



Ms Elena SANTIAGO
CEN Director General
Avenue Marnix 17
1000 Brussels

Brussels, 18.02.2011

ECOS appeal against ratification of EN 15359 ‘Solid recovered fuels — Specifications and classes’

Dear Ms Santiago, dear Elena,

We refer to the correspondence between CEN/CENELEC Management Center (CCMC), ECOS and CEN TC 343 having taken place in summer 2010. The formal vote on prEN 15359 (Solid recovered fuels — Specifications and classes) having closed on 21.12.2010 with the approval of the standard, ECOS hereby appeals against the ratification of EN 15359 referring to the CEN/CENELEC Internal Regulations – Part 2, Clause 7 (“Appeals policy”).

The reasons for the appeal are two-fold:

1. ECOS contests the sufficient quality of the document and reckons that it does NOT fulfil the requested high environmental quality requested in the respective European Commission (EC)-mandate M/325 of 26 August 2002. Apart from mercury (Hg) there are no limits with regard to heavy metals in the standard, and the ranges allowed for mercury content include highly polluted material that can only be abated properly, in the best case, in dedicated waste incinerators, although Solid Recovered Fuels (SRF) are specifically prepared for non-dedicated incineration. The standard would allow chlorine content, contributing to the formation of dioxins and furans, of as much as 3 %. The standard would qualify waste with a low net calorific value of only 3 MJ/kg as a fuel although such material will require other fuels for self sustaining combustion. Hence, prEN 15359 would qualify waste as a “standardised fuel” even if it would hardly burn and despite high probability of pollutant emissions to ashes and air, in particular from co-incineration - and
2. ECOS sees a problem of fundamental importance with the consensus-building process, since ECOS has been participating in the elaboration of the document with a technical expert for more than 7 years (starting with a TS and now leading to an EN). Despite making its case for setting stricter pollutant limits and for including other relevant heavy metal parameters in the classification system during all those years within the WG 2, the TC-plenary and several associated workshops, ECOS concerns have not been heard.

Therefore ECOS considers publication of EN 15359 would not only be contrary to the best interests of the European market but also contrary to the best interest of European citizens in terms of public health and environmental concerns due to the low level requirements of the standard and a problem during the consensus-building process to the standard, but also to have potential to bring CEN into disrepute.

1. Technical content of (pr)EN 15359

- The result of the standardisation work is that any non-hazardous waste mixture will find its class to be named an EN standardised Solid Recovered Fuel in the future, regardless of its content of heavy metals, content of chlorine and its net calorific value.

- The classification does not address the cadmium and thallium content, although both heavy metals are volatile and therefore regulated in the Waste Incineration Directive 2000/76/EC with low limit values. This standard only includes the classification for mercury (Hg). Even for Hg, the validation of the standard has shown that the repeatability is low. The decision on parameters for classification was not based on scientific knowledge.

- There are quality standards for waste fuels existing in Finland (SFS 5875), Germany (RAL-GZ 724) and Italy (9903-1) requiring much higher net calorific value for naming the waste a standardised fuel, and setting maximum values not only for Hg but (see RAL) for a series of heavy metals which may not be exceeded in a standardised solid recovered fuel.

- Due to pre-treatment, the overall energy balance can be negative and worse than for material recycling.

- Thus EN 15359 would be used to give the impression of "better" waste without any indication for competent bodies that some standard classes are not appropriate for incineration or co-incineration in all plants covered by the Waste Incineration Directive 2000/76/EC.

- The EC mandate M/325¹ (see attached) is based on Directive 2000/76/EC and cites its recital (7): *"Therefore, a high level of environmental protection and human health protection requires the setting and maintaining of stringent operational conditions, technical requirements and emission limit values for plants incinerating or co-incinerating waste within the Community. The limit values set should prevent or limit so far as practicable negative effects on the environment and the resulting risks to human health."* The classification system of EN 15359 would not be of any help for authorities when setting appropriate limit values and therefore NOT contribute to *"a high level of environmental protection"*.

