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Work Programme 2008

Cooperation
THEME 5
Energy

(European Commission C(2008) XXXXX)

Changes to the Cooperation Work Programme: Energy Theme

This work programme updates and replaces the version adopted by Commission Decision C(2007) 6839 of 27th of June 2007.

This update allows provision for 4 new calls for proposals.

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ANNUAL WORK PROGRAMME

2008

COOPERATION THEME 5: ENERGY

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Note: This work programme describes only part of the topics for which proposals will be called for in 2008. It will be updated in spring 2008 to incorporate an additional call..

ANNUAL WORK PROGRAMME

2008

COOPERATION THEME 5: ENERGY

Overall objective for FP7:

Adapting the current energy system into a more sustainable one, less dependent on imported fuels and based on a diverse mix of energy sources, in particular renewables, energy carriers and non polluting sources; enhancing energy efficiency, including by rationalising use and storage of energy; addressing the pressing challenges of security of supply and climate change, whilst increasing the competitiveness of Europe's industries.

5.1. CONTEXT

5.1.1. POLICY CONTEXT

Europe's energy economy, and that of the World, is currently on a pathway that is not sustainable. This must change. Set against the backdrop of a growing global demand for energy to power economic development and growth, we are faced with a huge challenge. Sustainable, competitive and secure energy has to become one of the basic pillars of our daily life.

In response to this ever growing challenge the European Council adopted in March 2007 an Action Plan to develop An Energy Policy for Europe. It includes the preparation in 2007 of the first European Strategic Energy Technology Plan (SET-Plan) with the aim of transforming the energy research and innovation system in Europe, including the European Programmes, Member States Programmes as well as the Industry Programmes, to accelerate the development of low carbon technologies. The European Council will examine and eventually endorse the SET-Plan at its Spring 2008 Summit. The scope of the SET-plan is much wider than the 7th Framework Programme. In particular, besides technology oriented measures, it is foreseen to include, between others, policy measures and recommendations. It is likely that recommendations will encompass the activities foreseen in the Framework Programme. The implementation of this Work Programme will consequently take into account the European Council conclusions.

5.1.2. APPROACH

Europe and the rest of the World share the common objectives of providing abundant, clean, secure and affordable energy, whilst simultaneously achieving substantial reductions in greenhouse gas emissions to mitigate the potentially serious consequences of climate change.

The focus of the research and demonstration actions in this Work Programme will be on accelerating the development of energy technologies towards cost-effectiveness for a more sustainable energy economy for Europe (and world-wide) and ensuring that European industry can compete successfully on the global stage.

Recognising that none of the technologies being developed can make a sufficient difference on their own and that their commercialisation will take place over differing time horizons, a

broad technology portfolio approach is adopted, thus greatly reducing the risk and potentially the costs, if one or more technologies fail to make the expected progress.

The research, development and demonstration carried out under this Work Programme is expected to:

- Improve energy efficiency throughout the energy system;
- Accelerate the penetration of renewable energy sources;
- Decarbonise power generation and, in the longer term, substantially decarbonise transport;
- Reduce greenhouse gas emissions;
- Diversify Europe's energy mix;
- Enhance the competitiveness of European industry, including through a better involvement of SMEs.

References to the contributions towards specific EU policy goals, such as targets for renewables and energy efficiency, are referred to in the relevant Activity areas. The future deployment of the Energy for Europe Action Plan and the associated European Strategic Energy Technology Plan will be reflected in future revisions of this work programme.

Increasing efficiency throughout the energy system, from source to user, is essential and underpins the whole of the Energy Theme. Recognising their important contribution to future sustainable energy systems, renewables and end-use energy efficiency will be the major part of this Theme (for the overall 7 year period). Particular attention will be paid to stimulating research, development and demonstration and promoting capacity building in this area. Synergies with the Intelligent Energy-Europe Programme component of the Competitiveness and Innovation Programme will be fully exploited in this regard. The potential for future large-scale initiatives integrating funding from various sources (e.g. JTI) will also be used.

- ***Structure and focus of calls in 2008***

At this stage one general call (FP7-ENERGY-2008-1) will be published in 2008. It will focus on research with a longer term perspective, with a view to accelerating technology development. However part of the 2008 budget had been affected to the 2007 call. In addition specific importance will be given in this work programme to cross cutting and cross thematic approaches, Future Emerging Technologies as well as to International actions. Therefore the budget available will leave room for a limited set of topics.

In addition three separate calls will respectively target cooperation with Russia (FP7-ENERGY-2008-RUSSIA) Future and Emerging Technologies (FP7-ENERGY-FET) and common research topics with NMP (FP7-ENERGY-NMP-2008-1).

The calls will be implemented using Collaborative Projects and Coordination and Support Actions. 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.

Calls for Proposals will be selective. With the exception of a separate budget earmarked for SICAs and for NCP activities in the Energy Call Part 1 (FP7-ENERGY-2008-1) there will

be competition, based on quality and excellence, between proposals both across and within research topics and areas in each call, which may result in some topics not being supported in a given call unless otherwise indicated in this Work Programme.

An additional call for proposals will be defined in a revision of this work programme in order to take up the priorities and needs identified in the Strategic Energy Technology (SET) Plan and to take into account of the results of the policy process including the conclusions of the European Council.

- ***Cross-cutting and cross-thematic approaches***

Due attention will be paid to ensuring there is effective coordination between the priority themes and to scientific areas which cut across themes.

In particular progresses in material science have the potential to lead to breakthroughs in energy technologies in a wide range of areas (CO₂ capture and storage, fuel cells and hydrogen, energy savings, energy storage, etc...). A joint call will be organised with Theme 4 "*Nanosciences, Nanotechnologies, Materials and new Production Technologies*" on the topic of "New materials for energy applications":

- Topic ENERGY.2008.10.1.2: Novel materials for energy applications (Joint Call NMP)

This call will target long term research across a very wide spectrum of novel materials for energy application.

Energy efficiency in its wider sense is fundamental to economic stability and development. In the Energy Theme itself, the concept of energy efficiency underpins the whole RTD programme. It is also a prime example of a cross-thematic subject, which will be appropriately coordinated.

In order to reflect the variety of energy technologies and their possible combinations for energy production, the work programme includes "cross-cutting" research areas, open also for combined/hybrid systems. Certain research areas also address the combination of renewable and fossil energy sources for energy production including poly-generation.

The activities "CO₂ capture and storage technologies for zero emission power generation" ENERGY.5 and "Clean coal technologies" ENERGY.6 are strongly linked and cross-cutting actions between the two are addressed in a separate section (Activity ENERGY.5&6). Horizontal actions within the Energy Theme (i.e. not linked to specific technologies) are addressed in the separate section (Activity ENERGY.10).

- ***Consultation***

In the identification of priority topics included in the 2008 Work Programme, the Commission has taken account of energy and research policy priorities and the inputs

resulting from a broad consultation process that has included a wide range of stakeholders, including:

- European Technology Platforms (see below)
- Conferences and workshops on specific technologies;
- Requested input from Thematic Networks, Coordination Actions and project clusters;
- Consultations on policy documents, such as Actions Plans and Green Papers, in particular those concerning the European Strategic Energy technology plan;
- Spontaneous inputs received from stakeholder groups or organisations;
- Opinions of the FP6 and FP7 Advisory Groups on Energy;
- Member States (Programme Committee)
- Whenever possible, the outcome of the 2007 Calls for proposals

- ***European technology platforms***

The key deliverables of European Technology Platforms, such as vision documents, strategic research agendas, deployment strategies and implementation plans, have been an important input for the research priorities in the Theme, as demonstrated in the relevant sections of this work programme. Such platforms have been established on hydrogen and fuel cells, photovoltaics, biofuels, zero emission fossil fuel power generation, electricity networks of the future, solar thermal energy and wind energy. Other technology platforms covering aspects of interest to energy, such as ERTRAC, sustainable forestry, sustainable chemistry and construction, are also monitored. Some of the most advanced of these platforms have led to the constitution of a Joint Technology Initiative.

- ***Industrial participation and SME relevant research***

Strengthening the competitiveness of the European energy sector, in the face of severe global competition, is an important objective of this Theme, providing the capability for European industry to attain or maintain world leadership in key energy technologies.

Strong industrial participation in research and demonstration activities has been instrumental in the creation of new industrial sectors, in particular in the area of renewable energy systems, and in placing European industries at the forefront of industrial innovation. Effective industry participation in FP7 will continue to be actively encouraged and promoted in order to make a contribution to achieving the Barcelona objective, i.e. raising research investment to 3% of EU GDP, two thirds of which should come from private investments.

The strategy in the Energy Theme is to particularly encourage further SME participation through the continuation of on-going activities. SMEs, the lifeblood of the EU industry, play a vital role in the energy chain and are crucial to promoting innovation. Dissemination events and the identification of topics particularly suitable for SMEs will continue. Topics open for proposals will indicate whether there is a particular relevance to the participation of SMEs.

- ***International cooperation***

All activities carried out in the Energy Theme are open to researchers and research institutions from third countries and strong efforts will be made to encourage them to seize this opportunity, in particular, countries from the International Cooperation Partner

Countries (ICPC, see list of countries in Annex 1) and countries with whom the EU has a Scientific and Technological cooperation agreement.

Except if specified differently, funding will be provided to participants from the ICPC. Funding for organisations from other third countries may be provided on a case-by-case basis if considered necessary for carrying out the project.

More specifically, international cooperation will be implemented via two mechanisms:

- (1) Opening of all activities of the Theme to international cooperation. The topics open for proposals will indicate whether there is a particular relevance or encouragement for the participation of third countries, providing guidance as to the targeted countries or regions.
- (2) A series of “Specific International Cooperation Actions” (SICA) will be dedicated to international co-operation with partners from International Cooperation Partner Countries (ICPC). They will address, on the basis of mutual benefit, problems of shared interest and importance such as the environmental consequences of energy policies, energy supply inter-dependency, technology transfer and capacity building and will engage emerging economies with significant energy needs. These activities will have specific rules for participation and have criteria for evaluation which take into account the concept of SICA. See below.

Where relevant, a particular attention will be paid to support important strategic bilateral agreements and dialogues, as well as multi-lateral co-operation initiatives, such as the International Partnership for the Hydrogen Economy (IPHE), the Carbon Sequestration Leadership Forum (CSLF) and others.

