

Final report

1. Project details

Project title	IEA Bioenergy Task 40 - Deployment of biobased value chains - Danish representation 2019-2021
File no.	64019-0039
Name of the funding scheme	EUDP
Project managing company / institution	Ea Energy Analyses
CVR number (central business register)	28 98 58 27
Project partners	None
Submission date	06 March 2024

2. Summary

English:

The project supported the work of Christian Bang from Ea Energy Analyses as Country representative for Denmark in Task 40 during the 2019-2021 triennium. The aim of IEA Bioenergy Task 40 is to support the development and design of efficient, economically viable and bankable value chains to support a larger deployment of sustainable biomass for energy, but also for biobased products and materials, taking into account food, feed and fibre markets.

The objective of the project was to facilitate Denmark's access to knowledge regarding developments in bio-based value chains from other IEA Bioenergy Task 40 member countries. This objective was achieved by:

- Participating in two annual business meetings and group workshops or conferences.
- Preparing for and reporting from these business meetings and workshops/conferences.
- Providing the task with updates regarding developments in the Danish deployment of biobased value chains.
- Participating in (and actively contributing to) the Task's current activities and projects.

More specifically, during 2020, Christian contributed to the group's ongoing work, particularly the BECCS/U scoping report, where he was both one of the main authors, and presenters of the report during a June 2020 webinar that had roughly 1,000 participants.

During 2021, Christian authored a case study involving a large-scale CHP plant in Copenhagen as part of the BECCUS Inter-task project, as well as participated in the Hi-Temp Industrial Heat and Bio-H2 synergies projects.

The BECCUS work is slated to expand via a phase 2 BECCUS Inter-task project. Scheduled to run from mid-2022 until the end of 2024, the proposed project will involve contributions from seven IEA Bioenergy Tasks and be led by Christian Bang.

In March of 2022, the first edition of the Task 40 newsletter for Danish stakeholders was distributed to over 50 subscribers in both English and Danish. The newsletter will continue during the next triennium, publishing 2-3 issues per year.

Dansk:

Projektet støttede Christian Bangs arbejde med at repræsentere Danmark i Task 40 i den treårige periode 2019-2021. Formålet med IEA Bioenergy Task 40 er at understøtte udviklingen og designet af effektive, lønsomme og sikre værdikæder for at fremme en større udbredelse af bæredygtig biomasse til energiformål, men også til biomassebaserede produkter og materialer under hensyntagen til markederne for fødevarer, foderstoffer og fibre.

Formålet med projektet var at sikre Danmarks adgang til viden om fremskridt indenfor bæredygtige, biomassebaserede værdikæder i andre IEA Bioenergy Task 40 medlemslande. Dette mål blev nået ved:

- Deltagelse i to årlige forretningsmøder og gruppeworkshops eller konferencer
- Forberedelse til og rapportering fra disse forretningsmøder og workshops/konferencer
- At informere gruppen om udviklingen indenfor implementering og udbredelse af biomassebaserede værdikæder
- At deltage i (og bidrage aktivt til) gruppens løbende aktiviteter og projekter.

Mere specifikt bidrog Christian i løbet af 2020 til gruppens igangværende arbejde, især BECCS/U scoping-rapporten, hvor han både var en af hovedforfatterne og holdt oplæg om rapporten ved et webinar i juni 2020, der havde omkring 1.000 deltagere.

I løbet af 2021 forfattede Christian et casestudie, der involverede et stort kraftvarmeværk i København som en del af BECCUS Inter-task projektet, samt deltog i Hi-Temp Industrial Heat og Bio-H2 synergiprojekterne.

BECCUS-arbejdet forventes at udvides via et fase 2 BECCUS Inter-task projekt. Det foreslåede projekt er planlagt til at løbe fra midten af 2022 til udgangen af 2024. Det vil involvere bidrag fra syv IEA Bioenergy Tasks og Christian Bang står for projektledelsen.

I marts 2022 blev den første udgave af Task 40 nyhedsbrevet til danske interessenter distribueret til over 50 abonnenter på både [engelsk](#) og [dansk](#). Dette vil fortsætte i løbet af den næste treårige periode med to til tre udgaver om året.

