

**The G8 Research Councils Initiative on
Multilateral Research Funding
Theme: Material Efficiency – A first step
towards sustainable manufacturing**

Instructions for Full Proposals 2011

A copy of the Full Proposal must be submitted by the Leading PI to the Call Secretariat (JSPS, Japan) at <http://www.jsps.go.jp/j-bottom/g8-initiative.html> by midnight Japanese Standard Time on 27th January, 2012. Leading and Partner PIs of each consortium will also be contacted separately by their national Funding Agencies, as appropriate, for detailed guidance on how to submit one copy of the Full Proposal through their national systems.

Full Proposals are to be submitted through the electronic proposal system and Leading PIs are requested to write the proposals directly into the system. However, MS Word File Form could be used in the process of completing the proposal and used to share the proposal among your consortium members.

General guidance for all applicants:

- the proposal should be written in English.
- the different sections of the application should not exceed the prescribed maximum number of characters. Any exceeded characters (including spaces and line breaks) **cannot be entered** into text fields of the system.
- **spaces and line breaks also count as characters.**
- non text descriptions such as **graphic chart, diagrams, figures, etc., can be presented only in the two sections, 9. Project description and 10. Management Plan** by uploading an arbitrary format to the system in PDF format.
- any documents other than those requested as part of the proposal **will not be forwarded** to External Reviewers or Panel members.

1. Project title

This should be the same as the title of the Pre-proposal.

2. Duration

Indicate the duration of the project and anticipated start date. The starting date of the project should be no later than June 1, 2012 and no earlier than May 1, 2012. While the duration of the project may exceed three years, it should be noted that the agreement of the Funding Agencies is for two to three years of support.

3. Project reference

This is completed by the Call Secretariat for administration purposes only.

4. Project summary (Maximum 2100 characters, suitable for public release)

Provide a summary describing the proposed research program and expected impact in plain language suitable for general audience.

The project summary should be the same as the summary provided in your Pre-proposal (although minor amendments are acceptable).

This summary will be published when the proposal is selected.

5. Key words

Give at least three and up to ten keywords that represent the scientific content of your proposal. These will be used to assist in identifying reviewers.

6. Summary of applicants

Provide brief summary information on consortium members and their role in the consortium.

7. Principal investigators

Provide detailed information on each Leading and Partner PI, including institution and contact details.

For each PI, 1400 characters summary of key achievements that are relevant to the research proposed and up to 5 most recent relevant publications should be included.

8. Executive summary (Maximum 7000 characters)

Give an overarching summary of the goals of the research project, with particular reference to the scientific quality of the consortium and of the proposed research, and the innovativeness of the approach. Describe the added value to be expected from the

collaboration with reference to the specific competence and expertise of team and the complementarities of the consortium. Explain the relevance and timeliness of the research proposed in terms of scientific, technological, economic and societal impact, and whether it addresses any global challenges. An ambition of this Initiative is to support early career researchers so you should highlight whether you address this issue.

9. Project description (Maximum 35000 characters)

Describe the research plan of your consortium in no more than 35000 characters.

9.1 Background

Give the scientific basis for your proposal and describe the present state-of-the-art. Identify important gaps to be filled in the current knowledge. Include reference to the significance of preliminary studies, describing how the proposed project is embedded within the research currently funded in the consortium laboratories and how it adds value to this broader program.

9.2 Research plan

Give an overall description and the general approach and methodology chosen to achieve the objectives. Highlight the particular advantages of the methodology chosen; quantify the expected project result(s).

Break down the research program into individual tasks, showing the interrelationship between the tasks. Explain why there is synergy between different tasks of the project and how this is going to be exploited. Remember that proposals will ultimately be assessed by an interdisciplinary panel of reviewers so applications should be prepared in that context. External reviewers and panel members will have been chosen so that there is sufficient expertise to cover the breadth of the call topic, but not all panel members will have specific expertise relevant to all proposals. Applications should be prepared with these two audiences in mind. Added-value – In instances where the proposed work builds on previous activities, describe how this collaborative proposal will complement or build on previous activities as well as the incremental value of the proposed work.

