

**WORK PROGRAMME 2010**

**COOPERATION**

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*(European Commission C(2009) 5893 of 29 July 2009)*

# Annex 1 of the 2010 Cooperation Work Programme

## Annex 1: List of International

|   |   |    |  |    |   |    |
|---|---|----|--|----|---|----|
| <b>Cooperation Partner Countries (ICPC)<sup>1</sup></b> | ➤ Uganda                                | L  | ➤ Lao People's Democratic Rep.                       | L  | ➤ Morocco <sup>2,3</sup>                      | LM |
|   | ➤ Zambia                                | L  | ➤ Malaysia   | UM | ➤ Palestinian-administered areas <sup>3</sup> | LM |
|   | ➤ Zimbabwe                              | L  | ➤ Maldives   | LM | ➤ Syrian Arab Rep. <sup>3</sup>               | LM |
|   | <b>- <u>CARIBBEAN</u></b>               |    | ➤ Mongolia   | L  | ➤ Tunisia <sup>2,3</sup>                      | LM |
|   | ➤ Barbados                              | UM | ➤ Nepal  | L  |   |    |
|   | ➤ Belize                                | UM | ➤ Oman   | UM |   |    |
|   | ➤ Cuba                                  | LM | ➤ Pakistan   | L  |   |    |
|   | ➤ Dominica                              | UM | ➤ Philippines  | LM | <b><u>WESTERN BALKAN COUNTRIES (WBC)</u></b>  |    |
|   | ➤ Dominican Rep.                        | LM | ➤ Sri Lanka  | LM |   |    |
|   | ➤ Grenada                               | UM | ➤ Thailand   | LM |   |    |
|   | ➤ Guyana                                | LM | ➤ Vietnam  | L  |   |    |
|   | ➤ Haiti                                 | L  | ➤ Yemen  | L  | ➤ Kosovo <sup>5</sup>                         | LM |
|   | ➤ Jamaica                               | LM |  |    |   |    |
|   | ➤ Saint Kitts and Nevis                 | UM | <b><u>EASTERN EUROPE AND CENTRAL ASIA (EECA)</u></b> |    |   |    |
|   | ➤ Saint Lucia                           | UM | ➤ Armenia <sup>3</sup>                               | LM |   |    |
|   | ➤ Saint Vincent and Grenadines          | UM | ➤ Azerbaijan <sup>3</sup>                            | LM |   |    |
|   | ➤ Suriname                              | LM | ➤ Belarus <sup>3</sup>                               | LM |   |    |
|   | ➤ Trinidad and Tobago                   | UM | ➤ Georgia <sup>3</sup>                               | LM |   |    |
|   | <b>- <u>PACIFIC</u></b>                 |    | ➤ Kazakhstan   | LM |   |    |
|   | ➤ Cook Islands                          | UM | ➤ Kyrgyz Republic                                    | L  |   |    |
|   | ➤ Timor Leste                           | L  | ➤ Moldova <sup>3</sup>                               | LM |   |    |
|   | ➤ Fiji                                  | LM | ➤ Russia <sup>2,**</sup>                             | UM |   |    |
|   | ➤ Kiribati                              | LM | ➤ Tajikistan   | L  |   |    |
|   | ➤ Marshall Islands                      | LM | ➤ Turkmenistan                                       | LM |   |    |
|   | ➤ Micronesia, Federal States of         | LM | ➤ Ukraine <sup>2,3</sup>                             | LM |   |    |
|   | ➤ Nauru                                 | UM | ➤ Uzbekistan   | L  |   |    |
|   | ➤ Niue                                  | UM | <b><u>LATIN AMERICA</u></b>                          |    |   |    |
|   | ➤ Palau                                 | UM | ➤ Argentina <sup>2</sup>                             | UM |   |    |
|   | ➤ Papua New Guinea                      | L  | ➤ Bolivia  | LM |   |    |
|   | ➤ Samoa                                 | LM | ➤ Brazil <sup>2,**</sup>                             | LM |   |    |
|   | ➤ Solomon Islands                       | L  | ➤ Chile <sup>2</sup>                                 | UM |   |    |
|   | ➤ Tonga                                 | LM | ➤ Colombia   | LM |   |    |
|   | ➤ Tuvalu                                | LM | ➤ Costa Rica   | UM |   |    |
|   | ➤ Vanuatu                               | LM | ➤ Ecuador  | LM |   |    |
|   | <b><u>ASIA</u></b>                      |    | ➤ El Salvador  | LM |   |    |
|   | ➤ Afghanistan                           | L  | ➤ Guatemala  | LM |   |    |
|   | ➤ Bangladesh                            | L  | ➤ Honduras   | LM |   |    |
|   | ➤ Bhutan                                | L  | ➤ Mexico <sup>2</sup>                                | UM |   |    |
|   | ➤ Burma/Myanmar                         | L  | ➤ Nicaragua  | LM |   |    |
|   | ➤ Cambodia                              | L  | ➤ Panama   | UM |   |    |
|   | ➤ China <sup>2,**</sup>                 | LM | ➤ Paraguay   | LM |   |    |
|   | ➤ Democratic People's Republic of Korea | L  | ➤ Peru   | LM |   |    |
|   | ➤ India <sup>2,**</sup>                 | L  | ➤ Uruguay  | UM |   |    |
|   | ➤ Indonesia                             | LM | ➤ Venezuela  | UM |   |    |
|   | ➤ Iran                                  | LM | <b><u>MEDITERRANEAN PARTNER COUNTRIES (MPC)</u></b>  |    |   |    |
|   | ➤ Iraq                                  | LM | ➤ Algeria <sup>3</sup>                               | LM |   |    |
|   |   |    | ➤ Egypt <sup>2,3</sup>                               | LM |   |    |
|   |   |    | ➤ Jordan <sup>3</sup>                                | LM |   |    |
|   |   |    | ➤ Lebanon <sup>3</sup>                               | UM |   |    |
|   |   |    | ➤ Libya <sup>3</sup>                                 | UM |   |    |

<sup>1</sup> Legal entities established in countries against which the European Community under Articles 60 and 301 of the EC-Treaty has issued actions to interrupt or to reduce, in part or completely, economic relations, may only participate and receive a financial contribution if it complies with these actions.

<sup>2</sup> Signed an agreement with the EC covering Science & Technology.

<sup>3</sup> These countries are also part of the European Neighbourhood Policy (ENP).

<sup>4</sup> Until the country becomes Associated to FP7

<sup>5</sup> As defined by UNSC resolution 1244 of 10 June 1999.

\*In the 'Specific international cooperation actions', Africa can also be considered as a region on its own, while the Caribbean countries can also participate with Latin American and the Pacific countries with Asia.

\*\*For participation in the 'Specific international cooperation actions' each of Brazil, China, India and Russia may be considered individually as a region on its own. Thus, the required two or more partners can be located in these countries. However, in this case, at least two different partners from different provinces, oblasts, republics or states within Brazil, China, India or Russia are necessary.

Income categories related to the use of lump sums for ICPC:  
L – Low-Income  
LM – Lower-Middle Income  
UM – Upper-Middle Income

## Annex 2 of the 2010 Cooperation Work Programme

### Annex 2: Eligibility and Evaluation Criteria for Proposals

#### Eligibility criteria

A proposal will only be considered eligible if it meets all of the following conditions:

- It is received by the Commission before the deadline given in the call text.
- It involves at least the minimum number of participants given in the call text.
- It is complete (i.e. both the requested administrative forms and the proposal description are present)
- The content of the proposal relates to the topic(s) and funding scheme(s), including any special conditions, set out in those parts of the relevant work programme

Other eligibility criteria may be given in the call text.

#### Evaluation criteria

The evaluation criteria against which proposals will be judged are set out in article 15 of the Rules for Participation. For the 'Cooperation' specific programme these are:

- a) scientific and/or technological excellence;
- b) relevance to the objectives of these specific programmes<sup>1</sup>;
- c) the potential impact through the development, dissemination and use of project results;
- d) the quality and efficiency of the implementation and management.

Within this framework, the work programmes will specify the evaluation and selection criteria and may add additional requirements, weightings and thresholds, or set out further details on the application of the criteria.

The purpose of this annex is to set out such specifications. Unless otherwise indicated in the relevant parts of this work programme, the criteria, weightings and thresholds given here will apply to all calls for proposals.

Proposals will be evaluated in line with the Commission 'Rules on Submission of Proposals and the Related Evaluation, Selection and Award Procedures'.

A proposal which contravenes fundamental ethical principles, fails to comply with the relevant security procedures, or which does not fulfil any other of the conditions set out in the specific programme, the work programme or in the call for proposals shall not be selected. Such a proposal may be excluded from the evaluation, selection and award procedures at any time. Details of the procedure to be followed are given in the Commission rules mentioned above.

The arrangements for a particular call will be set out in the relevant Guide for Applicants.

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<sup>1</sup> **Relevance** will be considered in relation to the topic(s) of the work programme open in a given call, and to the objectives of a call. In the scheme set out on the following page, these aspects will be integrated in the application of the criterion "S/T excellence", and the first sub-criterion under "Impact" respectively. When a proposal is **partially relevant** because it only marginally addresses the topic(s) of a call, or because only part of the proposal addresses the topic(s), this condition will be reflected in the scoring of the first criterion. Proposals that are clearly not relevant to a call ("out of scope") will be rejected on eligibility grounds.

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|  |           | <b>1. Scientific and/or technological excellence</b><br><i>(relevant to the topics addressed by the call)</i><br><br><b>(award)</b>  | <b>2. Quality and efficiency of the implementation and the management</b><br><br><b>(selection)</b>  | <b>3. The potential impact through the development, dissemination and use of project results</b><br><br><b>(award)</b>  |
|--|-----------|--|--|---|
| <b>All funding schemes</b>                         |           | <ul style="list-style-type: none"> <li>➤ <i>Soundness of concept, and quality of objectives</i></li> </ul>   | <ul style="list-style-type: none"> <li>➤ Appropriateness of the management structure and procedures</li> <li>➤ Quality and relevant experience of the individual participants</li> </ul>   | <ul style="list-style-type: none"> <li>➤ <i>Contribution, at the European [and/or international] level, to the expected impacts listed in the work programme under relevant topic/activity</i></li> </ul>                 |
| <b>Collaborative projects</b>                      |           | <ul style="list-style-type: none"> <li>➤ <i>Progress beyond the state-of-the-art</i></li> <li>➤ Quality and effectiveness of the S/T methodology and associated work plan</li> </ul>   | <ul style="list-style-type: none"> <li>➤ Quality of the consortium as a whole (including complementarity, balance)</li> <li>➤ Appropriateness of the allocation and justification of the resources to be committed (staff, equipment,...)</li> </ul>   | <ul style="list-style-type: none"> <li>➤ Appropriateness of measures for the dissemination and/or exploitation of project results, and management of intellectual property.</li> </ul>                                    |
| <b>Networks of Excellence</b>                      |           | <ul style="list-style-type: none"> <li>➤ <i>Contribution to long-term integration of high quality S/T research</i></li> <li>➤ Quality and effectiveness of the joint programme of activities and associated work plan</li> </ul>   | <ul style="list-style-type: none"> <li>➤ Quality of the consortium as a whole (including ability to tackle fragmentation of the research field, and commitment towards a deep and durable integration)</li> <li>➤ Adequacy of resources for successfully carrying out the joint programme of activities</li> </ul> | <ul style="list-style-type: none"> <li>➤ Appropriateness of measures for spreading excellence, exploiting results, and disseminating knowledge, through engagement with stakeholders and the public at large.</li> </ul>  |
| <b>Co-ordination &amp; Support Actions</b>         | <b>CA</b> | <ul style="list-style-type: none"> <li>➤ Contribution to the co-ordination of high quality research</li> <li>➤ Quality and effectiveness of the co-ordination mechanisms, and associated work plan</li> </ul>  | <ul style="list-style-type: none"> <li>➤ Quality of the consortium as a whole (including complementarity, balance) [for SA: only if relevant]</li> <li>➤ Appropriateness of the allocation and justification of the resources to be committed (staff, equipment,...)</li> </ul>                                    | <ul style="list-style-type: none"> <li>➤ Appropriateness of measures for spreading excellence, exploiting results, and dissemination knowledge, through engagement with stakeholders, and the public at large.</li> </ul> |
|  | <b>SA</b> | <ul style="list-style-type: none"> <li>➤ Quality and effectiveness of the support action mechanisms, and associated work plan</li> </ul>   |  |   |
| <b>Research for the benefit of specific groups</b> |           | <ul style="list-style-type: none"> <li>➤ Innovative character in relation to the state-of-the art</li> <li>➤ Contribution to advancement of knowledge / technological progress</li> <li>➤ Quality and effectiveness of S/T methodology and associated work plan</li> </ul> | <ul style="list-style-type: none"> <li>➤ Quality of the consortium as a whole (including complementarity and balance)</li> <li>➤ Appropriateness of the allocation and justification of the resources to be committed (staff, equipment,...)</li> </ul>  | <ul style="list-style-type: none"> <li>➤ Appropriateness of measures for the dissemination and/or exploitation of project results, and management of intellectual property</li> </ul>                                     |

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### Notes:

- Evaluation scores will be awarded for each of the three criteria, and not for the sub-criteria. Each criterion will be scored out of 5. No weightings will apply. The threshold for individual criteria will be 3. The overall threshold, applying to the sum of the three individual scores, will be 10.
- The second column corresponds to the **selection criteria** in the meaning of the financial regulation<sup>2</sup> (article 115) and its implementing rules<sup>3</sup> (article 176 and 177). They also will be the basis for assessing the 'operational capacity' of participants. The other two criteria correspond to the **award criteria**.
- For the evaluation of first-stage proposals under a two-stage submission procedure, only the sub-criteria in italics apply.

### **Priority order for proposals with the same score**

As part of the evaluation by independent experts, a panel review will recommend one or more ranked lists for the proposals under evaluation, following the scoring systems indicated above. A ranked list will be drawn up for every indicative budget shown in the call fiche.

If necessary, the panel will determine a priority order for proposals which have been awarded the same score within a ranked list. Whether or not such a prioritisation is carried out will depend on the available budget or other conditions set out in the call fiche. The following approach will be applied successively for every group of *ex aequo* proposals requiring prioritisation, starting with the highest scored group, and continuing in descending order:

(i) Proposals that address topics not otherwise covered by more highly-rated proposals, will be considered to have the highest priority.

(ii) These proposals will themselves be prioritised according to the scores they have been awarded for the criterion *scientific and/or technological excellence*. When these scores are equal, priority will be based on scores for the criterion *impact*. If necessary, any further prioritisation will be based on other appropriate characteristics, to be decided by the panel, related to the contribution of the proposal to the European Research Area and/or general objectives mentioned in the work programme (e.g. presence of SMEs, international co-operation, public engagement).

(iii) The method described in (ii) will then be applied to the remaining *ex aequos* in the group.

NOTE: the call fiche may indicate provisions that supplement or override the above.

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<sup>2</sup> OJ L248 16.9.2002, p1.

<sup>3</sup> OJ L357 31.12.2002, p1

## Annex 3 of the 2010 Cooperation Work Programme

### Annex 3: Forms of Grant and Maximum Reimbursement Rates for Projects Funded Through the Cooperation Work Programme

#### Forms of Grant

The FP7 'Rules for Participation' propose three potential forms of grant for the Community financial contribution: reimbursement of eligible costs, flat rate financing including scale of unit costs, and lump sum financing. In this work programme, for all funding schemes, the reimbursement of eligible costs (including the different options for flat rates on indirect costs as established in Article 32 of the Rules for Participation)<sup>1</sup> will be the only form of grant used.

Three exceptions to this will apply. Pursuant to Article 30 of the Rules for Participation and Commission Decision C(2007)2287 of 4 June 2007, participants from International Cooperation Partner Countries (see Annex 1) may choose to opt for lump sum financing.

In accordance with Article 2 of the Commission Decision of 23 March 2009 under reference C (2009) 1942, the present work programme provides for the possibility to use flat rates to cover subsistence costs incurred by beneficiaries during travel carried out within grants for indirect actions. The applicable flat rates are available at the following website [http://cordis.europa.eu/fp7/find-doc\\_en.html](http://cordis.europa.eu/fp7/find-doc_en.html) under 'Guidance documents/Flat rates for daily allowances'. Please note this option is only available when stated explicitly in the call fiche.

In addition, under chapter 5 of this work programme 'Energy', some actions under Activity 8 'Energy Efficiency and Savings', may combine the reimbursement of eligible costs with flat rate financing in the form of scale of unit costs. Further information on this is given in chapter 5.

#### Maximum Reimbursement Rates

The upper limits foreseen in the Rules for Participation (Article 33) for the Community financial contribution are summarised in the following table.

|  | Non-profit public bodies, secondary and higher education establishments, research organisations and SMEs | All other organisations |
|--|--|-------------------------|
| Research and technological development activities                | 75%  | 50% <sup>2</sup>        |
| Demonstration activities   | 50%  | 50%                     |
| Coordination and support actions                                 | 100%   | 100%                    |
| Management, audit certificates and other activities <sup>3</sup> | 100%   | 100%                    |

<sup>1</sup> As confirmed by Decision C(2009)4459 of 15 June 2009.

<sup>2</sup> For security related research and technological development activities, (Chapter 10 of this work programme) the Community financial contribution may reach a maximum of 75% in the case of the development of capabilities in domains with very limited market size and a risk of 'market failure' and for accelerated equipment development in response to new threats. Further information is given in Chapter 10.

