
TERMS OF REFERENCE TO APPOINT A SERVICE PROVIDER TO CONDUCT ENERGY ASSESSMENT, DEVELOPMENT OF TECHNICAL SPECIFICATIONS, DESIGNS, AND INSTALLATION OF ENERGY EFFICIENCY (EE) AND RENEWABLE ENERGY (RE) TECHNOLOGIES IN TWO (2) PUBLIC BUILDINGS FOR A PERIOD OF NINE (9) MONTHS

1. BACKGROUND

- 1.1 The South African national government recognised the need for transformation and the shift towards a resource efficient and low-carbon economy that can promote growth and sustainable development. This ideal is supported by a number of energy efficiency (EE) and renewable energy (RE) as well as climate change mitigation policies and programmes. However, despite all the efforts by the national government and various stakeholders, the current level of penetration of energy efficient practices and application of renewable energy technologies, particularly in the building sector is relatively small considering its potential.
- 1.2 To this effect, the Department of Energy (DoE), jointly with the Department of Public Works (DPW) developed a draft Energy and Climate Change Strategy (hereafter ECCS). The draft ECCS with focus on the public buildings sector is a vital exercise in support of the National Climate Change Response Policy (NCCRP) developed by the Department of Environment Affairs and approved by Cabinet in 2011.
- 1.3 The development of the ECCS took into account other important pieces of work carried out by other sister departments in responding to emissions reductions such as the Mitigation Potential Analysis (MPA). It also supports the Green Building Policy of the Department of Public Works (DPW), especially through the Shared Energy Savings Contract (SESC) initiative which is now in roll-out stage by the DPW. Furthermore, it supports the National Infrastructure Management Strategy (NIMS) which is also implemented under DPW and the Construction Industry Development

Board (CIDB). The strategy also aligns with the initiatives currently undertaken through the National Energy Efficiency Strategy such as energy assessment, smart metering and other various green energy interventions.

- 1.4 The overall aim of the draft ECCS project was to define the baseline and explore the potential for the reduction of energy use and Greenhouse gas (GHG) emissions in the public buildings sector with a focus on EE and RE interventions, while also paying attention to related co-benefits such as jobs and water conservation. As recommended by the study, there is therefore a need for the implementation of a pilot project to confirm the defined baselines and the proposed emission reduction potential to enable the sector to move beyond the currently mandated regulations such as SANS10400-XA for new buildings and the anticipated Energy Performance Certificates (EPCs) for existing buildings, as well as the Green Rating System by the Green Building Council of South Africa (GBCSA).
- 1.5 The draft strategy has appraised two different roll-out scenarios (i.e. retrofitting for buildings that require minor to moderate measures and/or eco-refurbishment for those requiring major measures) for the implementation of the identified potential interventions, with the associated energy savings, emissions reductions and implementation costs provided for each option. It has also identified a need for a pilot project on retrofitting, refurbishment or combination of both to validate a number of existing funding sources and enabling institutional arrangements, and appraised the co-benefits associated with the proposed interventions, including the potential number of jobs likely to be created over a long term.
- 1.6 The draft ECCS analysis has identified that the existing national public building stock is at the risk of being lost by 2030 if robust interventions are not carried out. The strategy proposes an eco-refurbishment approach as the best option to address the energy savings and related emissions challenges in the sector, while ensuring that the existing stock is salvaged beyond the 2030 time horizon.
- 1.7 Therefore the draft strategy recommended that the DoE in partnership with the DPW and CIDB supported by the European Union (EU) Smart Grid

Initiative and Danish government through the Danish/South Africa Renewable Energy programme should champion a pilot project, which will provide a firm Action Plan for the implementation of the strategy in the short, medium and long-term trajectory.

1.8 The approach to conduct a pilot project is seen as an important stepping stone towards addressing fully the energy and climate change challenges observed in the study, with the clear objective of improving the state of the public buildings' stock in South Africa as proposed through modelling and cost matrix analysis.

1.9 As a result, the strategy recommends that:

1.9.1 The pilot project should involve a selection of buildings in each of the four building categories defined in the Strategy (offices, healthcare, education and other), in each of the six climatic zones of South Africa (as defined under SANS10400-XA), and each of the refurbishment categories defined in the strategy (minor, moderate and major) to help in the learning curve and the quantitative analysis of the proposed options. The scope that the draft ECCS has recommended is therefore huge and thus prudent to start by piloting key components in a step-wise approach as resources become available.