9.3 Complementarity of the team (*Transnational added value of the consortium*)

Describe clearly the contribution and role of each partner to your project. It is expected that unless the participation is at the level of sub-contracting for specific tasks, individual applicants will be true research partners in the consortia and will contribute significantly to the development of the research program. Evaluators will be asked to comment on and rate the value added by the involvement of all partners in order to assist the assessment

of these projects.

Demonstrate how the project will increase synergy between teams across partner countries and how international collaboration adds a particular value.

10. Management Plan (Maximum 17500 characters)

Describe how the overall coordination, monitoring and control of the project will be implemented. Outline the management processes foreseen in the project (decision boards, coordination meetings, etc). It is recommended that milestones be presented in a detailed diagram (e.g. PERT or Gantt charts) providing the time schedule of the tasks and mark their interrelationships; add when decisions on further approaches will have to be made; indicate a critical path marking those events which directly influence the overall time schedule in case of delays. Explain how information flow and communication will be enhanced within the project (e.g. collaboration and task meetings, exchange of scientists).

It is requested that students and postdoctoral researchers supported through the G8 awards receive mentoring on responsible conduct of research. On-line resources can be provided at the time of award, if needed.

Risk management: Indicate where there are risks of not achieving the objectives and describe potential solutions, if appropriate.

Note that a Consortium Agreement (including Intellectual Property Rights) should be signed among the partners of a research consortium prior to the start of the project.

11. Outcome and dissemination plan

Describe how information generated in the course of the project will be captured, stored and managed. Also explain any plans for longer-term archiving and for the release of data to the wider scientific and user community. The application will be expected to demonstrate the necessary resourcing to achieve these aims.

Describe how the consortium will deal with the dissemination, publication, and, protection of results generated in the project. Notably: the access rights for academic and/or private research purposes to the research results, the delay before research results to be publicly available.

It is expected that arrangements will be made for timely release of information and resources from publicly funded research projects.

12. Budget plan

Describe your budget plan for each Leading or Partner PI under the headings in the table.

The currency unit must be K€.

13. Funding from other sources (current and pending support)

Please indicate if a) support from other funding sources will be used to augment resources provided through the G8 award and b) if support is currently being sought from other sources that is relevant to the proposal. If so, then the relationship between these various funds and the proposed project should be explained. This is particularly important in judging the need for funding via this G-8 Initiative.

14. Budget justification

In this section the summary of requested costs and own contribution related to the project should be inserted. The applicants should provide evidence that the requested means are balanced and justified when compared to the work proposed.

In addition to the summary, some funding agencies require a detailed budget specification according to national funding rules. For the appropriate forms and any other questions you should contact or refer to the website of your National Call Contact (contact details at the end).

15. Suggested reviewers

Suggest the names (and provide address, affiliation and e-mail) of at least three reviewers who might be asked to evaluate your proposal.

Reviewers should be experts in the field, and should not have known conflicts of interest with any of the Principal Investigators (PIs) or Funding Agencies.

16. Potential reviewers to avoid for direct competition reasons or conflict of interest

List the names (and provide his/her country and affiliation) of potential reviewers who, you think, should not be asked to evaluate the project for reasons of direct competition and partiality. Also provide the names of significant collaborators that should not be used as reviewers due to conflicts of interest.

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Second Call: Interdisciplinary Program on Material Efficiency – A first step towards sustainable manufacturing

For most materials used to manufacture equipment and products, global stocks are still sufficient to meet anticipated demand, but the environmental impacts of materials production and processing, particularly those related to energy, are rapidly becoming critical. These impacts can be ameliorated to some extent by the ongoing pursuit of efficiencies within existing processes, but demand is anticipated to double in the next 40 years, and this will lead to an unacceptable increase in overall impacts unless the total requirement for material production and processing is reduced.

Material efficiency forms part of the suite of philosophies towards sustainability and any proposal should give consideration to how the research undertaken will have wider impact in the long term on this agenda.