- One of the aims of the standards mentioned in the business plan of CEN TC 343 is: *"Increased public trust and acceptance of SRF"*. Given the lack of pollutant restrictions ECOS does not think this goal can be achieved in such a way.

- The study developed by CEN TC343 WG 2, authored by representatives from the recovered fuels industry's own umbrella organisation ERFO², shows that waste with high mercury content (classified in classes 2 to 5) cannot be incinerated without negative effects on the environment if no activated coke filters are in place (e.g. in co-incinerating power plants). Therefore it is not adequate for most co-incineration plants. However, this fact is not highlighted in prEN 15359.

- PrEN 15359 only addresses a classification for mercury. Other heavy metals, in particular the most volatile ones cadmium and thallium, are not addressed by the classification system (the classification is explicitly intended to give a short first impression on the major fuel properties including the environmental performance of the waste).

- For mercury, the standards' validation has shown that the repeatability is low. Studies (e.g. by Prof. S. Flamme, 2002) have shown that at least 40 samples have to be analysed from a lot to achieve a result near the "true" Hg content. However, prEN 15359 requires only 10

¹http://ec.europa.eu/enterprise/standards_policy/mandates/database/index.cfm?fuseaction=search.detail&id=68

²http://www.erfo.info/fileadmin/user_upload/erfo/documents/classification/Classification_report.270205.pdf

measurements (see p. 12 of prEN 15359: "*The class code for Hg is established using median and 80th percentile based on data sets of 10 consecutive measurements.*")

- Without clear indications to public authorities, any waste promoted as "EN standardised fuel" will give the impression of a "better" waste, and this to the detriment of the existing better standards in Germany, Finland and Italy which are providing not only stricter limits for mercury and determining minimum requirements for other relevant pollutants, but some also requiring independent third party evaluation. The classification system in prEN 15359 does neither explain the adequate use of highly contaminated waste fractions nor does it exclude these fractions from being EN standardised.

We already have a proof of this misunderstanding by some public authorities:

After Austria now also Portugal (PT) advocates for the End of Waste status for "high quality refuse-derived fuel" – RDF (= Solid Recovered Fuel). See information note from the Portuguese delegation, which was on the agenda of the Council of Ministers (Environment) on 20 December 2010 under "other business":

<http://register.consilium.europa.eu/pdf/en/10/st17/st17916.en10.pdf>

PT regards the application of End of Waste status to RDF/SRF as a priority issue. In this context, PT is considering the preparation of a procedure for the application of End of Waste status to RDF/SRF in the very near future. In this context it refers to CEN-standards on RDF/SRF as "*guaranteeing high quality*" of those fuels. If RDF/SRF would be classified as End of Waste (ie as a product) the co-incineration of RDF/SRF would NOT fall in the scope of the Waste Incineration Directive (and Industrial Emissions Directive) with its strict emission requirements.

Due to a last-minute intervention by the European Commission with CEN, a clarification that SRF can only cease to be waste subject to certain criteria specified in the Waste Framework Directive 2008/98/EC has been made to the document's introduction, but this changes nothing to its core content.

At the same time this would lead to unfair competition with dedicated Waste-to-Energy incineration plants, which are equipped with sophisticated flue gas cleaning devices providing for more efficient emission abatement.

- Remains from combustion (ashes, slags) can often substitute primary materials. For example, fly ashes from combustion plants are usually used for cement production, slags are used for road construction. The use of "standardised EN fuels" according to prEN 15359 would increase the release of pollutants e.g. via cement corrosion or from leaching.

- As background information one should know that prEN 15359 is one part in a series of standards. The other standards cover terminology, quality management, sample taking, preparation of laboratory samples and analytical methods. All other standards can be published and used independently from prEN 15359.