- ***Specific International Cooperation Actions (SICA)***

Topics for proposals for Specific International Cooperation Actions (SICA) are incorporated into the activities and areas described in Chapter 5.2. Such opportunities, described in detail in the relevant sections, include:

- Topic ENERGY.2008.2.1.1: Enhancing strategic international cooperation initiatives in the field of concentration photovoltaics (*Mediterranean Partner Countries*)
- Topic ENERGY.2008.3.2.1: Enhancing international cooperation between the EU and Latin America in the field of biofuels (*Latin America*)
- Topic ENERGY.2008.5.2.1: CO₂ Capture and Storage – Capacity building with the large emerging economies (*large emerging economies members of CSLF*)

In call FP7-ENERGY-2008-1 a specific budget will be dedicated to SICAs, avoiding direct competition with the other proposals submitted in the same call.

Special participation rules apply to Specific International Cooperation Actions – these are explained in the topic description only when they are different from the normal participation rules.

- ***Energy EU Russia Call***

The European Commission and the Federal Agency for Science and Innovations of the Russian Federation jointly agreed to co-fund two projects (one per topic) on the topics below:

- Topic ENERGY.2008.2.2.1: Enhancing strategic international cooperation with Russia in the field of power generation from biomass
- Topic ENERGY.2008.7.2.3: Innovative operational and/or monitoring tools for large power systems

Each of these projects will gather a balanced number of participants established in the EU or associated country and participants established in Russia. The Russian participants will be funded by the Russian Funding Agency. The proposals will be evaluated by a panel of EU and Russian experts, within the peer-review evaluation system of the European Commission and following the criteria of FP7.

The European Commission may contribute to the funding of the total eligible costs of Russian participants not covered by the Russian Funding Agency that may represent a maximum of 5 % of the total eligible costs.

- ***Future and Emerging Technologies (FET)***

The objective is to support research aiming at identifying or further exploring new scientific and technological opportunities in a given field and/or in combination with other relevant areas and disciplines, as well as to nurture novel ideas and radically new uses and to explore new options in research roadmaps, in particular those with a potential for significant breakthroughs. A specific call will take place in 2008 for the following topic:

- Topic ENERGY.2008.10.1.1: Future Emerging Technologies

This topic aims at ensuring a genuine chance for “emerging ideas” to be funded based on the strategic need to utilise the creative spirit in European research. It covers all the areas of the Theme and is to provide rewards for “high risk / high impact” science and to vigorously promote multi-disciplinarity on a European collaborative basis.

- ***Coordination of Non-Community Research Programmes***

The objective of the ERA-NET scheme is to step up the cooperation and coordination of research programmes carried out at national or regional level in the Member or Associated States through the networking of research programmes, towards their mutual opening and the development and implementation of joint activities.

There were specific Energy ERA-NET topics in the 2007 call. However there are no ERA-NET Topics in the Work Programme 2008.

However, there will be a general bottom up call in 2008 from which might emerge ERA-NET projects with relevance to ENERGY Research. Coordination will be established with these projects whenever relevant (see Annex IV for further information on this call).

- ***Dissemination actions***

In order to strengthen the diffusion and use of the output of research, the dissemination of knowledge and transfer of results, including to policy makers, will be supported. This will complement actions in the Intelligent Energy-Europe (IEE) Programme component of the Competitiveness and Innovation Programme (CIP) to support innovation and remove non-

technological barriers to the widespread market deployment of demonstrated energy technologies.

- ***Integration of the socio-economic dimension and societal concerns***

To become the most advanced knowledge-based society in the world, Europe must create a social and cultural environment conducive to successful and exploitable research. Therefore, legitimate societal concerns and needs have to be taken on board, entailing an enhanced democratic debate with a more engaged and informed public and better conditions for collective choices on scientific issues. This is particularly the case in the energy field which has an impact on the everyday life of all citizens.

Wherever possible, actors in the energy field will be encouraged to develop science in society perspectives from the very beginning of the conception of their activities. Where appropriate, cross-thematic partnerships, particularly with the “*Science in Society*” activity in the Capacities Programme, will be established which will focus on actions and measures of mutual benefit, highlight synergies, and help bridge the gap between topical areas in science and technology and society’s interests.

Many of the activities to be funded under this programme will also make positive contributions to education and training and to raising general levels of awareness of the nature of the research undertaken and the benefits likely to accrue.

- Opportunities for the integration of the socio-economic dimension and societal concerns occur throughout this work programme. They are incorporated into the activities and areas described in Chapter 5.2.

- ***Gender and ethical issues***

Activities in the work programme will be carried out according to fundamental ethical principles.

The pursuit of scientific knowledge and its technical application towards society requires the talent, perspectives and insight that an increasing diversity in the research workforce will ensure. Therefore, a balanced representation of women and men at all levels in research projects is encouraged. When human beings are involved as users, gender differences may exist. These will be addressed as an integral part of the research to ensure the highest level of scientific quality.

5.1.3. OTHER ACTIVITIES

The activities described in this section fall outside of the mainstream “calls for proposals” means of implementation of the Work Programme. Funds will be made available to support the following activities:

- a specific initiative on the basis of Art 171 or 169 of the Treaty is foreseen;
- several calls for tender ;
- a direct beneficiary is identified to receive financial support without a call for proposals¹.

¹ In accordance with Article 14(a) of the FP7 Rules for Participation.

a) Joint Technology Initiative on fuel cells and hydrogen

The Commission will make a specific proposal for a Joint Technology Initiative (JTI) on hydrogen and fuel cells, on the basis of Article 171 of the Treaty (proposal for a Council Regulation setting up the European Partnership for Hydrogen and Fuel Cell Technology Development).

b) Calls for Tender

The Commission will issue Calls for Tender for public procurements, such as specific studies or services required to achieve the programme objectives, particularly with regard to the monitoring and assessment of the programme and to the promotion and dissemination of results. A list of Calls for Tender planned for 2008 is shown in the table below:

Subject (Indicative title)	Indicative Budget in Euros	Expected duration
Establish an umbrella structure in order to finalise and ensure further coordination of the EU Flagship Programme in the area of sustainable power generation from fossil fuels with CO2 Capture and Storage.	3 million	3 years
Development of a set of energy research indicators in order to create a common understanding of the state of the art and updated research objectives at European level for the whole portfolio of European research.	800 000	3 years
Monitoring and mapping energy research activities at the EC, EU and global level.	700 000	3 years
Support to the coordination of the European Strategic Energy Technology (SET) Plan (support to carry out specific analyses needed to develop the SET-Plan).	200 000	9 months
Support to the Impact Assessment of the governance alternatives for the European Strategic Energy Technology Plan (SET-Plan)	250.000	6 months
Financing low carbon energy technologies development, market take up and early deployment – needs; sources; limitations; and public private partnerships	250.000	9 months

Regarding the calls for Tender above:

The Umbrella structure for the EU flagship Programme will help focusing the programme on providing sufficient practical experience to support the development and deployment of zero emission power generation technology including safety of transport/storage and public awareness. The tasks will include for example:

- Selecting and managing the portfolio of projects including (up to 12) large scale demonstration projects by 2015;
- Providing the coordination, and organising exchange of information and the sharing of experience among the projects,
- Promoting common monitoring and verification methods at the various sites,

- Promoting a common approach to public acceptance issues,
- Organising a coherent and fruitful relation between the flagship programme and the framework programme (FP) research activities, facilitating quick implementation of FP results,
- Ensuring harmonised funding mechanisms,
- Providing secretariat services,
- Supporting the Commission activities with third countries on the issue of zero emission power generation.

The development of a set of energy research indicators will support the development of a common understanding of the state of the art and updated research objectives at European level for the whole portfolio of European research. In addition to building this set of indicators, the action will focus on gaining on going interest, credibility and acceptance from the research community and wider (research managers, industry, political decision makers, etc.) by building a wide European forum through exchange and communication activities.

The Monitoring and mapping energy research activities should contribute to developing shared knowledge and understanding of the research portfolio in Member States main competitor regions and emerging regions. This would involve collecting, synthesising European activities and schemes on an ongoing basis with a view to share it and foster discussion between a wide range of stakeholders including industrialist, researchers and policy makers

Regarding the Strategic Energy Technology Plan specific technology, market and other analyses are needed for its follow-up and implementation after its foreseen adoption.

The SET plan will require a new way of working together in Europe; Member States, industry and the research community need to establish a governance structure that would allow decision makers to work collectively with the aim to optimise individual efforts. The Commission will analyse alternative options for this new governance, addressing in particular the effectiveness and costs involved. The foreseen study aims at providing the necessary elements to develop these options.

The resources needed to transform the energy system towards its decarbonisation are difficult to estimate, as they depend on the evolution of the market price of current resources and the results of on-going and future research, among many other factors. However, they are certainly larger than the current level of investment. Recent studies (e.g. the Stern Report, the Intergovernmental Panel on Climate Change reports and the International Energy Agency) confirm that increased investment, to at least double current levels, will deliver substantial benefits. The foreseen study will aim to provide a deeper understanding on the needs, possible sources of financing and their limitations and contribute to a better planning of research and innovation activities.

c) International Energy Agency

The Commission represents the European Community in the Implementing Agreements (hereinafter "IAs") concluded under the framework of the International Energy Agency where it participates in activities in certain areas of energy research.

The Commission will make annual financial contributions required by its participation, up to a total amount of 420.000 € The annual financial contributions will be paid to the entities responsible for managing the respective agreements. The table below shows only those IAs for which the financial contribution will be paid from the budget of this part of the Cooperation Work Programme. It is not an exhaustive list of all of the IAs to which the Commission participates.

The Commission may participate in additional activities agreed under the IAs mentioned above or in any other existing or future IA and in any other activities of the IEA where such participation is in the interest of the Community, in line with the objectives and priorities of the present Work Programme, and within the limits of the budgetary provisions. The table below will be updated in any future modifications of the Work Programme.

