

Terms of Reference

Undertake a Cost Benefit Analysis to Assess the Impacts of Introducing Technology Neutral Regulations that set Minimum Energy Performance Standards (MEPS) for General Illumination Purposes

Location: South Africa

Application Deadline: 15th November 2018

Category: Climate change mitigation; energy efficiency

Type of Contract: Institution

Assignment Type: Cost Benefit Analysis for General Illumination

Languages Required: English

Starting Date: (date when the selected candidate is expected to start): Upon signing the contract

Duration of Initial Contract: until 31 March 2019

Background:

Aligned to global best practice and in the interest of reducing energy and carbon intensity and consumer protection, South Africa has committed to pursue improved efficiency of household appliances. This commitment has been well established in relevant legislation and frameworks. The National Energy Act, Act 34 of 2008¹ empowers the Minister of Energy to regulate the sale of appliances that consume wasteful amounts of electricity.

The South African government through the Department of Energy (DoE) in collaboration with the Department of Trade and Industry (**the dti**), and the United Nations Development Programme (UNDP) is implementing the appliance energy efficiency S&L Programme. The programme is designed with the objective of removing inefficient appliances from the South African market through the adoption of minimum energy performance standards (MEPS) for appliances. The project forms an integral part of the country's

¹ NATIONAL ENERGY ACT, Act 34 of 2008 gives authority to the Minister of Energy to:

...by notice in the Gazette make regulations regarding—

- (a) the publication of energy statistics or information;
- (b) the type, manner and form of energy data and information that must be provided by any person;
- (c) the form and manner of the link between the energy database and information system to any other system within the public administration;
- (g) minimum levels of energy efficiency in each sector of the economy;
- (h) steps and procedures necessary for the application of energy efficiency technologies and procedures;
- (i) labelling for energy efficiency purposes of household appliances, devices and motor vehicles;
- (j) prohibition of the manufacture, or importation or sale of electrical and electronic products and fuel burning appliances for reasons of poor energy efficiency;
- (l) energy efficiency standards for specific technologies, processes, appliances, devices, motor vehicles and buildings;



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commitment to mitigate climate change and improved energy efficiency. This intervention is designed to reduce electricity consumption and the carbon footprint of the residential sector. Improved efficiency of household lighting is targeted under this initiative with the planned introduction of a MEPS.

The NRCS and the Department of Energy (DoE) wishes to commission a study² to provide an authoritative and an evidence based assessment of the costs and benefits as well as the potential economic impact of the introduction of overarching technology neutral regulations that sets MEPS for omni- and unidirectional general service lamps for general illumination purposes using incandescent, halogen, fluorescent, high-intensity discharge, light emitting diode (LED), and other lights sources.

In 2014³, Regulations (VC 9008) were introduced that specified MEPS for household appliances and required targeted products to carry an energy efficiency (EE) label. The Regulation resides with the **the dti** and compliance is being administered by the National Regulator for Compulsory Specifications (NRCS). Assessment and approval of compliance with MEPS have been incorporated alongside “conventional” or traditional processes for compliance with safety specifications and approvals. General service, household lighting is currently not regulated under VC 9008.

Currently compact fluorescent lamps (CFLs) and incandescent lamps (ICLs) are regulated separately. These are:

- CFLs: VC 9091 (2009 updated 2014) with references to national South African standards for safety and performance with numbers: SANS 61199, SANS 60901 & SANS 60968;
- ICLs (which includes all tungsten filament and halogen lamps): VC 8043 (2014) with reference again to relevant safety and performance standards with numbers: SANS 60432-1, SANS 60432-1 and SANS 60432-3 (safety); SANS 60064 and SANS 60357 (performance).

Light emitting diode (LEDs) that are self-ballasted (<50w) currently in South Africa only have voluntary standards i.e. SANS 62612 and SANS 62560. Safety and performance standards for LEDs are not regulated.

