LAC-ACCESS

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Connecting high-quality research between the European Union and Latin American and Caribbean Countries

Jana Machačová
(ZSI)

THEMATIC REPORT on Energy/Biofuels

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Edited by Jana Machačová (ZSI, Vienna)

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Contact:
Jana Machačová
c/o Centre for Social Innovation
Linke Wienzeile 246, A-1150 Vienna, Austria
ZVR: 757405110
Tel: 0043-1-49 50 442 48
Fax: 0043-1-49 50 442 40
machacova@zsi.at
http://www.zsi.at/

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Content

1 Introduction

The Thematic Report on Energy/Biofuels is produced in the context of the project LAC-ACCESS, which is funded by the 6th Framework Programme for Research and Technological Development (FP6). The project's central objective is to bridge high-quality research organisations in Latin America and the Caribbean (LAC) with those of the European Union (EU), focusing in particular on the 7th Framework Programme for Research and Technological Development (FP7). The project's duration is 28 months (January 2007 – April 2009).

The purpose of this report is to facilitate and provide useful information on existing initiatives, support programmes and current research activities on EU level with a special focus on biofuels research. The major programmes, supporting initiatives and instruments (e.g. ERA-NET, Joint Technology Initiatives) are listed and key research players and organizations presented in structured way. The report concludes with an overview and description of selected projects implemented in the EU but also informs about projects linking EU and LAC's countries in this scientific field.

This report is based upon the desk research and provides information gathered from diverse European sources. In several cases, information related to the projects was provided by project managers. The report was compiled in summer 2008.
Similar reports are produced also in the fields of agricultural research, technology-enhanced learning (TEL) and research focusing on public health.

1.1 Biofuels - situation in the European Union

In Europe, a few countries began to take an interest in biofuels during early 1990s. The EU began to pay serious attention to the subject in 2001, when the European Commission (EC) brought forward the legislative proposals that were adopted in 2003.

The European strategy for renewable energy sources identifies bioenergy as the most important renewable energy source for the future: a source of cleaner, more secure and sustainable power for Europe. Bioenergy is a highly diverse area: crops are converted to biofuels for transport; landfill sites are tapped for biogas to heat towns; and forestry residues are used to produce electricity. The EU is supporting biofuels with the objectives of reducing greenhouse gas (GHG) emissions, boosting the decarbonisation of transport fuels, diversifying fuel supply sources and developing long-term replacements for fossil oil. The development of biofuel production is expected to offer new opportunities to diversify income and employment in rural areas.

In the context of the review of the Biofuels Directive (carried out by the EC at the end of 2006), attention is being paid to the issue of cost-effectiveness, the level of ambition after 2010, and to assessing and monitoring the full environmental impact of biofuels. The production of biofuels from suitable feedstocks could also generate

economic and environmental benefits in a number of developing countries, create additional employment, reduce energy import bills and open up potential export markets. In particular, the production of bioethanol could offer a feasible alternative for some sugar-producing countries affected by the reform of the EU sugar regime. (EU Strategy for Biofuels)

The EU has a significant potential for the production of biofuels. Biofuel use has to increase from its present low usage - less than 2% of overall fuel - to a substantial fraction of the transportation fuel consumption in Europe (target of 25% in 2030). It is estimated that between 4 and 13% of the total agricultural land in the EU would be needed to produce the amount of biofuels to reach the level of liquid fossil fuel replacement required for the transport sector in the Directive 2003/30/EC. Creating an EU market for biofuels will offer an opportunity for the new Member States that have more agricultural land and will facilitate the absorption of the agricultural sector in the Common Agricultural Policy. (Vision 2030).

As stated already, biofuels production represents a major opportunity for the European economy. There is a need to accelerate the development of promising/innovative energy technologies and research in this area should be empowered. The newly established European Institute of Technology (EIT) could play an important role in helping to achieve those targets. For more information about EIT, please see chapter 3 Key EU research institutes and organizations.

1.2 Webportals on Biofuels

Apart from major EC's information sources (e.g. Community Research and Development Information Service webpage - CORDIS[1], ERAWATCH[2] and ManagEnergy Initiative[3]) indicated in upcoming chapters and supported by EC programmes on project basis (e.g. Biofuel Marketplace http://www.biofuelmarketplace.com/), there are several web-platforms providing overall information about bioenergy/biofuels, e.g.:

- Biofuels, Bioproducts & Biorefining (Biofpr): http://www.biofpr.com/
- Biofules International: http://www.biofuels-news.com/
- BioenergyWiki: http://www.bioenergywiki.net/
- Bioenergy International: http://www.bioenergyinternational.com/
- Bioenergy World: http://www.bioenergy-world.com/
- Enagri: Bioenergy, Biofuels, Biomass, Energy Agriculture and Renewable Energy: http://www.enagri.info/index.php
- Euractive.com: http://www.euractiv.com/en/energy

The Community Research and Development Information Service webpage (CORDIS) provides detailed information about Framework Programmes' calls and their work

[1] http://cordis.europa.eu/fp7/energy/home_en.html

[2] http://cordis.europa.eu/erawatch/

[3] http://www.managenergy.net/

programmes and ERAWATCH informs about national and regional research policies, actors, organisations and programmes. ManagEnergy is an initiative of the EC Directorate-General for Energy and Transport, which aims to support the work of actors working on energy efficiency and renewable energies at the local and regional level. The main tools are sectoral advice, training, workshops and online events. Additionally information is provided on case studies, good practice, European legislation and programmes.

2 Relevant EU support mechanisms/programmes and initiatives

2.1 FP7 Programme[4]

The Framework Programme (FP) is the European Union's main instrument for funding research and development (R&D).

The 7th Framework Programme (FP7) bundles all research-related EU initiatives together under a common roof playing a crucial role in reaching the goals of growth, competitiveness and employment; along with a new Competitiveness and Innovation Framework Programme (CIP), Education and Training programmes, and Structural and Cohesion Funds for regional convergence and competitiveness. It is also a key pillar for the European Research Area (ERA).
The FP7 is operating for seven years from January 1, 2007 with a budget of approximately EUR 50.5 billion.

The broad objectives of FP7 have been grouped into four categories – programmes:

- 'Cooperation';
- 'Ideas';
- 'People'; and
- 'Capacities'.

All specific programmes work together to promote and encourage the creation of European poles of (scientific) excellence. The non-nuclear research activities of the Joint Research Centre (JRC) are grouped under a specific programme with individual budget allocation.

The programme **'Cooperation'**[5] covers collaborative research, carried out in trans-national cooperation (consortia) and Joint Technology Initiatives (based on Technology Platforms) and covers following themes: Health; Food, Agriculture and Fisheries, and Biotechnology; Information and Communication Technologies (ICT); Nanosciences, Nanotechnologies, Materials and new Production Technologies; **Energy**; Environment (including Climate Change); Transport (including Aeronautics); Socio-Economic Sciences and the Humanities; Space and Security.

[4] http://cordis.europa.eu/fp7/home_en.html

[5] http://cordis.europa.eu/fp7/cooperation/home_en.html

The programme **'Ideas'** covers basic, frontier research, carried out across all fields by individual teams.[6] For its implementation, a European Research Council (ERC), consisting of an independent Scientific Council and a dedicated implementation structure, has been established by EC and more detailed can be found in the chapter 3 Key EU research initiatives, players and agencies.

The programme **'People'** focuses on strengthening the human potential in research (activities supporting training and career development of researches) and detailed description of Marie Curie Actions is provided on the FP7 programme webpage[7].

The programme **'Capacities'** supports research infrastructures, research for the benefit of SMEs and the research potential of European regions. Description of the areas is also available on the FP7 webpage.[8]

The European Commission (EC) has made international cooperation a major aspect of FP7. Open to participation from nearly every country in the world, FP7 is the largest international R&D programme worldwide. Participation of the Latin America and the Caribbean (LAC) countries is specifically encouraged and there are different categories of countries which may have varying eligibility for different specific and work programmes. The list of International Co-operation Partner Countries (ICPC) is always in the annex of each work programme for individual themes.

Comprehensive overview of legislative documents, participation regulations, publication and newsletters related to Energy/Biofuels is available in the CORDIS Library - Energy.[9]

2.1.1 FP7 Cooperation, Theme 5: Energy[10]

There are several possibilities under the programme 'Cooperation' (consisting of nine Thematic Areas/Priorities) to support research cooperation projects across the EU and beyond.

The overall budget dedicated to theme 5 for the period 2007 – 2013 is EUR 2.3 billion, which represents 7% allocated financial resources from 'Cooperation' programme (app. EUR 32 billion).

Taking into account biofuels, special attention should be given to the **FP7 Energy - Theme 5, Activity 3: Renewable fuel production**. As indicated in the Work Programme – Energy, this activity aims to research, develop and demonstrate improved fuel production systems and conversion technologies for the sustainable

[6] http://cordis.europa.eu/fp7/ideas/home_en.html

[7] http://cordis.europa.eu/fp7/people/home_en.html

[8] http://cordis.europa.eu/fp7/capacities/home_en.html

[9] http://cordis.europa.eu/fp7/energy/library_en.html

[10] http://cordis.europa.eu/fp7/energy/about_en.html

production and supply chains of solid, liquid and gaseous fuels from biomass (incl. biodegradable fraction of waste). Emphasis are given on new types of biofuels in particular for transport and electricity as well as on new production, storage and distribution routes for existing biofuels, including the integrated production of energy and other added-value products through biorefineries. Aiming to deliver 'source to user' carbon benefits, research should focus on improving energy efficiency, enhancing technology integration and use of feedstock. Issues such as feedstock logistics, pre-normative research and standardisation for safe and reliable use in transport and stationary applications are included. To exploit the potential for renewable hydrogen production, biomass, renewable electricity and solar energy driven processes are supported.

The FP7 Energy - Theme 5, Activity 3: Renewable fuel production has been structured in seven areas as follows:

- FP7 Energy.3.1: First Generation Fuel from Biomass;
- FP7 Energy.3.2: Second Generation Fuel from Biomass;
- FP7 Energy.3.3: Biorefinery;
- FP7 Energy.3.4: Biofuels from Energy Crops;
- FP7 Energy.3.5: Alternative Routes to Renewable Fuel Production;
- FP7 Energy.3.6: Biofuel Use in Transport; and
- FP7 Energy.3.7: Cross-cutting issues.