IEA Implementing Agreements financed under the Energy WP:

Implementing Agreement	Date IA signed by the European Commission	Estimated Annual EC Contribution in nominal currency	Estimated Annual EC Contribution in Euro
IEA Implementing Agreement for Co-operation in the Research and Development of Wind Turbine Systems	Commission signature in 1996. Expires in 2008	\$ 16,873	€14,060
IEA Implementing Agreement for the Establishment of a Project on Solar Power and Chemical Energy Systems	Commission signature in 1998. Expires in 2011	€5,250	€5,250
IEA Implementing Agreement for a Programme of Energy Technology Systems Analysis	Commission signature in 1980. Expires in 2009	€24,000	€24,000
Programme to Develop and Test Solar Heating & Cooling Systems	Commission signature in 1979. Expires in 2009	\$ 8,000	€7,000
IEA Implementing Agreement for a Programme of Research, Development and Demonstration on Bioenergy	Commission signature in 1995. Expires in 2009	\$ 88,500	€80,000
IEA Geothermal Implementing Agreement	Commission signature in 1997. Extended until 2012	\$ 14,000	€12,000
IEA Implementing Agreement on Photovoltaic Power System Programme	Commission signature in 1992. Extension procedure to 2012 under completion	€8,500	€8,500

Implementing Agreement	Date IA signed by the European Commission	Estimated Annual EC Contribution in nominal currency	Estimated Annual EC Contribution in Euro
IEA Implementing Agreement for the establishment of IEA Coal Research	Commission signature in 1989. Expires in 2008	GBP 62,400	€93,600
IEA Implementing Agreement for a Co-operative Programme on Technologies Relating to Greenhouse Gases derived from Fossil Fuel Use	Commission signature in 1991. Expires in 2011	GBP 52,500	€78,750
IEA Implementing Agreement for a Co-operative Programme on Ocean Energy Systems (OES)	Commission signature in 2002. Expires in 2011	€7,000	€7,000
IEA Implementing Agreement for Demand Side Management (DSM)	Expires in 2008	€35,000	€35,000
IEA Implementing Agreement on Efficient Electrical End-use Equipment	To be signed in 2007	€20,000	€20,000

5.2. CONTENT OF CALLS IN 2008

This section describes only the topics for which proposals will be called for in 2008 in the four calls described in section 5.1.2 It will be updated for an additional call for proposals.

Proposals may only be submitted to topics specifically identified in this Work Programme (i.e. explicitly labelled Topic ENERGY.2008.x.x.x). Proposals addressing other subjects will be considered to be ineligible (out-of-scope).

The description of each topic includes the technical content and scope, the applicable funding scheme and expected impact, as well as any other relevant information regarding participation requirements, relevance for SMEs or cooperation with third countries etc.

Funding schemes in the Energy Theme:

Regarding the Funding Schemes, the following information is provided to help applicants understand the expectations concerning project size.

(1) Collaborative Projects:

Collaborative projects can vary in size. Where the expected size of a project is stated in the description of a topic the definition is indicated in the specific call fiche. The call fiche might also indicate upper budgetary thresholds for projects when relevant.

Where no indications of collaborative project size are indicated in the description of a topic or in the relevant call fiche, then the applicant is free to choose the most appropriate size of the project.

(2) Coordination and support actions:

To assist applicants, a distinction is made between two types of actions, with the corresponding indications (non-binding) as regards the typical size of a project as follows:

- ‘*Coordination and support action (coordination type)*’ typically might be in the range 1-2 M€ (EC contribution), depending on the scale of the activity to be coordinated. For topics where this scheme is indicated, unless otherwise specified, it would normally be expected to finance only one project.
- ‘*Coordination and support action (support type)*’ typically might be up to 1 M€ (EC contribution). For topics where this scheme is indicated, it is intended to finance only one project, unless otherwise specified in the workprogramme.

Evaluation criteria:

The evaluation criteria to be applied to proposals submitted to the Energy Theme are specified in Annex 2 of the Work Programme.

Provisional Work Programme 2008

ACTIVITY ENERGY.1: HYDROGEN AND FUEL CELLS

NOTE: For 2008, the topics in this Activity are expected to be defined and selected in the programme of the Joint Technology Initiative (JTI) on fuel cells and hydrogen, on the basis of Article 171 of the Treaty, which will become fully operational beginning 2008. The JTI will be an industry led public private partnership which will define and manage a strategic, target-oriented research and development programme to support the broad market introduction of fuel cell and hydrogen technologies.

The JTI content will cover fundamental, industrial and applied research as well as demonstration and relevant cross-cutting activities. The detailed programme of activities of the JTI will be decided by its Governing Board. Therefore, such activities are not covered within the present version of the work programme.

However, in case of delay of the start up of JTI, a separate call may be published by the Commission.

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ACTIVITY ENERGY.2: RENEWABLE ELECTRICITY GENERATION

Research into, development and demonstration of integrated technologies for electricity production from renewables, suited to different regional conditions where sufficient economic and technical potential can be identified, in order to provide the means to raise substantially the share of renewable electricity production in the EU. Research should increase overall conversion efficiency, cost efficiency, significantly drive down the cost of electricity production from indigenous renewable energy resources including biodegradable fraction of waste, enhance process reliability and further reduce the environmental impact and eliminate existing obstacles. Emphasis will be on photovoltaics, wind and biomass including CHP. Furthermore, research will aim at realising the full potential of other sources of renewable electricity: geothermal, solar thermal power (i.e. *Concentrating Solar Power* or CSP), ocean (e.g. wave, tidal power) and hydropower.

Policy context: this activity would facilitate the actual implementation of the “Directive on the promotion of electricity produced from renewable energy sources in the internal electricity market (2001/77/EC, O.J. L283, 27/10/2001)” as well as its revision and medium-term application.

AREA ENERGY.2.1: PHOTOVOLTAICS

Photovoltaics is the most capital-intensive renewable source of electricity. Currently, the generation costs of grid-connected PV electricity in Europe range from 0.25 €/kWh to 0.65 €/kWh, depending on both local solar irradiation and market conditions. The work will include the development and demonstration of new processes for photovoltaic manufacturing, including the manufacturing of equipment for the PV industry, new photovoltaic-based building elements complying with existing standards and codes and the demonstration of the multiple additional benefits of photovoltaic electricity. Longer term strategies for next-generation photovoltaics (both high-efficiency and low-cost routes) will also be supported.

The content of this Area takes into consideration the Strategic Research Agenda (SRA) developed within the European Photovoltaic Technology Platform.

Overall expected impact: Through technological improvements and economies of scale, the cost of grid-connected PV electricity in Europe is expected to be lowered to a figure in the range of 0.10-0.25 €/kWh by 2020. Research and development should lead to reduced material consumption, introduction of solar grade materials, higher efficiencies and improved manufacturing processes based on environmentally sound processes and cycles.

Topic ENERGY.2008.2.1.1: Enhancing strategic international cooperation initiatives in the field of concentration photovoltaics

Content/scope: This topic solicits proposals for international cooperation in the field of concentration photovoltaics with Mediterranean Partner Countries (MPCs). Project should address common research interests, building on ongoing initiatives to deliver synergy effects. Examples of tasks may include reciprocal field testing of devices, establishment of common materials database, inter comparison of system components.

Funding scheme: Collaborative project with a predominant research component.

Expected impact: Accelerated development of the still small, but emerging and promising, sector of concentration photovoltaics in the participating regions.

Other information: *This is a Specific International Cooperation Action* focused on EU cooperation with Mediterranean Partner Countries. This topic is also particularly well suited for cooperation with entities from United States and Australia, which can help maximising its impact. Mediterranean Partner Countries may receive a Community financial contribution. A maximum of one project will be financed under this topic

Open in call: *FP7-ENERGY-2008-1*

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AREA ENERGY.2.2: BIOMASS

Current costs of electricity generation from biomass are in the range of 0.05-0.08 €/kWh. Development should aim at extending applications to a wider range of biomass materials by (1) solving specific problems hindering the use of biomass in direct co-firing and (2) addressing technical challenges for advanced biomass gasification systems for efficient power production.

Demonstration should aim at medium to large scale bio-electricity systems, covering the whole process chain from sustainable feedstock supply over energy conversion to the recovery of by-products. Preference will be given to the ambitious use of biofuels with still high exploitation potentials such as forest residues, energy crops, agricultural residues incl. straw, refuse derived fuels etc. Medium-to-large scale power generation from organic waste also comprises mass burning of solid municipal waste as well as the separate use of pre-treated and pre-separated municipal waste fractions. Emphasis is put on innovations with high penetration potential throughout Europe while also paying due attention to overall sustainability aspects. Stakeholders relevant for the commercialisation of the innovation are expected to participate. Proposals with bio-energy plants operating (at least partially) in combined heat and power (CHP) or combined heat, cooling and power (CCHP) will be preferred in case of similar performances in all other criteria.

Overall expected impact: Increased electricity production from biomass through the development and demonstration of improved biomass power generation and CHP plants which allow power generation costs below 0.04 €/kWh in 2020 whilst operating on a variety of sustainably produced biomass feedstocks.

Topic ENERGY.2008.2.2.1: Enhancing strategic international cooperation with Russia in the field of power generation from biomass

Content/scope: Research and technology development in the field of power generation from biomass. This collaborative research activity should be based on an assessment of ongoing research, the identification of best practices, gaps in knowledge, and barriers to implementation in both the EU and Russia.

Funding scheme: Collaborative project

Expected impact: Effective cooperation between key researchers and industries in the field of power generation from biomass should foster the development and uptake of innovative methods and technologies to expand the use of biomass in power generation.

Other information: The typical consortium should be a well balanced partnership between EU and Russian teams. The funding of all participants will follow the rules established for the Energy EU-Russia Call. Participants being established in the EU or in an associated country may jointly receive up to 2 M€ from the European Commission.. Russian Partners may jointly receive up to 2 M€ from the Russian Funding Agency.

Cooperation is encouraged between academic and industrial organisations from the EU and Russia which are actively involved in research and development on power generation from biomass.

Open in call: FP7-ENERGY-2008-RUSSIA

AEA ENERGY.2.3: WIND

In this Area, no topics are open in calls published in this workprogramme.

AREA ENERGY.2.4: GEOTHERMAL

In this Area, no topics are open in calls published in this workprogramme.

AREA ENERGY.2.5: CONCENTRATED SOLAR POWER

In this Area, no topics are open in calls published in this workprogramme.

In this Area, no topics are open in calls published in this workprogramme.

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AREA ENERGY.2.7: HYDRO

In spite of the perception that hydropower is a mature technology, there are still technological challenges which should be addressed in order to develop further the technology and to exploit the remaining potential, composed mainly of low-head and very-low-head sites.

The main objective is to further improve the energy and cost-efficiency of hydropower plants, in particular smaller systems, while minimising the adverse environmental impact. There is a need for demonstration of innovative systems, equipment and design practices which could be at the same time economically and environmentally efficient. They should be easily customised for a site-specific use. The systems should improve the reliability and efficiency with guaranteed performance. Innovative solutions which can maximise the energy production of existing plants should also be developed and demonstrated.

Overall expected impact: A continued increase in efficiency while reducing the environmental impact and the technology costs through innovation and learning curve effects.

Topic ENERGY.2008.2.7.1: Pre-normative research for hydropower

Content/scope: Pre-normative research aiming at harmonised testing methods and comparative assessment of small hydropower installations, in particular those based on new technologies and designs. Such pre-normative activities should include, inter alia, the monitoring of performance, life-cycle costs, environmental impact (including materials and production processes), and socio-economic assessment.

Funding scheme: Collaborative Project.

Expected impact: Harmonised testing and assessment of small hydropower installations will facilitate matching different system designs with various environments and accelerate their rate of deployment.

