UNDP Project Document

GOVERNMENT OF KENYA

UNITED NATIONS DEVELOPMENT PROGRAMME

GLOBAL ENVIRONMENT FACILITY

PIMS No. 3513: BU- KEN 10: Proposal No. 00045898 Project No. 00054346

Development and Implementation of a Standards and Labeling Programme
In Kenya with Replication in East Africa

Brief Description:

The proposed initiative, with a 5-year duration has been designed to remove barriers to market transformation of energy efficient products and services in Kenya with a replication effect to 4 other East African Community (EAC) countries of Burundi, Rwanda, Tanzania and Uganda. It is consistent with the GEF Operational Programme 5: Removal of Barriers to Energy Efficiency and Conservation and it follows Strategic Priority CC-1: Transformation of Markets for High-Volume Products and Processes, emphasizing the introduction of appliance standards and labelling as a means to achieve such transformation. The goal of the proposed initiative particularly, is to reduce energy (electricity) related CO2 emissions in Kenya and the EAC countries by improving the energy efficiency of selected appliances and equipment in residential, commercial and industrial sectors.

All five countries listed above do not have adequate energy to meet their development goals. The introduction and implementation of the initiative will therefore improve energy efficiency, increase availability of "new" power, and reduce GHG emissions thus mitigating climate change.

The total cost of the project is US$ 11.21 million with an amount of US$ 2.35 million of that corresponding to the incremental costs to be funded by GEF, which is approximately 21% of the overall budget. These investments will result in direct greenhouse gas emission reductions during the project's implementation phase ***totalling 1,413,000t CO2 eq***. Using the GEF bottom-up methodology, indirect emission reductions will be ***3,533,000t CO2 eq,*** assuming a replication factor of 2***.5***. Using the GEF top-down methodology, indirect emission reductions will be ***9,800,000t of CO2 eq***. The technological and economic potential for GHG emission reductions in this area over 10 years is ***24,500,000 tonnes of CO2 eq***, assuming a project causality factor of ***40 percent***.
The estimated impact in Kenya is a reduction of 9.53 Mt***CO_2 eq*** and in the other East African Community countries, 5.43Mt ***CO_2 eq***. In total, the expected impact is the reduction of 14.96Mt ***CO_2 eq***, of which 1.41 Mt ***CO_2 eq*** is attributed to the direct impact (5 years), and 13.55 Mt ***CO_2 eq*** to the indirect impact. Hence the resulting cost for GEF per avoided ton of CO_2 is US$ 0.14.

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LIST OF ACRONYMS AND ABBREVIATIONS

CEEC	Centre for Energy Efficiency and Conservation
CFL	Compact Fluorescent Lamp
EAC	East African Community
ERB	Energy Regulatory Board
EU	European Union
GDP	Gross Domestic Product
GHG	Greenhouse Gas
GEF	Global Environment Facility
IEC	International Electrical Commission
ISO	International Standards Organization
KAM	Kenya Association of Manufacturers
KEBS	Kenya Bureau of Standards
KIRDI	Kenya Industrial Research and Development Institute
KPLC	Kenya Power and Lighting Company
KRA	Kenya Revenue Authority
MEPS	Minimum Energy Performance Standards
ME	Ministry of Energy
MTI	Ministry of Trade and Industry
NEMA	National Environment Management Authority
TRAC	Target for Resources Allocation from Core
UNDP	United Nations Development Programme
UNFCCC	United Nations Convention on Climate Change
US	United States

Exchange rate:
1 US $ = 65 Kenyan Shillings (June 2007)

SECTION I. ELABORATION OF THE NARRATIVE

Part I Situation Analysis

1. The economic development of a country is often closely linked to its consumption of energy. In Kenya, after many years of stagnation, the GDP growth rate increased from 1.5% in 2003, to 6.1% in 2006. This is in line with the government plans which have projected a growth rate of 6-10% per annum. To sustain this growth and meet its development objectives, Kenya will need much more energy. Consumption of oil has been rising steadily. Consumption of oil products rose from 534,691 of fuel oil in 2003 to 616,830 million tones in 2004, an increase of 15%. In 2005, petroleum products imports accounted for 6.9 % of the GDP[1] and 25 % of the total import budget. At the same time, electricity consumption increased from 3.9MWh in 2003 to 4.5MWh in 2005 an increase of 13%. To keep up with this rise, and to compensate for drought, thermal generated power increased from 0.93MWh in 2003 to 1.5MWh in 2005, representing an increase of 38%.