Proposed new regulations

The DoE, with support from the NRCS, is proposing to develop an overarching technology neutral technical regulation (VC) that will prescribe MEPS, incorporating a selection of other performance requirement elements such as life expectancy, lumen maintenance, power factor, hazardous material (aligned with the Department of Environmental Affairs (DEA) and South Africa’s signing of the Minamata Convention (a global treaty to protect human health and the environment from the adverse effects of mercury)), health and also safety requirements. This will be done by referencing the respective underlying national standards for omni-

² Using the guidelines provided by Department of Performance Monitoring and Evaluation’s Socio-economic Impact Assessment System (SEIAS) unit and templates for phases 1 and 2, available at: <https://www.dpme.gov.za/keyfocusareas>

³ Three regulations pertaining to incandescent lamps, single capped fluorescent lamps and household appliances were introduced in 2014.



and unidirectional lamps for household application. Once adopted, it is intended that the technology neutral regulation will replace the existing VCs for CFLs and ICLs.

Understanding the potential socio-economic implications that such regulation may have on consumers and industry is critical for the DoE and NRCS. Indeed, the primary objective of the proposed regulations is to improve the health, safety and economic welfare of all South African citizens, which can only be achieved through carefully considered and effective standards. As lighting is probably one of, if not the, most essential and basic energy requirements of every household its usage is universal. Thus, meaningful energy savings, which is now possible due to recent technology advances, would have a meaningful impact on all South African households and would also lead to reduced overall electricity demand, especially during peak periods, with positive implications for the country's stated climate change goals of reducing its greenhouse gas emissions and usage of fossil fuels. However, the proposed new regulations may have cost (and other) implications for business which should also be understood and evaluated to understand the extent to which they are real and likely.

The study should:

- a) Market size: Develop a baseline of the consumption (sales and use) of such equipment in South Africa. This would provide an understanding of the size of the market, the types of bulbs used and allow for a reasonable estimation of the usage per household and by the residential sector as a whole;
- b) Consumers: Test up to four energy performance levels (lumens / Watt) to determine where the life cycle cost is the lowest to demonstrate the benefits to consumers and support the level which the proposed regulation will target;
- c) Business: Identify and assess any barriers (real and perceived) which would impede the adoption of the regulation. Here, the analysis should consider industry concerns and any negative impacts with regards to priority national objectives such as local manufacturing, jobs etc. The study must also align with existing and complementary legislation, such as the soon to be introduced integrated waste management plan for lighting products that will require manufacturers to finance the safe and responsible disposal of all lighting waste products and the cost implications to product retail prices for the disposal of this waste;
- d) Provide clear economic forecasts for each of the proposed energy levels (lm/W), such as: energy savings, greenhouse gas savings, financial savings. The final list will be agreed at the inception meeting.
- e) Testing facilities: assess the testing capacity and capability that is required to implement such a regulation, including the readiness of the laboratories and any additional capital investments that may be required
- f) The regulator: assess the capacity and readiness to implement such a technical regulation, including and any additional human capital investment that may be required for the determined market size

Resulting in a clear, accessible report which meets the study's objectives through:

- g) evidence based economic analysis which identifies the most cost-effective MEPS;
- h) ensure that the report aligns and meets the requirements of the DPME, SEIAS approach;

Purpose of this Tender / RFP / RFQ

The UNDP hereby invites proposals to commission an Economic Impact Assessment Study to provide an authoritative and evidenced assessment of the economic impact of the introduction of overarching technology neutral regulations that sets minimum performance standards for selected lighting consumable equipment.

Scope of work

The proposal seeks to obtain the services of a suitably qualified service provider / individual to conduct a cost-benefit and economic impact analysis by making use of quantitative methodologies such as cost-benefit analysis, input-output analysis or any other appropriate approach to inform on the various scenarios will be constructed in consultation with the Project Management Team (PMT) and provide in due course.

Summary of proposed tasks (the service provider can provide alternative approach for discussion if deemed relevant):

Task 1: Data collection and model preparation. Existing information studies/information available will be made available, but these are very limited. The proposal should include and propose alternative third-party data / reports / information rather than undertake new research to collect historical information. Here the service providers are encouraged to engage with market research firms such Euromonitor, GfK etc;

Task 2: Model parameters / assumptions and scenario requirements to be compiled in consultation with the PMT team. Different scenarios may be constructed with different levels of inputs for e.g. imports versus local assembly or manufacturing etc.

Task 4: Modelling of scenarios, analysis.

Task 5: Report, which included a description of the model, data assumptions, analytical outputs (LCC and GHG), barriers and recommendations.