Listing of all topics called and funding schemes within Activity 3 is available on the CORDIS webpage.[11]

There were two general calls published in the framework of the 2008 Work Programme. One general call (**FP7-ENERGY-2008-1**) was published on November 30, 2007 with a focus on research with a longer term perspective, with a view to accelerating technology development. In this call, the importance of linking researchers between the EU and Latin America in the field of biofuels was highlighted in one of the areas. For further information please see sub-chapter: 2.1.2 International cooperation in FP7 – possibilities for LAC in Theme 5.

The second general call (**FP7-ENERGY-2008-TREN-1**) was published on April 29, 2008 and addresses different technologies at research areas and topic level. The call was implemented using Collaborative Projects and Coordination and Support Actions and the funding scheme applicable to each topic is indicated in this Work Programme, along with guidance as to the expected level of ambition and other relevant information.

More detailed information above mentioned areas, revised Work Programme - Energy 2008 with listing all relevant, actual Calls for Proposals for Energy under FP7 including Specific International Cooperation Actions (SICA) and can be downloaded at the CORDIS webpage.[12]

[11] http://cordis.europa.eu/fp7/energy/about3_en.html

[12] http://cordis.europa.eu/fp7/dc/index.cfm?fuseaction=usersite.FP7DetailsCallPage&CALL_ID=127

The Work Programme 2009 for Energy was released by the EC on August 28, 2008 and new calls (**FP7-ENERGY-2009-1, FP7-ENERGY-2009-2, FP7-ENERGY-2009-3, FP7-2009-BIOREFINERY_CP)** have been announced on September 3, 2008 with several topics related to biofuels (except FP7-ENERGY-2009-2). Additionally, the **Biorefinery Joint Call** (**FP7-2009-BIOREFINERY_CSA, FP7-2009-BIOREFINERY_CP)** has been announced and more information related to this call is provided in chapter 2.1.2 International cooperation in FP7 – possibilities for LAC in FP7 Cooperation, Theme 5.

In the Energy Call Part 1 (FP7-ENERGY-2009-1) under the Activity Energy 3: Renewable Fuel Production, Area Energy 3.2 Second Generation fuel from Biomass two topics have been called:

- **ENERGY.2009.3.2.1: Algal and other suitable non-food aquatic biomass feedstock for 2nd generation biofuel production**; and
- **ENERGY.2009.3.2.2: Biowaste as feedstock for 2nd generation**.

In the Energy Call Part 3 (FP7-ENERGY-2009-3) under the Activity Energy 3: Renewable Fuel Production, Area Energy 3.7 Cross Cutting Issues one topic relevant to this thematic report has been announced:

- **ENERGY.2009.3.7.1: Support to the coordination of stakeholder' activities in the filed of Biofuels.**

The project proposals for indicated calls (Part 1 and Part 2) have to be submitted until November 25, 2008 and detailed information about individual calls is available on the internet. [13]

It is necessary to mention the overlaps of this theme with other themes of FP7, such as theme 2 – Food, Agriculture and Fisheries, Biotechnology (FAFB); theme 4 – Nanosciences, Nanotechnologies, Materials and new Production Technologies; theme 6 – Environment (including Climate Change) and theme 7 – Transport. Therefore it is strongly recommended to pay enough attention to other themes too.

For example, the fourth call for proposals (**FP7-KBBE-2009-3)**[14] covering theme 2 - FAFB was published on September 3, 2008 and covers also biofuels within the area **2.3.4 Biorefinery**. Special focus is given on the development of 2nd generation biofuels with improved energy and environmental balance and which avoid the potential food/fuel conflict.

In the area **2.3.7 Biorefinery Joint Call,** the research, development and integration of innovative technologies to prove the viability related to the entire value chain (biomass production, biomass conversion, safe recycling and/or disposal of waste, conformity of end-products to end-user requirements) of advanced biorefineries is supported. More information about this call is provided in the upcoming chapter International cooperation in FP7 – possibilities for LAC in FP7 Cooperation, Theme 5.

[13] http://cordis.europa.eu/fp7/dc/index.cfm?fuseaction=UserSite.FP7ActivityCallsPage&id_activity=5

[14] http://cordis.europa.eu/fp7/dc/index.cfm?fuseaction=UserSite.FP7DetailsCallPage&call_id=143&act_code=KBBE&ID_ACTIVITY=2

2.1.2 International cooperation in FP7 – possibilities for LAC in FP7 Cooperation, Theme 5[15]

International cooperation between EU and non-EU countries is in the FP7 Energy - Theme 5 implemented through:

- **Opening up** of all research areas and topics of the Work Programme to participation of research entities from third countries.
- **Targeted Opening**
  Several topics are especially designed in order to promote participation of targeted International Cooperation Partner Countries (ICPC) within this theme. The list of ICPC is available on the webpage. [16]
- **Specific International Cooperation Actions (SICA)**
  These actions are dedicated to international co-operation with partners from ICPC.

As a result of energy research dialogues other forms of specific actions might be implemented, such as coordinated calls for co-funded projects.

As already indicated, the necessity to link European researchers with researcher in Latin America in the field of biofuels was indicated in call **FP7-ENERGY-2008-1,** which was published on November 30, 2007.
Under the area **3.2: Second Generation Fuel from Biomass, topic ENERGY.2008.3.2.1:Enhancing international cooperation between the EU and Latin America in the field of biofuels**, significant enhancement of the cooperation between key researchers and industries from the EU and Latin America was supported. Proposals (Collaborative Projects with a predominant research component, Specific International Cooperation Action - SICA) should address the characterization of feedstock and pre-treatment technology, optimization of the production processes for 1st and 2nd generation biofuels, sustainability issues and coproduction of biofuels and bioproducts.

The call was offering in total EUR 26.3 million and the deadline of submission was on February 26, 2008 (stage 1) and June 3, 2008 (stage 2 - only for proposals retained at stage 1). According to the information provided by RTD Sustainable Energy Systems Helpdesk (EC, DG for Research), successful applicants of this call have not signed the contracts yet and all approved projects should be found, once they are signed, on the CORDIS webpage.[17]

As already stated, one of the important aspects of FP7 is the overlapping approach across research themes. For example, the fourth call for proposals (**FP7-KBBE-2009-3)** covering theme 2 - Food, Agriculture and Fisheries, and Biotechnology is also supporting research on biofuels within the area **2.3.4 Biorefinery**.

[15] http://cordis.europa.eu/fp7/energy/int-cooperation_en.html

[16] ftp://ftp.cordis.europa.eu/pub/fp7/docs/icpc-list.pdf

[17] http://cordis.europa.eu/fp7/projects_en.html

There are several topics indicated in the area 2.3.4 Biorefinery, where participation of countries from Latin America is explicitly requested:

- **FP7-KBBE-2009-3-4-01: Biomass and bioproducts: sustainability certification and socioeconomic implications** – Mandatory ICPC (Latin America, Africa and /or Asia); and
- **FP7-KBBE-2009-3-4-02: Biomass pre-treatment for optimized biomas deconstruction and analytical characterization** – SICA (Brasil)

In the frame of the Work Programme 2009 Food, Agriculture and Fisheries, and Biotechnology, in the area 2.3.1 Novel sources of biomass and bioproducts, there is one topic called, where participation from Latin America is encouraged:

- **KBBE-2009-3-1-02: Jatropha curcas - breeding strategy - towards a sustainable crop for biomaterials and biofuels** – SICA (India and/or African ACP and/or Latin America)

According to the Work Programme, the sustainability of the production systems of Jatropha (an oil crop growing in tropical regions) should be evaluated within this topic including energy balance and environmental/economical analysis. Attention should focus on analysing non-toxic/non carcinogenic versus toxic accessions including aspects of plant protection given the potential of multiple applications of the protein-rich by-products, such as animal feed and/or other valuable components, through the bio-refinery concept.

The **Biorefinery Joint Call (FP7-2009-BIOREFINERY)** was published on September 3, 2008 with deadline stage 1 proposal on December 2, 2008 and deadline stage 2 on May 2, 2009. Evaluation results should be expected in the second half of July 2009. The indicative budget is in total EUR 57 million and consists of individual budgets from theme 2 - Food, Agriculture and Fisheries, Biotechnology, theme 4 - Nanosciences, nanotechnologies, materials and new production technologies, theme 5 - Energy and theme 6 - Environment. The final budget awarded to this call, following the evaluation of projects, may vary by up to 10% of the total value of the call.

The Biorefinery Joint Call aims at the research, development and integration of innovative technologies to prove the viability of advanced biorefineries taking into account the entire value chain and sustainability issue.

It will be implemented through two topics:

- **Sustainable Biorefineries** (indicative budget EUR 55 million) will be targeted at the funding of a limited number of large, multi-disciplinary, collaborative projects addressing bio-products, bio-energy, sustainability and technical and economical viability.
- **Enhancing exchange of information, synergies and cross-fertilization between projects in the field of Biorefineries** (indicative budget EUR 2 million) will further seek to promote coordination of on-going research at European and national levels across Biotechnology, Energy, Industrial Technologies and Environment on distinctive features of the biorefinery concept through a single Coordination Action.

This joint call was presented at the Info day on the Biorefinery Joint Call[18] in Brussels, Belgium on September 16, 2008 which was organized by DG RTD Directorates: Biotechnology, Agriculture, Food; Industrial Technologies; Environment; Energy and by Directorate D (New and renewable sources of energy, energy efficiency & innovation) of DG Transport and Energy.

More information related to the Info day on the Biorefinery Joint Call including information booklet, call supporting documents, presentations and list of participants is available on the internet.[19]

2.2 European Technology Platforms (ETPs)

The European Technology Platforms (ETPs) provide a means to foster effective public-private partnerships between the research community, industry and policy makers in order to deliver the impetus to mobilise the research and innovation effort towards achieving a common goal. The role of Technology Platforms in stimulating more effective RTD, particularly in the private sector, can contribute directly to achieving the Lisbon objectives, developing the European Research Area (ERA) and increasing investment in R&D towards the 3% of GDP target.

