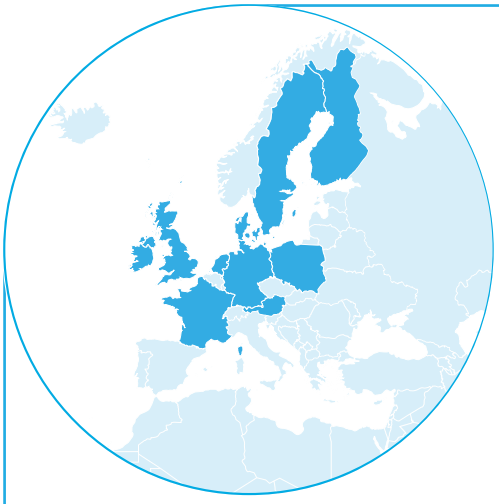

ERA-NET BIOENERGY

Establish a structural cooperation between national bioenergy RTD programmes aiming at: cost efficiency, improved quality and accelerated development

PROJECT DETAILS

Period	From 2004-10-01 To 2010-12-31
Follow-on ERA-NET	Self-funding from 2011
Project reference	515738
Programme acronym	FP6-COORDINATION
Call identifier	ERA-NET/1/CA-SSA-B
Title	Establish a structural cooperation between national bioenergy RTD programmes aiming at: cost efficiency, improved quality and accelerated development
Contract type	Coordination (or Networking) Action
Total cost **EU contribution**	€ 2 651 593 € 2 651 593
Number of participants	15
Coordinator	Ministry of Economic Affairs EZ - Agency NL The Netherlands
Contact person	Kees Kwant T +31 (0)88-6022458 E kees.kwant@agentschapnl.nl Matté Brijder T +31 (0)88-6027954 E matte.brijder@agentschapnl.nl
Website	www.eranetbioenergy.net

Participants until 2011

AT	Austrian Research Promotion Agency FFG
AT	Austrian Energy Agency AEA
AT	Federal Ministry of Transport, Innovation and Technology BMVIT
DK	Energinet.dk
FI	Finnish Funding Agency for Technology and Innovation TEKES
FR	French Environment and Energy Management Agency ADEME
DE	Federal Ministry of Food, Agriculture and Consumer Protection BMELV
DE	Agency for Renewable Resources FNR
IE	Sustainable Energy Authority Ireland SEI
PL	National Centre for Research and Development NCBiR
NL	Ministry of Economic Affairs EZ
NL	Agency NL (formerly SenterNovem)
SE	Swedish Energy Agency SWEA
UK	Engineering and Physical Sciences Research Council EPSRC
UK	Department of Trade and Industry DTI

Participants self-funded

AT	Austrian Research Promotion Agency FFG
AT	Federal Ministry of Transport, Innovation and Technology BMVIT
DE	Agency for Renewable Resources FNR
IE	Sustainable Energy Authority Ireland SEAI
PL	National Centre for Research and Development NCBiR
NL	Agency NL (formerly SenterNovem)
SE	Swedish Energy Agency SWEA
UK	Biotechnology and Biological Sciences Research Council BBSRC
UK	Technology Strategy Board TSB

Objective

The EU's energy strategy sets out to replace 12% of total energy consumption with renewable sources such as bioenergy by 2010. Bioenergy is a form of energy that could bring many benefits to the developing as well as the developed world. The biomass used to create bioenergy or biofuels is abundant in many countries, especially in the form of agricultural by-products. Growing bioenergy crops can give a boost to rural economies, providing an alternative market for existing crops. Biomass also has the advantage that it can be mixed in with other fuel sources. As an energy source biomass is nearly 'CO2 neutral'.

The initial 50-month ERA-NET Bioenergy programme which was launched in 2004 sets out to develop a sustainable, long-term platform for transnational cooperation in bioenergy research across the EU. Across Europe there are many national and regional bioenergy research programmes which have been working independently, driven by the potential benefits of bioenergy and renewable energy sources.

The ERA-NET Bioenergy project is focused on developing structured cooperation between national bioenergy research programmes in the EU Member States. Its mission is to enhance the quality and cost-effectiveness of European bioenergy research programmes and encourage the development of new transnational research projects.

A further focus of the Bioenergy programme is to enhance the complementarity and synergy between Community actions undertaken under the EU's Framework Programme and those of other European scientific cooperation organisations, such as COST, EUREKA, etc. Over the first four years of operation the programme has developed 'cooperation models' for both short and long term projects which take into account the legal aspects, selection criteria, evaluation methods, financial support and monitoring methods.