<sup>3</sup> Including, inter alia training in actions that do not fall under the funding schemes for training and career development of researchers, coordination, networking and dissemination (as set out in Article 33(4) of the Rules for Participation).

### Annex 4: General Activities

In this annex, the activities which are funded across the Programme are presented. These activities concern in particular the following:

#### **Dissemination, knowledge transfer and broader engagement**

- The CORDIS services

#### **Co-ordination of non-Community research programmes**

- The ERA-NET scheme
- Research organisations in the EU
- Strengthened coordination with EUREKA
- Scientific and technological cooperation activities carried out in COST

#### **Risk-Sharing Finance Facility**

- Contribution to the European Investment Bank (EIB) – Risk Sharing Finance Facility

### A4.1 THE CORDIS SERVICES

CORDIS, the 'Community Research and Development Information Service', is a website which provides information for the research community on the latest news, progress, results and initiatives of the 7<sup>th</sup> and previous Framework Programmes and other relevant research initiatives in the European Research Area. Together with the Participant Portal, and the Europa website CORDIS forms an information service for the whole research community and all those interested in EU funded research and development activities. CORDIS is available at: <http://cordis.europa.eu>

Priority areas are identified for CORDIS activities in 2010:

- the continuity and easy availability to users of the existing CORDIS services, in particular the projects service, the publication of calls for proposals, thematic websites and information pages;
- editorial integration with the Europa website;
- integration with the Participant Portal, the entry point for participants to interact with the Research Directorates-General of the European Commission;
- the dissemination and exploitation of research results;
- the use of publications as an important vehicle in promoting Framework Programme projects and their outcomes;
- improvement of the ergonomics and user-friendliness of the CORDIS website;
- further improvement of the search facility, including its integration with Europa and other research thematic web sites;
- enhancement of the CORDIS Partners Service.

CORDIS activities will also include:

- **The collection of research results**
  - Putting in place and applying appropriate collection mechanisms to ensure CORDIS gathers all available research results;

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- **The dissemination of research results**
  - Processing, tagging and clustering research results to ensure their efficient dissemination and easy retrieval by interested parties;
  - Rewriting texts for target audiences, highlighting achievements and promoting the take up and understanding of research results, including the understanding of research results by the citizen;
  - Publishing of news closely related to research results (e.g. on events, outcomes of projects, publications etc.);
  - Improving the tools for promoting and sharing success stories and encouraging their submission by beneficiaries;
  - Improving multilingual aspects of the CORDIS website, to facilitate the exploitation and take-up of research results.
  
- **The exploitation of research results**
  - Developing partnerships with thematic, national and regional entities active in the field of research for wider information sharing and dissemination of FP funded research results;
  - Promoting partnerships with relevant information services dealing with the dissemination and exploitation of research and innovation results and activities;
  - Producing posters, flyers and factsheets relating to the exploitation and take-up of research results.

In addition, throughout 2010, work will continue in reorganising and archiving current content on the CORDIS website. Thus improving the ergonomics and user-friendliness of the CORDIS website will allow for better integration with the Europa website and the Participant Portal; furthermore, the deletion of obsolete and/or out of date information will ensure a user-friendly CORDIS service. The Commission will monitor the services jointly provided by the research pages on Europa, the Participant Portal and CORDIS in order to avoid duplication.

Awareness and marketing activities will be carried out in close cooperation with the Participant Portal and the Research Directorates General.

The CORDIS website will continue to comply with the World Wide Web Consortium (W3C) standards, in particular those relating to the web accessibility initiative (WAI).

The budget foreseen for these activities in 2010 is EUR 7.9 million.

The CORDIS website is managed through the administrative arrangements between the research Directorates General and the Office for Official Publications of the European Communities (OPOCE).

## Annex 4 of the 2010 Cooperation Work Programme

### A4.2 THE ERA-NET SCHEME

The objective of the ERA-NET scheme is to develop and strengthen the coordination of national and regional research programmes through two specific actions:

- 'ERA-NET actions' - which provide a framework for actors implementing public research programmes to coordinate their activities. This will include support for new ERA-NETs as well as for the broadening and deepening of the scope of existing ERA-NETs, e.g. by extending their partnership, as well as opening mutually their programmes;
- 'ERA-NET Plus actions'- which, *in a limited number of cases, can provide* additional EU financial support to facilitate joint calls for proposals between national and/or regional programmes.

Under the ERA-NET scheme, national and regional authorities identify research programmes they wish to coordinate or open up mutually. The participants in these actions are therefore programme 'owners' (typically ministries or regional authorities defining research programmes) or programme 'managers' (such as research councils or other *research funding* agencies managing research programmes).

The networking and mutual opening of research programmes require a progressive approach. The ERA-NET scheme therefore has a long-term perspective and it is flexible in order to allow for the different ways in which public research funding is organised in different Member States and Associated Countries.

#### A4.2.1 Approach

As a result of the ERA-NET scheme, progress has been made in reducing fragmentation across the European Research Area (ERA). Organisations from all Member States and Associated Countries participate actively in the scheme:

- Since the introduction of the scheme in FP6, more than 100 ERA-NET actions have been funded (through Coordination Actions), involving hundreds of national research programmes<sup>1</sup>.
- These ERA-NET actions cover a wide range of research fields such as transport, energy, environment, industrial technologies, plant and human health, astrophysics and social sciences. In addition, several ERA-NET actions have been set up to address more horizontal topics such as international cooperation, SMEs, metrology or the promotion of gender balance in research. For the full list of projects, please refer to:  
<http://cordis.europa.eu/coordination/projects.htm>  
[http://cordis.europa.eu/fp7/coordination/home\\_en.html](http://cordis.europa.eu/fp7/coordination/home_en.html)

Under FP7, the ERA-NET scheme is continued and reinforced:

- New ERA-NET actions are supported.
- FP6 ERA-NET actions may re-apply to receive Commission support to extend and/or reinforce their integration.
- A new module, called 'ERA-NET Plus', facilitates the organisation of joint calls between national research programmes by 'topping-up' joint trans-national funding with Community funding.

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<sup>1</sup> ERA-NET actions cover both national and regional research programmes. To avoid repetition, the term 'national research programme' will be used in this section to refer to both national and regional research programmes.

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In contrast to FP6, the ERA-NET scheme is no longer a 'stand-alone' action in FP7, but an implementation tool available to the Themes of the Cooperation specific programme and to the Parts of the Capacities Programme<sup>2</sup>.

### A4.2.2 Content of the *FP7-ERANET-2010-RTD* Call

For 2010, the ERA-NET scheme will be mainly implemented through a coordinated call for proposals, open for strategically important activities and topics explicitly specified in this work programme at the level of the various Themes, which will independently provide the required funding (*please refer to the Call Fiche for details*).

The call will concern also centrally-managed Horizontal Support Actions, looking at the optimization of the ERA-NET scheme and providing assistance to the EU initiative for the Joint Programming in Research<sup>3</sup>.

However, ERA-NET topics might be present also in other calls, distinct from the present one. In order to provide a complete reference on the way in which the scheme will be implemented in 2010, a list of additional subjects open for ERA-NETs is provided in appendix to the call fiche.

#### *A4.2.2.1 Activity: ERA-NET actions*

Funding Scheme: Coordination and Support Actions (coordinating action)

The aim of ERA-NET actions is to network research programmes carried out at national or regional level, with a view to their mutual opening and the development and implementation of joint activities.

"*Research programmes carried out at national or regional level*" refers to entire research programmes, parts of such programmes or similar initiatives. Such programmes shall have all of the following characteristics:

- a) Be strategically planned (i.e. be composed of a number of research projects focused on a defined subject area or set of problems, that are scheduled to run for a set period of time and that have a co-ordinated management).
- b) Be carried out at national or regional level.
- c) Be either financed or managed directly by national or regional public bodies, or by structures (e.g. agencies) closely related to, or mandated by, public authorities.

#### Eligibility

The minimum number of participants in an ERA-NET consortium is **3 independent legal entities** which finance or manage publicly funded national or regional programmes. ***Each of these must be established in a different Member State or Associated Country.***

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<sup>2</sup> Since both the Cooperation and the Capacities Specific Programmes foresee the use of ERA-NET / ERA-NET Plus, 'Cooperation themes' will be used in this Work Programme to cover themes in the Cooperation and the Parts of the Capacities Specific Programmes.

<sup>3</sup> See Commission Communication "Towards Joint Programming in Research", COM(2008)468 of 16 July 2008

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Partners for ERA-NET actions eligible to satisfy the above condition are:

- Programme owners: typically national ministries/regional authorities responsible for defining, financing or managing research programmes carried out at national or regional level.
- Programme 'managers' (such as research councils or funding agencies) or other national or regional organisations that *implement* research programmes under the supervision of the programme owners.
- Programme owners (typically national ministries/regional authorities) which do not have a running or fully fledged research programme at the moment of submitting an ERA-NET proposal, but which are planning, and have committed, to set up such a programme, are also eligible if their participation is well justified and adds value to the overall programme coordination. As such, countries or regions which have less diverse research programmes (in particular new Member States and candidate Associated Countries) will find their involvement in the ERA-NET scheme greatly facilitated.

Please note that research organisations or universities which are not programme owners or managers are not eligible partners for ERA-NET actions.

In addition, other private legal entities (e.g. charities) which manage research programmes may enter the consortium if their participation is well justified and adds value to the overall programme coordination.

Participants are encouraged, as appropriate, to adopt a global approach in their proposals, involving also non-European research programmes in the activities undertaken by ERA-NET actions.

Sole participants (as referred to in Article 10 of the Rules for Participation) may be eligible if the above-mentioned specific criteria for eligible ERA-NET partners are respected. A sole participant shall explicitly indicate which of its 'members' forming a sole legal entity is either a programme owner or programme manager in the proposed action and indicate for these members, the respective national/regional programmes which are at the disposal of the proposed ERA-NET action.

### Technical content/scope

ERA-NET actions cover the networking of national research programmes on selected topics of science and technology which are identified in the annual work programmes of the Cooperation Themes and the relevant parts of the Capacities Programme.

The networking of programmes may involve several levels of cooperation and coordination, depending on the degree of maturity of the network. The use of the ERA-NET scheme should make this evolution possible and should adopt a step-by-step approach.

In this respect, a four-step approach covering the following activities could be envisaged:

- 1) Information exchange
- 2) Definition and preparation of joint activities
- 3) Implementation of joint activities
- 4) Funding of joint trans-national research.

ERA-NET actions should be ambitious and should aim to reach step 4. They should result in concrete progress towards the opening up of, or cooperation between, the participating research

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programmes. The cooperation should be sustainable beyond the duration of the ERA-NET action itself.

### Activities funded

The Community contribution shall take the form of a grant consisting of a reimbursement of the eligible costs related to the action.

Activities eligible for funding correspond to the four steps identified in the *'technical content/scope'* section above. More specifically, these include:

#### (i) Information exchange

This step aims to gather information on the structure and programmes covered by each national research system. It could also improve communication, develop better reciprocal knowledge and promote trust-building among programme owners or managers in similar scientific and technological areas through a mutual learning process, and the systematic exchange of information and good practices.

#### (ii) Definition and preparation of joint activities

This key part of the action should analyse the information gathered in step 1 and identify the type of cooperation and the areas which will be addressed.

It should result in an **Action plan**, which sets out common strategic issues and prepares for a concrete implementation of joint activities.

#### (iii) Implementation of joint activities

Experience from FP6 has shown that much of the added value in co-ordinating national programmes is gained by trying to implement joint activities, even if in a pilot form.

ERA-NET actions are therefore encouraged to develop and implement, from an early stage in the project, common, joint, strategic activities such as:

- Clustering of nationally-funded research projects, to develop complementarities or mutual reinforcement of ongoing nationally-funded research programmes.
- Multinational project evaluation procedures (common evaluation criteria and methods of implementation). This could contribute in the long-term to the integration of evaluation practices across national research systems (covering proposal, project and programme evaluation).
- Schemes for joint training activities, such as co-supervised theses and international PhD schemes, to help support a wider cooperation in research.
- Schemes for the mutual opening of facilities or laboratories in one country for scientists from another.
- Converging schemes for programme monitoring and evaluation, including joint monitoring or evaluation.
- Schemes for personnel exchange, in the context of the above activities.
- Specific cooperation agreements or arrangements between participating programmes. These would prepare the ground for further trans-national research programmes and ensure that legal barriers are removed

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### (iv) Funding of joint trans-national research

The strongest form of programme networking implies the funding and implementation of a joint programme of trans-national research projects or actions. This is likely to involve the setting-up of a common strategy, a joint work programme, common (mutually open) or joint calls for proposals or tenders, a common trans-national evaluation system and a common plan for dissemination of results or experiences. In such schemes, projects funded out of a common or joint call for proposals should involve *at least two teams from two different countries*.

In this step, other ways of implementing joint research actions could also be developed or explored. For example, a complex or very ambitious research agenda could be divided in various parts, which are each addressed through differentiated national calls. Results would then be shared.

### Expected Impact

The ERA-NET scheme aims to reduce the fragmentation of the European Research Area by increasing coordination between national research programmes across the EU Member States and Associated Countries.

ERA-NET actions allow Member States and Associated Countries to avoid overlap between their programmes and to develop expertise from mutual learning.

In general, ERA-NET actions should not cover very limited research areas. They should not overlap with other ongoing ERA-NET actions or create further fragmentation. Complementarities to, or coordination with, FP7 activities should be ensured where possible.

ERA-NET actions will result in concrete cooperation between research programmes, such as their networking, their mutual opening and the development and implementation of joint programmes and activities.

The level of ERA-NET actions will depend on their previous experience:

- ERA-NETs launched under FP6 wishing to submit a new proposal under FP7 must include a strong coordination action, directly focusing on steps 3 and 4. As such, these proposals shall aim to broaden the partnership and/or deepen the coordination between the relevant national programmes in the concerned field. In particular, a global approach including non-European research programmes is encouraged.
- New ERA-NET actions, which address topics that were not covered in FP6, should address steps 1 to 3 as a minimum, but are encouraged to aim at the 'four step approach' described above.

The scheme will also enable national or regional systems to collectively take on tasks that they would not have been able to tackle independently.

ERA-NET actions are expected to have a lasting impact. The cooperation developed should provide reliable indications that it could continue beyond the Community funding. Lessons learned and knowledge gathered should be disseminated in the European Research Area.

In addition to the general impact described above, more specific expected benefits of ERA-NET actions include:

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- Achieving critical mass, to ensure the better use of scarce resources.
- Joining forces to provide common answers to common research problems.
- Addressing global issues, common to many EU Member States or Associated Countries.
- Addressing specific geographical issues, common to a number of EU Member States or Associated Countries.
- Developing common governance principles (e.g. with respect to ethics, good practices).
- Bring together national programmes which deal with cooperation with third countries, and enable them to speak with a 'single voice'.
- Adopt a global approach, including third-country research programmes, to the activities covered by ERA-NET actions.

### ***A4.2.2.2 Activity: ERA-NET PLUS actions***

#### Funding Scheme: Coordination and Support Actions (coordinating action)

Under ERA-NET Plus actions, the Commission provides an incentive to the organisation of joint calls between national or regional research programmes by 'topping-up' joint trans-national funding with Community funding. These joint calls will entail the award of grants to third parties participating in calls for proposals launched under the ERA-NET Plus actions.

These actions require programme owners or programme managers ***from at least 5 different Member States or Associated Countries*** to plan a single joint call with a clear financial commitment from the participating national or regional research programmes.

#### Activities funded

The Community will top up the total of the national contributions to the joint call with additional funding for RTD activities. The Community contribution will be limited to a maximum of 33% of the total contributions to the joint call budget. The combined national/regional and Community contributions to the joint calls have to reach ***at least EUR 5 million***.

The Community contribution shall take the form of a grant. This grant will combine the reimbursement of eligible costs covering the activities linked to the preparation and coordination of the joint call<sup>4</sup>, and the reimbursement of eligible costs as an agreed proportional contribution to the national pooling of funds (for activities relating to the funding of selected trans-national projects, maximum 33%).

In accordance with the Decisions concerning the 7<sup>th</sup> Framework Programme<sup>5</sup> and the 'Cooperation' Specific Programme<sup>6</sup>, the provisions of Article 120(2) of the Council Regulation on the Financial Regulation applicable to the general budget of the European Communities<sup>7</sup> and Article 184a of the Commission Regulation laying down detailed rules for the implementation of Council Regulation

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<sup>4</sup> No further supporting costs will be eligible once a 'selection decision' has been taken by the consortium as a result of the joint call.

<sup>5</sup> OJ L 412, 30.12.2006, p. 1 Decision No 1982/2006/EC of the European Parliament and of the Council of 18 December 2006

<sup>6</sup> OJ L 400, 30.12.2006, p. 86

<sup>7</sup> Council Regulation No. 1605/2002 of 25.6.2002 on the Financial Regulation applicable to the general budget of the European Communities (OJ L248, 16.09.2002, p1).

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on the Financial Regulation applicable to the general budget of the European Communities,<sup>8</sup> shall not be applicable with regard to the financial support provided by the participants in the ERA-NET Plus actions to third parties participating in projects selected following calls for proposals launched under these actions.

The total duration of a given ERA-NET Plus action and of the resulting projects should normally **not exceed 5 years**.