A Technology Platform (TP) is a mechanism to bring together all interested stakeholders to develop a long-term vision to address a specific challenge, create a coherent, dynamic strategy to achieve its vision and steer the implementation of an action plan to deliver agreed programmes of activities and optimise the benefits for all parties. The elaboration and follow-up of a Strategic Research Agenda (SRA) form a crucial part of the implementation strategy, to optimise the contribution of RTD to the process. In achieving its wider goals, a TP should, in a medium to long term perspective, generate sustainable competitiveness and world leadership for the EU in the field concerned, by stimulating increased and more effective investment in R&D, accelerating innovation and eliminating the barriers to the deployment and growth of new technologies.

Technology Platforms follow three stages of development:

- Agreement on a common vision for technological development in the sector;
- Definition of a Strategic Research Agenda (medium and long-term);
- Mobilization of financial and human resources to implement the Strategic Research Agenda (SRA).

Nowadays, there are 30 European Technology Platforms created so far and detailed information on individual platforms is available at CORDIS webpage.[20]

[18] http://cordis.europa.eu/search/index.cfm?fuseaction=events.document&EV_RCN=29699

[19] http://circa.europa.eu/Public/irc/rtd/susbioref/library?l=/biorefinery_info&vm=detailed&sb=Title

[20] http://cordis.europa.eu/technology-platforms/individual_en.html

2.2.1 European Biofuels Technology Platform (Biofuels TP)[21]

The European Biofuels Technology Platform (launched in June 2006) aims to develop cost-competitive, world class biofuel technology, contribute to the creation of a European biofuels industry and accelerate the deployment of biofuels.

The Biofuels TP implements the major proposals outlined in the final report of BIOFRAC[22] presenting a long-term view on how to overcome the technical and non-technical barriers for biofuel deployment in the EU and worldwide. The main contribution is the development of the Biofuels TP Strategic Research Agenda and Strategy Deployment Document (SRA/SDD) identifying key RD&D working lines for the next decades, as necessary to achieve the Vision 2030. It also provides a reliable source of information and opinion on the development of biofuels for transport in the EU. The SRA/SDD was launched at the First Stakeholder Plenary Meeting in Brussels on January 31, 2008.

The platform is supervised by a Steering Committee, activities are carried out by the members of five Working Groups (WGs) and inspected by a Member State Mirror Group. It is supported by a Secretariat that receives partial financial support from the EC (FP6). The Secretariat is coordinated by the Swedish Energy Agency (STEM, Eskilstuna, Sweden) in association with Fachagentur Nachwachsende Rohstoffe e.V (FNR, Gülzow, Germany). The CPL Press (CPL, Newbury, UK) is responsible for the website and public relations activities.

2.2.2 European Hydrogen and Fuel Cell Technology Platform (HFP)[23]

The European Hydrogen and Fuel Cell Technology Platform (HFP) was endorsed on recommendation by the EC's High Level Group (HLG) on Hydrogen and Fuel Cells in September 2003. The main goal of the platform is to facilitate and accelerate the development and deployment of cost-competitive, world class European hydrogen and fuel cell based energy systems and component technologies for applications in transport, stationary and portable power.

The platform assists in the efficient co-ordination of European, national, regional and local research, development and deployment programmes and initiatives and ensures a balanced and active participation of the major stakeholders (i.e. industry, scientific community, public authorities, users, civil society). It helps to develop awareness of fuel cell and hydrogen market opportunities and energy scenarios and fosters future co-operation, both within the EU and at global scale. The platform helps to identify and promote deployment opportunities both for energy infrastructure and services.

[21] http://www.biofuelstp.eu/

[22] 'Biofuels in the European Union - A vision for 2030 and beyond' Final report of the Biofuels Research Advisory Council'

[23] https://www.hfpeurope.org/

2.3 Joint Technology Initiatives (JTIs)[24]

Joint Technology Initiatives (JTIs) are one of the major elements of the 7th Framework Programme for Research and Technological Development (FP7). They provide a way of creating new partnerships between publicly and privately-funded organisations involved in research, focusing on areas where research and technological development can contribute to European competitiveness and quality of life. The approach proposed by the JTIs signals a real change in how Europe promotes industry-driven research, designed to establish European leadership in certain technologies that are strategic to Europe's future.

In its structure, JTIs are independent legal entities managing research projects in an integrated way, with industry joining forces with other stakeholders. JTIs organise calls for proposals, oversee selection procedures and put in place contractual arrangements for projects set up to implement the JTI research agenda. JTIs will thus allow funds from different sources to be jointly managed and will be responsible for communication and dissemination activities.

Each JTI includes a Governing Board, an Executive Director as well as other bodies, covering advisory bodies, depending on its specific operational and governance needs.

Name:	**Fuel Cells and Hydrogen Joint Technology Initiative**
Contact:	Not available
Email:	florian.frank@ec.europa.eu;Joaquin.Martin_Bermejo@ec.europa.eu
Website:	Not available

The Fuel Cells and Hydrogen Joint Technology Initiative was adopted by Council on May 30, 2008. This public-private joint technology initiative (JTI) will implement the EU target-oriented research and development to support the broad market introduction of these technologies. Founding members are the European Community and a non-profit association of European industry interests composed of a major share of Europe's fuel cells and hydrogen companies of all sizes from micro to large multinationals. The EC is expected to fund EUR 470 million from the FP7 for a period of six years.

The main goal of the JTI is to speed up the development of fuel cells and hydrogen technologies in Europe and enable their commercialisation between 2010 and 2020. The partnership will implement an integrated and efficient programme of basic and applied research and technology development activities, demonstration and support actions focused on the most promising applications. The JTI will ensure coordination of activities at European level in order to maximise synergies with Member States and regional programmes.

[24] http://cordis.europa.eu/fp7/jtis/about-jti_en.html

The legal entity, the Fuel Cells and Hydrogen Joint Undertaking, will be led by a Governing Board. Daily management and operations will be the responsibility of an Executive Director supported by the Programme Office with its seat in Brussels, Belgium. A Scientific Committee composed of high level personalities will advise the Governing Board. The Member States will closely follow the activities via the States Representatives Group. The Stakeholders' General Assembly will be held on an annual basis and be open to all public and private stakeholders to stimulate a dynamic debate and information exchange on ongoing and future activities.

The first calls for proposals are expected to be published in autumn 2008 after the official launch of the JTI at the first Stakeholders' General Assembly in Brussels, Belgium, which will be held on October 14 – 15, 2008. It is jointly organised by the two founding members of the Joint Technology Initiative, the European Community represented by the European Commission and the New Energy World Industry Grouping (NEW IG), the non-profit association representing a major share of Europe's hydrogen and fuel cell industries.

2.4 ERA-NETs and ERA-NET Bioenergy[25]

European Research Area Networks (ERA-NETs) is a scheme encouraged by the EC under FP6 and FP7 with the objective to support the co-operation and co-ordination of research activities carried out at national or regional level. ERA-NETs are financial supported by the FPs through SSA (Specific Support Action) during the preparatory phase and CA (Coordination Action) during the implementation.

Only 'Programme owners' (typically national ministries/regional authorities) and 'Programme managers' (such as research councils or funding agencies) are considered as eligible partners in an ERA-NET action. It should be stressed that research organisations or universities which are not programme owners or managers are not eligible partners for ERA-NET actions.

The mission of all existing ERA-NETs is to:

- propose actions to better co-ordinate research activities;
- launch call for proposals to support research activities in some EU Countries and regions and for a specific sector.

In FP7, new ERA-NET actions will be supported and existing ERA-NET actions may re-apply to receive EC support to extend and/or reinforce their integration e.g. by broadening their partnership or increasing the type of collaborations. EC plans to support the organisation of joint calls between national research programmes by 'topping-up' joint trans-national funding with EC funding in a new module, so called 'ERA-NET Plus'. More information about recent development in FP7 related to ERA-NETs is available on the internet.[26]

[25] http://www.eranetbioenergy.net/

[26] http://cordis.europa.eu/fp7/coordination/eranet_en.html

ERA-NET Bioenergy, supported through FP6, is devoted to developing a structured cooperation of Member State national agencies and Ministries responsible for coordinating and funding national research efforts in bioenergy.

The following activities are carried out:

- Setting up common strategic issues to analyse research activities leading to multinational schemes and identifying administrative or legal barriers that are hindering transnational co-operation, practical networking activities and mutual opening mechanisms;
- Implementing joint activities to develop multinational evaluation procedures, common programme monitoring and evaluation; enabling personnel exchange at programme manager level, and developing a joint bioenergy research strategy; and
- Implementing transnational research activities: setting up pilots of joint work programmes.

The ERA-NET Bioenergy consortium consists of representatives from following countries: Austria, Denmark, Finland, France, Germany, Sweden, Netherlands and United Kingdom and the project's duration is from October 2004 till December 2008.

As already stated, the goal of ERA-NET Bioenergy is to strengthen national bioenergy research programmes and one way to reach this goal is implementing joint research activities. This is realized by setting up pilots of joint transnational bioenergy research in the form of Joint Work Programmes (JWP) and by learning from these lessons. The joint work programmes are carried out as evaluations, project co-operation and joint calls. More joint calls and joint work packages are still under the preparation, for example on 'Biorefinery' and 'Synthetic natural gas from biomass'. For more information consult the webpage. [27]

2.5 Competitiveness and Innovation Framework Programme (CIP)/ Intelligent Energy - Europe Programme (IEE)[28]

The Intelligent Energy - Europe Programme (IEE) is the EU's tool for funding action to improve conditions and move towards a more energy intelligent Europe. The programme is a part of the EU's Competitiveness and Innovation Framework Programme (CIP)[29].

The IEE programme does not fund technical RTD projects and acts rather as a catalyst for socio-economic, market, regulatory, policy and institutional changes (e.g. international transfer of experience, promotion of best practices, education and training, institutional capacity building, information dissemination, creation of new standards and norms etc.).

