

Promoting favourable conditions to establish biodiesel market actions

– **WP 3: Emerging best practice** –

Dr. Guido Reinhardt

**ifeu – Institute for Energy and
Environmental Research Heidelberg**

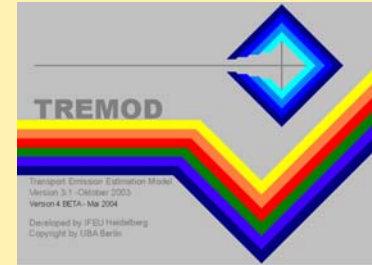
Kick-off-meeting EIE/05-113: Biodieselchains

Athens, 27-28 February 2006



IFEU - Institute for Energy and Environmental Research Heidelberg, since 1978

- **Independent scientific research institute**
- **organised as a private non profit company with currently about 40 employees**
- **Research / consulting on environmental aspects of**
 - **Energy (including Renewable Energy)**
 - **Transport**
 - **Waste Management**
 - **Life-Cycle-Analyses**
 - **Environmental-Impact- Assessment**
 - **Renewable Resources**
 - **Environmental Education**



TREMOD: Transport Emission Model

- **Modelling emissions of road vehicles, trains, ships and airplanes**
- **Official database of the German Ministries for emission reporting**

Life cycle analyses (LCA) and technology impact assessments since 1990:

- **Biofuels (all biofuels, all applications)**
- **Alternative transportation modes (Fuel cells, FFV, etc.)**
- **Renewable Energy**



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- **Our clients (on biofuel studies)**
 - World Bank
 - UNEP, GTZ etc.
 - European Commission
 - National and regional Ministries
 - Associations (industrial, Life-Cycle-Analyses
 - Local authorities
 - WWF, Greenpeace etc.
 - Companies (DaimlerChrysler, German Telekom, etc.)
 - Foundations (German Foundation on Environment, British Foundation on Transport etc.)

Analysis of all world-wide published LCAs about current and innovative biofuels for transportation

Procedure:

- **Literature compilation world wide by involving external experts: more than 800 publications.**
- **Screening of the studies concerning state of the art data and fulfilment of ISO 14040/43 norms (Life cycle assessment).**

