

IEA Task 39 Business Meeting

IEA Bioenergy Task 39 Commercialization of conventional and advanced liquid biofuels from biomass

5-6 November 2018

**5 November, business meeting, Bay View Room,
25th floor Hotel Nikko
San Francisco, California, USA**

**6 November, tour of JBEI,
Emeryville, California, USA**

Monday, 5 November, 2018

8:30-9:00	<p>Welcome (Jim McMillan / Jack Saddler) Group introductions, local arrangements and logistics. Tabling of meeting agenda.</p>
9:00-9:30	<p>Current triennium – Feedback on last ExCo meeting (Ottawa), review of Task deliverables for this triennium including commissioned work, budget status, etc. (Jim M./Jack S.)</p>
9:30-10:00	<p>Drop-in Biofuels report, including two proposed inter-Task activities for next triennium (Jack Saddler) - Production and uptake of drop in biofuels, status of technology providers, integration with refineries and co-processing potential and challenges. These will continue to be major foci in next triennium.</p>
10:00-10:30	<p>Survey of Advanced Biofuels for Advanced Engines report (Nicolaus Dahmen) - Report status / achieving “sign off” and status of AMF Annex 52 to which this report contributes - Next steps / possible Task 39 collaborations with AMF & Combustion TCPs</p>
10:30-11:00	<p>Coffee/tea break</p>
11:00-12:00	<p>Comparison of LCA models report (Antonio Bonomi) - Progress to date/ status of Phase 2 final report. Phase 1 papers in peer review for journal publication. When will draft of final report be circulated, etc.</p> <p>Proposed LCA plans for coming triennium (Don O’Connor) - What to prioritize for next triennium, leveraging expertise of Task 39’s LCA biofuels advisory committee (Michael Wang, Mark Staples, Adrian O’Connell, Antonio Bonomi, Don O’Connor) Integration with new “sustainability” Task.</p>
12:00-12:30	<p>Implementation Agenda report (compare and contrast biofuels policies) (Mahmood Ebadian & Jack Saddler) - Feedback on questionnaire / template that was distributed - Feedback on the progress on the draft report - How can the process be made easier but still allow the needed data to be collected? - What should be done in this area in the coming triennium?</p>
12:30-13:15	<p>Lunch Break</p>
13:15-13:45	<p>Assessing advanced biofuels R&D in the EU (Adrian Oconnell)</p>
13:45-15:00	<p>Review and discuss proposed Task 39 activities for new triennium (Jan 2019 - Dec 2021) (Jim/Jack) Identify project leads/champions for (some) of the topics below (following Prolongation Proposal)</p> <ol style="list-style-type: none"> 1) Continue updating implementation agendas report (Discuss approach of breaking up effort into regions (e.g., Europe, Asia, North and South America, Australasia, Africa?) Also evaluate which types of policies – carbon tax, low carbon fuel standard, mandates, etc. – work best? (Mahmood Ebadian) 2) Continue focus on drop-in biofuels, especially for marine and aviation. Develop roadmaps for decarbonisation of long-distance transport (marine, rail, truck, air); study refinery integration; assess development of standards to commoditize bio-intermediates in biorefineries (UBC, others, also with other Tasks; also ties into item 6 below) 3) Conduct feedstock-to-biofuel(s) supply chain analysis to identify CAPEX and OPEX cost reduction opportunities (with Task 43/Feedstocks)

