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ESA PAPER ON R1 STATUS

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The R1 Energy Efficiency Formula

The Waste Framework Directive (WFD) provides a hierarchy which prioritises waste prevention followed by preparing for reuse, recycling, recovery and finally, least favourably, disposal. Energy From Waste (EfW) plants can be classified as either Recovery or Disposal operations.

The ESA has committed to driving higher standards across the Waste and Recycling sector. For EfW plants, achieving Recovery status (known as R1) is an efficient way to increase standards across the industry. The ESA continues to work and support its members to work towards all operational UK EfW facilities being formally recognised by Regulators as Recovery operations where possible. To increase transparency in the industry the ESA has worked with Tolvik Consulting to create this document which outlines the R1 status of UK EfW plants.

Definitions

The Waste Framework Directive (WFD) Article 3 makes the following definitions:

- 'Recovery' means any operation the principal result of which is waste serving a useful purpose by replacing other materials which would otherwise have been used to fulfil a particular function, or waste being prepared to fulfil that function, in the plant or in the wider economy.
- 'Disposal' means any operation which is not recovery even where the operation has as a secondary consequence the reclamation of substances or energy.

The Revised WFD specifies that Energy from Waste plants dedicated to the processing of municipal solid waste can be classified as Recovery (R1) only where their energy efficiency is equal to or above either 0.60 (for installations in operation 1st January 2009) or 0.65 (for installations permitted after 31st December 2008).

To qualify as an R1 recovery operation an Energy from Waste plant must:

- have or will have an environmental permit for a waste incineration installation;
- be capable of incinerating mixed municipal solid waste, including refuse derived fuel or solid recovered fuel;
- not be a co-incinerator.

Application

Application details can be found at <https://www.gov.uk/guidance/waste-incinerator-plant-apply-for-ri-status>. It is important that the formula is applied to the correct parts of the EfW process and that the 'system boundaries' are set correctly.

The list of installations below is the current schedule of R1 (design or operational status) Energy from Waste plants that are operational in the UK as of April 2021. The ESA will update this list to reflect any changes.

Table 1: EfW Facilities that have achieved R1 status.

Installation name	Operator	R1 value *
Avonmouth Energy Recovery Facility	Viridor	0.82
Allington	FCCE	0.67
Allerton Waste Recovery Park	AmeyCespa	0.81
Ardley Energy from Waste Facility	Viridor	0.71

Battlefield Energy from Waste Facility	Veolia	0.67
Beddington Energy Recovery Facility	Viridor	0.69
Cardiff Energy from Waste Facility	Viridor	0.79
Cornwall Energy Recovery Centre	SUEZ	0.77
Devonport Energy from Waste CHP	MVV	0.87
Dunbar Energy Recovery Facility	Viridor	0.72
Parc Adfer Energy Recovery Facility	enfinium	0.69
Ferrybridge MFE2 Limited	enfinium	0.85
Ferrybridge Multifuel Facility	enfinium	0.85
Four Ashes Energy Recovery Facility	Veolia	0.71
Full Circle Generation Ltd	Full Circle Generation Ltd	<i>0.74</i>
Greatmoor EFW Facility	FCCE	0.84
Hartlebury EfW	Severn Waste Services Limited	0.77
Integra North Energy Recovery Facility	Veolia	0.66
Integra South East Energy Recovery Facility	Veolia	0.61
Integra South West Energy Recovery Facility	Veolia	0.71
Javelin Park Energy recovery Facility	Urbaser Ltd	0.71
Kemsley Generating Station	enfinium	1.03
Kirklees EFW	SUEZ	0.65
Lakeside EfW Facility	Lakeside Energy From Waste Limited	0.68
Leeds Recycling and Energy Recovery Facility	Veolia	0.77
Lincolnshire EfW Facility	FCCE	0.84
Newhaven Energy Recovery Facility	Veolia	0.67
Peterborough Energy From Waste Facility	Viridor	0.85
Riverside Resource Recovery Facility	Cory	0.76
Runcorn EFW; Lines 1&2, 3&4	Viridor	1.02, 0.85
Sevenside energy Recovery Centre	SUEZ	0.88
Sheffield Energy Recovery Facility	Veolia	0.78
South East London Combined Heat & Power	Veolia	0.66
SUEZ Suffolk Energy from Waste Facility	SUEZ	0.81
Tees Valley; Lines 1&2, 3, 4&5	SUEZ	0.70, 0.62, 0.77
Tyesley Energy from Waste Plant	Veolia	0.64
Wilton 11 EfW	SUEZ	0.77

*= 3 year average (or Design)

Table 2: EfW facilities that have not achieved R1 status.

Installation name	Operator	R1 / Comments
Coventry	CSWDC	
Dudley	MESE	
Bolton	Suez	In repair and refurbishment
NewLincs	NewLincs	
Edmonton	LondonEnergy	

Eastcroft	FCCE	
Gremista	Gremista	
Baldovie	MVV	
Hanford	MESE	
Lancing	Enviropower	
Wolverhampton	MESE	
Exeter	Viridor	
Glasgow	Viridor	
Milton Keynes ACT	Amey	
Millerhill EfW	FCCE	Expecting to achieve R1 status in late 2022
Energy Works ACT	BIG	
Levensat ACT	Levensat	
Baddersley	Equitix	
Rookery South	Covanta	To apply summer 2022

This schedule has been prepared for the Environmental Services Association (ESA) by Tolvik Consulting Ltd from information provided by Regulators and plant operators. Please feedback any updates, errors, or omissions to www.tolvik.com.

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