

Welcome to the IEA Bioenergy Task 39 Business Meeting



15-16 May 2019
Joint Research Center, Ispra, Italy

Wednesday, 15 May 2019

10:30-10:45	Welcome Coffee/Registration/Logistics (Adrian O’Connell and Laura Lonza)
10:45-11:00	Welcome to the European Commission’s Joint Research Centre (JRC) (Piotr Szymanski, Director, TBC)
11:00-11:30	Welcome to IEA Bioenergy Task 39 meeting (Jim McMillan) 1) Welcome new/rejoined members 2) Review of agenda 3) Brief summary of last triennium deliverables and outstanding reports 4) Brief discussion on proposed structure/function of IEA Bioenergy for 2019-2021 5) Brief summary of proposed Task 39 “deliverables” for 2019-2021 6) How Task 39 might interact with other Tasks and other organisations (GBEP, IEA HQ, IRENA, etc.) 7) Task 39 new logo and website header
11:30-12:15	Review of activities covered / delivered in the last triennium (2016-2018) (Jack Saddler) 1) Meetings and Newsletters; 2) The Potential of Biofuels in China; 3) Mobilizing Sustainable Bioenergy Supply Chains– proposed Inter-Task report; 4) Algal report; 5) Marine drop in biofuels report; 6) Advanced biofuels in advanced engines; 7) Pilot, Demo, Commercial biofuel plant database; 8) LCA report led by CTBE (covered in more detail later); 9) Brief on Implementation Agendas report update; 10) Brief on Drop-in biofuels report update; 11) Outstanding activities

Wednesday, 15 May 2019

12:15-13:00	Lunch
13:00—15:15	Task 39 member country updates (all) Country report briefs (target 12 min blocks: 4-6 slides max.; 5-8 min present + 4 min Q&A) Progress in the production and use of biofuels in each of Task 39’s member countries, current and future trends, commercial, technical & policy developments (16x12 = 192 min = 3h12m) (Australia, Austria, Brazil, Canada, Denmark, European Commission, Germany, India, Ireland, Japan, Korea, Netherlands, New Zealand, Norway, Sweden, USA)
15:15-15:30	Coffee break
15:30-17:00	Continuation of Task 39 member country updates
17:00-17:30	Decarbonization of aviation and marine sectors (Susan van Dyk, via Skype)
17:30-18:00	Implementation Agenda’s report (compare-and-contrast of biofuels policies) and proposal on how the data collection and next report can be improved (Mahmood Ebadian, via Skype)
18:00-18:15	Update of Biofuels Demonstration website/report (Dina Bacovsky)
18:15-18:30	Wrap up for the day and head for bus
19:30	Dinner

Thursday, 16 May 2019

8:30-8:40	Welcome and review of program for the day (Jim McMillan / Jack Saddler)
8:40-9:15	Drop-in Biofuels report update (Jack Saddler) - Production and uptake of drop-in biofuels - Status of technology providers - Refinery integration and co-processing potential and challenges - Work initiated on biojet/SAF briefing note, technology, commercialisation, policy and LCA - Cooperation with Task 33 and 34 - Greater involvement of refineries and companies such as REG, Neste, World Energy, etc.
9:15-10:30	Discussion of Task 39 activities for 2019-2021 triennium (moderated by Jim) 1) Feedstock-to-biofuel(s) supply chain analysis (to identify CAPEX and OPEX cost reduction opportunities) (Possible collaboration w/ Trade/Deployment Task 40/ Task 43?) but overlap with Special project lead by Adam Brown? 2) Progress in commercialisation of advanced biofuels, how to achieve better industry involvement (all) (Recruit /reinvigorate industry representation at Task 39 meetings, e.g., Refineries, Neste, Borregaard, Novozymes, DSM, REG, etc.) 3) Policy evaluation – carbon tax, low carbon fuel standard and mandates – which one works best to promote biofuels? How to forge/foster political consensus to get policy developed and implemented?(all) 4) Continued work on drop-in biofuels, with a main emphasis on decarbonizing the long-distance transport sectors (i.e., Marine, Aviation, Rail and Truck). Lead by UBC, with focus on Aviation and Marine. Building on ongoing work with industry representatives from each sector?

