



IEA Bioenergy
Technology Collaboration Programme

Task 40 – Deployment of biobased value chains

Newsletter

February 2021

Task Activities

June 2020 to January 2021

Welcome to the Newsletter of Task 40. Last year was very special to all of us, but our members are still in good contact and health.

MEETINGS AND CONTACT

The period since March 2020 was also a new experience for Task 40. Funny rooms (in the camper!), interesting looks and exciting interjections cheered up the atmosphere in the now virtual meetings. As we have been using this type of communication for several years, it was not really new for the group. However, we had to struggle with solutions for cross-continental time slots and rare personal meetings.



Nevertheless, Task 40 met a total of 8 times in 2020, including 2 meetings over 2 days. This was more meetings than in 2019!

The planned workshop with Task 32 unfortunately had to be postponed until further notice, but there were several other events (webinar, workshops ExCo 85+86) with very good participation, and presenters and moderators from Task 40. Additionally, there were two meetings for ongoing projects and even two new projects were launched...see all details in this newsletter- enjoy reading!

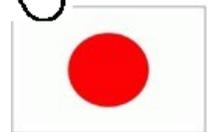
WEBINAR

Intertask Project Deployment of Bioenergy with Carbon Capture and Storage/Utilization

June 2020 saw the publication of the report [“Deployment of BECCS/U Value Chains - Technological Pathways, Policy Options and Business Models”](#) which is the first deliverable from an ongoing IEA Bioenergy intertask project “Deployment of BECCS/U Value Chains” led by IEA Bioenergy Task 40 and with Task 36 and Task 45 as partners.

Here in this issue:

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WEBINAR SERIES

Deployment of Bioenergy Combined with Carbon Capture and Storage or Utilisation (BECCS/U)
June 16, 2020

4:00 pm - 5:00 pm Central European Time
10:00 am - 11:00 am North American Eastern Daylight Time
3:00 pm - 4:00 pm British Summer Time



Presenter
Olle Olsson
Stockholm Environment
Institute (SEI),
Sweden



Presenter
Tero Tynjälä
Lappeenranta University of
Technology (LUT),
Finland



Presenter
Christian Bang
EA Energy Analysis,
Denmark



Presenter
Daniela Thrän
German Business
Centre (IBFZ),
Germany

Presentation Summary

Negative emissions technologies (NETs) will likely be important for fulfilment of global climate change mitigation ambitions. Bioenergy coupled with Carbon Capture and Storage or Utilisation (BECCS/U) is one of the NETs that are most frequently discussed, yet often only on a rather abstract level. This webinar highlights and discusses the key technological, economical and political factors that need to be taken into account to take BECCS/U from theoretical concept to on-the-ground deployment.

The IEA Bioenergy Technology Collaboration Programme (TCP) is organized under the auspices of the International Energy Agency (IEA) but is functionally and legally autonomous. Views, findings and publications of the IEA Bioenergy TCP do not necessarily represent the views or policies of the IEA Secretariat or its individual member countries.

Register for the webinar at <https://us02web.zoom.us/join/register?WJN-FG-TmBGRuuvv2kUc4ppxQ>

Unable to attend the live lecture? Lectures will be recorded and archived for later viewing at <https://www.ieabioenergy.com/iea-publications/webinars>



All electronic lectures are free
For technical issues: ieabioenergy@iaeforce.it
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Technology Collaboration Programme

The report was also presented in a well-attended [IEA Bioenergy Webinar](#) on 16 June 2020, a recording is available within this [YouTube link](#).

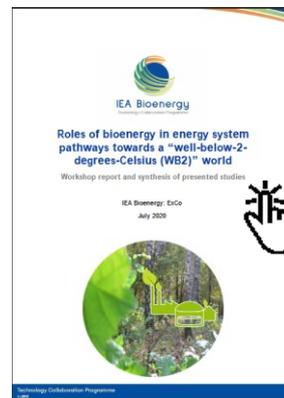
The report focuses on the potential and challenges associated with deploying BECCUS systems and value chains in the near to medium term. It provides a brief overview of different technological options for capture, transport, and storage of CO₂. Furthermore, the report also discusses role of public policy in this setting, and how bioenergy with carbon capture and utilization (BECCU) could play a role in enabling BECCS deployment.