2. Currently, the effective power generation capacity is 1,032 MW, against a peak demand of 920 MW which is projected to rise by 14% per annum to 1370 MW by July 2008. This growth is much higher than the 7% which had been projected in 2003 therefore new sources of power have to be identified.

3. The power mix comprises of 57% hydropower, 30% thermal and 10% geothermal. About 2% of hydropower is imported from Uganda though in the past few years, this portion has not been available, due to a serious power crisis in Uganda. The system is severely constrained due to raising electricity demand. Also, it is vulnerable to erratic weather conditions and the rising costs of oil. Under severe drought the effective capacity of the hydropower is reduced, as was experienced for example in the year 2000, when available plant capacity was reduced from 639 MW to 501 MW. Discussions are going to establish most viable short-term solutions for the expected power shortages, and all indications are that the likely solution will be gas turbine and high-speed diesel generators.

4. An additional 423 MW[2] of electricity generation capacity will be installed in the country by 2008 in line with the Government's National Power Development Plan. Of this additional power to be installed, over 50% (280 MW) will come from fossil fuel plants while 30 MW and 35 MW will come from wind and geothermal respectively and the balance from hydro.

5. Efforts are in high gear to exploit the geothermal potential in the country but as this is a slow and expensive process, it will be many years before the power can be available in the grid.

6. Even with all this efforts, only 15% of the population of over 30 million in Kenya has access to electricity (30% urban and 5% rural). In order to accelerate growth and

[1] Statistical Abstract 2006 pg 82 Tab. 47 (a)

[2] Ministry of Energy Kenya

improve the lives of the Kenyan (rural) population, greater access to electricity and modern energy services is required. As part of its economic recovery and poverty reduction strategy, the government has set a target of 150,000 new connections each year. The Government has enacted a law to set up the Rural Electrification Authority to speed up the process of powering the vast hinterland. This means that additional power capacity will be required to meet the demand and the challenge is therefore to ensure development of new sources of power without undue environmental degradation to meet the increasing demand and to improve livelihoods.

Context and global significance

7. The Project will be implemented in Kenya and replicated in East African countries of Tanzania, Rwanda, Uganda and Burundi. These countries are members of the East Africa community (EAC) – which is a regional economic block with a population of over 100 million people. There is free movement of people, goods and services between the borders. For this reason, implementation of standards in one country at the exclusion of the others would defeat the purpose. On the other hand, implementation across the five countries would have a greater impact on climate change mitigation.

8. The government has formulated a new forward-looking and environmentally sensitive energy policy. The broad objective of the energy policy[3] (2004) is to ensure adequate, quality, cost effective and affordable supply of energy to meet development needs, while protecting and conserving the environment. The specific objectives are to:
    a) Provide sustainable quality energy services for development;
    b) Utilize energy as tool to accelerate economic empowerment for urban and rural development;
    c) Improve access to affordable energy services;
    d) Provide an enabling environment for the provision of energy services;
    e) Enhance security of supply;
    f) Promote development of indigenous energy resources; and, promote energy efficiency and conservation as well as prudent environmental, health and safety practices.

9. All the five countries of the region do not have adequate energy to meet their development goals. Many businesses and homes in Rwanda and Burundi have resorted to the use of back-up diesel generators to supplement the mains which are highly unreliable due to low capacity. The introduction and implementation of S&L will improve energy efficiency, increase availability of "new" power, and reduce GHG emissions thus mitigating climate change.

