

## **Minutes of the progress meeting**

Project N° ENK5-CT2002-80648: Tar Measurement Standard

Location: ECN Office, Amsterdam- the Netherlands

27<sup>th</sup> November 2003

Time: 12.00-18.00

### **Project participants present:**

B. Coda	ECN
J. Kiel	ECN
B.van Egmond	ECN
H. v.d. Hoek	NEN
M. Suomalainen	VTT
U. Zielke	DTI
P. L. Hansen	DTI
T. Lilledhal	KTH
J. Good	Verenum
H. Knoef	BTG
L. Ventress	Casella Group
J. Neeft	NOVEM

### **Other invited parties:**

C. Unger                      Fraunhofer UMSICHT

### **Introduction and welcome**

J. Kiel gives a brief overview presentation of ECN Biomass and the research activities carried out.

### **Presentation from the co-ordinator**

#### **1.General**

B.Coda presents an overview of the current status of the project in terms of results achieved so far. Project activities are well under schedule according to the original plan. The main conclusions are:

- 1) R&D: the Round Robin test of synthetic tar samples and of real tar samples has been successfully completed and evaluation is well under way
- 2) Standardisation: the activities of the CEN/TF/143, started officially in correspondence of the Helsinki meeting in June, are well under way- a second draft of the Standard will be discussed the following day with national delegates.

#### **2. Dissemination**

- A presentation on the project has been given at the conference 'Enlarged perspectives' organised by the European Commission in Budapest in October 2003.
- An abstract has been sent to the 2nd World Biomass Conference, to be held in Rome in may 2004
- It is agreed that an abstract will be also sent to the next Science in Thermal and Chemical Biomass Conversion (STCBC) Conference, which will be held in Vancouver in October 2004
- The possibility to send an abstract to the Velen conference will be also evaluated.

ECN and BTG will set a date for a meeting as soon as possible to discuss about relevant update of the Internet page of the project, [www.tarweb.net](http://www.tarweb.net) (**action ECN-BTG**)

### **3. Contractual/Administrative issues**

The first year of the project closes officially on the 30th of November 2003. An annual report (progress report) must be issued and presented at the European Commission at the latest by **31st of January 2004**, as well as a cost statement by all the project partners sent through the co-ordinator.

The progress report must include:

- an executive publishable summary
- objectives and strategic aspects
- scientific and technical performance
- summary of deliverables
- dissemination

**ECN** will try to cover the overall report and ask for help to the project partners when needed. In addition, the report has to contain a manpower-progress follow up table and a budget follow up table. This has to be completed by all the partners.

Details on the cost statement table have been sent by the co-ordinator in a separate email.

It is agreed that the cost statement (2 original signed + 1 copy) and the properly filled in manpower/budget follow up table will be sent by each project partner to the co-ordinator at the latest **by January 15th 2004** - see attachment

### **Discussion on the Round Robin Test (lead by DTI)**

A second Round on real tar samples (both GC and gravimetric tar) has been completed. The results are now being evaluated. The samples were coming from an updraft gasifier (Harboore gasifier) and a CFB gasifier (Umsicht gasifier). A preliminary report was sent by Uwe Zielke in due time before the meeting so that everybody had time to analyse the results

The main results of the discussion are:

- Concerning the GC analysis- statistical results are different between the CFB samples and the updraft samples. Overall it can be stated that the analysis of the CFB gasifier tar samples give better results ( in terms of standard deviation) than the updraft gasifier tars. The reason for that might be related to the experience of some the labs in analysing the FB tars but especially on the use of the GC-FID versus GC-MS associated to the type of tar composition. With the GC-FID it looks like the peak separation of an updraft gasifier tar spectrum is not easy, almost impossible, vice versa the GC-MS is more suited for updraft gasifier. That has had a significant influence on the results.
- Concerning the gravimetric analysis: the results obtained are of very difficult interpretation, due to the fact that the participating labs have used different conditions in terms of evaporating pressure and temperature.

Further actions will be:

- **DTI** will contact the various labs and ask reasons for the different outliers
- **DTI** will also prepare a list of parameters/operating conditions related to the GC used (es: column, injector, liner, carrier gas, etc).
- Once the outliers will be eliminated/corrected, a second evaluation of the RRT will be done and further actions will be taken only after that (**DTI/all**). It looks likely that the evaluation will be splitted in two parts, linking the analysis results with the analysis technique (GC-FID and GC-MS), and that eventually the standard might contain 2 different indications related to the use of the 2 different GC techniques. This possibility will be explored in further detail only after the final evaluation of the results.

- Gravimetric tars: **DTI** will send an invitation to participate to a 3<sup>rd</sup>, small round on Gravimetric tars. It is necessary that labs will use the same operating conditions so that accuracy and reproducibility can be finally checked.

### **Parallel measurement campaign**

The time has come to organise in detail the parallel measurement campaign to be carried out in 2004. The main results of the discussion are:

- It is agreed that a parallel measurement campaign will be held in the first half of 2004 (to have the results ready in due time for the mid-term assessment meeting in May) and a second one in the second half of 2004.
- Candidates institutes for the first campaign are: ECN, Umsicht Fraunhofer, and VTT (all the three fluidised bed-FB- gasifier).
- It is agreed that the second campaign will be on the updraft gasifier and that it will be performed in Harboore, Denmark (co-ordinated by DTI) and will be performed in the second half of the year, unless it won't be possible to perform the campaign at the FB gasifier until **March/April 2004**.
- A final date for decision on the location for the FB gasifier campaign will be **end of January 2004**.  
**ECN** will prepare a list concerning a set of requirements for the institute to host several parties (where to sample, what to sample, analysis, etc.) until **december 2004** so that it will be worked out in January 2004 by ECN, Umsicht and VTT.
- ECN and DTI have expressed their interest to participate at both parallel measurements campaign. Umsicht participation in both campaigns looks also very likely. VTT has no extra money to travel, and the participation looks possible only if in the framework of other meetings of this project. BTG could participate only in one campaign depending on a project proposal approval. As for Casella Group, Verenum, and KTH, participation seems not likely.
- Other external parties had expressed their interest in participation when the first call for expression of interest was sent out early 2003 (e.g. IVD, Uni Delft, etc.). It is agreed that these partners will be contacted again as soon as a decision is taken on the location of the 1st parallel measurement campaign. Publicity on the event will be also done at the appropriate time by BTG in the Gas net issue.

### **Other R&D**

VTT has successfully tested the Petersen column and propose it as alternative method to the impinger train.

Verenum will provide additional details on the comparison SPA/Guideline that was recently performed (high and low tar concentration measurements)

Aerosol formation and how to avoid it, it is still an issue- it is agreed that this will be tackled when discussing the draft standard in the CEN/TF/143 meeting.

### **Next project meeting**

Next project meeting will be tentatively held in Rome in May 2004, combining it with the 2nd world Biomass Conference. A date will be made known once the conference schedule will be available. However, since next project meeting is the mid-term assessment meeting, the European Commission will be informed to agree on location and date.