In the light of the above we see the EC-mandate M/325 for development of standards under the Waste Incineration Directive is not fulfilled as environmental protection is not considered appropriately, in particular due to insufficient cut-off criteria for Hg and missing criteria for other heavy metals.

In any case and regardless of the assessment of the fulfilment of the mandate, the environmental quality of the standard is not sufficient to justify the label "standardised European SRF" as it is potentially being (mis-)perceived by an important part of the market brought about by the publication of the EN:

- It causes much higher emissions than acceptable under waste and air quality legislation.
- It is unlikely to bring any positive effect in terms of energy efficiency and balance of greenhouse gases, since the minimum net calorific value is way too low.

- It does not increase public trust and is of no help for public authorities when setting limit values.

The existing national level standards show clearly that other ways are possible guaranteeing a higher level of environmental protection. These national standards can serve as a reference as long as prEN 15359 has to be revised.

We may add that these concerns are being shared by:

- **CEWEP, the Confederation of European Waste-to-Energy Plants** (www.cewep.eu)
Managing Director Dr. Ella Stengler, ella.stengler@cewep.eu
Boulevard Clovis 12A, B-1000 Brussels, Tel: +32.2.770 63 11, Fax: +32.2.770 68 1
- **Some public authorities**, e.g. Ministries/Agencies for the Environment in Belgium. When ECOS presented the case at the latest meeting of CEN/SABE/ENIS, some representatives from public authorities reacted quite strongly. If CEN decided to propose the standard for publication to the EC, ECOS would recommend to EU-Member States (MS) to object to that publication in the respective committee of MS.
- Also UNI, the Italian Standards Body, has been requesting a higher minimum calorific value all along the process.

2. Degree and quality of consensus

ECOS has been participating in the elaboration of the document with a technical expert for more than 7 years (starting with the elaboration of TS 15359 and now during the upgrade to an EN). Despite making its case for all those years within the WG 2, the TC-plenary and several associated workshops ECOS concerns have not been heard.

Therefore we wonder whether we can speak of full consensus that has been achieved for this standard.

According to the CEN IR consensus is defined as:

“General agreement, characterized by the absence of sustained opposition to substantial issues by any important part of the concerned interests and by a process that involves seeking to take into account the views of all parties concerned and to reconcile any conflicting arguments”.

- There can be no doubt that ECOS has shown its sustained opposition against the essential content of EN 15359 throughout the process, at TC and WG level. This must have been obvious to all participants. Also to the stakeholders outside TC 343 ECOS opinion has been made clear at various occasions, e.g. at workshops organised to promote the use of SRF, e.g. by ERFO in London in 2008.

- Does ECOS not represent *“an important part of the concerned interests”*?

Most experts in WG 2 are representatives of the waste management and co-incineration (such as cement) industry or of energy utilities. Their main interest has been to give waste incineration a better image by labelling it with two terms more positive than waste (“fuel”, “EN standardised”), both associated with a high quality level regarding its combustion properties.

Public authorities have been mostly absent from the process, especially during the upgrade to EN. Whereas the Joint Research Center (JRC) ran the QUOVADIS project and advocated for the inclusion of more heavy metals in the very beginning of the work, the mandating DGs Environment and Transport & Energy (now Energy) have hardly been following the process. This is due to a lack in human resources, but also to staff changes having occurred during those 7 years. Also, national authorities were mostly absent from the process. Some of them are on the TC’s mailing list, but only one has participated regularly.

As far as representatives of science were involved in the work of the TC they mostly held convenorship of WGs other than WG 2 and thus played a more neutral role in the process.

ECOS was the only stakeholder advocating continuously for a high level of environmental protection as foreseen in the directive and the EC mandate via the concerns detailed above. There can be no doubt that environmental protection and EU waste legislation have been one of the main drivers of this mandate and the standardisation process. Therefore it is difficult to argue that the concerned interest represented by ECOS was not important in this work.