3. Project objectives

The overall objective of the project is to ensure Denmark's access to knowledge from other IEA Bioenergy Task 40-member countries regarding developments in biomass trade, and the emergence and design of efficient value chains for biomass utilisation, particularly in terms of biomass deployment into new markets and sectors. This objective was to be achieved by:

- Participating in two annual business meetings and group workshops or conferences.
- Preparing for and reporting from these business meetings and workshops/conferences.
- Planning, preparing and hosting a business meeting and workshop in Denmark.
- Providing the task with updates regarding developments in the Danish deployment of biobased value chains.
- Participating in (and actively contributing to) the Task's current activities and projects.

The 'technology' in focus in Task 40 is biomass, primarily for use in energy-related applications. The global use of biomass as an alternative to fossil fuels has been growing in recent years, and with much focus on how to meet the objectives of the Paris Agreement, the role of biomass in a variety of sectors is expected to increase.

4. Project implementation

Due to COVID-19, the project did not evolve entirely according to plan. Particularly early in the project, some works within Task 40 were delayed, but the task settled into a good work routine given the circumstances, and the vast majority of works and tasks were completed on time. COVID-19 resulted in Task 40 electing to replace in-person meetings with more virtual meetings, thus resulting in a greater number of shorter meetings relative to the original plan. In addition, the task relied more heavily on webinars for dissemination. As a result, Task 40 was able to cope with these COVID-19 challenges quite effectively.

More specific to this project, due to COVID-19 it was not possible to host a Task 40 meeting combined with a workshop and site visits in Copenhagen. As it was not known how long COVID-19 would make such in-person meetings unfeasible, each year a preliminary plan was made to hold the combined meeting and workshop the following year. This is once again the case this year, as Task 40 is now proposing to have an in-person meeting combined with a workshop and site visits in Copenhagen during the upcoming September of the 2022-2024 triennium.

The postponement of the workshop contributed to a delay in the dissemination of a newsletter targeted towards the Danish audience as the initial plan was to both summarise the findings from the workshop in the newsletter and use the workshop to recruit interested parties to the newsletter. As a result, a link to Ea's website was instead added to encourage interested parties to subscribe. Given changes to data privacy laws the last few years, Ea was required to investigate how contact data can be acquired and maintained, as well as establish a "Politics on personal data". According to these new rules, only publicly available email addresses may be used to contact potential newsletter recipients. As a result, Ea undertook a time-consuming process of manually contacting an extensive list of potentially interested parties where each email address first had to be checked to see if it was available in the public domain. All of this background work took much longer than was initially anticipated, but the first newsletter was published in March of 2022, and the system is now in place to publish newsletters on a regular basis going forward.

5. Project results

Obtainment of objectives

The overarching objective of the project, i.e., to facilitate Denmark's access to knowledge regarding developments in bio-based value chains from other IEA Bioenergy Task 40 member countries was achieved. This was done by carrying out the following sub-objectives:

- Participating in two annual business meetings and group workshops or conferences.
- Preparing for and reporting from these business meetings and workshops/conferences.
- Providing the task with updates regarding developments in the Danish deployment of biobased value chains.
- Participating in (and actively contributing to) the Task's current activities and projects. This included authoring and co-authoring reports, as well as presenting results via a webinar.

As was outlined in the previous section, due to COVID-19, the only sub-objective not achieved was the hosting of an in-person business meeting and workshop in Copenhagen. The business meeting was instead held online, and both the in-person business meeting and workshop are now planned to take place in Copenhagen during the 2022-2024 triennium, in September of 2022.

Obtainment of technological results

The project did not contain direct technology development or demonstration, but the work in Task 40 supports the shift away from fossil fuels and potential generation of negative emissions through the expanded utilisation of bioenergy, also in combination with carbon capture technologies. This was achieved via international cooperation and dissemination of information regarding the expected shift to a circular economy (of which the bio-based economy will constitute a significant share), and investigations into how BECCUS technologies can assist in reaching the Paris climate targets.

The result of the project is that Denmark has been actively represented in all Task 40 meetings, thus allowing for Denmark to contribute knowledge to the rest of the task, as well as disseminate knowledge from the task to interested parties in Denmark.

Target audience

The target audience for dissemination included all Danish actors within biobased value chains, including Danish fuel supplier companies, equipment suppliers, utilities, industry associations, authorities, research institutes, and consultants.

During the course of the triennium, Christian has held several in-person and/or online meetings with stakeholders from various municipality owned utilities where Christian shared the ongoing work and findings within the task, while also receiving input as to what was most relevant for these respective actors.