1.9.2 To this end, the DoE, in consultation with the DPW, has selected two public buildings to form the first part of the pilot project and these will be the targeted buildings for this assignment. These are the DoE's Matimba building (about 12600 square meters) in Central Pretoria and the National DPW's Central Government Office (CGO) building (the square meters are more than the DoE in Central Pretoria). The DoE's and National DPW's buildings are assumed to require moderate refurbishment in accordance with the draft ECCS classification.

1.9.3 The DoE's and DPW's buildings have been chosen for the first pilot for strategic **reasons to ensure that the two key role players in the public buildings sector are** leading by examples. These two office buildings will also represent the bulk of public buildings in fair conditions which is about

60% of the stock according to the ECCS. The full energy assessment for the DoE's Matimba and DPW buildings will be conducted for the EE retrofitting (lighting) and technical assessment.

1.9.4 Furthermore, the DoE building has twelve floors with smart meters installed in two of the floors for a period of over year. In addition, the Department acknowledges that Renewable Energy Initiatives Directorate is working towards the implementation of the solar roof-top PV in the current financial year through the support of the German government. This work will contribute towards the achievement of the piloting of the draft ECCS set target. Therefore, the focus of this project will be to implement other related EE measures, specifically the retrofitting of lights, installation of smart meters, building energy management system and Heating, Ventilation and Air-Conditioning (HVAC) temperature controls.

1.10 It is expected that the choice of these two buildings for a pilot project should yield important lessons for the scale-up, and would also help confirm (taking into consideration other factors such as climatic zones and the remaining building categories) the finalization of an ECCS Action Plan for the public building sector in the long term based on the cost and associated energy savings and emissions reduction.

1.11 This systematic Action Plan would require higher levels of accuracy with regard to data, legislative and institutional set-up as well as budgetary resources. In order for the service provider to provide a detailed proposal with realistic costing, the service provider will be expected to conduct assessment for energy savings potentials covering the type of energy technology currently being used in the two identified buildings. In addition, the service provider is expected to provide energy technologies that will guarantee a minimum of 40% energy savings, and at least 50% local content. It should also be noted that in implementing this project, the preferred service provider will have to take into consideration and build on the experiences and lessons learned from similar work that has been carried out or currently being carried out, which includes amongst others:

- a) The DPW's SESC programme which is rolled out as energy efficiency interventions at various buildings per provincial-region by Energy Service Companies (ESCOs) at their own costs for which the cost savings are shared at 50:50 with DPW. The allocation is effective for seven years. In addition, the EU Smart Grid and Danish/South Africa RE Initiatives are determining energy consumption baseline through the introduction of smart metering technologies as part of establishing a system for measurement and verification of energy savings for the SESC programme. This implies that the energy consumption baseline determination, pilot stage and the major part of the short-to medium-term of the ECCS-roll-out will fall within the seven year period of the SESC programme; and
- b) Smart metering technologies, and building Energy Management System (BEMS) already installed in various government owned buildings together with the data analysis that is being consolidated by the Departments of Energy and Public Works; The solar roof-top PV initiative announced by Gauteng Province in its State of the Province speech is yet another significant opportunity to synergize with depending on its roll-out time-horizon.

2. OBJECTIVES

- 2.1 The main objective of this assignment is to undertake a pilot project recommended by the draft ECCS in the selected two public buildings mentioned above with the focus on:
 - 2.1.1 Conduct an assessment of energy savings potential in each of the selected buildings, and provide a detail proposal on the energy efficiency improvement, energy consumption data management and control;
 - 2.1.2 Identify the type of the technologies currently being used and propose appropriate replacement with energy efficient and renewable energy technologies including the installation of split smart metering and building energy management system for each of the two buildings;
 - 2.1.3 Development of specifications and technical designs for the installation of the identified energy efficient and renewable energy technologies; and

2.1.4 Finally, to package the information collected from 2.1.1 to 2.1.4 so that it can be later be used towards the update and finalization of the draft ECCS with a clear action plan for implementation in the public building sector until 2050.