10. The Project is in line with UNDAF programme area number 4: To Promote Sustainable Livelihoods & Protect the Environment and lead to outcome number eleven on effective community-based management of natural resources. One of the goals of this outcome is to assist in the preparation and implementation of Sustainable Natural Resource Management Plans at the local level by communities

[3] GoK - Sessional paper No 4 on energy Nov 04

and other stakeholders including technologies or approaches, such as integrated nutrient management, water harvesting, or energy-efficiency optimization.

11. This initiative is supportive of the CPAP (2003-2008) objective aimed at "Development and distribution of sustainable energy services to meet household needs, to offer income generating opportunities and to service all sectors of the economy. The specific objectives of this programme aims to support among other things " …appropriate standards and regulations that support sustainable technologies and their markets incorporating energy efficiency and conservation during production and use, and to built capacity to access available investment opportunities for sustainable energy options.

Threats, root causes and barriers analysis

12. Owing to political, financial, institutional or other reasons, the country may choose not to implement or delay the introduction of MEPS (Minimum Energy Performance Standards) for industrial and commercial equipment and energy labels for domestic appliances. However, this is mitigated by the National Energy Policy which firmly states standards and labeling as a goal. In addition, the structure for the proposed GEF project is to first identify and focus on barriers and barrier removal, then to develop a menu of options suited to the specific situation of Kenya and the EAC countries. Therefore the GEF strategy will substantially offset this risk. Other energy policies in the region will facilitate implementation of the project.

13. Often, industry objects to the implementation of perceived new regulations due to perceived additional costs to industrial and commercial enterprises. However, the project as designed to take into account this concern of the private sector, especially small and medium-scale companies. A very important factor is that this project is the involvement of the private sector including the Kenya Association of Manufacturers, distributors and retailers.

14. Many enterprises and household consumers do not understand energy efficiency concepts and avoid purchasing energy-efficient models owing to initial higher costs. While the project cannot eliminate the potential higher first-costs of energy efficient equipment and appliances, the introduction of standards and labels will be accompanied by substantial efforts in information dissemination, industrial company capacity building, consumer education, retail-directed educational materials, and other activities to both raise awareness of the label and to educate consumers on the benefits of energy-efficiency purchasing. Experiences from the UK refrigerator market indicate that for some models, prices came down after introduction of MEPS.

Barriers to the Uptake of Energy Efficient Products

Lack of product energy efficiency test procedures, standards and labels

15. Kenya and the other East African countries currently have no test regulations for the energy efficiency of products. In order to transform the market towards more energy efficient appliances and equipment, regulations are required for:

    - Testing products in an internationally recognized way;
    - Minimum energy performance requirements for selected products; and
    - Labels or other means to identify high-efficiency products.

16. Without test procedures, a clear indication of the energy efficiency of a product cannot be established, thus making it impossible to select better products. The cost of developing a national test facility and procedure is prohibitive, with or without GEF support. The cost of adopting and implementing international test procedures is still a significant barrier to the countries involved.

17. In order to promote more energy efficient appliances, or to ban or limit the sales of low-efficiency ones, unambiguous regulations are needed to identify these products. The countries will select and adopt the most appropriate standards and labels from major trade blocks around the world (typically: EU or US), and adopt these with modification, but the resources required for this purpose remain a major barrier.

Lack of adequate verification procedures for product (energy) quality

18. Kenya and the other East African countries have started with pre-export inspections, for verifying compliance of products with some quality standards. Product energy efficiency is currently not a part of this, but that would be required for an effective national appliance and equipment energy efficiency programme. Without such inspections, there would effectively be no control of the energy performance of imported products, thereby creating the very substantial risk that compliance will only occur on paper, but not in reality.

19. For some products (e.g. refrigerators), a restriction on the import of second-hand products will be needed. Kenya customs have experience with import regulations for some products, but not for appliances and equipment. This capacity, however, is needed for effectively intervening in the market.