If that is the case, why has the ECOS opposition been discarded by a vote of nine NSBs, as it was mentioned in the correspondence with the TC and CCMC?

Have the interests of the waste management and co-incineration industry prevailed in the NSBs? Or have the national committees been unaware of the health and environmental arguments against prEN 15359?

How is it possible that there are no stakeholders promoting the public interest of a high level of environmental and health protection active in the national mirror committees of (at least most of) the NSBs that have been following this work? And what about those NSBs that have not been following this work in detail and have simply voted “yes”?

NSBs will justify their positive vote by the national delegation principle. Therefore we wonder whether the consensus-building process at national level was good enough given the outcome of the vote despite the concerns we have highlighted above.

We think that every CEN-member would agree that it is crucial to ensure the standard reflects the maximum support possible from stakeholders and a broad level of consensus for this important work. However, we clearly see a problem in the absence of environmental representation at national level. If an important interest is absent from the consensus building process at national level, there is a problem with the national delegation principle and there has to be a corrective factor somewhere, in this case at CEN level.

This problem has been recognised at political level now. E.g. the European Parliament “Report on the future of European standardisation (2010/2051(INI)), approved in October 2010, *“considers also that the NSBs must play a key role in promoting and reinforcing the participation of societal stakeholders in the standardisation process, given the primacy of the national delegation principle”* (point 34 of the report). This shows that the Parliament has understood the need for a remedy to the existing shortcoming of that principle.

Under point 9 it *“stresses, [...] that these [WTO-] principles are not in themselves sufficient to ensure that all stakeholders – in particular those representing health and safety, consumer and environmental interests – are adequately represented in the standard-setting process within the European standardisation system”*.

Under point 59 the European Parliament *“considers, [...], that there is an urgent need to integrate environmental aspects into all relevant products and services, and that the European standardisation system needs to develop an improved system to ensure that such aspects are properly addressed when standards are developed”* and the same for health aspects one paragraph further down.

CEN members who have not been aware of the arguments against (pr)EN 15359 before have now the opportunity to correct this flaw themselves on the grounds of the ECOS appeal. If members are unable to take corrective action themselves, they will give public interest stakeholders just one more argument that such an interest missing at national level needs a representation including a vote at CEN level.

In the light of the above we ask that our appeal is submitted to the CEN Technical Board for consideration.

Yours sincerely



(Ralf LOTTES)
ECOS Secretary General

Annexes:

- Correspondence between CCMC, TC 343 leadership and ECOS
- EC-mandate M/325 (as attached file), also available at:
http://ec.europa.eu/enterprise/standards_policy/mandates/database/index.cfm?fuseaction=search.detail&id=68

For further reference:

- http://www.ecostandard.org/downloads_a/Tebert_OKOPOL.pdf (PPT)
- http://www.ecostandard.org/priorities.php?detail=on&prio_id=7&priocat=1 (detailed position paper, incl. more references)
- http://www.erfo.info/fileadmin/user_upload/erfo/documents/classification/Classification_report.270205.pdf (SRF-industry study)

Annex 1: Correspondence between CCMC, TC 343 leadership and ECOS

From: Ralf Lottes
Sent: jeudi 26 août 2010 11:43
To: ddus@cencenelec.eu
Cc: 'Ganesh Ashok'; Stamatis Sivitos; tebert@oekopol.de
Subject: RE: SRF and ECOS concerns towards CEN/TC 343-standards

Dear Diana,

back from holidays. Thanks for having discussed this with the TC 343 leaders.

Our reply regarding the feedback from TC 343:

The main argument of the group is that the responsibility is on the permitting authority. This is true, but the current standard means that permitting authorities are left alone with their analysis of a "fuel" which is awarded to be a "standardised EN fuel".