Gaps have been identified in research, and opportunities for interdisciplinary work have been pinpointed. A platform has been created for information exchange between programme managers and pilots of transnational bioenergy research in joint work programmes.

To ensure the effectiveness and gained experience in the cooperation models the programme has been extended for two more years with EC funding until 31st December 2010. After this EU funded period six partners decided to continue the work on a self-funded basis which is intended to last for 2015. In 2013 two more partners joined the consortium.

Consortium

The ERA-NET Bioenergy consortium consists of organisations that finance or manage national or regional research activities with respect to bioenergy. The ERA-NET Bioenergy consortium combines the basic elements of RTD programmes for a successful bioenergy development of all participating countries. All consortium partners are key players in the stimulation of research activities in this field. Their involvement in the consortium enables the ERA-NET Bioenergy project to combine national policy makers and policy executing organisations of different European countries to learn from each other and research the possibilities of coordination and cooperation of RTD programmes. The involvement of all three elements (ministries, agencies, programmes) is essential for the project. There were 15 countries participating in the ERA-NET Bioenergy network until 31 December 2010. The self-funded consortium from 2011 consists of eight partners (from the Netherlands Germany, Austria, Ireland, Poland, Sweden and the UK) and four observers: Energinet.dk (Denmark), Finnish Funding Agency for Technology and Innovation TEKES (Finland), French Environment and Energy Management Agency ADEME (France) and Engineering and Physical Sciences Research Council EPSRC (United Kingdom).

Mapping and scoping activities

- Create a structure for cooperation and systematic information exchange;
- Identify areas of common strategic interest for collaboration by networking national RTD programmes;
- Develop a workable model of cooperation between the partners;
- Set up pilots of joint work packages and learn from these projects;
- Develop national political support and expand the collaboration by dissemination of results.

The involvement of high level management from each of the ERA-NET partners helps ensure that the project results will become embedded in national research policies.

Joint calls

First call 2006
Pilot call

The first pilot joint call for proposals on the topic "Small Scale Combustion" was launched at the beginning of March 2006. The process resulted in five funded projects with a total granted support of EUR 1.7 million (total project costs: EUR 2.1 million) provided by the participating countries Sweden, Austria, Germany, Finland and the United Kingdom.

Projects funded:

1. Development of Test Methods for Non Wood Small-Scale Combustion Plants. Coordinator: University of Nottingham

(United Kingdom). Participating countries: Austria, Germany, Sweden and Finland

2. BIOMASS-PM - Clean Biomass Combustion in Residential Heating: Particulate Measurements, Sampling and physicochemical and Toxicological Characterization. Coordinator: Austrian Bioenergy Center GmbH (Austria). Participating countries: Finland, Germany, Austria, Sweden
3. Combustion Characteristics of Ash Rich Pellets - Evaluation of technology for small scale combustion of pellets from new ash rich biomasses regarding combustion technology and emission reduction in special case particulate matter and NOx. Coordinator: University of Kuopio (Finland). Participating countries: Sweden, Finland, Germany
4. Small Scale Biomass-Fired CHP Systems Coordinator: Swedish University of Agricultural Sciences (Sweden). Participating countries: United Kingdom, Germany
5. COPECOM - Control Potential of Different Operating Methods in Small-Scale Wood Pellet Combustion. Coordinator: Tampere University of Technology (Finland). Participating countries: Finland, Sweden

Second call 2007

The second joint call within the framework of ERA-NET Bioenergy was the Joint Call Gasification: cleaning and treatment of product gas from biomass gasifiers. This call was launched on 1st June 2007 and was specifically for the topic: treatment and cleaning of product gas from biomass gasifiers. Six Projects were funded with a total granted support of EUR 3.7 million (total project costs: EUR 4.6 million), provided by the participating countries Sweden, Germany, the Netherlands, United Kingdom, Denmark and Austria.

Projects funded:

1. Development of a photoionization-detection technique for on-line measurement of biomass tar concentrations. Coordinator: Biomass Technology Group BTG (The Netherlands). Participating countries: The Netherlands, Sweden
2. EMF - Mop Fan and Electrofilter: an innovative approach to cleaning product gases from biomass gasification. Coordinator: Technische Universität Berlin (Germany). Participating countries: Germany, United Kingdom
3. Synclean - Intensification of Syngas Cleaning and Hydrogen Separation. Coordinator: Institut für Mikrotechnik Mainz GmbH (Germany). Participating countries: United Kingdom, Germany
4. Tar removal from low-temperature gasifiers. Coordinator: Energy Research Centre ECN (The Netherlands). Participating countries: The Netherlands, Denmark
5. Energy efficient selective reforming of hydro carbons. Coordinator: Chalmers University (Sweden). Participating countries: Sweden, Denmark
6. OptiBtLGas - Cleaning and treatment of Product Gas from biomassgasifiersoptimisation of the H2:CO - ratio in synthesis gases for the production of 2nd generation biofuels. Coordinator: CU Tec Institut (Germany). Participating countries: Germany, Austria

