan  
050040  
Tel: +7(727) 334 1310

**MOSCOW**  
21/5 Kuznetskiy Most St.  
Moscow  
Russia  
Tel: +7(495) 626 07 67

*your earth our world*