For us, such an award gives the impression of something positive, but in fact - besides standardised sampling and analysis - the standard series do not help the authority with a pre-selection of those waste fractions which are less harmful for the environment (as the existing Finish, Italian and German standards do, in particular regarding the mercury content). Therefore the standard on classification as such does not provide any benefit for the environment. => The standard itself does not contribute to environmental protection => An opportunity is missed to enhance environmental protection by standardisation, as by this system the decision is left to the operator (as without having standardised classes).

The situation will even be worse in those MS mentioned above where more ambitious standards have to be withdrawn.

We would have expected that a CEN working group when starting with the declared aim of "improving public trust" for waste used as fuel would have done such a pre-selection with more ambitious cut-off criteria, in particular for mercury and cadmium + thallium.

Staffan is wrong to say that there have been members of the working group asking for 0 MJ/kg as cut-

off for net calorific value. According to Christian the current "limit" of 3 MJ/kg is the deepest ever requested.

Regarding chlorine he is right to say that the cut-off criterion of 3% is not the deepest ever requested, but higher chlorine content is very seldom and practically means pure PVC. It can in fact be seen as a pro that at least pure PVC is excluded now. However, other high-chlorine fractions with > 1% should have been excluded also - mainly as a benefit of operators and also for reducing the risk of dioxine formation.

The answer concerning Cd+Tl (where always mercury would determine the class of the waste) is a question of determination of these classes. The phrase mentioned by Staffan refers to a setting not supported by ECOS, where Hg and Cd+Tl would all three determine a common class value. We had asked for a SEPARATE classification for cadmium and thallium, not a common one together with mercury.

However, I don't have the impression that further discussion within 343 will lead anywhere unless there is a real threat of rejection of the standards.

BP

I am not aware of the Business Plan's latest revision and hope that the changes/improvements discussed with Bénédicte will substantially improve it, although I have my doubts. Thus I suppose we will receive a revised draft via the TC and will have a look. Checked on livelink. Latest version from early June. Up to there it's not sufficient.

...

Best regards
Ralf

Ralf Lottes, MPA (ENA), Secretary General ECOS
European Environmental Citizens' Organisation for Standardisation (asbl)
Mundo-B, Rue d'Edimbourg, 26, B-1050 Brussels, Belgium
Switchboard: +32 2 894 46 68; Direct line: +32 2 894 46 55
Fax: +32 2 894 46 10; ralf.lottes@ecostandard.org; skype: ecos.ralf;
<http://www.ecostandard.org>; <http://www.experts.coolproducts.eu>; <http://www.coolproducts.eu/>

From: Dus Diana [mailto:ddus@cencenelec.eu]
Sent: vendredi 30 juillet 2010 09:34
To: Ralf Lottes
Cc: Ganesh Ashok
Subject: CEN/TC 343

Dear Ralf,

We have consulted the WG convenor and the TC chair and on Solid Recovered Fuels. Both of their replies included that ECOS's position has been understood and discussed in different occasions, however not shared by the members. Considering that all CEN members attending the last plenary meeting (nine NSBs) have unanimously agreed to forward the draft to Formal Vote, it has been registered in our system and the FV will be launched on 23 September. Taking into account that the topic has been discussed and that the members agreed to the current draft for formal vote, CCMC does not have any justification to intervene in the process.

May we propose that discussions continue between the working group, the TC and ECOS, in order to find a common ground, which might eventually lead to a position that can be shared by all.

Please find below the replies I received for my request to the TC Chair and WG convenor about the points raised by Christian Tebert.

From CEN/TC 343 Chairman:

Indeed Christian Tebert, on behalf of ECOS, has made the stated comments throughout the work of WG2, which has not taken them aboard. He repeated them at the last TC plenary on 1 June and also proposed some sentences to be included in the revised BP.

The main reason for rejection is that TC343 is not responsible for how and in what installations the classified SRFs are used. It is the 'competent authority' that gives the case by case permission for each and every fuel a plant uses. This permit is usually based on a test burn to prove the plant's technical and environmental capability to use such a fuel.