### Specific Eligibility criteria for ERA-NET Plus actions

ERA-NET Plus proposals must meet the following eligibility criteria:

- A single joint call should be planned with a clear financial commitment from the participating national or regional programmes<sup>9</sup>.
- Eligible participants are the same as for ERA-NET actions with the exception that programme owners, which do not have yet a running or fully fledged research programme at the moment of submitting a proposal, are not eligible for ERA-NET Plus actions. Furthermore, ***a consortium must include programme owners or programme managers from at least 5 different Member States or Associated Countries.***
- Beyond the minimum of 5 programme owners or managers, the same types of additional participants foreseen for ERA-NET actions are eligible.
- The total planned budget of ***the joint call shall have a minimum financial volume of EUR 5 million.***
- A common peer review mechanism for evaluating the proposals submitted to the joint call shall be foreseen.
- Each project financed out of the joint call shall be trans-national (i.e. minimum of two partners from different countries).
- A fixed common set of general evaluation/selection criteria (excellence, European added value, etc.) should be part of the common evaluation criteria of the joint call organised by the national programmes.

Detailed rules for participation in the funded trans-national projects shall be defined by the call organisers themselves (e.g. participating national or regional programmes).

### Expected Impact

ERA-NET Plus actions aim to facilitate the launching of joint calls for proposals between EU Member States or Associated Countries, based on their European added value. In special cases, they may also facilitate the transition of an ERA-NET towards an Article 169 initiative, where the criteria for the latter are met.

The EU added value will be a critical criterion to evaluate the impact of ERA-NET Plus actions and will depend on the area/topic covered by the research programmes participating in the joint call. Therefore, the following criteria should help to identify the impact of ERA-NET Plus actions offering best prospects for sufficient European added value:

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<sup>8</sup> Commission Regulation No. 2342/2002 of 23.12.2002 laying down detailed rules for the implementation of Council Regulation No. 1605/2002 (OJ L357, 31.12.2002, p1).

<sup>9</sup> Proposals must demonstrate that national research programmes are committed to support the call. Selected proposals will have to provide evidence that a commitment has been made by the relevant research programmes.

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- **Relevance to EU objectives:** The field of the potential topic should be of major interest for the Community as a whole.
- **Framework Programme relevance.** As regards '**objective**': Demonstration that an ERA-NET Plus action in that topic shall allow the Community to reach the objective of effectively enhancing the coordination of national research programmes. As regards '**content**': The field of the potential topic shall be covered by the Framework Programme both in terms of scientific content and of budget allocation.
- **Pre-existing basis:** The ERA-NET Plus action should build on a pre-existing basis or coordination experience between national programmes in the topic identified.
- **Critical mass:** ERA-NET Plus actions will enable national programmes to address together with the Community programmes research areas, that due to the nature of the field are better addressed jointly or fields which would/could not have been addressed independently.
- **Instrument relevance:** Demonstration that ERA-NET Plus is the most appropriate instrument for achieving the Framework Programme goals with regard to coordination of national research programmes (i.e.: avoiding fragmentation, etc.). Demonstration that implementing an ERA-NET Plus action in a given field is more appropriate to coordination goals than other possible FP7 actions.

ERA-NET Plus actions are expected, where appropriate, to facilitate the development of a more global approach to the topics addressed, involving also non European research programme.

ERA-NET Plus actions are expected to have a lasting impact. The cooperation developed should provide reliable indications that it could continue beyond the joint call supported by the Community funding.

### ***A4.2.2.3 Activity: Support for Programme coordination and cooperation in the context of the European Research Area (Horizontal Support Actions)***

Funding Scheme: Coordination and Support Actions – Supporting Action.

The Council of the European Union, in its conclusions of 2 December 2008<sup>10</sup> on the Joint Programming of Research in Europe, recognised that, in the context of globalisation and the intensification of competition, there is growing awareness of the existence of common societal challenges which no Member State is capable of resolving alone. The largest share of public resources for research and innovation is actually committed at national or regional level, but there is evidence that clear benefits could be derived by further improving cooperation in the European Research Area, with structuring effects and economies of scale.

Europe needs to elaborate stronger, better coordinated, more coherent and global responses to the challenges it is facing. This will boost Europe's capacity to transform the results of research into tangible benefits for society and for the overall competitiveness of its economy. The EU and its Member States have complementary roles and must work together: both the ERA-NET scheme, which the Commission successfully introduced since FP6, as well as the new Joint Programming

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<sup>10</sup> 2891st Competitiveness Council Meeting Conclusions concerning Joint Programming of Research in Europe in response to the major societal challenges. Brussels, 2 December 2008

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activities, which the Member States will undertake in a limited number of particularly important domains, can provide a valuable contribution.

In order to foster further progress in co-ordination and mutual cooperation, *two sets of strategic support actions are foreseen in 2010:*

### **-A) Support Actions for assessing the impact of the ERA-NET scheme and optimising its operational modalities (Topic ERA-NET.2010.1)**

Since the ERA-NET scheme started in 2002, a wide community of programme owners and managers has been accumulating a valuable experience. There is tremendous scope in sharing such experience for the benefit of both current participants and newcomers to the scheme. In 2008, the Commission launched a first set of initiatives offering opportunities for mutual learning and exchange of good practice, as well as the creation of a central information platform on European transnational programme cooperation in Research and Technological Development. These initiatives can be strengthened further, taking into account the needs of the ERA-NET community in terms of implementation and future development of the ERA-NET principles.

#### Scope

Proposals may cover the following areas:

- **Coherent implementation mechanisms and increased mutual learning**, as well as information exchange within the wider ERA-NET community. The actions should support active ERA-NETs and their participants, in particular those which started under FP7, and respond directly to the needs of the ERA-NET community.
  
- **Policy related issues** in the context of programme coordination and cooperation, e.g. conceptual and methodological approaches to analyse alternative means of implementing the ERA-NET principles, in view also of a possible common set of rules for programme managers and owners.

#### Expected Impact

The selected support actions should provide useful input in view of the possible future evolution of the ERA-NET scheme and a further opportunity to share experiences among the main stakeholders engaged in designing and deploying the broad structures and functions for the coordination of national research programmes. The selected actions should also highlight the synergies between ERA-NETs and other forms of national and regional research programme coordination.

### **-B) Actions in support of the European Union's initiative on Joint Programming in Research. (Topic ERA-GPC.2010.1)**

In the above mentioned Council Conclusions of December 2008, the European Research Ministers, called Member States to collaborate in a dedicated configuration of CREST (referred to as "High Level Group for Joint Programming" or GPC) to identify themes for Joint Programming, chosen following broad public consultation of the different regional, national and European scientific communities and, where appropriate, of the private sector.

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At the same time, the GPC was also asked to consider, with the support of the Commission, how best to find a common approach to a number of issues (referred as “Framework Conditions”), such as common peer review mechanisms and cross border mobility of research funding.

### Scope

Proposals are invited in relation to:

**Exploring, supporting and analyzing the “Framework Conditions” considered necessary for an effective implementation of Joint Programming, such as:**

- **Common peer-review procedures**
- **Joint forward-looking activities and evaluation of programmes.**
- **Coherent approach to the funding of cross-border research by national or regional authorities.**
- **Effective measures to ensure the optimum dissemination and use of research findings, including common practices for the protection, management and sharing of intellectual property rights.**
- **Provisions to facilitate the involvement in Joint Programming of the various scientific and, where appropriate, industrial communities.**

### Expected Impact

The selected actions should help the different framework conditions for Joint Programming to be moved forward, in line with relevant Council Conclusions.

All proposed events should be planned for at least six months after the closing date of the call in order to allow sufficient time to complete all procedures for the funding to be in place.

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### \*\*\* Call Fiche \*\*\*

**Call title:** ERA-NET Call 2010

**Call identifier:** FP7-ERANET-2010-RTD

**Date of publication:** 30 July 2009<sup>11</sup>.

**Deadline:** 19 January 2010, at 17.00.00, Brussels local time<sup>12</sup>.

### Indicative budgets and Topics<sup>13</sup>:

A total of EUR 21.5 million is foreseen for this call, divided as follows:

A sum of up to EUR 20.5 million<sup>14</sup> will be allocated by individual Themes in the Cooperation Work Programme to the ERA-NET<sup>15</sup> topics detailed in *Table 1* (Thematic part of the Call).

A further EUR 1 million<sup>16</sup> for horizontal support actions, funded pro-rata by all the Themes in the Cooperation Work Programme, as detailed in *Table 2* (Horizontal part of the Call).

*Table 1 – Overview of Thematic Activities and Topics in FP7-ERANET-2010 –RTD<sup>17</sup>*

| THEME/Activity  | Topic identifier    | TITLE  | Budget (M€) |
|---|---------------------|--|-------------|
| <b>1. HEALTH</b>  |                     |  |             |
| 1.1 Biotechnology, generic tools, and medical technologies for human health | HEALTH.2010.1.1-2   | ERA-NET on Genomics and Genetic Epidemiology of Multi-factorial Diseases | 2.0         |
| 1.2 Translating Research for human health                                   | HEALTH.2010.2.4.1-1 | ERA-NET on translational cancer research in Europe                       | 2.0         |
| 1.2 Translating Research for human health                                   | HEALTH.2010.2.4.4-2 | ERA-Net on rare diseases   | 2.0         |
| <b>2. FOOD, AGRICULTURE AND FISHERIES, AND BIOTECHNOLOGY</b>                |                     |  |             |
| 2.1 Sustainable production and  | KBBE.2010.1.1-2     | Deepened and enlarged European cooperation in the                        | 1.0         |

<sup>11</sup> The Director-General responsible for the call may publish it up to one month prior to or after the envisaged date of publication.

<sup>12</sup> The Director-General responsible for the call may delay this deadline by up to two months.

<sup>13</sup> Under the condition that the preliminary draft budget for 2010 is adopted without modifications by the budget authority.

<sup>14</sup> Total indicative budget provided by the concerned Themes for ERA-NET actions. Following the evaluation of proposals, the final total budget of the call, as well the individual sub-budgets independently allocated by each Theme, may vary by up to 10% of the values initially foreseen.

<sup>15</sup> Please note that, in 2010, no budget has been allocated by the Themes for ERA-NET Plus Actions.

<sup>16</sup> Total indicative budget for horizontal support actions. Following the evaluation of proposals, the final budget of the call may vary by up to 10% the total value of the indicated budget.

<sup>17</sup> Coordination and Support Actions (Coordinating Action)

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|   |                  |  |     |
|---|------------------|--|-----|
| management of biological resources                                |                  | area of Molecular Plant Sciences - ERA-NET   |     |
| 2.1 Sustainable production and management of biological resources | KBBE.2010.1.2-6  | Deepened and enlarged cooperation between phytosanitary (statutory plant health) research programmes - ERA-NET | 1.0 |
| <b>4. NMP</b>   |                  |  |     |
| 4.4 Integration of technologies for industrial applications       | NMP.2010.4.0-7   | ERA-NET on Nano-technologies, including Nano-toxicology  | 1.5 |
| 4.4 Integration of technologies for industrial applications       | NMP.2010.4.0-8   | ERA-NET on Manufacturing   | 1.5 |
| 4.4 Integration of technologies for industrial applications       | NMP.2010.4.0-9   | ERA-NET on Catalysis   | 1.5 |
| <b>6. ENVIRONMENT</b>   |                  |  |     |
| 6.2 Sustainable management of resources                           | ENV.2010.2.1.2-2 | ERA-Net on Water Management  | 2.0 |
| 6.2 Sustainable management of resources                           | ENV.2010.2.1.4-2 | <i>ERA-NET on Biodiversity: "Towards integrated European biodiversity research strategy and programmes"</i>    | 2.0 |
| 6.3 Environmental technologies                                    | ENV.2010.3.1.4-2 | ERA-NET on Eco-Innovation  | 2.0 |
| <b>7. TRANSPORT (including Aeronautics)</b>                       |                  |  |     |
| 7.2 Sustainable Surface Transport                                 | SST.2010.6-3     | ERA-NET in Waterborne Research (MARTEC II)   | 2.0 |

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Table 2 – Overview of Horizontal Support Actions in FP7-ERANET-2010 –RTD<sup>18</sup>

| THEME/Activity  | Topic identifier | TITLE   | Budget (M€) |
|---|------------------|---|-------------|
| <b>HORIZONTAL</b>   |                  |   |             |
| A4.2.2.3.a Support for Programme coordination and cooperation in the context of the ERA | ERA-NET.2010.1   | Support Actions for assessing the impact of the ERA-NET scheme and optimising its operational modalities. | 1.0         |
| A4.2.2.3.b Support for Programme coordination and cooperation in the context of the ERA | ERA-GPC.2010.1   | Actions in support of the European Union's initiative on Joint Programming in Research                    |             |

### General Eligibility Conditions

The general eligibility criteria are set out in Annex 2 of this work programme, and in the guide for applicants. Please note that the completeness criterion also includes that part B of the proposal shall be readable, accessible and printable. Only information provided in part A of the proposal will be used to determine whether the proposal is eligible with respect to budget thresholds and/or minimum number of eligible participants.

| Funding scheme   | Minimum conditions  |
|--|---|
| Coordination and Support Actions (coordinating action) | At least 3 independent legal entities, each of which is established in a MS or AC, and no 2 of which are established in the same MS or AC |
| Coordination and Support Actions (supporting action)   | At least 1 independent legal entity.  |

### Specific Eligibility Criteria for ERA-NET proposals

The aim of ERA-NET actions is to network research programmes carried out at national or regional level, with a view to their mutual opening and the development and implementation of joint activities. Such programmes shall have all of the following characteristics:

- Be strategically planned (i.e. be composed of a number of research projects focused on a defined subject area or set of problems, that are scheduled to run for a set period of time and that have a co-ordinated management).
- Be carried out at national or regional level.

<sup>18</sup> Coordination and Support Actions (Supporting Action)

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- Be either financed or managed directly by national or regional public bodies, or by structures (e.g. agencies) closely related to, or mandated by, public authorities.

The minimum number of participants in an ERA-NET consortium is **3 independent legal entities** which finance or manage publicly funded national or regional programmes. ***Each of these must be established in a different Member State or Associated Country.***

Partners for ERA-NET actions eligible to satisfy the above condition are:

- Programme owners: typically national ministries/regional authorities responsible for defining, financing or managing research programmes carried out at national or regional level.
- Programme 'managers' (such as research councils or funding agencies) or other national or regional organisations that *implement* research programmes under the supervision of the programme owners.
- Programme owners (typically national ministries/regional authorities) which do not have a running or fully fledged research programme at the moment of submitting an ERA-NET proposal, but which are planning, and have committed, to set up such a programme, are also eligible if their participation is well justified and adds value to the overall programme coordination. As such, countries or regions which have less diverse research programmes (in particular new Member States and candidate Associated Countries) will find their involvement in the ERA-NET scheme greatly facilitated.

Please note that research organisations or universities which are not programme owners or managers are not eligible partners for ERA-NET actions.

In addition, other private legal entities (e.g. charities) which manage research programmes may enter the consortium if their participation is well justified and adds value to the overall programme coordination.

Sole participants (as referred to in Article 10 of the Rules for Participation) may be eligible if the above-mentioned specific criteria for eligible ERA-NET partners are respected. A sole participant shall explicitly indicate which of its 'members' forming a sole legal entity is either a programme owner or programme manager in the proposed action and indicate for these members, the respective national/regional programmes which are at the disposal of the proposed ERA-NET action.

### ***Evaluation Criteria for ERA-NET proposals***

For the evaluation of ERA-NET proposals, the general criteria and thresholds applicable to Coordination and Support Actions given in Annex 2, are complemented as follows:

#### ***1. Scientific and/or technological excellence - Quality of coordination (Threshold 3/5)***

- The management should be supported by a suitable governance structure involving the participating organisations at an appropriate level.

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### 2. *Quality and efficiency of the implementation (Threshold 3/5)*

- In reference to the applicable work programme, does the proposed ERA-NET / ERA-NET Plus action pool the necessary resources between national programmes and the Community and does it represent the most appropriate type of public funding for this pre-defined area?

### 3. *Potential impact (Threshold 3/5)*

- The participants should be the key actors within their national or regional research systems.
- The ERA-NET activities should lay the foundations for a durable cooperation between the partners involved.
- Is there a clearly identified and agreed European added value through a variable geometry approach?

A reserve list may be produced of proposals that pass the evaluation, but fall below the available budget.

- Proposal format:
  - Applicants must ensure that proposals conform to the page limits and layout given in the Guide for Applicants, and in the proposal part B template available through the EPSS. The Commission will instruct the experts to disregard any pages exceeding these limits. The minimum font size allowed is 11 points. The page size is A4, and all margins (top, bottom, left, right) should be at least 15 mm (not including any footers or headers).
- Evaluation procedure:
  - The evaluation will follow a single stage procedure.
  - Proposals will not be evaluated anonymously.
  - Proposals may be evaluated remotely.
- Indicative timetable:
  - Evaluation in February 2010
  - Opening of negotiations in March 2010
  - Selections from September 2010
  - Grant agreements from October 2010
- Consortia agreements:
  - Consortia Agreements are recommended.
- The forms of grant and maximum reimbursement rates which will be offered are specified in Annex 3 to the Cooperation work programme. This call provides the possibility to use flat rates to cover subsistence costs incurred by beneficiaries during travel carried out within grants for indirect actions. For further information, please refer to the relevant Guide for Applicants. The applicable flat rates are available at the following website: [http://cordis.europa.eu/fp7/find-doc\\_en.html](http://cordis.europa.eu/fp7/find-doc_en.html) under 'Guidance documents/Flat rates for daily allowances'.