Other information: In order to maximise industrial relevance and impact of the research effort, the active participation of SMEs represents an added value to this topic. This will be reflected in the evaluation. Key players in the consortium should demonstrate their ability to productively interact with relevant stakeholders from governmental, public and private organisations. A maximum of one project will be financed under this topic.

Open in call: FP7-ENERGY-2008-1

AREA ENERGY.2.8: INNOVATIVE INTEGRATION OF RENEWABLE ENERGY SUPPLY AND ENERGY EFFICIENCY IN LARGE BUILDINGS AND/OR CONCERTO COMMUNITIES

In this area, no topics are open in calls published in this work programme.

AREA ENERGY.2.9: CROSS-CUTTING ISSUES

In this Area, no topics are open in calls published in this workprogramme.

ACTIVITY ENERGY.3: RENEWABLE FUEL PRODUCTION

Research into, development and demonstration of improved fuel production systems and conversion technologies for the sustainable production and supply chains of solid, liquid and gaseous fuels from biomass (incl. biodegradable fraction of waste). Emphasis should be 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 will 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 will be included. To exploit the potential for renewable hydrogen production, biomass, renewable electricity and solar energy driven processes will be supported.

The structure and content of this Activity takes into consideration the Strategic Research Agenda (SRA) of the Biofuels Technology Platform.

Policy context: this research activity would facilitate the actual implementation of the Directive on the promotion of the use of bio-fuels or other renewable fuels for transport (2003/30/EC, O.J. L125, 17/05/2003).

AREA ENERGY.3.1: FIRST GENERATION BIOFUEL FROM BIOMASS

In this Area, no topics are open in calls published in this workprogramme.

AREA ENERGY.3.2: SECOND GENERATION FUEL FROM BIOMASS

Second generation biofuels comprise a range of alternatives such as lignocellulosic ethanol, syngas gas based fuels, pyrolysis-oil based biofuels and others. Activities will cover process development and system integration focusing on the conversion process, with a view to improve cost-competitiveness of biofuels while minimising the environmental impact of biofuel production. Results are expected to expand the biomass feedstock available for biofuel production, assisting the take-off of a large biofuel industry while helping to avoid food/fuel competition for the land use.

Overall expected impact: Technology development should bring about substantial cost reduction to pave the way for large scale production of second generation biofuels by 2020, while improving the energy balance and environmental impact of biofuel production.

Topic ENERGY.2008.3.2.1: Enhancing international cooperation between the EU and Latin America in the field of biofuels

Content/scope: International cooperation in the field of biofuel technologies. Proposals could address the characterisation of feedstock and pre-treatment technology, optimisation of the production processes for 1st and 2nd generation biofuels, sustainability issues and co-production of biofuels and bioproducts.

Funding scheme: Collaborative Project with a predominant research component

Expected impact: Significant enhancement of the cooperation between key researchers and industries from the EU and Latin America in the field of biofuels.

Other information: This is a Specific International Cooperation Action. At least four legal entities must participate, two from EU Member States or Associated Countries, and two from Latin America. The consortium should include in a balanced way both Latin American

and European partners with solid experience and competence in the field and strong project management skills. Key players in the consortium should have a proven track record of EU-LA collaboration. The partnership should demonstrate the added value of EU-LA collaboration in the proposed action. Expertise in the international context and knowledge of Latin America for European partners and vice-versa is important. Preference will be given to actions involving countries having a S&T bilateral agreement with the EU and/or specific arrangements.

Open in call: FP7-ENERGY-2008-1

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In this Area, no topics are open in calls published in this workprogramme.

AREA ENERGY.3.3: BIOREFINERY

In this Area, no topics are open in calls published in this workprogramme.

AREA ENERGY.3.4: BIOFUELS FROM ENERGY CROPS

In this Area, no topics are open in calls published in this workprogramme.

AREA ENERGY.3.5: ALTERNATIVE ROUTES TO RENEWABLE FUEL PRODUCTION

In this Area, no topics are open in calls published in this workprogramme.

AREA ENERGY.3.6: BIOFUEL USE IN TRANSPORT

In this Area, no topics are open in calls published in this workprogramme.

AREA ENERGY.3.7: CROSS-CUTTING ISSUES

In this Area, no topics are open in calls published in this workprogramme.

ACTIVITY ENERGY.4: RENEWABLES FOR HEATING AND COOLING

AREA ENERGY.4.1: LOW/MEDIUM TEMPERATURE SOLAR THERMAL ENERGY

In this Area, no topics are open in calls published in this workprogramme.

AREA ENERGY.4.2: BIOMASS

In this Area, no topics are open in calls published in this workprogramme.

AREA ENERGY.4.3: GEOTHERMAL ENERGY

In this area, no topics are open in calls published in this workprogramme

AREA ENERGY.4.4: INNOVATIVE INTEGRATION OF RENEWABLE ENERGY SUPPLY AND ENERGY EFFICIENCY IN LARGE BUILDINGS AND/OR CONCERTO COMMUNITIES

In this Area, no topics are open in calls published in this workprogramme.

AREA ENERGY.4.5: CROSS-CUTTING ISSUES

In this Area, no topics are open in calls published in this workprogramme.

ACTIVITY ENERGY.5: CO₂ CAPTURE AND STORAGE TECHNOLOGIES FOR ZERO EMISSION POWER GENERATION

Research, development and demonstration of technologies to drastically reduce the adverse environmental impact of fossil fuel use aiming at highly efficient and cost effective power and/ or steam generation plants with near zero emissions, based on CO₂ capture and storage technologies, in particular underground storage.

Areas and topics in the two partly complementary activities ENERGY.5 and ENERGY.6 are based on previous actions initiated under the 5th and 6th framework programmes and take into account results as well as work under way. Their common aim is to enable the arrival of an integrated technological solution allowing for zero emission power generation from fossil fuels. Priorities have also been determined in accordance with those identified by the work of the Technology Platform for zero emission, with a view to getting to the vision established by the ZEP platform of having integrated solutions for zero emission fossil fuel based power available by 2020. This requires large scale demonstration in place by 2015 at the latest.

Besides this common aim, each activity also includes particular priorities of its own merit which can be seen as parallel, although not unrelated, to the aim of an integrated solution for zero-emission power generation.

The activities under the Framework Programme must also be seen in complementarity with those carried out by the Research Fund for Coal and Steel. Following a Protocol annexed to the Treaty of Nice, the RFCS disposes of own budgetary means outside the Framework Programme, part of which are used to fund coal research activities ranging from coal mining to coal conversion and coal combustion/applications.

Expected impact: *The development of more cost effective zero emission fossil fuel based power plants would enable the use of fossil fuel reserves with a substantially reduced environmental impact, in particular in terms of greenhouse gas emissions. The same capture techniques would often also be applicable to other energy intensive industries.*

The development of safer storage techniques, monitoring and verification techniques for geological storage would enable the large scale deployment of zero emission fossil fuel power plants with a wide public acceptance. It would also enable the qualification of such plants into the European Emission Trading Schemes or indeed into any other form of incentive scheme.

The development of clean coal technologies with a view to delivering zero emission would enable the wider use of indigenous solid hydrocarbon (hard coal, lignite, oil shale and other solid fossil fuel) resources, as well as widely abundant traded coal, compatible with the environment.

All these actions would put the European industry in these sectors in a better competitive position for markets in the EU and outside, in a carbon-constrained world.

AREA ENERGY.5.1: CO₂ CAPTURE

In this Area, no topics are open in calls published in this workprogramme.

AREA ENERGY.5.2: CO₂ STORAGE

Projects in this area should address the safety of geological CO₂ storage at all relevant timescales, the liability issues, for different kinds of CO₂ storage underground, e.g. saline aquifers, depleted oil or gas fields, enhanced oil or gas recovery, enhanced coal bed methane.

Overall expected impact: It is expected that this will give full confidence in geological CO₂ storage and will form the basis for the legal and regulatory requirements allowing the deployment of large scale near zero emission power generation technology using underground CO₂ storage.

Topic ENERGY.2008.5.2.1: CO₂ Capture and Storage – Capacity building with the large emerging economies

Content/scope: Research is required in order to have a first global estimate of the potential CO₂ storage capacity available in the large emerging economies. The matching of sources and sinks should complement the capacity assessment studies to identify a few potential storage sites in the vicinity of large emission point sources. Capacity building in CO₂ capture and storage, including the development of the necessary transport infrastructure should also be covered in subjects of mutual interest.

Funding scheme: Collaborative Project

Expected impact: The results of this project would allow the deployment of zero emission fossil fuel based power plants in large emerging economies with sufficient pre-requisite knowledge of the CO₂ storage potential, and based on improved capture know-how resulting from the capacity building actions.

Other information: *This is a Specific International Collaboration Action* The typical consortium should be a well balanced partnership between institutions of the EU and of the large emerging economy members of the Carbon Sequestration Leadership forum. The participation of institutions from developed countries also members of the CSLF is encouraged.

Open in call: FP7-ENERGY-2008-1

Topic ENERGY.2008.5.2.2 : CO₂ transport and storage infrastructure development

Content/scope: Work is required to develop the various aspects of transport and storage infrastructure to allow the large scale deployment of zero emission plants in the EU. This should cover the infrastructure to collect CO₂ from large point sources, intermediate short term storage technologies, large scale CO₂ compression installations, and the design of large scale final injection facilities, both on-shore and off-shore. The societal, legal, environmental, financial and technical aspects of the previous installations and infrastructures should be addressed.

Funding scheme: one Collaborative Project.

Expected impact: The project would facilitate the large scale deployment of zero emission plants in the EU by generating the necessary knowledge associated to all the intermediate steps between the capture plant and the final geological repository.

Other information: a maximum of one project will be funded under this topic.

Open in call: FP7-ENERGY-2008-1

Topic ENERGY.2008.5.2.3 : CO2 capture and storage – public acceptance

Content/scope: Work is required to study the acceptance of CO2 capture and storage technologies in the general public. The work should cover the necessary information needs, the impact of the information given, the role of opinion shapers, as well as the local dimension of public acceptance, compared to the more abstract general perception.

Funding scheme: Coordination and support action (support type).

Expected impact: The project would facilitate the large scale deployment of zero emission power plants in the EU by addressing the issue of public acceptance, which is a potential show stopper.

Other information: a maximum of one project will be funded under this topic.

Open in call: FP7-ENERGY-2008-1

Topic ENERGY.2008.5.2.4: Development of a suitable methodology for the qualification of deep saline aquifers for CO2 storage

Content/scope: Development of a suitable methodology (seismic testing, exploratory drilling, etc) to assess the quality of a given site for geological storage. The aim will be to develop a common generic methodology to address the various criteria put in place by the regulatory authorities with the ultimate view of satisfying the certification criteria that they will enforce.

