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nationale kontaktstelle



30th of January 2007  
Winterthur/Zurich, Switzerland  
15 minutes from Zurich international airport

## International Partnering Meeting Find partners for your FP7 projects

European collaboration for  
R&D and Innovation  
in the forest-based and wood industries

# Description of the first FP7 call topics interesting for the forest-based and wood industries 1/13

This partnering meeting is offering you a unique opportunity to **meet potential partners** and find **synergies with the Innowood Annual Conference** organized at the same place the following day. The presentations of projects and skills/technologies will facilitate the set-up of FP7 project consortia and the collaboration between SMEs and R&D institutions in the forest-based and the wood industries.

The programme, event and hotel registration details are published on the WOODISM website:

<http://www.tts.fi/woodism/events/zurich.htm>

Find below the list of the topics and their descriptions extracted from the four following Work Programmes:

- [LIST OF THE TOPICS](#)
- [DESCRIPTION TOPICS FOOD, AGRICULTURE AND FISHERIES, AND BIOTECHNOLOGY](#)
- [DESCRIPTIO TOPICS NANOSCIENCES, NANOTECHNOLOGIES, MATERIALS, NEW PRODUCTION TECHNOLOGIES](#)
- [DESCRIPTION TOPICS ENERGY](#)
- [DESCRIPTION TOPICS ENVIRONMENT](#)
- [DESCRIPTION RESEARCH FOR THE BENEFIT OF SMALL AND MEDIUM SIZED ENTERPRISES \(SMEs\)/ ASSOCIATIONS OF SMEs](#)

**The event is free of charge** and the conference language is English.  
Please note that **the registration deadline for the conference is 21.01.2007.**

## **LIST OF THE FP7 CALL TOPICS**

### **Research for the benefit of Small and Medium-sized Enterprises SMEs / for associations of SMEs.**

- BOTTOM-UP APPROACH (NO GIVEN TOPICS):** Qualified research institutions work with SMEs/associations to develop solutions for the SMEs problems. Those performing the research are funded 100% and the SMEs obtain the exclusive rights to exploit the results.

### **Food, Agriculture and Fisheries, and Biotechnology, Call 1**

- Novel forest tree breeding
- Developing new methods for valuing and marketing of currently non-marketable forest goods and services
- Developing the knowledge-based bio-economy
- Policy and institutional aspects of sustainable agriculture, forestry and rural development in the Mediterranean partner countries
- Understanding Plant Cell Walls for optimizing Biomass potential
- Novel plants for energy production
- New forest based products and processes
- Development of cellulases for lignocellulosic biomass pre-treatment

### **Nanotechnology, Materials, Production Technologies, Call 1**

- Renewable materials for functional packaging applications
- New added-value user-centered products and product services
- Advanced Wood-Based Composites and their Production
- Application of new materials including bio-based fibres in high-added value textile products
- Resource Efficient and Clean Buildings
- Innovative added-value construction product-services

### **Energy, Call 1**

- Novel solid biofuels for electricity generation
- Pre-treatment of lignocellulosic biomass for ethanol production
- New and advanced technologies for hydrolysis and/or fermentation of lignocellulosic biomass
- Synthetic biofuels via gasification
- Forest-based biorefinery
- Developing biorefinery concepts

### **Environment, Call 1**

- Climate Change Impacts on vulnerable Mountain Regions
- Impact and feed-back of climate policies on land use and ecosystems in Europe.
- Contribution of biodiversity to ecosystem services
- Use of natural resources: the impact on biodiversity, ecosystem, goods and services
- Low resource consumption buildings and infrastructure

## **FOOD, AGRICULTURE AND FISHERIES, AND BIOTECHNOLOGY**

Complete Call information (Call Fiche, Work Programme, Budget, Deadlines, Guide for Applicants, ...): [http://cordis.europa.eu/fp7/dc/index.cfm?fuseaction=UserSite.CooperationDetailsCallPage&call\\_id=16](http://cordis.europa.eu/fp7/dc/index.cfm?fuseaction=UserSite.CooperationDetailsCallPage&call_id=16)

### **Extract of the Work Programme:**

#### **KBBE-2007-1-2-05: Novel forest tree breeding (Work Programme page 16)**

##### **Call: FP7-KBBE-2007-1**

By focusing on improved/novel breeding strategies (e.g. resistance breeding, marker assistant breeding, flowering stimulation, genetically designing trees with enhanced physiological characteristics, mathematical and informatics aided simulation models of genotype-phenotype interactions at the tree architecture and production level), this project will address increasing societal needs, such as the sustainable biomass production from forests as a replacement for fossil fuels and other petrochemical products, improved raw material quality and quantity for forest based products. Concomitantly, the project will need to reduce the vulnerability of trees towards the impact of biotic hazards, pests, diseases and improve adaptation to changing environmental conditions due to climate change, as well as the potential impacts of enhanced biomass utilisation on sustainability.

**Funding scheme:** Large collaborative project

**Expected impact:** This project will help the European forest-based sector to adapt production strategies to already shifting, and in the future more rapidly changing, market and environmental conditions. Consequently it will strengthen the sector's global competitiveness by demonstrating novel/improved methods to breed trees with improved quality and quantity parameters.

#### **KBBE-2007-1-2-06: Developing new methods for valuing and marketing of currently non-marketable forest goods and services (Work Programme page 16)**

##### **Call: FP7-KBBE-2007-1**

The project will develop new valuation methods to assess the socio-economic impact of a wide range of forest externalities, provide decision support for ranking economic targets and, additionally, develop new or improved marketing concepts and integrated production methods for non-wood forest products. These methods and concepts will address the changes in forestry production where goods, benefits and services such as clean water and air, carbon sequestration, recreation, hazard protection and prevention, landscape, etc. are becoming more important as a forest product but currently lack sufficient economic incentives to be viable. Inclusion of ICPC partners, particularly developing countries, is encouraged.