[27] http://www.eranetbioenergy.net/website/exec/front?id=4183-6e65742e6572616e65742e50616765

[28] http://ec.europa.eu/energy/intelligent/index_en.html

[29] http://ec.europa.eu/cip/index_en.htm

Only organisations established in one of the 27 EU Member States, Croatia, Norway, Iceland and Liechtenstein can currently apply for funding from the IEE.

The recent call for proposals 2008 was closed on June, 26 2008 and for further information about results and upcoming activities in 2009, consult IEE webpage.

2.6 Financial Instrument for the Environment - LIFE+ (2007-2013)[30]

LIFE+, the new Financial Instrument for the Environment, has entered into force with the publication of the Regulation in the Official Journal L149 of June 9, 2007.

LIFE+ is a follow up of the LIFE programme, which was in operation since 1992 and co-financed approximately 2.750 projects, contributing approximately EURO 1.35 billion to the protection of the environment. LIFE projects focusing on energy and climate include energy production and distribution, renewable energy technologies, energy-efficiency in areas such as industry, services, buildings, transportation, lighting and equipment, as well as the reduction of greenhouse gases. To view most recent energy and climate projects supported by LIFE, consult webpage.[31]

With a budget of EUR 2.143 billion (for the period 2007-2013), LIFE+ is a limited but focused funding instrument providing specific support for the development and implementation of Community environmental policy and legislation, in particular the objectives of the 6th Environment Action Programme - EAP (Decision 1600/2002/EC) and resulting thematic strategies.
It comprises three components:

- LIFE+ Nature & Biodiversity;
- LIFE+ Environment Policy & Governance;
- LIFE+ Information & Communication.

According to the EC's webpage, at least 78% of LIFE+ will be for the co-financing of project action grants, of which at least 50% will be for nature and biodiversity projects. Only expenditure in EU27[32] countries is eligible at the moment, although the future participation of certain countries is possible if supplementary appropriations are received (see Article 8 of the LIFE+ Regulation).

Themes of the LIFE+ programme covers following:

- Nature, Biodiversity;
- Air;
- **Energy, climate**;
- Environmental management;
- Industry, production;
- Urban environment, quality of life;
- Soil, land-use, agriculture;

[30] http://ec.europa.eu/environment/life/funding/lifeplus.htm

[31] http://ec.europa.eu/environment/life/themes/energy/thematic.htm

[32] EU27 covers following countries: Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Netherlands and United Kingdom.

- Waste; and
- Water.

The 2008 call for proposals was published in the Official Journal on July 15, 2008 and more detailed information including the calendar is available on the LIFE+ webpage.

Information related to the **6th Environment Action Programme (EAP) 2002-2012** with four major areas of action: tackling climate change; nature and biodiversity; environment and health; and sustainable use of natural resources and management of wastes are available on webpage of the Environment Directorate-General of the European Commission.[33]

2.7 European Cooperation in the field of Scientific and Technical Research (COST)[34]

Founded in 1971, COST is an intergovernmental framework for European Cooperation in the field of Scientific and Technical Research, allowing the co-ordination of nationally funded research on a European level. COST Actions cover basic and pre-competitive research as well as activities of public utility. COST is managed by the European Science Foundation (ESF) and receives funding from the EC under the framework programmes (FP).

COST has a geographical scope beyond the EU and welcomes the participation of interested institutions from non-COST member states without any geographical restriction.

As a precursor of advanced multidisciplinary research, COST plays an important role in the realisation of the European Research Area (ERA). It anticipates and complements the activities of the EU Framework Programmes, constituting a "bridge" towards the scientific communities of emerging countries.

It also increases the mobility of researchers across Europe and fosters the establishment of scientific excellence in nine key domains:

- Biomedicine and Molecular Biosciences;
- Food and Agriculture;
- Forests, their Products and Services;
- Materials, Physical and Nanosciences;
- **Chemistry and Molecular Sciences and Technologies**[35];
- Earth System Science and Environmental Management;
- Information and Communication Technologies;

[33] http://ec.europa.eu/environment/newprg/index.htm

[34] http://www.cost.esf.org/

[35] http://www.cost.esf.org/cmst

- **Transport** [36] and Urban Development; and
- Individuals, Societies, Cultures and Health.

COST finances networking of nationally funded activities in supporting meetings, conferences, short term scientific exchanges and outreach activities. COST supports the networking of specific research themes but does not fund research projects themselves. Currently more than 200 actions are supported and it is expected that every year approximately 50 new actions will be approved. On average financial support of some EUR 100.000 p.a. as grant for normally 4 years can be expected.

More information related to open COST Calls for proposals to support Scientific and Technical Collaboration in Europe is available on the webpage.[37]

2.8 EUREKA[38]

EUREKA is a pan-European network for market-oriented, industrial R&D. Created as an intergovernmental initiative in 1985, EUREKA aims to enhance European competitiveness through its support to businesses, research centres and universities who carry out pan-European projects to develop innovative products, processes and services.

EUREKA promotes cross-border, market-oriented, collaborative R&D and simplifies access to national funding for industry and research institutes from 39 member countries (none of them is from LAC) in a bottom-up approach to developing and exploiting innovative technology.

Through EUREKA projects, partners develop new technologies for which they agree the Intellectual Property Rights and build partnerships to penetrate new markets. Each year hundreds of individual projects are initiated by European companies, an increasing number of which are SMEs.

Projects supported within EUREKA are covering following areas: Electronics & ICT; **Industrial Manufacturing, Material & Transport**[39]**;** Other Industrial Technologies; **Energy Technology**[40]**; Chemistry, Physical & Exact Sciences**[41]; Biological Sciences; Agriculture & Marine Resources; Agrofood Technology; Measurements & Standards; and Technology for protecting humankind & the environment.

Detailed information about individual projects is available on the EUREKA webpage.

[36] http://www.cost.esf.org/tud

[37] http://www.cost.esf.org/index.php?id=opencall

[38] http://www.eureka.be/

[39] http://www.eureka.be/thematic/showThematic.do?area=t02

[40] http://www.eureka.be/thematic/showThematic.do?area=t04

[41] http://www.eureka.be/thematic/showThematic.do?area=t05

3 Key EU research institutes and organisations

Name:	**Joint Research Centre (JRC)**
Contact:	SDME 10/78, B-1049 Brussels, Belgium
Email:	jrc-info@ec.europa.eu
Website:	http://ec.europa.eu/dgs/jrc/index.cfm

The mission of the European Commission's Joint Research Centre (JRC) is to provide customer-driven scientific and technical support for the conception, development, implementation and monitoring of EU policies. As a service of the EC, the JRC functions as a reference centre of science and technology for the EU. Close to the policy-making process, it serves the common interest of the Member States, while being independent of special interests, whether private or national.

The JRC provides scientific-technical support mainly to the following policy areas of the European Commission: Chemicals legislation; European Research Area (ERA); Internal market (financial services, system of common standards); **Energy policies (Clean and sustainable energy production and conversion; safe and secure energy supply: energy efficiency, renewable energies, nuclear energy); Sustainable transport**; Information Society (competitiveness, innovation and inclusion); Common Agricultural Policy (rural development, sustainable agriculture); Maritime Strategy (fisheries, marine policy, security); Environmental policies (support to various legislative acts such as on fuels, soils, water, forests, air quality); Infrastructure for spatial information in Europe; **Climate change (Kyoto protocol and post-Kyoto policy options)**; Health and consumer protection (food and feed safety and quality, cosmetics directives); Internal and global Security; and Nuclear policies.

More information dedicated to Joint Research Centre (JRC) and its institutes all across Europe dealing with biofuels (e.g. Institute for Prospective Technological Studies[42], Institute for Energy[43]) can be downloaded on the webpage.

Name:	**European Research Council (ERC)**
Contact:	Secretariat to the ERC Scientific Council and the ERC Board, Place Madou 1, MADO 06/64, 1049 Brussels, Belgium
Email:	rtd-erc@ec.europa.eu
Website:	http://erc.europa.eu/index.cfm

[42] http://ipts.jrc.ec.europa.eu/

[43] http://ie.jrc.ec.europa.eu/

The European Research Council (ERC) is the first European funding body set up to support investigator-driven frontier research. The ERC complements other funding activities in Europe such as those of the national research funding agencies, and is a flagship component of the 'Ideas Programme' of the European Union's 7th Research Framework Programme (FP7). More information about 'Ideas' is provided in the chapter 2.1 FP7 Programme.

Its main aim is to stimulate scientific excellence by supporting and encouraging the very best, truly creative scientists, scholars and engineers to be adventurous and take risks in their research. The scientists are encouraged to go beyond established frontiers of knowledge and the boundaries of disciplines.

Being 'investigator-driven', or 'bottom-up', in nature, the ERC approach allows researchers to identify new opportunities and directions in any field of research (i.e. all fields related to energy research), rather than being led by priorities set by politicians. This approach ensures that funds are channelled into new and promising areas of research with a greater degree of flexibility.

Participation from third countries (International Cooperation Partner Country – ICPC) in the ERC funding schemes is encouraged as a Principal Investigator (PI). The researcher may be of any age and nationality (with PhD or equivalent degree) and may reside in any country in the world at the time of the application. PI, who is coming from a third country, must establish a research team and activity at a host institution in a member state or associated country.

Depending on the specific project and field, the level of ERC grants may be up to around EUR 3.5 million for a period of 5 years. Normally, however, grants will be limited to a maximum of around EUR 2.5 million unless the application involves specific features requiring a higher level of support.

All practical information on ERC Grant Schemes is available in structured way on the webpage.[44]

Name:	**Biofuels Research Advisory Council (BIOFRAC)**
Contact:	Not available
Email:	Not available
Website:	http://circa.europa.eu/Public/irc/rtd/biofrac/home

The Biofuels Research Advisory Council (BIOFRAC) was created by DG Research in early 2005. A group of high level experts representing widely different sectors of the biofuel chain was invited to develop a report 'A vision for biofuels up to 2030 and beyond', to ensure a breakthrough of biofuels and increase their deployment in the EU. In addition to this report, the Commission also invited BIOFRAC to prepare the

[44] http://erc.europa.eu/index.cfm?fuseaction=page.display&topicID=23

ground for the Strategic Research Agenda (SRA) and to provide considerable input for FP7. The council was established as the first Steps towards a European Biofuels Technology Platform (Biofuels TP).