Funding scheme: Collaborative Project with a predominant research component.

Expected impact: Such a project will deliver site qualification methodologies which will feed into the regulatory process for site qualification. This will ultimately contribute to the use of deep saline aquifers for CO2 storage in Europe, and therefore ease the penetration of fossil fuel based zero emission power plants.

Other information: It is envisaged that such a project could be developed in connection with one or more of the specific sites for CO2 storage emerging in Europe, where a deep saline aquifer could be used for the storage part. Cooperation is encouraged with organisations from the member countries of the Carbon Sequestration Leadership Forum.

Open in call: FP7-ENERGY-2008-1

ACTIVITY ENERGY.6: CLEAN COAL TECHNOLOGIES

Research, development and demonstration of technologies to substantially improve plant efficiency firstly, but also reliability and cost, of coal and other solid hydrocarbon (including oil shale) conversion technologies producing also secondary energy carriers (including hydrogen) and liquid or gaseous fuels. "Clean coal" in this context really means a sustainable solid hydrocarbon value chain with a focus on efficient and clean coal utilization, i.e. coal use aiming at zero or significantly reduced emissions by means of enhanced plant efficiency and CO₂ capture and storage.

Areas and topics in the two partly complementary activities ENERGY.5 and ENERGY.6 are based on previous actions initiated under the 5th and 6th framework programmes and take into account results as well as work under way. Their common aim is to enable the arrival of an integrated technological solution allowing for zero emission power generation from solid fuels. Priorities have also been determined in accordance with those identified by the work of the Technology Platform for zero emission, with a view to getting to the vision established by the ZEP platform of having integrated solutions for zero emission fossil fuel based power available by 2020. This requires large scale demonstration in place by 2015 at the latest.

Besides this common aim, each activity also includes particular priorities of its own merit which can be seen as parallel, although not unrelated, to the aim of an integrated solution for zero-emission power generation.

The activities under the Framework Programme must also be seen in complementarity with those carried out by the Research Fund for Coal and Steel. Following a Protocol annexed to the Treaty of Nice, the RFCS disposes of own budgetary means outside the Framework Programme, part of which are used to fund coal research activities ranging from coal mining to coal conversion and coal combustion/applications.

Expected impact:

The development of more cost effective zero emission fossil fuel based power plants would enable the use of fossil fuel reserves with a substantially reduced environmental impact, in particular in terms of greenhouse gas emissions. The same capture techniques would often also be applicable to other energy intensive industries.

The development of safer storage techniques, monitoring and verification techniques for geological storage would enable the large scale deployment of zero emission fossil fuel power plants with a wide public acceptance. It would also enable the qualification of such plants into the European Emission Trading Schemes or indeed into any other form of incentive scheme.

The development of clean coal technologies with a view to delivering zero emission would enable the wider use of indigenous solid hydrocarbon (hard coal, lignite, oil shale and other solid fossil fuel) resources, as well as widely abundant traded coal, compatible with the environment.

All these actions would put the European industry in these sectors in a better competitive position for markets in the EU and outside, in a carbon-constrained world.

AREA ENERGY.6.1: CONVERSION TECHNOLOGIES FOR ZERO EMISSION POWER GENERATION

In this Area, no topics are open in calls published in this workprogramme.

AREA ENERGY.6.2: COAL-BASED POLY-GENERATION

In this Area, no topics are open in calls published in this workprogramme.

DRAFT

CROSS-CUTTING ACTIONS BETWEEN ACTIVITIES ENERGY.5 AND ENERGY.6 (Activity ENERGY.5&6)

AREA ENERGY.5&6.1: POWER GENERATION TECHNOLOGIES FOR INTEGRATED ZERO EMISSION SOLUTIONS

In this Area, no topics are open in calls published in this workprogramme.

DRAFT

AREA ENERGY.5&6.2: CROSS CUTTING AND REGULATORY ISSUES

Projects in this area should contribute to address general economic, social, environmental and infrastructural development issues essential to the large scale commercial deployment of CCS technologies. Results should contribute to prepare a regulatory framework for CCS technology in the EU, addressing the relevant issues as identified in the report of the ECCP2 that is planned to be taken forward in the upcoming Commission Communication on CO₂ capture and storage. Research will also identify, assess and recommend ways to overcome non-technical barriers relative to the deployment of CCS.

In this Area, no topics are open in calls published in this workprogramme.

DRAFT

ACTIVITY ENERGY.7: SMART ENERGY NETWORKS

To facilitate the transition to a more sustainable energy system, a wide-ranging R&D effort is required to increase the efficiency, flexibility, safety, reliability and quality of the European electricity and gas systems and networks notably within the context of a more integrated European energy market. For electricity networks, the goals of transforming the current electricity grids into a resilient and interactive (customers/operators) service network, controlling the real time flows and removing the obstacles to the large-scale deployment and effective integration of renewable energy sources and distributed generation (e.g. fuel cells, microturbines, reciprocating engines), will necessitate the research, development and demonstration of key enabling technologies (e.g. innovative ICT solutions, storage technologies for RES, power electronics and superconducting devices) including the development of new control and reliability tools for electricity systems. For gas networks, the objective is to demonstrate more intelligent and efficient processes and systems for gas transport and distribution, including the effective integration of renewable energy sources and the use of biogas in the existing networks.

This Activity has been structured into three Research Areas, which have been identified taking into consideration the Vision and recommendations of the Strategic Research Agenda developed within the Technology Platform SmartGrids, as well as the inputs of the existing Coordination Actions active in the area.

AREA ENERGY.7.1: DEVELOPMENT OF INTER-ACTIVE DISTRIBUTION ENERGY NETWORKS

To fully exploit the potential advantages of renewable energies, distributed generation and demand respond techniques it is necessary to re-think the basic philosophy governing the electricity distribution systems. Distributed generation sources should not only be connected, but must be fully integrated into the distribution system. At the same time, full use must be made of the customers' demand flexibilities, and appropriate economic signals, such as real time pricing, must be developed to exploit these flexibilities. The future active network will efficiently link small and medium scale power sources with consumer demands, allowing both to decide how best to operate in real time. The level of control required to achieve this is much higher than in the present distribution systems. Power flow assessment, voltage control, protection and intelligent metering solutions require cost-competitive technologies and new communication systems with more sensors and actuators than presently seen in the distribution systems.

Overall expected impact: To contribute to the penetration of renewable energies and distributed generation into the distribution grids, improving the security of supply of critical loads, increase the load factor of distribution feeders, and enable real-time electricity pricing for all network users.

Topic ENERGY.2008.7.1.1: Open-access Standard for Smart Multi-Metering Services

Content/scope: The large scale adoption of Smart Multi-Metering equipment, potentially covering electricity, gas and any other network service and commodity, is today hampered by the lack of widely accepted open-standards, capable to guarantee the interoperability of systems and devices produced by different manufacturers.

The main objective of this topic is to fill the knowledge gaps necessary to enable the relevant industries to agree on the required standards.

(Pre-normative) Research activities should cover formal definition of protocols, data formats and all the necessary modules of integrated open-access Integrated Automatic Meter Management Systems. Among the functions covered will be automatic meter reading, remote (re)connection, flexible tariff management, demand side management and demand response to market and network signals, and integration of Distributed Generation.

Funding scheme: Collaborative Project.

Expected impact: Adoption of these standards will open up the market of smart multi-metering system, enabling active customer participation to energy markets, and at the same time allowing EU-industry to take world leadership.

Other information: The typical consortium should be a well balanced partnership between network industries, equipment suppliers, research centres and regulatory and standardisation bodies. Proposals will undergo a one-step evaluation procedure. A maximum of one project will be funded under this topic.

Open in call: FP7-ENERGY-2008-1

AREA ENERGY.7.2: PAN-EUROPEAN ENERGY NETWORKS

The Energy Green Paper 2006 identifies the need to develop a flexible single European Grid as one of the most important priorities of the EU energy policy for the next few years. A single European Grid is needed to support the proper functioning of the Internal Electricity & Gas Market, to facilitate the large scale deployment of new generation technologies, like wind power and distributed generation, to increase security of supply, to avoid black-outs and to support mechanisms of solidarity between Member States.

Overall expected impact: The expected results of this area will be focused on the development of the technical and regulatory solutions necessary for the rapid establishment of a *de facto* single European Grid. This will require the development of technologies to increase the observability, controllability, stability and security of the overall system, to increase the current-carrying capacities of existing and new lines, and to strengthen the cooperation between network operators, both on research and operational issues.

Topic ENERGY.2008.7.2.1: Innovative operational and/or monitoring tools for large power systems

Content/scope: Development and validation of new of innovative operational and/or monitoring software tools and hardware equipment for large power systems.

Funding scheme: Collaborative Project

Expected impact: The possible future interconnection between the Pan-European and Russian electricity transmission system would be greatly simplified if common/compatible software tools, hardware equipment and operational procedures are adopted by all Transmission System Operators involved. The joint development of these tools and equipments will promote their adoption.

Other information: The typical consortium should be a well balanced partnership between EU and Russian teams. The funding of all participants will follow the rules established for the Energy EU-Russia Call. Participants being established in the EU or in an associated

country may jointly receive up to 2 M€ from the European Commission and Russian Partners may jointly receive up to 2 M€ from the Russian Funding Agency.

Open in call: : FP7-ENERGY-2008-RUSSIA

Topic ENERGY.2008.7.2.2: Innovative concepts and technologies for sustainable gas networks

Technical content/scope: Research should focus on the development of innovative concepts and technologies for reliable and flexible European gas networks, tackling for example the integration of renewable energy alternatives into the networks, novel solutions for monitoring, maintenance, and system issues.

Funding scheme: Collaborative Project with a predominant R&D component

Expected impact: The resulting technologies should open new pathways for sustainable gas networks, while addressing the pressing challenges of security of supply and climate change

Open in call: FP7-ENERGY-2008-1

DRAFT

ACTIVITY ENERGY.8: ENERGY EFFICIENCY AND SAVINGS

The vast potential for final and primary energy consumption savings and improvements in energy efficiency² need to be harnessed through the research into, optimisation, validation and demonstration of new concepts, optimisation of proved and new concepts and technologies for buildings, transport, services, and industry. This incorporates the combination of sustainable strategies and technologies for increased energy efficiency, the use of renewable energy and co- and poly-generation and the integration of demand management measures and devices at large scale in cities and communities, and the demonstration of minimum climate impact buildings (eco-buildings). These large-scale actions may be supported by innovative R&D addressing specific components or technologies, e.g. for poly-generation and eco-buildings (including lighting). A key aim is the optimisation of the local community energy system, balancing a significant reduction in energy demand with the most affordable and sustainable supply solution, including the use of new fuels in dedicated fleets³.