**Funding scheme:** Small collaborative project

**Expected impact:** The project will help develop a viable income from forests, secure the future stability of European forests and contribute to a sustainable rural development by reducing the abandonment of forests as a result of the long-term stasis in prices for wood-based forestry products. It will provide models for validating and marketing of several forest externalities and give guidance to policy makers for implementing those models.

#### **KBBE-2007-1-4-01: Developing the knowledge-based bio-economy (KBBE) (Work Programme page 24)**

##### **Call: FP7-KBBE-2007-1**

This project will assist in the development and application of new or improved existing models and indicators for supporting analysis, development and monitoring of the social, environmental and economic impact of the implementation of the Knowledge-Based Bio-Economy in Europe. The potential contribution of the KBBE to the UN Millennium Goals of eradicating extreme poverty and hunger and to ensure environmental sustainability at the global level, will also be analysed. Among others, the impact on the Common Fisheries and Agriculture Policies as well as the European Forest Strategy should be addressed, and the project will also include the impact on Europe's competitiveness at the global level. Participation of ICPC partners, in particular from developing countries, is encouraged.

**Funding scheme:** Coordination and support action aiming at supporting the KBBE

**Expected impact:** The project will measure the social and economic impact of the KBBE approach to European development and, thus, assist in the development of the KBBE concept.

#### **KBBE-2007-1-4-12: Policy and institutional aspects of sustainable agriculture, forestry and rural development in the Mediterranean partner countries (Work Programme page 28)**

##### **Call: FP7-KBBE-2007-1**

This project will provide research on the impact of (EU and national) agricultural, rural and environmental policies; impact of agri-food trade liberalisation on the Mediterranean partner countries: studies on structural changes, impact on rural populations, including employment, poverty, income distribution and possible migration trends; commercial relations with major trade partners such as the EU; increasing competition on the export market with emerging economies; impact of consumers' changing demands, prospects for quality products; impact of norms and standards on trade; institutional and traditional management of access to resources (land, water, etc.) .

**Funding scheme:** Small collaborative project

**Expected impact:** The project results will support the trade negotiations by assessing the impact on Mediterranean partner countries.

**KBBE-2007-3-1-01: PLANT CELL WALLS - Understanding Plant Cell Walls for optimising Biomass potential (Work Programme page 44)**

**Call: FP7-KBBE-2007-1**

Plant Cell Walls characterise the major biomass resource on the planet. They are composed of high energy polymers as well as complex mixtures of additional polysaccharides, proteins and small molecules. In principle, biorefining can convert these cell walls into sugars and other renewable feedstocks for industrial biotechnology. They have however naturally evolved to resist breakdown from mechanical and microbial forces so unlocking the components in these biomaterials represents a massive scientific and technical challenge. Multidisciplinary integrated research is called for which addresses the chemistry of cell wall polymers, particularly the lignins, microcrystalline cellulose, hemicelluloses and pectins; the cell biology of the wall; bioprocessing of the raw material, to design novel and more efficient fractionation systems; enzyme biochemistry and technologies of hydrolases involved in cell wall degradation; genomics, transcriptomics, proteomics and metabolomic analysis of cell wall biosynthesis and metabolism to devise new plant breeding strategies for the production of raw materials enhanced for biorefining including microarray technologies.

**Funding scheme:** Large collaborative project

**Expected impact:** Demonstration of EU-US collaboration in tackling a fundamental technical bottleneck in the development of biomass potential. Essential generic knowledge for the exploitation of plant material in the production of industrial products, including food.

**KBBE-2007-3-1-02: ENERGY PLANTS - Novel plants for energy production (Work Programme page 45)**

**Call: FP7-KBBE-2007-1**

Crops which are grown specifically for the production of renewable energy offer new opportunities for sustainable forestry and agricultural systems. Where this involves marginal land, new economic potential can be realised. Our current knowledge of dedicated energy crops is limited, both in relation to the biological processes involved in the synthesis of substances acting as raw material for biofuel production, as well as, in relation to the discovery, domestication and/or development of new energy crops. Realising the potential of this area will necessitate the application of genetic and genomic technologies to facilitate gene discovery and fast-track breeding. developing greater knowledge of supply chain issues including life cycle analysis and environmental impact.

**Funding scheme:** Small collaborative project

**Expected impact:** Market driven, hardy, viable and profitable energy crops with enhanced traits derived from conventional and biotechnological breeding techniques which exploit the post genomic knowledge base.

**KBBE-2007-3-1-04: FOREST PRODUCTS - New forest based products and processes (Work Programme page 45)**

**Call: FP7-KBBE-2007-1**

The forest is our most ancient and abundant source of renewable and sustainable material. The exploration of forest based products for including novel plant species and sustainable processes which improve properties and processing facilities will be sought along with the production of high added value products made of wood based fibres with high durability, usability and recyclability. Meeting consumer demand for new products by replacement of "unsustainable products" with wood based products as well as energy saving processing, and replacement of hazardous components (glues, painting, and preservatives) with environmentally friendly biobased products will be investigated.

**Funding scheme:** Large collaborative project

**Expected impact:** Diversification of the forest based industries and opportunity to apply post-genomic knowledge in the production of derived forest products.

**KBBE-2007-3-2-01: LIGNOCELLULOSIC ENZYMES - Development of cellulases for lignocellulosic biomass pre-treatment (Work Programme page 48)**

**Call: FP7-KBBE-2007-1**

The use of lignocellulosic biomass could offer significant advantages compared to the current use of sugar or starch as the main substrate for fermentation processes. Such biomass feedstock would primarily be produced on the basis of either waste products from agriculture (straw), forestry (thinning wood, residuals) or wood-based industries (saw dust, 'black liquor' from pulp and paper industry) or from specific energy crops such as short rotation forestry or other cellulosic material. However, efficient enzyme mixtures of cellulases and other necessary enzymes for the hydrolysis of lignocellulosic biomass into fermentable sugars are not readily available. This lack presents a formidable significant bottle-neck for the further development of the bio-based economy in Europe.

