

Waste Research Development and Innovation Roadmap

Research, development and innovation (RDI) to advance the South African waste sector

2018 CALL FOR PROPOSALS

The Department of Science and Technology (DST) is pleased to announce a **Targeted Call for Proposals on Municipal Solid Waste** Research, Development and Innovation (RDI), for projects commencing in January 2019. Applicants are requested to familiarise themselves with the information provided in this Call as well as in the Waste Research, Development and Innovation (RDI) Roadmap for South Africa (2015-2025), before preparing an application.

- Strategic framework of the Waste RDI Roadmap (6 Clusters) – available online at: http://wasteroadmap.co.za/download/rdi_clusters.pdf
- Waste RDI Roadmap – available online at: http://wasteroadmap.co.za/download/waste_rdi_roadmap_summary.pdf

1. Background

The Waste RDI Roadmap is an initiative of the DST, managed by the CSIR, and aimed at strengthening –

- human capital development (HCD)
- research and development (R&D)
- innovation in the field of solid waste management

Through the strategic investment in science, engineering and technology, the Department aims to support the prevention of waste and the optimised extraction of value from waste reuse, recycling and recovery, in order to create significant social, economic, and environmental benefit for the country. The objective of the Waste RDI Roadmap Call for Proposals is to directly support –

- More effective decision-making
- Strengthened RDI capability and capacity
- Faster insertion of context-appropriate technology
- Export of know-how and technology

2. Research topics to be funded

This Call for Proposals is targeted at four specific research projects on **Municipal Solid Waste**, including the sub-streams organic waste (OFMSW), construction and demolition waste (C&D waste), and paper and packaging (P&P) waste. These four research projects have been scoped in partnership with the South African Local Government Association (SALGA) and the Department of Environmental Affairs (DEA) to ensure that the outputs of this research provide useful and practical solutions for South African municipalities.

Research proposals addressing **one of the following research questions** are invited.

Research Topic 1: City cleanliness

Litter and illegal dumping of waste are growing concerns for South African municipalities. Significant quantities of waste, particularly OFMSW and C&D waste, are illegally dumped in open spaces, costing municipalities a lot of money annually to remove and remediate. Litter in streets, along sidewalks and in open spaces has become common-place.

Universities and Science Councils are invited to submit research proposals that explore the root causes of increasingly dirty towns and cities in South Africa; the infrastructure that is in place to keep our towns and cities clean; the possible approaches that towns and cities could adopt to improve urban cleanliness; and the cost implications for a municipality to implement these solutions. Research projects should consider the approaches that other developing and developed countries have taken to improve city cleanliness.

The focus of this research topic is on non-metropolitan municipalities, i.e. Municipal categories B1-4. The research project may focus on a single municipality but preferably multiple municipalities.

The immediate goal is therefore to get the waste *“from the ground to the bin”*, before moving to recycling.

Research Topic 2: Diversion of organic and C&D waste

The last official statistics for South Africa showed that only 10% of general waste was recycled in 2011 (DEA, 2012). These figures are expected to have improved since 2011 with the local uptake of recycling and recovery technology and the development of local end-use markets. However, a lot of potentially recyclable material is still lost to landfill, often to controlled or uncontrolled dumpsites. Organic waste and C&D are two waste streams which have considerable potential for diversion from municipal landfills.

Universities and Science Councils are invited to submit proposals which explore municipalities’ readiness to divert organic waste and C&D away from landfill towards recycling and recovery (i.e. where are they now), and appropriate models that could be adopted by South African municipalities to maximise diversion. Models should not only focus on technology solutions, but should also consider issues of policy, governance, infrastructure, financing, etc.

The focus of this research topic is on metropolitan and non-metropolitan municipalities. The research project may focus on a single municipality but preferably multiple municipalities.

Research Topic 3: Incentive models

The current state of landfills and the low cost of landfilling in South Africa, means that municipalities have little incentive to divert waste away from landfill towards prevention, reuse, recycling and recovery (with the exception of those municipalities facing landfill airspace shortages).

Universities and Science Councils are invited to submit proposals which explore and evaluate incentive models that can be used to incentivise municipalities to drive greater diversion of waste away from landfills in South Africa, i.e. incentives that can be applied to municipalities by national or provincial government. Research projects should consider the innovative approaches that other developing and developed countries have taken to incentivise municipalities.

The focus of this research topic is on metropolitan and non-metropolitan municipalities. The research project may focus on a single municipality but preferably multiple municipalities.

Research Topic 4: Phasing out uncontrolled dumping

While considerable effort has been put into licensing landfill sites in South Africa, their compliance with license conditions still remains questionable. The United Nations Environment Programme (UNEP) and the International Solid Waste Association (ISWA) have called for the phasing out of uncontrolled dumping globally and in Africa, in favour of engineered landfills for residual waste.