**\*\*\* End of Call Fiche \*\*\***

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### \*\*\* Appendix to Call Fiche \*\*\*

*For information purposes:* overview of ERA-NET topics, open for other Themes in Cooperation and Parts in Capacities, which are not included in the coordinated ERA-NET Call 2010 described in the previous section.

| THEME/Activity   | Topic identifier | TITLE   | Budget (M€) <sup>19</sup> |
|--|------------------|---|---------------------------|
| <b>COOPERATION SPECIFIC PROGRAMME</b>  |                  |   |                           |
| <b>10. SECURITY<sup>20</sup></b>   |                  |   |                           |
| 7.0 Security Research coordination and structuring   | SEC.2010.7.0-5   | ERA-NET on co-ordination of national research programmes in the area of Security research | 6.0                       |
| <b>CAPACITIES SPECIFIC PROGRAMME</b>   |                  |   |                           |
| <b>1. INFRASTRUCTURES<sup>21</sup></b>   |                  |   |                           |
| 1.3 Support for policy development and programme implementation  | INFRA.2010.3.1   | ERA-NET supporting cooperation for research infrastructures in all S&T fields             | 5.0                       |
| <b>7. INTERNATIONAL COOPERATION<sup>22</sup></b>   |                  |   |                           |
| 7.3 Supporting the coordination of national policies and activities of Member States and Associated States in the field of international S&T cooperation | INCO.2010.7.3-1  | ERA-NET International Cooperation with Africa   | 2.0                       |
|  | INCO.2010.7.3-2  | ERA-NET International Cooperation with Brazil, Canada, China, Japan, USA                  | 4.0                       |

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<sup>19</sup> Under the condition that the preliminary draft budget for 2010 is adopted without modifications by the budget authority.

<sup>20</sup> The Security topic is included in the call FP7-SEC-2010-1, with publication date 30 July 2009

<sup>21</sup> The Infrastructure topic is included in the call FP7-INFRASTRUCTURES-2010-1, with publication date 30 July 2009

<sup>22</sup> The International Cooperation topic is included in the call FP7-INCO-2010-3, with publication date 30 July 2009

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### **A4.2.3 External expertise**

*Funding Scheme:* Coordination and Support Actions - Expert Contracts<sup>23</sup>

It is foreseen to appoint groups of independent experts to carry out the following tasks:

The evaluation of the proposals submitted to the coordinated call **FP7-ERANET-2010-RTD** and, where appropriate, the review of running projects.

In-depth analysis of the ERA-NET Plus instrument and of the first experiences in its implementation, taking into account operational, strategic and policy related criteria.

**Budget for A4.2.3:** EUR 80 000

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<sup>23</sup> In accordance with Articles 14(c), 17 and 27 of Regulation (EC) No 1906/2006 of 18 December 2006 laying down the rules for the participation of undertakings, research centres and universities in actions under the 7th Framework Programme and for the dissemination of research results (2007-2013).

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### **A4.3 SUPPORT FOR COORDINATION AND COOPERATION WITH AND BETWEEN INTERGOVERNMENTAL AND OTHER HIGH-LEVEL SCIENTIFIC AND RESEARCH ORGANISATIONS IN THE EU, IN THE CONTEXT OF THE ERA.**

*Funding Scheme:* Coordination and Support Actions – Expert Contracts<sup>24</sup>

Intergovernmental organisations which perform and/or fund research (e.g. EIROforum and its Members<sup>25</sup>), cooperation initiatives (e.g. COST, EUREKA), other representative organisations involving networks or associations of academies or research organisations as well as professional societies<sup>26</sup>, are all crucial actors in EU research.

The further development and growth of ERA will therefore require stimulation and intensification of coordination and cooperation initiatives with and between these relevant organisations.

For 2010, in addition to the dedicated support to EUREKA and COST, respectively detailed in sections A4.4 and A4.5, it is envisaged to nominate a group of independent experts which will be asked to investigate practical ways for consolidating the role played by non-University Research Performing Organisations in ERA, taking into account their specific structural and operational characteristics, as well as the national and/or European settings they operate in.

**Budget for A4.3:** EUR 70 000

### **A4.4 STRENGTHENED COORDINATION WITH EUREKA**

*Funding Scheme:* Other Actions – Subscription<sup>27</sup>

The Specific Cooperation Programme will support coordination activities aimed at increasing complementarities and synergy between EUREKA and the Framework Programme in areas of common interest. The Community is a member of EUREKA and, as such, contributes to the budget of the EUREKA Secretariat: membership fees are expected to total about EUR 2 million for the duration of the 7<sup>th</sup> Framework Programme.

The following activities are foreseen:

- Creating and strengthening synergies between the Framework Programme and EUREKA in order to carry out initiatives across the full spectrum of the research and innovation cycle in a complementary and/or cooperative manner.

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<sup>24</sup> In accordance with Articles 14(c), 17 and 27(5) of Regulation (EC) No 1906/2006 of 18 December 2006 laying down the rules for the participation of undertakings, research centres and universities in actions under the 7th Framework Programme and for the dissemination of research results (2007-2013).

<sup>25</sup> EIROforum is the partnership of Europe's seven largest intergovernmental research organisations (CERN, EFDA, EMBL, ESA, ESO, ESRF, ILL)

<sup>26</sup> Examples of such networks, associations or societies could be EuroHORCS, EARTO, Academia Europa, ALLEA, EARMA, etc.

<sup>27</sup> In accordance with Article 14(d) of Regulation (EC) No 1906/2006 of 18 December 2006 laying down the rules for the participation of undertakings, research centres and universities in actions under the 7th Framework Programme and for the dissemination of research results (2007-2013), and in accordance with Article 108(2)(d) of the Financial Regulation and Article 160a of the detailed rules of the implementation of the Financial Regulation.

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- Continuing the exchange of technical information, mainly in the stimulation of 'brokerage events', notably for the benefit of research and innovation in SMEs and the exchange of expertise in project and impact evaluation.

**Budget for A4.4:** EUR 350 000

### A4.5 SCIENTIFIC AND TECHNOLOGICAL COOPERATION ACTIVITIES CARRIED OUT IN COST

*Funding Scheme:* Coordination and Support Actions – Named Beneficiary<sup>28</sup>

COST is a long-standing, bottom-up mechanism that facilitates coordination and exchanges between nationally funded scientists and research teams in a variety of research fields. During the 6<sup>th</sup> Framework Programme, COST underwent significant reforms as a result of which it can now contribute cost-effectively to research coordination within the European Research Area.

The Community's funding to COST under FP7 is specified in the Cooperation Specific Programme, whereby the Community's grant will be at least EUR 210 million and up to EUR 250 million for COST, subject to a mid-term evaluation. This grant is subject to an agreement between the Commission and the European Science Foundation<sup>29</sup>, the legal entity designated by COST as its implementing agent and communicated to the Commission by the General Secretariat of the Council.

The first three instalments of the FP7 COST grant, of EUR 30 million each, covered consecutive 12-month periods spanning until 1 June 2010. Similarly in 2010, the grant agreement will be extended for a further 12 months, until 1 June 2011, with a complementary Community financial contribution of EUR 30 million.

Reinforced coordination among the activities of the European Science Foundation, COST and the Framework Programme will also be sought in areas of common interest. The partnership between the Commission and COST will be further developed.

**Budget for A4.5:** EUR 30 000 000

### A4.6 RISK-SHARING FINANCE FACILITY

In accordance with Annex III of the Cooperation Specific Programme, the Community has provided a contribution to the European Investment Bank (EIB) for a Risk Sharing Finance Facility (RSFF), with a view to foster primarily private sector investment in research, technological development and demonstration (RTD) as well as innovation<sup>30</sup>. This new financing instrument has been designed by the European Investment Bank with the support of the EC.

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<sup>28</sup> In accordance with Article 14(a) of Regulation (EC) No 1906/2006 of 18 December 2006 laying down the rules for the participation of undertakings, research centres and universities in actions under the Seventh Framework Programme and for the dissemination of research results (2007-2013).

<sup>29</sup> The European Science Foundation is established in 1 Quai Lezay Marnesia, Strasbourg, CEDEX 67080, France.

<sup>30</sup> Costs related to Innovations activities may be considered as eligible EC RSFF Operations provided their compliance with the provisions set in the RSFF Co-operation Agreement between the European Community and the European Investment Bank (as stated in the article A4.6.2: Selection of Projects for Financing and the Eligibility Criteria below)

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Private investment in research and innovation in Europe remains below the level necessary to achieve the ambitions of the Lisbon agenda and the Barcelona objective. In addition to grants, other mechanisms have proven effective in leveraging private investment by firms, thus mobilising the financial markets and diversifying funding sources for European RTD actions.

Improving access to loans for RTD actions requires public support to overcome market deficiencies for the financing of European RTD actions, which often involve a high level of risk.

### **A4.6.1 Approach**

Within the framework of a maximum contribution of EUR 1 billion for the period 2007-2013, the Community has provided its first contributions (Coordination and Support Action) to the EIB for RSFF for an amount of EUR 420 million for the period 2007-2009<sup>31</sup>, EUR 350 millions of which coming from the Cooperation Specific Programme. For 2010 it is expected that the EU will transfer EUR 80 million to the EIB, out of which EUR 50 from the Cooperation Specific Programme. The Bank is the sole beneficiary of this Community action. Pursuant to a decision by the EIB Board of Directors, endorsed by the Bank's Governors on 9 June 2006, the EC contribution will be matched by an equivalent amount from the EIB (up to EUR 1 billion).

The level of the Community risk coverage for each operation shall depend on the financial risk evaluation carried out by the EIB. The level of total provisioning and capital allocation for the majority of RSFF operations is expected to fall within the range of 15%-25% of the nominal value of such operations, although in view of increasing risks reflecting the crisis, the portfolio may migrate towards the higher end of this range. In no case shall the level of total provisioning and capital allocation amounts of the Community contribution exceed 50% of the nominal loan or guarantee value. There will be risk sharing under each operation, according to the methodology established in the Agreement concluded between the Commission and the EIB. The percentage of risk covered by the Community contribution for each operation will be variable and will depend, *inter alia*, on the risk grading of such operation as well as its maturity.

The cooperation agreement between the European Community (EC) and the European Investment Bank (EIB) in respect of the Risk-Sharing Finance Facility (RSFF) – the RSFF Cooperation agreement – was approved by the Commission (Commission Decision C(2007)2181 – 25/05/2007) and signed on 5 June 2007 by Commissioner Janez Potočnik and President Philippe Maystadt and amended by the Commission (Commission Decision C(2008)8058 – 12/12/2008). The amendment entered into force on 26 February 2009

This Agreement, defines terms and conditions related to RSFF and, in particular, to the use of the Community contribution in RSFF, the risk-sharing methodology, the indicative annual budget, the reporting conditions, the governance, the rules for establishment of network of financial intermediaries in all Member States and Associated Countries and their relating conditions. The amendment seeks to simplify and harmonize the financial reporting requirements and rules for asset management with other Commission funds managed by the EIB. The entry into force of this amendment allows, *inter alia*, for the allocation to RSFF of the Third Country Appropriations.

### ***International Co-operation***

In accordance with the provisions of the Cooperation Specific Programme, the EIB may only use the Community contribution to RSFF to cover risk of operations limited to those borrowers or

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<sup>31</sup> This amount includes the EUR 350 million as originally planned and EUR 70 million front-loaded from 2010 budget in response to the financial and economic crisis.

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beneficiaries of guarantees from legal entities from Third Countries other than Associated Countries who participate in FP7 projects and whose costs are eligible for Community funding.

### ***Dissemination actions***

Since 2006 the EIB, assisted by the RSFF Designated Service, has carried out an intensive awareness raising campaign to reach stakeholders in as many Member States and Associated Countries as possible. Such awareness raising actions will continue in 2010, with special focus on the most research intensive sectors in Europe.

RSFF will involve development of financial engineering solutions adapted to the needs of European RTD actions. Such solutions will be implemented and tested by the EIB and its financing partners.

As soon as such a solution can be considered replicable, case studies of risk-sharing arrangements with financing partners and new products developed specifically for RSFF will be published on the EIB dedicated RSFF web-site.

A number of workshops for representatives of Member States and Associated Countries have been held since the launch to disseminate such financial engineering solutions and seek future co-operation opportunities. Initiatives of this kind will be continued in 2010, both at European and national level.

### ***Contacts with potential clients***

The launch of RSFF dedicated website and other awareness raising activities started in 2006 have resulted in applications for financing from promoters of European RTD actions. In parallel, the EIB loan officers have numerous contacts with highly research intensive companies explaining the existence of new financing options made possible by RSFF.

RSFF will be offered in all Member States and Associated Countries in order to ensure that all legal entities, irrespective of size (including SMEs and research organizations, including universities) in all Member States and Associated Countries, may benefit from this facility for the funding of their activities in eligible actions. This will entail the identification by the EIB of at least one financial intermediary partner active in each Member state and Associated Country and willing to offer RSFF products. The attention of the Member States and Associated Countries is drawn to the fact that, in case of difficulties in identifying financial intermediary partner interested to join EIB network for RSFF purpose, there will be a dependence on the best efforts of the Member States and Associated Countries themselves to ensure that there is no consequential damage to the interests of participants in their countries.

### ***Addressing the financing needs of the Technology Platforms and Joint Technology Initiatives***

Having identified in 2006 the most dynamic and active Technology Platforms the Commission and the EIB will continue to follow their individual development and monitor the implementation of their strategic research agendas to search for financing needs which the Bank could address. In some cases customised products, individual or wholesale, may be developed, if necessary in co-operation with other financial institutions.

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The Commission and the EIB will follow the development of Joint Technology Initiatives and the initiatives undertaken by their stakeholders and advise the stakeholders on options available to optimise their financing packages. This may involve bridge financing as well as individual customised financing solutions, specifically adapted to the financing needs.

### ***Implementation arrangements for SMEs***

The EIB can only be directly involved in operations with financing requirements in excess of EUR 7.5 million. Smaller requests will be directed to financing partners established in Member States or Associated Countries with whom the EIB has or will develop risk-sharing arrangements, including Framework Facilities designed to provide intermediated financing to smaller projects, notably those promoted by SMEs.

A Framework Facility is a line of credit advanced by the EIB to banks or other intermediary institutions which on-lend the proceeds to finance small and medium-size investments.

The deployment of Risk-Sharing Framework Facilities across the EU will reflect demand and will be staged, involving, during an initial phase, a limited number of leading EIB partner banks, based in Member State or Associated Countries. In a subsequent phase, a more wide-spread coverage of EU markets will be attempted by approaching, in a systematic manner, other interested financing partners throughout the EU, in view of setting up Risk-Sharing Framework Facilities covering respective markets.

Risk-Sharing Framework Facilities will be set up either through the introduction of risk sharing arrangements in existing credit lines or through new facilities or intermediaries. Alternative framework financing concepts could also be envisaged.

### ***Governance***

RSFF is managed by the EIB in accordance with its own rules and procedures, with due regard to terms and conditions of the RSFF Cooperation Agreement (as amended) between the Commission and the Bank. RSFF implementation and in particular the use of the Community Contribution will be supervised by a Steering Committee, consisting of at least four representatives, at the Director level, from the Commission and the Bank respectively.

The Commission will continue to closely monitor the effective use of the Community Contribution, including ex-post assessments of the successful features of the action, and to regularly report to the Programme Committee. In addition, the Commission will include main findings in this respect to the annual report on research and technological development activities which it will send to the European Parliament and the Council pursuant to Article 173 TEC.

In addition, and in compliance with the mid-term evaluation referred to in Annex II of the Framework Programme, the Commission will provide at that time a report containing information on the participation per type of legal entities, the fulfillment of the FP7 selection criteria, the kind of projects supported and the demand for the instrument concerned, the duration of the authorization procedure, the project results, and the funding distribution.

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### **A4.6.2 Selection of Projects for Financing and the Eligibility Criteria**

The EIB was recognised as a beneficiary of the Community action in the Council and Parliament decision adopting the 7<sup>th</sup> Framework Programme.

In accordance with the principles established in the Cooperation Specific Programme the EIB will use the Community contribution on a "first come, first served basis," as provisions and capital allocation within the Bank to cover part of the risks associated with its operations supporting eligible European RTD actions.

The EC contribution to RSFF may only be used to support activities which can be classified as "fundamental research", "industrial research" or "experimental development" as defined in the Community Framework for State Aid for Research and Development and Innovation. Prototypes and pilot projects, which are part of "experimental development", may be eligible if they fulfill the conditions specified therein. Innovation activities intended to prepare the commercial use of research results within the time period of the project (such as training, technology management and transfer) are eligible if they are linked to and complementary to research, technological development activities and/or demonstration activities, the later constituting the bulk of any eligible European RTD action.

The RSFF Cooperation Agreement with the Bank comprises a list of exclusions from financing with support of the Community contribution, reflecting political agreement between the Commission; the Member States and Associated Countries as well as the European Parliament as documented in the 7th Framework Programme and the Cooperation Specific Programme.

### **A4.6.3 The Commission Right to Object to the Use of the Community Contribution**

The Commission has a right to express its opinion on each and every financial operation proposed by the EIB to its Board for decision under Article 21 of the EIB Statutes. Where the Commission delivers an unfavourable opinion, the EIB Board may not grant the loan or guarantee concerned, unless it votes unanimously in its favour, the Commission nominee abstaining. Should the Bank proceed with financing despite the Commission's negative opinion the Community contribution to RSFF may not be used.

