**BREF WT meeting JRC Sub-werkgroep**

**Amsterdam: 11th-12th of June 2015**

# Present

* Unico Van Kooten
* Adrie Veeken
* Arjen Brinkman
* Anneleen Rotering
* Christian Neubauer
* Florian Amlinger
* Wojciech Rogalski
* Karin Adam
* Isabelle Pace
* Marc-Henri Thimonier
* Ingrid Vandenbroucke
* Howard Lebermann
* Volker Kummer
* Michael Balhar
* David Wilken
* Thomas Terpetschnig
* Amalia Cerda
* Nathalie Buijs
* Stefanie Siebert
* Aliki Kriekouki
* Benoit Zerger (EIPPC)
* Kiara Zennaro (skype)

# Introduction

Presentation of everyone round the table. Unico gives a short summary of the work done until now.

# MBT

Isabelle explains the MBT-work done until now (Paris Dec. 2014, Catania Jan. 2015, Seville March 2015, Amsterdam June 2015). See slides.

Discussion points:

## Air abatement techniques

## Biodrying / biological drying

Leave it here or move it to another part? It has to be in chapter 2, chapter 4 and chapter 5. We have to describe it properly. Germany and Austria will propose some inputs on biodrying.

## Cross reference with the part ‘emissions to air’ of the indoor composting

Cross references yes or no? RTO apart, only in the MBT chapter. We have to avoid duplication, make the document not too big. But we have also to take care that all abatement techniques are at the same level, not RTO first and the rest secondary because they are in another chapter.

It has to be considered that the process management is very different between producing organic fertilizer (French model) or stabilized material to landfill (e.g. German model) regarding impurities, times of turning, aeration, watering etc. Also that the techniques for mechanical pretreatment is much more complex with more points of emission releases than for treatment of separate collected biowaste.

Decision: Keep cross referencing. If, out of the data collection, extra differences are identified, then put it in the chapter where it belongs (to give the right weighting).

We finally agreed that for air abatement techniques, we will make cross references with the indoor composting and/ or AD part where it is already described; the RTO technique will remain in the MBT part in order not to generalize it. As underlined by many representatives, we will have to describe the situations in which RTO can be useful precisely and highlight also that its use is very limited within the EU (mainly DE).

Isabelle will finalise C4/C5 accordingly.

# AD

David explains the last changes.

The post-treatments are possibilities, not a must. Take care how we say it. Kiara will send a text proposal. The proposals to modify the text are adopted according to the team presentation on AD by David.

# Questions EIPPC

Ingrid presents the answers to the questions of the EIPPC.

Ingrid will adapt the text to the results of this discussion for the second week of July.

Thomas will deliver some text on question 5 (before the 3th of July).

Howard will send the link to ‘2013 Biofilter performance and operation as related to commercial composting (EA).’

Everyone looks for the following texts (and send them to Ingrid before the 3th of July):

* Composting and Anaerobic Digestion Association of Ireland (2011) Certificate in Compost Facility Operation Manual. Dundalk, Louth, Ireland.
* Bidlingmaier, W., Müsken, J., 1997. Biotechnologische Verfahren zur Behandlung fester Abfallstoffe; in: Ottow, J. C. G., Bidlingmaier, W. (hrsg.), Umweltbiotechnologie, Gustav Fischer Verlag, Stuttgart
* C. Cuhls et al. (2010); Bioabfallverwertung - Handbuch Emissionsarmer Anlagenbetrieb.Studie der GEWITRA Ingenieurgesellschaft für Wissenstransfer mbH im Auftrag der Bundesgütegemeinschaft Kompost e.V.
* G. Bruyn; Barth & Bitter (2011); Expert´s opinion concerning the odouremissions and -immission of different composting systems
* M. Kühner et al. (2000) “Kompostierung unter semipermeablen Planenabdeckungen als emissionsarems “Low-Tech” und “Low-Cost” Verfahren” (composting under semipermeable membrane covers as low emitting “low-tech” and “low-cost” technology).
* UK EA: How to comply with your environmental permit. Additional guidance for: Anaerobic Digestion. LIT 8737, Report version 1.0 and November 2013

# Data analyses

The first data analyses on the questionnaire was done by Adrie (presented in Catania), now a second, more detailed data analyses was made by UBA, Vienna, presented by Christian.

General points:

* Only the information available at the end of January is used, the changes made after January are not included (neither the answers on the questions of the EIPPCB).
* Excluded from the assessment so far: sheet 4 (input/output), sheet 5 (storage and common steps), sheet 6 (process – mechanical), sheet 8 (process – physic-chemical) and BAT candidates.
* Capacity of mixed wastes plants is a lot bigger than the capacity of the source-separated waste plants.
* 84 plants participated for source-separate waste, 26 for mixed waste.
* 1st category: re-use/recycling/material recovery; 2nd category: energy recovery; 3rd category: landfill.

Discussion about odour:

* average is 1297 OU/m³, complaint driven, kind of odour is important (process odour versus rest odour (woods))
* France: if there is an odour complaint, than look to ammonia and… to find the reason.
* Germany - requirements for MBT: every 3 year odour and TOC
* UK: still thinking, they want at least once a year monitoring
* Belgium: complaint driven (like France)

If BAT-AEL limits as set in the BREFs they have to come in the permits. This doesn’t say what the consequences are in case these limits are superseded. That is for the regulator/CA to decide.

Conclusion in Catania: if there are biofilters, you have to monitor NH3. For the other parameters, look to the process management.

Conclusion: once an abatement technology is being used (like biofilter, RTO,…) then on this abatement technology a monitoring strategy can be set up (e.g. ammonia).

