

ANNEX II

RECOVERY OPERATIONS

R 1

Use principally as a fuel or other means to generate energy⁽¹⁾

R 2 Solvent reclamation/regeneration

[^{F1}R 3 Recycling/reclamation of organic substances which are not used as solvents (including composting and other biological transformation processes)⁽²⁾

Textual Amendments

F1 Substituted by [Directive \(EU\) 2018/851 of the European Parliament and of the Council of 30 May 2018 amending Directive 2008/98/EC on waste \(Text with EEA relevance\)](#).

R 4 Recycling/reclamation of metals and metal compounds⁽³⁾

R 5 Recycling/reclamation of other inorganic materials]⁽⁴⁾

R 6 Regeneration of acids or bases

R 7 Recovery of components used for pollution abatement

R 8 Recovery of components from catalysts

R 9 Oil re-refining or other reuses of oil

R 10 Land treatment resulting in benefit to agriculture or ecological improvement

R 11 Use of waste obtained from any of the operations numbered R 1 to R 10

R 12 Exchange of waste for submission to any of the operations numbered R 1 to R 11⁽⁵⁾

R 13 Storage of waste pending any of the operations numbered R 1 to R 12 (excluding temporary storage, pending collection, on the site where the waste is produced)⁽⁶⁾

Status: EU Directives are being published on this site to aid cross referencing from UK legislation. After IP completion day (31 December 2020 11pm) no further amendments will be applied to this version.

- (1) This includes incineration facilities dedicated to the processing of municipal solid waste only where their energy efficiency is equal to or above:
- 0,60 for installations in operation and permitted in accordance with applicable Community legislation before 1 January 2009,
 - 0,65 for installations permitted after 31 December 2008,

using the following formula:

$$\text{Energy efficiency} = (E_p - (E_f + E_i)) / (0,97 \times (E_w + E_f))$$

In which:

E_p means annual energy produced as heat or electricity. It is calculated with energy in the form of electricity being multiplied by 2,6 and heat produced for commercial use multiplied by 1,1 (GJ/year)

E_f means annual energy input to the system from fuels contributing to the production of steam (GJ/year)

E_w means annual energy contained in the treated waste calculated using the net calorific value of the waste (GJ/year)

E_i means annual energy imported excluding E_w and E_f (GJ/year)

0,97 is a factor accounting for energy losses due to bottom ash and radiation.

This formula shall be applied in accordance with the reference document on Best Available Techniques for waste incineration.

[The energy efficiency formula value will be multiplied by a climate correction factor (CCF) as shown below:

1. CCF for installations in operation and permitted in accordance with applicable Union legislation before 1 September 2015.

CCF = 1 if HDD \geq 3 350

CCF = 1,25 if HDD \leq 2 150

CCF = $-(0,25/1\ 200) \times \text{HDD} + 1,698$ when $2\ 150 < \text{HDD} < 3\ 350$

2. CCF for installations permitted after 31 August 2015 and for installations under 1 after 31 December 2029:

CCF = 1 if HDD \geq 3 350

CCF = 1,12 if HDD \leq 2 150

CCF = $-(0,12/1\ 200) \times \text{HDD} + 1,335$ when $2\ 150 < \text{HDD} < 3\ 350$

(The resulting value of CCF will be rounded at three decimal places).

[The value of HDD (Heating Degree Days) should be taken as the average of annual HDD values for the incineration facility location, calculated for a period of 20 consecutive years before the year for which CCF is calculated. For the calculation of the value of HDD the following method established by Eurostat should be applied: HDD is equal to $(18\ ^\circ\text{C} - T_m) \times d$ if T_m is lower than or equal to $15\ ^\circ\text{C}$ (heating threshold) and is nil if T_m is greater than $15\ ^\circ\text{C}$; where T_m is the mean $(T_{\text{min}} + T_{\text{max}})/2$ outdoor temperature over a period of d days. Calculations are to be executed on a daily basis ($d = 1$), added up to a year.]

- (2) [^{F1}This includes preparing for re-use, gasification and pyrolysis using the components as chemicals and recovery of organic materials in the form of backfilling.]
- (3) [^{F1}This includes preparing for re-use.]
- (4) [^{F1}This includes preparing for re-use, recycling of inorganic construction materials, recovery of inorganic materials in the form of backfilling, and soil cleaning resulting in recovery of the soil.]
- (5) If there is no other R code appropriate, this can include preliminary operations prior to recovery including pre-processing such as, inter alia, dismantling, sorting, crushing, compacting, pelletising, drying, shredding, conditioning, repackaging, separating, blending or mixing prior to submission to any of the operations numbered R1 to R11.
- (6) Temporary storage means preliminary storage according to point (10) of Article 3.

Textual Amendments

- F1** Substituted by [Directive \(EU\) 2018/851 of the European Parliament and of the Council of 30 May 2018 amending Directive 2008/98/EC on waste \(Text with EEA relevance\)](#).