**Funding scheme:** Small collaborative project

**Expected impact:** Expanded knowledge base on metabolic pathways and mechanisms for the complete breakdown of lignocellulosic material in either waste or dedicated forestry/plant based feedstock streams.

## **NANOSCIENCES, NANOTECHNOLOGIES, MATERIALS, NEW PRODUCTION TECHNOLOGIES**

Complete Call information (Call Fiche, Work Programme, Budget, Deadlines, Guide for Applicants, ...):

- Large Research projects  
[http://cordis.europa.eu/fp7/dc/index.cfm?fuseaction=UserSite.CooperationDetailsCallPage&call\\_id=18](http://cordis.europa.eu/fp7/dc/index.cfm?fuseaction=UserSite.CooperationDetailsCallPage&call_id=18)
- Small Research projects  
[http://cordis.europa.eu/fp7/dc/index.cfm?fuseaction=UserSite.CooperationDetailsCallPage&call\\_id=19](http://cordis.europa.eu/fp7/dc/index.cfm?fuseaction=UserSite.CooperationDetailsCallPage&call_id=19)
- Collaborative Research projects targeted to SMEs  
[http://cordis.europa.eu/fp7/dc/index.cfm?fuseaction=UserSite.CooperationDetailsCallPage&call\\_id=20](http://cordis.europa.eu/fp7/dc/index.cfm?fuseaction=UserSite.CooperationDetailsCallPage&call_id=20)

### **Extract of the Work Programme:**

#### **NMP-2007-2.4.3 Renewable materials for functional packaging applications (Work Programme page 24)**

**Technical content / scope:** Innovative renewable materials (e. g. wood or vegetable based) and their ecoefficient processing are required to provide novel entirely-renewable functional packaging solutions for a global market. Important drivers for innovation using life-cycle approaches in these renewable packaging materials are cost reduction, improved functionality, higher flexibility and prolonged shelf life of packaged consumer goods like seafood by improved barrier (e.g. active, antimicrobial, permselective, intelligent adaptive) performance. Smart features such as displays or sensors can be incorporated into packaging materials using ink and printing technologies that allow for low production costs. The focus should be on the design and processing of innovative, renewable packaging materials as well as on the interactions between different types of renewable materials, e.g. in multilayer packaging, using the latest developments in nanotechnology. Special emphasis should be put on material performance (e.g. functionality, surface strength, moldability, chemical and microbiological safety, biodegradability, hydrostability, moisture resistance and microbiological immunity). Materials processing should display low emissions, reduce the use of chemicals, but enhance the use of "green" biotechnological alternatives in the manufacture and treatment of packaging materials and printing inks.

**Funding scheme:** Small or medium-scale focused research projects.

**Special features:** Industrial participation is required.

**Expected impact(s):** From product storage and distribution to waste disposal and environmental degradation of packaging materials. Packaging is a high volume business close to the consumer where demands for a sustainable transformation will continue to increase. A contribution towards the overall target of reducing greenhouse gases and the dependency on petroleum resources is expected.

#### **NMP-2007-3.1-2 New added-value user-centered products and product services (Work Programme page page 27)**

**Technical content/scope and deliverables:** The objective is to improve the long term competitiveness of the European manufacturing industry by adopting more user driven innovation modes that allow for integration of customers and users into all phases of the value adding chain. The markets increasingly demand customised products that fulfil not only one but several criteria for customisation ranging from strict technical functionality to emotional aspects, to improved quality of life, public health, safety and environmental protection, while imposing short delivery times. On the other hand, a continuous shift of business is taking place towards product services, capable of fulfilling specific users' demands. Customers and users must therefore have flexible means for participating in the creation phase of product-service systems and these solutions must be seamlessly integrated with production scheduling, highly advanced manufacturing process technologies, delivery logistics etc. Companies also need to adopt new organisational solutions and develop specific skills for realising continuous interaction with customers.

The research should therefore focus on the synergistic integration of the diverse aspects of this production model, including: customer interface facilitating assisted product and product service creation; data flows and standards for product data; manufacturing technologies capable for the automated production of products in small to single piece batches integrating user characteristics needs and desires, delivered just in time. This includes the integration of the manufacturing of the piece itself as well as its decoration, surface treatments and/or the addition of functionalities linked to the digital world.

Deliverables will take the form of pilot implementations in an industrial setting, covering consumer products oriented sectors and demonstrating the feasibility of the concept.

**Funding scheme:** Collaborative projects targeted to SMEs

**Specific features:** SME dedicated collaborative projects are specifically designed to encourage SME participation in research and innovation representing the complete value added of the targeted sectors. Research and innovation activities need to be covered by the projects. In each project, at least 35% of the EC contribution is expected to be allocated to the participating SMEs. The projects will be led by SMEs with R&D capacities but the coordinator does not need to be an SME. The participating SMEs should have the decision making power in the project management. The output should be for the benefit of the participating SMEs and the targeted SME dominated industrial communities. Proposals only focussing on product-service design issues are excluded (covered by topic NMP-2007-3.3.-1). The consortia should include all the key players in the product supply chain (although this is an SME dedicated topic, OEMs falling outside the SME definition are nevertheless eligible to participate.)

