

IEA Bioenergy

Land Use Changes Due to Bioenergy – Quantifying and Managing Climate Change and Other Environmental Impacts

Helsinki, 30 March 2009

Facilitating commercialisation and market deployment of environmentally sound, sustainable and cost-competitive bioenergy technologies.....

IEA Bioenergy.....

- Provides an international forum for sharing information and developing best practice on
 - Technology development
 - Non-technical barriers and issues
 - Regulatory and legislative issues
- Produces authoritative information on key strategic issues affecting deployment

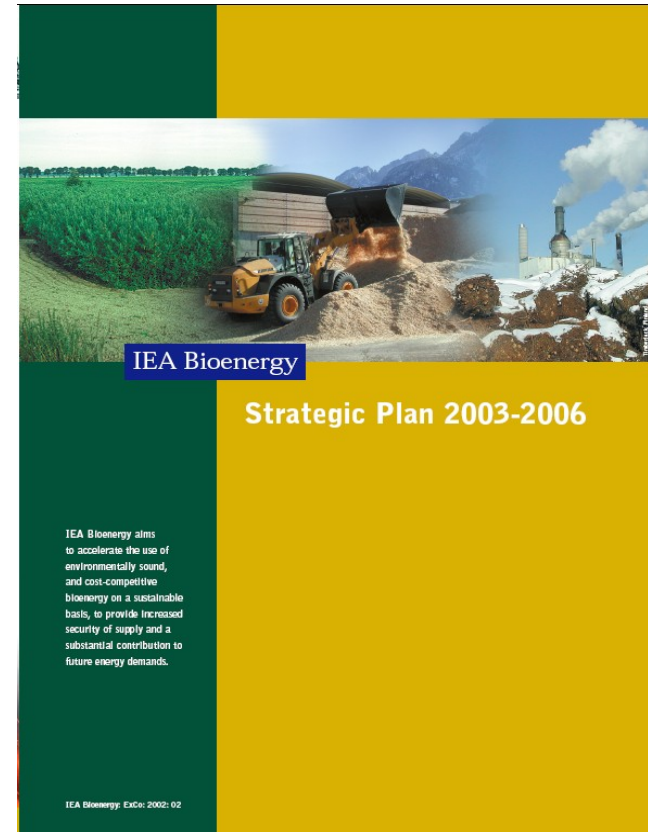
Vision and Mission

Vision:

To accelerate the use of environmentally sound and cost-competitive bioenergy on a sustainable basis, to provide increased security of supply and a substantial contribution to future energy demands.

Mission:

To facilitate commercialisation and market deployment of environmentally sound, sustainable and cost-competitive bioenergy technologies.



22 Contracting Parties

- Australia
- Austria
- Belgium
- Brazil
- Canada
- Croatia
- Denmark
- European Commission
- Finland
- France
- Germany
- Ireland
- Italy
- Japan
- Netherlands
- New Zealand
- Norway
- South Africa
- Sweden
- Switzerland
- United Kingdom
- United States

Agreement Activities

Executive Committee

- Bi-annual ExCo meetings/management of the IA
- ExCo Workshops
- Annual report, newsletters, website
- Strategic Position Papers

Tasks

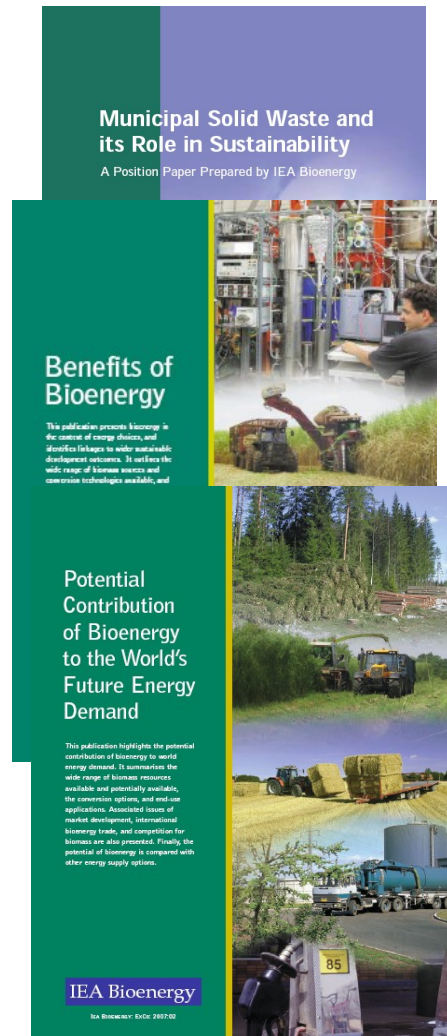
- Coordination of national RD&D programmes, information exchange and joint projects
- Task meetings, study tours and workshops
- Publications, reports, newsletters, websites
- Networking with industrial and other stakeholders

Tasks

- **Feedstock**
Forest and agricultural products, MSW and recovered fuels
- **Conversion**
Combustion, gasification, pyrolysis, anaerobic digestion, fermentation, biorefineries
- **Integrating Research Issues**
GHG balances, socioeconomic drivers, international trade, systems analysis