In the light of the large and growing interest in in BECCUS, Task 40 together with representatives from Tasks 36, 44 and 45 jointly applied for strategic IEA Bioenergy funding to expand the intertask project to include additional case studies as well as cross-cutting analyses. This was approved by IEA Bioenergy ExCo in October. The new components include case studies on BECCUS implementation in the cement and bioethanol industries, an analysis of CO₂ accounting and related policy in BECCU value chains and an investigation into how BECCS could interact with the role of bioelectricity generation as a balancing resource in electricity systems. These activities are in addition to three case studies on BECCUS implementation in Waste-to-Energy, bioelectricity and biomass-based combined heat and power (CHP) that were part of the original plan for the intertask project and that are now close to completion. These activities will result in a series of short publications over the coming months and summarized in a synthesis report (end of 2021).

REPORT

Intertask project WB2/SDG Workshop: Role of bioenergy technologies in energy system pathways towards a WB2/SDG world

The Nov 25, 2019 project workshop in Berlin brought together a broad range of expertise, underpinning the variety of scientific work on the future role(s) of bioenergy. In July 2020, the **workshop report** (edited by Daniela Thrän, Annette Cowie and Göran Berndes) was published, including contributions of Task 40 members. The report gives an extensive collection of respective work, synthesizes key outcomes, and provides perspectives on further activities.



EXCO 86 E-WORKSHOP

On 19-20 October 2020, IEA Bioenergy organized an online workshop on the topic of *Contribution of sustainable biomass and bioenergy in industry transitions towards a circular economy*. The workshop was composed of a series of 2-hour sessions across the two days. On 19 October, Olle Olsson gave a presentation entitled "Market opportunities and effective ways to address barriers for high temperature biomass heat in industry" that introduced some of the ongoing work done by Task 40 in the strategic IEA Bioenergy intertask project on the role of bioenergy as a source of renewable high-temperature heat in industry, led by IEA Bioenergy Task 32. The Task 40 work will outline some of the business model and policy related challenges pertaining to the use of bioenergy as a source of industrial heat and is to be published in the first half of 2021.

More information on, and a recording from the online workshop can be found [here](#).

New and ongoing projects

RG (RENEWABLE GAS) INTERTASK PROJECT KICK-OFF

After being on hold since February 2019, the works on the Strategic Intertask Project "Renewable Gas - Deployment, Markets and Sustainable Trade " (RG) eventually started in September 2020 with the 2nd (online) kick-off meeting.

RG focuses on the prospects of implementing renewable gas in the energy markets. The aim of the task is to provide state-of-the-art overviews on prospects, opportunities and challenges for various mechanisms that could help deploying biogas, biomethane and other renewable gases in energy markets in IEA countries, and beyond. For this, the task examines how technology development, infrastructures and policy mechanisms can fulfil the important role of renewables gases in global climate scenarios for a well-below 2°C world. Sustainability issues of RG will also be discussed from a deployment perspective.

The objective is to provide decision makers and the research community with a comprehensive overview of what is currently known regarding renewable gases (especially biogas, biomethane), and to derive respective recommendations for policy-makers.

The task comprises three work packages (WP). WP1 focuses on the status of regulatory issues for renewable gases in EU and non-EU countries, WP2 deals with the same issues for non-bio renewable gases, and WP3 will gather knowledge on the sustainable potentials for renewable gas trade. Contributions will be made by members from tasks 37, 40, 44 and 45 and also by GBEP.

In order to include the knowledge of the task members, questionnaires were sent out by WP1 and WP2. The results will be evaluated and discussed in an internal workshop. To achieve a broader participation, a stakeholder workshop will be held in September or October 2021. The final report shall be published by the end of 2021.

Contact: Hans-Werner Gress, hg[at]iinas.org

CIRCULAR BIOECONOMY SYNERGIES PROJECT

Fabian Schipfer, Uwe Fritsche, Chenlin Li, Pralhad Burli, Michael Wild, Christiane Hennig

Biomass mainly contains carbohydrates and carbon-based building blocks such as sugars and fibres. A circular biobased economy with decreasing shares of "linear", fossil-based value chains will have to efficiently deploy sustainably available biomass for food, feed, materials, and energy purposes. An interconnection between the supply chains into supply networks based on competitively used densified biogenic carbon carriers and the inter-sectoral valorization of by-products, post-consumer and secondary feedstocks can be expected.