In accordance with Rules of Participation, the Commission may object, in duly justified cases, the use of the *Community contribution* for provisioning and capital allocation against a loan *or a guarantee* proposed by the EIB. If such a case arises the Commission may conduct an independent, internal or external, review of such a case.

### **A4.6.4 Community Contribution to RSFF**

All Themes of this Work Programme will contribute on a proportional basis, except the Socio-Economic Sciences and the Humanities theme, which does not contribute to RSFF

In compliance with Annex II to the 7<sup>th</sup> Framework Programme, and reflecting demand from highly research-intensive companies, the Community financial contribution to RSFF from the abovementioned contributing Themes of the Cooperation Specific Programme will reach the amount of EUR 400 million in 2010.

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The Community financial contribution to RSFF from the Cooperation Specific Programme may reach a maximum amount of EUR 800 million for 2007-2013. In line with the projected level of demand for RSFF, Article 7(2) of the 7<sup>th</sup> Framework Programme gives to the Council and the European Parliament the option to revise this amount on the basis of a report by the Commission containing information on the participation of SMEs and universities, the fulfilment of the FP7 selection criteria, the duration of the authorisation procedure, the project results, and the funding distribution.

As from 2009 the Commission proceeds annually with an equal amount of commitment and payment of the Community contributions to RSFF, based on an the EIB's activity and forecast report and its request for the amount of the contribution estimated necessary for the following year. Following mid-term evaluation, however, the payment may be made in (several) instalments to ensure the maximum match between funds paid to the EIB and used for provisions and capital allocation.

In view of the satisfactory build-up of the RSFF portfolio in 2007-9 and a promising pipeline of potential projects to be financed in 2010 the Commission has increased, in 2009, its commitment to an amount of EUR 220<sup>32</sup> million— with EUR 190 million coming from the Cooperation Specific Programme. In view of the limit established by the Annex II to the 7<sup>th</sup> Framework Programme the remaining amount of EUR 80 million, out of which EUR 50 from the Cooperation Specific Programme, will be transferred to the EIB for the period of 2010.

### **A4.6.5 Process for Recovering and Reallocating Unused Community Funds**

In order to mitigate the risk of accumulation of unused funds the multi-annual planning will be adjusted on the basis of reports including pipeline report (summary of information on projects considered for financing) and demand forecasts. Amounts committed but not earmarked, blocked or paid to the EIB – i.e. not used for the operations of RSFF – will be reallocated to other activities of the contributing themes.

Notwithstanding the above and unless the Council adopting the 8<sup>th</sup> Framework programme decides otherwise the Commission will recover from the EIB any unused funds of the Community contribution (including interest and income) which on the 31 December 2013 have not been used or committed to be used or are required to cover eligible costs The mid-term evaluation will include an external assessment of the impact of the RSFF.

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<sup>32</sup> This amount includes a partial frontloading of EUR 70 million from the budget of 2010

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### A4.7 FINANCIAL OVERVIEW FOR GENERAL ACTIVITIES FOR 2010

The following provides a financial overview for 2010 of the activities which are funded across the Cooperation Programme:

| Activity                             | Funding for 2010 *                                 |
|--------------------------------------|--|
| A4.1 CORDIS                          | EUR 7.90 million                                   |
| A4.2 ERA-NET scheme (cross-thematic) | EUR 1.08 million<br><i>broken down as follows:</i> |
| A4.2.2.1 ERA-NET Actions **          | EUR 0.00 million                                   |
| A4.2.2.2 ERA-NET Plus Actions        | EUR 0.00 million                                   |
| A4.2.2.3 Horizontal Support Actions  | EUR 1.00 million                                   |
| A4.2.3 External expertise            | EUR 0.08 million                                   |
| A4.3 Research Organizations          | EUR 0.07 million                                   |
| A4.4 EUREKA                          | EUR 0.35 million                                   |
| A4.5 COST                            | EUR 30.00 million                                  |
| A4.6 RSFF***                         | EUR 50.00 million                                  |
| EFTA credits/RSFF                    | EUR 1.26 million                                   |
| <b>Total:</b>                        | <b>EUR 90.66 million</b>                           |

\* Under the condition that the preliminary draft budget for 2010 is adopted without modifications by the budget authority.

\*\* ERA-NET Actions are directly funded by the Themes.

\*\*\* This amount corresponds to primary-credit appropriations. It is complemented by an additional amount of EUR 1.26 million (corresponding to the allocation to RSFF of the EFTA credits of 2.52 %).

### Budget Figures in This Work Programme

All budgetary figures given in this work programme are indicative. The final budgets may vary following the evaluation of proposals.

The final budget awarded to actions implemented through calls for proposals may vary:

- The total budget of the call may vary by up to 10% of the total value of the indicated budget for each call; and
- Any repartition of the call budget may also vary by up to 10% of the total value of the indicated budget for the call.

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For actions not implemented through calls for proposals:

- The final budgets for evaluation, monitoring and review may vary by up to 20% of the indicated budgets for these actions;
- The final budget awarded for all other actions not implemented through calls for proposals may vary by up to 10% of the indicated budget for these actions.

### V. Recovery Package: Public-Private Partnerships (PPPs) and Risk Sharing Finance Facility

The European Economic Recovery Plan adopted by the European Commission on 26 November 2008 and endorsed by the European Council on 11-12 December 2008 proposes actions to develop technologies for the manufacturing, construction and automotive sectors, which have recently seen demand plummet as a result of the crisis and which face significant challenges in the transition to the green economy. The Commission proposes to increase research financing through the RSFF instrument and to launch three Public-Private Partnerships (PPPs) which provide the required support to the three sectors:

- in the manufacturing sector: a 'Factories of the Future' initiative to help EU manufacturers across sectors, in particular SMEs, to adapt to global competitive pressures by increasing the technological base of EU manufacturing through the development and integration of the enabling technologies of the future, such as engineering technologies for adaptable machines and industrial processes, ICT, and advanced materials (EUR 1.2 billion);
- in the construction sector: an 'Energy-efficient Buildings' initiative to promote green technologies and the development of energy-efficient systems and materials in new and renovated buildings with a view to reducing radically their energy consumption and CO<sub>2</sub> emissions (EUR 1 billion);
- in the automotive sector: a 'Green Cars' initiative, involving research on a broad range of technologies and smart energy infrastructures essential to achieve a breakthrough in the use of renewable and non-polluting energy sources, safety and traffic fluidity (EUR 1 billion).

These initiatives are part of a comprehensive, integrated package to be implemented in cooperation between all the responsible services within the Commission, complemented by actions on the demand-side, such as public procurement, technical standards, and regulatory measures. This includes a further EUR 4 billion for non-research activities under the Green Cars Initiative.

The three PPPs are intended to prevent the crisis from deflecting attention from the EU's longer-term interests and the need to invest in its future. Research and Innovation are considered as strategic and "smart" investments to prepare the ground for the future of the EU economy which has to become a knowledge-based and low carbon economy, as stated in the Lisbon strategy. This is crucial for the EU to come out from the crisis stronger, more sustainable and more competitive.

The Commission is working in close collaboration with industrial representatives to develop longer-term research strategies for the three sectors, but to meet the need for a rapid start-up, the initiatives will be implemented in the first instance through a series of Cross-thematic Calls under the 2010 work programme 2010 between the relevant FP7 Themes. Responsibility for these Cross-thematic Calls is as follows:

- The 'Factories of the Future' initiative involves financial support from the NMP<sup>1</sup> and ICT<sup>2</sup> Themes;
- The 'Energy-efficient Buildings' initiative involves financial support from the NMP, Energy, ICT and Environment Themes;
- The 'Green Cars' initiative involves financial support from the Transport, ICT, NMP, Energy, and Environment Themes.

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<sup>1</sup> Nanosciences, Nanotechnologies, Materials & New Production Technologies

<sup>2</sup> Information and Communication Technologies

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In addressing the industrial needs and objectives of each PPP, the Themes will work closely together to ensure a coherent, complementary and holistic approach. To ensure high visibility and to promote cooperation and exchange of information between the research projects funded under the different Themes, it is intended to gather the researchers and the industrial stakeholders together in annual cross-thematic workshops and seminars for each PPP. This would be part of the implementation of the projects.

The Call Fiche for the Joint Call on Sustainable automotive electrochemical storage in the Green Car PPP is included in Annex 5. The Call Fiches for all the other topics can be found within the corresponding work programme chapter of each participating Theme. The topics in the FoF and EeB PPPs are organised in two Coordinated Calls with a common deadline. With the exception of the Joint Call on Sustainable automotive electrochemical storage, each Theme will remain responsible for its own budget and for the implementation of the related topics.

The corresponding research topics for each PPP under the work programme 2010 Cross-thematic Calls are given in the following three sections V.1 to V.3. A table providing a global overview of the PPP topics in 2010 is given at the end of Annex 5.

The RSFF will now include a front-loading measure as follows:

In line with this work programme and the amended version of Annex 4 of work programme 2009, a total amount of EUR 220 million will be at the disposal of the EIB by July 2009, allowing an estimated amount of RSFF loan financing under the EC window in 2009 of EUR 1.1 billion.

### V.1 "Factories of the Future" Public-Private Partnership (FoF) - Cross-thematic cooperation between NMP and ICT

Manufacturing is still the driving force of the European Economy. Manufacturing activity in Europe represents approximately **21% of the EU GDP** and provides about **20% of all jobs** (more than 30 million) in **25 different industrial sectors**, largely dominated **by SMEs**. With each job on the factory floor generating approximately two other jobs in services, about 60 million people are additionally engaged in the related service areas. Therefore, manufacturing is of high importance to Europe, with a huge potential to generate wealth, jobs and a better quality of life. The long-term shift from a cost-based competitive advantage to one based on high added value requires that European manufacturing increases its technological base, building on the EU's excellent R&D in this domain, and develops a number of **enabling trans-sectoral production technologies**.

The *Factories of the Future PPP Initiative* aims at helping EU manufacturing enterprises, in particular SMEs, to adapt to global competitive pressures by developing the necessary enabling technologies to support EU manufacturing across a broad range of sectors. It will help European industry to meet the increasing global consumer demand for greener, more customised and higher quality products through the necessary transition to a demand-driven industry with lower waste generation and energy consumption.

The activities will concentrate on increasing the technological base of EU manufacturing through the development and integration of the enabling technologies of the future, such as engineering technologies for adaptable machines and industrial processes, ICT for manufacturing, and the novel industrial handling of advanced materials. The initiative will concentrate on industry-led R&D projects and will include demonstration activities, such as large-scale production-line demonstrators for validation and market applications. The partnership will work together to identify the R&D needs of manufacturing industry and in particular SMEs. In order to further ensure the PPP

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character of the initiative, a large part of the activities in the projects is expected to be performed by industrial organisations themselves. This initiative, being by nature **cross-sectoral** and including efforts to address the **needs of SMEs**, aims to transform Europe into a dynamic and competitive knowledge-based economy by delivering:

- A new European model of production systems for the factories of the future (e.g. transformable factories, networking factories of excellence, learning factories) depending on different drivers such as high performance, high customisation, environmental friendliness, high efficiency of resources, human potential and knowledge creation.
- ICT-based production systems and high quality manufacturing technologies capable of optimising their performance with a high degree of autonomy and adaptability for a balanced combination of high throughput and high accuracy production.
- Sustainable manufacturing tools, methodologies and processes that have the capability of cost-efficiently shaping, handling and assembling products composed of complex and novel materials.

The indicative budget for the "Factories of the future" PPP initiative is EUR 95 million in 2010, of which EUR 60 million is from the NMP Theme and EUR 35 million from the ICT Theme.

### V.1.1 "Factories of the Future (FoF)" - Topics covered by the NMP Theme

#### **FoF.NMP.2010-1                      Plug-and-Produce components for adaptive control**

**Technical content/scope:** The main objective is to develop active, self-optimising, portable plug-and-produce components for a new generation of adaptive production systems. These plug-and-produce components should hold the manufacturing process at optimal performance despite influence of disturbances, variations in plant performance or voluntary changes in the production. Research should also explore the potential of adaptive smart materials or combination of passive and active materials (mechatronic solutions and/or engineered materials) to increase the adaptability of production systems for changing conditions. The intelligent plug-and-produce systems can feature sensing and actuating structures, adaptive control and energy harvesting to allow a high accuracy in production systems under different conditions and to overcome the traditional limitations on dynamics versus precision.

Research should focus on self-sufficient intelligent plug-and-produce components with advanced sensing and actuating functionalities, e.g. based on smart materials. Such systems should easily implement and self-adapt their range of properties, depending on the changing process conditions. Regarding the use of smart materials, technical key points are the compensation of static and/or thermally induced dislocations, vibration damping and the decoupling of oscillations. Vibrations could be used for energy harvesting processes to transform kinetic energy into electric energy, to drive the intelligent system. Deliverables should include components and methods for intelligent, self-sufficient plug-and-produce systems. The system should be of an open architecture to facilitate any additions of new modules as needed for implementation in a new environment.

In order to ensure industrial relevance and impact of the research efforts, active participation of industrial partners, including SMEs, represents an added value to the activities and this will be reflected in the evaluation.

The projects are expected to cover demonstration activities, including pilot implementations in industrial settings, and this will be reflected in the evaluation.

**Funding Scheme:** Collaborative projects.

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**Expected impact:** The new generations of adaptive production systems by means of active, self-optimising plug and produce components should lead to significantly improved dynamics, a higher precision as well as a high level of reliability in the use of changing process conditions. This should result in higher productivity as well as higher product quality.

### **FoF.NMP.2010-2                      Supply chain approaches for small series industrial production**

**Technical content/scope:** Manufacturing systems for small series production will enable the transition from mass production to the personalised, customer-oriented and eco-efficient manufacturing needs of the future, requiring innovative interactions between design, materials, processes and ICT. A complete supply chain model addressing new challenges such as involving customers in design, which could include the creation and management of personalised data files, and on-demand manufacturing, requiring appropriate raw materials availability, highly flexible, fast response manufacturing techniques and final product acceptance criteria and procedures, needs to be developed. Typically, data capture, reverse engineering, design activities and manufacturing may take place in various geographical locations and need reliable data transfer capabilities.

The research should focus on advanced techniques for fast and reliable data capture and data management (ensuring confidentiality of data), flexible and multifunctional computer-aided component design systems, on-purpose planned raw material specification and supply as well as on fostering on ad-hoc logistics, legislative and organisational aspects in order to offer solutions in building sustainable supply chain approaches. Special attention will be required for final product quality management in the whole production chain. Particular emphasis may also be given on developing machines capable of processing specifically upgraded single or multi-materials parts.

The topic is aimed at projects driven by industry and service-to-industry companies, with significant demonstration elements of the complete manufacturing cycle distributed over the whole value chain. The overall objective of the topic is to involve the relevant industrial sectors, including OEMs (Original Equipment Manufacturers), design and service providers as well as material manufacturers.

In order to ensure industrial relevance and impact of the research efforts, the active participation of industrial partners, including SMEs, represents an added value to the activities and this will be reflected in the evaluation. Regarding industrial SMEs, a strong participation, a significant role in the decision making structure of the project and clear benefits in the exploitation of the results would also add value to the project.

The projects are expected to cover demonstration activities, including pilot implementations in industrial settings, and this will be reflected in the evaluation.

**Funding Scheme:** Collaborative projects.

**Expected impact:** First-time right flexible, energy and eco-efficient manufacturing systems will play a crucial role in maintaining the economic viability of manufacturing organisations within the EU. It is expected that the removal of technical barriers will open the way for wide-scale introduction and implementation of those systems. For example, Rapid Manufacturing technologies are expected to be in the market place for high value added products (replacing 5-15% of the conventional production techniques within the next 5-10 years), in a wide range of sectors. New supply chain approaches are particularly crucial for sectors in which citizens play an important role, such as health, consumer, automotive, electronics, but also high-end equipment.

### **FoF.NMP.2010-3                      Intelligent, scalable, manufacturing platforms and equipment for components with micro- and nano-scale functional features**

**Technical content/scope:** In order to be competitive in the global market, manufacturing industry needs to be cost-efficient and flexible in volume and product features, meeting at the same time quality and sustainability targets. The integration of micro- and nano-features in products and production equipment shows high potential to enable the achievement of these targets. The aim is to deliver new reconfigurable, upscalable and multipurpose micro- and nano-manufacturing platforms and equipment that can facilitate cost efficient and competitive industrial-scale manufacturing of customised products. This will require the development of a new generation of modular, knowledge intensive, scalable and rapidly deployable systems, which should utilise the emerging technologies from micro- and nano-research and follow a flexible industrial production philosophy where production chains are easily downscalable in size or resolution, upscalable in volume and open to the introduction of new technologies, ensuring quality and reliability at low costs.

The research focus is on:

- New design and modelling tools for intelligent, integrated cross-domain design approaches to all aspects of the future manufacturing platforms (including design for manufacturing rules, prototyping, process & material characterisation, integrated process chains, assembly, packaging, metrology, testing, standardisation).
- New (in-line) control solutions and embedded sensor technologies for reconfigurable, modular micro- and nano-manufacturing systems, with potential link to factory level control systems (e.g. Manufacturing Executive System).
- Integrated new solutions for automatic handling of large volumes of very small parts or macro-components integrating small parts using high precision positioning and handling techniques.
- Novel solutions of nano-processing operations integrated within conventional mass production lines
- Modular and knowledge-based approaches, e.g. self-learning & auto-calibrating systems.
- Characterisation, quality control and yield management.