Third call 2008

On 2nd January 2008, the Joint Call on Short Rotation Coppice (woody species) was launched within the framework of ERA-NET Bioenergy. The call aims to generate joint European research and development activities and focuses on three topics:

- Genetic improvement of Salix and other woody SRC species
- Improving the value chain of SRC
- Environmental aspects of SRC

Three projects were funded with a total granted support of EUR 2.2 million (total project costs: EUR 2.7 million), provided by the participating countries Germany, France, Sweden, Austria, United Kingdom.

Projects funded:

1. CREFF - Cost reduction and efficiency improvement of Short Rotation Coppice. Coordinator: INRA (France). Participating countries: France, Germany, Austria
2. RATING-SRC - Reducing environmental impacts of SRC through evidence-based integrated decision support tools. Coordinator: Rothamstad Research (United Kingdom). Participating countries: United Kingdom, Sweden
3. BREDNet-SRC - Towards targeted breeding of a European SRC willow crop for diverse environments and future climates. Coordinator: Swedish University of Agricultural Sciences (Sweden). Participating countries: Sweden, Germany, United Kingdom

Fourth call 2009

ERA-NET Bioenergy launched on 9th February 2009 the joint call on Clean Biomass Combustion Clean Biomass Combustion is a sustainable way to ensure a renewable energy supply and improved air quality. It is also a prerequisite for a significant extension of biomass use for power and heat production. The call aims to generate joint European research and development activities and focused on four topics:

- Modelling of the combustion process
- Advanced characterisation and relevant standardisation of biofuels
- Technology development for fine particle and NO_x reduction (< 20 MW_{th})
- Health effects of small scale combustion (< 3 MW_{th})

Four projects were funded with a total granted support of EUR 6.1 million (total project costs: EUR 8.5 million), provided by the participating countries Austria, Germany, Sweden, Poland, Denmark, Finland, France, Ireland.

Projects funded:

1. BIOHEALTH – Health effects of particulate emissions from small scale biomass combustion. Coordinator: University of Eastern Finland (Finland). Participating countries: Austria, Finland, France, Sweden
2. BIOMODELLING – Advanced Biomass Combustion Modelling for Clean Energy Production. Coordinator: Czestochowa University of Technology (Poland). Participating countries: Finland, Poland, Sweden
3. FUTUREBIOTEC – Future low emission biomass combustion systems. Coordinator: Bioenergy 2020+ (Austria). Participating countries: Austria, Germany, Denmark, Finland, Ireland, Norway, Poland, Sweden
4. SCITOBICOM – Scientific tools for fuel characterization for clean and efficient biomass combustion. Coordinator: Technical University of Denmark (Denmark). Participating countries: Austria, Denmark, Norway, Finland

Two other proposals, which were included in the originally submitted proposals, were subsequently implemented through funding support outside of the formal ERA-NET Bioenergy process.

Projects funded:

1. EN-PME-TEST – Common European method for the determination of particulate matter emissions of solid fuel burning appliances and boilers. Coordinator: Bioenergy 2020+ (Austria). Participating countries: Austria, Switzerland, Germany, Denmark, Finland, France, Sweden
2. BRAN BLENDING - Development of a low emission standardized biomass fuel from bran. Coordinator: Austria Research Institute for Chemistry and Technology (Austria). Participating countries: Austria, France, Sweden

Fifth call 2010

Joint Call between ERA-NET Bioenergy and WoodWisdom-Net.

The Joint Call: Sustainable forest management and optimised use of lignocellulosic resources - Bridging gaps between research disciplines, producers, consumers and society was launched 15th September 2010.

Call topics:

1. Forest for multiple needs of society, including enhanced productivity and optimised use of forest feedstock.
2. Advanced products and technologies for primary wood processing and manufacturing of wood and fibre-based products.
3. Advanced biofuels and biorefineries.

The total public funding of EUR 18.5 million for the call is provided by the 19 participating national funding organisations from Finland, France, Germany, Ireland, Italy, Latvia, Norway, Poland, Slovenia, Spain, Sweden, Turkey and the United Kingdom.

Under this joint call 13 projects of ERA-NET Bioenergy and WoodWisdom-Net 2 started in early 2012.