**Expected impact:** Strategic impacts for the SME manufacturers include: realisation of maximum value at minimum time through knowledge management; capability to operate flexible and interdisciplinary product teams as well as testing and validating cooperative and strategic partnership arrangements, creating new business opportunities; creating total management of customers-based innovation processes. A positive contribution to sustainability is also expected as overproduction can be avoided (products manufactured on demand) and due to longer product lifespan.

#### **NMP-2007-4.0-1 Advanced wood-based composites and their production (Work Programme page 34)**

**Technical content / scope:** The market price on standard technology wood-based products is increasingly driven by low labour cost countries that have short timber harvesting cycles. The difference in production costs is so significant that improving production efficiency is not sufficient alone to maintain the competitiveness of the European forest-based industry. A strategy for success is to develop new high added value products produced by new resource efficient production concepts.

Wood as a natural and abundant composite can form the basis for a completely new industry based on intelligent recombination of specific physical properties such as heat insulation, conductivity and mechanical strength and shape in engineered wood products (EWP). For example, replacing lignin with silicon, geofiller or ceramics in the wood nano-structure, chemical grafting of cellulose or environmentally friendly chemical densification can yield radically new product properties. New wood and bio-fiber polymer composites (e.g. transformation of wood fibres and thermoplastic resins into wood polymer composites throughout plastic processing, injection moulding, extrusion or pultrusion) show high potential for construction, furniture and packaging applications. The ambitious research objectives include adaptive production concepts for new composites based on wood fibres, cellulose, lignin, or hemicelluloses, and their derivatives; manufacturing technologies such as moulding, shaping, compounding, melt blowing and electro-spinning; new manufacturing methods for sheet structures and converting operations that enable paper to replace non-renewable materials; engineering concepts for cellulose processing, e.g. melting and solid-state processing.

**Funding scheme:** Large-scale integrating collaborative projects

**Specific features:** In line with the objectives of this topic, adequate industrial participation is recommended. Although this is not a dedicated SME topic, a significant SME participation is nevertheless expected.

**Expected impact:** The expected strategic impacts include: (1) placing sustainability at the forefront of cost control and competitive advantage as well as emphasising its role in industry's social responsibility, and (2) addressing Health and Safety issues for both the worker and the consumer through promotion of intrinsically better technologies. More specifically, funded proposals are collectively expected to develop several new product families based on new production concepts that exploit the potential of wood-based composites across a variety of applications in the health, electronics and food sectors, as well as in the fields of construction, furniture, packaging, speciality papers, vehicles and textiles.

#### **NMP-2007-4.0-2 Application of new materials including bio-based fibres in high-added value textile products (Work Programme page 35)**

**Technical content / scope:** Intensified research and development efforts, especially from the SME segment of the textiles industry, are required for reinforcing Europe's leadership in the technical textiles field and for establishing the EU as the global lead market for application of innovative textile products. Enhanced fibre properties are the key for improving the properties of these new products and applications in terms of weight performance ratios, strength, durability, flexibility, bio-degradability, energy-efficiency, insulation, temperature and moisture management, permeability, self-cleaning and self-healing. The new materials targeted by the topic are based on natural and bio-based fibres, speciality fibres and fibre-composites.

The research should concentrate on bulk fibres with new or significantly improved properties, novel fibres with tailored functionalities for special applications, natural fibres and bio-based fibres; new processing and production concepts include the development of environmentally friendly and energy-efficient processing and surface modification of fibres, yarns and fabrics to enhance manufacturing of textile- and composite-based innovative products. Deliverables will include the fibre innovation itself, the development of new products and application areas and competitive new processing and production concepts. The main application areas targeted are transport systems, energy systems, agri- and aquaculture, food and packaging applications, machines and other durable equipment, sports and leisure, furniture, home textiles and other similar consumer application sectors.

**Funding scheme:** Collaborative projects targeted to SMEs

**Specific features:** SME dedicated collaborative projects are specifically designed to encourage SME participation in research and innovation representing the complete value added of the targeted sectors. Research and innovation activities need to be covered by the projects. In each project, at least 35% of the EC contribution is expected to be allocated to the participating SMEs. The projects will be led by SMEs with R&D capacities but the coordinator does not need to be an SME. The participating SMEs should have the decision making power in the project management. The output should be for the benefit of the participating SMEs and the targeted SME dominated industrial communities. Smart textiles with embedded systems such as sensors and actuators as well as developments with the main applications in building and construction, medical and protective clothing domains **are excluded** from this call.

**Expected impact:** The expected strategic impacts include: (1) promoting Innovation and the ability of European Textile SMEs to use the results of research; (2) founding market competitiveness on knowledge and added value through highly specific customisation to address specific high-tech markets ideally suited to European Textile high-tech SMEs. More specifically, replacement of currently used traditional textile and non-textile materials in the targeted application areas by at least 20% and an acceleration of currently projected growth rates for technical textile application areas by at least 10% over the next 5 to 10 years.

#### **NMP-2007-4.0-5 Resource efficient and clean buildings (Work Programme page 35)**

**Technical content / scope:** The construction industry, as a major industrial sector, must provide a significant contribution to the reduction of resources consumption and to a wider use of renewable resources. The main objective of the topic is to reduce raw materials resources & energy consumption and environmental impact of buildings during their entire life-cycle (80% of energy consumption occurs during service-life).

The main development issues and targets are: new concepts, technologies, design tools and business models for "intelligent buildings", able to significantly reduce or even meet their own energy consumption; improvement of the building energy performance (through cladding and ventilation technologies, sensors and pervasive computing systems, utilisation of embedded renewable energy sources...) at building and at district levels. Developments are also required in new and improved materials and structures to improve the indoor environment as well as resource and climate, energy consumption conversion and storage capacities of buildings. Deliverables include the development, integration and demonstration of the above concepts e.g. for apartment buildings, offices, hospitals, schools, factories or airports. This topic will be executed in collaboration with and complementary to the Environment (including Climate change) thematic priority in relation to technologies for the built environment and cultural heritage.