Thursday, 16 May 2019

9:15-10:30	Discussion of Task 39 activities for 2019-2021 triennium (moderated by Jim) 6) Coordinated activities reaching out to other entities/Tasks: (a) IRENA on biofuels developments in non-IEA countries / emerging economies (due to Brazil’s past involvement in the BioFuture Platform and activities such as the recent SCOPE study, Glaucia Mendes Souza expressed her interest in leading this activity, possibly with India as co-lead) (b) GBEP (e.g., AG8), RSB, FAO, etc. (all) (c) Joint IEA Bioenergy (Task 39), EC and AMF study on “the contribution of advanced renewable transport fuels to decarbonizing transport by 2030 and beyond” (follow up with Kyriakos and work with Task 39 leadership to try to better scope) (d) techno-economic analysis (TEAs) of advanced biofuels (including feedstock/technology pathways), particularly for drop-in biofuels, build on the ExCo/EU funded special Task 41 project (Tomas Ekbom and Duncan Akporiaye indicated interest) (e) 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?) (f) Ongoing updating of the pilot/demo/commercial biofuels plants (“Demoplants database”) will continue. (led by Dina Bacovsky / Bioenergy 2020+)
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Thursday, 16 May 2019

10:30-10:45	Coffee/tea break
10:45-11:15	<u>Future newsletters</u> Early-2019 Brazil Mid-2019 Netherlands Late-2019 Denmark <u>Future meetings</u> Stockholm - Week of 16 September, 2019 Meetings in 2020 Brazil, Sao Paulo, 2/3 April, 2019, in conjunction with BBEST meeting Second half of 2020? Early 2021? Late 2021?
11:15-12:00	1) Review of which individuals will take the lead on which prioritized activities 2) Budget allocation to each of the prioritized activities 3) Task 39 contributions to inter-Task activities 4) Final review of Task 39 activity assignments
12:00-12:30	Update on LCA studies led by Antonio Bonomi/CTBE and used as a transition to the workshop
12:30	Lunch
13:30	Workshop on the sustainability of biofuels, with a focus on LCA (Thursday afternoon through to mid-Friday afternoon)

Ending Triennium- 2016-2018

- Fourteen countries collaborated within Task 39, with a goal of facilitating the commercialization of conventional and advanced liquid biofuels for transport.
- Task 39 delivered several cooperative research projects which assessed policy, markets and sustainable biofuel implementation issues.
- Task 39 strengthened collaborations with other IEA Bioenergy Tasks (Tasks 33, 34, 36, 37, 40, 42 & 43 and the new sustainability and deployment Tasks being proposed for the 2019-2021 triennium).
- Task 39 continued its good rapport with other groups such as IEA HQ, IRENA, the IEA Advanced Motor Fuels TCP, UN FAO and various national programs.

Ending Triennium- 2016-2018

- Task 39 also benefited from extensive industry involvement from companies at the forefront of biofuels development (DSM, Boeing, Licella, Novozymes, LanzaTech, the REG, International Air Transport Association, Boeing, S&T2 Consultants, World Wildlife Federation, RSB, Argonne National Laboratories and many others)
- In two cases, webinars (Algal biofuels and Marine biofuels) were also delivered, to highlight new published reports and to facilitate knowledge transfer and information dissemination between IEA Bioenergy members and other transport biofuels stakeholders.
- 9 newsletters were developed and distributed to over 2000 recipients. Feature articles highlighted biofuel production, use and policy developments in Sweden, Australia, Austria, Korea, China, Africa, USA, Canada and European Union.

Business meetings

- IEA Task 39 Business Meeting, Delft, the Netherlands, March 10, 2016 (in conjunction with ECO-BIO 2016)
- IEA Task 39 Business Meeting, Rotorua, New Zealand, November 8, 2016 (in conjunction with New Zealand's Advanced Biofuels Research Network (ABRN) Science Symposium and Bioenergy Australia 2016 Conference)
- IEA Task 39 Business Meeting, Gothenburg, Sweden, May 15, 2017 (in conjunction with Sweden's 2017 Advanced Biofuels Conference)
- IEA Task 39 Business Meeting, Brussels, Belgium, Sept. 25-27, 2017 (in conjunction with 6th International Conference on Lignocellulosic Ethanol)
- Task meeting, Beijing, China, April 7-9, 2018 (in conjunction with Beijing University of Chemical Technology Bioenergy Symposium and China-Canada Joint Centre for Bioenergy Research and Innovation (CJCBERI))
- Task meeting, San Francisco, USA, November 5-6, 2018 (in conjunction with ABLC GLOBAL conference)