IEA Bioenergy

	<p>4) Sustainability assessment of biofuels pathways (with new Sustainability task, and/or multi-task). Identify key metrics beyond GHG reduction; span both feedstocks and conversion technologies. Co-lead biofuels LCA studies (A. O’Connell, M. Staples, D. O’Connor, A. Bonomi, M. Wang)</p> <p>5) TEAs of advanced biofuels feedstock/technology pathways, particularly for drop-in biofuels (UBC)</p> <p>6) Review existing/proposed certifications used for oleochemical- and lignocellulosic-based biofuels supply chains; identify certification scheme improvement opportunities (with Task 40 /Trade?)</p> <p>7) Continue to follow commercialisation of advanced biofuels, particularly cellulosic ethanol plants, and tracking Biofuels Demonstration Facilities (“Demoplants database”) (Dina Bacovsky)</p> <p>8) Coordinate with IRENA on biofuels developments in non-IEA countries / emerging economies</p> <p>9) Ongoing collaboration with other Tasks, TCP’s such as AMF and agencies such as IRENA, FAO, etc.</p>
15:00-15:15	Coffee/Tea break
15:15-16:30	Continue discussing/identifying project leads (and contributors) for priority future Task activities
16:30-16:45	<p>Planning for next Task 39 business meetings in 2019 – Proposal from Adrian/JRC/Ispra, Italy 20-24 May, (possible tie in with 2018 European biomass/bioenergy meeting, Lisbon, 27-30 May). Where will we meet in the second part of 2019. Japan, Australia, other?? There is also a joint meeting of AMF and Combustion TCP task leaders scheduled in Switzerland in later 2019</p> <p>Planning for the last 2018 newsletter – Feature story on/by European Commissions?</p> <p>Planning for the three newsletters to be published in 2019: Brazil, Netherlands and Denmark</p>
16:45-17:00	General discussion
17:00-18:00	Close of meeting
18:30	Informal group dinner at Zero Zero, 826 Folsom St, San Francisco, CA 94107, 15-minute walk from Hotel Nikko

Tuesday, 6 November, 2018

Morning tour of the JBEI facilities (<https://www.jbei.org/>).

Depart Union Square at 8:30am. Take BART subway and free “Emery Go-Round” shuttle bus to get to JBEI at around 9:30am. Our visit is planned for 2 and one half hours (9:30am-12pm). We plan to have lunch (at own expense) afterwards at a nearby restaurant.

Monday, 5 November 2018

Attendance

ExCo members: just for the morning, Alex MacLeod, Paul Bennett, Birger Kerckow

Task 39 members: Tomas Ekblom, Steve Rogers, Timo Gerlagh, Adrian O'Connell, Satoshi Aramaki, Henning Jørgensen, Jin-Suk Lee, Antonio Maria Bonomi, Glaucia Mendes Souza, Rubens Maciel Filho, Duncan Eyewumi Akporiaye, Dina Bacovsky, Nicolaus Dahmen, Don O'Connor, Jack Saddler, Jim McMillan, Mahmood Ebadian

- 1) Opening of meeting: Jim McMillan welcomed everyone to the US/meeting and thanked all country representatives for their hard work and collegiality during the 2016-2018 triennium.
- 2) Jim McMillan/Alex MacLeod/Paul Bennett provided a summary/feedback on the May, 2018 ExCo meeting in Ottawa
 - Task leaders discussed possible enhanced "Task collaboration" over the next triennium.
 - Task 34 expressed interest in working with Task 39 on marine and aviation drop-in biofuels and petroleum refinery co-processing.
 - IEA Bioenergy will continue to contribute to the policy landscape, focusing on providing sound information and analysis for areas/topics that are often misinterpreted, such as sustainability assessment, especially LCA studies
 - Task 39 was encouraged to look at possible synergies with the new Inter-Task projects and new Tasks such as the proposed expanded sustainability Task (Subsequent to the Task 39 meeting, it was agreed that copies of the proposed new Tasks/InterTask projects would be distributed to the Task 39 country representatives. We will ask ExCo for permission to do this)
 - ExCo wants to avoid duplicative efforts and is trying to make sure there is minimum overlap between the Tasks and encourages more collaboration among the Tasks in areas of mutual interest (such as LCA of biofuels pathways)
- 3) Jack Saddler / Jim McMillan - Review of current (2016-2018) triennium activities
 - The Task leadership team (primarily Jack, Jim and some others) did follow up with China, India, Indonesia, Mexico, Finland and Norway to try to get them to join/rejoin IEA Bioenergy/Task 39 for next triennium. Despite considerable efforts by the whole Task 39 group/ExCo executive, and quite positive indications after holding our last Task 39 meeting in Beijing, China has still not joined. However, we continue to try and recruit China. Similarly, despite some positive signs from Indonesia and Mexico, they too have not yet joined. Although India attended the Ottawa ExCo meeting and indicated interest in joining, they are not attending the ExCo meeting in San Francisco. We and other colleagues remain optimistic that India will ultimately join. While Finland is not rejoining, Norway will rejoin and was warmly welcomed back into Task 39 at the San Francisco meeting. They will again be a valued contributor to the Task's activities over the 2019-2021 triennium.