**Funding scheme:** Large-scale integrating collaborative projects

**Specific features:** In line with the objectives of this topic, adequate industrial participation is recommended. The activities under this topic could benefit from the participation of ICPC partners.

**Expected impact:** As more than 40% of all energy consumption is due to domestic and service sectors, apart from the direct economic benefits, the topic contributes significantly towards meeting the Kyoto protocol obligations and would reduce Europe's reliance on imported energy.

#### **NMP-2007-4.0-6 Innovative added-value construction product-services (Work Programme page 37)**

**Technical content / scope:** Buildings retrofitting and maintenance is one of the key activities for the 2.5 million SMEs in the construction sector. The aim is to modernise these traditional SMEs by developing new construction knowledge-based services improving their competitiveness with crucial impact on employment and growth, while ensuring that the SMEs are able to meet all health, safety and environmental requirements.

The main development issues and targets are: The development of knowledge-based construction processes and products deployable by SMEs (in terms of investment costs and human resources), especially for the retrofit, refurbishment and maintenance of buildings; new manufacturing systems (e.g. robots and automation) and ICT infrastructures and tools to develop ubiquitous SMEs access to competitive knowledge; development of new "full" services with a high added value for clients. The deliverables are expected to include tools, strategies, services and technologies to ensure a better satisfaction of the end users together with reduction of materials and energy consumption. This topic will be executed in collaboration with and complementary to the Environment (including Climate change) thematic priority in relation to technologies for the built environment and cultural heritage.

**Funding scheme:** Collaborative projects targeted to SMEs.

**Specific features:** SME dedicated collaborative projects are specifically designed to encourage SME participation in research and innovation representing the complete value added of the targeted sectors. Research and innovation activities need to be covered by the projects. In each project, at least 35% of the EC contribution is expected to be allocated to the participating SMEs. The projects will be led by SMEs with R&D capacities but the coordinator does not need to be an SME. The participating SMEs should have the decision making power in the project management. The output should be for the benefit of the participating SMEs and the targeted SME dominated industrial communities.

**Expected impact:** Knowledge-based upgrading and retrofitting of the existing building stock has the potential for significant reduction in resources consumption (energy, water, raw materials). The construction sector achieves a new image of innovation and quality, creating new business opportunities and offering attractive working conditions.

## **ENERGY**

Complete Call information (Call Fiche, Work Programme, Budget, Deadlines, Guide for Applicants, ...):

- Energy-RTD  
[http://cordis.europa.eu/fp7/dc/index.cfm?fuseaction=UserSite.CooperationDetailsCallPage&call\\_id=4](http://cordis.europa.eu/fp7/dc/index.cfm?fuseaction=UserSite.CooperationDetailsCallPage&call_id=4)
- Energy-TREN  
[http://cordis.europa.eu/fp7/dc/index.cfm?fuseaction=UserSite.CooperationDetailsCallPage&call\\_id=5](http://cordis.europa.eu/fp7/dc/index.cfm?fuseaction=UserSite.CooperationDetailsCallPage&call_id=5)

### **Extract of the Work Programme:**

#### **Topic ENERGY.2007.2.2.5 Novel solid biofuels for electricity generation (Work Programme page 28)**

**Content/scope:** Demonstration of the production of new, tradable solid biofuels fully or partially based on unconventional and difficult resources such as straw including their longterm application in existing bio-electricity installations is intended. The new biofuels should be ready-to-use for the plant operators without the necessity of major technical adaptations of the existing conversion plants themselves. Supplementary pre-normative work aiming at a future European-wide standardisation of these new biofuels is welcome.

**Funding scheme:** Collaborative project with a predominant demonstration component.

**Expected impact:** Increase the range of usable biomass feedstock for existing bioelectricity installations. Reduce the production cost of solid biofuels through the (partial) use of low-cost feedstock.

**Other information:**

**Open in call:** FP7-ENERGY-2007-2-TREN

#### **Topic ENERGY.2007.3.2.1: Pre-treatment of lignocellulosic biomass for ethanol production (Work Programme page 37)**

**Content/scope:** Development of new and advanced pre-treatment technologies for lignocellulosic biomasses (agricultural residues, wood, forestry residues and biodegradable fraction of municipal solid waste and perennial annual crops). Research should focus on optimising the exposure of cellulose and hemicellulose for subsequent enzymatic hydrolysis, while minimising the production of inhibitors and reducing the environmental impact of the pre-treatment. The technologies developed should improve the overall process efficiency of the whole lignocellulose to ethanol process, and optimise the pre-treatment for the production of added value bio-products in this phase or the subsequent steps. Research should include testing of the technology from lab-scale to pilot reactors.

**Funding scheme:** Collaborative Project (small or medium scale focused project) with a predominant R&D component.

**Expected impact:** The results are expected to substantially reduce the cost of the pre-treatment step and improve its environmental performance.

**Other information:** For technology development, SMEs are expected to represent the core members of the team.

**Open in call:** FP7-ENERGY-2007-1-RTD

#### **Topic ENERGY.2007.3.2.2 New and advanced technologies for hydrolysis and/or fermentation of lignocellulosic biomass (Work Programme page 37)**

**Content/scope:** Optimisation of the enzymatic hydrolysis of cellulose and hemicellulose, and/or the fermentation of the produced sugars, either as separate processes or in SSF (simultaneous saccharification and fermentation). Research should focus on one or both of the following steps:

(1) Development of new and improved enzymes (e.g. thermostable enzymes) and enzyme systems, with a view to improving the rate of enzymatic hydrolysis and enzyme recycling in the whole lignocellulose to ethanol process. Research should include both production of the improved enzymes and their testing - at laboratory scale and in a pilot reactor - on pretreated biomasses ranging from agricultural residues to wood and forest residues, the biodegradable fraction of municipal solid waste and perennial annual crops.