The classification is intended to give a first impression on the quality of the fuel, in order to proceed with a full fuel specification for a commercial contract between seller and buyer.

The End-of-Waste issue has been consequently disclosed from the work of TC343, but naturally we hope that Member States and the EC would use the classification system if they would proceed in political discussions on limit values for some SRFs that could be considered EoW.

I hope Staffan and Jean-Francois could give a more detailed and constructive answer to the issues, repeatedly raised by ECOS who has refused to accept the arguments given by WG2 and the TC Plenary.

From CEN/TC 343 WG2 Convenor:

Martin has given you a good answer and I want to underline what he says: "The classification is intended to give a first impression on the quality of the fuel, in order to proceed with a full fuel specification for a commercial contract between seller and buyer." It is expressed in the pre-standard (Clause 5) in the following way: "The classification itself is not enough for an intending user. A user has to have a more detailed description of the fuel. Relevant fuel properties are thus to be further specified. Some of the fuel properties are so important that they are obligatory to specify whereas others can be recorded voluntarily, e.g. upon request of the user." You will find the specification requirements in Clause 9 and ANNEX A.

According to the CEN rules I have as a convenor to strive to reach consensus. Some experts wanted the classification to start with a much lower net calorific value (almost zero) whereas other experts wanted it to start at 15 MJ/kg. Some experts wanted a much higher upper value for chlorine (at least 6 %) whereas others wanted it to be below 3 %. We have in the WG had heavy but constructive discussions about which characteristics that ought to be in the classification scheme and the values of them. After not so few WG meetings we succeeded to reach consensus among the experts and most of the observers. I do not think that any expert is disappointed of the result. I am very happy and feel that I have met what is expedient for me as a convenor. You will find the base for the classification scheme in the report CEN Report CEN/TR 15508, Key properties of solid recovered fuels to be used for establishing a classification system, Brussels, Belgium, 2006.

It is then up to the Commission and to national bodies to decide how the standard can and will be used in legislation, permitting rules etc. We have given a good base for the following decisions.

We also have discussed the need of having cadmium and thallium in the scheme. ERFO has made upon request of the WG a qualified study of the impact of these elements compared with that of mercury. The study contains hundreds of data. The result is: "The environmental parameters may be represented by Hg since based on actual SRF data there is no added value provided by Cd and Tl (because Hg data makes always a higher classification number than Cd values of the same SRF)". That is the reason why the WG has excluded Cl and Tl from the scheme.

When the TC at its meeting in Helsinki in June this year decided to send the FprEN on Specifications and Classes to CEN for FV all national members supported the decision.

Regarding the Business Plan, CEN TC 343 has made a second revision since the one you commented on. Upon the request of the EHD, they inserted the 'environmental clause', and

we have asked Benedicte to assess whether they have successfully considered the environmental impacts of their activities. As far as I know she is in contact with the TC to suggest some changes/improvements.

I hope we have managed to address some of your concerns.

Have a great holiday,
Diana

CEN-CENELEC Management Centre

Avenue Marnix 17 - B-1000 Brussels

Phone: +32 2 550 08 44

Fax: +32 2 550 08 19

E-mail: ddus@cencenelec.eu

Please note that the e-mail address has changed!

www.cen.eu CEN - European Committee for Standardization

www.cenelec.eu CENELEC - European Committee for Electrotechnical Standardization

From: Ralf Lottes

Sent: lundi 12 juillet 2010 10:16

To: aganesh@cencenelec.eu; ddus@cencenelec.eu

Cc: bdelloye@cencenelec.eu; Stamatis Sivitos; tebert@oekopol.de

Subject: Criticism to CEN TC 343 on Solid Recovered Fuels (SRF)-standards

Dear Ashok and Diana,

Please find below as agreed.