BIOFRAC consists of members who represent a balance of the major European biofuels stakeholders, including the agricultural and forestry sectors, food industry, biofuels industry, oil companies and fuel distributors, car manufacturers and research institutes.

There are several EU initiatives announced just recently which represent major milestones in the way the EU conducts target-oriented research by partnering with the industry. One of them is the European Institute of Innovation and Technology (EIT), which will increase the overall resources available for R&D and will allow for better coordination with national and regional programmes available for R&D.

Name:	**European Institute of Innovation and Technology (EIT)**
Contact:	Budapest, Hungary
Email:	via internet (using EIT Contact form)
Website:	http://ec.europa.eu/eit/

The European Institute of Innovation and Technology (EIT) is a major EU initiative which aims to foster excellence in European innovation and to provide new solutions for major challenges, such as climate change, renewable energies or the next generation of information and communication technologies. The EIT is the first European initiative to integrate fully the three sides of the 'Knowledge Triangle' (Higher Education, Research, Business-Innovation) and seeks to stand out as a world-class innovation-orientated reference model, inspiring and driving change in existing education and research institutions.

By boosting the EU's capacity to transform education and research results into tangible commercial innovation opportunities, the EIT will further bridge the innovation gap between the EU and its major international competitors. The EIT will favour sustainable economic growth and job creation throughout the Union by generating new products, services and markets responding both to public demand and to the needs of the knowledge economy.
Based on partnerships known as 'Knowledge and Innovation Communities' (KICs) – highly integrated public-private networks of universities, research organisations and businesses – the EIT's activities will be coordinated by a Governing Board ensuring its strategic management. Direct involvement of business stakeholders, including SMEs, in all strategic, operational and financial aspects of the Institute is the corner stone of the initiative.

The EU Member States decided unanimously on June 18, 2008, that the European Institute of Innovation and Technology (EIT) will have its headquarters in Budapest, Hungary.

The inaugural meeting of the newly appointed Governing Board of EIT was held in the Institute's host city of Budapest on September 15, 2008 and was preceded by a ceremonial opening in the presence of Hungarian Prime Minister Ferenc Gyurcsány, Commission President José Manuel Barroso, and Commissioner for Education, Training, Culture and Youth, Ján Figel', among others.

According to the EIT's webpage[45], the Governing Board will be responsible for steering the EIT's strategic orientation and for the selection, monitoring and evaluation of KICs. At the inaugural meeting in September 2008, the Governing Board members, consisting of 18 experts worldwide, unanimously elected Prof. Dr. Martin Schuurmans, a Professor of Physics and former Executive Vice President of Philips Research, as Chairman of the EIT's.

3.1 International organisations/networks focusing on biofuels

(in alphabetical order)

Name:	**Biofuel Cities European Partnership**
Contact:	Not available
Email:	secretariat@biofuelcities.eu
Website:	http//www.biofuel-cities.eu

According to the webpage resources[46], the Biofuel Cities European Partnership was officially launched on November 8, 2007 at the Clean Vehicles and Fuels Symposium in Stockholm, Sweden.

The Biofuel Cities European Partnership is a platform for the introduction of biofuels across Europe that takes into account the complete chain from feedstock to biofuels production, distribution and utilisation in vehicle fleets. The development of the European Partnership was one of the major purposes of the Biofuel Cities project, supported by the EC within the FP6. More details about the project can be found in the section: 4.2. EU projects - running projects (a selection).

The Biofuel Cities European Partnership aims to:

- build a European Partnership in which biofuel end-users, suppliers, and those actors setting the frameworks for biofuel applications are invited to form new partnerships for projects and to engage in exchange and networking;

[45] http://ec.europa.eu/eit/news_en.htm#eit006news

[46] http://www.inem.org/default.asp?menue=4&ShowNews=ON&Artikel=40

- independently assess biofuel projects, both R&D and demonstration orientated projects, as well as local sustainable mobility policies, in order to guide industrial and commercial stakeholders, local governments, the European Commission and others on the implementation of biofuels and energy-efficient vehicles; and
- support biofuel stakeholders through information, events, tools and publications, as well as guidance on biofuel policies and applications.

Participants of the European Partnership have full access to all features and the participation is free.

Name:	**European Association for Bioindustries (EuropaBio)**
Contact:	Avenue de l'Armée 6, 1040 Brussels, Belgium
Email:	info@europabio.org
Website:	http://www.europabio.org

The European Association for Bioindustries (EuropaBio) is the political voice of the biotechnology industry in Europe. The association of bioindustries includes 81 corporate and 5 associate members operating worldwide, 6 bioregions and 25 national biotechnology associations, representing 1800 small and medium sized biotech companies in Europe.

The association's mission is to promote an innovative and dynamic biotechnology-based industry in Europe. Through its members, EuropaBio fosters a standing dialogue with policy makers and stakeholders at a national level and cooperates with Member State governments.

Members of EuropaBio are involved in research, development, testing, manufacturing and commercialisation of biotechnology products and processes. The corporate members have a wide range of activities: human and animal health care, diagnostics, bio-informatics, chemicals, crop protection, agriculture, food and environmental products and services.

The EuropaBio has a board of management consisting of representatives from among its members. They are assisted by sectoral councils representing the main segments of EuropaBio - healthcare (red biotech), industrial (white biotech), agriculture (green biotech) and emerging enterprises. Experts from member companies and national associations actively participate in EuropaBio's working groups which cover a very wide range of issues and areas of concern.

Name:	**European Biomass Association (AEBIOM)**
Contact:	Croix du Sud 2 bte 11, 1348 Louvain-la-Neuve, Belgium
Email:	iossart@aebiom.org
Website:	http://www.aebiom.org/

The European Biomass Association is a non-profit international organisation founded in 1990, whose mission is to represent bioenergy at EU level. AEBIOM with its 28 national associations all over Europe indirectly represents more than 4000 members including companies, research centers and individuals.

The main goal of AEBIOM is to promote the production of biomass as well as its application throughout Europe.

Activities of AEBIOM, managed by the General Assembly, Steering Committee and the Board, are to:

- develop and advertise global solutions to boost biomass production;
- coordinate international activities;
- provide direct and indirect assistance in setting up national associations;
- liaise with European institutions (European Commission, European Parliament, Economic and Social Council);
- organise seminars, conferences, information and awareness campaigns;
- undertake studies and encourage experience sharing; and
- promote the transfer of appropriate technologies to developing countries.

Name:	**European Biomass Industry Association (EUBIA)**
Contact:	Renewable Energy House, Rue d'Arlon 63-65, 1040 Brussels, Belgium
Email:	eubia@eubia.org
Website:	http://www.eubia.org/

EUBIA, the European Biomass Industry Association, was established in 1996 as an international non-profit association and is based in Brussels, Belgium. It groups together market forces, technology providers, and knowledge centres, all of them active in the field of biomass.

The main objective of the association is to support the European biomass industries at all levels, promoting the use of biomass as an energy source, developing innovative bioenergy concepts and fostering international co-operation within the bioenergy field.

Name:	**IEA Bioenergy**
Contact:	via website
Email:	via website
Website:	http://www.ieabioenergy.com/

IEA Bioenergy was established by the International Energy Agency (IEA) in 1978 in order to improve cooperation and information exchange between countries that have national programmes in bioenergy research, development and deployment. The International Energy Agency (IEA) was founded in 1974 as an autonomous body within the OECD to implement an international energy programme in response to the oil shocks.

IEA Bioenergy provides opportunities for:

- Researchers in order to exchange information on recent developments in R&D through networking, meetings and/or workshops; to provide opportunities for collaborative R&D.
- Industry in order to be informed about new projects; to work together to develop handbooks or models; to offer early participation of industrial partners in RD&D work.
- Policy-makers and decision-makers in order to gain an international perspective on progress in bioenergy; to compile guidelines and standards; to gain new perspectives on deployment opportunities and issues.

Twenty countries (OECD and non-OECD) and the European Commission participate in IEA Bioenergy: Australia; Austria; Belgium; Brazil; Canada; Croatia; Denmark; Finland; France; Germany; Ireland; Japan; Netherlands; New Zealand; Norway; South Africa; Sweden; Switzerland; United Kingdom and USA.

Name:	**International Biofuels Forum (IBF)**
Contact:	Not available
Email:	Not available
Website:	Not available

The International Biofuels Forum (IBF) is an initiative assuring information sharing and linking key biofuels countries (and the EC), bringing together key producers and consumers of biofuels to support the international trading of biofuels as a commodity.

It is a governmental initiative among Brazil, China, the European Commission, India, South Africa, and the United States, which was launched in March 2007 (and renewed in March 2008) in order to promote the sustained use and production of biofuels in the world. The IBF intends to play an increasing role in providing adequate

supplies of biofuels to the markets where the energy demand for transport fuel is rising at an accelerated rate.

The IBF established two working groups:

- Codes and Standards Working Group; and
- Information Exchange Working Group.

The U.S., Brazilian and EU experts formed the core of the Codes and Standards Working Group of the IBF, which was working on the White Paper on Internationally Compatible Biofuels Standards published in December 2007.

According to the internet source[47], the upcoming meeting of the International Biofuels Forum will be hosted by the Brazilian Government in São Paulo on November 17 - 21, 2008 and the conference should be a great opportunity to promote an informed discussion on the opportunities and challenges of biofuels for sustainable development, with a special focus on developing countries.

4 Projects focusing on biofuels

The following chapter introduces couple of projects in the field of biofuels financed by the European Commission's programmes (e.g. FP5, FP6, FP7, IEE Programme, etc).

Projects supported within all FP7 themes are published on CORDIS webpage after the closed negotiation process and signed grant agreement between the EC and the beneficiaries.[48]

Very valuable source of information serving general overview of the projects/initiatives supported mainly within the 6th Framework Programme for Research and Technological Development (FP6) with a special focus on biofuels for transport is listed in the report 'Biofuel Projects and Activities in the EU'. This report was prepared by teams from SenterNovem and the Institute for Fuels and Renewable Energy (IPiEO) as a part of the EC funded project 'Biofuels Cities'. The first version of the report was published in December 2007 and is downloadable on the webpage[49].