Lack of distributor and retailer awareness of product energy efficiency

20. Although some appliance and equipment distributors and retailers (typically high-end suppliers) understand the importance of product energy efficiency characteristics, the majority are ignorant of the benefits these products might bring to them and the clients. The main focus of retailers is on sales volume. Moreover, uncertainty about market demands of high-efficiency equipment and appliances, make importers reluctant to acquire and dealers/retailers reluctant to stock energy-efficient models.

Lack of end-user awareness of product energy efficiency

21. The majority of end-users are not aware of the energy performance of products, and the associated costs and benefits. Currently, a maximum of 10% of all end-users occasionally inquires about the energy performance of products. The consumer organization is seriously under staffed and has very limited resources to work with. Customers make a purchase decision largely based on the purchase price of a product without consideration of its running cost.

22. The lack of end-user understanding of product energy performance issues is a barrier to the transformation of the market, as the cooperation of end-users is essential for those products where a voluntary or information-based strategy is chosen. It is also essential for segments that are to be regulated by minimum energy performance standards, as the end-user understanding of the rationale for such measure (which removes the cheapest, lowest performing products from the market) is essential for the long-term support of the policy, and thus for its sustainability.

Lack of financial resources for more energy efficient products

23. Even when end-users understand the rationale for investing in more energy-efficient products, and see the costs and benefits, they often lack the resources needed for making the investment in the first place. Energy efficient products are often a bit more expensive on initial purchase and, even if this cost is earned back within 1-2 years, the extra amount of money still has to be provided upfront. Besides, energy efficiency issues are not taken into account in the tax regime (high import VAT and duty) nor are incentives provided for using energy efficient equipment.

24. Those customers that have the possibility to invest, for example industrial clients, will have to balance that investment opportunity with other possible investments in their business environment. Typically, few businesses are willing to provide extra budgets for non-core investments like those in the energy efficiency of equipment.

25. Policy and capacity barriers are considered to be part of the barrier categories presented above. In addressing the barriers, policy and capacity strengthening activities will be proposed. These problems are replicated in varying degrees in the other countries of the EAC.

Institutional, Sectoral and Policy Context

26. The Kenyan government priority for energy efficiency is articulated in the *National Energy Policy* otherwise known as Sessional Paper No 4 on Energy 2004. It states that:

"..The Government recognizes the need to remove barriers and constraints to adoption of energy efficiency and conservation technologies and will therefore put appropriate measures in place including:

- √ *Encouraging private sector participation in providing technical and financial support for energy conservation and efficiency;*
- √ *Enhancing the provision of energy audits and advisory services by the Ministry of Energy to institutions and companies including sensitization of industries and financial institutions on benefits of energy efficiency;*
- √ *Establishment of energy and equipment testing laboratories for efficiency and accelerated equipment ageing testing;*
- √ *Promotion of cost-effective industrial energy efficiency and conservation measures within economic sectors through exposure to competition;*
- √ *Dissemination of energy efficiency and conservation information to consumers;*

- √ *Encouraging demand side management by industrial and commercial sectors, and where necessary provision of the necessary technical support by the Ministry of Energy and electric power utilities; and*
- √ *Development of standards and labeling and codes of practice on cost effective energy use."*

27. Furthermore, the Government of Kenya, through the Ministry of Energy has committed itself to supporting the Energy Efficiency and Conservation Centre at KAM to carry out energy efficiency activities as part of implementing the National Energy Policy.

28. Following on the policy development, GoK published the Energy Act which was passed into law in 2006. The Act has given energy efficiency activities the full backing of the law and proceeded to commit resources towards these activities. Section 104 of the Act states….." the Minister will develop and manage a prudent national energy efficiency and conservation programme". In section 104 (a) and (j), the Act, empowers the Minister in charge of energy to make requirements for energy standards and labels to be displayed on equipment and appliances, while part (j) goes further to empower the minister to disallow the importation of inefficient energy equipment. The Act also allows the Minister to device incentive mechanisms to encourage the use of more efficient technologies. This gives an important legal framework for introduction of standards and labels in Kenya.

