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## Outline of the Agenda for the International Workshop

### “Aquatic Biomass: Sustainable Bioenergy from Algae?”

to be held at UBA Berlin (Bismackplatz 1, Room 1041), Germany, Nov. 2, 2009

#### Background

Bioenergy will play a major role within a global sustainable energy system. The main feedstocks for bioenergy are – in addition to biogenic residues and wastes – cultivated energy crops (if sustainably grown). Although about three quarters of the earth’s surface are covered by oceans, only a relatively small amount of marine biomass is used today (e.g. fishery, algae).

These exploitation already cause serious problems in many regions of the world and, in accordance with international agreements (e.g. CBD; OSPRA Convention), any further intensification of aquatic biomass production must comply with sustainability requirements.

However, the potential of sustainably provided *aquatic biomass* (micro- and macro-algae, sea grass) for energy has been barely investigated so far compared to terrestrial production. In addition, land-based production of biomass from algae could be a future resource.

#### Objectives

The workshop will bring together key representatives from countries active in research and development of algae-based bioenergy. They will present and discuss the current status and future options of algae use, introduce into relevant technology prospects and discuss environmental and development issues. From that, open questions will be identified, and perspectives for further work will be considered.

The workshop will be co-funded by two German research projects “bio-global” (sponsored by the Federal Ministry for Environment through the Federal Environment Agency) and “conCISEnet” (sponsored by the Federal Ministry for Research) so that no fee will be issued. For participants from developing countries, travel support will be made available.

A workshop **input paper** will be prepared, and workshop **proceedings** will document all contributions, discussions, and outcomes. All documents will be made available through the BioenergyWiki.

The draft agenda is attached.

For more information, pls. contact Dr. Klaus Hennenberg, [k.hennenberg@oeko.de](mailto:k.hennenberg@oeko.de)

<b>Time</b>	<b>Item</b>	<b>Chair/Contributor</b>
9:30	<b>Arrival of Participants</b>	
	<b>SESSION 1: Introduction</b>	Chair: BMU
10.30	Welcome and Workshop Overview	Almut Jering, UBA
10.40	Thematic Introduction: Aquatic Biomass – Promises and Open Issues – Key Questions for the Workshop	Klaus Henneberg/Uwe Fritsche, Öko-Institut
	<b>SESSION 2: Status of Algae Research, Activities and Practical Experiences</b>	Chair: Olaf Kruse Rapporteur: Suzanne Hunt
	<b>2.1: Micro-algae</b>	
10.50	Bioenergy from micro-algae: potentials and problems	Avigad Vonshak
11.05	3 years of active research on micro-algal biofuel in Europe: Achievements and hurdles	Olivier Bernard
11.20	Recent developments on microalgae cultivation in Brazil to produce biofuels	Sergio Lourenco
11.35	Algae Redux: The return of a US algae R&D effort	John Sheenhan
11.50	Microalgae research in Thailand and Southeast Asia	Boosya Bunnag
12.05	Questions and Discussion	moderated by the Chair
	<b>2.2: Macro-algae</b>	
12:20	Overview on European experiences and projects on mass cultivation of seaweeds (marine macroalgae) as a renewable energy biomass	Klaus Lüning
12:35	Potential and challenges for biofuels production in Latin America (experiences from Chile and Mexico)	Renato Morchio and Carlos Caceres
12.50	Pulp and Paper - Bio-ethanol made from Red Algae (Korea)	Hack-Churl You
13:05	Questions and Discussion	moderated by the Chair
13.15	- Lunch Break -	

**SESSION 3: Potentials, Economics and Perspectives – parallel Working Groups –**

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| 14.00 | <b>WG I: Micro-algae</b><br>Input Statements – focus on questions/points to be discussed (input max. 5 min):<br>- Energy Efficiency and Potential (Anja Eggert)<br>- Technical and Economic Restrictions (Jörg Ullmann)   | WG Chair: Christian Wilhelm<br>WG Rapporteur: Boosya Bunnag / Mr. Wipawan |
| 14.00 | <b>WG II: Macro-algae</b><br>Input Statements – focus on questions/points to be discussed (input max. 5 min):<br>- New uses and potentials: Macro-Algae as Bioproducts & Bioenergy (Roberto Marcos)<br>- Perspectives in developing countries (Alessandro Flammini) | WG Chair: Klaus Lüning<br>WG Rapporteur: Renato Morchio                   |
| 14:45 | Brief Reports from WG Rapporteurs<br>Brief Questions and Answers  | Chair: Klaus Hennenberg   |
| 15.00 | - Coffee/Tea Break -  |   |

**SESSION 4: Environment and Sustainable Use – parallel Working Groups –**

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| 15.15 | Environmental challenges (title tbc.)  | Catherine Ryan   |
| 15:30 | <b>WG I: Micro-algae</b><br>- Environmental constraints, synergies from combined material and energy use | WG Chair: Christian Wilhelm<br>WG Rapporteur: Suzanne Hunt |
|       | <b>WG II: Macro-algae</b><br>- Environmental Aspects / protection of marine ecosystems                   | WG Chair: Klaus Lüning<br>WG Rapporteur: Renato Morchio    |
| 16.15 | Brief Reports from WG Rapporteurs<br>Brief Questions and Answers   | Chair: Klaus Hennenberg                                    |
| 16.30 | <b>SESSION 5: Next Steps / Future Challenges</b><br>Open Discussion                                      | Chair: Uwe Fritsche  |
| 17.15 | Closing Remarks by the Chair   |  |
| 17.30 | End of Workshop  |  |