Task 34 Pyrolysis Business Meeting Minutes
4-5 November, 2018
Richland, WA and San Francisco, CA USA
PNNL

Attendees

National Team Leaders (NTL):
Fernando Preto (FP) - CanmetENERGY, Canada
Axel Funke (AF) – KIT, Germany
Bert van de Beld (BvB) – BTG, Netherlands
Ferran de Miguel Mercader (FM) – Scion, New Zealand
Magnus Marklund (MM) – RISE-SP-ETC, Sweden
Alan Zacher (AZ) – PNNL, USA, Lead

Observers
Justin Billing (JB) – PNNL, USA, incoming NTL

Introductions and business of the week covered.

Ferran announced that he is stepping down at Scion. Now have to decide the leadership of the Task, as he was planning on leading. There should be a NZ replacement, but it is not clear how fast it will happen. This raised concerns by the Task on the certainty that the unknown, incoming NTL from NZ will be experienced with IEA Bioenergy enough to lead the task. Need to decide what to do next. Germany may be interested.

Netherlands tentatively stepping out of task due to changes in task funding [this was later rescinded at ExCo the following week.] Fernando may have a new Canada rep. Norway may be in, we are hoping for a commitment, and Ireland may be considering?. Magnus will have a new rep. Korea will probably not be, even though their researchers are interested and it may be a good opportunity. They have a strong pyrolysis program, and build things very quickly. Australia is not currently ready to get involved in the Task. UK will likely not be able to join again. It would be good to reach out to EBRI to see how thing are going. Denmark has been verbally interested, but it does not sound like there is budget for that yet. Multiple NTLs have been interactions, this would be good as Denmark is very involved in SvTL.

Discussed the current interactions with various commercialization entities and if there is ways of working them into the Task with interactions and country involvement.

Biorefinery vs. Bioenergy. Also need to make sure that upgrading is called out in the WP1 not just for liquefaction technology. Need to make sure there is clarity to explain why both application standards (boiler fuel, etc.) and analytical standards (new or modified methods.)

As far as TEA: Finland/US interaction should be approached for TEA deliverable, if they are interested. As Netherlands will be out.

As far as Coprocessing: There was an interaction that was planned intertask with Task 39, but it sounds like this is in question. There will be a final update at the end of the next triennium, so it may be Sweden that would be leading that one with Linda.

As far as validation of analytical methods: It is open, could be a round robin, something could be method development, chloride, important output. Canada may be the right lead for that.

Bio-oil and bio-crude technical standards for specific applications. Need to make this clear, this would be reporting out on standard centralization. Application standards, technical standards may be a good term for that. This may be part of the website such that we have the definitions written in at the beginning, and then report on the progress. Residue2Heat may not be establishing standards, but reporting out on the data for informing the application. This is the data that can be used to inform a standard.

Technical notes on R&D handling experience, this would be a great deliverable, and there is a need for it. US would be the lead for it, and then disseminate by the web or newsletter.

Dissemination, newsletter and website. We may need a brochure that can be an ISBN number associated with it as it can be used for policy. But whether it is printed or in page it may not be needed to describe. One proposal would be 1 to 3 minute video dissemination would be a great idea to substitute here. A lot of NTLs reported that this is more common and may be much more accessible to outreach, particularly for early researchers and new scientist. Website deliverable may need adjustment, as there is a major refresh that is going on at the end of this triennium of the Task 34 site.

The workshops are attached to meetings, and covered there.

Success stories: Netherlands will be out, so it would be an output for high temperature applications: Could be Canada or Finland. 2 parts: work from intertask and ExCo money.

Country reports: Internal ones twice a year. External ones would be a 2 pager updated once per year and put on the website. Should we give an opportunity to put up a half page for anyone who wants one under our website? Then the researchers can provide their own update and we can put it under the country header.

Also need to discuss what is the position of Task 34 with regards to the task leadership.

Break. Opportunity to meet with Manuel Garcia-Perez at WSU to talk about current research in pyrolysis at WSU. Thermochemical conversion to liquefaction. Looking at pyrolysis model and formation of aerosols as part of the fundamentals. Looking at different solvents for solvothermal liquefaction and looking at matching the fundamentals of pyrolysis and SvTL. Also in the characterization using ICR-MS

for looking at oligomers, which were not analyzable by GC-MS. Looking at hybrid sugars and phenol oligomers and understanding what oligomers are present and if they can be separated or segregated. This may help inform separation schemes. Describing pyrolysis oils in terms of appropriate groups then. Hydrotreating whole oil has been a focus, but he is looking at more separation and separate treatment. Putting out a review paper soon on separation strategies. Working with PNNL on lignin separation and upgrading, looking at blending vegetable oils and hydrotreating. Light molecules upgrading. We are looking at a biorefinery concept to separate and treat separately. Also looking at bio-char, a method for getting the volatiles out of bio-oil and separating the bio-char from a boiler such that it is for energy production and bio-char production. The difficulty is getting data on the costs of doing bio-char and the costs of not doing it, such as forest thinning, waste, etc. Opportunity to hear the breadth of work at WSU.

One of the challenges is linking things like wildfire potential with solutions like bioenergy as a double solution to multiple problems and communicating the correlations.

Intertask collaborations: Two types. One is an actual project with an official project, and the other is a collaborative project where the task provides less formal input. 4 are proposed for the next triennium. 1. Sustainability (apply LCA to specific applications.) Uncertain that Task 34 has a role. 2. Deployment of renewable gas (unlikely). 3. Role of biomass in 2C (uncertain if there is a role here). 4. Biomass in high temperature heat (likely that the task could participate.)

With respect to #3, it is unclear what participation would look like. Note that the next triennium proposal is aimed at accelerating commercialization, which is the conclusion from the IEA Technology Roadmap. The proposal is more about dissemination and messaging the contribution of technologies to this target. There may be limited contribution we can make here. As far as #1: our contribution could be to review the data that was used to LCA to make sure that it is relevant and appropriate.

Collaborative projects: 8 are informal collaborations: 1: maybe a workshop. 2: maybe our equipment experience paper series. 3: not directly, we could review data? 5: Low Q feed/waste: Canada is doing this, US is doing this Workshop. 6: CCS: No. 7: No. 8: Interested.

As far as Task leadership in the new Triennium, Ferran will be gone so the NTL from New Zealand will be new and may not be familiar enough to be ready to lead Task 34. In order to go with a known option, discussed need to put Germany forward if they agree, there was task consensus that it may be the best option going forward considering the changes and the importance of continuity.

Round robin discussion. Need to fix conclusions slide to reflect that additional round robins are the outcome (not just needs).

Country Reports given by all NTLs present.

Next Meeting:
Co-location with ExCo (near the Netherlands?)
Potentially for Germany (Berlin or Hamburg)
For future: Norway?, Finland?
19Q2: Germany?
19Q4: Finland?
20Q2: ?

20Q4: ?
21Q2: Sweden
21Q4: ?
Newsletter articles:

1) Alucha (BvB)
2) Venderbosch electrochemical
3) Report on proposal for next triennium (Ferran/Axel)
4) Report out on Netherlands/Germany site visits (AZ)
5) Linda (LS)
6) Kai Toven (AZ)
7) Nowakowski (AZ)
8) Conference Report ABLC Global 2018 (JB)
9) International Biofuel Initiatives (FP)
10) David (BvB) Turbine pyrolysis-oil
11) Jensen (thesis?) - Sergio from Steeper (AZ)
12) Fish processing waste, Kelly (FP)

Meeting was adjourned to travel to ExCo in SF.