As indicated in the publication, there should be other two versions of the report published by the beginning of 2009. The second version was already issued in July 2008 and consists of projects which were inserted in the online-database at www.biofuel-cities.eu until July 16, 2008. The projects and activities in the report are listed alphabetically, followed by location, title of the project, acronym, type of the project and indication of the project purpose. Short abstracts and website addresses of the projects are also provided (if available).

[47] http://www.embaixada-americana.org.br/index.php?action=saopaulomateria.php&id=6957&submenu=14&itemmenu=165

[48] http://cordis.europa.eu/fp7/projects_en.html

[49] http://www.biofuel-cities.eu/

4.1 EU projects – running projects (a selection)

(in alphabetical order)

Name:	**BIOCOUP - Co-processing of upgraded bio-liquids in standard refinery units**
Website:	http://www.biocoup.eu/
Time frame:	May 2006 – April 2011 (60 months)
Supported by:	6th Framework Programme for Research and Technological Development (FP6), SUSTDEV-1.2.5 New and advanced concepts in renewable energy technologies – Biomass
Partners:	The coordinator of the project if the Technical Research Centre of Finland (VTT). For all participants of the international consortium, please consult the project's webpage.

The aim of the BIOCOUP project is to develop a chain of process steps, which would allow biomass feedstock to be co-fed to a conventional oil refinery. Energy and oxygenated chemicals will be co-produced. The overall innovation derives from integration of bio-feedstock procurement with existing industries (energy, pulp and paper, food) and processing of upgraded biomass forms in existing mineral oil refineries.

The project has six sub-projects[50], each of which deals with critical areas of the proposed biomass utilization chain.

The overall objectives in each subproject are:

- Biomass liquefaction and energy production: reducing bio-oil production costs;
- Upgrading technologies: development of de-oxygenation technology and scaling up to process development unit-scale;
- Evaluation of upgraded bio-liquids in standard refinery units: assessing the viability of upgraded bio-liquids co-processing in a standard refinery;
- Conversion to chemicals: identifying optimal recovery and fractionation strategies and technologies for the production of discrete target compounds from bio-liquids;
- Scenario and life cycle analysis: outline a low-risk, low-cost development path for the most promising bio refinery chains, a path based on stage-wise validation, demonstration and implementation;
- Transversal activities: optimizing the impact of the project by a structured management and the efficient coordination of transversal activities (standardisation, exploitation and dissemination).

[50] http://www.biocoup.eu/index.php?id=69

Name:	**BioDieNet Project**
Website:	http://www.biodienet.eu/
Time frame:	January 2007 - December 2009 (36 months)
Supported by:	IEE Programme (Intelligent Energy Europe), EIE/06/090
Partners:	The BioDieNet project (coordinated by Energy Solutions, United Kingdom) consists of 17 partners from 10 countries. For full list of partners, please consult the project's webpage.

The BioDieNet project facilitates the uptake of used cooking oil to produce biodiesel. The objective of BioDieNet is the promotion of localised biodiesel production for transportation purposes, by means of the active involvement of local energy agencies in 10 European countries: Bulgaria, Germany, Great Britain, Hungary, Italy, Netherlands, Portugal, Romania, Spain, Norway.

The action establishes a working network of energy agencies and other market actors across Europe who are engaged in or planning to be engaged in the supply of locally-produced biodiesel from used cooking oils (UCOs). The network provides specific, practical information, education, dedicated tools and support to help set up and maintain projects which result in greater uptake of locally-produced biodiesel by public and private vehicle fleets as well as individual vehicle owners.

Through the involvement of energy agencies traditional barriers of centralized biodiesel structures are addressed to enable easier introduction in higher concentrations (20-100%), reduce high risks involved for potential biodiesel producers, and create localized supply chains.

Name:	**Biofuel Marketplace**
Website:	http://www.biofuelmarketplace.com/
Time frame:	January 2006 - December 2008 (36 months)
Supported by:	IEE Programme (Intelligent Energy Europe), EIE/05/022/SI2.420009
Partners:	- Geonardo Environmental Technologies Ltd., Hungary (coordinator) - Biopetrol Environmental Ltd., Hungary - Bluewaters Environmental Consultants, Austria - Centre for Renewable Energy Sources, Greece - ETA Renewable Energies, Italy - Mindsoft Software and Consulting Ltd., Hungary - WIP Renewable Energies Ltd, Germany

The Biofuel Marketplace project creates a web-based biofuel marketplace in order to provide a forum where Europe's biofuel stakeholders can promote their technologies,

exchange ideas, sell and buy biofuel products, disseminate results of national, international and European research activities and raise awareness of the public and professional community.

Within its duration, the project intends to deliver a matrix of multi-disciplinary work-packages as follows:

- Establishing a web-based marketplace with a supply and demand information system for biofuels;
- Involving industrial and political stakeholders, decision-makers and multipliers in Europe;
- Providing an overview of European projects covering the strategic and management aspects of biofuel market development;
- Reviewing the technical development of biofuels and related technologies;
- Determining barriers and economics of biofuels; and
- Disseminating and promoting the use of biofuels in Europe.

The project is SME-driven and is characterized by a need for long-term sustainability and innovative commercial solutions. As stated by the Consortium members', the Biofuel Marketplace should be self-sustainable after the end of the project and financed by industrial advertisers and commissions paid after the trading and commercial application of biofuel products and technology.

The On-Line Biofuel Trading Platform will be launched soon and registered stakeholders will be immediately notified about the activation of the Marketplace Module.

Name:	**Bio-NETT Project**
Website:	http://www.bio-nett.org/
Time frame:	January 2006 - August 2008 (32 months)
Supported by:	IEE Programme (Intelligent Energy Europe)
Partners:	- North East London Energy Efficiency Advice Centre Ltd (NELEEAC), United Kingdom (coordinator) - Regional Energy Agency of Central Macedonia (REACM), Greece - Municipal Energy Agency-Rousse (MEA), Bulgaria - Energy Agency for Southeast Sweden Ltd (ESS), Sweden - Baltic Energy Conservation Agency (BAPE), Poland - Tipperary Energy Agency Ltd (TEA), Ireland - Riga Managers School (RMS), Latvia - Severn Wye Energy Agency Ltd (SWEA), United Kingdom - Agencia de Gestión de Energía de la Región de Murcia, (ARGEM), Spain - Comitato Termotecnico Italiano (CTI), Italy

The Bio-NETT Project aims to develop a supportive framework for encouraging the growth of local markets for biofuels as a low carbon fuel for local authorities and other public sector transport fleets across the EU. The overall goal of the Bio-NETT project is to support the development of local supply and use of liquid bio-fuels by creating a more integrated and cohesive market structure, linking suppliers and users through regional networking in both the urban and rural context.

Activities implemented within the project:

- Establishment of local bio-fuels networks;
- Increasing the confidence and knowledge of the use of bio-fuels by public sector organisations and within farming communities for the supply of bio-fuels products, through training and capacity building initiatives;
- Establishment of supply chain thematic groups by the project partners, in order to provide a detailed assessment of the key issues that form the supply chain for bio-fuels;
- Development of best practice tools to support the development of efficient local bio-fuel supply network, building on the work of the project networks and the thematic groups; and
- Disseminate the results of the project to further transfer the developed knowledge and support the growth of regional bio-fuel supply networks across the EU.

Name:	**CABCEP - Co-ordination action biofuel cities European partnership (Biofuel Cities)**
Website:	http://www.biofuel-cities.eu/
Time frame:	June 2006 - June 2009 (36 months)
Supported by:	6th Framework Programme for Research and Technological Development (FP6), SUSTDEV-1.1.5 Alternative motor fuels
Partners:	- SenterNovem, Netherlands (coordinator) - Exergia, Greece - ICLEI, Local Governments for Sustainability - International Network for Environmental Management e.V. - Institute for Fuels and Renewable Energy (IPiEO), Poland - Netherlands Standardisation Institute (NEN), Netherlands - Flemish Institute for Technological Research (VITO), Belgium

The Biofuel Cities (CABCEP) is a European project, a ‘Co-ordination Action’ project funded by the FP6 under the Activity 'Alternative Motor Fuels: Biofuel Cities'. The project provides a platform for biofuel stakeholders for biofuel innovation at the local level.

Biofuel Cities aims to:

- assist in the acceleration of the market introduction of biofuels and energy-efficient vehicles in accordance with local sustainable mobility policies (short term);

- stimulate continued and sustainable market penetration of biofuels by facilitating biofuel developments through identification of strategic Research and Development (R&D) needs, as well as the joint development of sustainable mobility and environmental policies (longer term).

Biofuel Cities offers following activities:

- Interactive website providing a Europe-wide directory on projects and activities, news and future events, information about policies, legislation, technology, etc.;
- Events and online facilities providing twinning, project cooperation and networking opportunities;
- Expert workshops and study tours demonstrating practical examples of biofuel application;
- News and a range of publications to provide information on biofuel developments, including good practice cases, guidebooks, and reports; and
- Tools for monitoring, standardisation of biofuels and biofuel application.

One of the major aims of the project is to build a Biofuel Cities European Partnership, which was officially launched at the Clean Vehicles and Fuels Symposium in Stockholm, Sweden on November 8, 2007. For more details related to the Biofuel Cities European Partnership, please the chapter 3.1 International organisations/networks focusing on biofuels.

Name:	**PROBIO - Integrated promotion of the biodiesel chain**
Website:	http://www.probio-project.com/
Time frame:	January 2007 - July 2009 (30 months)
Supported by:	IEE Programme (Intelligent Energy Europe)
Partners:	- University of Teramo, Department of Food Science, Italy - Abruzzo Regional Energy Agency (ARAEN), Italy - Development Agency Sinergija, Moravske Toplice, Slovenia - University of Maribor, Faculty of Agriculture, Slovenia - Agencia Provincial de la Energía de Burgos (CEEI), Spain - Agencia Provincial de la Energía de Ávila (APEA), Spain - Exma. Diputación Provincial de Huelva, Spain

The PROBIO project (approved in December 2006) focuses on encouraging the integration between production and consumption in the biodiesel supply chain in EU countries. This should be achieved by means of a three-pronged strategy based on the development of a concrete new market in respective regions, promotion activities and training actions aimed at strengthening the weak points in the biodiesel supply chain.

