

Introduction

IEA Bioenergy is one of a number of Implementing Agreements established by the International Energy Agency (IEA) Secretariat and its Committee on Energy Research and Technology (CERT), through its Renewable Energy Working Party (REWP).

In the past twenty years, IEA Bioenergy has been at the forefront of world efforts to improve the production, harvesting and utilisation of biomass resources, and to more efficiently use related and other wastes. In the late 1990s bioenergy is attracting additional interest as an important element of the energy programmes of most industrialised nations. This interest arises from the predicted climate change resulting from the emission of greenhouse gases and the role that bioenergy can play in alleviating these effects.

IEA Bioenergy has evolved since the establishment of the Forestry Energy Agreement in 1977. The Agreement has changed both its structure and focus to reflect the interests of the participating countries. Initially there were four member countries, by the end of 1998 there are 18 members.

In 1998, IEA Bioenergy changed its structure to streamline its management and improve cost-effectiveness. More closely defined tasks were adopted and other changes were made to eliminate a layer of management and reduce costs. By the end of 1998 the programme consists of 13 Tasks:

- Technology assessment studies for the conversion of cellulosic materials to ethanol in Sweden
- Short rotation crops for bioenergy
- Conventional forestry systems for bioenergy
- Biomass combustion
- Thermal gasification of biomass
- Pyrolysis of biomass
- Techno-economic assessments for bioenergy applications
- Energy from thermal conversion of MSW and RDF
- Energy from biological conversion of organic waste
- Greenhouse gas balances of bioenergy systems
- Biotechnology for the conversion of lignocellulosics to ethanol
- Liquid fuels from biomass
- Solid biomass fuels standardisation and classification





In IEA Bioenergy, national experts from research, government and industry work together with experts from other member countries. This cooperation offers many benefits:

For research - to exchange information on recent developments in R&D through meetings or state-of-the-art seminars; to provide opportunities for collaborative R&D.

For industry - to be informed of new projects; to work together to develop handbooks or models; to offer early participation of industrial partners in R&D work.

For policy-makers and decision-makers - to gain an international perspective on progress in bioenergy; to compile guidelines and standards.

For research and industry - to remove technical barriers.

For industry and policy makers - to remove non-technical barriers.

IEA Bioenergy published its first Strategic Plan in 1995. That was seen as a "living document" which would be amended to reflect the changing needs and aspirations of IEA Bioenergy and its participants. The current plan was developed in response to recent changes including the following:

- Greater recognition of the impact of increased bioenergy use on predicted global climate change
- Revision of the REWP strategy
- The changing informational needs of the developing bioenergy industry
- Increased interest shown by Central and Eastern European, non-member and developing countries to participate in IEA Bioenergy
- Reorganisation of the task and operational structure of IEA Bioenergy
- Requirements for greater efficiency and cost reductions in the cooperation
- Increased access to the Internet

IEA Bioenergy Vision, Mission and Strategy

Biomass is material originally produced by photosynthesis - such as wood or plants - or related municipal and agricultural wastes. Bioenergy technologies use these resources to produce heat, electricity or fuels that substitute for petroleum, petrochemicals, or other energy-intensive products. Bioenergy resources such as woody crops, biomass residues and wastes already provide about 14% of the world's primary energy supplies. For the future, bioenergy offers cost-effective and sustainable opportunities that have the potential to meet up to 50% of world energy demands during the next century, and at the same time meet the requirement of reducing carbon emissions from fossil fuels.

The vision and mission statements for IEA Bioenergy focus on overcoming the environmental, institutional, technological, and financial barriers to the near- and long-term deployment of bioenergy technologies.

IEA Bioenergy Vision: To realise the use of environmentally sound, and eventually cost-competitive, bioenergy on a sustainable basis to provide a substantial contribution to meeting future energy demands.

IEA Bioenergy Mission: To facilitate, coordinate and maintain bioenergy research, development and demonstration through international cooperation and information exchange, leading to the deployment and commercialisation of environmentally sound, sustainable, efficient and cost-competitive bioenergy technologies.

IEA Bioenergy Strategy: To assist the participating countries in expanding the use of economical, environmentally sound bioenergy technologies in a manner which is linked to, and consistent with, the REWP strategy and goals.

Objectives and Actions

The Strategy of IEA Bioenergy will be accomplished through carrying out the following actions to meet the objectives listed below.

Objective 1:

To promote the utilisation of technologies and systems for enhanced sustainable energy production from biomass.

