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Date: 8 July 2011

Dear Colleagues,

Determination of biomass energy content of waste feedstock by post combustion analysis of flue gases: Carbon-14 technique proposal

The Renewables Obligation (RO) Orders set out that the Authority must issue Renewable Obligation Certificates (ROCs) on electricity generated from renewable source where all necessary eligibility criteria have been met. In addition, the RO requires that ROCs can only be issued on the basis of 'accurate and reliable' information having been provided to us. When considering issuance of ROCs on fuelled generating stations, we work with generators to agree a Fuel Measurement and Sampling (FMS) procedure that will allow them to determine the renewable energy fraction of their feedstock as accurately as possible.

When a new FMS procedure is proposed to Ofgem we must be sure it is capable of producing data of adequate accuracy for the issuance of ROCs. The vast majority of generating stations using waste as a feedstock currently sample the waste to determine its renewable content. We acknowledge that these sampling methods can be time consuming and expensive, with the heterogeneous nature of waste acting as a barrier to accurate figures.

A new FMS proposal has been put forward, concerning the use of a Carbon-14 (¹⁴C) technique that analyses flue gases. It has been proposed that this, post-combustion technique could be used to accurately determine the renewable energy content of a waste feedstock burnt in a generating station.

When considering this proposal, we commissioned an independent report to review the science behind the ¹⁴C technique and to comment on whether it is as accurate as the sampling procedures currently used. Members of the Renewable Energy Association (REA) also commissioned an independent report to review the ¹⁴C technique and have shared the content of this report with us.

Both independent reports concluded that the ¹⁴C technique is based on mature and well understood technology. The reports also concluded that results from this technique would be at least as accurate as the existing sampling methods used.

We are therefore prepared to consider FMS procedures that propose to use the ¹⁴C technique. As always, the FMS proposals will be considered on a case by case basis, taking into account the different feedstock used and the nature of each generating station. We are

currently preparing a dedicated FMS questionnaire to be completed by stations proposing to use the ^{14}C technique. This will be published on our website in due course.

In particular generating stations will be required to submit details of:

- The procedure for sampling flue gases
- The technique for determining the ^{14}C to ^{12}C ratio in samples of flue gas
- The carbon ratio to energy calculations

We would like to emphasise that generators are under no obligation to use the ^{14}C technique. We will continue to consider proposals using the existing methods used by industry. Despite this, we see the potential for the ^{14}C technique as a positive step in terms of recognising a new method for generators to consider when setting about making an application for accreditation to us.

Yours sincerely,

Richard Bellingham
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