Task 39 deliverables status

Project No.	Topic (collaboration)	Deliverable	% Work completed	2016				2017				2018				Alarm
				Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4	
T39-T1	Update status and potential for <u>algal</u> biofuels production in a biorefinery context	Report	Planning													Completed
			Actual 100%													
T39-T2	Advanced biofuels in <u>advanced engines</u> (with IEA AMF)	Report	Planning													Completed
			Actual 100%													
T39-T3	Comparison of LCA models (with Task 38 & contributing to intertask) 3 Phases	3 Reports	Planning													Ph. I Completed
			Actual 100%													Ph. II Completed
T39-T4	Assessment of <u>large-scale</u> demonstration plants (with Bioenergy 2020+)	Database updates	Planning													On-going
			Actual 100%													Completed annually
T39-T5	<u>Definitions and terminology of biofuels</u>	Report	Planning													cancelled
			Actual N/A													
T39-T6 (& P2)	Update drop-in report, specifically focusing on aviation and maritime fuels	2 Reports	Planning													Marine completed
			Actual 100%													Drop-in completed
T39-T7	Biofuel production and consumption in <u>emerging economies</u> (China)	Report	Planning													Completed
			Actual 100%													
T39-P1	Update on country policies and implementation agendas	Report	Planning													Completed
			Actual 100%													
--	<u>Roadmap</u> for Integration of advanced biofuels (with IEA AMF)	Report	Planning													On hold
			Actual													
--	Assessment of advanced biofuels commercialization success (with Task 42)	Workshop	Planning													On hold
			Actual													
--	Co-products and biorefineries (with Task 42)	workshop	Planning													On hold
			Actual													
--	Potential of “generation 1.5“ feedstocks (with China and possibly Task 43)	Report	Planning													On hold
			Actual													
--	<u>Spatial</u> analysis of biofuel feedstock reserves (with Task 43).	Report	Planning													On hold
			Actual													
--	Task 39 Newsletter		Planning													Completed
			Actual 100%													
--	IEA Annual Report (Task progress)		Planning													Completed
			Actual 100%													

Commissioned works in Triennium 2016-2018

- **Survey on Advanced Fuels for Advanced Engines with IEA Advanced Motor Fuels TCP (AMF)- Completed**
- **T39-T3 - Comparison of LCA models**
 - Project leaders: Antonio Bonomi (CTBE, T39); Helena Chum (NREL, T38)
 - Phase 1- completed in 2017 (conventional ethanol production)
 - Phase 2 - completed in 2018 (diesel biofuels (both fatty acid methyl esters (FAME) and hydrotreated vegetable oils (HVO)/hydrotreated esters and fatty acids (HEFA))
 - Phase 3- Postponed to next triennium

Joint Projects in Triennium 2016-2018

- **Mobilizing Sustainable Bioenergy Supply Chains (2016) - Intertask report, carried out with cooperation between IEA Bioenergy Tasks 37, 38, 39, 40, 42, and 43- Completed in 2016**
- **Advanced biofuels cost reduction potential (Task 41 special project)**
 - Task 39 sent out the questionnaire to 23 biofuels technology companies in North America
 - 10 companies completed the questionnaires.
 - The collected biofuel cost data were compiled and evaluated.
 - The impact of feedstock costs and biofuel policies on biofuels costs were also evaluated by Task 39 for this project.

On-hold projects will likely be included in the next triennium

- Roadmap for Integration of advanced biofuels (with IEA AMF)
- Assessment of advanced biofuels commercialization success (with Task 42)
- Co-products and biorefineries (with Task 42)
- Potential of “generation 1.5” feedstocks (with China and possibly Task 43)
- Spatial analysis of biofuel feedstock reserves (with Task 43).

Success Stories- Triennium 2016-2018

- Encourage the decarbonizing of the transportation sector, particularly the long-distance transport sector (Aviation, Marine, Rail, Trucking) by the production and use of sustainable and low carbon liquid biofuels
- Enhance the understanding of the differences between and commonalities of four well-recognized biofuels life cycle analysis (LCA) models (EU's BIOGRACE, Canada's GHGENIUS, USA's GREET and Brazil's VSB).
- Expand Task membership- India and Ireland joined Task 39, Norway rejoined, still optimistic that China will join.

Budget status and spending- triennium 2016-2018

TRIENNIUM 2016 - 2018							
TASK	39						
BUDGET		USD		USD		USD	
	Triennium	Year 1		Year 2		Year 3	
Number of participants							
Annual cost per participant							
Task income ** ^a	\$630,000	\$210,000		\$210,000		\$210,000	
Less 10% to Strategic Fund	63,000	21,000		21,000		21,000	
Net Task income	567,000	189,000		189,000		189,000	
Funds carried forward	368,286	91,863		109,169		167,254	
Other income ** ^b	68,650	25,000		25,000		18,650	
Outstanding contribution	45,000	30,000		15,000			
Net available funds	\$1,048,936	\$335,863		\$338,169		\$374,904	
		USD		USD		USD	
SPEND vs BUDGET BREAKDOWN		2016		2017		2018	
	Budget	Budget	Spent	Budget	Spent	Budget	Spent
	Triennium	Year 1	Year 1	Year 2	Year 2	Year 3	Year 3
1. Salaries / benefits ** ^c	238,948	75,426	43,132	75,000	60,894	88,522	89,314
2. Support services	300		195	0	79	300	280
3. Materials / supplies	3,000		0	3,000	62	0	0
4. Travel	79,619	26,500	27,221	28,119	18,893	25,000	21,253
5. Other expenditure	7,200	3,000	3,333	0	6,101	4,200	11,507
6. Overhead	80,663	26,731	7,390	25,050	9,353	28,882	26,604
7. Subcontracts / consultants ** ^d	639,206	204,206	118,107	207,000	72,363	228,000	210,169
Total	1,048,936	335,863	199,378	338,169	167,744	374,904	359,127