29. This legal and policy framework will have to be converted to institutional and capacity to implement, test and enforce the application of these standards. Kenya bureau of standards is well established and has good experience in standards development and application. However, the Bureau works through line ministries (i.e.) the ministry sponsoring the standard e.g. in this case, the Ministry of Energy and the Ministry of Trade and Industry. The capacity of these ministries will have to be further developed as well as the coordination mechanisms between the various actors and the Bureau. The East Africa Community Treaty provides a framework for the member states to collaborate on issues of mutual interest, including trade, infrastructure, energy and others. On energy, it has set up the Ministerial Committee with reports to the Heads of state summit. There are efforts to harmonize standards in the region.

30. UNDP and other partners have developed a strategy to scale energy services in the EAC and which will incorporate energy efficiency. To implement this strategy, efforts will be made to establish and build the capacity at the EAC secretariat through the wider UNDP regional initiative. This will benefit implementation of the project. An assessment of policy and institutional settings of the other countries of the region is presented below.

Rwanda

31. Rwanda has a generation capacity of 35 MW, 22% of which is from fossil fuels. Only 5% of the population has access to electricity and 60% of these live in Kigali the capital. The country has no reserve capacity to handle present demand let alone cope with sharp growth in demand due to economic growth. Many residents of Kigali town depend on standby diesel generator sets due to the unreliability of the mains supply. Continuing low rainfall has worsened the **energy** crisis making the country to be over reliant on energy imports. This reliance on imported power puts Rwanda in a precarious position.

32. The Ministry of Infrastructure and Communication (MINFRA) is in charge of energy. It has a department dealing with energy efficiency and is in the process of establishing a renewable energy and energy efficiency agency. This agency will focus on increasing access to electricity and activities aimed at reducing energy wastage. As an initial step, the Agency has undertaken to promote the use of energy efficient light bulbs in the country. The Rwandan electricity company (ELECTROGAZ) is the main power supplier but also in charge of water and sewerage.

33. The Government's development agenda is focused on achieving economic growth and on poverty reduction. Infrastructure improvement lies at the heart of the Government's policies and private sector participation has a central role in its development and operation. The Energy policy is supportive of energy efficiency as it is centered on: achieving better use of energy resources; and harnessing energy resources to improve living conditions and human welfare.

34. Rwanda Bureau of Standards (RBS) is a young and dynamic organization. It is working towards acquiring international accreditation which was expected to be awarded in 2006. The bureau has laboratories of chemistry, microbiology, food and chromatography with 150 national standards and over 5,000 international and other reference standards.

Burundi

35. Burundi has installed capacity of 49 MW majority of it from hydro sources. The power generation and transmission company (REGIDESO) operates a few thermal power stations, (the majority of which are located in the country's capital Bujumbura and the surrounding areas). The country does not have adequate power to meet present and expected rising demand. Energy policy has not been revised due to instability, and much of the infrastructure and the institutions are weak. The Ministry of Energy and Mines is in charge of energy.
36. The bureau of standards is still in nascent stages and will require extra capacity building before it can handle energy standards and labels. This is one of the priorities of the Ministry of Commerce and Industry which will be a key partner in the implementation of the Project.

Uganda

37. Uganda's electrification rate is very low, with grid access of only 5% for the whole country and less than 2% in rural areas. This means that only 200,000 customers are connected to the grid with an annual growth rate estimated between 5.5 and 7.5%. Another 1% of the population provides itself with electricity using diesel and petrol gensets, car batteries and solar PV systems[4].
38. Although 99% of Ugandan electricity is hydro generated, the installed capacity in is low at 317 MW, and is unable to meet the increasing demand and sustain an economic growth that has averaged 6% per annum. This is made worse by distribution losses which have at times hit peak levels of 35% of billed electricity[5]. In

[4] The Republic of Uganda, Ministry of Energy and Mineral Development 2002-THE ENERGY POLICY FOR UGANDA

[5] : ESI Africa Issue No 2 2003 page 30_1

recent years, the country has resulted in load shedding for long periods. It has also had to import power from Kenya even though it has a standing obligation to export 30 MW to Kenya and 50MW from 2006.