This Task 40 project kick-starts the discussion on synergy effects between the different sectors. In the first step, we are comparing the metabolism of our current economy with a possibly relevant metabolism of a circular bio-based economy, derived from quantitative impact discussions of fossil fuel phase-outs, significantly increasing renewable electricity shares, efficiency and circularity improvements, nutritional transformation and changing economic valorization of carbon.

In the second step, we aim to describe examples and key findings regarding current and future synergies for forestry, agricultural, secondary and third generation raw materials. Also, the impact of changing carbon economics due to market measures and changing reference systems/price drivers will be elaborated.

Finally, we will build upon this discussion to derive recommendations for

(1) policy makers, also taking into consideration current developments on EU and global levels with regard to e.g., circularity, biobased sectors, trade, investment, and innovation,

(2) the IEA Bioenergy TCP communities next triennium (2022-2024) regarding possible strategic orientation and intertask works and

(3) for the scientific community with regard to bioeconomy modelling.

The project runs from September 2020 - September 2021. Project results will be shared via report and a webinar.

Contact: Fabian Schipfer, schipfer[at]eeg.tuwien.ac.at

ASSESS SUCCESSES AND LESSONS LEARNED FOR CONVENTIONAL / ADVANCED BIOFUELS DEPLOYMENT

Quang Nguyen, Ric Hoefnagels, Christiane Hennig, Richard Hess, Chenlin Li

On September 23rd there has been the kick-off meeting of the Lessons learned biofuels project. It is a strategic intertask collaboration between the IEA Bioenergy Tasks 39, 40 and 45. IEA Bioenergy Task 39 is leading this activity. The project will evaluate the technical, economic, societal and political reasons underlying the past and ongoing booms and busts cycles of biofuel technologies development, demonstration, deployment and replication in order to identify technology successes and the best policy framework conditions and measures for stimulating increased future markets for production and consumption of sustainable transport biofuels.

IEA Bioenergy Task 40 is mainly in charge of work package 4 dealing with the issue of sustainable biomass supply chains for international markets. The goal of WP4 is to develop criteria for sustainable biomass feedstock supply chains for international markets based on lessons learned from current successes and past failures.

The scope of work comprises the following Activities:

1. Assess successes and failures of feedstock supply chains in biofuel, pulp & paper and biomass power industries
2. Assess potential development of fractionation technologies to provide conversion ready feedstock and co-products
3. Assess lessons learned in supply risks and sustainability standards and certification of international supply chains.

Task 40 will be responsible for Activities 1 and 2 and part of Activity 3. Task 45 will contribute to Activity 3.

One common contrast between success and failure of biomass feedstock supply is the consistent quality of feedstock delivered to conversion facilities. For example: uniform quality grains are delivered to first generation ethanol plants, wood pellets or wood chips meeting users' specifications are delivered to biomass power plants, and uniform wood chips are delivered to pulp mills. The

technical difficulties experienced in pioneer cellulosic ethanol plants in the U.S. can be traced to variability in properties of corn stover delivered to the plants.

Contact: Quang Nguyen, Quang.Nguyen[at]inl.gov



**BIOMASS WORKSHOP SERIES 2020-21:
REDII Implementation and Beyond**

Online workshops from Nov 2020 to end of Jan 2021 -

Recordings www.youtube.com/channel/

Publications 2020

“Deployment of BECCS/U Value Chains - Technological Pathways, Policy Options and Business Models”

Authors: Olle Olsson, Christian Bang, Malgorzata Borchers, Alena Hahn, Hannu Karjunen, Daniela Thrän and Tero Tynjälä (June 2020) [download](#)

“Roles of bioenergy in energy system pathways towards a “well-below-2-degrees-Celsius (WB2)” world - Workshop report and synthesis of presented studies”

Edited by Daniela Thrän, Annette L. Cowie and Göran Berndes (July 2020) [download](#)

For more info, upcoming events or contact please visit our homepage:

<https://task40.ieabioenergy.com/>

Stay healthy and informed until the next newsletter in half a year!