Dissemination of project results

During 2020, Christian contributed to the group's ongoing work, particularly the BECCS/U scoping report, where he was both one of the main authors, and presenters of the report during a June 2020 webinar that had roughly 1,000 participants.

During 2021, Christian authored a case study involving a large-scale CHP plant in Copenhagen as part of the BECCUS Inter-task project, as well as participated in the Hi-Temp Industrial Heat and Bio-H2 synergies projects.

All of the above reports and webinar were available on the [Ea Energy Analyses Task 40 homepage](#) and/or the [IEA Bioenergy Task 40 website](#).

In March of 2022, the first edition of the Task 40 newsletter for Danish stakeholders was distributed to over 50 subscribers via email in both [English](#) and [Danish](#). This will continue during the next triennium, with 2-3 issues per year.

6. Utilisation of project results

Utilisation of project results in the future

The dissemination of information from the task to Danish politicians, bioenergy producers, consumers, traders, technology providers, consultants, researchers, and universities allows them to incorporate this information in their decision making and/or policy development decisions. During the past triennium, Christian has also responded to Danish stakeholder requests for further information and/or relevant contacts within the Task 40 network, thus assisting Danish stakeholders in acquiring useful information.

Contribution of project results to realise energy policy objectives

Both Denmark's 2050 objective of being independent of fossil fuels by 2050, and 2030 objective of reducing CO₂ emissions by 70% will require significant CO₂ reductions, and there is a growing consensus that negative CO₂ emissions will need to play a role. Biomass usage within the energy sector is one of few technological options that can provide large scale negative emission reductions, particularly by 2030. The current project undertook international cooperation and dissemination of information regarding increased biomass utilisation in various sectors, as well as investigations into how BECCUS technologies can assist in reaching the Paris climate targets. Sharing these findings with relevant stakeholders can assist in realising these energy policy objectives.

7. Project conclusion and perspective

Main conclusions

The main conclusions from the Task 40 work are that biomass utilisation within the energy sector can play a significant role in the shift away from fossil fuels, and that the generation of negative emissions via the expanded utilisation of bioenergy in combination with carbon capture technologies are likely necessary to achieve EU and global climate targets.

Next steps

The next steps for Task 40 are to continue to "work on deploying sustainable biomass for energy in the context of the larger bioeconomy and a future renewable carbon economy" during the 2022-2024 triennium (Task 40 proposal 2022-2024).

Regarding the current EUDP project, Christian Bang will continue as Danish country representative for Task 40 during the 2022-2024 triennium. Concrete next steps related to work undertaken during the 2019-2022 triennium include:

- Building and expanding on the BECCUS work via a proposed phase 2 BECCUS Inter-task project. Scheduled to run from mid-2022 until the end of 2024, the proposed project will involve contributions from seven IEA Bioenergy Tasks and will be led by Christian Bang.

- Increasing the outreach of the Danish Task 40 newsletter by continually adding new contacts and increased dialogue. The initial newsletter has already led to Danish stakeholder inquiries regarding information and potential contacts to assist their work, and it is expected that this will increase during the 2022-2024 triennium.
- Host a business meeting in Copenhagen for Task 40 as well as co-organise a workshop and site visits with Task 32.

Influence of results on future development

Specific to the current project, Danish bioenergy producers, consumers, and traders, along with Danish-based technology providers, consultants, researchers, and universities are all amongst global leaders within the bioenergy sector and can therefore be expected to play a role in developing and implementing bioenergy policy and technologies required to meet Danish and international climate targets. This could for example be by developing policy to incentivise the implementation of carbon capture on Danish biomass power plants, and/or testing and refining such technologies.

Denmark therefore has a strong incentive to both participate in, and drive, the deployment of biobased value chains and participation in this task is thus of particular interest for Denmark.

8. Appendices

Links to relevant documents, publications, and home pages have been included above in section 5, but are also included below:

- <https://www.ea-energianalyse.dk/en/cases/iea-bioenergy-task-40/>
- <https://task40.ieabioenergy.com/>
- https://www.ea-energianalyse.dk/wp-content/uploads/2022/04/Task40_nyhedsbrev_DK_2022_03_31_1_udgave.pdf
- https://www.ea-energianalyse.dk/wp-content/uploads/2022/04/Task-40-Newsletter_UK_2022_03_31_issue-1.pdf