Resource allocation for next triennium

- Conduct feedstock-to-biofuel(s) supply chain analysis to identify CAPEX and OPEX cost reduction opportunities (Possible collaboration w/ Trade/Deployment Task 40/ Task 43)
- Progress in commercialisation of advanced biofuels, how to achieve better industry involvement (all) (Recruit /reinvigorate industry representation at Task 39 meetings, e.g., Refineries, Neste, Borregaard, Novozymes, DSM, REG, etc.)

Resource allocation for next triennium

- Continue updating implementation agendas report (Mahmood Ebadian?)
 - Update the country chapter
 - Breaking up effort into regions (e.g., Europe, Asia, North and South America, Australasia, Africa?)
 - Evaluate which types of policies - carbon tax, low carbon fuel standard, mandates, etc. - work best for biofuels?
- Continue work on drop-in biofuels, with a main emphasis on decarbonizing the long-distance transport sectors (i.e., Marine, Aviation, Rail and Truck) (Lead by UBC, with focus on Aviation and Marine. Building on ongoing work with industry representatives)

Resource allocation for next triennium

- 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 (Lead by , D. O'Connor with input from A. O'Connell, M. Staples, A. Bonomi, M. Wang)
- TEAs of advanced biofuels feedstock/technology pathways, particularly for drop-in biofuels (Tomas Ekbom and Duncan Akporiaye indicated interest)

Resource allocation for next triennium

- Continue to follow commercialisation of advanced biofuels, particularly cellulosic ethanol plants, and tracking Biofuels Demonstration Facilities (“Demoplants database”) (Dina Bacovsky)
- Review existing/proposed certifications used for oleochemical- and lignocellulosic-based biofuels supply chains; identify certification scheme improvement opportunities (with Task 40 /Trade?)

Resource allocation for next triennium

- Joint IEA Bioenergy (Task 39), EC and AMF study on “the contribution of advanced renewable transport fuels to decarbonizing transport by 2030 and beyond” (follow up with Kyriakos and work with Task 39 leadership to try to better scope)
- IRENA on biofuels developments in non-IEA countries / emerging economies (due to Brazil’s past involvement in the BioFuture Platform and activities such as the recent SCOPE study, Glaucia Mendes Souza expressed her interest in leading this activity.
- GBEP (e.g., AG8), RSB, FAO, etc. (all) possibly with India as co-lead)

Upcoming meetings

- Second half of 2019: Gothenburg, Sweden- Week of 16 September, in conjunction with Advanced Biofuels conference
- First half of 2020: Brazil, Sao Paulo, 2/3 April, 2019, in conjunction with BBEST meeting
- Second half of 2020: ???
- First half of 2021: ???
- Second half of 2021: ???

Upcoming newsletters for 2018-2019

- April 2019: Feature story on/by Brazil
- September 2019: Feature story on/by Netherlands
- September 2019: Feature story on/by Denmark





Continue to recruit new members to join Task 39

- Keep pursuing key countries to join the IEA Bioenergy TCP and Task 39
- Invite former members to rejoin including Finland and Italy
- Countries that are prospects to become new members of IEA Bioenergy and Task 39 in the next triennium include Chile, China, Indonesia, Malaysia, Mexico and Thailand.



Proposed budget, 2019-2021

Task 39 budget 2019-2021 per annum

Cost per participant	\$15,000
Number of participants:	15
TOTAL	\$225,000

Cost/year (US\$)	Task Administration	Technology & Commercialization	Policy, Market Sustainability & Implementation	Information Dissemination	Total for Task
Labor and benefits	\$35,000.00	\$30,000.00	\$30,000.00	\$10,000.00	\$105,000.00
Workshops, business meetings	\$3,000.00	\$3,000.00	\$3,000.00		\$9,000.00
Travel	\$6,000.00	\$7,000.00	\$7,000.00	\$3,000.00	\$23,000.00
Materials & supplies	\$500.00			\$2,000.00	\$2,500.00
Consultants, contracts		\$24,000.00	\$24,000.00		\$48,000.00
Subtotals	\$44,500.00	\$64,000.00	\$64,000.00	\$15,000.00	\$187,500.00
Overheads (8%)					\$15,000.00
Held-back funds (10%)					\$22,500.00
TOTAL					\$225,000.00