In order to ensure industrial relevance and impact of the research efforts, the active participation of industrial partners, including SMEs, represents an added value to the activities and this will be reflected in the evaluation

The projects are expected to cover demonstration activities, including pilot implementations in industrial settings, and this will be reflected in the evaluation.

The project consortia would benefit from the integration of players in the supply-chain of manufacturing systems and the integration of inter-sectoral technologies (micro- and nano-manufacturing, bio-, IT etc.).

**Funding Scheme:** Collaborative projects.

**Expected Impacts:** The approach must demonstrate its ability to:

- i) establish and to support a competitive European nano- and  $\mu$ -manufacturing industry, creating favourable conditions for private investment and economic growth;
- ii) enable new factories, new equipments and new products with micro- and nano-scale functional features, integrating results from manufacturing of nano-materials & nano-surfaces and production technologies for  $\mu$ -components;
- iii) upgrade existing factories by means of effective integration of nano-manufacturing processes; iv) reverse the trend of out-sourcing to low cost countries by allowing manufacturing on demand at the right

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time and place. The target is to strengthen Europe as a NMT-location for both equipment and production industry by creating the technology and infrastructure basis.

### V.1.2 "Factories of the Future" - Topics covered by the ICT Theme

#### FoF.ICT.2010.10-1 Smart Factories: ICT for agile and environmentally friendly manufacturing

##### Targeted outcomes:

- Integrated process automation and optimisation for sustainable manufacturing: Highly integrated shopfloor-based platforms and systems<sup>3</sup>, in seamless cooperation with enterprise software<sup>4</sup>, capable of achieving operational targets, such as yield and quality increase, while ensuring energy efficiency and reduction of waste. R&D is expected to be accompanied by training measures.
- Applications based on context- and user-aware ICT and scalable networks of sensors, exhibiting features such as energy autonomy, wireless connectivity, self-configuration, diagnosis and repair integrated in machines and factory-level infrastructure, supporting real-time monitoring of energy use and material flow. Work should aim at promoting standards-based approaches in conjunction with international initiatives involving industry groups and standardisation bodies<sup>5</sup>.
- Robotics-enabled production processes tested and validated in real-world environments. Projects are expected to involve system integrators and manufacturers and to test and validate robotic prototypes, paving the way for large-scale operations in smart factory environments. The projects should target domains which have until now not made much use of robotics technology such as in food processing and packaging, service supply (logistics, transport and warehousing), lightweight goods industries and SMEs.
- Laser applications: To integrate, test and validate novel lasers and laser systems (including for example high-power sources, new wavelengths, frequency conversion and remote processing) in energy-efficient processes, and/or for the production of environmentally friendly products.
- European "ICT for Factories of the Future" Coordination Action: One coordination action should bring together all relevant stakeholders and aim at facilitating industrial learning about the role of ICT in "Factories of the Future" in Europe. Its tasks should include exchange of engineering and manufacturing knowledge across industry sectors and elaborate a European vision and roadmap "ICT for Factories of the Future" in conjunction with other related activities (e.g. Manufuture ETP and IMS).

Proposals in a), b), c), d) are expected to be industry-driven to focus on the use of advanced ICT based technologies and to contain a strong validation element with quantifiable targets.

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<sup>3</sup> e.g. MCS, SCADA, DCS, PLC

<sup>4</sup> e.g. MIS, ERP, MES

<sup>5</sup> e.g. IEC/CENELEC, NAMUR, IEEE, ISA, NIST

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### Expected impact:

- A higher level of intelligence and environmental consciousness on the shopfloor through context-aware, fault-tolerant, adaptable, reconfigurable, interoperable, wireless and robust ICT.
- Facilitated introduction of advanced automation into mainstream manufacturing, and promotion of the development of an early European market for advanced technologies such as electronic and photonic devices, control and new assistive automation and robot systems.
- Stronger penetration of advanced automation into small-scale manufacturing and crafts, especially through the introduction of new assistive automation and robot systems.
- Higher productivity of highly customised manufacturing in Europe and reduced emissions and waste.

**Funding Scheme:** Collaborative projects (IP for targeted outcomes a) and b); STREP for targeted outcomes c) and d)); CSA for targeted outcome e).

### **V.2 "Energy-efficient Buildings" - Public-Private Partnership (EeB) - Cross-thematic cooperation between NMP, ICT, Energy and Environment**

The construction industry accounts for more than 10 % of the EU's GDP and employs 32 million people in large, medium and small enterprises (direct and indirect employment). The construction sector is the highest contributor to the emission of Green House Gases with an average value estimated in most developed countries at close to 33%, knowing that around 40% of the total energy use corresponds to buildings, while their fossil-fuel heating represents a major share. Therefore, in the near future, the built environment in Europe needs to be designed, built and renovated with much higher energy efficiency. In order to contribute through Energy-efficient Buildings to the objectives adopted in March 2007 by the European Council for a reduction by 2020 of 20% in the total energy consumption, 20% contribution of renewable energies to total energy production and a 20% reduction of greenhouse gas emissions compared with the figures for 1990, a strong and continued effort in RTD and innovation in the short, medium and long term is needed.

The objective of the *Energy-efficient Buildings PPP Initiative* is to deliver, implement and optimise building and district concepts that have the technical, economic and societal potential to drastically reduce energy consumption and decrease CO<sub>2</sub> emissions, both in relation to new buildings and to the renovation of existing buildings. This new initiative should have a large payoff, as it will increase the market for energy-efficient, clean and affordable buildings. Research priority will be given to delivering new building materials and components for energy saving and energy generation, thermal energy storage systems, advance insulation systems, thermal distribution systems, lighting technologies, windows and glazing technologies, energy generation systems based on renewable sources, but also to reliable simulation and prediction tools, including assessment methods that integrate economical, social and environmental issues. To date, the construction industry has failed to effectively integrate key technologies into its operations in order to achieve sustainable, long-term competitiveness.

The aim of the activities is to identify, through the partnership with industry, the main RTD needs, and address a number of areas of clear industrial interest, such as tools, the building envelopes, systems and equipment, ICTs for energy efficiency, environmental technologies, social and

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behavioural aspects, standardisation and business models. Specific deliverables expected for new and refurbished buildings (including cultural heritage) are:

- Research for new design and manufacturing technologies, focussing on new building materials and components, thermal energy storage systems, advanced insulation systems, thermal distribution systems, lighting technologies, windows and glazing technologies, and assessment methods which include guidelines/methodologies for the eco-design and the Life Cycle Assessment of energy-efficient buildings.
- Research on ICT for energy efficiency in buildings, such as design and simulation tools, inter-operability/standards, building management systems, smart metering and user-awareness tools.
- Research on resource efficiency (waste and energy use) to identify best practices to help set standards and establish public policies for higher energy efficiency and reduced environmental impact.
- Research on the application of technological, design and organisational improvements at district-level with the aim of reducing the energy and resource consumption.
- Research-related activities on key demonstration topics concerning integration of innovative products and systems, grid issues and business models.

The indicative budget for the "Energy-efficient buildings" PPP initiative is EUR 65 million in 2010, of which EUR 30 million is from the NMP Theme, EUR 15 million from the ICT Theme, EUR 15 million from the Energy Theme and EUR 5 million from the Environment Theme.

### V.2.1 "Energy-efficient Buildings (EeB)" - Topics covered by the NMP Theme

#### **EeB.NMP.2010-1                      New nanotechnology-based high performance insulation systems for energy efficiency**

**Technical content/scope:** Insulating materials are used to keep the temperature constant in an enclosed space such as a house, either warmer or colder than the surroundings, and in doing so can protect the environment through the reduction of greenhouse gases. Nanotechnology offers high potential for enhanced insulation allowing thinner coatings or fillings to prevent heat loss or gain which would not be possible with conventional materials. The research shall focus on development of nanotechnology based insulation systems for enhanced thermal and improved mechanical properties while reducing overall costs making wide-scale commercial application feasible, including the renovation of existing installations. Examples of materials systems for achieving this are aerogels/aerogels composites and nanofoams or thin nanostructured insulators based on thermally resistant (composite) nanoparticles, which can be applied directly to a surface as a film, spray or paint. A further research objective is to combine the insulating effect with other functionalities, for example with photocromic, thermocromic, electrochromic for windows or flame retardant effects, self-cleaning, biocide or humidity control properties, for walls and roofs. The safety of proposed solution(s) must be ensured for the full product life cycle (production, use, disposal/recycling). Economic performance of the proposed solutions should be demonstrated by service-life costing analysis.

In order to ensure industrial relevance and impact of the research effort, the active participation of industrial partners represents an added value to the activities and this will be reflected in the evaluation.

The projects are expected to cover demonstration activities, including pilot implementations in industrial settings, and this will be reflected in the evaluation.

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**Funding Scheme:** Collaborative projects

**Expected impact:** (i) Reduce the cost of nanotechnology-based insulation systems and make their wide-scale commercial application feasible (ii) reduce the heat losses and gains through the building envelope for reduced energy consumption and increased indoor comfort; (iii) for windows which are the weakest part on the energy efficiency performance, a reduction in the U/value by more than 35% is expected compared with conventional ones. For glass covered building it would reduce the energy bill for heating by 40% and for cooling by 7%.

### **EeB.NMP.2010-2                      New technologies for energy efficiency at district level**

**Technical content / scope:** The construction sector can provide a significant contribution to the reduction of resources consumption and to a wider use of renewable resources. The main objective of the topic is to develop new technologies and methods to help reduce the energy consumption and environmental impact of buildings during their entire life-cycle (80% of energy consumption occurs during service-life) at district level, since this cannot be achieved only at building level.

The main focus is on new concepts, technologies, design tools and business models at district level for "intelligent buildings", able to significantly reduce or even completely meet their own energy consumption; improvement of the building energy performance (through cladding and ventilation technologies, sensors, actuators and pervasive computing systems, utilisation of embedded renewable energy sources, etc.). Developments are also required at district level addressing new and improved materials and structures to improve the indoor environment as well as resource and climate, energy consumption conversion, storage capacities and energy carriers. Deliverables include the development, integration and demonstration, if possible at district level, of decision support systems and assessment tools of the above concepts e.g. for social housing, residential buildings, offices, and public buildings such as hospitals, schools and universities, railway- and underground-stations and airports.

In order to ensure industrial relevance and impact of the research efforts, the active participation of industrial partners, including SMEs, represents an added value to the activities and this will be reflected in the evaluation.

The projects are expected to cover demonstration activities, including pilot implementations in industrial settings, and this will be reflected in the evaluation.

**Funding scheme:** Collaborative projects.

**Expected impact:** The new technologies should contribute to a reduction of 50% in energy consumption compared to the 2005 values. The benefits for applying the new technologies at district level are expected to represent a significant reduction (around 20%) of the total costs compared to existing solutions. The return on investment for these additional costs should be preferably not more than 7 years, both in the case of new construction and retrofitting.

## **V.2.2 "Energy-efficient Buildings" (EeB) - Topics covered by the ICT Theme**

### **EeB.ICT.2010.10-2                      ICT for energy-efficient buildings and spaces of public use**

Targeted outcomes:

- Integrated ICT-based management and intelligent control systems governing all energy-efficient sub-systems, such as solid state lighting, heat exchange or air treatment, deployed in spaces of public use. These control systems should interoperate with other ICT-based sub-systems which may be in place to ensure security, safety and comfort.

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The system may cover both the inside of buildings as well as the exterior and surrounding space. Examples of such spaces include: a motorway service area, a football stadium with its surrounding parking space, a university campus or a shopping mall.

In addition to systems integration, proposals should include a substantial validation phase focussing on the operation of the building(s) and surrounding space. During this phase, proposals should record evidence and draw lessons on the benefits and total cost of operation for use by those planning to deploy and finance such systems. Proposals should also consider any relevant contributions to/from standardisation and regulation measures, as well as guidelines for future procurement schemes.

- European "ICT for Energy-efficient Buildings" Forum: One coordination action should bring together all relevant stakeholders to identify and review the needs in terms of research and systems integration. Its tasks should include editing and up-dating the REEB research Roadmap<sup>6</sup>, the organisation of expert hearings, and dissemination and networking events. The Forum should also aim at contributing to standardisation and regulation.

### Expected impact:

- Contribution to the opening of a market for ICT-based customized solutions integrating numerous products from different vendors and offering services from design of integrated systems to the operation and maintenance phases.
- Establishment of a collaboration framework between the ICT and buildings and construction sectors aimed at exploiting opportunities for the development of ICT-based systems in compliance with the Energy Performance of Buildings Directive.
- Radical reduction of energy consumption and CO<sub>2</sub> emissions, in line with the policy framework for facilitating the transition to an energy-efficient, low-carbon economy through ICT<sup>7</sup>.

**Funding Scheme:** Collaborative projects (STREP) for targeted outcome a); CSA for targeted outcome b).

### V.2.3 "Energy-efficient Buildings" - Topics covered by the Environment Theme

#### **EeB.ENV.2010.3.2.4-1 Compatible solutions for improving the energy efficiency of historic buildings in urban areas**

The objective is to develop new technologies and systems as well as compatible materials for improved energy efficiency of historic buildings while ensuring their sustainable protection and integration in urban areas. Proposals will target rehabilitation or adaptation of historic buildings to make them highly resource and energy efficient by improving architectural components, thermal insulation, air conditioning and ventilation, heating, lighting, and other appropriate solutions. Developments should also promote innovative methods and materials for the monitoring and control of energy consumption and of indoor climate including air pollution and possibly be applicable to cultural heritage collections located in historic buildings. Solutions for the rehabilitation and/or retrofitting of historic buildings must respect the integrity, authenticity and

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<sup>6</sup> REEB: The European Strategic Research Roadmap to ICT enabled Energy-Efficiency in Building and Construction, <http://www.ict-reeb.eu/>

<sup>7</sup> COM(2009)111.

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compatibility between the old and new materials and techniques, and be economically viable to enable a widespread application to a vast majority of urban historic buildings, whether they are or not protected by legislation.

Protocols and tools for the planning and implementation of heritage rehabilitation works should be adapted to consider the specific cultural value and priorities required of heritage building interventions and to ensure their effective transferability to other historic buildings located in other urban centres or their surroundings across Europe.

A significant participation of industrial partners including SMEs is required. The participation of local authorities or agencies in charge of the rehabilitation and adaptation of ancient and historic buildings in rehabilitated urban areas is encouraged. This will be considered in the evaluation.

**Funding scheme:** Collaborative Project (large scale integrating project, upper financial contribution EUR 5 000 000)<sup>8</sup>

**Expected impact:** Proposals should contribute to the European Economic Recovery Plan and lead to widespread improvement of energy saving in historic buildings, sustainable renovation of ancient infrastructure and improved living conditions within historic urban areas. Research should contribute to improved quality management of historic cities and cultural tourism, and also help implement the EU Environmental Impact Assessment Directives when applied to historic buildings<sup>9</sup>. Proposals should contribute to the EU Energy Performance of Buildings and other relevant policy regulations. Proposals will also support the Strategic Research Agenda of the European Construction Technology Platform and its Focus Area in Cultural heritage.

### V.2.4 "Energy-efficient Buildings" - Topics covered by the Energy Theme

#### **EeB.ENERGY.2010.8.1-2: Demonstration of Energy Efficiency through Retrofitting of Buildings**

##### ***Content/scope:***

Demonstrate in the building sector, high energy efficient innovative retrofitting technologies and measures for low energy performing buildings, the typology of which is representative for large geographical areas in Europe.

The project(s) shall use innovation in technology, design, planning, operation or systems integration with a strong preference for residential buildings and address socio economic issues.

While the project(s) could contain a single building or a number of buildings, located in one or more countries, effort and budget should be balanced amongst participants from at least three Member States/Associated States.

Retrofitting should be as cost effective as possible. The return to investment for the energy saving measures should be calculated and presented and should be reasonable under current market standards.

Detailed information should be provided on the building(s) existing envelope and its current energy use and the energy efficiency measures to be applied should also be described extensively. The gross floor area of the building(s) should be specified together with the targeted annual energy use per m<sup>2</sup> (kWh/m<sup>2</sup>/year, broken down by space heating, cooling, domestic hot water heating, lighting, etc)

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<sup>8</sup> No more than one project will be supported.

<sup>9</sup> See the guidelines resulting from the EC project SUIT at <http://www.suitproject.net>

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In addition to the technical measures to be undertaken, additional accompanying measures affecting the future operation of the building (e.g. behavioural changes, post occupancy evaluation) should also be clearly addressed.

The energy use should achieve at least the national limit values for new buildings according to the applicable legislation based on the Energy Performance of Buildings Directive (for 2010).

A holistic approach is expected in the measures to be taken and all elements and systems of the building that could contribute to its becoming more energy efficient should be envisaged. The space heat use (kWh/m<sup>2</sup>/year) should be reduced by about 75%.

The project(s) should have a high potential of replication contributing to large scale market deployment before 2020; a dissemination and market deployment programme should be included in the proposal. The detailed metering/monitoring programme should last at least for one year, however, longer term commitment and programmes of the building operators (e.g. in continuous monitoring and/or guarantees of performance to the tenants) would give an added value to the proposal.

**Funding scheme:** Collaborative Projects.

### **Expected impact:**

- Large scale market deployment in retrofitting of buildings before 2020
- Accelerate the retrofitting uptake of low efficient building stock in EU.
- Offer cost effective highly energy efficient retrofitting practices.
- Accelerate the market uptake of the most innovative ICT tools for efficient buildings management
- Create best practice examples for the construction sector based on innovation and competitiveness, with benefits for the citizens and the environment.
- Contribute to raise the performance standards and regulations on European, national and local level, in the construction industry and building sector, through the best practice examples.