3. SCOPE OF WORK

3.1 To be included in the required proposal for this bid, interested service providers are expected to conduct an assessment of energy savings potential that shall be included in the proposal. The proposal should then include:

3.1.1 Currently used energy consuming technologies, namely, Heating, Ventilation, Air-conditioning and Cooling (HVAC) system, lighting, and water heating as well as data management and analysis tools and metering technologies in the selected buildings;

3.1.2 The current energy consumption (in KWh per square metre per annum) in accordance with the energy performance standard for buildings;

3.1.3 Proposed energy efficient and renewable energy technologies including recommended tele-metric or smart metering technologies, building energy management system with minimum overall energy savings of 40% and at least 50% local content; and

3.1.4 The projected energy consumption (in KWh per square metre per annum) of the selected buildings after the implementation of the proposed energy saving measures.

3.2 As part of the implementation of the project, the preferred service provider will be expected to:

3.2.1 Develop an inception report for approval by the Departments of Energy and Public Works covering energy efficient and renewable energy technologies to be installed with detailed technical specifications, project implementation phases and timelines;

- 3.2.2 Supply and installations of the proposed energy efficient and renewable technologies including smart meters, data management and control systems;
 - 3.2.3 Provide skills transfer and capacity building to the Department's officials on the operation and management of the installed technologies, data management and control systems;
 - 3.2.4 Provide a report indicating the achieved energy savings on the measures implemented over three months; and
 - 3.2.5 Provide a final report stipulating the viability of the installed technologies, overall energy savings and lessons learned for finalisation of the Strategy and possible national implementation roll-out of the energy savings measures in other government buildings.
- 3.3 Procure and install the identified technologies in the two buildings.

4. EXPECTED OUTPUTS

- 4.1 Inception report stipulating the following:
 - 4.1.1 The current energy consumption patterns and the appropriate energy saving, fuel-switching and renewable energy opportunities in the buildings as well as recommended energy management systems required.
 - 4.1.2 Technical specifications and structural designs for piloting and installing the appropriate and feasible energy saving, fuel-switching and renewable energy opportunities identified in the selected two public buildings including costs.
 - 4.1.3 A project work plan detailing how the different task will be executed
- 4.2 Supply and install the identified technologies in the selected two public buildings.
- 4.3 A work plan on the skills transfer and capacity building to the DoE's officials on the operation, management and maintenance of the installed technology.

- 4.4 Quarterly reports detailing energy savings per rand spent and also progress on the implementation of the skills transfer over the duration of the contract.
- 4.5 A detailed final report covering items 4.1 to 4.4 above. The information collected should be packaged such that it can be later be used towards the update and finalization of the draft ECCS with a clear action plan for implementation in the public building sector until 2050.

5. PAYMENTS

- 5.1 Payment will only be made in accordance to the delivery of service (deliverables and milestones) as follows:
 - 5.1.1 Seventy percent (70%) of the total contract value will be paid upon the installation of the identified technologies in the two buildings.
 - 5.1.2 The remaining thirty percent (30%) will be paid contingent to three (3) months verified energy savings per rand spent.
- 5.2 These payments will be made upon receipt of an original invoice in line with the payment schedule agreed to by both parties.

6. REPORTING REQUIREMENT AND PROGRESS MEETINGS

- 6.1 It is envisaged that the Department of Energy will require an initial meeting with the successful bidder(s) to agree on the project process and implementation.
- 6.2 Progress meeting feedback shall be held as and when necessary, but at least twice a month. The venue for these meetings will be a selected venue in Johannesburg or Pretoria. Representatives from the service provider's organisation shall be obliged to attend. Where applicable, conference calls shall be held to facilitate such meetings.

7. COMPLETION DATE

- 7.1 The duration of the project to carry out technical assessment and structural design of buildings shall be **nine months** after signing of the contract with the successful service provider.

8. INFORMATION SESSION

- 8.1 Briefing session will be held in **15 December 2015 at 10H00**, at the Department of Energy, at 192 Corner Paul Kruger and Visagie Streets.

9. TAX CLEARANCE CERTIFICATE

- 9.1 The bidder is required to submit an original and valid Tax Clearance Certificate issued by the South African Revenue Services together with the bid documents before the closing date and time of the bid. Failure to comply with this condition will invalidate the bid.

10. CONFIDENTIALITY OF INFORMATION

- 10.1 The names of all the members of the team must be disclosed for the prior approval of Department of Energy. Any changes, replacements and/or **additions** should be submitted for prior approval of Department of Energy.