(2) Development of improved yeasts and/or thermophilic bacteria aiming at increasing the ethanol yields of the fermentation of C5 and C6 sugars from hydrolysed lignocellulosic biomass. Research should address the optimisation of fermentation conditions, including the effect of the degradation compounds on fermentation.

**Funding scheme:** Collaborative Project (small or medium scale focused project) with a predominant R&D component.

**Expected impact:** The results are expected to substantially reduce the cost of lignocellulosic ethanol production.

**Other information:** For technology development, SMEs are expected to represent the core members of the team. *N.B. Complementary topics, comprising non-fuel uses and with a focus on basic research on enzymes and micro-organisms, are open in the theme "Food, Agriculture and Biotechnology".*

**Open in call:** FP7-ENERGY-2007-1-RTD

**Topic ENERGY.2007.3.2.5 Synthetic biofuels via gasification (Work Programme page 39)**

**Content/scope:** Demonstration at industrial scale of synthetic biofuels from lignocellulosic biomass (and its derivatives such as black liquor and flash pyrolysis bio-oil), with emphasis in the production of clean synthesis gas and the final synthetic fuel process steps. The final output of this demonstration should lead alternatively to one of the following final products: DME, methanol, ethanol, Fischer-Tropsch biofuel or biomethane. The methanol could also be used for hydrogen production; the ethanol for both CHP applications and hydrogen production. The final biofuel should also be tested in appropriate engines and/or vehicles and/or fleets in order to check technical standards, commercial possibilities and engine compatibilities.

**Funding scheme:** Collaborative project with a predominant demonstration component.

**Expected impact:** New types of biofuels production processes with significantly improved energy and environmental performance.

**Other information:**

**Open in call:** FP7-ENERGY -2007-2-TREN

**Topic ENERGY.2007.3.3.1 Forest-based biorefinery (Work Programme page 40)**

**Content/scope:** Development of advanced fractionation and conversion technologies to be integrated in a pulp mill for the combined production of new bioproducts and biofuels (solid and/or transport fuels by fermentation or syngas route) from forest-based biomass and mill residues. project should include development from lab scale to pilot plant. The optimised integration of the developed technologies in a pulp mill should be covered. Research could address: extracting hemicelluloses before pulping for the production of fuels and bioproducts, extraction of chemicals from black liquor, syngas route to fuels and chemicals from forest biomass and mill residues.

**Funding scheme:** Collaborative project (large-scale integrating project) with a predominant R&D component.

**Expected impact:** The results are expected to maximise the renewable energy output from existing pulp mills, thus optimising the economics of the whole process.

**Other information:** The participation of SMEs is especially encouraged.

**Open in call:** FP7-ENERGY-2007-1-RTD

**Topic ENERGY.2007.3.3.3 Developing biorefinery concepts (Work Programme page 40)**

**Content/scope:** Development of advanced biorefinery schemes to be integrated into existing industrial complexes, such as sugar/starch ethanol plants, oil-seed crushing/trans-esterification plants, pulp and paper mills, oil refineries. Feasibility studies should identify the optimal integrated schemes of production and the best suited "building blocks" in term of processes and bioproducts. The analysis should consider optimal uses of the side-streams, innovative fractionation and conversion technologies, most promising bioproducts and maximising energy production. Simulation tools will be necessary to support the analysis, which should focus on a particular biomass sector, and should identify the main technological challenges for the realisation of the developed schemes.

**Funding scheme:** Coordination and Support Action (support type). More than one may be funded.

**Expected impact:** The analysis will identify opportunities for various biomass-based sectors to produce fuels while increasing their competitiveness.

**Other information:** SMEs are important in the innovation process for this topic.

**Open in call:** FP7-ENERGY-2007-1-RTD

## **ENVIRONMENT**

Complete Call information (Call Fiche, Work Programme, Budget, Deadlines, Guide for Applicants, ...): [http://cordis.europa.eu/fp7/dc/index.cfm?fuseaction=UserSite.CooperationDetailsCallPage&call\\_id=6](http://cordis.europa.eu/fp7/dc/index.cfm?fuseaction=UserSite.CooperationDetailsCallPage&call_id=6)

### **Extract of the Work Programme:**

#### **ENV.2007.1.1.5.2. Climate change impacts on vulnerable mountain regions (Work Programme page 18)**

The impacts of climate change on physical, biological and socio-economic systems of mountain regions should be quantified from time periods covering next decades to a century including field campaigns and modelling studies. Emphasis should be given to water and energy supply, melting of glaciers, tourism, forestry and agricultural production, and services from semi-natural and natural (pristine) ecosystems. Research should also address the resulting social and economic impacts. Focus should be on regions with particularly high vulnerability in Europe and worldwide. Participation of international partner countries is encouraged.

#### **Funding scheme: collaborative projects (large-scale integrating projects)**

***Expected impact:** Identification of key criteria to identify sensitive mountain areas vulnerable to climate change taking into account sectors and impacts. Know-how and integrated models and methodologies to quantify climate change impacts that can be applied in different vulnerable mountain regions of the world.*

#### **ENV.2007.1.1.6.3. Impacts and feed-backs of climate policies on land use and ecosystems in Europe (Work Programme page 20)**

Research should assess the impacts of climate (and other sectoral) policies on land use and ecosystems and the resulting feed-back on the climate system. Regional climate models should be coupled with land use models to improve the representation of explicit biophysical and economic mitigation and adaptation strategies in agriculture and forestry. Improved methodologies should include explicit crop/trees growth models that have sufficient, sub-national spatial detail to estimate the responses and adaptation possibilities of crops and trees to both scenarios of extreme climate events and changes in weather patterns. Models should include scenarios for the distribution and pressures from socio-economic drivers with sufficient geographical details. Impacts of climate mitigation measures need to be covered with sufficient details on bioenergy sources and pathways. Research should help in assessing and evaluate the impacts of alternative policy scenarios and estimating the associated costs and benefits of the policies. **(Policy relevant topic)**

