IEA Bioenergy
Technology Collaboration Programme

System Integration and Flexibility
IEA Bioenergy Task44

Highlights aus den Tasks

Fabian Schipfer, Markus Gölles, Carina Deutsch

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Triennium 2025-2027

7 Members in Task44

- Austria (international lead)
- Canada
- European Commission
- Finland (co-lead)
- Germany
- Sweden
- Netherlands
- China (observer)

Previous members and interested

- Australia
- Ireland
- Switzerland
- United States

Name and country	Affiliation
Fabian Schipfer (AT)	IIASA - International Institute for Applied Systems Analysis
Markus Gölles (AT)	BEST – Bioenergy and Sustainable Technologies GmbH
Carina Deutsch (AT)	BEST – Bioenergy and Sustainable Technologies GmbH
Florian Kraxner (AT)	IIASA - International Institute for Applied Systems Analysis
Shubham Tiwari (AT)	IIASA - International Institute for Applied Systems Analysis
Bruno Gagnon (CA)	NRC - Natural Resources Canada, Canadian Forest Service
Hamed Kouchaki (CA)	NRC - Natural Resources Canada, Canadian Forest Service
Yael Pfeiffer (CA)	NRC - Natural Resources Canada, Canadian Forest Service
Biljana Kulisic (EC)	EC – DG ENER Renewable Energy Sources, Climate and Environmental Protection
Maria Georgiadou (EC)	EC - DG RTD Directorate General for Research
Thomas Schleker (EC)	EC - DG Research & Innovation
Miia Nevander (FI)	VTT - Technical Research Centre of Finland Ltd
Christiane Hennig (DE)	DBFZ – Deutsches Biomasseforschungszentrum
Daniela Thrän (DE)	UFZ – Helmholtz Center for Environmental Research
Nora Lange (DE)	DBFZ – Deutsches Biomasseforschungszentrum
Jaap Kiel (NL)	TNO - Netherlands Organisation for Applied Scientific Research
Anna Krook-Riekkola (SE)	LTU - Luleå University of Technology

Kick-off meeting March 2025 Laxenburg, Austria

IEA Bioenergy

Bioenergie kann mehr als effiziente Services - Bioenergietechnologien sind Integratoren

Definition „Flexibilität“

Die Fähigkeit, (Energie-)Ressourcen durch Zeit (Speicher), Raum (Transport), zwischen Sektoren und Optionen (Umwandlung) zu verschieben.

Definition „Systemintegration“

Der Prozess der Kombination von mindestens zwei Elementen zu einem Ganzen. (ähnlich wie Sektorkopplung und industrielle Symbiosen)

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From 2019 till 2025

Technologies & Best practices (with other IEA bioenergy tasks)	Integration concepts and Synergies (with other IEA TCPs)	Market Integration, Policies, Valorisation	Energy system modelling (with other IEA TCPs & ETSAP)

What is flexibility? Who understands what under flexibility?

Which energy sectors have to be considered?

Remarkable track record

- ✓ Numerous reports, policy briefs, workshops, and questionnaires analysis – free to download
  https://task44.ieabioenergy.com/iea-publications/

- ✓ Coordination of inter-task projects and inter-TCP activities
  > Synergies of green hydrogen and bioenergy
  > Energy Technology Systems Analysis Program

- ✓ Scientific publication including technology, policy, market and literature review on flexible bioenergy
  https://doi.org/10.1016/j.rser.2022.112094

- ✓ Participation in innovative communication formats
  https://www.ieabioenergyreview.org/

Work plan and expected output
2025 - 2027 with 7 members

WP1 Power and Heat
Best practices, automation, cost reduction

WP2 Fuels and Chemicals
Technologies inventory, Bioeconomy Synergies ITP

WP3 Systemic Aspects
Energy System Modelling, BECCUS ITP

WP3 Coherent policies
Monitoring, synthesis, IEA TCPs involvement

First results in 2025-2027 Triennium

TECHNOLOGIES FOR FLEXIBLE BIOENERGY (UPDATED)

Apr 2025

Task 44 new report published As the share of variable renewables like wind and solar increases, flexibility becomes a key requirement for...

read more

VALUE OF FLEXIBLE BIOENERGY – REPORT ASSESSING ELECTRICITY MARKETS

Apr 2025

The economic value of flexible bioenergy in Austria, Finland, and Germany is assessed in our new report: The Value of Flexible Bioenergy -...

