Chapter 1
Project Ideas for the Energy Sector; Electricity consumption Subsector

1.1Brief Summary of the Project Idea

This project idea is suggested to support the deployment of the Compact Fluorescent Lamps (CFL) among the consumers of the domestic sector. It is expected to realize significant reduction in electricity consumption (lighting) thus reducing GHG emissions. The project titled 'Establishment of quality control Laboratory of Compact Fluorescent Lamps (CFL)' aims to fill the gap in regulatory framework found due to absence of local setup for issuing quality assurance certificates for CFL.

1.2 Specific Project Idea

Establishment of quality control laboratory of Compact Fluorescent Lamps (CFL).

The establishment of a laboratory for quality assurance for CFL will encourage consumers to use them thus it enhances technology diffusion and eliminates the use of incandescent lamps (ICLs). The main performance parameters such as lifetime, lighting efficiency, power factor and harmonic disturbance are to be tested and verified before issuing a quality assurance (QA) certificate. The project incorporates two components, firstly, the physical establishment of lab with 3 testing lines capable of test 20 lamp/ month thus around 600 lamp/ year: 0.001 % of the targeted quantity of CFL 600,000 lamp/ year. This phase includes provision of the testing equipment. The establishment process is expected to be in three phase, (i) tender document (ii) construction of the buildings and setting the equipment (iii) commissioning phase where by a kind of intensive training for the local staff is expected to take place. The second phase which is expected in take place simultaneously with establishment process involves setting the optimum standards and specifications including threshold values. The project is seen as a first step in the introduction of the labelling system for electrical appliances in Sudan.

1.3 Project overview

Name of Project Idea	Establishment of Quality Control Laboratory of Compact Fluorescent Lamps (CFLs12).
Introduction	An absence of an assigned laboratory for testing and quality assurances of CFL is one of the major barriers against the diffusion of this technology. This project ensures consumer confidence in the energy efficient label and protects the consumer investment in CFL. The issuing of QA certificate or energy efficiency label requires product testing in a certified laboratory that meets international standards for quality and competency. Additionally, the suitable set of standards and specification should be ascertained considering the local circumstances in Sudan.
Objectives	To ensure the quality of the CFL in local markets To enhance diffusion and deployment of CFL To contribute to efforts paid in establishing labelling systems for electrical appliances.
Outputs	Support quality control efforts for CFL Support the establishment of the labelling system for electrical appliances
Relationship to the country's sustainable development priorities	The project is in line with the declared objectives of MWRE namely: Execute energy labelling system for electric appliances Reduce electricity consumption on the domestic sector and in government buildings The Demand reduction will provide more capacity in the grid; hence more consumers could be connected to the grid, thus increasing a coverage level for electricity service, The project will also contribute also to development objectives of poverty alleviation by reducing the electricity bill to consumers Reduce GHG from electricity sector; replacement of 6,000,000 ICLs by CFL will reduce GHG by 251,395 tCO2
Project Deliverables	Establishing a well-developed laboratory for testing of CFL quality (20 lamp/ month; lab established Setting standards and specifications for lighting lamps particularly CFL; booklet of standards produced Setting conditions for QA certificates (specific instructions and steps)
Project Scope	Construction of the laboratory including providing the testing equipment Support the ascertaining process required to identify the suitable set of standards and specifications under Sudanese conditions Support during the first work phase(commissioning)

Project activities	Establishment of standard and labelling system for CFL Setting terms of reference (TOR) for importing the laboratory construction and equipment provision Preparation of the tender document for lab construction and equipment supply Execution phase: construct the building and Import the laboratory equipment Support during first work phase (commissioning phase).
Timeline	The estimated timeline for the project is about 2 years: setting standards and preparing tender documents (one year), construction (six months), commissioning (six months)
Budget	The estimated costs for laboratory equipment for quality testing of CFL will be about 750,000 USD, excluding costs of laboratory land, construction and management The land cost and the construction expenses are approximately 150,000 USD
Measurement/evaluation	Construction of laboratory Number of QA certificate issued
Possible complications/ challenges	The process of preparing standards and specifications will require some compromises between the stakeholders, which should be carefully tackled Importing the lab equipment may conflict with the economic sanctions imposed on Sudan. The current importers of the low quality CFL may set obstacles against quality control effort
Assumptions	The project implementation is expected to increase the confidence among consumers in using CFL
Responsibilities	Electricity-Regulatory Authority (ERA):Executing body Sudanese Standards and Metrology Organization (SSMO): Setting standards and specifications Importers Chambers: contribute to setting of standards, market regulation Custom authority_ Control for import Society of consumer protection (NGO): Awareness raising