



# Department of Energy

**CONDUCT FULL ENERGY ASSESSMENT, DEVELOP TECHNICAL SPECIFICATIONS, DESIGNS, AND INSTALL ENERGY EFFICIENCY (EE) AND RENEWABLE ENERGY (RE) TECHNOLOGIES IN TWO (2) PUBLIC BUILDINGS FOR A PERIOD OF NINE (9) MONTHS**

**15 December 2015**



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REPUBLIC OF SOUTH AFRICA

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# Outline

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# Background

- Department of Energy (DoE) in collaboration with Department of Public Works (DPW) developed a draft Energy and Climate Change Strategy (ECCS) for Public buildings .
- The ECCS was developed in line with the:
  - National Climate Change Response Policy (NCCRP).
  - Country's vision to shift towards a resource efficient and low-carbon economy that can promote growth and sustainable development.
- ECCS is aligned to and supports :
  - Mitigation Potential Analysis (MPA)
  - Green Building Policy
  - Shared Energy Savings Contract (SESC)
  - National Infrastructure Management Strategy (NIMS)
  - National Energy Efficiency Strategy



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# ECCS in a Nutshell

- The overall context of the draft ECCS project was premised on:
  - Defining the baseline and explore the potential for the reduction of energy use and Greenhouse gas (GHG) emissions in the public buildings sector.
  - Focusing on EE and RE interventions.
  - Related co-benefits such as job creation and water conservation.
- There is therefore a need for the implementation of a pilot project to confirm the defined baselines and the proposed emission reduction potential.
- 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),
  - Each of the six climatic zones of South Africa (as defined under SANS10400-XA).
  - The zones are defined as cold interior (covering areas such as Johannesburg, Bloemfontein, Sutherland etc); temperate zone (covering Pretoria, Polokwane, Cradock etc); Hot Interior (Musina, Phalaborwa, Kruger Park etc); Temperate Coastal (Stellenbosch, Cape Town, Alexander Bay etc); Sub-tropical Coastal (Durban, East London, Port Elizabeth etc); and Arid Interior (Upington and Kimberley).
  - 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 huge and thus prudent to start by piloting key components in a step-wise approach as and when resources become available.



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# ECCS in a Nutshell cont..

- The DoE's Matimba building and the DPW's Central Government Office (CGO) were selected for the first part of the pilot project .
- The DoE's and National DPW's buildings are thought to require moderate refurbishment in accordance with the draft ECCS classification.
- 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.



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# Objectives of this assignment

- The main objective is to undertake a pilot project recommended by the draft ECCS in the selected two above mentioned buildings through:
  - An assessment of energy savings potential in the two buildings,
  - A detailed proposal on the energy efficiency improvement, energy consumption data management and control;
  - Identification of currently installed technologies and a proposal of appropriate replacements with energy efficient and renewable energy technologies.
  - Development of specifications and technical designs for the installation of the identified energy efficient and renewable energy technologies; and
  - Packaging of information collected 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.



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# Scope of Work

- An Assessment of energy savings potential in each of the selected buildings which should form part of the Proposals by bidders.
- Bidders will be afforded an opportunity to walk-in and assess the buildings
- Proposals should also include:
  - Currently used energy consuming technologies;
  - Current energy consumption (in KWh per square meter per annum);
  - Proposed energy efficient and renewable energy technologies including tele-metric or smart metering technologies;
  - Proposed technologies should achieve a minimum of **40%** overall energy savings
  - **50%** of the proposed technologies should be local content; and
  - The projected energy consumption (in KWh per square meter per annum) of the selected buildings after the implementation of the proposed energy saving measures.



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# Scope of Work

- As part of the implementation of the project, the preferred service provider will be expected to:
  - **Develop an inception report for approval** by the Departments of Energy and Public Works covering designs and specifications of energy efficient and renewable energy technologies to be installed, project implementation phases and timelines;
  - **Supply and install** the proposed energy efficient and renewable technologies including smart meters, data management and control systems
  - 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;
  - Provide a report indicating the achieved energy savings on the measures implemented over three months;
  - Provide a final report stipulating the viability of the installed technologies, overall energy savings and lessons learned for finalization of the Strategy and possible national implementation roll-out of the energy savings measures in other government buildings.



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# Expected Outputs

- Inception report stipulating the following:
  - 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.
  - Technical specifications, costs and structural designs for piloting and installing the appropriate and feasible energy saving, fuel-switching and renewable energy opportunities identified in the selected public buildings.
- A project work plan detailing how the different task will be executed
- Supply and installation of the identified technologies in the two public buildings.
- A work plan for skills transfer and capacity building to the DoE's officials on the operation, management and maintenance of the installed technology.
- Quarterly reports detailing energy savings per rand spent and also progress on the implementation of the skills transfer over the duration of the contract.
- A detailed final report covering information collected and 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.



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# Assessment Schedule

Day/Building	Monday, 4 <sup>th</sup> January 2016	Tuesday, 5 <sup>th</sup> January 2016	Wednesday, 6 <sup>th</sup> January 2016	Thursday, 7 <sup>th</sup> January 2016	Friday, 8 <sup>th</sup> January 2016
DoE Matimba House	10:00-12:30 and 13:30 – 16:00	10:00-12:30 and 13:30 – 16:00	10:00-12:30 and 13:30 – 16:00	10:00-12:30 and 13:30 – 16:00	10:00-12:30 and 13:30 – 16:00
DPW	10:00-12:30 and 13:30 – 16:00	10:00-12:30 and 13:30 – 16:00	10:00-12:30 and 13:30 – 16:00	10:00-12:30 and 13:30 – 16:00	10:00-12:30 and 13:30 – 16:00

Day/Building	Monday, 11 <sup>th</sup> January 2016	Tuesday, 12 <sup>th</sup> January 2016	Wednesday, 13 <sup>th</sup> January 2016	Thursday, 14 <sup>th</sup> January 2016	Friday, 15 <sup>th</sup> January 2016
DoE Matimba House	10:00-12:30 and 13:30 – 16:00	10:00-12:30 and 13:30 – 16:00	10:00-12:30 and 13:30 – 16:00	10:00-12:30 and 13:30 – 16:00	10:00-12:30 and 13:30 – 16:00
DPW	10:00-12:30 and 13:30 – 16:00	10:00-12:30 and 13:30 – 16:00	10:00-12:30 and 13:30 – 16:00	10:00-12:30 and 13:30 – 16:00	10:00-12:30 and 13:30 – 16:00



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