I may add that all these concerns have been raised by Christian as ECOS-expert since the very beginning. We have been on board (TC and WGs 1, 2 and 3) since 2002 or 2003 (WG 3 since biomass content standard started). Apart from that we had been invited to be part of the steering committee of the QUOVADIS-project - Quality Management, Organisation, Validation of Standards, Developments and Inquiries for SRF (QUOVADIS):

http://ieea.erba.hu/ieea/page/Page.jsp?op=project_detail&prid=1684

where Christian (and me in one meeting in Brussels) kept raising those concerns. Furthermore, several dissemination workshops have been organized, e.g. by ERFO, where we did the same.

We have to give the TC-chair, the QUOVADIS-people and the other stakeholders the credit that they have always given us the opportunity to make our point without, however, taking into account the points below.

Please keep us posted on the follow-up and don't hesitate to get in touch for any questions you may have to Christian or me.

Best regards,
Ralf
... (e-mail signature)

From: Christian Tebert [<mailto:tebert@oekopol.de>]

Sent: vendredi 9 juillet 2010 16:19

To: Ralf Lottes

Subject: Critics on CEN TC 343 on Solid Recovered Fuels (SRF)

Dear Ralf,

for your information find below the main issues to be criticized in the work of CEN TC 343:

- Main criticism refer to working group 2, elaborating the standard on "Specifications and Classes"

- Main criticism are on the development of classes: The pollution prevention principle has not been followed. Standardised Solid Recovered Fuels do not contribute to minimisation of pollutants because practically any heavy metal pollution is allowed in standardised fuels.

=> Opportunity to set cut-off criteria for producing "clean"/"green" fuel out of waste was missed

=> Standardised fuels will obtain a name that sounds like better quality although a high environmental quality is not achieved

a) Mercury values of classes 2, 3, 4, and 5 have been set are too high. Such values are difficult to abate and run the risk of increased emissions, in particular in cement co-incineration with SRF where no abatement for elementary mercury is available

b) No classes have been defined for Cadmium and Thallium although the Waste Incineration Directive is mentioned as basis of the work of CEN TC 343 in the Commission's mandate. Both heavy metals are 100% volatile during combustion and therefore regulated by the Directive.

=> Working Group 2 gave as reason that there was a parallel development of mercury and cadmium concentrations in some SRF (although it is clearly recognised that there is no scientific background for a parallelity of mercury and cadmium concentrations as these heavy metals have totally different origin in waste respectively in products.

c) No cut-off criteria have been set for other heavy metals with high toxic potential, in particular nickel, lead, chromium, cobalt, arsenic. Therefore, the intended promotion of using standardised SRF as a substitute for conventional fuel can lead to higher heavy metal content in products like cement and in combustion ashes, regularly used for cement production.

d) The classes defined by CEN TC 343 for net calorific value allow waste being standardised as "fuel" although its contribution to the combustion is close to zero. This means that standardisation promotes waste disposal operations (e.g. of sewage sludge) by allowing the use of the term "fuel" although standardised waste with class 5 for net calorific value will in fact reduce the temperature of the combustion.

e) The class 5 defined by CEN TC 343 for chlorine allows very high chlorine content in waste (1.5-3.0 %) to be used as a standardised fuel although such material is very corrosive and increases the risk of dioxin formation during combustion. Such material should have been excluded from standardised fuel made of waste to protect the environment. Dioxin abatement is not installed in most co-incineration plants where standardised SRF are promoted to be used in.

Please do not hesitate to contact me in case of questions.

Best regards

Christian

Ökopol GmbH Christian Tebert
Dipl.-Ing. Techn. Umweltschutz
Environmental Protection Engineer
Tel. +49 40 39 1002 - 0
Fax +49 40 39 1002 - 33
Email: Tebert@oekopol.de

Oekopol GmbH - Institut fuer Oekologie und Politik
Nernstweg 32-34
D-22765 Hamburg
www.oekopol.de
Amtsgericht Hamburg, HRB 41221
Geschaeftsfuehrung: Dipl. Ing. Dirk Jepsen, Dipl. Ing. Sabrina Errico