11. EVALUATION METHODOLOGY

11.1. Cost

- 11.1.2 The service provider will be requested to provide a quote regarding the work to be undertaken for this project;
- 11.1.3 The total cost must be VAT inclusive and should be quoted in South African currency (i.e. rands).

12. Broad-Based Black Economic Empowerment

- 12.1 Provisions of the Preferential Procurement Policy Framework Act (PPPFA) 2011 and its regulation will apply in terms of awarding points.

- 12.2. Bidders are required to submit original and valid B-BBEE Status Level Verification Certificates or certified copies thereof together with their bids, to substantiate their B-BBEE rating claims.
- 12.3 Bidders who do not submit their B-BBEE status level verification certificates or are non-compliant contributors to B-BBEE will not qualify for preference points for B-BBEE.
- 12.4 A trust, consortium or joint venture must submit a consolidated B-BBEE status level verification certificate for every separate bid.
- 12.5 Accounting Officers must ensure that the B-BBEE Status level Verification Certificates submitted are issued by the following agencies:

12.5.1 Bidders other than EMEs

- (a) Verification agencies accredited by SANAS.
- (b) Registered auditors approved by IRBA.

12.5.2 Bidders who qualify as EMEs

- (a) Accounting officers as contemplated in the CCA; or
- (b) Verification agencies accredited by SANAS; or
- (c) Registered auditors (Registered auditors do not need to meet the prerequisite for IRBA’s approval for the purpose of conducting verification and issuing EMEs with B-BBEE Status Level Certificates).

12.5.3 The table below depicts the B-BBEE status level of contribution:

B-BBEE Status Level of Contributor	Number of points (90/10 system)
1	10
2	9
3	8
4	5
5	4
6	3
7	2
8	1
Non-compliant contributor	0

13. COMPANY EXPERIENCE

13.1 Service providers should demonstrate a track record of a minimum of 5 projects on the assessment of energy savings, supply and installation of energy efficiency and renewable energy technologies. This experience or track record must be supported by **signed letters with contact details of the clients** as proof of the projects executed.

14. TEAM LEADER AND TEAM MEMBERS' EXPERIENCE

14.1 Team Leader must have a minimum of five (5) years' experience in energy assessment and management as well as compilation of technical specifications and designs for installation of energy efficiency and renewable energy technologies, and

14.2 Individual team members must have a minimum of three (3) years' experience in energy assessment, management and installation of energy efficiency and renewable energy technologies.

14.3 The CV's of the team leader and team members must be attached to the technical proposal as proof. Details of the team leader and team member should indicate their designated responsibilities in this assignment.

15. QUALIFICATION

15.1 Team leader must possess a minimum of three year Degree in electrical, civil or construction engineering and should be registered with the Engineering Council of South Africa or related institutions as a Professional Engineer (s).

15.2 Team member(s) must possess a minimum of a diploma in electrical, civil or construction engineering and should be registered with the Engineering Council of South Africa or related institution as a Professional Engineer(s). Copies of certified certificates must be attached to the proposal as proof, **failure to attach, bidders will forfeit points**. At least one of the team members should have a wire man's licence

16. PROJECT PLAN

- 16.1 Project plan with intermediate and final outputs on the type, the energy savings potential and the local content of the technology to be installed. A proof of the local content of each technology should be attached
- 16.2 Proposed Methodology on how to supply and install the identified technologies. This should include data collection, management and analysis
- 16.3 Management of the project. This should include the personnel's role in relation to the work plan and deliverables

17. EVALUATION CRITERIA

- 17.1 Bids will be evaluated on **90/10** point system as outlined in the PPPFA of 2011. The proposals will be evaluated in two phases:

Phase 1:

Bidders will be evaluated based on functionality. The minimum threshold for functionality is **70 out of 100 points**. Bidders who fail to meet minimum threshold will be disqualified and will not be evaluated further for price points.