- Summary/quick update on Task activities and commissioned work
 - The Task has published two newsletters since the Beijing meeting, one in May and the latest October, profiling the US and Canadian situations, respectively. The hope is that Europe (EC/EU) will be featured in the “end of 2018” newsletter planned to be published in December.
 - T39-T2, Survey on Advanced Fuels for Advanced Engines report (with IEA Advanced Motor Fuels (AMF) TCP. After further revisions and review, this report was declared as completed. We appreciate the feedback provided by Task members who reviewed/re-reviewed this report. The final report, incorporating much of the feedback provided, is now posted on the Task 39 website. It will remain “members only” accessible for three months and then become publicly available.
 - T39-T3, Update of GHG Emissions and Energy Balances for Advanced Biofuels: Phase II of Comparing Different GHG Models on Biofuel Systems. This work is on track to be completed by end of 2018, with final reporting in early 2019.
 - T39-T4, Demonstration plant database led by Austria/Dina Bacovsky. This is an ongoing activity and remains on track. Task 39 members were reminded to send any updated information from their respective countries to Dina as soon as possible.
 - T39-T6, the update of the drop-in biofuels report. A draft is in progress and should be sent out for confidential internal review by Task 39 membership by mid-December.
 - T39-P1, the update of the implementation agendas report that compares and contrasts biofuels policies among member countries (and selected other influential countries). The draft of the updated report is nearly complete and is expected to be distributed for review by Task membership by early December.
 - As indicated in the Task’s progress report Gantt-Chart, some of the other activities that had been planned for this triennium are either on-hold or stalled, primarily due to the lack of a “point person” to take the lead.

- 4) Progress on the LCA study and the future work
 - Antonio Bonomi - updated the group on the status of the comparison of the four biofuels LCA models, showing highlights of Phase 2 work status. The final report, still to be prepared, will describe how the models estimate GHG emissions. The report will identify the commonalities and main differences in the models’ methodological structures, calculation procedures, assumptions, etc. The report will also highlight the main parameters that impact the determination of emissions associated with the production and use of diesel biofuels (both FAME and HVO/HEFA/RD). The harmonization procedure shows it is possible to successfully align the results of the models to agree with one another through a series of steps. The draft report will be sent to the group for review in early 2019, with a goal of finalizing the report before the end of March, 2019. It was emphasised that we should also try to ensure that we can also communicate the results of the LCA study to non-technical audiences, particularly emphasizing that comparable results are obtained with the different LCA models when the various assumptions within the models are harmonized. For example, how apparent differences between models are driven by the models’ different default values and allocation approaches.

IEA Bioenergy

- Don O'Connor, on behalf of the LCA steering committee (composed of Adrian O'Connell, Michael Wang, Mark Staples, Don O'Connor, and Antonio Bonomi), discussed ideas for extending the Task's LCA studies in the next triennium. (See attached slide deck). Over the coming triennium, the group proposes to further assess the data sets and regionally specific approaches that each modeling group (GREET, BIOGRACE, GHGenius and VSB) uses to model feedstocks-to-biofuels conversion processes. They will also discuss how to further harmonize and extend the modeling approaches, e.g., considering aspects such as system boundaries and specific assumptions such as soil carbon changes and how coproducts are handled (i.e., displacement, energy or economic allocation, etc.). The group approved continuing this project. A more detailed work plan will be developed by Don in consultation with the other members of the steering committee.

Lunch Break

5) Progress on the update of the Implementation Agendas report.

Mahmood Ebadian gave a presentation on the status of this report (see attached slide deck), which is nearing completion. He also reviewed the methodology / questionnaire / template used to collect data from each member country. The report will describe the respective biofuels production levels and progress, as well as the various policies and fiscal incentives being used to support pilot, demo and commercial biofuels projects, increased biofuels production and use, and assess overall policy effectiveness in further developing its biofuels markets. The group discussed possible ways to improve the data collection and aggregation process. Mahmood will send out, for consultation by Task membership, an updated questionnaire proposed to be used to update the report during the next triennium. We hope to develop a better comparison of the existing biofuel policies within the Task's member countries (e.g., also including a discussion of the biofuels trade globally using biofuels policy and trade data published by Task 40, REN21 and AMF). It was also suggested to add the UK to the list of countries being covered, as well as considering the EU as one jurisdiction, at least for the purpose of analysing trade so that we do not get stuck in the analysis of biofuels trade between EU members but instead focusing on trade of the EU with non-members.