#### **Funding scheme: collaborative projects (small or medium-scale focused research projects)**

***Expected impact:** Assessment of the efficiency of current and future land use adaptation and mitigation processes, including carbon sinks and biomass/fuel production. Identification of the adaptation induced by policies, in particular by the Common Agricultural Policy, Rural development Strategy, EU Forestry Strategy and Forest Action Plan, and in general EU policies on climate change.*

#### **ENV.2007.2.1.4.1. Contribution of biodiversity to ecosystem services (Work Programme page 31)**

Understanding how biological diversity terrestrial, inland waters and marine - at European and international levels - contributes to ecosystem goods and services and to livelihoods. Based on major trends in biodiversity and patterns of species interactions, work should contribute to better understanding of the values of and human dependence on biodiversity, the implications of change, and an initial evaluation of the costs and social and environmental consequences of not halting biodiversity loss. In addition, it should be considered how these values can be realised through payments for ecosystem services (PES) such as habitats banking. Institutional contexts, cost and benefits of strategies to preserve, restore and use biodiversity in a more sustainable way should also be assessed. The topic is important in the context of European competitiveness and sustainable development in Europe and elsewhere because the loss of biodiversity will impact upon the provision of goods and services. Major economic sectors depending/impacting on biodiversity have to be considered (agriculture, forestry, fisheries, transport, trade, tourism, industry).

#### **Funding scheme: collaborative projects (small or medium-scale focused research projects)**

***Expected impact:** Better quantification of the cost of losing biodiversity, e.g. in terms of products and services, use and non-use values, and ultimately in terms of reduced productivity and welfare. Increased understanding by researchers, regional planners and political and economic actors, including civil society organisations active in the economic sectors under consideration through public access to information should make it possible to develop inclusive management strategies that will protect or restore ecosystems and help maintain the provisions of the ecosystem services upon which economic competitiveness and welfare depend. Communicating research process and results in a constructively engaged way to the full spectrum of societal actors is of utmost importance to maximise its policy relevance and impact.*

**ENV.2007.2.1.4.2. Use of natural resources: the impact on biodiversity, ecosystem goods and services (Work Programme page 31)**

Improve understanding of how the use of and trade in natural resources at European and international levels affects biodiversity (marine, inland waters and terrestrial), ecosystem goods and services and the resilience and resistance of ecological-economic systems, and develop or improve methods to measure and value biodiversity and ecosystem resilience and detect when ecosystems are approaching the limits of their natural functioning or productive capacity. Establish and improve mechanisms and methods to determine the sustainability of various intensities of use of components of biodiversity and of ecosystems. This topic complements the preceding one. It relates to competitiveness, which depends on the state of biodiversity and ecosystem. Results will be shared effectively with citizens and other societal actors in ways that facilitate general understanding and impact on social, economic and environmental planning and decision making. Participation of International Cooperation Partner Countries (ICPC) is encouraged.

**Funding scheme: collaborative projects (small or medium-scale focused research projects)**

*Expected impact: Assessment of the impact of the use and abuse of natural resources on biodiversity, the ways in which systems (ecosystem services) may respond and how resource use could be made more ecologically sustainable. The results should allow governmental and non-governmental actors to discuss and develop viable policy options and should support their implementation. Results will have to be communicated effectively to citizens and other societal actors in Europe and in other parts of the world in ways that facilitate general understanding and impact on social, economic and environmental planning and decision making.*

**ENV.2007.3.1.5.1. Low resource consumption buildings and infrastructure<sup>21</sup> (Work Programme page 43)**

This coordination activity aims at promoting and facilitating the uptake of new or improved technologies for the built environment which reduce the life-cycle environmental impact associated to the use of multiple, natural and non-renewable resources (water, primary raw materials, energy, land) and the generation of waste. The reduction of use of hazardous substances in the building sector is also to be considered. Analysis of case-studies across Europe, pre-normative research, standards, training needs, directives and regulatory framework, and policy recommendations should be considered together with non-technical barriers to the uptake of environmental technologies Economic and institutional instruments to influence the choice of building and infrastructure technologies should be evaluated with respect to their potential physical and socio-economic impacts. This coordination action should serve as basis for establishing some consensus regarding further industrial research. **(SME relevant and Policy relevant topic)**

**Funding scheme: coordination and support actions (coordinating type)**

*Expected impact: Promotion and uptake of sustainable environmental technologies for a resource efficient built environment. This coordination action should provide support for policy in line with the Directives on energy, pollution prevention, landfill, waste, etc*

## **RESEARCH FOR THE BENEFIT OF SMALL AND MEDIUM SIZED ENTERPRISES (SMEs)/ ASSOCIATIONS OF SMEs.**

### **BOTTOM-UP APPROACH (NO GIVEN TOPICS)**

This FP7 funding scheme is interesting for all sectors of the forestry value chain (Bottom-up approach, no given topics). The objective is to help increase the competitiveness of small and medium-sized enterprises (SMEs) by funding research and development activities in cooperation with qualified public or private research performers (universities, institutes of technology, industry, SMEs). There is no restriction in terms of research topics (bottom-up approach), provided the research meets the needs of the SMEs involved and has clear potential for exploitation.

The principle is as follows: qualified research institutions (e.g. universities, research centres) work with SMEs and associations of SMEs to develop solutions for the SME's problems. Those performing the research are funded 100 % and the SMEs obtain exclusive rights to exploit the results.

