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IEA Bioenergy Task 39 Aktuelle Aktivitäten

Dina Bacovsky

Wien, 12.12.2016

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Current triennium 2016-2018

- Members (14) – Australia, Austria, Brazil, Canada, Denmark, European Commission, Germany, Japan, Netherlands, New Zealand, South Africa, South Korea, Sweden, USA
- Priorities for new/renewed membership:
China, India, Italy, Finland, Thailand, Norway

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Publikationen - Newsletter

Commercializing Conventional and Advanced Liquid Biofuels from Biomass Task 39

From the Task

My Sister-in-Law, Julia, Is a Scientist and She's a Scientist

The next meeting of Task 39 will be held in Valencia, New Zealand on 8 November 2016. The meeting will be combined with a workshop on Energy in Aviation and Marine Biofuels organized by the European Commission (EC). Task 39 will also participate in the European Energy Conference to be held on 14-16 November 2016 in Brisbane, Australia, with several Task members going to the meeting. Appropriately, the subject of the Newsletter also features an article on the latest biofuels developments in Australia. We would like to thank Dr. Stephen Schick, Australia's representative to the EC Energy Task and Manager of Energy Australia, for preparing an educational, interesting article on the latest biofuels developments in Australia.

The Task continues to bring advanced fuels in advanced bioenergy, and an advanced sector, the sustainability of completed and early projects. There are now several, a biofuels line the most mature projects in the 2016. More potential in research projects.

Task 39 Members - FICP and Country Task 39

| Country | Task 39 Member | Country Task 39 |
|-----------|---------------------------|------------------|
| Australia | Dr. Stephen Schick | Energy Australia |
| Canada | Dr. Robert M. Waymouth | Energy Canada |
| Denmark | Dr. Søren Sørensen | Energy Denmark |
| France | Dr. Jean-Louis Lallemand | Energy France |
| Germany | Dr. Gert-Dirk Scharber | Energy Germany |
| India | Dr. Anand Kumar | Energy India |
| Japan | Dr. Takashi Kuroki | Energy Japan |
| Spain | Dr. Juan Carlos Rodríguez | Energy Spain |
| Sweden | Dr. Göran Sjöström | Energy Sweden |
| USA | Dr. Robert M. Waymouth | Energy USA |

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biofuels developments in Australia

Renewable Energy Target

The Australian government has set a renewable energy target (RET) of 33,000 GWh of renewable energy capacity by 2020. The primary mechanism for achieving this target is the Renewable Energy Target (RET) which requires the generation of renewable energy to be certified by the Australian Government. The RET is a market-based mechanism that allows renewable energy generators to sell their energy to the government. The RET is a market-based mechanism that allows renewable energy generators to sell their energy to the government. The RET is a market-based mechanism that allows renewable energy generators to sell their energy to the government.

Sweden takes the lead in biofuel-use in Europe

General Introduction - A fossil free energy supply by 2050

The production and use of biofuels in Sweden has increased substantially since the mid 2000s. According to preliminary data from 2016, the share of renewable energy in the total energy use in Sweden is estimated at about 25%.

Sweden currently has the largest share of biofuels in the transport sector in Europe (together with Finland) according to the 2016 data. The share of biofuels in the transport sector is estimated at about 10% of the total energy use. The use of biofuels in the transport sector is also higher in Sweden than in other EU countries. Figure 1 below illustrates the growth of biofuels use in Sweden since 2005.

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Task 39 Berichte in Bearbeitung

- Potential for Algal Biofuels Production
- Assessment of LCA tools and models with respect to biofuels and their sustainability
- Advanced fuels in advanced engines – in cooperation with AMF Annex 52 “Fuels for Efficiency”
- Review the status of advanced biofuels demonstration and commercial facilities
- Biofuels in Shipping
- Biofuels in China

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Geplante weitere Arbeiten

- Update of drop-in report, specifically focusing on aviation and maritime fuels
- Definitions and terminology of biofuels
- Update to implementation agendas

- Newsletter mit Schwerpunkt Österreich

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Mögliche weitere Themen

- Kooperation mit Task 42 zu Bioraffinerien und Biotreibstoffen als Workshop im Mai 2017
- Fortsetzung der Zusammenarbeit mit AMF
- Generation 1,5 Biotreibstoffe (mit China und Task 43)

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Teilnahme an internationalen Vernetzungsaktivitäten

- EBTP Stakeholder Plenary Meeting
- Eco-Mobility Conference
- Workshop Drop-In Biofuels for Marine and Aviation
- Bioenergy Australia Conference
- Biomass4Growth Workshop
- SET-Plan Conference

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Vernetzung in Österreich

- Email-Newsletter
- Nationaler Workshop Biotreibstoffe
 - 29.9.2016, bmvit, Wien
 - ~40 Teilnehmer
 - Programmpunkte:
 - Biotreibstoffproduktion und –verwendung in Ö
 - Österreichische Technologieanbieter
 - Neues aus der Forschung in Ö
 - Taskbeiträge
 - Task 33, 37, 39, 40, 42 und ExCo vertreten

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Upcoming meetings



- West Coast USA - In association with 39th SBFC in San Francisco, May 1-4, 2017
- Gothenburg, Sweden (mid May 2017) in conjunction with Advanced Biofuel Conference & ExCo
- Late 2017 – Austria?
- Early 2018 – China?
- Late 2018 – USA in conjunction with ExCo

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Thank you for your attention!