Projects funded:

1. Cell-Assembly - Self-Assembled Bio-mimetic Wood-Based Nanocomposites. Coordinator: Aalto University (Finland). Participating countries: Finland, Germany, Sweden
2. LBTGC - Load Bearing Timber-Glass Composite Structures. Coordinator: Vienna University of Technology (Austria). Participating countries: Austria, Sweden, Germany, Turkey, Slovenia, China, Brazil
3. RegioPower - A regional IT-based platform for bringing resource needs and land-based resource production together. Coordinator: Dresden University of Technology (Germany). Participating countries: Germany, Sweden, Finland, Slovenia, China
4. WoodApps - Improvement in collaboration along the wood value chain through knowledge-based methods and mobile applications. Coordinator: Research Association High Competence Network (Germany). Participating countries: Germany, Slovenia, Sweden, Ireland
5. WOP - WoodSupply. Coordinator: University of Helsinki (Finland). Participating countries: Finland, Sweden, Germany
6. GREASE - A novel lipid platform to sustainable bio-based products from low-value forestry streams through multi-functional fatty acids. Coordinator: VTT Technical Research Centre of Finland (Finland). Participating countries: Finland, Sweden, Germany, Italy, Turkey
7. BIOFOAMBARK - Bark Valorization into insulating Foams and Bioenergy. Coordinator: Institute of Forest Utilization and Works Science, University of Freiburg (Germany). Participating countries: Germany, Finland, France, Slovenia, Spain, Italy
8. PowerBond - Enhancement of Fiber and Bond Strength Properties for Creating Added Value in Paper Products. Coordinator: Tampere University of Technology (Finland). Participating countries: Finland, Germany, France, Sweden, Austria
9. ProLignin - High-value products from lignin side-steams of modern Biorefineries. Coordinator: VTT Technical Research Centre of Finland (Finland). Participating countries: Finland, Latvia, Germany, Italy, Spain, Norway, United States, Brazil
10. WOBAMA - Wood Based Materials and Fuels. Coordinator: Kungliga Tekniska Högskolan (Sweden). Participating countries: Finland, Sweden, France, Poland
11. AgroCop - Maximizing Timber and Energy Wood Production by Innovative Agroforestry Systems with Short Rotation Coppice as Intercrop. Coordinator: FVA Baden-Württemberg (Germany). Participating countries: Germany, France, Ireland, United Kingdom, Italy
12. PINOBIO - Pinosylvins as novel Bioactive Agents for Food Applications. Coordinator: University of Eastern Finland (Finland). Participating countries: Finland, Slovenia, Latvia, Spain
13. COOL - COMPETING USES OF FOREST LAND – The future of integrative and segregative policy and forest management approaches in Europe. Coordinator: Institute of Forest and Environmental Policy (IFP)/University of Freiburg (Germany). Participating countries: Finland, Germany, Norway, Slovenia, Spain

Sixth call 2012

The 6th ERA-NET Bioenergy joint call on Biogas and Energy Crops was launched on 1st March 2012 and will support transnational research and development projects in areas ranging from energy plant breeding to biogas upgrading.

Call topics:

- Innovative biogas production. Focal points include e.g. pre-treatment technologies, unexploited substrates, measurement/ control, upgrading, management of digestate.
- Sustainable biomass for energy purposes. Focal points include e.g. optimisation of existing and new crops by way of plant breeding or cultivation techniques, breeding and cultivation for cascading uses, harvesting/storage technologies.

Four projects were funded with a total granted support of EUR 4.3 million (total project costs: EUR 6.6 million) provided by the participating countries Sweden, Poland, Germany, Ireland and the United Kingdom.

Funded projects:

1. SE Biomethane - Small but efficient – Cost and Energy efficient BioMethane Production. Coordinator: Swedish University of Agricultural Sciences (Sweden). Participating countries: Germany, Sweden, Poland
2. ORNATE - Optimisation of Reed Canary Grass as a native European Energy Crop. Coordinator: IBERS Aberystwyth University (United Kingdom). Participating countries: Sweden, Ireland, United Kingdom, United States
3. AmbiGAS - Biogas production from high volume industrial effluents at ambient temperatures. Coordinator: University of Southampton (United Kingdom). Participating countries: United Kingdom, Ireland, Germany, Sweden
4. ERANET GAS - Genetic Adaptation of Sorghum: Genomics-based breeding of a sustainable, next-generation bioenergy crop for Europe. Coordinator: Justus Liebig University Giessen (Germany). Participating countries: Germany, Sweden, Poland

Seventh call 2013

The seventh joint call on Small-scale heat and power production from biomass was launched on 1st March 2013.

Four countries are participating (Sweden, Germany, Poland and the United Kingdom) with a total budget of EUR 3.6 million.