

Task 34

Direct Thermochemical Liquefaction of Biomass

Task 34 Meeting October 7th 2021 (videoconference)

6am-7:20am (CEST)

Recognition of Meeting Participants

Bert van de Beld	(BvB)	NTL The Netherlands
Alex Böhm	(AB)	Task Lead
Benjamin Bronson	(BB)	NTL Canada
Axel Funke	(AF)	Task Lead/ NTL Germany (Minutes)
Christian Lindfors	(CL)	NTL Finland
Lasse Rosendahl	(LR)	NTL Denmark
Linda Sandström	(LS)	NTL Sweden
Mike Thorson	(MT)	NTL U.S.
Kirk Torr	(KT)	NTL New Zealand

Report from WP's

A short indication of the progress of all WP's was given (the updated Gantt Chart is attached to these minutes). Most of the work packages will be finalized by the end of 2021. There is a foreseeable delay into Q1/2022 for WP 2.1, 3.2, and 4.3. It was decided by Task lead that WP 2.2 will be cancelled due to limited resources and prioritising completion of other WP's. There is an issue of data publication from companies involved in developing standards for co-processing FPBO in refineries, which might affect completion of WP 3.1.

Discussion of TEA Review (WP 1.1)

The study was subcontracted to Prof Shonnard/ MTU (U.S.). He reviewed several (primarily U.S. based) TEA studies with a DTL scope from 2010 onwards. The report includes a comparison of these studies regarding e.g. minimum fuel selling price and conversion efficiency (energy based). Some correlations were investigated, too. In order to achieve this, parameters of the investigated studies were re-calculated whenever necessary and possible. There are three parts for fast pyrolysis, HTL, and solvolysis, respectively. They all follow the same logic/ structure.

It was consensus among the meeting participants that what is missing in this report is a critical reflection of the value of these TEA studies for other stakeholders e.g. from politics and industry. Notably, there is a mismatch in assumed plant capacity/ actual built plants, a MFSP suspiciously scattering around of 3-4USD for U.S. based studies, comparison of technologies with different maturity, use of GGE/ energy based comparison for different products etc). It was found that such a critical evaluation is required prior to publication and it was decided to follow up on this during one of the first meetings in 2022. I.e. this critical evaluation will be started by Task 34 participants and input from Task 42 is requested to aid with potential methodological issues.

AF will try to request following technical issues with Prof Shonnard:

- Distinguishing different product types, i.e. what product has been produced in which case?
- Why have EU based studies Rogers 2012 and Trippe 2010 not been included?
- Delivery of associated Excel-Sheet

Success story

LS will try to compile the data available to her for the Pyrocell/ Preem joint venture and double-check with the involved companies for publication as success story.

The hydrotreatment center in Alberta/ Canada is not in operation, yet. It remains an interesting case to be featured as success story in future once it will be in operation.

Other business

AB has sent around invitations to all NTLs to provide reviews of DTL related developments over the past three years in each country as input for PyNe 49.

Fast pyrolysis bio-oil and HTL biocrude samples are required for the Round Robin. LR agreed to supply several liters and MT will check availability of HTL biocrude at PNNL. BB will detail exact available amounts (and source) directly with LR and MT before requesting FPBO samples.

All NTL's are requested to prepare Country Report presentations (~10min) for the upcoming two virtual Task 34 meetings.

Attachment

Project No.	Торіс	Lead	Status	% Work completed	2019					20	20		2021				Alarm
				See Note 1	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	
1.1	1.1 Techno-economic assessment of DTL technologies	Justin Billing	Planning	90%													
			Actual														
1.2	1.2 Contribute to co-processing bio-oil/biocrudes in petroleum refineries Task 39 report	Paul Bennett/Kirk Torr	Planning	100%													
			Actual														
2.1	2.1 Validation of analytical method	Benjamin Bronson	Planning	10%													
			Actual														
2.2	2.2 Advanced analytical techniques workshop/webinar	tbd	Planning	25%													
			Actual														
Add 2.1	Add 2.1 Validation of methods to determine polar and non-polar components in FP Bio-Oil	Bert van de Beld	Planning	100%													
			Actual														
3.1	3.1 Report on standardisation of bio-oil/biocrude analysis and application	Christian Linfors	Planning	10%													
		Justin Billing	Actual														
3.2	3.2 Technical notes on R&D and commercialisation	Benjamin Bronson	Planning														
	experiences		Actual	25%													
Add 3.1		Axel Funke	Planning														
	MSDS - Data		Actual	25%													
Add 3.2	Add 3.2	Benjamin Bronson	Planning														
	Materials Compatibility		Actual	10%													
Add 3.3		Paul Bennett/Kirk Torr	Planning	100%													
	Commercialisation Overview		Actual														
Add 3.4	Electrochemistry & Fast Pyrolysis Bio-Oil	Kirk Torr	Planning	75%													
			Actual														
4.1	4.1 PyNe Newsletter (6 deliverables)	Alexandra Böhm	Planning	90%													
			Actual														
4.2	4.2 Direct thermochemical liquefaction technologies	Axel Funke	Planning	1000/													
brochure		Actual	100%														
4.3	4.3	Alexandra Böhm	Planning	500/													
Website content refresh		Actual	50%														
4.4	4.4 Workshops, seminars and/or site visits with key	Axel Funke	Planning	250/													
stakeholders (5 deliverables)		Actual	25%														
4.5	Success Stories (at least 1)	Axel Funke	Planning	0%													
			Actual														
4.6	Country reports (3 deliverable)	Alexandra Böhm	Planning	75%													
			Actual														
Add 4.1	Anniversary PyNe	Alexandra Böhm	Planning	25%													
			Actual	2376													
Add 4.2	Add 4.2 Round Robin Archive	Alexandra Böhm	Planning	100%													
			Actual	10070													
Add 4.3	Add 4.3	Alexandra Böhm	Planning	100%													
PyNe Database		Actual	10070														
ITP1	ITP1 Process heat in industry	Bert van de Beld	Planning	90%													
			Actual														
ITP2	ITP2 Flexible bioenergy and system integration	Bert van de Beld	Planning	50%													
			Actual	3070													