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IEA Advanced Motor Fuels:
www.iea-amf.org

IEA Bioenergy Task 39:
www.task39.org

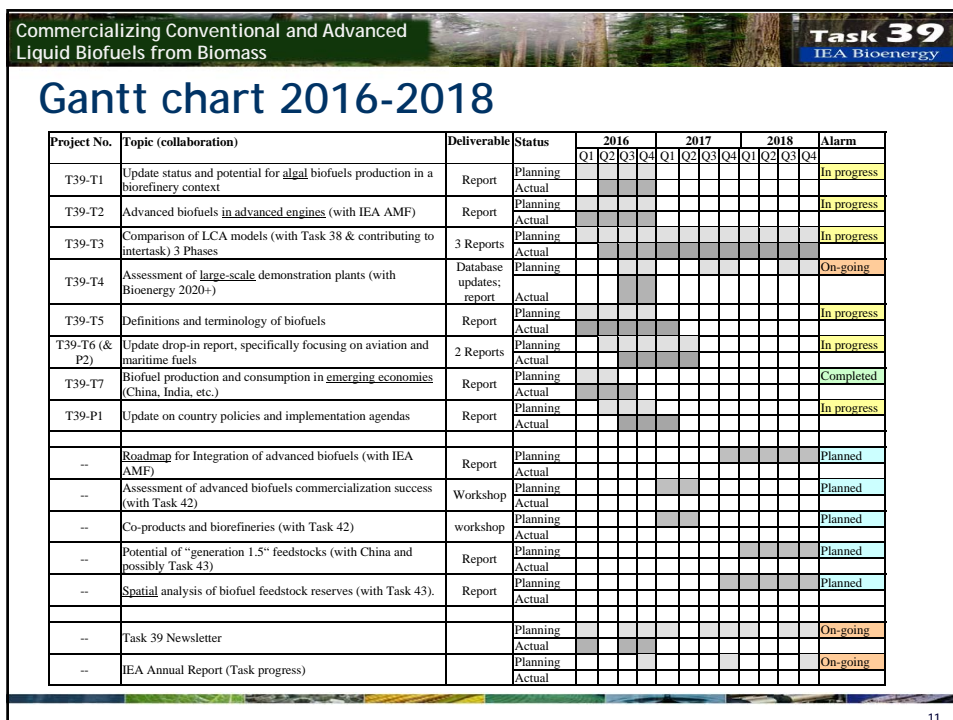
Online database:
<http://demoplants.bioenergy2020.eu>

Netzwerk Biotreibstoffe:
www.nwbt.at

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Commercializing Conventional and Advanced Liquid Biofuels from Biomass **Task 39**
IEA Bioenergy

T39-T1 - Update Report on Status and Potential for Algal Biofuels/Bioenergy Production

- Final draft completed May 2016; in revision since then. Revised to address initial ExCo and Steering Committee feedback, then distributed for external peer peer review & also to ExCo.
- Thanks to Lieve Laurens
- Key conclusions (Jim M.)



12

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T39-T2 - Survey on Advanced Fuels for Advanced Engines

- Progress report - Franziska Mueller-Langer/Norbert Grope via videolink
- Project leaders - Jurgen Krahl /Franziska Mueller-Langer
- A global survey on different biofuel qualities (current and advanced)
 - WP1 - Relevant non-technical framework
 - WP2 - Most relevant advanced biofuels for road transport
 - WP3 - Fuel properties of advanced biofuels
 - WP4 - Chemical reactions among advanced fuel components & additives
 - WP5 - Known health effects
- Draft report to be completed November 2016

13

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T39-T3 - Comparison of Biofuel Life Cycle Assessment Tools - Progress report

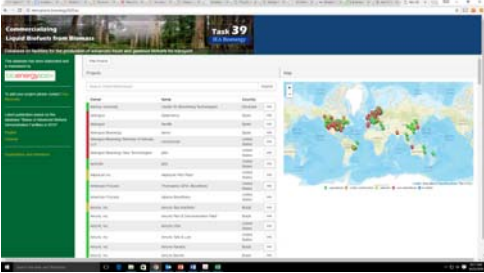
- Project leaders: Antonio Bonomi (CTBE, T39); Helena Chum (NREL, T38)
- CTBE, NREL and IEA Bioenergy Tasks 38 & 39
- **Phase 1** ((2016) completed - Assessment of sugarcane ethanol (sugarcane from Brazil, processing in Brazil), corn ethanol (corn from United States, processing in the United States), and wheat ethanol (wheat from Europe, processing in Europe).
 - Key conclusions (Antonio B.)
 - Deliverables
- **Phase 2** (2017) - FAME biodiesel and renewable diesel

