SEPA Regulatory Position Statement

Permitting of Pyrolysis and Gasification of Waste Activities

Purpose

This Regulatory Position Statement (RPS) sets out SEPA's approach to the permitting of pyrolysis and gasification processes (which use waste as the starting material and then produce outputs such as syngas, synoil or char) where the syn-gas meets the conditions laid out in Article 42(1) of the Industrial Emissions Directive (IED) and it, along with all other products as necessary, receive 'End-of-Waste' approval prior to being burned. Specifically, this RPS sets out the prescribed activity under the Pollution Prevention and Control (Scotland) Regulations 2012 (as amended) ("the PPC regulations").

To support this Regulatory Position Statement, separate guidance has been developed which will provide additional information on how to demonstrate an 'End-of-Waste' case for the syn-gas and the information that will be required to support an application.

Background

The second paragraph of Article 42(1) of the IED states: "This Chapter [Chapter IV] shall not apply to gasification or pyrolysis plants, if the gases resulting from this thermal treatment of waste are purified to such an extent that they are no longer a waste prior to their incineration and they can cause emissions no higher than those resulting from the burning of natural gas."

SEPA has received a number of proposals seeking to obtain a permit for pyrolysis and gasification processes used to produce outputs such as syngas, synoil or char, where the syn-gas could meet the conditions laid out in Article 42(1) of the IED and an 'End-of-Waste' case could be made prior to being burned.

Where the waste syn-gas does not meet these criteria and that syn-gas is subsequently incinerated[1] the activity will be treated as an activity under Schedule 1, Section 5.1 of the PPC Regulations – "incineration and co-incineration of waste".

In the situation where the waste syn-gas is cleaned to such an extent that it can meet an 'End-of-Waste' case (meeting a standard equivalent to natural gas) before it is burned, the activity that is being carried out could be considered to be either combustion or pyrolysis[2]. The two most relevant activity descriptions in Schedule 1 of the PPC Regulations are pyrolysis under Section 1.2(c) or incineration of waste under Section 5.1. SEPA has reviewed the PPC regulations and has concluded that there is no clear way to permit these activities owing to the specific wording of the PPC Regulations (see Annex 1 for the relevant excerpts from Schedule 1);

- Schedule 1, Section 1.2 A (c) does not apply to the incineration or pyrolysis of any substance as a waste and;
- Schedule 1, Section 5.1 does not apply unless incineration of waste occurs, and in this case the syn-gas is no longer waste (also, when defining incineration plant, gas is not considered waste as per Article 3(1) of the Waste Framework Directive).

[1] "Incineration" means the thermal treatment of waste with or without recovery of the combustion heat generated (definition from the PPC Regulations)

2 Provided no other products are burned without 'End-of-Waste' approval

SEPA Position

Until publication of additional guidance or future amendments to the Pollution Prevention and Control (Scotland) Regulations 2012 (as amended) ("the PPC regulations"), where waste undergoes pyrolysis/gasification and the requirements of Article 42(1) of the IED are met (an 'End-of-Waste' case can be made for the syn-gas, along with all other products as necessary, prior to being burned), the activity shall be permitted as a Section 1.2(c) activity[3], unless the process produces charcoal as the main product.[4]

Where the syn-gas produced does not meet the requirements of Article 42(1), the syngas or other products do not receive 'End-of-Waste' approval or the operator cannot demonstrate evidence of compliance with the requirements, this Regulatory Position Statement shall not apply. In such circumstances, the operator will require to be permitted as a waste incineration activity or will risk committing an offence.

This statement applies only in Scotland. The terms of this statement may be subject to periodical review and be changed or withdrawn in light of technological developments, regulatory or legislative changes, future government guidance or experience of its use. SEPA reserves its discretion to depart from the position outlined in this statement and to take appropriate action to avoid any risk of pollution or harm to human health or the environment.

[3] There is an exemption in IED for "experimental plants used for research, development and testing in order to improve the incineration process and which treat less than 50 tonnes of waste per year." For further information on this please speak to a SEPA officer.

[4] This will likely require a Waste Management Licence. For further information on this please speak to a SEPA officer.

Annex 1

Section 1.2 Gasification, liquefaction and refining activities
Part A
(c) - ***"Pyrolysis, carbonisation, distillation, gasification, liquefaction, partial oxidisation or other heat treatment of coal (other than drying of coal), lignite, oil, or other carbonaceous material or mixtures, otherwise than with a view to making charcoal."***
"Nothing in paragraph (c) or (f) refers to the use of any substance as a fuel or its incineration or pyrolysis as a waste or to any activity for the treatment of sewage sludge."[5]

Interpretation of Part A
In Part A –
"Carbonaceous material" includes such materials as charcoal, coke, peat, rubber and wood

Section 5.1 – "Incineration and co-incineration of waste"
Part A
Unless carried out as part of any other Part A activity, the –
(a) Incineration of hazardous waste in an incineration or co-incineration plant,
(b) Incineration of non-hazardous waste with the exception of waste which is biomass or animal carcasses in an incineration or co-incineration plant

Interpretation of Section 5.1
In this Section –
[…]
"incineration" means the thermal treatment of waste with or without recovery of the combustion heat generated,
"incineration plant" means any stationary or mobile technical unit and equipment dedicated to the thermal treatment of waste, with or without recovery of the combustion heat generated, through—

(i) incineration by oxidisation of waste, or
(ii) other thermal treatment processes (such as pyrolysis, gasification or a plasma process), provided that the substances resulting from the treatment are subsequently incinerated[6]

"waste" means any solid or liquid waste as defined in Article 3(1) of the Waste Framework Directive.

[5] If the syngas and other products produced reach 'end of waste' then these would be considered not to be waste
[6] If the syngas and other products produced reach 'end of waste' then these would be considered not to be being incinerated, as they are no longer waste