### **Additional information:**

- In addition to the detailed description of the buildings and the measures to be taken, it is strongly suggested for participants to complete and include in the proposals the Building Energy Specification Tables (BEST) summarising this information for every type of building proposed. The template for the BEST table can be downloaded from the following web address: [ftp://ftp.cordis.europa.eu/pub/fp7/docs/wp/cooperation/energy/e\\_best\\_2010\\_en.xls](ftp://ftp.cordis.europa.eu/pub/fp7/docs/wp/cooperation/energy/e_best_2010_en.xls).
- Successful proposals will be asked to follow a common monitoring data structure, using a common methodology, in order to feed the relevant Commission data bases (e.g. CONCERTO data base).
- The form of grant applied in area 8.1.2. 'Energy efficiency in Buildings' is based on additional energy efficiency measures in buildings. The grant will be composed of a combination of:
  - the typical reimbursement of eligible costs, and
  - flat rate financing determined on the basis of scale of unit costs only for the demonstration part of the buildings.
- The scale of unit cost of Community financial contribution is fixed to EUR 100 /m<sup>2</sup> eligible costs and thus EUR 50 /m<sup>2</sup> Community contribution.
- The eligible costs per building used in the projects are fixed costs.
- The total of Community financial contribution based on scale of unit costs may not exceed EUR 6 million for one demonstration site.

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- The evaluation of the proposals will also take into account the degree of excellence and innovation of the technology used and the most cost effective practices (euros/efficiency gain; euros/CO<sub>2</sub> reduction, kWh/m<sup>2</sup>/year saved). For this reason, the above figures should be indicated in the proposal.
- Up to four (4) projects will be supported.

### V.3 'European Green Cars' Public-Private Partnership (GC)

The automotive industry is one of Europe's key industrial sectors, whose importance is largely derived from its linkages within the domestic and international economy and its complex value chain. It is estimated to account for close to 8% of total manufacturing value added (ca. EUR 120 billion, 2006) and about 6% of total manufacturing employment (over 2 million employees). The automotive industry also provides an indirect employment to 10-11 million persons and is one of the largest RTD investors in the EU with over EUR 20 billion annually (ca. 5% of its turnover)<sup>10</sup>.

The foreseeable shortage in crude oil based energy carriers is driving fears about energy security: 73% of all oil consumed in Europe is used in transport and estimates predict a doubling of passenger cars within the next 20 years. From an environmental and energy point of view there is an urgent need to find alternatives to fossil fuels in order to secure future energy supply, to guarantee the availability of appropriate material recycling technologies, and to reduce greenhouse gas emissions and other potential environmental impacts related to the automotive industry entire life-cycle. It is thus increasingly evident that a particular emphasis should be put on the rapid development of technologies supporting the massive emergence of more efficient and sustainable road transport solutions based on alternative fuels/energy, and on the RTD efforts associated with them.

The '*European Green Cars*' PPP Initiative is a series of measures boosting research and innovation aiming at facilitating the deployment of a new generation of passenger cars, trucks and buses that will spare our environment and lives and ensure jobs, economic activity and competitive advantage to car industries in the global market. A series of different measures are proposed: support to research and innovation through FP7 funding schemes, specific EIB loans to the automotive and other transport industries and its suppliers, in particular for innovative clean road transport, and a series of legislative measures to promote the greening of road transport (circulation and registration taxes, scrapping of old cars, procurement rules, the CARS21 initiative).

Other actions that are very closely related to the 'European Green Cars' Initiative but not formally included in it are being implemented, such as the 'Fuel Cell and Hydrogen' (FCH) Joint Technology Initiative and the road transport projects funded under the FP7 Transport activity '7.2.1. The Greening of Surface Transport' in its 2007 and 2008 Calls.

The 'European Green Cars' Initiative includes three major research and development avenues within its RTD pillar:

- **Research for heavy duty vehicles based on internal combustion engines (ICE)** [Sustainable Surface Transport sub-theme (SST)]: The research will primarily concentrate on advanced ICE with emphasis on new combustion, the use of alternative fuels (e.g. bio-methane), intelligent control systems, 'mild' hybridisation (use of recuperated electricity to power the auxiliary systems) and special tyres for low rolling resistance.
- **Research on electric and hybrid vehicles:** This component will be the most essential in this package. To have a real impact on the green economy, research in this field should no

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<sup>10</sup> "European industry – a sectoral overview, 2006 update, EC-DG ENTR

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longer focus on electric vehicle technologies seen in isolation from the rest of the transport system: a massive introduction of the technology requires the availability of smart electricity grids and intelligent vehicle charging systems tailored to customers' needs.

- **Logistics and co-modality** combined with **intelligent transport system** technologies are essential to optimize the overall system efficiency and sustainability avoiding for example that empty trucks circulate on highways due to sub-optimal logistics. In this respect, smooth and co-operative interactions between the different transport modes will be essential.

The 2010 work programme focuses on the second research avenue: electric and hybrid vehicles and their infrastructures. Three groups of topics covering collaborative research activities as well as coordination and support actions are included:

- Materials, technologies and processes for sustainable automotive electrochemical storage applications, implemented through a Joint Call with other Themes.
- Research on electric and hybrid vehicles, implemented through the Sustainable Surface Transport (SST) sub-theme of the Transport Theme.
- Information and Communication Technologies for the fully electric vehicle, implemented through the ICT Theme.

The indicative budget for the "European Green Cars" PPP initiative is EUR 108 million in 2010, of which EUR 68 million is from the Transport Theme, EUR 10 million from the NMP Theme, EUR 20 million from the ICT Theme, EUR 5 million from the Environment Theme and EUR 5 million from the Energy Theme.

### **V.3.1 "European Green Cars" (GC) – Topic implemented via a Joint Call between the following Themes: NMP, Energy, Environment and Transport.**

One of the crucial aspects of research needed for electric and hybrid vehicles related to electrochemical storage. It should concentrate on both: new low cost materials (nickel and cobalt oxides are expensive and their prices are exploding) and on safety problems related to thermal runaway. Research on these issues is multidisciplinary and must involve several Themes to gather specialised knowledge and critical mass in a research field where step changes are needed. Another aspect that will be looked at is the issue of the recycling of batteries at the end of their life cycle and the development of technologies to maximise the recovery of materials, in particular for those of high added-value or presenting high environmental impacts.

The Joint Call is jointly organised by the Directorates NMP, Energy, Environment and Transport of DG RTD. The indicative budget of the NMP part for this "Green cars" PPP initiative is 10 million Euros in 2010, while the other Directorates each contribute 5 million Euros. The Community funding part of the indicative budget of the Call is thus 25 million Euros. The deadline is fixed on January 14, 2010 at 17.00 (Brussels local time). The Call Fiche of this Joint Call is below.

**GC.NMP.2010-1,                      Materials, technologies and processes for sustainable  
GC.ENERGY.2010.10.2-2,        automotive electrochemical storage applications  
GC.ENV.2010.3.1.3-3,  
GC.SST.2010.7-9**

**Contents/scope:** Research projects are called for, addressing innovative materials and technologies for battery components, material architectures and systems for automotive electrochemical storage within a responsible, sustainable and environmental-friendly approach looking at the entire life cycle.

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Projects for batteries and/or electrochemical capacitors are eligible. For batteries, research should focus on innovative developments for lithium-based energy storage technologies improving on safety and energy density. Alternatively, projects can be looking at completely different technologies, architectures and chemistries, such as open cells for higher energy densities.

For existing or near-to-market types of lithium-based batteries, projects dealing with the recycling, recovering and re-use of materials are eligible, as well as projects on the comprehension, modelling and management of degradation drivers and processes with the aim to extend the calendar and operational life of the cells.

The environmental sustainability of each developed solution shall be assessed via life cycle assessment studies carried out according to the International Reference Life Cycle Data System (ILCD) Handbook<sup>11</sup>.

Cost, recyclability and safety issues should be prominently emphasized in all projects, as well as proof of concept in terms of product and/or process (not necessarily reaching the industrial scale but convincingly proving scalability towards industrial needs), thereby exploring their standardisation potential. The effect of bidirectional flow at charge stations should be taken in due account, as well as the potential for fast charging (at least 5C) without significant life reduction.

Participation from the manufacturing industrial sector is requested in each project. Aspects like characterisation, standardisation and synergies with other applications, availability of concerned materials, eco-design, manufacturing, can be covered.

At the same level of quality resulting from the evaluation by independent experts, priority for funding should be given to proposals that allow covering this topic as completely as possible.

Work on fuel cells is excluded since it is already covered in the related JTI, but synergies of storage chemistries and architectures with fuel cell vehicle applications showing performance beyond the Call targets, can be covered.

**Funding Scheme:** Collaborative projects

**Expected impact:** Establishing the basis for a world level European automotive battery and electrochemical capacitors industry, with significant contributions to lead the market in the area of recycling<sup>12</sup>. Fostering the constitution of interdisciplinary consortia. The expected impact has to be credibly motivated in terms of performance, cost, recyclability and life-cycle sustainability. Quantitative targets for lithium-based energy storage technologies include cost reduction down to a system level target value<sup>13</sup> of maximum 150€/kWh for mass production and improvement of safety and energy density up to at least 200 Wh/kg. For electrochemical capacitors the corresponding targets are respectively a cost reduction down to a maximum of 10€/kW and a specific power of at least 25 kW/kg, with an energy density of at least 10 Wh/kg. Advanced chemistries should target energy densities of at least 300 Wh/kg.

### V.3.2 "European Green Cars" (GC) – Topics covered by the Sustainable Surface Transport (SST) sub-Theme of Transport Theme.

This part is implemented by DG RTD (Directorate H - Transport) and by DG TREN (Directorate D - New and renewable sources of energy, energy efficiency and innovation). Topics of the 'European Green Cars Initiative' are part of these two Calls:

- Call FP7-SST-2010-RTD-1 (Indicative budget: EUR 40 million)

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<sup>11</sup> [http://lca.jrc.ec.europa.eu/EPLCA/Deliverables/ILCD\\_handbook.htm](http://lca.jrc.ec.europa.eu/EPLCA/Deliverables/ILCD_handbook.htm)

<sup>12</sup> A Lead Market Initiative for Europe, <http://ec.europa.eu/enterprise/leadmarket/recycling.htm>.

<sup>13</sup> All targets are at end of life, cell level for mass produced elements unless otherwise specified.

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- Call FP7-TRANSPORT-2010-TREN-1 (Indicative budget: EUR 23 million)

These topics are grouped in the corresponding Call Fiches and clearly identified.

Limits on the EC financial contribution apply for some of these topics. These are implemented strictly as formal eligibility criteria. You must refer to the Call Fiches for details of these limits and other relevant information.

### **GC.SST.2010.7-1 Electrical machines**

The successful introduction of electric vehicles in the market requires the development of electric machines that are at the same time cheap and highly efficient (on a wide torque/speed range) with high power to weight and volume ratios. At the same time they should also be reliable and robust, in order to withstand the harsh environmental and usage conditions imposed by the automotive standards achieved with the internal combustion engines.

With regard to the integration of electrical machines in a car, it is of high relevance to develop electronic architectures, compact/miniaturised mechatronic modules and highly integrated, energy efficient power electronics technologies and subsystems for power conversion.

At the same time these advanced machines will have to be produced in numbers which have never been achieved before, and this might put a strain not only on the current production technologies, but also on the availability of some raw materials, in particular those needed for the magnetic components. Particular attention should therefore be paid to these aspects when designing these devices, as well as to the integration with the required electronic components. The proposals should therefore focus on achieving the above mentioned requirements by:

- Exploring innovative topologies and concepts (including consideration of intrinsic fault tolerance or methods to cope with unavoidable faults) for the various types of applications (from in-wheel to stand-alone or engine-integrated ones).
- Researching high performance conductive, magnetic and insulating materials.
- Defining simplified, high efficiency cooling concepts.
- Developing advanced magnetic modelling tools.
- Defining automated manufacturing concepts that, given the gradual introduction of these devices, are flexible enough to be capable of supporting efficient manufacturing at the different rates needed in the early and full scale phases of the electrification process.

**Funding Scheme:** Collaborative projects

### **GC.SST.2010.7-2 Integrated electric auxiliaries and on-board systems**

The challenges of the implementation of a world class electric car include matching as well as possible current customer expectations in other domains such as comfort, safety and driveability. This entails the electrification and integration on board of several power-hungry devices, from climate control to lighting, from power steering to infotainment, from braking systems to pumps for several liquids (cooling, fuel, oils, depending on the application) and after-treatment. These should be optimised in order to be competitive with the highly refined mechanical equivalents, and not to add too large an energy burden to the vehicle.

The proposals should therefore focus on:

- Developing optimised electrified components and subsystems (as listed above) in terms of efficiency, size, power-class, weight and cost (design for manufacturing) In some cases, such as steering and braking, due consideration of regulations and safety, needs to taken.

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- Developing energy harvesting concepts which could compensate other auxiliaries' energy consumptions.
- Studying other energy control devices, such as actively controlled glasses, to optimize the energy flows.

Electric safety of the new on-board devices and systems must be kept at least at the safety level which is established today for other type of equipments through the EC Low Voltage Directive. The development of specific auxiliaries and heat recovery systems for heavy duty vehicles (in particular buses) is also acceptable for applications where these differ significantly from light duty vehicle ones and where they represent a significant share of the vehicle's global energy requirements and therefore would provide a significant power saving potential. Synergies with other transport modes such as light rail would be preferable.

**Funding Scheme:** Collaborative projects

### **GC.SST.2010.7-3 Optimised thermal engine development and integration**

Advanced plug-in hybrids and electric vehicles with range extenders need to benefit from highly efficient, compact, clean and low cost engines to provide battery charging over longer trips or in areas where electric recharge infrastructure is not available. In order to be consistent with the "zero emissions" label of electric vehicles, these engines should aim at significantly improving over future Euro 6 standards for noxious emissions.

Proposals should therefore deal with the development and integration of:

- Highly innovative engines, based on alternative architectures or cycles, particularly adapted for this application.
- Extremely downsized automotive engines with the associated gearbox if necessary.
- Existing engines from other applications potentially well adapted to the range extender role

**Funding Scheme:** Collaborative projects

### **GC.SST.2010.7-4 Smart storage integration**

Battery packs for pure electric and plug-in vehicles, even with the most advanced batteries available today and in the near future, will be bulky and heavy components. Their integration would therefore be problematic, and even more so when the emerging concepts in which these packs would need to be removable for fast "refuelling" over long trips are considered.

Proposals will therefore aim at:

- Developing innovative concepts for the physical integration in the vehicle structure.
- Smartly integrating the battery pack in the various on-board systems (electric, cooling, monitoring).
- Considering the implications of both the above points in the case of removable packs and assess the benefits and disadvantage, and therefore the feasibility of the quick-change concept (if possible also in view of its environmental, cost, logistic and life cycle impacts).

The novel concepts for smart electrical storage in vehicles must also provide adequate level of safety. Proposals may address aspects of electrical safety, fire and safety at misuse.

**Funding Scheme:** Collaborative projects

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### **GC.SST.2010.7-5                      Advanced electric vehicle concepts**

The electrification of road vehicles, if brought to its extreme consequences, can have a significant impact on the basic vehicle concept. Today's cars are shaped in ways that strongly descend from the presence of an internal combustion engine on board, with its architectural constraints, dictated by mechanical, thermal, or safety considerations.

The requirements and constraints deriving from an electrical powertrain are much less stringent in several areas, yet not fully explored.

Therefore projects aiming at exploring all the aspects and requirements emerging from this new paradigm are needed, particularly for urban vehicles.

Proposals will address aspects such as:

- Innovative concepts for light weight and crashworthy architectures.
- Optimised aerodynamic bodies for the new packaging constraints.
- Ergonomic on board passenger space and for assembly/maintenance/repair accessibility.
- Modular vehicle architectures that benefit from the absence of many mechanical constraints in the current vehicles both in the construction and use phases.
- EMI/EMC aspects of the new electric vehicle to ensure the successful integration of novel drive systems into complete vehicles.
  - 1) Overall optimization of efficiency and reliability of the drive train.

These concepts will be considered in a holistic way to achieve optimised performance with as little as possible cost, weight, comfort and performance penalties compared to today's vehicles.

**Funding Scheme:** Collaborative projects

### **GC.SST.2010.7-6                      Implementing Public-Private Partnership in the 'European Green Cars Initiative'**

In the frame of the recently launched 'European Green Cars Initiative' this Coordination Action will support the realisation of a Public Private Partnership (PPP) in connection to this initiative (In particular, research priorities within FP7 and a roadmap of R&D activities for Europe).

In this context, road transport sector industries will interact with public authorities both at the level of the implementation of FP7 and national schemes. This Coordination Action will also look at coordinating efforts at the level of the different European Technology Platforms linked to the "European Green Cars Initiative" (ERTRAC, EPoSS and Smart Grid) and research supported by MS/AS.

**Funding Scheme:** CSA

### **GC.SST.2010.7-7                      Raising awareness of potential job opportunities related to the electrification of road transport**

This Coordination Action aims at raising awareness of job creation opportunities and future prospects for young people deriving from the emergence of electrification as an important research and development trend in the automotive sector, which adds a new dimension to the traditional skills taught to automotive engineers and technicians.