Complete Call information (Call Fiche, Work Programme, Budget, Deadlines, Guide for Applicants, ...):

- Research for SME  
[http://cordis.europa.eu/fp7/dc/index.cfm?fuseaction=UserSite.CooperationDetailsCallPage&call\\_id=35](http://cordis.europa.eu/fp7/dc/index.cfm?fuseaction=UserSite.CooperationDetailsCallPage&call_id=35)
- Research for SME Associations  
[http://cordis.europa.eu/fp7/dc/index.cfm?fuseaction=UserSite.CooperationDetailsCallPage&call\\_id=36](http://cordis.europa.eu/fp7/dc/index.cfm?fuseaction=UserSite.CooperationDetailsCallPage&call_id=36)

### **Extract of the Work Programme:**

To strengthen the competitiveness of SMEs by enhancing their investment in RTD-activities and acquisition of intellectual property rights and knowledge, support to outsourcing of research and technological development by SMEs and SME associations will be one of the core activities within this Programme.

This support aims at SMEs or SME associations in need of outsourcing research to research services providers ("RTD performers") such as universities, research centres or research performing SMEs. Other enterprises and end-users, which belong to the same value chains as the participating SMEs, can participate, if it is in the interest of the project.

a) The financial support will be implemented through 2 distinct schemes:

- 'Research for SMEs' targets mainly low to medium technology SMEs with little or no research capability, but also research performing SMEs who need to complement their core research capability. Projects aim at creating new knowledge or achieving results with a clear exploitation potential to improve or develop new products, processes or services which meet the needs of the participating SMEs.
- 'Research for SME Associations' targets SME Associations which act on behalf of their members to identify and address common technical problems and to promote the effective dissemination and take-up of the research results. Projects in this activity may address e.g. pre-normative research issues, technological problems related to the development and implementation of legislation, and technological problems of industrial sectors that cannot be addressed by 'Research for SMEs' and which meet the needs of the SME members of the SME Associations.

Both schemes will follow a bottom-up approach, meaning that they can be carried out in the entire field of science and technology. In addition to research, technological development and demonstration activities, projects are encouraged to include other activities such as training, to facilitate the dissemination and exploitation of results.

Under FP6, at least 2/3 of the budget was earmarked for 'Research for SMEs' (cooperative research). Under FP7, a somewhat greater accent will be put on 'Research for SME associations' as it is considered that such research benefits a larger number of SMEs due to the expected disseminating capacities of SME Associations. The budget for each scheme would be determined each year taking account of the outcome of the impact assessment studies described under "support measures".

b) The main objective of the FP6 equivalent of 'Research for SMEs' and 'Research for SME associations' remains valid in FP7: providing financial support to SMEs or SME associations to outsource research and technological development, with the view of acquiring intellectual property rights, preferably ownership, to the project results. It contrasts with collaborative projects where participants implement on an equal footing common research and exchange access on knowledge each of them generates.

The relationship between SMEs or SME Associations and RTD-performers under this Programme is therefore a "customer-seller" relationship. To further develop their activities, SMEs or SME Associations buy knowledge from RTD performers, who sell their expertise and work. Specific research and development activities undertaken by SMEs or SME Associations with their own resources are essentially focussed on validation and testing of the acquired knowledge. In this context, the real investment or cost incurred by SMEs or SME Associations includes a price they pay for the intellectual property rights and knowledge they wish to acquire.

c) The funding model developed for 'Research for SMEs' and 'Research for SME associations' better reflects the economic nature of this relationship, and takes into account the experience gained under previous framework programmes and the feedback from the stakeholder consultation process. Compared to FP6, a number of changes are being made along the following principles:

- Stronger emphasis will be put on the outsourcing character of the actions: 'research and technological development activities' of the RTD performers should form the bulk of the project, assessed in terms of level of activities and resources deployed.
- More flexibility is given to the consortium in establishing an agreement on intellectual property rights. The default regime remains full ownership by the SMEs or SME Associations. The consortium may however reach a different agreement in their own best interests, as long as the SMEs and SME Associations are provided with all the rights that are required for their intended use and dissemination of the project results.

- RTD performers will charge eligible costs only under 'management activities' and 'other activities' (including training and dissemination). Resources they use for 'research and technological development activities' and/or 'demonstration activities' will be invoiced to SMEs or SME Associations at an agreed price. The price and payment modalities agreed between RTD performers and SMEs or SME Associations should reflect the value of the intellectual property rights and knowledge acquired: the price of a licence should normally be lower than the price for ownership.
- SMEs or SME Associations and other enterprises and end-users will charge eligible costs under the various available activities to the project. The payment of RTD performers' invoices by SMEs or SME Associations will be considered as eligible costs for them and be reimbursed at the funding rate applicable for 'research and technological development activities' and/or 'demonstration activities'.
- The financial support of the Community in accordance with Article 33 of the Rules for participation will be capped at a value not exceeding 110% of the estimated price to be invoiced by RTD providers to SMEs or SME Associations, as agreed amongst them prior to contract signature in compliance with Article 120 of the Financial Regulation. Within this limit, the effective reimbursement of eligible costs will be subject to the applicable rates of the various activities. Should the actual invoices be lower than the initially estimated price, the financial support of the Community will not exceed 110% of their actual value.
- RTD performers will be protected against the legal impossibility for an SME or SME Association to honour its financial commitment towards them. RTD performers may be authorised to charge their eligible costs related to unpaid invoices for direct reimbursement by the Community. This reimbursement shall be subject to the funding rates applicable for 'research and technological development activities' and/or 'demonstration activities' in accordance with Article 33 of the Rules for participation and within the above-mentioned cap.
- Coordination tasks may not be subcontracted. However, in duly justified cases, participants may entrust project coordination to a management organisation acting as participant.