Planned time lines

The project is planned to start as soon as possible but targeting 1 November 2018 as the latest start date. The consultant should plan to ensure key resources are available from a calendar time perspective up to 31 March 2019.

However, effort level associated with the actual research should be provided for separately based on various tasks and activities. Contingency time should be allowed for in terms of possible stakeholder engagements



that in practice sometimes need to be shifted around availability of key stakeholders, while no additional effort is required in case of such delays.

Response required

A formal written response to be submitted to the UNDP contact person by the date indicated in the header of this document. The service provider needs to provide a short proposal commenting on above proposed method, tasks and time lines, as well as providing effort estimates in hours and associated rates to conduct the required work to achieve the envisaged outcomes. Due to the status of some of the information regarding scenario definitions and due dates, it would be proposed that the proposal contains a combination of fixed estimates (model preparations) and variable (scenarios and engagements) components.

The following aspects should be addressed in the response:

- Introduction and executive summary: Brief overview of proposed approach, experience in this field, key personnel and total cost.
- Company Overview, Relevant Experience and number of years performing similar studies. Company must indicate the number of years it has been in existence with key focus areas of its business.
- Project approach and methodology:
 - i. Demonstrate a clear understanding of the Key Issues involved in describing and assessing the Economic Environmental and Social impact of the study objective in South Africa, including how best to quantify this impact where possible and of value, and to draw lessons from, or distinctions with, other similar studies;
 - ii. Project plan: Submit a detailed scoping of the types of quantitative and other analysis that will be undertaken;
 - iii. Provide Data Sources that will be utilised, how that data will be accessed and what information is expected from **NRCS and DoE**. NB: While Government will provide support, consultants should not anticipate availability of or access to required data and should be able to derive the findings of the study from other sources as well;
 - iv. Originality, what will be produced, as opposed to the simple gathering of information in the public domain;
- Team: Overview detailing the project team, including:
 - i. Qualifications and experience of individual members of the team (formal degree certificates required as proof);
 - ii. Role that each will play and degree of time commitment anticipated from each;
 - iii. Project management structure with overall responsibility for delivery clearly defined and allocated, including identification of a project lead;

- Cost proposal and project schedule:
 - i. A detailed timetable for the project which fulfils the project's requirements and provides a clear set of deliverables against which progress can be periodically assessed and interim comments provided;
 - ii. A fee proposal and payment schedule. The latter should be weighted to successful completion of the project. Any interim payments should be clearly tied to interim / milestone deliverables - associated travel costs shall be invoiced separately; and

- Identification of any possible actual or perceived conflicts of interest.

Evaluation criteria

Proposed technical evaluation framework:

Area of assessment	Sub-score	Score/Weight	Minimum threshold required
1. Bidder presentation and relevant experience		20	15
Bidder overview, relevant experience and number of years performing similar studies. Bidder must indicate the number of years it has been in existence with key focus areas of its business.			
2. Project approach and methodology		30	20
Understanding: Demonstrate a clear understanding of the Key Issues involved in describing and assessing the Economic Environmental and Social impact of the topic within the South African context, including how best to quantify this impact where possible and of value, and to draw lessons from, or distinctions with, other sectors	5		
Data sources: Provide insight into what data sources will be utilised, how that data will be accessed and what information is expected from the client	10		
Case studies: Role in the analysis, including how those case studies will be selected and applied	5		
Originality: Focus on what value will be produced, as opposed to the simple gathering of information in the public domain	5		



Project plan: Submit a detailed scoping of the activities required as well as types of quantitative and other relevant analysis that will be undertaken	5		
3. Relevant references from existing clients and not older than 3 years. The Bidder must provide a minimum of three (3) relevant contactable references of similar work done.		20	12
4. Expertise and demonstration of qualified human and other resources		30	20
Qualifications and experience of individual members of the team - Team lead relevant experience > 20 yrs	10		
- Bidder to provide CVs and list the number of years of experience of the dedicated team members for the assignment. The team members must have experience in projects of a similar nature all > 5 years' experience	10		
- Role that each will play and degree of time commitment anticipated from each	5		
- Project management structure with overall responsibility for delivery clearly defined and allocated, including identification of a project lead	5		
Total		100	70