



IEA Bioenergy Task 39

Biofuels to Decarbonize Transport

Special Project Meeting @ Zoom

Tomas Ekbom, SVEBIO

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Meeting agenda

1. General project and budget status, Tomas (5 minutes)
2. Program of Work proposals. General discussion (70 minutes)
 - a) T39-T3 “Extend assessment of decarbonization of the marine transport sector” by Tomas, Sweden
 - b) T39-P2 “Assessment of the sustainability of biofuels pathways..., and also further compare and harmonize leading LCA models (possibly InterTask with T45)” by Glaucia Mendes Souza, Brazil
 - c) T39-P3 “Emerging/proposed certifications for oleochemical/lignocellulosic feedstock-to-biofuel supply chains” by Paul Sinnige / José Muisers, the Netherlands.
 - d) Section 4.1.2 and 4.2.2 and other suggestions, proposals
3. Discussion of the “Leadership of I-T Project BECCUS Phase 2 and of Task 39 to coordinate to further explore opportunities for synergies” (15 minutes)

1. General project and budget status

- The total budget is calculated as \$634,500 with the changes for the triennium. This can change.
- There are currently six new projects in this triennium on-going with total financing of \$230,000.
 - o T39-T1 Commercialisation of SAF/biojet fuel [Jack Saddler, Canada](#)
 - o T39-T2: Commercialization of drop-in biofuels [Jack Saddler, Canada](#)
 - o T39-T4: Demonstration plants and progress [Andrea Sonnleitner, Austria](#)
 - o T39-T6: I-T project 'Green hydrogen' [Franziska Müller-Langer, Germany](#)
 - o T39-P1: Implementation Agenda [Jack Saddler, Canada](#)
 - o T39-P4: Biofuels in “emerging” economies [Glaucia Mendes Souza, Brazil](#)
- There are uncommitted projects and large fund available, \$140,000 (maybe more) where a large part may possibly remain end of 2024.
- Six projects were started 2022. Ideal is four projects startup in 2023 and finalization of some in 2023 and remainder during 2024 for an even schedule of deliverables.

2. Program of Work proposals 1 (4)

- a) **T39-T3 “Extend assessment of decarbonization of the marine transport sector”**
Project leader Tomas Ekbom, Sweden
Potential participating countries / potential partners: Sweden, Denmark, The Netherlands, New Zealand, USA / Maersk, Stena Line, Liquid Wind, Methanol Institute, Swedish Coast Guard, Swedish Maritime Authority, Fossil-free Marine.

- b) **T39-P2 “Assessment of the sustainability of biofuels pathways, including social and environmental aspects of sustainability, the specific CI impact of “new/advanced” feedstocks, and also further compare and harmonize leading LCA models to support biofuels categorization and regulation (possibly Inter-Task with Tasks 45)”**
Project leader Glaucia Mendes Souza, Brazil
Potential participating countries: Brazil, China, South Korea, European Commission, USA

- c) **T39-P3 “Improvement opportunities for policies and certification schemes promoting sustainable biofuels with low GHG emissions. Part 2: Robustness of GHG emission certification and verification – a case study of selected biofuel value chains and policies”**
Project leader Paul Sinnige / José Muisers, The Netherlands
Potential participating countries: The Netherlands, Belgium, European Commission

T39-T3 Pre-proposal of biomarine fuels project

Project title: Identifying and lowering hinders for greater use of biomarine fuels

Aim: “Extend assessment of decarbonization of the marine transport sector”

- This could be elaborated in terms of analysis of obstacles and hinders for biomarine fuels. Identifying factors in technical, economical, market, legal etc and propose solutions.
- Start of project August 2023 and end December 2024.
- Budget ca 90 000 USD with 45 000 USD funds from T39.
- Potential participants: **Sweden, Denmark**, The Netherlands, **New Zealand**, and the USA.
- Potential partners: Maersk, **Stena Line**, Liquid Wind, **Methanol Institute**, Swedish Coast Guard, Swedish Maritime Authority, Fossil-free Marine, Licella, **Södra**.
- Workshop at Advanced Biofuels Conference in Gothenburg, 20-21 Sept 2023.
- Dissemination at webinar December 2024

2. Program of Work proposals 2 (4)

- d) **T39-T5: “Phase 2 - Successes and Lessons Learned for Advanced Biofuel Technologies Commercialization (possibly InterTask with Tasks 40 and 45)”**

Project leader: USA / Brazil

Potential participating countries: USA, Brazil, Japan

Topics in the Program of Work Section 4.1.2 and 4.2.2:

- e) **Extend analyses of opportunities for and key issues limiting the efficient integration/use of advanced biofuels into existing infrastructure and engines for transport (e.g., available engine technologies, existing policy frameworks). With anticipated AMF TCP cost share.**

Project leader ?

