

NATIONAL RESEARCH FOUNDATION

PRESS RELEASE

9 December 2011

NRF OPENS CALL FOR HIGH IMPACT SCIENTIFIC RESEARCH PROJECTS UNDER THE COMPETITIVE RESEARCH PROGRAMME FUNDING SCHEME

- *9th Competitive Research Programme (CRP) call for proposals opens for high impact scientific research projects*
- *Latest call comprises two tracks – a general call for proposals in science and technology research, and a thematic call for energy-related research under the National Innovation Challenge on Energy Resilience for Sustainable Growth*

1. The National Research Foundation (NRF) is inviting submission of research proposals for the 9th CRP call. The CRP aims to fund a broad range of research ideas at the programme level to build up Singapore's research capabilities.

2. This latest request-for-proposal comprises two tracks. Track A will be a general call for proposals in all areas of science and technology, excluding projects related to biomedical sciences or energy research.

3. The Energy Innovation Challenge Directorate (EICD) was established by NRF in Feb 2011 to catalyse significant changes in Singapore's energy landscape in a whole-of-government effort to meet the National Innovation Challenge of Energy Resilience for Sustainable Growth (Energy NIC). Track B will be a thematic call under the newly launched Energy NIC. Proposals in Track B should be related to the aim of the Energy NIC to develop cost-competitive energy solutions for deployment within 20 years to help Singapore improve energy efficiency, reduce carbon emissions and increase energy options. (More information on the CRP Funding Scheme's 9th grant call is available in the Annexes.)

4. A multi-disciplinary approach is strongly encouraged for all submitted proposals, as is partnership with industry and academia. Proposals will be evaluated based on research excellence, manpower capability development potential, relevant to industry and with economic impact.

5. The CRP grant will offer funding support for programmes over three to five years and capped at a funding quantum of S\$10 million. Stronger justifications on the economic contribution would be required for proposals requesting more than S\$5million.

6. The grant application will close on 31 Jan 2012. Interested applicants are invited to submit a White Paper at the NRF's grant administration portal – the Research, Innovation and Technology Administration system or RITA at <https://rita.nrf.gov.sg>.

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The National Research Foundation (NRF)

The National Research Foundation (NRF), set up on 1 January 2006, is a department within the Prime Minister's Office. The NRF sets the national direction for research and development (R&D) by developing policies, plans and strategies for research, innovation and enterprise. It also funds strategic initiatives and builds up R&D capabilities and capacities by nurturing local talents and attracting foreign ones. In addition to coordinating the research agenda of different agencies to transform Singapore into a knowledge-intensive, innovative and entrepreneurial economy, it also provides secretariat support to the Research, Innovation and Enterprise Council (RIEC), chaired by the Prime Minister. The NRF aims to transform Singapore into a vibrant R&D hub that contributes towards a knowledge-intensive, innovative and entrepreneurial economy; and make Singapore a talent magnet for scientific and innovation excellence. For more information, please visit www.nrf.gov.sg.

Energy Innovation Challenge Directorate (EICD)

The EICD was established by NRF in Feb 2011 to catalyse significant changes in Singapore's energy landscape in a whole-of-government effort to meet the National Innovation Challenge of "Energy Resilience for Sustainable Growth" (Energy NIC). The Energy NIC will harness the vibrant energy R&D base in Singapore to develop innovative solutions to meet the objectives of competitiveness, energy security and environmental sustainability. As part of the Energy NIC, NRF will embark on the development of technology roadmaps in areas such as smart grids, carbon capture and utilisation, green buildings and renewables.

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NRF COMPETITIVE RESEARCH PROGRAMME (CRP) - 9TH CALL

The National Research Foundation Competitive Research Programme (CRP) Funding Scheme aims to encourage high-impact research and enhance intellectual and human capital development for R&D.

2. The CRP scheme aims to fund a broad base of research ideas at the programme level through a competitive bottom-up approach. Each programme may be made up of several related projects sharing a common unifying theme. This will allow a coordinated, integrated and sustained way of supporting high-impact interdisciplinary research because a larger budget can be allocated to fund a number of smaller related projects that address a given problem. The tight linkage among the projects in a programme will also facilitate the commercialisation of research results.

3. In addition, the CRP scheme provides a way to identify future strategic research areas and would complement other on-going research focus areas identified via a top-down approach. Two call-for-proposals are launched yearly.