This Call aims to support collaborations between experts in research areas related to the global challenge of materials efficiency to address one or more of seven potential strategies for reducing material demand through material efficiency:

- longer-lasting products;
- modularisation and remanufacturing;
- component re-use and re-cycle;
- designing products with less material;
- rethinking products and their use;
- redesigning the manufacturing processes ;
- replacement of scarce and expensive elements, notably those critical for energy applications.

The Call will support interdisciplinary projects with the potential of creating a step change in the approach taken towards the sustainable use of material resources and the contribution and impact that this will have upon the wider cradle-to-cradle design and manufacturing principles.

The Call includes within its scope the entirety of the industrial system – from material extraction, through supply chains, logistics, manufacturing, and distribution - and

recognizes the global nature of that system. Proposals are expected to show how they address this global approach in a synergistic way and to justify the need for the international collaboration proposed. The Call emphasizes *the potential future role of manufacturing in supporting a sustainable global economy*, and encompasses all parts of the materials hierarchy.

The collaborative and interdisciplinary nature of the Call is expected to encourage proposals that bring different sets of knowledge together in a concerted effort toward solving a problem. Proposals that focus on basic materials science or current manufacturing processes in isolation are unlikely to meet the requirements.

The Call emphasizes the systemic nature of material efficiency and seeks proposals that show awareness of system interactions, and propose novel approaches to influencing the system. In particular,

- Each proposal must firstly position itself within the larger global material system and demonstrate that the scope of the research (what is included in the proposal and what is left outside) is
 - Clear
 - Logical and coherent (in that it does not create an unrealistic simplification – e.g. tackling a material recycling problem that assumes that the waste stream will return from end users in a clean and homogeneous state, an assumption that is not supported by our knowledge of current or future predicted practice)
 - Of significant global scale of impact (show that solving the problem is worthwhile)
- Each proposal must secondly demonstrate its contribution to improved materials efficiency
 - In the synergism made possible by the multi-disciplinary skills held by the team
 - By explaining the relationship between the proposed research and its impact on sustainability of the materials system

When preparing the Full Proposal it is useful to remember the Selection Criteria on which it will be evaluated.

1. Quality/Intellectual Merit

- *Scientific quality and innovativeness of the joint research plan*
- *Added value to be expected from the research collaboration*

How well does the activity advance knowledge and understanding within its own field or

across different fields?

Does the proposal contribute to scientific excellence and significant progress toward the state of the art?

To what extent does the proposed activity suggest and explore creative, original concepts?

If these partnerships were in place already what does this new funding allow them to do that they could not do otherwise?

What is the added value of the international cooperation?

2. Societal/Broader Impacts

- *Expected impacts: e.g. scientific, technological, economic, societal*
- *Opportunities for early career researchers*

What may be the benefits of the proposed activity to society?

To what extent will it enhance infrastructure/capabilities for research and education, such as training, learning, networking and partnerships?

Does the project involve early career researchers?

Does the research collaboration focus on global challenges for which solutions can only be achieved by global scientific approaches?

3. Personnel/Quality of the Consortium

- *Competence and expertise of team and complementarities of consortium (inter-disciplinary / inclusion of all necessary expertise)*

How well qualified are the proposers (Leading Principal Investigator and team) in terms of knowledge, expertise and experience to conduct the project?

What is the quality of previous work in terms of past or potential contributions to, and impact on the proposed and other areas of research?

Is the Leading Principal Investigator team (including any identified Co-Principal Investigators) able to lead the project, e.g. having strong management and leadership skills, or having complementarity of expertise and synergy of the members of the team?

4. Resources and Management

- *Appropriateness of resources and funding requested*
- *Balanced cooperation*

How well conceived and organized is the proposed activity?

Is there an operational plan with well defined milestones in place?

Is the coordination plan adequate?

Is there sufficient access to resources?

Are the requested investments well justified and relevant?

21th November, 2011

Are the scientific and financial contributions of the partners from each country well balanced?

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