

The Competence Network “Modeling the Bioeconomy”

The competence network “Modeling the Bioeconomy” is a network of four leading universities and research organisations in the Federal State of Baden-Württemberg coordinated by the University of Hohenheim. The competence network is funded by the Ministry of Science, Research and Arts and is part of the bioeconomy research program Baden-Württemberg.

The partners of the competence network are:

- Centre for European Economic Research (ZEW): Department of Environmental and Resource Economics, Environmental Management
- Karlsruhe Institute of Technology (KIT): Institute for Industrial Production (IIP), Institute for Technology Assessment and Systems Analysis (ITAS)
- University of Hohenheim: Institute of Agricultural Policy and Markets (APO), Institute of Farm Management (ILB)
- University of Stuttgart: Department of Building Physics (LBP), Institute of Energy Economics and the Rational Use of Energy (IER)

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Summer School Modeling the Bioeconomy

September 14 – 18, 2015

Registration deadline: July 15, 2015

Hosted by the competence network “Modeling the Bioeconomy”
within the bioeconomy research program Baden-Württemberg
www.bioeconomy-research-bw.de



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Core information

Background

Biomass production and use link several sectors within the economy and with the environment. Moreover, biomass value-added chains compete for land and with one another for resources. The economic and ecologic impacts of the transformation from a fossil-based to a bio-based economy must be analyzed in an integrative and interdisciplinary way. Simulation models are an ideal instrument to carry out such an analysis.

Summer School Aim and Set-up

This summer school provides insight into integrative modeling approaches for biomass production and use from microeconomic to macroeconomic levels. It also examines the links between economic and ecologic modeling. It combines lectures, discussions and exercises on approaches to modeling bioeconomy-related issues and includes an excursion to the bioliq® pilot plant at the KIT.

Participants

This summer school is designed for young scientists with an interest in modeling economic or environmental issues related to the production and use of biomass. The number of participants is limited to 20.

Fees

Young scientists from Hohenheim or Stuttgart University: 100 Euro (incl. meals)

Other young scientists: 300 Euro (incl. accommodation and meals)

BBW ForWerts PhD students: Information about the exact costs can be found in the BBW ForWerts portal.

Information and registration

Competence network "Modeling the Bioeconomy"

Email: model-bioec@uni-hohenheim.de

BBW ForWerts participants should also register in the BBW ForWerts portal (in addition to the registration process described here) in order to have this summer school count towards the certificate requirements.

Program

Modeling Biomass Markets with different Model Types

Models of biomass markets with different aggregation levels will be explained (structure, data) and strengths and weaknesses will be discussed: A scenario of increased demand for biomass will be simulated and results will be compared. Options for analyzing bioeconomy scenarios based on a model chain and potential model interfaces will be presented and discussed based on published examples. Models covered:

- Farm models: Allow for in-depth analysis of production changes and farm adaptation strategies. Are typically based on linear or non-linear programming approaches and limited to the supply side of the market.
- Agricultural sector models: Depict agricultural biomass supply and demand and their interactions in markets. Allow for much detail in the agricultural sector but do not fully consider economy-wide interactions.
- Economy-wide computable general equilibrium models: Depict intersectoral and economy-wide relations and present a broad picture of the impact from policy or technology changes.

(E. Angenendt, ILB, H. Grethe, APO, S. Voigt, ZEW)

Energy System Modeling

Over the last decade, energy policy has grown more and more complex. Energy system models provide a consistent tool for decision making and planning for complex problems in energy policy or for energy utilities. This workshop will give an overview of the energy models used and insights into current advanced energy system modeling practices pointing to the characteristics of its advantages and limitations.

(M. Blesl, IER)

From Technology to Policy – Modeling environmental Impacts of Bioeconomy using Life Cycle Assessment (LCA) and Material Flow Analysis (MFA)

Although bioeconomy claims to be a sustainable approach in itself, related technologies consume resources and cause environmental impacts. These technology, process or product-related impacts can be calculated and compared using the standardized method of LCA. By identifying important actors and scaling up LCA results to regional or national extent, feasibility and impacts of related policies can be assessed using the method of MFA. Both methods will be presented using examples related to the context of bioeconomy.

(T. Beck, LBP, W.-R. Poganietz, ITAS)

Development of Scenarios

Scenarios are a prominent instrument for policy advice that give consistent insights into possible futures and measures necessary to achieve intended goals. This workshop will discuss and analyze the method of scenario development with its latest advances. Questions addressed are: Do we really need scenarios? Do we need different types of scenarios? How do we develop scenarios? Are model-based scenarios sufficient to describe potential futures of socio-technical systems such as bioeconomies?

(W.-R. Poganietz, ITAS)