read more

FLEXIBLE BIOENERGY POLICIES IN DIFFERENT COUNTRIES – SUMMARY REPORT

Mar 2025

Task 44 publication on activity Work package 3 – Acceleration of flexible bioenergy concepts implementation Flexible bioenergy policies in...

read more

https://task44.ieabioenergy.com/iea-publications/

Results from “Flexibility Inter-TCP Coordination Group”

https://schipfer.eu/collaboration-opportunities-between-iea-tcps/

Collaboration opportunities between the IEA Bioenergy TCP and 17 individual TCPs:

🌊 **Hydropower TCP**
https://www.ieahydro.org/about +

🔋 **Energy (Electricity, Thermal, Distributed) Storage TCP**
https://iea-es.org/ +

🏭 **Industrial Energy-Related Technologies and Systems (iets) TCP**
https://iea-industry.org/ +

Flexible·bioenergy·-·enabler·for·energy·transition·for·zero·emission·energy·systems¶

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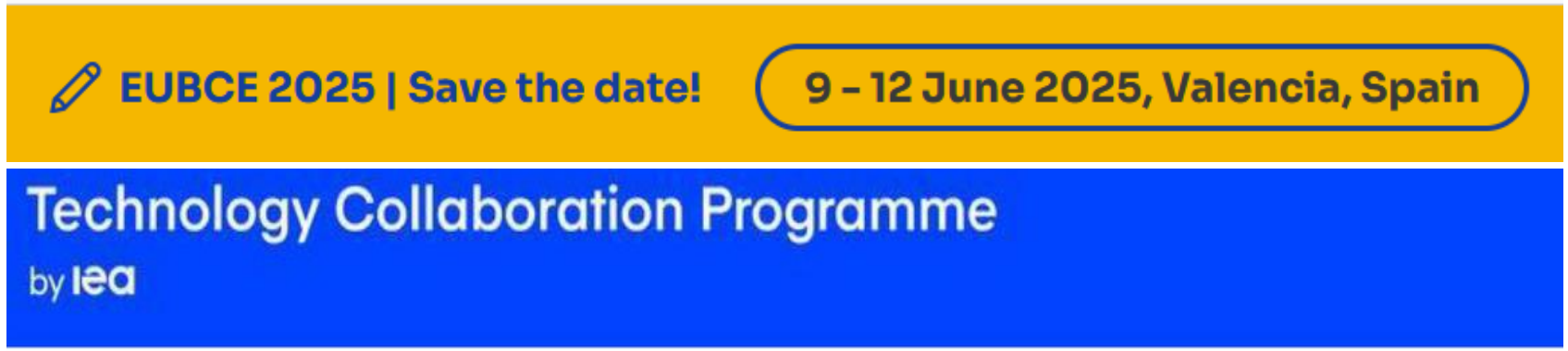

Workshop on "Biomass and Hydrogen – Allies for Net Zero", in IEA - Paris.

Agenda (Overview 3):

May 15th, 2025:

D1.2 Automation workshop
Outline & Cost Estimate

CEBC - January 2026 in Graz
Central European Biomass Conference

- PART 1: presentations
  - control of the **different biomass technologies**
    - always with focus on flexible operation and system integration
    - possibly given by members of the technological tasks within IEA Bioenergy
  - control of **other relevant technologies** often combined with biomass technologies
    - focus on flexible operation and system integration
    - possibly given by members of other IEA TCPs
  - supervisory control of the **resulting multi-energy-and-ressource-systems**
- PART 2: interactive part
  - main conclusions from presentations
  - including the audience
  - predefined skellet of questions, i.e. a line for the discussion

Nutzen Sie unser Task44 Netzwerk !

- Gratis Marktberichte
  https://task44.ieabioenergy.com/
- Internationale Werbung für Ihre Vorzeigeprojekte
- Expertinnennetzwerk für kollaborative Forschung und Entwicklung
  →Schnittstelle System- und Prozessintegration
  →Automatisierung, Flexibilisierung
- Industriekontakte zu Pilot- und Demonstrationsprojekten, Start-ups und internationalen Interessensvertretungen
- Österreichische Politikberatung im globalen Kontext

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