Potential participating countries: ?

- f) **Conversion of 2G ethanol industry wastes to biogas, examining potential for reductions in OPEX and GHG emissions and production of additional transport fuel (possibly with Task 37).**

Project leader ?

Potential participating countries: USA, USGC, Austria, Germany?

2. Program of Work proposals 3 (4)

- g) Biogas as a transportation fuel light and heavy-duty vehicles (Collaboration with T37)**
Project leader ?
Potential participating countries: NEL, AUS, Germany, Sweden?
- h) (Potential multi-task) Update report on status of algal biofuel technologies assuming a multi-product biorefinery co-product approach (e.g., facilities producing higher value products like fish feed, nutraceuticals, cosmetic ingredients, etc. in addition to biofuels).**
Project leader ?
Potential participating countries: South Korea, Japan?
- i) Conduct a supply chain analysis to identify all potential opportunities across the feedstock-to-biofuel supply chain to reduce capital and/or operating costs for advanced biofuels production, lower the financial risks and facilitate financing of commercial biofuels projects, as well as to understand and be able to inform policy on how much financial support will be required to “buydown” the still relatively high costs of advanced biofuels. (Link T42 assessment methodology, T43 feedstocks).**
Project leader ?
Potential participating countries: ?

2. Program of Work proposals 4 (4)

- j) **Cost/benefit analysis and comparison of drop-in (fungible but less commercialized) versus conventional ethanol/biodiesel biofuels (more commercialized but less fungible) to better understand feedstock versus infrastructure integration challenges.**

Project leader ? Potential participating countries: ?

- k) **Investigate and recommend the types of policies that will be optimal for decarbonizing the aviation and marine sectors based on their distinctive international character relative to other transport sectors.**

Project leader ? Potential participating countries: ?

- l) **Others, surprise?**

3. Project BECCUS

Discussion of Action No 9 in ExCo90 regarding the “Leadership of I-T Project BECCUS Phase 2 and of Task 39 to coordinate to further explore opportunities for synergies” Tomas Ekblom (15 minutes)

Task 39 to suggest a case study which Task 39 would like to contribute within the BECCUS frame. During BECCUS 1.0 they produced system of case and system studies going to be produced during BECCUS 2.0 phase.

Proposal for case (bioenergy technology option with carbon capture) allowing for a complete picture of BECCUS technology options. Usually the presentation of the technology option is linked to a specific project/facility. Some biorefinery considerations could be e.g. an interesting option as well. Financing would be based on using own task money.

Discuss case study options for further bilateral discussion on these option(s) with T40 and more.

BECCUS 1.0

5 case studies

- Waste-to-energy (T36)
- Biomass-based CHP (T40)
- Biomass-based electricity generation (T45)
- Cement (T45/T40)
- Bioethanol (T40)

3 system studies

- Scoping report (T40)
- Carbon accounting across BECCUS supply chains (T45)
- Bioenergy flexibility and carbon removal - finding the balance (T44)

BECCUS 2.0

4 case studies

- Biomass combustion and CO₂ capture (small & large-scale) (T32/T36)
- Biomass gasification and CO₂ capture (T33)
- Direct Thermal Liquefaction technology options (T34)
- Biomethane and CO₂ capture (T37)

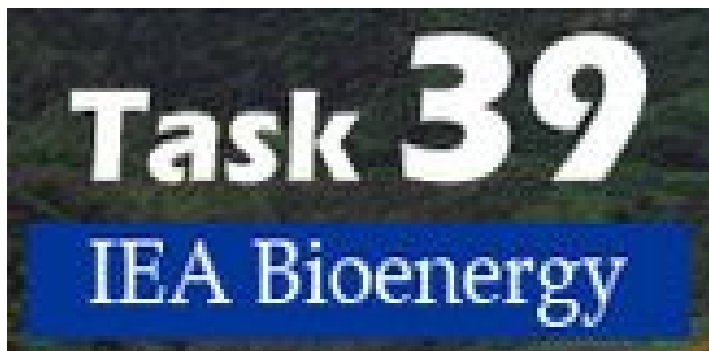
3 system studies

- CO₂ removal as part of the overall bioenergy services portfolio (T44/T40)
- BECCS/BECCU trade-offs (T40/T44/T45)
- Science & policy surrounding biogenic CO₂ (T45/T40)
- Synthesis (T40 & all)

Biofuels to decarbonize transport - the work we do improves the world

Tomas Ekblom, Task leader

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