Dual Tracks

4. This latest CRP 9th call request-for-proposal comprises two tracks.:

a) Track A: Open/General Competitive Research Programme (CRP)

Proposals in all areas of science and technology, except those primarily involving biomedical sciences (BMS) research¹ or energy research² are sought. More details on Track A are available at the following web-link, and all submissions under this track must be completed here: <https://rita.nrf.gov.sg/CRP9-TrackA/default.aspx>.

¹ A separate funding scheme is administered by NMRC and BMRC for BMS proposals.

² Energy-related proposals should be submitted under Track B.

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b) Track B: Energy-related Competitive Research Programme (CRP)

The Energy Innovation Challenge Directorate (EICD) was established by NRF in Feb 2011 to catalyse significant changes in Singapore's energy landscape in a whole-of-government effort to meet the National Innovation Challenge of Energy Resilience for Sustainable Growth (ENIC). Proposals that fulfil the objectives of the ENIC – to develop cost-competitive energy solutions for deployment within 20 years to help Singapore improve energy efficiency, reduce carbon emissions and increase energy options, are sought. More details on track B are available at the following web-link, and all submissions under this track must be completed here: <https://rita.nrf.gov.sg/CRP9-TrackB/default.aspx>.

5. Multi-disciplinary research is strongly encouraged for all submitted proposals, as is partnership between industry and academia.

Grant

6. The CRP scheme offers funding support for programme of varying sizes over three to five years, capped at a funding quantum of S\$10million. Stronger justifications on the economic contribution would be required for proposals requesting more than S\$5million. NRF will support 100% of the approved direct costs for supported programmes proposed by public sector organisations. For supported programmes proposed by Singapore-based private sector organisations, funding will be up to 70% of qualifying costs.

Candidates

7. NRF welcomes research proposals from Principal Investigators from all Singapore-based institutions of higher learning (IHLs), public sector agencies and research institutions, not-for profit hospitals/research laboratories as well as companies and company-affiliated research laboratories/institutions.

Selection Process

8. Interested applicants need to submit a **White Paper** of up to five pages describing their research proposal and objectives as well as expected outcomes by 31 Jan 2012. NRF will shortlist promising White Papers to be developed into **Full Proposals**, which will be put through an international peer review process. NRF's International Evaluation Panel will select the final proposals for funding support. Proposals will be evaluated on the criteria of research excellence, manpower development potential, economic impact and industry involvement.

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Application

9. All submissions must be completed via the Research, Innovation and Technology Administration (RITA) system at <https://rita.nrf.gov.sg> through the relevant web-links for the two tracks listed in section 4.

10. Applicants are reminded to submit their whitepaper to either Track A or Track B only. There should be no duplication in the submissions, e.g. the white paper submitted to Track A should not be submitted to Track B, and vice versa. Violation of this ruling will result in automatic removal of the proposal from the evaluation process for both tracks under this call.

Energy Resilience for Sustainable Growth

Singapore is a small island state with a developing economy that is highly dependent on imported energy. With rising world energy demand in recent years, fossil fuel prices have increased sharply, posing a serious challenge to Singapore's economic competitiveness and growth. At the same time, Singapore is committed to reducing her carbon intensity as the world seeks solutions to the increasingly worrying problem of anthropogenic climate change. Coupled with these problems is the fact that Singapore has limited land and sea available for the generation of renewable energy.

Recognising the critical role of Research, Development and Demonstration (RD&D) to meet the National Innovation Challenge of Energy Resilience for Sustainable Growth, Singapore will harness the vibrant energy RD&D base in Singapore to develop innovative solutions to meet the objectives of competitiveness, energy security and environmental sustainability.

The RD&D will be focused on developing cost-competitive energy solutions for deployment within 20 years to help Singapore improve energy efficiency, reduce carbon emissions and increase energy options.

Below are some examples on technologies that would address the energy challenge in Singapore:

- Air-conditioning System Efficiency
 - Use of desiccant to improve the energy efficiency of chillers
 - Energy management systems to improve energy efficiency of air-conditioning systems
 - Innovative air distribution schemes

- Biorenewables
 - Bio-oil upgrading technology
 - Biomass pre-treatment
 - Developing cost effective and sustainable biorefineries

- Carbon Capture Storage/Utilization
 - Innovative and effective carbon capture post-combustion

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- Innovative and effective storage/capture solutions to produce effective by-products
- Energy Storage
 - Design and development of cathode, anode and electrolyte materials for advanced Li-ion batteries
 - Superconductors for energy storage systems