39. The Ministry of Energy and Mineral Development (MEMD) is responsible for the sector, dealing specifically with energy policy formulation, implementation and monitoring. It has a Division for energy efficiency whose mandate is to ensure efficient utilization of energy in all sectors of the economy, including industry, commercial buildings, institutions, households, transport and agriculture. It is also charged with responsibility of setting efficiency standards for the utilization of various types of energy. The energy policy was revised in 2002, and takes into account the need to promote energy efficiency and conservation. The policy goal is to meet the energy needs of Uganda's population for social and economic development in an environmentally sustainable manner.

40. The Ugandan Bureau of Standards is well developed and with reasonable capacity. It has been cooperating with Kenyan and Tanzanian Bureaus to harmonize a number of standards that can be adopted by the three countries. By 2006, 400 such standards had been harmonized. This collaboration will support the project implementation.

Tanzania

41. The total installed power capacity for Tanzania is 953 MW. The percentage of people with access to electricity in rural areas is 2% and about 30% in urban areas. Majority of the power - 59% - is used in residential, small commercial and light industries while the industrial sector consumes 34%. About 6.7% is exported to Zanzibar and the balance of 1% is used in public lighting.

42. Energy efficiency is in line with the energy policy whose main objective is to provide an input in the development process "by establishing efficient energy production, procurement, transportation, distribution, and end-user systems in an environmentally sound manner and with due regard to gender issues."

43. One of the policy objectives is to promote energy conservation and efficiency and to develop human resources for facilitation of energy technologies development

Stakeholder analysis

44. The development of this Project was undertaken in a highly participatory manner, involving consulting with the major stakeholders throughout the process. These are listed in the table.

Table1: Stakeholder Analysis

Main stakeholders *(similar type of organizations in Burundi, Rwanda, Tanzania and Uganda are considered stakeholders as well)*	***Function***
Ministry of Trade and Industry	Efficiency standards, labeling, education and

	awareness, certification, compliance
Kenya Bureau of Standards (KEBS)	Certification and accreditation, labeling efficiency standards, policy, regulation
Kenya Association of Manufacturers (KAM)	Education and awareness, energy audits, coordination
Kenya, Ministry of Energy	Energy policy, regulations, support for a centre on energy efficiency and conservation
National Environment Management Authority (NEMA)	Enforcement of standards as part of statutory environmental audit. Standards development
Kenya Power and Lighting Company (KPLC)	Education and awareness, R&D, finance, standards and labeling, energy audits
Kenya Industrial Research and Development Institute (KIRDI)	Education and awareness, R&D, standards development, baseline studies
Universities and NGOs	Education and awareness, energy audits, labeling, R&D
Users of equipment and appliances (companies and consumers)	Labeling, efficiency standards, education & awareness, energy audits, finance
Kenya, Energy Regulatory Commission (ERC)	Education and awareness, regulation, energy management, policy, finance, certification
Financial sector	Finance
Ministry of Finance	Financial incentives, regulation
Consumer organizations	Education, awareness

45. Similar consultations were held with corresponding organizations and institutions in the other EAC countries. National reports were produced.

46. Two stakeholder workshops were held in October and December 2005 in Nairobi, Kenya. In these workshops only Kenyan participants were present, representing the organisations listed in the above table. Separate missions to Burundi, Rwanda, Tanzania and Uganda were undertaken between February and September 2006 to inform key stakeholders about the proposed initiative; to consult on issues to be incorporated in the Project; and to get Government commitments to be involved in this Kenya-led initiative with regional spin-offs. The main distributors and suppliers of appliances participated in the inception workshops and have supplied a lot of information. Traders, distributors and importers will be engaged directly during the implementation of the project, through KAM, and through consumer organizations like the Consumer Information network. Direct public involvement in the project is limited by the absence of a well-organised consumer protection agency/institution.