Policy context: this research activity would facilitate the actual implementation of the Directive on the energy performance of buildings (2002/91/EC, O.J. L 1 of 4.1.2003), the Directive on the promotion of cogeneration based on a useful heat demand in the internal energy market (2004/8/EC, L 52 of 21.2.2004), the Directive on eco-design requirements for end-use energy-using products (2005/32/EC, O.J. L 191 of 22.7.2005) and the Directive on energy end-use efficiency and energy savings (2006/32/EC, O.J. L 114 of 27.4.2006).

AREA ENERGY.8.1: EFFICIENT ENERGY USE IN THE MANUFACTURING INDUSTRY⁴

The manufacturing industry is consuming large quantities (percentage of primary energy) of energy - electricity, heat, cold, fuels - for the production of industrial and consumer goods; any increase in energy efficiency in the manufacturing processes would deliver significant benefits on security of energy supply as well as reduction of green house gases emissions while reducing the cost of the manufactured goods. This has been highlighted in all industrial technology platforms (Steel industry, Chemical industry and Forest products industry). Activities will focus on the demonstration of innovative production processes in the manufacturing industry with significant energy savings and improved environmental performance. Emphasis will be given on innovative recovery of waste heat in industrial processes and efficient management of industrial and community waste and residues while maximising the overall energy efficiency.

Topic ENERGY.2008.8.1.1: Energy efficiency of industrial heat exchangers and boilers

Content/scope: Long term generic research and technology development to increase significantly the efficiency of heat exchangers and boilers It would aim at developing new

² As recognised by the Green Paper on Energy Efficiency or "Doing More for Less" - COM(2005) 265, 22.6.2005, as well as the 'Action Plan for energy efficiency: realising the potential' – COM(2006)545 of 19.10.2006.

³ Building upon the experience of the CONCERTO and CIVITAS initiatives supported in the 6th Framework Programme.

⁴ In this Area, the term 'manufacturing industry' is used in its broadest sense, including process industries.

concepts for these key components in view of improving energy efficiency in a large number of industrial sectors It could address various aspects such as materials, thermodynamics, fluid dynamics and engineering.

Funding scheme: Collaborative Project with predominant R&D component.

Expected impact: Significantly increase energy efficiency in a large number of industrial sectors.

Other information: In order to maximise industrial relevance and impact of the research effort SMEs are expected to be important contributors to such technology development. This will be reflected in the evaluation

Open in call: FP7-ENERGY-2008-1

AREA ENERGY.8.2: HIGH EFFICIENCY POLY-GENERATION

In this Area, no topics are open in calls published in this workprogramme.

AREA ENERGY.8.3: LARGE-SCALE INTEGRATION OF RENEWABLE ENERGY SUPPLY AND ENERGY EFFICIENCY IN BUILDINGS: ECO-BUILDINGS

In this Area, no topics are open in calls published in this workprogramme

AREA ENERGY.8.4: INNOVATIVE INTEGRATION OF RENEWABLE ENERGY SUPPLY AND ENERGY EFFICIENCY IN LARGE COMMUNITIES: CONCERTO

In this Area, no topics are open in calls published in this workprogramme.

AREA ENERGY.8.5: INNOVATIVE STRATEGIES FOR CLEAN URBAN TRANSPORT: CIVITAS-PLUS

(To be also covered by: Transport Work Programme SST.2008.3.4)

In this Area, no topics are open in calls published in this workprogramme

AREA ENERGY.8.6: SOCIO-ECONOMIC RESEARCH AND INNOVATION

In this Area, no topics are open in calls published in 2008.

AREA ENERGY.8.7: THEMATIC PROMOTION AND DISSEMINATION

In this Area, no topics are open in calls published in this workprogramme.

ACTIVITY ENERGY.9: KNOWLEDGE FOR ENERGY POLICY MAKING

Development of tools, methods and models to assess the main economic and social issues related to energy technologies. Activities will include the building of databases and scenarios for an enlarged EU and the assessment of the impact of energy and energy-related policies on security of supply, environment, society, competitiveness of the energy industry and issues of public acceptability. Of particular importance is the impact of technological progress on Community policies. Activities will include scientific support for policy development.

AREA ENERGY.9.1: KNOWLEDGE TOOLS FOR ENERGY-RELATED POLICY MAKING

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In this Area, no topics are open in calls published in this workprogramme

AREA ENERGY.9.2: SCIENTIFIC SUPPORT TO POLICY

In this Area, no topics are open in calls published in this workprogramme.

ACTIVITY ENERGY.10: HORIZONTAL PROGRAMME ACTIONS

The topics described in the section have a horizontal character not linked specifically to any particular technology. The challenge for policy-makers in the field of research, technology and innovation, particularly in the Energy context, is the timely identification of new directions that have a high potential for significant breakthrough and may become tomorrow's energy robust technologies.

In order to foster highly creative research groups in the European Research Area, enabling them to pursue promising research avenues as these arise bottom-up, a substantial part of the budget will be devoted to this **two-stages-open-call**, addressing the widest possible spectrum of research topics that closely relate to Energy science and technologies. As such, this activity takes as foundations the FP6 NEST-ADVENTURE activities, as their natural inspiration for this new programme tool.

The research supported with an orientation towards the long term is "purpose driven" and not "blue-sky". The project objectives need to be tangible, highly ambitious and challenging. This means either reaching a clearly defined scientific goal and/or creating a new basic technology, which in either case has the potential to open up new fields of enquire and lies well beyond the international state of the art.

Being EC-funded research under the Cooperation programme, projects will involve multinational partnership, often from different scientific disciplines and/or different technological sectors, in order to work across traditional boundaries. But there should be no "superfluous" partners who will hinder effective management and research flexibility.

On the other hand, the following types of research will not be considered for funding:

- any research that does not involve significant and clearly identifiable novel aspects;
- any research that constitutes a technology demonstration or a combination of existing technologies;
- any open-ended blue-sky research - "increased understanding" alone would not be considered sufficiently tangible;
- any research directed towards hypothetical phenomena, with no plausible or convincing evidence as to their real or potential existence, or research that is inconsistent with the most basic laws of science.

Topic ENERGY.2008.10.1.1: Future Emerging Technologies (FET)

Technical content/scope: The development of energy technologies is often impeded by bottlenecks which require the development and application of basic science and cross-cutting technologies. This topic aims at ensuring a genuine chance for “emerging ideas” to be funded based on the strategic need to utilise the creative spirit in European research. It covers all the areas of the Theme and is to provide rewards for “high risk / high impact” science and to vigorously promote multi-disciplinarity on a European collaborative basis.

Funding scheme: Collaborative projects.

Special features: In order to maximise industrial relevance and impact of the research effort, the active participation of High technology SMEs represents an added value to this topic. This will be reflected in the evaluation.

Expected impact: To explore new paths leading to highly innovative novel technologies for energy applications and, to contribute to the establishment of a strong scientific and technical base for European science and technology in energy emerging areas.

Open in call: FP7-ENERGY-2008-FET

Topic ENERGY.2008.10.1.2: Novel materials for energy applications (Joint Call NMP)

Technical content/scope: In most cases, real breakthroughs in the energy sector can only come from progress in basic materials science that underpins energy technologies. Research should focus on a wide spectrum of novel materials and nanomaterials for energy applications with an orientation towards long-term innovation. The research activities supported should go beyond conventional approaches, and be highly novel, very ambitious and of long term nature. The expected impact of these projects will be judged in the first instance on the radical upgrade in the properties of the materials, but this improved performance must be in areas where energy technology benefits are to be expected and, in this context, multidisciplinary approaches are of particular interest. Projects should contribute to the establishment of strong strategic positions for Europe in emerging materials science areas of technological relevance. Important fields of application for energy technology are energy conversion and storage, photon capture and CO₂ capture and storage

Funding scheme: Collaborative projects.

Special features: Joint Call with Theme 4 – topic NMP-2008-2.6-1, under activity 4.2.6. This joint call is particularly well suited for cooperation with top class research groups from Third Countries in particular Emerging Economies and Industrialised Countries which can help ensure a wider impact. It is also encouraged to include in the projects activities related to benchmarking and validation (testing) of the new materials, which would have a positive effect on the industrial impact.

Expected impact: Exploration of radically new paths leading to highly innovative, high risk, long term research in the field of materials for energy applications and contribution to the establishment of strong strategic positions for European science and technology in emerging areas. The potential impact on the energy system has to be clearly demonstrated.

Open in call: FP7-ENERGY-NMP-2008-1

Topic ENERGY.2008.10.1.3: Trans-national co-operation among NCPs

Content/scope: Reinforcing the network of National Contact Points (NCP) for the Seventh Framework Programme under the Energy Theme, by promoting trans-national cooperation. The action will focus on identifying and sharing good practices. This may entail various mechanisms such as benchmarking, joint workshops, training, and twinning schemes. Practical initiatives to benefit cross-border audiences may also be included, such as trans-national brokerage events. The specific approach should be adapted to the nature of the theme and to the capacities and priorities of the NCPs concerned. Special attention will be given to helping less experienced NCPs rapidly acquire the know-how accumulated in other countries.

Funding scheme: Coordination and Support Action (coordination type)

Expected impact: An improved NCP service across Europe, therefore helping simplify access to FP7 calls, lowering the entry barriers for newcomers, and raising the average quality of submitted proposals. A more consistent level of NCP support services across Europe. More effective participation of organisation from third countries, alongside European organisations, in line with the principle of mutual benefit.

Other information: The Commission will finance a single proposal under this heading for a duration of 12 months. Proposals should include NCPs who have been officially appointed by the relevant national authorities. This is an eligibility criterion. Other participants from the EU and associated countries are ineligible. If certain NCPs wish to abstain from participating, this fact should be explicitly documented in the proposal. Third countries may be included, where there is mutual benefit.