No	CRITERIA	WEIGHTS
1	<p>Company Experience:</p> <ul style="list-style-type: none"> ❖ The service provider (as a company not individuals) should demonstrate a track record of a minimum of 5 projects on the assessment of energy savings, supply and installation of energy efficiency and renewable energy technologies. ❖ This experience or track record must be supported by signed letters with contact details of the clients as proof of the projects executed. ❖ NB: IT SHOULD BE NOTED THAT PROPOSALS THAT ARE UNCLEAR AND NOT ADHERE TO THESE INSTRUCTIONS WILL FORFEIT POINTS 	<p>10</p> <p>3</p> <p>7</p>
2	<p>Team leader and team members:</p> <ul style="list-style-type: none"> ❖ Team Leader must have a minimum of five (5) years experience in 	<p>20</p> <p>10</p>

	<p>energy assessment and management as well as compilation of technical specifications and designs for installation of energy efficiency and renewable energy technologies.</p> <ul style="list-style-type: none"> ❖ Individual team members must have a minimum of three (3) years experience in energy assessment and management as well as installation of energy efficiency and renewable energy technologies. 5 ❖ Copies of CV's of the team leader and team members must be attached to the technical proposal as proof. Details of the team leader and the team member should indicate their designated responsibilities in this assignment. 5 ❖ NB: IT SHOULD BE NOTED THAT PROPOSALS THAT ARE UNCLEAR AND NOT ADHER TO THESE INSTRUCTIONS WILL FORFEIT POINTS 	
3.	<p>Qualifications:</p> <ul style="list-style-type: none"> ❖ Team leader must possess a minimum of three year Degree in Electrical, Civil or Construction engineering and should be registered with the Engineering Council of South Africa or related institutions as a Professional Engineer. 5 ❖ Team member(s) must a have a minimum of a Diploma in Electrical, Civil or Construction engineering and registration with the Engineering Council of South Africa or related institution as a Professional Engineer(s) will be advantageous. 5 ❖ At least one of the team members should have a wireman's licence 5 ❖ Copies of certified certificates must be attached to the proposal as proof, failure to attach, bidders will forfeit points. 5 ❖ NB: IT SHOULD BE NOTED THAT PROPOSALS THAT ARE 	20

	UNCLEAR AND NOT ADHERE TO THESE INSTRUCTIONS WILL FORFEIT POINTS	
4	<p>Project Plan should provide the following:</p> <ul style="list-style-type: none"> ❖ A clear and quantifiable energy savings potential of each technology proposed. 10 ❖ A verifiable minimum of 50% local content of each of the proposed technologies 10 ❖ A quantifiable minimum 40% energy savings of the overall energy consumption reduction 10 ❖ The methodology must outline how the planned supply and installation of the proposed technologies will be carried out. 5 ❖ Clear process on the approach to develop technical specifications for the identified RE and EE interventions, quantification of the estimated costs and project management for installing the identified interventions. 5 ❖ Detailed work plans, including timetable for key deliverables and milestones. 5 ❖ Management of the project. This should include the personnel's role in relation to the work plan and deliverables. 5 ❖ NB: IT SHOULD BE NOTED THAT PROPOSALS THAT ARE UNCLEAR AND NOT ADHERING TO THESE INSTRUCTIONS WILL FORFEIT POINTS 	50
Total		100

For purpose of evaluating functionality, the following values will be applicable:

1=	Very Poor	Will not be able to fulfil the requirements
2=	Poor	Will partially fulfil the requirements
3=	Average	Will be able to fulfil the requirements
4=	Good	Will be able to fulfil better in terms of the requirements adequately
5=	Excellent	Will fulfil the requirements exceptionally

Phase 2:

Price	90
B-BBEE compliance	10

18. FORMAT AND SUBMISSION OF THE PROPOSAL

18.1 All the standard bidding documents (SBD) must be completed in all respects by bidders. Failure to comply will invalidate a bid.

18.2 Bidders are requested to submit two (2) copies if submitted manually: 1 original plus copy of the proposal and bid documents.

19. CLOSING DATE

19.1 Proposals must be submitted on or **15 January 2016 at 11H00**, at Department of Energy, 192 Corner Visagie and Paul Kruger Streets, Pretoria in the bid box marked Department of Energy. **No late bids will be accepted.**

20. ENQUIRIES

20.1 All technical enquiries to be directed in writing to:

Mr Thebe Mamakoko

Tel: 012- 406 7679

Email: Thebe.Mamakoko@energy.gov.za

20.2 All bid enquiries to be directed to:

Ms Daisy Maraba

Tel: 012-406 7748

Email: Daisy.Maraba@energy.gov.za

Ms Rachel Moerane

Tel: 012-406 7747

Email: Rachel.Moerane@energy.gov.za