Baseline Analysis

47. The project is designed to remove barriers to the market transformation of energy efficient products and services in Kenya with a replication effect to other EAC countries, namely Tanzania, Uganda, Rwanda and Burundi. It is consistent with the GEF Operational Programme 5: Removal of Barriers to Energy Efficiency and Conservation and it follows Strategic Priority CC-1: Transformation of Markets for High-Volume Products and Processes.

48. The total estimated impact in Kenya is a reduction of 8.5 million tonnes of CO_2, and 4.85 million tonnes CO_2 in the other East African Community countries. In total, the expected impact is the reduction of 13.36 million tonnes CO_2, of which 1.96 million

tonnes is the direct impact (2007-2026), and 11.38 the indirect impact calculated over the period 2007-2036. Hence the resulting cost for GEF per avoided ton of CO_2 is 2.35/13.36 = US$ 0.18 over a 30-year period

49. The incremental costs associated with this project are considered to be the costs of the activities designed to remove the primary barriers to the market transformation of energy efficient products and services.

50. The incremental costs analysis and related matrix are included in Annex I. The total cost of the project is US$ 11.21 million, with US$ 2.35 million of that corresponding to the incremental costs to be funded by GEF, or approximately 21% of the overall budget. Cash co-financing contributions amount to US$5.7 million distributed as follows: Government of Kenya, ($5.48 million), Kenya Association of Manufacturers ($ 0.26 million) and UNDP Kenya ($ 0.25 million). The in-kind contributions amount to US$ 2.76 million) and comes from a variety of sources in the Kenya including public and private sectors. A total of US$ 1.39 million will be provided for investments in energy efficient equipment and appliances by industry players and is considered parallel financing.

Part II Project strategy

Project Rationale and Policy Conformity

51. Energy Performance Standards are a set of regulations prescribing minimum energy performance for appliances and equipment in the market. They can be mandatory or voluntary Energy Efficiency Labels: These are attached to appliances and equipment to indicate level of energy performance.

52. Energy efficiency standards and labels (S&L) for appliances, equipment, and lighting products are particularly cost-effective for conserving energy. They fit well with most energy policies and can be the backbone of a country's energy policy portfolio. Efficiency standards and labels can force a shift to energy efficient technology and dramatically improve national energy efficiency[6].

53. Energy standards and labels promote market transformation towards higher efficiency by providing a basis for consumers to make informed purchase decisions. In the UK when the energy label was introduced, most of the inefficient fridges were phased out in 2 years without an increase in retail price. In fact, the units sold for less and were more efficient. Therefore, the S&L programme can cause market transformation towards higher efficiency.

54. The average efficiency of electrical appliances and equipment currently sold in Kenya and the Region is way below that of the best products on the international market due to the following:
    - √ Reliance on "initial purchase cost" as the basis for a purchase decisions at the expense of life-cycle cost considerations
    - √ Lack of awareness and information regarding equipment performance and operating costs,

[6] CLASP

- √ Inability to check the entrance of low-quality products,
- √ Lack of appropriate energy efficiency incentives and regulations,
- √ No programme to introduce more energy efficient equipment and appliances.

55. Inefficient equipment and appliances consume more power than necessary thus exacerbating poverty by straining the countries capacity to provide electricity. In addition, increased consumption of energy leads to increased GHG emissions from fossil fuel generation. All the EAC countries suffer from low electricity generation capacity and are struggling to meet demand to continue economic growth. All of them have had to install fossil generation capacities to supplement the existing hydro generation – with Kenya having the largest share of thermal generation at 30%. These countries are in desperate need for new and cheap sources of power.

56. Introduction of energy standards and labels can help achieve this objective. The baseline information indicates that there are significant savings to be made through introduction of efficient industrial motors; residential refrigerators; commercial display refrigerators; air conditioners; and lighting. The information available shows that the savings potential from water heaters is minimal due to their limited use. In addition, there is scarcity of market information to make a meaningful intervention on these products.