Universities and Science Councils are invited to submit proposals which explore how such a goal impacts South African municipalities, i.e. municipal readiness to phase out dumping, feasibility and options to phasing out uncontrolled dumping, and the implications for South African municipalities.

The focus of this research topic is on non-metropolitan municipalities, i.e. Municipal categories B1-4. The research project may focus on a single municipality but preferably multiple municipalities.

The above four research topics have not been presented in detail so as to allow researchers the opportunity to interpret the goals of the research project and present a methodology that will achieve these goals and provide maximum learning for municipalities.

The intention is to award at least one grant project per research topic, however more than one grant may be awarded per research topic based on the funding availability.

3. Typical Award Amount and Project Duration

Grant projects previously funded under the Waste RDI Roadmap can be viewed on the website (www.wasteroadmap.co.za). Previously awarded grants have ranged from R349,000 to R2,800,000. The average grant amount for projects with a duration of 2 years is R462,000 while 3-4 year projects average R1,490,000. Proposals in excess of R2,000,000 or longer than 3 years should contain sufficient details that justify the need for the higher than average amount requested and longer project duration. The total Grant funding available for 2018/19 is limited and the process is therefore expected to be highly competitive.

4. Eligibility criteria

Researchers from only South African Universities, Science Councils and other public research institutions, working in relevant disciplines, are invited to submit proposals for a Waste RDI Roadmap Research Grant. Principal investigators (PI) must be qualified to do the proposed research and should be experts in the subject matter referenced in the proposal. Typically this would include full-time faculty at academic and research institutions.

5. Evaluation criteria

All applications will undergo evaluation by an independent review panel, to assess the suitability of the proposal in terms of the Waste RDI Roadmap's objectives.

All proposals will be evaluated against the following criteria:

- i. **Alignment:** the research proposal must address the priorities and research themes of the Waste RDI Roadmap and the intent of the research topic (Section 2 above).
- ii. **Relevance:** the research must have the potential to directly, and positively, influence the management of MSW in South Africa. Preference will be given to proposals which are impact driven and solution orientated and show partnership with local municipalities.

- iii. **Scientific/technical soundness and credibility:** the research proposal has a sound scientific and/or technical base, reflects a sound grasp of the issues requiring investigation, the proposed methodologies are appropriate for achieving the objectives; and the deliverables and associated time frames for delivery are realistic.
- iv. **Innovation:** the project is original and contributes to the body of knowledge or develops practical solutions to move waste away from landfilling towards waste prevention, reuse, recycling or recovery.
- v. **Research Outputs/Deliverables:** the project must result in a significant research output, such as technical research reports, post-graduate dissertations, journal papers, technologies, etc.
- vi. **Capacity development:** Preference will be given to proposals that include capacity development through the training of post-graduate students.
- vii. **Institutional capacity:** the applicant should demonstrate sufficient institutional capacity to implement the project.
- viii. **Value for money:** the benefits of the proposed research are measurable and the value of the benefits exceed the value of the investment.

6. Equity and redress

In line with the national imperative of equity and redress, the research call prioritises support for designated groups viz. black, female and persons with disabilities.

7. Submission of proposals

To be eligible for consideration, proposals must be submitted on the research proposal template provided, and submitted in MSWord or PDF format. Research proposals (Part III: Detailed description of the project) **must not exceed 10 pages** (at font Arial 10, line spacing 1.15). **Proposals may be rejected prior to evaluation if they exceed the set length and if they do not make use of the template provided.**

8. Reservations

The DST expressly reserves the following rights:

- To reject all or any proposals
- To waive any or all irregularities in the proposals submitted
- To retain the right not to select any application/s even if meeting all the requirements

9. Contract negotiations

The successful applicant/s will be required to enter into a written Agreement with the CSIR, who manages the Roadmap Grants on behalf of the DST.

10. Closing date

Applications must be submitted electronically via email to info@wasteroadmap.co.za in the prescribed format. The deadline for the submission of proposals is **Friday, 10 August 2018 at 17:00.**

All applicants will be notified about the outcome of their applications before the end of September 2018 to allow sufficient time for students to be recruited for the 2019 academic year.

11. Validity

All applications will be regarded as valid for 120 days from the 10 August 2018 whereafter the CSIR may request an updated application, should this become necessary.

For any queries relating to the call for proposals, contact:

Prof Linda Godfrey

Manager: Waste RDI Roadmap Implementation Unit

Telephone: 012 841 4801

Fax: 012 842 7687

E-mail: LGodfrey@csir.co.za