Analysed biofuels for transportation

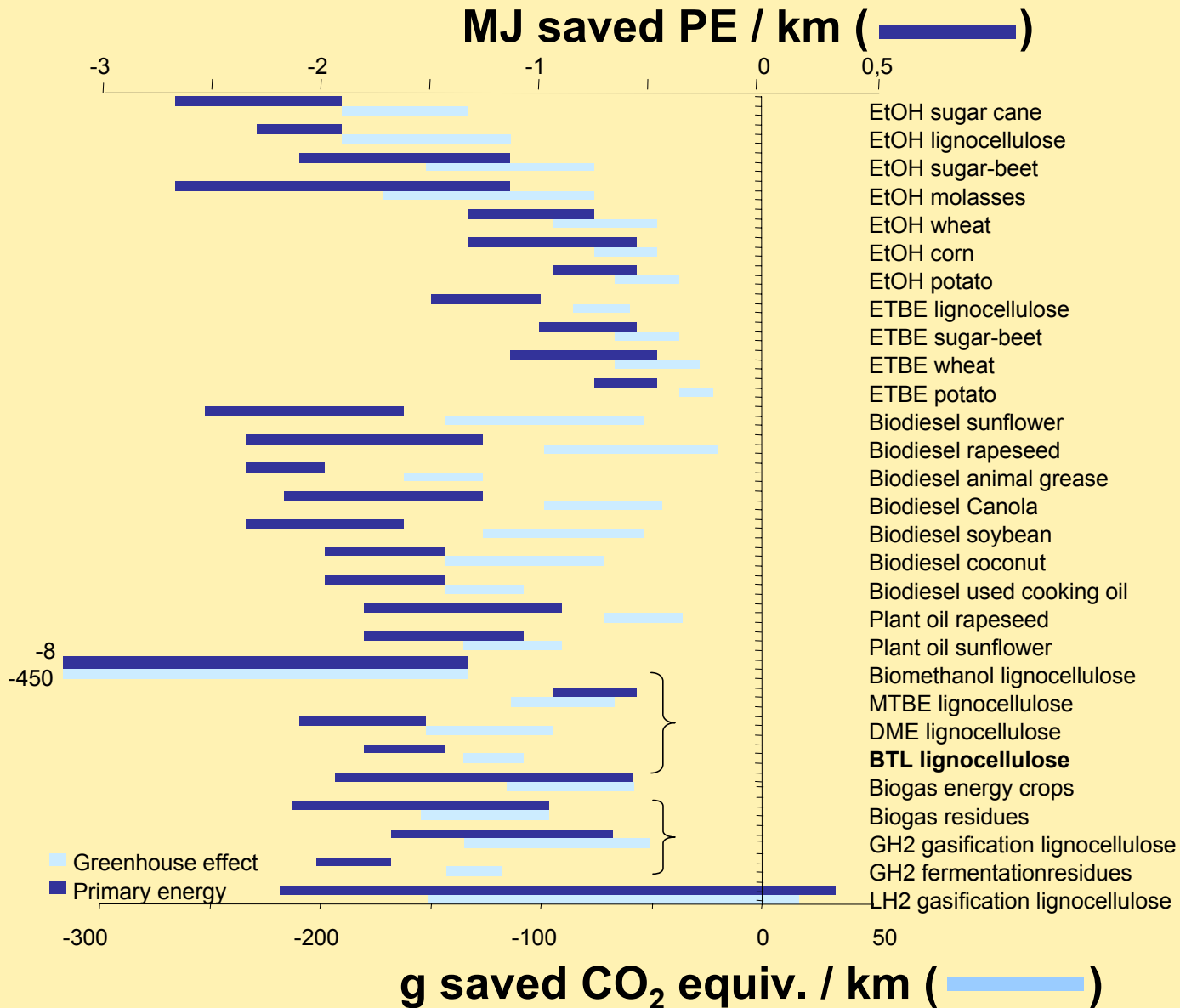


	Number
Bioethanol	
— Bioethanol from sugar cane	1
— Bioethanol from corn	7
— Bioethanol from wheat	9
— Bioethanol from sugar-beet	8
— Bioethanol from lignocellulose	8
— Bioethanol from potato	1
— Bioethanol from molasses	2
<hr/>	
ETBE	
— ETBE from wheat	2
— ETBE aus sugar-beet	8
— ETBE from lignocellulose	2
— ETBE from potato	1
<hr/>	
Biodiesel	
— Biodiesel from rapeseed	17
— Biodiesel from sunflower	7
— Biodiesel from soybean	3
— Biodiesel from Canola	2
— Biodiesel from coconut oil	1
— Biodiesel from recycled plant oil	1
— Biodiesel from animal grease	1
— Biodiesel from used cooking oil	1
<hr/>	
Plant oil	
— Plant oil from rapeseed	4
— Plant oil from sunflower	1

	Number
Biomethanol	
— Biomethanol from lignocellulose	5
<hr/>	
MTBE	
— MTBE from lignocellulose	1
<hr/>	
DME	
— DME from lignocellulose	3
<hr/>	
BTL	
— Sunfuels from lignocellulose	4
<hr/>	
Pyrolysis oil	
— Pyrolysis oil from lignocellulose	0
<hr/>	
HTU Diesel	
— HTU diesel from lignocellulose	0
<hr/>	
Biogas	
— Biogas from org. residues	3
<hr/>	
Hydrogen	
— GH2 from lignocellulose	5
— GH2 from org. residues	1
— LH2 from lignocellulose	3

**Analyses regarding energy and
CO₂ balances: 112**

Results: biofuels



National Fuel Strategy



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Research Heidelberg
Germany

**CO₂ Mitigation
through Biofuels
in the Transport
Sector**
Status and Perspectives

Main Report

supported by FVV, Frankfurt
and UFOP, Berlin

Forschungsmessung
Verbrennungsmotoren
FVV

ufop



DIALOG **NACHHALTIGKEIT**

Progress Report 2004

**Perspectives
for Germany**

**Our national strategy
for a sustainable development**

Reference: IFEU 2004, see www.ifeu.de

Progress report on national sustainability
strategy of the German government 2004
“Alternative fuels and engine technologies”

Goal

Collation of information on emerging best practices and commercialisation of biodiesel in leading European member states and understand how this can be adapted and transferred to participating countries

Task 3.1 Case studies

Task 3.2 Best practice

Task 3.3 Key success factors and barriers

Task description

The most relevant and promising case studies for successful application of biodiesel in EU25 countries will be summarized and documented in a common format. The focus will be full supply chains including distribution networks for the biofuel. At least 5 case studies will be produced. These will be done using published material and by making visits and holding interviews and meetings.

➔ **What happened yesterday?**

- **The situation of today**
- **What will come tomorrow?**

Bottlenecks in Germany

- **Taxation issues**
- **Technical issues**
- **Biodiesel quality**
- **Life cycle assessment**

Further consequences

Measures

- Tax exemption until 2009
- Biodiesel approvals (partly)
- Norm EN 14214
- Assoc. for quality management
 - Still the same
- Marketing campaigns by UFOP
- **Incentives**

→ Which case studies ?

Proposal:

Austria: long tradition

Germany: long tradition

France: long tradition

UK: short tradition, emerging

Poland: no tradition, emerging

→ What to look at ?