Four strategic objectives of the project are:

- Improvement of raw material supply availability to the biodiesel plants;
- Supporting training initiatives for farmers and agricultural sector workers;

- New market initiatives concerning biodiesel use; and
- Promotion of the final consumption of biodiesel among general public and specific sectors related to transport.

The expected overall result is a sensible increase of the production and use of biodiesel at the local level. In fact, in the short term the partners plan to realize a significant boost in the cultivation of energy crops in a close cooperation with farmers and local authorities. Medium to long term, the participating areas intend to increase the consumption of biodiesel to a 4-5% in 2010. For listing of direct outcomes, please consult the project's webpage.

4.2 EU projects – recently completed projects (a selection)

(in alphabetical order)

Name:	**Biodiesel Chains - Promoting favourable conditions to establish biodiesel market actions**
Website:	http://www.cres.gr/biodiesel/
Time frame:	January 2006 - December 2007 (24 months)
Supported by:	IEE Programme (Intelligent Energy Europe), EIE/05/113/SI2.A20022
Partners:	- Centre for Renewable Energy Sources (CRES), Greece (coordinator) - Institut fuer Energie- und Umweltforschung Heidelberg (IFEU), Germany - Universite catholique de Louvain (UCL), Belgium - Energy for Sustainable Development – Bulgaria Ltd (ESDB) - INTERTERMO CONCEPT (ITC), Romania - Polish National Energy Conservation Agency (KAPE), Poland - AEOLIKI Ltd., Cyprus

The major goal of the project was to understand and promote favourable conditions for the establishment of biodiesel market chains in selected countries which have had limited developments to date. The proposed work was focusing on following countries: Greece, Belgium, Poland, Cyprus, Romania and Bulgaria. The selected countries were making limited progress in creating markets to achieve European liquid biofuel policies and targets.

Activities implemented within the project covered:
- Biodiesel market status;
- Emerging best practice;
- Market structures;
- Strategy formation;
- Mobilization of actors; and
- Dissemination.

Name:	**PREMIA - R&D, demonstration and incentive programmes effectiveness to facilitate and secure market introduction of alternative motor fuels**
Website:	http://www.premia-eu.org/ (not in operation anymore)
Time frame:	June 2004 - June 2007 (36 months)
Supported by:	6th Framework Programme for Research and Technological Development (FP6), SUSTDEV-1.1.5 Alternative motor fuels
Partners:	- Flemish Institute for Technological Research (VITO), Belgium - JRC/Institute for Prospective Technological Studies (IPTS) - Centre for Research and Technology Hellas (CERTH)/Hellenic Institute of Transport (HIT), Greece - Technical Research Centre of Finland (VTT), Finland - Co-operation in Transport Research in South East Europe (SETREF)

PREMIA project was a Specific Support Action (SAA) that investigated the effectiveness of support programmes for the market penetration of biofuels. One of the aims was to give policy recommendations which can support the market transition of alternative motor fuels like biodiesel, bio-alcohol, biogas, biomass-to-liquid fuels and hydrogen. Country-specific policy options, which can indicate the most effective methods how to introduce biofuels in relation to market maturity, were given.

Common assessment frameworks for research, development and demonstration were introduced, and national incentive programmes that can facilitate the market introduction of alternative motor fuels were developed.

The project analysed the production and consumption of biofuels, price evolutions (both for fossil and biofuels), feedstock production and the active policy measures and market conditions in different Member States. Also the experiences gained all over Europe were described. So the most important key drivers for biofuel support could be evaluated for the future as well as the conditions that influence a Member State's potential and interest in producing and consuming biofuels.

The project PREMIA grouped countries based on their economic strength, their energy situation and their natural suitability of growing bioenergy crops as well as on the importance of the agricultural sector for the economy. Additionally scenarios for 2010 and 2020 were assessed.

The use of biofuels was estimated for each country, taking into account the impacts of biofuel production on the energy and agricultural markets (e.g. through increasing feedstock prices).

Name:	**PRO-BIODIESEL - Overcoming Non-Technological Barriers For Full-Scale Use of Biodiesel In Europe**
Website:	http://www.probiodiesel.com
Time frame:	January 2006 - December 2007 (24 months)
Supported by:	IEE Programme (Intelligent Energy Europe), EIE-05-111
Partners:	- ACCIONA Biocombustibles, Spain - Centre for Renewable Energy Sources (CRES), Greece - Repsol YPF, Spain - University of Magdeburg, Germany - Austrian Biofuels Institute (ABI), Austria

The general objective of the PRO-BIODIESEL project was to promote biodiesel as a competitive and commercial product in the European fuel market, using the broadest range of raw materials both from North and South-Europe and considering all the agents involved. One of the outcomes was to successfully put in the market 35.000 t/year of biodiesel, which increases 2.3% biodiesel production of EU-25 in 2003.

Outcomes of the project were:

- Reduction of biodiesel biodegradability by using additives for at least 8 different raw-material-based biodiesels;
- Proposal for improvement of biodiesel EN 14214 and/or EN 590 diesel standards;
- Identification of best suitable materials for biodiesel logistics and related investment needs;
- Assessment of biodiesel social acceptability in Germany, France and Spain; and
- Manual with marketing recommendations to fuel sellers for better biodiesel acceptability.

Name:	**REFUEL**
Website:	http://www.refuel.eu
Time frame:	January 2006 - December 2007 (24 months)
Supported by:	IEE Programme (Intelligent Energy Europe)
Partners:	- Energy Research Institute of the Netherlands (ECN), Netherlands (coordinator) - Chalmers University of Technology, Sweden - Consultants in Engineering, Environmental Sciences and Economics (COWI), Denmark - EC Baltic Renewable Energy Centre, Poland - Joanneum Research, Austria - Copernicus Institute, Utrecht University, Netherlands - International Institute of Applied System Analysis, Austria

The refuel project was designed to encourage a greater market penetration of biofuels. To help achieve this goal, the project developed a biofuels road map, consistent with EU biofuel policies and supported by stakeholders involved in the biofuels field. The final road map was officially presented at the press conference held on March 14, 2008 during the World Biofuel Markets conference in Brussels, Belgium.

Apart from the biofuels roadmap, a variety of complementary techno-economic market models were applied, generating the following outcomes:

- Spatially detailed refuel land resources database for EU25+;
- Detailed long-term assessment of technical and economic biomass production potentials for the EU25+, incorporating economic factors, land-use, energy and agricultural policy in a coherent manner;
- Analysis of key drivers and barriers for developing and exploiting biomass production potentials for biofuels;
- Assessment of the impact of the biofuels target on biomass production schemes;
- Costs and potentials for conventional and advanced biofuels and the required market structure and supply chain;
- Socio-economic cost-benefit analysis for biofuels and corresponding methodology;
- Review of current EU25+ biofuels policies, their drivers and effectiveness; and
- Dissemination, closely focused on relevant policy makers and market actors, and differentiated for various target audiences.

Name:	**RENEW - Renewable Biofuels for Advanced Powertrains**
Website:	http://www.renew-fuel.com
Time frame:	January 2004 - December 2007 (48 months)
Supported by:	6th Framework Programme for Research and Technological Development (FP6), SUSTDEV-1.2.5 New and advanced concepts in renewable energy technologies – Biomass.
Partners:	The Renew consortium (coordinated by Volkswagen AG, Germany) consisted of 33 partners from 9 European countries, mainly representing industrial enterprises (more than half). Research and development institutes were involved in special expertise needed to perform the individual R&D tasks. For full list of partners, please consult the project's webpage.

In 2003, a consortium of 31 European entities joined forces to increase the knowledge of liquid biofuels produced from ligno-cellulosic biomass (BtL). The project consortium was led by Volkswagen and a group of industrial companies from all parts of the production chain, including sectors like automotives (Daimler, Renault, Volvo), the mineral oil industry (BP, Total), representatives of electricity producers (EDF), pulp and paper production (Södra) and process engineering companies (Chemrec,

CHOREN/UET). Universities and institutes from nine European countries supported project activities to a great extend.
The consortium defined three main objectives for a four-year project:

- to extend the knowledge on BtL production pathways and investigate the suitability and use of BtL fuels in today`s and future powertrains;
- to assess the regional biomass potential available in Europe and analyse environmental, economic and technical properties of BtL production; and
- to prepare commonly agreed recommendations to stakeholders on the future of BtL.

The project was divided into six subprojects and four of the subprojects were dedicated to the optimization, analysis of the fuel production process and production routes for biofuels from lignocelluloses feedstock.

The RENEW project published the summary of the scientific results in its final report (available on the project webpage since July 2008) and the main conclusions of the RENEW project were presented and discussed at the public meeting in Brussels, Belgium, which was organised on September 15, 2008. 90 participants from politics, administration, industry and science discussed with prominent speakers actual political developments, the future of 2nd generation biofuels in Europe and the contributions of the RENEW project.

4.3 International biofuels projects linking European Union and Latin American countries

(in alphabetical order)

Name:	**BEST - Bioethanol for Sustainable Transport**
Website:	http://www.best-europe.org
Time frame:	January 2006 - December 2009 (48 months)
Supported by:	6th Framework Programme for Research and Technological Development (FP6), SUSTDEV-1.1.5 Alternative motor fuels
Partners:	The projects is coordinated by City of Stockholm, Sweden and participating cities/regions are: - Biofuel Region, Sweden - Brandenburg, Germany - Somerset, United Kingdom - Rotterdam, Netherlands - Basque Country and Madrid, Spain - La Spezia, Italy - Nanyang, China - Sao Paolo, Brazil For full list of project partners (vehicle producers, bioethanol fuel producers and universities) please consult the webpage.