Actions:

- Advance understanding of technologies that can reduce emissions of greenhouse gases to the atmosphere.
- Promote the deployment of technologies with important local and global environmental benefits.
- Recognise technologies with local or regional economic benefits or employment opportunities that contribute to a secure energy supply.
- Examine the implications for embedded generation and the role of utilities in deployment of bioenergy products and services.
- Encourage deployment of bioenergy products and services in developing countries.

Objective 2:

To actively encourage the maintenance and development of networks of participants involved in research, development, demonstration and deployment, and to provide for the effective exchange of information on bioenergy markets.

Actions:

- Encourage and facilitate collaborative research, development and demonstration through an effective programme of Tasks.
- Conduct cooperative technology demonstration projects and share the information to overcome barriers to the market deployment of sustainable and cost-effective bioenergy technologies.
- Provide reliable information to policy and decision-makers in a timely fashion.
- Increase the use of the Internet as a means to exchange information on a timely basis at low cost.
- Archive published reports and documents with IEA ETDE.

Objective 3:

To improve the involvement of industry in IEA Bioenergy.

Actions:

- Evaluate the appropriate role of industry in IEA Bioenergy.
- Increase involvement of industry in on-going tasks.
- Develop tasks specially designed to allow cooperation with industry.
- Transfer technology to industry and other participants through focused reports, case studies, a structured series of seminars and workshops, and the Internet.
- Identify and expand the involvement of supportive trade-groups where appropriate.
- Enhance the provision of reliable information to industry in a form that is meaningful to them by developing and disseminating "best practice guidelines" to aid deployment of sustainable bioenergy technologies.

Objective 4:

To increase membership with emphasis on countries with large biomass resources and R&D infrastructure.

Actions:

- Identify potential participants and contact appropriate government representatives through continued efforts of the Executive Committee.
- Develop appropriate government representative contacts.
- Develop an "orientation package" to distribute to potential participants who are actively considering participation.
- Educate possible participants to the benefits of IEA Bioenergy collaboration through workshops, seminars and other related activities.
- Provide invitations to workshops, seminars and study tours so as to apprise participants of recent developments in bioenergy technologies and to demonstrate the benefits of collaboration.
- Update the IEA Bioenergy display posters and present IEA Bioenergy and its message at national and international meetings.
- Promote advanced technologies through the use of dedicated brochures, papers, and presentations at the Agreement and Task level.



IEA Bioenergy



Objective 5:

To increase interactions with other global, multilateral energy implementation programmes.

Actions:

- Increase interaction within the IEA, particularly with the REWP, and other Implementing Agreements.
- Promote joint work, information exchange and technology transfer by international collaborative research with other agencies such as World Bank and FAO.
- Identify appropriate institutions and entities through ongoing working committees at both the Executive Committee and Task level.
- Provide invitations to appropriate IEA Bioenergy meetings and seminars.

Objective 6:

To ensure mutual IEA Bioenergy and IEA REWP goals are met.

Actions:

- Continue integration of IEA Bioenergy and REWP strategies, defining the role of each.
- Form an Executive Committee working group to examine longer-term research and development needs of bioenergy, and provide a summary.
- Form an ongoing working group of Executive Committee members to consider whether there are

new strategies or opportunities which IEA Bioenergy should develop in addition to its information exchange function.

- Through the IEA Bioenergy secretariat, produce a four-yearly review of the status of renewable energy technologies, products, services and markets, including reliable costings, levels of business, technology policy proposals and the REWP's view of the future.
- Develop a communication plan for information about bioenergy from both within and outside of IEA Bioenergy.

Objective 7:

To continue to seek efficiencies and cost effectiveness in the operation of IEA Bioenergy.

Actions:

- Develop and implement management tools to increase value.
- Look for opportunities for cost-shared or concerted actions with others.
- Place increased emphasis on Task reporting, milestones and measures to review scientific progress and financial matters, and respond to environmental issues.
- Establish well-defined measures to encourage improved efficiency, productivity and accountability.
- Exploit the use of the Internet to save costs.



Acknowledgments

Professor Paul Mitchell and Dr Don Stevens coordinated the preparation of this plan under a contractual arrangement with the Executive Committee. Their efforts are gratefully acknowledged. The assistance of Executive Committee Members, Task Leaders and Bioenergy practitioners within the Member Countries of IEA Bioenergy was also an important element in the production of this plan.

For more information:

If you are interested in finding out more about IEA Bioenergy, please visit the IEA Bioenergy website: <http://www.forestresearch.cri.nz/ieabioenergy/home.htm> or contact the Executive Committee secretary. Mr John Tustin, Email: iea.bioenergy@fri.cri.nz

IEA Bioenergy