Open in call: FP7-ENERGY-2008-1

Budget Overview

Budget for the calls closed in 2007 for the Energy Theme for the 2007 Work Programme

Call/activity	RTD Total M€	RTD 2007 M€	RTD 2008 M€	TREN 2007 M€
FP7-ENERGY-2007-1-RTD	144.3	109.3	35	
FP7-ENERGY-2007-1-TREN				128
FP7-ERANET-2007-RTD (see Annex 4)	7.5		7.5	
General Activities (see Annex 4)	9.2	9.2		7.36
Other Activities	4.3	4.3		0.56
Evaluation costs	1.0	1.0		1.2
Estimated total budget allocation	166.3	123.8	42.5	137.1

Indicative budget for the Energy Theme for the 2008 Work Programme

- Figures to be confirmed -

Call/ activity	RTD 2008 M€	TREN 2008 M€
FP7-ENERGY-2008-1 ⁵	26.3	

⁵ Any savings from previous activities launched under the previous RTD calls in the Energy work programme would be assigned to call FP7-2008-1

FP7-ENERGY-2008-RUSSIA	4	
FP7-ENERGY-2008-FET	15	
FP7-ENERGY-NMP-2008-1	15	
General Activities (see Annex 4)	2.015	2.1
Other Activities⁶	2.95	3.1
Evaluation costs	1	
Estimated total budget allocation	96.265*	* 5.2*

* This budget might be increased in the case where 'recettes de tiers' become available

Summary of budget allocation to general activities for 2008 (cf. Annex 4):

	DG RTD €	DG TREN €
Cordis	250 456	262 022
Eureka/Research Organisations	10 734	11 230
COST	1 073 385	1 122 951
ERA-NET (horizontal)	679 810	711 202
RSFF	-	-
Total	2 014 385	2 107 405

5.3. IMPLEMENTATION OF CALLS

Call title: Energy Call Part 1

Call identifier: FP7-ENERGY-2008-1

Date of publication: 13th November 2007⁷

Deadline: 5th February 2008 at 17.00.00, Brussels local time⁸

⁶ As set out in Sections 5.1.3 (b) and (c) of the Work Programme.

⁷ The Director-General responsible for the call may publish it up to one month prior to or after the envisaged date of publication.

*Indicative budget*⁹: 26.3 M€ from the 2008 budget¹⁰¹¹

Funding schemes	
Collaborative project for specific international cooperation actions (SICA)	13 million Euro
Trans National Cooperation among NCPs	0.3 million Euro
Others	13 million Euro

Topics called:

Activity/ Area	Topics called	Funding Schemes
ACTIVITY ENERGY.2: RENEWABLE ELECTRICITY GENERATION		
AREA ENERGY.2.1: PHOTOVOLTAICS	ENERGY.2008.2.1.1: Enhancing strategic international cooperation initiatives in the field of concentration photovoltaics	Collaborative project for specific international cooperation actions (SICA)
AREA ENERGY.2.7: HYDRO	ENERGY.2008.2.7.1: Pre-normative research for hydropower	Collaborative Project
ACTIVITY ENERGY.3: RENEWABLE FUEL PRODUCTION		
AREA ENERGY.3.2: SECOND GENERATION FUEL FROM BIOMASS	ENERGY.2008.3.2.1: Enhancing international cooperation between the EU and Latin America in the field of biofuels	Collaborative project for specific international cooperation actions (SICA)
ACTIVITY ENERGY.5: CO2 CAPTURE AND STORAGE TECHNOLOGIES FOR ZERO EMISSION POWER GENERATION		
AREA ENERGY.5.1: CO2 CAPTURE		Collaborative Project
AREA ENERGY.5.2: CO₂ STORAGE	ENERGY.2008.5.2.1: CO ₂ Capture and Storage – Capacity building with the large emerging economies	Collaborative project for specific international cooperation actions (SICA)
	ENERGY.2008.5.2.2 : CO ₂ transport and storage infrastructure development	Collaborative Project

⁸ At the time of the publication of the call, the Director-General responsible may delay this deadline by up to two months.

⁹ A reserve list will be constituted if there is a sufficient number of good quality proposals. It will be used if extra budget becomes available.

¹⁰ Under the condition that the preliminary draft budget for 2008 is adopted without modification by the budget authority.

¹¹ Any savings from previous activities launched under the previous RTD calls in the Energy work programme would be assigned to call FP7-2008-1

	ENERGY.2008.5.2.3 : CO2 capture and storage – public acceptance	Coordination and support action (coordination type)
	<u>ENERGY.2008.5.2.4: Development of a suitable methodology for the qualification of deep saline aquifers for CO2 storage</u>	Collaborative project with a predominant research component
ACTIVITY ENERGY.7: SMART ENERGY NETWORKS		
AREA ENERGY.7.1: DEVELOPMENT OF INTER-ACTIVE DISTRIBUTION ENERGY NETWORKS	ENERGY.2008.7.1.1: Open-access Standard for Smart Multi-Metering Services	Collaborative Project
AREA ENERGY.7.2: PAN-EUROPEAN ENERGY NETWORKS	ENERGY.2008.7.2.2: Innovative concepts and technologies for sustainable gas networks	Collaborative Project
ACTIVITY ENERGY 8: ENERGY EFFICIENCY AND SAVINGS		
AREA ENERGY 8.1 EFFICIENT ENERGY USE IN THE MANUFACTURING INDUSTRY	ENERGY.2008.8.1.1: Energy efficiency of industrial heat exchangers and boilers	Collaborative Project
ACTIVITY ENERGY.10: HORIZONTAL PROGRAMME ACTIONS		
	ENERGY.2008.10.1.3: Trans-national co-operation among NCPs	Coordination and support action (coordination type)

Evaluation procedure:

The evaluation shall follow a two stages procedure.

The first stage proposal, of a maximum of 10 A4 pages (font size 12, 2 cm margins) should focus on the S&T content and on clear identification of the intended results, their intended use and the expected impact (economic, social, environmental, etc.) and 2 additional pages to describe the consortium and the estimated financial resources involved. This is an eligibility criterion. Longer proposals will not be evaluated

It should focus on the S&T content and on clear identification of the intended results, their intended use and the expected impact (economic, social, environmental, etc.) and 2 additional pages to describe the consortium and the estimated financial resources involved.

First stage proposals will be evaluated on the basis of their *scientific quality*. They will be evaluated remotely with the consensus session being held in Brussels. Stage 1 proposals shall be submitted at the closure date mentioned above.

Coordinators of retained proposals in stage 1 ("go" proposals) will be invited to submit a complete proposal that will be then evaluated against the entire set of evaluation criteria.

The closure date of the second submission will be specified in the invitation to submit the complete proposal. The indicative closure date is May 6th 2008.

- The evaluation criteria and subcriteria, together with the eligibility, selection and award criteria, for the different funding schemes are set out in Annex 2 to this work programme
- Proposals will not be evaluated anonymously.
- For Collaborative Projects (large-scale integrating projects), coordinators of proposals that pass the evaluation thresholds may be invited to a hearing.
- At the Panel stage, proposals with equal overall scores will be prioritised according to their scores for the Quality criterion. If they are still tied, they will be prioritised according to their scores for the Impact criterion, and then by their scores for the Implementation criterion. If any proposals are still tied, then overall Work Programme coverage will be used to decide the priority order.

Indicative evaluation and contractual timetable:

Evaluation Stage 1 proposals: February/march 2008

Evaluation stage 2 proposals: May 6th 2008. Evaluation results: estimated to be available within two months after the closure date. A reserve list of projects might be established.

Consortia agreements: Participants in Collaborative Projects are required to conclude a consortium agreement; participants in Coordination and Support Actions are encouraged, but not required, to conclude a consortium agreement

Particular requirements for participation, evaluation and implementation:

For this call, implemented via a two stage procedure, the following criteria and thresholds are applied:

Evaluation criteria and thresholds for stage 1 proposals:

Stage 1 proposals are evaluated on the basis of **S/T quality**. A mark from 0 to 5 will be given, with the possibility of half-point scores. Successful proposals must pass the minimum thresholds as follows:

	Minimum threshold
S/T quality	4/5

Evaluation criteria and thresholds for stage 2 proposals:

Stage 2 proposals are evaluated on the basis of the following three criteria: **1. S/T quality; 2. Implementation; 3. Impact**. For each criterion marks from 0 to 5 will be given, with the possibility of half-point scores. Successful proposals must pass the minimum thresholds as follows:

	Minimum threshold
S/T quality	4/5
Implementation	3/5

Impact	3,5/5
Overall threshold required	12/15

Forms of grant and maximum reimbursement rates for projects funded through the Cooperation work programme are given in Annex 3

The minimum number of participating legal entities required, for all funding schemes, is set out in the Rules for Participation. They are summarised in the table below¹²:

Funding scheme	Minimum conditions
Collaborative project	At least 3 independent legal entities, each of which is established in a MS or AC, and no two of which are established in the same MS or AC.
Collaborative project for specific international cooperation actions (SICA)	At least 4 independent legal entities. Of these, 2 must be established in different MS or AC. The other two must be established in different international cooperation partner countries.
Coordination and support action (coordination type)	At least 3 independent legal entities, each of which is established in a MS or AC, and no two of which are established in the same MS or AC.
Coordination and support action (support type)	At least 1 independent legal entity.

The following points will be reflected in the evaluation

ENERGY.2008.2.7.1 Pre-normative research for hydropower: In order to maximise industrial relevance and impact of the research effort, the active participation of SMEs represents an added value to this topic.

ENERGY.2008.8.1.2 Energy efficiency in industry: In order to maximise industrial relevance and impact of the research effort SMEs are expected to be important contributors.

Topic ENERGY.2008.10.1.3: Trans-national co-operation among NCPs Proposals should include the NCPs who have been officially appointed by the relevant national authorities. This is an eligibility criterion

¹² MS = Member States of the EU; AC = Associated country. Where the minimum conditions for an indirect action are satisfied by a number of legal entities, which together form one legal entity, the latter may be the sole participant, provided that it is established in a Member State or Associated country

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Call title: Energy EU Russia Call

Call identifier: FP7-ENERGY-2008-RUSSIA

Date of publication: 13th November 2007¹³

Deadline: May 6th 2008 at 17.00.00 Brussels local time¹⁴

Indicative budget ¹⁵: 4 M€from the 2008 budget ¹⁶

Topics called:

Activity/ Area	Topics called	Funding Schemes
ACTIVITY ENERGY.2: RENEWABLE ELECTRICITY GENERATION		
AREA ENERGY.2.2: BIOMASS	ENERGY.2008.2.2.1:Enhancing strategic international cooperation with Russia in the field of power generation from biomass	Collaborative Project
ACTIVITY ENERGY.7: SMART ENERGY NETWORKS		
AREA ENERGY.7.2: PAN-EUROPEAN ENERGY NETWORKS	ENERGY.2008.7.2.1: Innovative operational and/or monitoring tools for large power systems	Collaborative Project

Evaluation procedure:

- The evaluation shall follow a single stage procedure.
- The evaluation criteria (including weights and thresholds) and subcriteria, together with the eligibility, selection and award criteria, for the different funding schemes are set out in Annex 2 to this work programme.
- Proposals will not be evaluated anonymously.
- At the Panel stage, proposals with equal overall scores will be prioritised according to their scores for the Quality criterion. If they are still tied, they will be prioritised according to their scores for the Impact criterion, and then by their scores for the Implementation criterion. If any proposals are still tied, then overall Work Programme coverage will be used to decide the priority order.