All relevant issues. Taking into account:

- Yesterday, today, tomorrow
- Technological, economic, environmental, fiscal issues
- Incentives, programs, goals, regulations
- Producers, distributors, users, decision makers, politicians etc.
- Especially: Main barriers, main drivers

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Task 3.1 Case studies

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Task 3.3 Key success factors and barriers

Task description

According to the case studies, **partners** will collect and present examples of best practice within the biofuel sector. Best practice will be considered with reference to technical, economic, environmental performance, innovation, fit with communities etc.

Task 3.3: Key success factors and barriers

Task description

In parallel to the above tasks, factors that are most important to the success of biodiesel market chain development will be identified. On the other hand, information will be collected relating to important factors that had a negative influence on project development, undermining or preventing success of projects. These factors will be analysed and reviewed in report.

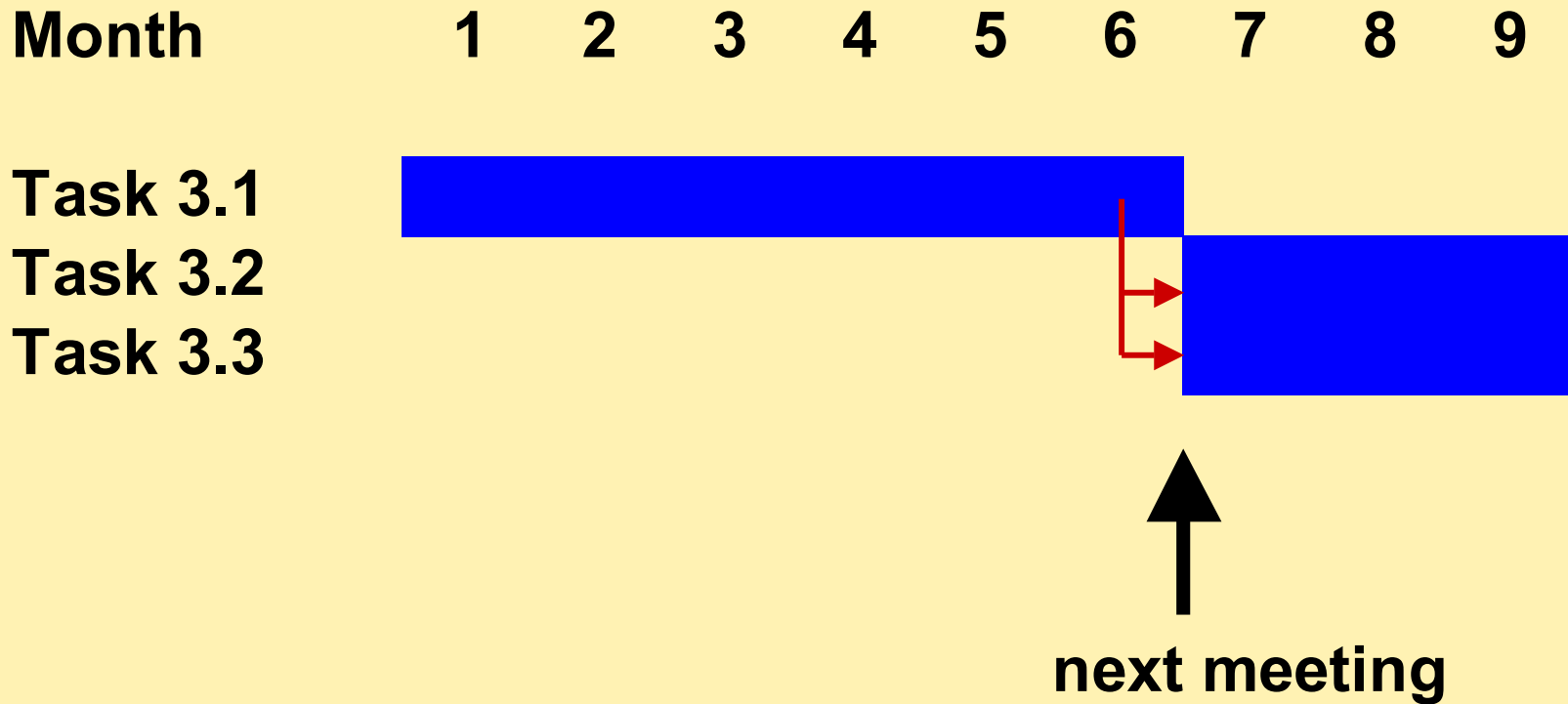
Results of Task 3

Case studies, reviews of best practice and report on key success / failure factors that provide valuable information to the project team and the market actor networks.

Deliverables

- **Report on case studies for biodiesel (full chain incl. distribution) in EU25.**
- **Best practice report.**
- **Report on success factors and barriers.**

Schedule and flow chart



The IFEU Team



Dr Guido Reinhardt



Dr Martin Pehnt



Dipl-Phys Ing Sven Gärtner



Dipl-Geogr Hinrich Helms

Contact for Task leader: guido.reinhardt@ifeu.de