14

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T39-T4 - Assessment of large-scale demonstration plants

- Presentation Dina Bacovsky
- With Bioenergy 2020+
- Annual update of website and summary report of developments



The screenshot shows a web application interface with a green sidebar on the left containing navigation options. The main content area features a table with columns for 'Name', 'Status', and 'Location'. To the right of the table is a world map with several colored markers indicating project locations. The top of the interface includes the 'Task 39 IEA Bioenergy' logo and a search bar.

15

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T39-T5 - Definitions and terminology of biofuels


- European Commission published a report (distributed)
 - Based on European terminology and definitions
- Propose to expand this to reflect variations in other regions
- Project leaders - Susan van Dyk, Timo Gerlagh, Luisa Marelli, Jacopo Giuntoli

16

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T39-T6 Update to Drop-in Report

- Retain structure of previous drop-in report, updating information in each section based on recent reports/publications/conferences (less than 3 years old).
 - In progress
- Information on companies will be updated, new companies and proposed construction of pilot/demonstration/commercial facilities will be added.
- New subsection on the aviation sector will also be added
- Should we add a specific section on policy? Or put such content in a separate report?




17

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US DOE Alternative Aviation Fuel Workshop

- 14-15 September 2016
- Macon, Georgia



ALTERNATIVE AVIATION FUEL WORKSHOP
U.S. Department of Energy,
Bioenergy Technologies Office
September 14-15, 2016 • Macon, Georgia

- Attended by Jack Saddler & Susan van Dyk
- Current technical barriers for aviation biofuels
 - Economic and technical competitiveness
 - Fuel conversion and scale-up
 - Environmental sustainability and life-cycle benefits
 - Feedstock supply and product distribution chains

18

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T39-T8 Drop-in biofuels for marine and shipping

- Part of Update to drop-in report
- Report on biofuels for shipping as a separate report - draft by Claus Felby in progress
- Presentation on progress - Claus Felby



19

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T39-T7 The Potential of Biofuels in China (2016)

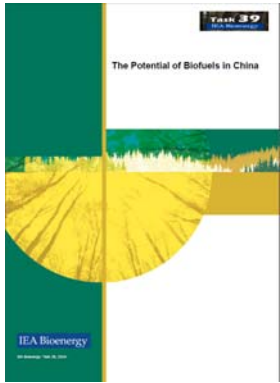
- Report published in August 2016
- Public access available in 6 months

The Potential of Biofuels in China

J Susan van Dyk^a, Ling Li^a, Deborah Barros Leal^a, Jinguang Hu^a, Xu Zhang^b, Tianwei Tan^b, Jack Saddler^a

a. University of British Columbia, Forest Products Biotechnology/Bioenergy Group
(www.bioenergy.ubc.ca), Forest Sciences Centre, 4041-2424 Main Mall, Vancouver, BC, Canada V6T 1Z4. Jack_saddler@ubc.ca

b. Beijing Key Lab of Bioprocess, National Energy R&D Center for Biorefinery, College of Life Science and Technology, Beijing University of Chemical Technology, Beijing 100029, PR China".
zhangxu@mail.buct.edu.cn, twtan@mail.buct.edu.cn



20

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T39-T7 The Potential of Biofuels in China

Highlights - key conclusions

- Strong energy security and climate drivers
- But food security a significant concern due to a large population and limited land availability
- Current production
 - bioethanol - 3 billion litres per year
 - biodiesel - 1.14 billion litres per year
- Future targets 2020
 - bioethanol - 12.7 billion litres per year
 - biodiesel - 2.3 billion litres per year
- Unlikely that 2020 targets will be met
- Greater focus on wind and solar, with electric vehicles for transport
- No national program focused on R,D&D in this area

21

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T39-P1 Update to implementation agendas - (Policy, compare and contrast report)

- Susan is updating country sections in the report with latest information and these will be sent to country representatives for review early 2017
- Accurate information is key
- *Essential to get review and input from all country representatives*

Bioethanol production

| Bioethanol production (million L/a) | | | |
|-------------------------------------|--------|--------|--------|
| | 2011 | 2012 | 2013 |
| USA | 52,727 | 50,035 | 50,340 |
| Brazil | 22,893 | 23,509 | 26,572 |
| EU-27 | 6,530 | 6,842 | 7048 |
| China | 2099 | 2100.7 | 2634 |
| Canada | 1,600 | 1,725 | 1979.5 |
| Germany | 1,552 | 1,463 | 1,514 |
| Australia | 440 | 440 | 453.8 |

22