¹³ The Director-General responsible for the call may publish it up to one month prior to or after the envisaged date of publication.

¹⁴ At the time of the publication of the call, the Director-General responsible may delay this deadline by up to two months.

¹⁵ A reserve list will be constituted if there is a sufficient number of good quality proposals. It will be used if extra budget becomes available.

¹⁶ Under the condition that the preliminary draft budget for 2008 is adopted without modification by the budget authority

Indicative evaluation and contractual timetable:

Evaluations are expected to be carried out in May 2008. It is expected that the contract negotiations for the short-listed proposals will open by September 2008.

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Consortium agreements:

Participants in Collaborative Projects are required to conclude a consortium agreement.

The evaluation criteria and subcriteria, together with the eligibility, selection and award criteria, for the different funding schemes are set out in Annex 2 to this work programme

Forms of grant and maximum reimbursement rates for projects funded through the Cooperation work programme are given in Annex 3.

Particular requirements for participation, evaluation and implementation:

- The minimum number of participating legal entities required, for all funding schemes, is set out in the Rules for Participation. They are summarised in the table below¹⁷:

Funding scheme	Minimum conditions
Collaborative project	At least 3 independent legal entities, each of which is established in a MS or AC, and no two of which are established in the same MS or AC.

Proposals submitted will gather a balanced number of European and Russian legal entities. The European legal entities (MS and AC) will be funded by the EC and the Russian legal entities will be funded by the Russian Federal Agency for Science and Innovations.

The EC and the Russian Funding Agency reserved a dedicated total budget of up to 4 M€ to fund two projects. The Russian participants will be funded by the Russian Funding Agency. The EC may contribute to the funding of the total eligible costs of Russian participants not covered by the Russian Funding Agency that can represent a maximum of 5 % of the total eligible costs.

Collaborative Projects under this call shall have a maximum requested EC contribution of 2M€. This is an eligibility criterion – proposals above this limit will not be evaluated.

¹⁷ MS = Member States of the EU; AC = Associated country. Where the minimum conditions for an indirect action are satisfied by a number of legal entities, which together form one legal entity, the latter may be the sole participant, provided that it is established in a Member State or Associated country

Call title: Energy FET Call

Call identifier: FP7-ENERGY-2008-FET

Date of publication: 13th November 2007

Deadline: 5th February 2008 at 17.00.00, Brussels local time¹⁸

Indicative budget¹⁹: 15 M€ from the 2008 budget²⁰

Topics called:

Activity/ Area	Topics called	Funding Schemes
ACTIVITY ENERGY.10: HORIZONTAL PROGRAMME ACTIONS		
	ENERGY.2008.10.1.1: Future Emerging Technologies (FET)	Collaborative Project

Evaluation procedure:

The evaluation shall follow a two stages procedure. The evaluation shall follow a two stages procedure. The first stage proposal, of a maximum of 10 A4 pages (font size 12, 2 cm margins) should focus on the S&T content and on clear identification of the intended results, their intended use and the expected impact (economic, social, environmental, etc.) and 2 additional pages to describe the consortium and the estimated financial resources involved. This is an eligibility criterion. Longer proposals will not be evaluated

First stage proposals will be evaluated on the basis of their *scientific quality*. They will be evaluated remotely with the consensus session being held in Brussels. Stage 1 proposals shall be submitted at the closure date mentioned above.

Coordinators of retained proposals in stage 1 ("go" proposals) will be invited to submit a complete proposal that will be then evaluated against the entire set of evaluation criteria. The closure date of the second submission will be specified in the invitation to submit the complete proposal. The indicative closure date is May 6th 2008.

- The evaluation criteria and subcriteria, together with the eligibility, selection and award criteria, for the different funding schemes are set out in Annex 2 to this work programme
- Proposals will not be evaluated anonymously.
- At the Panel stage, proposals with equal overall scores will be prioritised according to their scores for the Quality criterion. If they are still tied, they will be prioritised according to their scores for the Impact criterion, and then by their scores for the Implementation criterion. If any proposals are still tied, then overall Work Programme coverage will be used to decide the priority order.

¹⁸ The Director-General responsible for the call may publish it up to one month prior to or after the envisaged date of publication.

¹⁹ A reserve list will be constituted if there is a sufficient number of good quality proposals. It will be used if extra budget becomes available.

²⁰ Under the condition that the preliminary draft budget for 2008 is adopted without modification by the budget authority

Indicative evaluation and contractual timetable:

Evaluation Stage 1 proposals: February/March 2008

Evaluation stage 2 proposals: May June 2008. Evaluation results: estimated to be available within two months after the closure date. A reserve list of projects might be established.

Consortia agreements: Participants are strongly encouraged to conclude a consortium agreement.

Particular requirements for participation, evaluation and implementation:

For this call, implemented via a two stage procedure, the following criteria and thresholds are applied:

Evaluation criteria and thresholds for stage 1 proposals:

Stage 1 proposals are evaluated on the basis of their **S/T quality**

A list of proposals for 250% of the available budget will be invited to proceed to stage 2. If there is a tie between the proposals with the lowest mark to enter the list of proposals to proceed to stage 2, all those proposals with the same mark will be added to the list.

Evaluation criteria and thresholds for stage 2 proposals:

Stage 2 proposals are evaluated on the basis of the following three criteria: **1. S/T quality; 2. Implementation; 3. Impact.** For each criterion marks from 0 to 5 will be given, with the possibility of half-point scores. Successful proposals must pass the minimum thresholds as follows:

	Minimum threshold
S/T quality	4/5
Implementation	3/5
Impact	4/5
Overall threshold required	12/15

Forms of grant and maximum reimbursement rates for projects funded through the Cooperation work programme are given in Annex 3

The minimum number of participating legal entities required, for all funding schemes, is set out in the Rules for Participation. They are summarised in the table below²¹:

Funding scheme	Minimum conditions
Collaborative project	At least 3 independent legal entities, each of which is established in a MS or AC, and no two of which are established in the same MS or AC.

²¹ MS = Member States of the EU; AC = Associated country. Where the minimum conditions for an indirect action are satisfied by a number of legal entities, which together form one legal entity, the latter may be the sole participant, provided that it is established in a Member State or Associated country

In order to maximise the industrial relevance and the impact of the research effort, the active participation of High Technology SMEs represents an added value. This will be reflected in the evaluation.

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Call title: Joint Energy NMP Call**Call identifier:** FP7-ENERGY-NMP-2008-1**Date of publication:** 13th November 2007²²**Deadline:** 5th February 2008 at 17.00.00 Brussels time ²³**Indicative budget** ²⁴: 25 M€ from the 2008 budget (of which 10 M€ for Theme 4 – NMP and 15 M€ from Theme 5 Energy)²⁵**Topics called:**

Activity/ Area	Topics called	Funding Schemes
ACTIVITY ENERGY.10: HORIZONTAL PROGRAMME ACTIONS		
ENERGY.2008.10.1.2	Novel materials for energy applications (Joint Call NMP)	Collaborative Projects
ACTIVITY 4.2 MATERIALS		
NMP-2008-2.6-1	Novel materials for energy applications (Joint Call with Energy)	Collaborative Projects

Evaluation procedure:

The evaluation shall follow a two stages procedure. The evaluation shall follow a two stages procedure. The first stage proposal, of a maximum of 10 A4 pages (font size 12, 2 cm margins) should focus on the S&T content and on clear identification of the intended results, their intended use and the expected impact (economic, social, environmental, etc.) and 2 additional pages to describe the consortium and the estimated financial resources involved. This is an eligibility criterion. Longer proposals will not be evaluated

Proposals will be evaluated on the basis of two evaluation criteria, i.e.: *scientific quality and expected impact*. Stage 1 proposals will be evaluated remotely. Stage 1 proposals shall be submitted at the closure date mentioned above.

Coordinators of retained proposals in stage 1 ("go" proposals) will be invited to submit a complete proposal that will be then evaluated against the entire set of evaluation criteria. The closure date of the second submission will be specified in the invitation to submit the complete proposal. The indicative closure date is May 6th 2008.

Indicative evaluation and contractual timetable:

Evaluation Stage 1 proposals: February/March 2008

²² The Director-General responsible for the call may publish it up to one month prior to or after the envisaged date of publication.

²³ At the time of the publication of the call, the Director-General responsible may delay this deadline by up to two months.

²⁴ A reserve list will be constituted if there is a sufficient number of good quality proposals. It will be used if extra budget becomes available.

²⁵ Under the condition that the preliminary draft budget for 2008 is adopted without modification by the budget authority

Evaluation stage 2 proposals: May/June 2008. Evaluation results: estimated to be available within two months after the closure date. A reserve list of projects might be established.

Consortia agreements: Participants are required to conclude a consortium agreement.

Particular requirements for participation, evaluation and implementation:

For this call, implemented via a two stage procedure, the following criteria and thresholds are applied:

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Evaluation criteria and thresholds for stage 1 proposals:

Stage 1 proposals are evaluated on the basis of the following two criteria: **S/T quality and Impact**. For each criterion marks from 0 to 5 will be given, with the possibility of half-point scores. Successful proposals must pass the minimum thresholds as follows:

	Minimum threshold
S/T quality	4/5
Impact	3/5
Overall threshold required	8/10

Evaluation criteria and thresholds for stage 2 proposals:

Stage 2 proposals are evaluated on the basis of the following three criteria: **1. S/T quality; 2. Implementation; 3. Impact**. For each criterion marks from 0 to 5 will be given, with the possibility of half-point scores. Successful proposals must pass the minimum thresholds as follows:

	Minimum threshold
S/T quality	4/5
Implementation	3/5
Impact	4/5
Overall threshold required	12/15

Forms of grant and maximum reimbursement rates for projects funded through the Cooperation work programme are given in Annex 3

The minimum number of participating legal entities required, for all funding schemes, is set out in the Rules for Participation. They are summarised in the table below²⁶:

Funding scheme	Minimum conditions
Collaborative project	At least 3 independent legal entities, each of which is established in a MS or AC, and no two of which are established in the same MS or AC.

Projects under this call shall have a maximum requested EC contribution of 3M€ This is an eligibility criterion – proposals above this limit will not be evaluated.

²⁶ MS = Member States of the EU; AC = Associated country. Where the minimum conditions for an indirect action are satisfied by a number of legal entities, which together form one legal entity, the latter may be the sole participant, provided that it is established in a Member State or Associated country