The following activities might be included:

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- Encourage young people to seek for high skilled jobs in sectors related to road transport electrification with special focus on science, research and innovation.
- Evaluate and demonstrate the potential of research outputs, outcomes and impacts to create and maintain jobs giving special consideration to opportunities for young people and gender balance.
- Extensive and broad communication and stimulation campaigns targeting young people of different ages (from high school to university). These could be: travelling workshops, competitions, animations and broad media actions directed to a young target, etc.

Proposals will focus on all major research priority lines defined for electrification research activities and might involve all major research stakeholders from industry, academia and society.

**Funding Scheme:** CSA

### **GC.SST.2010.7-8                      Green Cars - Integrated EU demonstration project on electromobility**

#### **Context and scope**

The development of an electric vehicle market in the EU shall be stimulated through a large size integrated demonstration project, including vehicles, infrastructure and standards. Such a European project should also provide input for the smart grid development, integrating a whole new category of electricity users. This large-scale project should include demonstration in cities of captive fleets and their charging infrastructure. Electric vehicles are well adapted to urban vehicle mission profiles and the electrical infrastructure can readily be upgraded in cities, as can support services - leading to greater impact.

Fleets are expected to include several types of autonomous road vehicles with differing drive-train technologies, provided electricity for the electric drive can be taken from the grid. The demonstrations should be broad ranging - investigating different scenarios for vehicle-grid interaction. The project time-frame should consider latest technological developments in Community-funded or national and regional programs. The best use of electric vehicles in terms of range, CO<sub>2</sub> emission and pollutant emissions should be considered. Fuel cell electric vehicles are not addressed here, as they are covered by the Fuel Cells and Hydrogen Joint Undertaking.

#### **Activities**

The activities to be carried out should include:

- Demonstration of the use of electricity as energy vector for road transport in a wide range of real-life operating conditions, including climatic and geographical conditions. The project should demonstrate several autonomous vehicle types from powered two-wheelers to buses with different types of electrical power train systems, including plug-in-hybrid to full battery electric technologies. Focus should be on vehicles where fossil fuel can be substituted and with an electric-only range consistent with typical operating ranges.
- Demonstration of all aspects of fixed infrastructure including different and bidirectional vehicle-to-grid interactions scenarios, and maintenance facilities.
- Development of standards; comprehensive safety assessment of vehicles and infrastructure; Technology validation for performance, durability and costs, under real-world driving conditions and including full energy and environmental impact.
- Assessment of impact on the electricity grids of a broad roll-out of electric vehicles, using modelling based on the real-life results of the project.
- Assessment of the impact on energy and environment, including a Well-to-Wheels analysis and assessment of the lifetime economics.

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- 2) Assessment of customer acceptance, markets potentials and travel patterns.
- Communication, dissemination of information, and education.  
The marginal cost associated with the innovation element compared to state-of-the-art vehicles will be considered as eligible cost.

**Funding Scheme:** Collaborative projects (with a predominant demonstration component).

### Expected impact

The expected impact of this project is an acceleration of the market roll-out of electric vehicles in order to meet EU policy objectives. This project should contribute to clarify the safety, economic and technical viability of the different types of electrical vehicles for broad market introduction, as well as identify needed standards and requirements for fixed electrical infrastructure at European level. The results will be used as input for next generation development of electric vehicles and components.

### Other information

A typical consortium could include cities or regional authorities, fleet operators, vehicles and equipment manufacturers, utilities, research centres and universities.

### V.3.3 "European Green Cars" (GC) – Topics covered by the ICT Theme.

ICT is essential for developing fully electrical vehicles, e.g. for battery management and power supply, for control mechanisms and for the interconnections with the transport and power infrastructures.

#### GC.ICT.2010.10-3                      ICT for the Fully Electric Vehicle

##### Target outcomes:

- a) Highly energy-efficient ICT components and solutions for Fully Electric Vehicles (FEVs), including adaptive and distributed control solutions, as well as new architectures, infrastructure interfaces (with both the road and the power grid) and overall system optimization. Projects should address optimization at vehicle and system levels, derive requirements and define standards - where appropriate - for subsystems, components, communications and closed-loop control, making components and subsystems work together in synergy.

In order to reach significant breakthroughs in performance, efficiency, complexity management, system integration, safety of components and cost reduction while ensuring robustness and reliability, thorough modelling, simulation, implementation and testing of overall systems and components will be required. Research should also consider life-cycle assessment and well-to-wheel analysis, electromagnetic compatibility, high voltage, high power and high temperature components, and standardisation (voltage, current, temperature, connectivity, communication and data protocols). Safety procedures, qualification and validation tests, and adaptation of safety systems for electric vehicles should also be addressed. Projects should preferably address several topics, and consortia should represent a critical mass along the value chain.

Research priorities are:

1. New solutions for overall efficiency gains in the electric vehicle:
  - (i) smart ICT solutions and models for electrical and thermal management, including battery control and charger management

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- (ii) development of energy efficient and lightweight electrified auxiliaries (e.g. air conditioning, steering, lighting, brakes)
- (iii) closed-loop control and cooperative interaction of distributed subsystems

2. Safe and robust sub-systems: communication, sensors, actuators, distributed controls, power electronics, as well as adaptive components and associated real-time monitoring and control for active safety and comfort.

3. Advanced fail-safe systems and electrical architectures, new concepts for vehicle-to-road infrastructure integration based on cooperative system concepts and new generation Advanced Driver Assistance System (ADAS) and active safety systems for FEVs including methods and systems for safety assessment and evaluation.

b) European Fully Electric Vehicle Coordination Action: Coordination of FEVs research activities to identify and continuously review the needs in terms of research, components, systems integration and standardisation. This includes editing and regularly updating a European FEV roadmap, the organisation of expert hearings and networking events, and coordination with FEV-related activities at the national and global levels.

Additional coordination activities can include assessment of energy efficiency and life cycle impact, infrastructure and regulations enabling and leveraging the technologies for FEVs and their convergence with regenerative energy sources, as well as road and passenger safety.

### Expected impacts:

- Increased overall power and energy efficiency of FEVs through ICT solutions for optimised architecture, integration, controls, systems and components, given current and anticipated constraints in terms of energy storage systems.
- Strengthened global competitiveness of the European automobile sector, including the components and systems suppliers and contribution to the creation of knowledge-based jobs in a sector of strong economic impact for Europe.
- European leadership in the move towards the electrification of mobility and transport of goods and passengers.
- Reinforced coordination of the research activities on FEVs across Europe.

**Funding Scheme:** Collaborative projects (STREP) for targeted outcome a); CSA for targeted outcome b).

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**Public-Private Partnership "Green Cars": Cross-Thematic cooperation between NMP, ENERGY, ENVIRONMENT (including Climate Change), TRANSPORT (including Aeronautics)**

**Call title: Sustainable automotive electrochemical storage**

**Call identifier:** FP7-2010-GC-ELECTROCHEMICAL-STORAGE

**Date of publication:** 30 July 2009<sup>14</sup>

**Deadline:** 14 January 2010<sup>15</sup> at 17.00.00, Brussels local time

**Indicative budget** <sup>16,17</sup>: EUR 25 million from the 2010 budget of which:

- EUR 10 million from Theme 4 – Nanosciences, nanotechnologies, materials and new production technologies (NMP)
- EUR 5 million from Theme 5 – Energy
- EUR 5 million from Theme 6 – Environment (including Climate Change)
- EUR 5 million from Theme 7 – Transport (including Aeronautics).

The budget for this call is indicative. The final budget of the call may vary by up to 10% of the total value of the indicated budget for the call.

In case the budget can not be consumed (totally or partially), the remaining budget will be returned to each FP7 theme according to its respective contribution.

### **Topics called:**

The topic on Sustainable Automotive Electrochemical Storage is evaluated and implemented jointly by the Themes 4, 5, 6, and 7. It is identical in each Theme. When applying for this Call please use one of the activity codes below. Each proposal must be submitted only once.

| Activity/ Area        | Topics called  | Funding Schemes       |
|-----------------------|--|-----------------------|
| GC.NMP.2010-1         | <b>Materials, technologies and processes for sustainable automotive electrochemical storage applications</b> | Collaborative Project |
| GC.ENERGY.2010.10.2-2 |  |                       |
| GC.ENV.2010.3.1.3-3   |  |                       |
| GC.SST.2010.7-9       |  |                       |

### **Eligibility Conditions**

The general eligibility criteria are set out in Annex 2 of this work programme, and in the guide for applicants. Please note that the completeness criterion also includes that part B of the proposal shall be readable, accessible and printable.

The minimum number of participating entities required, for all funding schemes, is set out in the Rules for Participation: For Collaborative projects, the minimum condition shall be the participation of 3 independent legal entities, each of which is established in a Member State or Associated Country and no two of which are established in the same Member State or Associated Country.

<sup>14</sup> The Director-General responsible for the call may publish it up to one month prior to or after the envisaged date of publication

<sup>15</sup> The Director-General responsible may delay this deadline by up to two months

<sup>16</sup> A single reserve list will be constituted if there are a sufficient number of good quality proposals. It will be used if extra budget becomes available.

<sup>17</sup> Under the condition that the preliminary draft budget for 2010 is adopted without modification by the budgetary authority.

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Under this topic, the requested Community contribution must not exceed EUR 4 million.

Only information provided in part A will be used to determine whether the proposal is eligible with respect to budget thresholds and partnership.

### Evaluation procedure:

- For this Call the evaluation shall follow a single-stage evaluation procedure.
- Proposals will not be evaluated anonymously.
- Proposals will be evaluated remotely with the consensus session being held in Brussels.
- The page limits that apply to proposals submitted under this Call are given in the Guide for Applicants and in the proposal part B template available through the EPSS. The Commission will instruct the experts to disregard any pages in excess of these limits.
- At the Panel stage, proposals with equal overall scores will be prioritised according to their scores for the S/T Quality criterion. If they are still tied, they will be prioritised according to their scores for the Impact criterion.
- 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 0.5 point scores. Successful proposals must pass the minimum thresholds as follows:

|                                   | <b>Minimum threshold</b> |
|-----------------------------------|--------------------------|
| <b>S/T quality</b>                | <b>3/5</b>               |
| <b>Implementation</b>             | <b>3/5</b>               |
| <b>Impact</b>                     | <b>3/5</b>               |
| <b>Overall threshold required</b> | <b>10/15</b>             |

### Particular requirements for participation, evaluation and implementation:

The forms of grants and maximum reimbursement rates which will be offered are specified in Annex 3 to the Cooperation work programme.

### Indicative Evaluation and contractual timetable

Evaluation: remote phase January 2010, consensus phase February 2010. Evaluation results: estimated to be available by April 2010. A single reserve list of projects might be established, for which the results are estimated to be available by the second semester of 2010.

### Consortia agreements

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

### Use of flat rates for subsistence costs:

In accordance with Annex 3 of this work programme, this call provides for the possibility to use flat rates to cover subsistence costs incurred by beneficiaries during travel carried out within grants for indirect actions. For further information, see the relevant Guides for Applicants for this call. The applicable flat rates are available at the following website: [http://cordis.europa.eu/fp7/find-doc\\_en.html](http://cordis.europa.eu/fp7/find-doc_en.html) under 'Guidance documents/Flat rates for daily allowances'.

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### Overview of the PPPs Topics implemented in 2010

#### 1. Factories of the Future (FoF)<sup>56</sup>

| FP7 Theme  | Topic  | Budget (mio EUR) | Call references                   | Funding scheme                    | Deadline               |
|--|--|------------------|-----------------------------------|-----------------------------------|------------------------|
| NMP –<br>Nanosciences,<br>nanotechnologies,<br>Materials and new<br>Production | <b>FoF.NMP.2010-1</b> Plug and Produce components for adaptive control   | <b>60</b>        | <b>FP7-2010-NMP- ICT-<br/>FoF</b> | <b>Collaborative<br/>Projects</b> | <b>3 November 2009</b> |
|  | <b>FoF.NMP.2010-2</b> Supply chain approaches for small series industrial production   |                  |                                   |                                   |                        |
|  | <b>FoF.NMP.2010-3</b> Intelligent, scalable, manufacturing platforms and equipment for components with micro- and nano-scale functional features |                  |                                   |                                   |                        |
| ICT – Information and Communication Technologies                               | <b>FoF.ICT.2010.10-1</b> Smart Factories: ICT for agile and environmentally friendly manufacturing – a), b), c), d) targeted outcomes            | <b>33.5</b>      |                                   | <b>CSA</b>                        |                        |
|  | <b>FoF.ICT.2010.10-1</b> Smart Factories: ICT for agile and environmentally friendly manufacturing – e) <b>targeted outcome</b>                  | <b>1.5</b>       |                                   |                                   |                        |

<sup>56</sup> Proposers have to check the legal and procedural requirements described in the respective chapters of the work programme Cooperation relating to the Themes concerned

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### 2. Energy-efficient Buildings (EeB)<sup>57</sup>

| FP7 Theme  | Topic   | Budget (mio EUR) | Call references                                  | Funding scheme                    | Deadline               |
|--|---|------------------|--|-----------------------------------|------------------------|
| NMP –<br>Nanosciences,<br>nanotechnologies,<br>Materials and new<br>Production | <b>EeB.NMP.2010-1</b> New nanotechnology-based high performance insulation systems for energy efficiency                  | 30               | <b>FP7-2010-NMP-<br/>ENV-ENERGY-ICT-<br/>EeB</b> | <b>Collaborative<br/>Projects</b> | <b>3 November 2009</b> |
|  | <b>EeB.NMP.2010-2</b> New technologies for energy efficiency at district level  |                  |  |                                   |                        |
| <b>Environment</b><br>(including Climate Change)                               | <b>EeB.ENV.2010.3.2.4-1</b> Compatible solutions for improving the energy efficiency of historic buildings in urban areas | 5                |  |                                   |                        |
| <b>Energy</b>  | <b>EeB.ENERGY.2010.8.1-2</b> Demonstration of Energy Efficiency through Retrofitting of Buildings                         | 15               |  |                                   |                        |
| <b>ICT – Information and Communication Technologies</b>                        | <b>EeB.ICT.2010.10-2</b> ICT for energy-efficient buildings and spaces of public use - <b>a) targeted outcome</b>         | 14               |  |                                   |                        |
|  | <b>EeB.ICT.2010.10-2</b> ICT for energy-efficient buildings and spaces of public use - <b>b) targeted outcome</b>         | 1                |  | <b>CSA</b>                        |                        |

<sup>57</sup> Proposers have to check the legal and procedural requirements described in the respective chapters of the work programme Cooperation relating to the Themes concerned

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### 3 . Green cars (GC)<sup>58</sup>

| FP7 Theme   | Topic  | Budget (mio EUR) | Call references   | Funding scheme                | Deadline               |
|---|--|------------------|---|-------------------------------|------------------------|
| <b>Joint Call NMP, Energy, Environment, Transport</b> | Materials, technologies and processes for sustainable automotive electrochemical storage applications. <b>This topic is published under:</b><br><b>GC.NMP.2010-1</b><br><b>GC.ENERGY.2010.10.2-2</b><br><b>GC.ENV-2010.3.1.3-3</b><br><b>G.-SST.2010.7-9</b> | <b>25</b>        | <b>FP7-2010-GC-ELECTROCHEMICAL-STORAGE</b>                |                               |                        |
| <b>Transport</b><br>(Sustainable Surface Transport)   | <b>GC.SST.2010.7-1</b> Electrical machines   | <b>40</b>        | <b>FP7-SUSTAINABLE SURFACE TRANSPORT (SST)-2010-RTD-1</b> | <b>Collaborative Projects</b> | <b>14 January 2010</b> |
|   | <b>GC.SST.2010.7-2</b> Integrated electric auxiliaries and on-board systems  |                  |   |                               |                        |
|   | <b>GC.SST.2010.7-3</b> Optimised thermal engine development and integration  |                  |   |                               |                        |
|   | <b>GC.SST.2010.7-4</b> Smart storage integration   |                  |   |                               |                        |
|   | <b>GC.SST.2010.7-5</b> Advanced electric vehicle concepts  |                  |   |                               |                        |

<sup>58</sup> Proposers have to check the legal and procedural requirements described in the respective chapters of the work programme Cooperation relating to the Themes concerned, **except for call FP7-2010-GC-ELECTROCHEMICAL-STORAGE for which the call fiche is included in this Annex**

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|   |  |           |                                  |                               |                        |
|---|--|-----------|----------------------------------|-------------------------------|------------------------|
|   | <b>GC.SST.2010.7-6</b> Implementing Public-Private Partnership in the European Green Cars initiative                     |           |                                  | <b>CSA</b>                    |                        |
|   | <b>GC.SST.2010.7-7</b> Raising awareness of potential job opportunities related to the electrification of road transport |           |                                  |                               |                        |
|   | <b>GC.SST.2010.7-8</b> Green Cars - Integrated EU demonstration project on electromobility                               | <b>23</b> | <b>FP7-TRANSPORT-2010-TREN-1</b> | <b>Collaborative Projects</b> |                        |
| <b>ICT – Information and Communication Technologies</b> | <b>GC.ICT.2010.10-3</b> ICT for the fully electrical vehicle - <b>a) targeted outcomes</b>                               | <b>19</b> | <b>FP7-2010-ICT-GC</b>           | <b>Collaborative Projects</b> | <b>3 November 2009</b> |
|   | <b>GC.ICT.2010.10-3</b> ICT for the fully electrical vehicle - <b>b) targeted outcomes</b>                               | <b>1</b>  |                                  | <b>CSA</b>                    |                        |