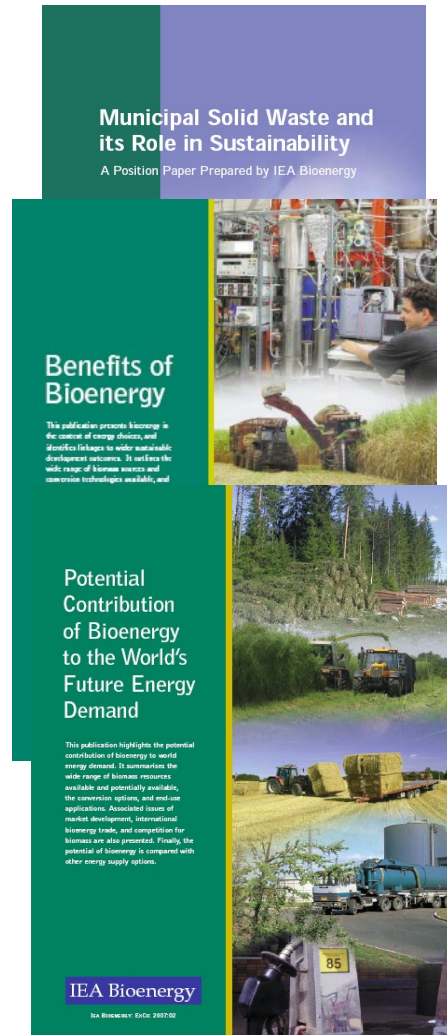
Policy Relevant Papers - Complete

- Sustainable Production of Woody Biomass for Energy
- Municipal Solid Waste and Its Role in Sustainability
- Benefits of Bioenergy
- Potential Contribution of Bioenergy to Future World Energy Needs
- Gaps in R&D for 2 Generation Biofuels
- Bioenergy – Synergies with Forestry and Agriculture
- From 1st to 2nd Generation Biofuels (with IEA HQ)



Policy Relevant Papers – In Preparation / Planned

- Lifecycle Analysis of Biomass Fuels for Power or Heat (Task 38)
- Bioenergy Review
- Better Use of Biomass (With RETD Agreement)
- Bioenergy and Land Use Change (Task 30 and Task 38)

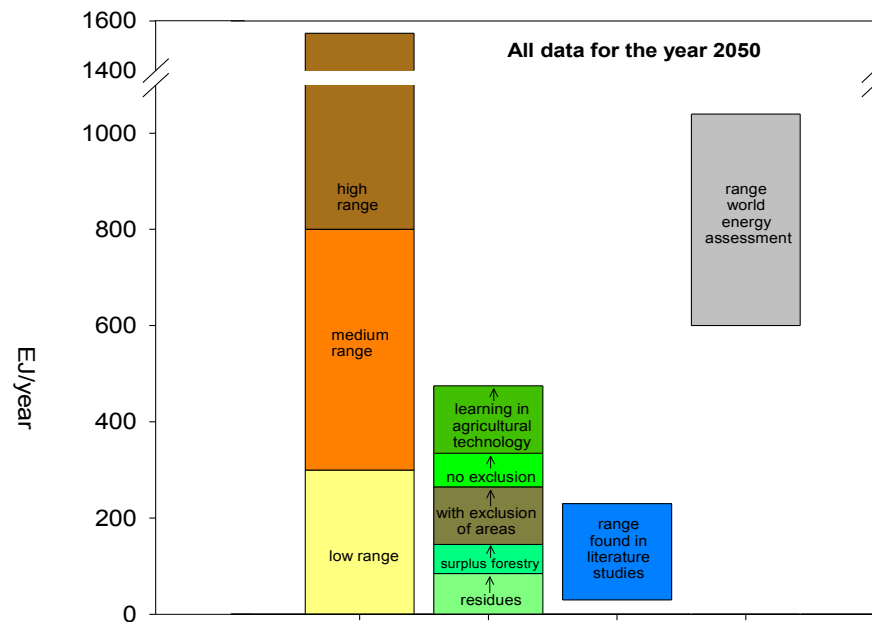


Bioenergy Review – Current Situation

- 10% of current world's energy use is already from bioenergy
 - 3% in industrialised countries
 - 1.3% electricity
- Biofuels
 - 1 % transport fuel
 - 2% of total bioenergy use
- Range of developed and relatively low cost technologies
- Scope for technology and resource development

Bioenergy Review – Potential

- Moderate scenarios indicate
 - 200-400EJ/y by 2050 (10-25% of world energy demand)
 - 50-150 EJ from residues and wastes



Technical biomass potential
Sustainable biomass potential
Modelled bioenergy demand
Total world energy demand

Pointers

- **Bioenergy for heat and power from residues and wastes can be safely exploited now using proven and relatively low cost technologies**
- **Cautionary approach for biofuels 10% sustainability issues crucial**
 - Develop incentives based on ghg saving potential
 - Carefully analyse impacts on commodity markets and impact of indirect land use change
 - Limit growth rate to allow sectoral adjustment
- **Continue development of new technologies and resources**
 - 2nd and later generation biofuels
 - gasification and other conversion technologies
 - Biorefineries
 - Improved agricultural productivity
 - Lignocellulosic crops and later algae etc
 - Sustainable land use policies

ExCo Workshops

- “Biofuels for Transport – Part of A Sustainable Future?”
14May 2008, Oslo
- “Bioenergy – the Impact of Indirect Land Use Change.”
12 May 2009, Rotterdam