Work for the TEAMS (indoor- outdoor composting, AD, MBT):

* Members of the subgroup are able to send corrections/ suggestions on the document of Christian (till the end of June), then Christian will finish it within 3 weeks

# Questions tot Benoit/ EIPPCB

* What is the current status of the work of D1?

Benoit: The analytical part (questionnaires) of the biological treatment is almost finalized. There is a big progress in the textual part. The texts that were delivered by this group are a great help, they are not used word by word. There are still gaps: e.g. what to measure en how to measure it.

* The parameters like they were showed in the kick-off meeting, will they be maintained?

Benoit: For now the guiding information is work of the subgroups and the outcome of the questionnaires.

* What is the procedure to decide on the final draft list of KEI, out of the questionnaires?

Benoit: also out of experts and information exchange, … everything that is useful (provides evidence, justification), is used.

**Friday 12 June**

# Meerlanden

Mr. Ger de Jong, Director Meerlanden, welcomes us and gives a summary of the plant:

* Self-supporting and self-supplying company: enough profits to do this; >500 workers; 2,4 million m³ green gas (not biogas); Underground pipeline for heat, used by greenhouses in the neighbourhood.
* It is important to involve the neighborhood
* The company is also contracted for biowaste collection
* 300 à 350.000 households deliver circa 55 000 ton VGF waste input

# Debate about KEI

Unico is leading this discussion. Some points to consider:

* Point source release or environmental?
* Do we have to look for the plants with the lowest emissions (“best performing”)? To see how they do it? No. This information is not in the questionnaire, it will be difficult to find this information. There can be a lot of explanations: input material, capacity (maybe there are only on half capacity?), temperature, climatic location, …
* Odour:
* Management of the biofilter and control for emission are both very important.
* Kind of odour is important (process odour versus rest odour (woods))
* Way to measure it is important (e.g. German method measures less).
* Best is to work with ranges, e.g. for odour 500-1500 OU/m³

Possible KEI

Based on the first data analysis as presented in Catania a first list of KEI to air was identified. Today the second analyses (based on the work of the Austrian Environmental Ministry) has been added to the thinking of the subgroup. The group made a second assessment on what could be considered to be KEI to AIR. The following questions are being dealt with inside the teams:

1. Are the KEI to air adequately described in C5 and is this sufficient to control these emissions?
2. Is it necessary to add a monitory obligation and how should this look like (for the respective KEI to air)?

The teams have until 14 July to come up with proposals to the Subgroup Biological Treatment. Proposals should be send through the teams to the rapporteur.

**Summary:**

2 aspects must be considered independently:

* + Global Environment protection objectives like e.g. GHG emissions, potential impacts on ground and surface water; and
  + Nuisance related emissions: perception in the vicinity of the plant / complaints and specific health protection

The key questions are:

* + How can you design and optimise the technique and its operation in order with regard to possible impacts?
  + How to control/monitor KEI in order to prove that certain maximum thresholds are not exceeded with defined tolerance ranges?

Regarding the procedure to come to a common view or conclusion, two steps are proposed:

1. Clarifying the question ***IF*** an identified emission parameter is at all relevant as regards overall presumed magnitude to be expected from a certain process (and why); and
2. Defining ***HOW*** (by what means) best performance as regards emission minimisation and control can be achieved.

If a subgroup member want to add another KEI that the ones identified yet, it is essential to provide the rationale for the team to scrutinise the value of the contribution.

The following table is a first draft on STEP 1, based on:

* Key results of the questionnaire as assessed by UBA, Wien (Christian Neubauer)
* Expression of experience, national regulations et cetara from the subgroup members

***Draft assessment of KEI to air***

Whatever KEI is proposed in addition to what the SG agreed, the rationale behind must be provided.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | **Open (1c)** | **Closed (1a)** | **AD\* (2)** | **MBT aerobic (4a+4b)** | **MBT AD (5)** | **MBT aerobic+ AD (6a + 6b)** |
| Odour | L; in case of odour problems | L | L | L | L | L |
| NH3 | no | G/P | G/P | G/P | G/P | G/P |
| *screening in case of odour problems:* | | | | | | |
| Dust | L | L | L | L |  | L |
| TOC or NMVOC | no | L/G/P | no | L/P | no | L/P |
| H2S | no | L/P | L/P | L/P | L/P | L/P |
| *Linked to detection (AD)* | | | | | | |
| CH4 |  |  | G |  | G | G |
| *In case of the use of RTO (check functioning of abatement technology)* | | | | | | |
| N2O |  |  |  | G |  | G |

\* it needs to be clarified with JRC if gas engine is within the scope or not.

*Legend*:   
L … local perception /nuisance precaution  
G … global environmental indicator  
P … key process parameter to be monitored (check if properly described in C5 already?)  
marked in yellow: inserted by Florian after meeting!

(1a) aerobic, indoor

(1b) aerobic, indoor + outdoor

(1c) aerobic, outdoor

(2) anaerobic

(3a) anaerobic/aerobic, indoor

(3b) anaerobic/aerobic, Indoor + outdoor

(4a) MBT, aerobic, indoor

(4b) MBT, aerobic, indoor + outdoor

(5) MBT, anaerobic

(6a) MBT, aerobic + anaerobic, aerobic indoor

(6b) MBT, aerobic + anaerobic, aerobic indoor + outdoor

Work for the teams:

* The team leaders coordinate the work. They make a first proposal to the team. The respective teams assess again the KEI to air (indoor/outdoor/AD/MBT) and discuss within the teams:
  1. Are the KEI to air adequately described in C5 and is this sufficient to control these emissions?
  2. Is it necessary to add a monitory obligation and how should this look like (for the respective KEI to air)?
  3. The team contributions are submitted to the SG via the rapporteur not later than the 14th July.