6) Assessing advanced biofuels R&D in the EU

Adrian O'Connell gave a brief presentation on "EU R&D projects to improve the advanced biofuels technologies". His presentation (see uploaded slides) covered three advanced biofuels technologies including biochemical, thermochemical and oleochemical. For each of the technology pathways, he discussed the EU funding that had been awarded to each technology, the various challenges facing the various technologies and next steps. Adrian indicated he would be happy to answer any subsequent questions from the group as his presentation had to be brief since it was not on the original agenda.

- 7) To ensure we achieved some “concrete” decisions, we next discussed where and when we would hold the next Task 39 business meetings and who would write the lead/feature article for the upcoming Task 39 newsletters.

Future business meeting locations and dates:

- First half of 2019: Adrian O’Connell confirmed that JRC would be pleased to host a Task 39 meeting in Italy in May 2019 (this timing would provide a possible tie-in with 2019 European biomass/bioenergy meeting being held in Lisbon 27-30 May 2019). The initial proposed dates were May 20-24, the week after Brussel’s “green week” and the week before the Lisbon meeting). However, this is the same week proposed for the next ExCo meeting (in the Netherlands) and these dates might not work for some of Task 39 colleagues. Alternatively, the meeting could be held 13-17 May. As a consensus could not be reached, Jim and Jack will follow up with Adrian to firm up the dates of the next Task 39 meeting. It was suggested to include a conference/workshop before or after the business meeting. One suggested theme for the workshop was the sustainability of biofuels.
- Second half of 2019: Tomas Ekblom kindly offered to host a Task 39 meeting in Stockholm, Sweden in September 2019 (in conjunction with Sweden’s 2019 Advanced Biofuels Conference, 17-19 Sept 2019).
- First half of 2020: Glaucia Mendes Souza suggested that Brazil might be able to host the Task 39 meeting in May 2020 in Sao Paulo, Brazil (in conjunction with BEST conference).
- First half of 2021: Henning Jørgensen indicated that Denmark would be interested in hosting a Task 39 meeting in a joint event with Task 42. This could occur in the first half of 2021. The suggested format could be using one day for individual Task business meetings followed by 1-2 days of joint workshops that would include several local Danish stakeholders

Newsletters:

- The last Task newsletter of 2018: Adrian O’Connell confirmed that he will provide a feature article, tentatively entitled, “Assessing advanced biofuels R&D in the EU.” He hopes to be able to send it to Mahmood/Jack/Jim by early December.
- For the three newsletters to be published in 2019: it was confirmed with Glaucia Mendes Souza, Timo Gerlagh and Duncan Akporiaye that next year’s Task newsletters’ feature articles will highlight Brazil (April), Netherlands (August) and Norway (December), respectively.

Afternoon coffee/tea break

- 8) The group discussed the Task’s proposed activities for the next triennium, particularly trying to identify which individuals would take the lead on each proposed/priority topic. The goal was to agree on specific projects to tackle in next triennium as well as who would take the lead on these projects.