The project 'BEST - Bioethanol for Sustainable Transport' deals with the introduction and market penetration of bioethanol as a vehicle fuel, and the introduction and wider use of flexible fuel vehicles and ethanol cars on the market. The project aims to demonstrate an extensive substitution of petrol and diesel to bioethanol and initiates a lasting and accelerating development of bioethanol-fuel all over Europe.

BEST is one of two sister projects within the European Partnership Biofuel-Cities (the other project is BiogasMAX).

Approximately 10 500 Flexifuel vehicles, 160 bioethanol buses and more than 140 fuelling stations (E95 fuel stations for buses, E85 fuel pumps) are expected to be established as a result of the project - making it the largest demonstration of alternative fuelled vehicles yet supported by the European Commission.

Name:	**BioTop - Biofuels Assessment on Technical Opportunities and Research Needs for Latin America**
Website:	http://www.top-biofuel.org
Time frame:	March 2008 - August 2010 (30 months)
Supported by:	7th Framework Programme for Research and Technological Development (FP7), ENERGY-2007-3.2-07 Identifying research needs and technological opportunities for biofuels production in Latin America.
Partners:	- WIP Renewable Energies Ltd, Germany (coordination) - Technical University of Denmark, Denmark - Karl-Franzens-University - Institute of Chemistry, Austria - Biomass Technology Group (BTG), Netherlands - Centro de Investigaciones Energéticas, Medioambientales y Technológicas (CIEMAT), Spain - Camara Argentina de Energias Renovables, Argentina - Fundação de Apoio a Universidade de São Paulo, Brazil - UCV P. Universidad Catolica de Valparaiso, Chile - Universidad Nacional Autonoma de Mexico (UNAM), Mexico - Fundación Bariloche, Argentina

The overall objective of the BioTop project is to identify technical opportunities and research needs for Latin America in order to maximize synergies in the biofuels sectors of Latin America and Europe. This Specific International Cooperation Action (SICA) comprises five European partners and five partners from Latin American countries which signed S&T agreement with the EC: Argentina, Brazil, Chile, and Mexico.

BioTop provides a broad overview of the existing biofuels sector in Latin American countries. Key focus of the project is the identification and assessment of improved 1st and 2nd generation biofuel conversion technologies. Sustainability, standardization and trade aspects of future large-scale biofuel production are investigated, and

scenarios, roadmaps and recommendations are developed. Exchanges between stakeholders active in RTD of biofuel conversion technologies are promoted and BioTop activities are effectively linked with existing networks.

Specific objectives of the projects are to:

- provide a broad overview of the existing biofuel sectors in all Latin American countries (This also includes a broad overview of biofuel policies and strategies focusing on RTD in the field of 2nd generation biofuels in both LA and the EU up to 2030);
- identify priorities, needs and opportunities in the field of RTD for sustainable biofuel production and biomass conversion technologies at both the national and the regional level in LA;
- inform European and Latin American actors in the biofuel sector about specific, mutually interesting areas for increased collaboration and partnerships;
- harmonize the agenda between LA and the EU on sustainable biofuel production and the integration of biofuels into the energy matrix;
- facilitate and advance mutual knowledge and technology transfer between biofuel stakeholders in LA and the EU;
- make recommendations on RTD and policies for the production and utilization of biomass conversion technologies.

The major outcome of the BioTop project will be the increased awareness about EU-LA opportunities for collaboration in the area of biofuels and the identification of suitable areas for biofuels RTD cooperation.

Name:	**CLARIS - Europe-South America Network for Climate Change Assessment and Impact Studies**
Website:	http://www.claris-eu.org/
Time frame:	July 2004 - June 2007 (36 months)
Supported by:	6th Framework Programme for Research and Technological Development (FP6), SUSTDEV-2002-3-SSA.1.1 Actions such as the European Network for Research in Global Change (ENRICH)
Partners:	The project was coordinated by Centre National de la Recherche Scientifique (CNRS), France and project partners covered the following countries: Italy, Brasil, Germany, Spain, France, Argentina, Uruguay, Netherlands and Chile. For full list of project partners, please consult the FP6 webpage.

The CLARIS project officially started in July 2004 and the objectives of the project were to:

- create a European-South American Network;
- address issues related to climate change in South America;
- examine the feasibility of addressing climate change impacts on society; and
- define a set of research priorities for the region in the future.

The CLARIS framework facilitated the participation of European researchers to Inter American Institute (IAI) projects and the submission of new common research proposals. Moreover, its opening towards stakeholders (e.g. agriculture, reinsurance, hydroelectricity), associated to the project through an expert group, promoted future initiatives on climate impact analysis.

One of the main tools that guided the consortium in the study of the relevant physical processes and the prediction of climate evolution and impacts were climate models. The project was slightly tackling biofuels issue in the way how climate change trends can interact in the region.

Name:	**GOTA VERDE Project - Promotion of small-scale biofuel production and use in Honduras**
Website:	http://www.gotaverde.org/
Time frame:	January 2007 - December 2009 (36 months)
Supported by:	IEE Programme (Intelligent Energy Europe), EIE/06/277/S12.448446
Partners:	- Social TRade Organisation (STRO), Netherlands (coordinator) - Humanist Institute for Cooperation with Developing Countries (HIVOS), Netherlands - Intitute for European Environmental Policy (IEEP), United Kingdom - Dajolka, Denmark - Ageratec, Sweden - FACT Foundation, Netherlands

The GOTA VERDE Project was launched in early 2007. The objective of this three-year project is the promotion of small-scale production and use of biofuels for local consumption in marginal rural areas of Honduras (Northern Honduras with dissemination activities in Central America).

The transfer of knowledge follows an integrated approach, focusing on three components:

- Ensuring that the most appropriate technology is used: technology following local conditions (crops cultivation and engine adaptations);
- Sustainable financial mechanisms, such as favourable credits and opportunities to ease investment costs for poor households over the long term; and
- Removing problematic structural conditions that make sustainable energy policies difficult in Honduras.

Expected results of the GOTA – VERDE Project are:

- Introduction of bio-oil production on the marginal fields (at least 160 hectares) in Northern Honduras. Approximately 200 pioneer small farmers (and several hundreds more will follow) will be trained to produce in effective way;

- 15 trained mechanics aware of the biofuels possibilities and able to adapt and/or maintain diesel engines.
- An adapted micro credit programme will be available to finance the realistic and viable proposals coming out of the targeted area to finance the establishment of oil crop plantations, the adaptation of the engines etc.
- Ultimately, a favourable socio-economic and financial environment will be created by means of a local exchange network and biofuel production chain.

Name:	**LAMNET - Latin America Thematic Network on Bioenergy**
Website:	http://www.bioenergy-lamnet.org/
Time frame:	January 2002 - December 2004 (36 months)
Supported by:	5th Framework Programme for Research and Technological Development (FP5) , INCO 2 - Confirming the International Role of Community Research
Partners:	The network was coordinated by WIP-Renewable Energies, Germany, in partnership with Energia Trasporti Agricoltura (ETA), Italy and the European Biomass Industry Association (EUBIA). The Latin American organisations CENBIO (Centro Nacional de Referência em Biomassa, Brasil) and UNAM (Universidad Nacional Autónoma de México, Mexico) acted as coordination support points on the South- and Central American continent.

The project LAMNET - Latin America Thematic Network on Bioenergy was funded by the European Commission in the framework of the specific research and technological development programme 'Confirming the International Role of Community Research' (FP5).

The main objective of LAMNET was to establish a trans-national forum for the promotion of sustainable use of biomass in Latin America, Europe, China and Africa. LAMNET supported the elaboration of recommendations for the development and implementation of policy options for the promotion of biomass and bioenergy as well as the identification of commercially available and reliable biomass technologies worldwide.

This global network of 48 institutions (Knowledge Centres and SMEs) from 24 countries worldwide was set up to face urgent needs for improved and regionally adapted bioenergy applications.

For more information related to the project contact rainer.janssen@wip-munich.de or contact@bioenergy-lamnet.org.

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6 List of Acronyms / Definitions

BAP - Biomass Action Plan
BAPE - Baltic Energy Conservation Agency
BIOFRAC - Biofuels Research Advisory Council
BiofuelsTP - European Biofuels Technology Platform
BtL - ligno-cellulosic biomass
CEN - European Committee for Standardization
CENBIO - Centro Nacional de Referência em Biomassa, Brazil
CIP - Competitiveness and Innovation Framework Programme
CORDIS - Community Research and Development Information Service
DG - Directorate General
EAP - Environment Action Programme
EC - European Commission
EIT - European Institute of Innovation and Technology
EPE- Action Plan for an Energy Policy for Europe
ERA - European Research Area
ERA-NET - European Research Area Network
ERC - European Research Council
ESF - European Science Foundation
ETPs - European Technology Platforms
EU - European Union
EUBIA - European Biomass Industry Association
EUR - Euro (currency)
EuropaBio - European Association for Bioindustries
FP - Framework Programmes
FP5 - 5th Framework Programme for Research and Technological Development
FP6 - 6th Framework Programme for Research and Technological Development
FP7 - 7th Framework Programme for Research and Technological Development
GHG - Greenhouse gas
HFP - European Hydrogen and Fuel Cell Technology Platform
HLG - High Level Group
IBF - International Biofuels Forum
ICPC - International Co-operation Partner Countries
ICT - Information and Communication Technologies
IEE - Intelligent Energy - Europe Programme
IPTS - Institute for Prospective Technological Studies
JRC - Joint Research Centre
JTIs - Joint Technology Initiatives
JWP - Joint Work Programmes
KICs - Knowledge and Innovation Communities
LA - Latin America
LAC - Latin America and the Caribbean
nBAPs - National biomass action plans
NEW IG - New Energy World Industry Grouping
OPEC - Organization of the Petroleum Exporting Countries
PI - Principal Investigator
R&D - Research and Development
SDOs - Standards Developing Organizations

SICA - Specific International Cooperation Actions
SMEs - Small- and Medium-sized Enterprises
SRA - Strategic Research Agenda
SRA/SDD - Strategic Research Agenda and Strategy Deployment Document
STREP – Specific Targeted Research Project
UFOs - Used Fried Oils
TP - Technology platform
VITO - Flemish Institute for Technological Research, Belgium
VTT - Technical Research Centre of Finland