



Call for proposals

The G8 Research Councils Initiative on Multilateral Research Funding

Second Call for Proposals from an initiative between Research Councils from Canada, France, Germany, Japan, Russia, the UK, and the USA¹

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

CLOSING DATE FOR SUBMISSION of “Pre-proposals”: 30th September 2011²

NOTIFICATION FOR SUBMISSION of “Full Proposal”: 21th November 2011²

CLOSING DATE FOR SUBMISSION for “Full Proposal”: 27th January 2012²

At the G8 Heads of Research Councils (HORCs) meeting held in Kyoto, Japan in May 2008, the initial proposal for a multilateral funding activity was introduced with the understanding that multilateral research projects can address global challenges in ways that are beyond the capacity of national or bilateral activities. The G8 HORCs framework provided the unique opportunity to pilot a new modality for conducting international research.

G8HORCs agreed that research topics would be defined separately for each call. Following the successful First Call the following research funding organizations, hereafter referred to as the Funding Agencies, are launching a Second Call of the multilateral initiative: the Natural Sciences and Engineering Research Council of Canada (NSERC), the French National Research Agency (ANR), the German Research Foundation (DFG), the Japan Society for the Promotion of Science (JSPS), the Russian Foundation for Basic Research (RFBR), the Research Councils of the United Kingdom (RCUK), and the U.S. National Science Foundation (NSF). This initiative is aimed at supporting excellent research on topics of global relevance best tackled through a multinational approach, recognising that global challenges need global solutions. Funding should support researchers to cooperate in consortia consisting of partners from at least three of the participating countries.

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 years¹, and this will

¹ Italy will not be participating in this call for proposals

² All closing dates will be midnight Japanese Standard Time (JST)

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

Principles for Applications - for details, please consult www.isps.go.jp/j-bottom/q8-initiative.html

Each consortium should be represented by a Leading Principal Investigator (LPI) who has the responsibility for submitting a joint application to the Call Secretariat. Research projects will be selected in a two-step procedure. Short "Pre-proposals" must be submitted by interested consortia by **30th September 2011**. These will be considered by a scientific review panel that will invite submission of Full Proposals by **27th January 2012**. After multinational peer review of the Full Proposals, the intention is to fund approximately 8-10 consortia.

Principles of Funding

Within each selected consortium, funding of the participating researchers is provided by their respective national Funding Agencies according to their normal terms and conditions for project funding. Funding is meant for collaborative research, not merely for networking, mobility or communication. The total budget for this call is approximately 10 million € over three years. Funding can be provided for projects lasting from two to three years. It is expected that 8-10 research consortia will be funded in this call. It is anticipated that awards will be made by May 2012.

Eligibility

Each consortium must consist of at least one academic participant from a minimum of 3 different countries represented by the participating Funding Agencies. Consortium partners should identify a Leading Principal Investigator (LPI) for each proposal for application, management and communication purposes. The LPI is officially responsible for all communications with the Call Secretariat, including the submission of the Pre-proposal and, if invited to do so, the Full Proposal.

All applicants must fulfil national eligibility rules for research grant applications as set by their Funding Agencies.

More than one partner from each country is possible in each consortium. However, consortia should aim for a balanced geographical contribution to the research project.

Researchers from countries not represented by any of the Funding Agencies can participate in the research project at their own expense.

Selection criteria

A successful proposal will combine significant contributions by scientists from at least three of the participating countries and must show an interdisciplinary approach in addressing problems within the scope of the described call theme. The proposal should conform to program aims and designated research fields. Major evaluation criteria are:

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?

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

Applications that are not complete or do not meet the eligibility criteria outlined above and in the national Funding Agency's terms and conditions will be removed from the competition.

Pre-proposals

The selection of projects to be funded follows a two-stage peer-reviewed selection process. In the first step, interested consortia are required to submit a Pre-proposal, using the forms provided by the Call Secretariat.

It is requested that application forms are completed in English and submitted electronically as a PDF-file to the Call Secretariat. (Secure server details will be provided at www.jsps.go.jp/i-bottom/q8-initiative.html within some weeks after the launch of the call.)

The Pre-proposals will be evaluated by the Panel of Experts (PoE). The PoE consists of approximately 15 scientists, encompassing the necessary expertise to cover the call theme.

The PoE will establish a pool of high-quality applications based on above-mentioned criteria that will be invited to submit Full Proposals.

All LPs will receive the result from the Call Secretariat and a short written summary from their national Funding Agencies on their Pre-proposals.

Full Proposals

The Full Proposal must be closely based on the successful Pre-proposal and substantial changes to the proposed program of research or consortium membership is not anticipated.

The LPI should submit one copy of the Full Proposal to the Call Secretariat (for central registration and statistics) and one copy to each of the Funding Agencies which would be responsible for awarding funds to members of successful consortia. There may be additional national application requirements. Further details will be provided in due course.

Peer review will be co-ordinated across the participating Funding Agencies using external and panel review, sharing a common review form. Each proposal will be peer-reviewed by at least three experts.

Full Proposals will be discussed and recommended for funding by the PoE based on the selection criteria and the assessments of external reviews, with quality of science being the primary criterion in selection. The final award decision will be responsibility of the national Funding Agency.

All LPs will receive the result from the Call Secretariat and a short written summary from their national Funding Agencies on their Full Proposals.

Contact Data

Call Secretariat for this call:

G8 Research Councils Initiative Call Secretariat
Ms. Helga TABUCHI

bottom-up@jsps.go.jp

<http://www.jsps.go.jp/j-bottom/g8-initiative.html>

JSPS

Ichibancho FS Bldg.
8 Ichibancho, Chiyoda-ku, 102-8472 Tokyo
Japan

National contacts:

- Natural Sciences and Engineering Research Council of Canada (NSERC)
http://www.nserc-crsng.gc.ca/Professors-Professeurs/Grants-Subs/G8-G8_eng.asp
- French National Research Agency (ANR)
<http://www.agence-nationale-recherche.fr/AAP-308-G8-ANR-2010.html>
- German Research Foundation (DFG)
<http://www.dfg.de/g8-initiative>
- Japan Society for the Promotion of Science (JSPS)

http://www.jsps.go.jp/j-bottom/01_b_gaiyo.html

- Russian Foundation for Basic Research (RFBR)
<http://www.rffi.ru/>
- Research Councils of the United Kingdom (RCUK)
<http://www.rcuk.ac.uk/international/funding/collaboration/Pages/G8Initiative.aspx>
- National Science Foundation (NSF)
<http://www.nsf.gov/od/oise/g8initiative>