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- It was agreed that we would continue working on drop-in biofuels, with a main emphasis on decarbonizing the long-distance transport sectors (i.e., Marine, Aviation, Rail and Truck). Other topics for study within this area include assessing methods to measure/follow the “green” molecules when adopting co-processing and upgrading strategies within existing petroleum refineries (or biofuels biorefineries). The extension of the LCA project will continue the work on the life cycle / sustainability assessment aspects of drop-in biofuel production. To try to better inform policy discussions and educate the wider public, it was emphasised that we should also ensure that we can effectively communicate the results of the LCA studies to non-technical audiences and show the comparable results obtained using different LCA models (i.e., once they are “harmonized”).
- During the next triennium, we will update the implementation agendas/compare-and-contrast biofuels policies report, with this activity lead by the management team and Mahmood Ebadian in particular. Once the current report is approved, it was suggested that an update be carried out in about 18 months. This would provide two updates in the coming triennium. In the meantime, and once the current report is approved, the management team will refine the questionnaire used for gathering input, to try to simplify report preparation and improve the usefulness of the report. It was noted that it would be useful if the report was prepared within a tight timeline as to assure that the information provided by the delegates is not outdated upon the publication of the final report.
- The proposed feedstock-to-biofuel(s) supply chain analysis (to identify CAPEX and OPEX cost reduction opportunities) was discussed. Although no lead was identified at the meeting, subsequent discussions with Glaucia Souza indicated that Brazil might be interested in taking the lead on this project with the Task providing partial funding for an individual such as a post doc.
- The possible sustainability assessment of biofuels pathways (with new Sustainability task, and/or multi-task) was discussed. This project should identify key metrics beyond GHG reduction and include multiple feedstocks and conversion routes / technologies. It was agreed that the LCA team (lead by Don O’Connor/Adrian O’Connell and also including Mark Staples, Antonio Bonomi and Michael Wang) should be the way that Task 39 liaises with the new sustainability Task. The specific priorities / objectives to be focused on in the next triennium will be discussed among the LCA steering committee and then shared with the group. It was also suggested that the LCA group tie in with the ongoing drop-in biofuels/ co-processing work that Task 39 will be engaged in. This was noted as the overall sustainability of drop in biofuels will be key plus the group will need access to reliable and reproducible data.
- The proposed project on techno-economic analysis (TEAs) of advanced biofuels (including feedstock/technology pathways), particularly for drop-in biofuels, was discussed. This will build on the ExCo/EU funded special Task 41 project that is currently being coordinated by Adam Brown and involves Task 39, CTBE and Swedish consultants. Although this proposed project will likely be part of the ongoing drop-in biofuels study, it was hoped that someone working closely with industry might take the lead on this project. Tomas

IEA Bioenergy

Ekbom indicated his interest. Jim and Jack will follow up with Tomas and refine the objectives, once the special project Adam Brown is leading has been completed and its report circulated to the Task 39 group.

- Review existing/proposed certifications used for oleochemical- and lignocellulosic-based biofuels supply chains; identify certification scheme improvement opportunities (with Task 40 /Trade?) - Timo offered to take the lead.
- Ongoing updating of the pilot/demo/commercial biofuels plants will continue. (“Demoplants database”), led by Dina Bacovsky / Bioenergy 2020+.
- Ensuring coordination with IRENA, GBEP, IEA HQ, Mission Innovation, etc., on biofuels developments in IEA, non-IEA, emerging economies, etc. As well as being a role for the Task management team, due to Brazil’s involvement in the BioFuture Platform and activities such as the recent SCOPE study, Glaucia Mendes Souza expressed her interest in working with the management team on this activity.
- Although not on the original agenda, Dina Bacovsky, on behalf of Kyriakos Maniatis (the EC’s ExCo member), presented a proposal for a joint IEA Bioenergy (Task 39), EC and AMF study on “the contribution of advanced renewable transport fuels to decarbonizing transport by 2030 and beyond” (see attached slides). Dina suggested that Task 39 should participate in this proposed project due to Task 39’s established expertise on this topic. The group supported this proposal. Subsequent discussions with Adrian O’Connell and members of the IEA Bioenergy ExCo leadership indicated they would follow up with Kyriakos and work with Task 39 leadership to try to better scope this would-be project and better define the desired “deliverables” for it, as well as better define the specific roles / contributions of the various participating groups.
- The meeting ran out of time before we identified a lead person/team for several of the Task 39 activities/projects being proposed for the next triennium. The group agreed to follow up with Jim/Jack to further refine next triennium plans and project lead assignments once the meeting minutes and presentations were distributed and approved, and Task 39 membership for the next triennium was finalized (following ExCo82).
- As both of the Task 39’s 2018 business meetings were “time compressed”, no country updates were presented in this meeting. As this is one of the most valued aspects / outcomes of Task membership, we plan to include a one-full-day for country report updates to be presented at the May 2019 meeting, i.e., once the dates for this meeting are finalized.

Discussions continued over dinner. Most Task 39 members participated the following morning in a bioenergy study tour visit to the Joint BioEnergy Institute (JBEI) and the ABPDU pilot plant facility. Most of the Task members also participated in the joint IEA Bioenergy/ABLC GLOBAL conference held 7-9 November, 2018, the first day of which constituted IEA Bioenergy’s end-of-triennium conference.

Tuesday, 6 November, 2018

Task 39 members visited the JBEI & ABPDU lab facilities (with the exception of Jim, who attended ExCo meeting). An overview of JBEI's missions and goals was first presented by Dr. Steven Singer and then a tour of JBEI's plant biology, pretreatment and conversion labs was provided by JBEI scientists. (slides attached)