57. The energy standards and labels will be introduced through the following four components:

- √ Awareness creation, knowledge build-up and capacity building;
- √ Development and adoption of minimum energy performance standards and labels;
- √ Conducive policy and policy instruments on energy efficiency and standards and labeling; and,
- √ Monitoring and evaluation.

58. The GEF intervention strategy is to address the policy, financial, information and technological barriers that prevent the widespread introduction of more energy efficient equipment and appliances. To this end, GEF funds through the responsible ministries will be used to provide assistance to the government and private sector to introduce energy standards and labels program. Relevant capacity building activities will be identified and implemented through training and technical assistance. GEF funds will also target importers and retailers who play an important role in influencing the purchase decision of consumers to set up comprehensive awareness and information dissemination campaigns. Specific attention will be given to addressing financial barriers, while potential funding sources for energy efficiency will be identified and evaluated.

59. The project will support the Ministries responsible for Trade and Industry, Energy and the agencies responsible for development of Standards to get commitment from the main stakeholders to achieve an effective market transformation.

60. The project fits into the GEF Focal Area of Climate Change. It addresses "Operational Programme 5, Removal of barriers to energy efficiency and conservation". In particular, the project will focus on the "GEF Strategic Priority CC-1, Transformation of markets for high-volume products and processes", emphasizing the introduction of appliance standards and labeling as a means to achieve such transformation.

Project goals, objectives, outputs and activities

61. The goal of the proposed initiative is to reduce energy (electricity) related CO2 emissions in Kenya and the EAC countries by improving the energy efficiency of selected appliances and equipment in residential, commercial and industrial sectors. This will be done through a market transformation towards high-efficiency equipment and appliances by introducing minimum energy performance standards and energy labels.

62. The main objective is to remove the barriers to rapid and widespread uptake of energy efficient motors in the industrial sector; refrigerators in the residential; display refrigerators in the commercial sector; air-conditioners in the commercial and residential sectors; and lighting in the residential, commercial and industrial sectors.

63. The second objective is the enhancement of energy security through energy savings from the utilization of energy-efficient appliances and equipment.

64. The project will build on the achievements and experiences of the GEF-KAM Energy Project - KEN98G31. It will continue the collaborative approach to introduce energy efficient technologies, develop capacity in national institutions and introduce incentives mechanisms. GEF support is needed to develop and implement the S&L programme and prove among consumers that investing in energy efficiency is often the best economic choice and good business practice.

Outcomes

65. *Outcome 1: Selection and adoption of international test procedures, minimum energy performance standards and label classifications.*
This component targets barrier1, the lack of product energy efficiency test procedures, standards and labels.

66. *Outcome 2: Development & implementation of a verification & enforcement system.*
This component addresses barrier 2, the lack of adequate verification procedures for product (energy) quality.

67. *Outcome 3: Awareness raising campaign for standards and labels, targeting distributors, retailers and end-users.*
This component addresses the need to inform distributors, retailers and end-users with information about appliance and equipment energy efficiency (barriers 3 and 4).

68. *Outcome 4: Development of voluntary agreements for efficient commercial display refrigerators and hotel air conditioners.*
This component addresses the need to inform distributors, retailers and end-users with information about appliance and equipment energy efficiency, specifically focusing

on display refrigerators and air conditioners in the commercial sector (barriers 3 and 4).

69. *Outcome 5: Policy support & policy framework.*
This component targets multiple barriers in policy, legal and institutional frameworks and can be considered cross-cutting.

70. *Outcome 6: Learning and replication.*
This outcome targets replication activities into the other EAC countries or Burundi, Rwanda, Tanzania and Uganda).

71. The outcomes are to a large extent inter-dependent hence all have to be addressed to remove the barriers. The sequencing of the activities planned to be undertaken are as follows:

Table 2: Activity planning

Outcomes	**Year 1**		**Year 2**		**Year 3**		**Year 4**		**Year 5**	
1: Test procedures, MEPS, labels										
2: Verification and enforcement										
3: Awareness raising										
4: Voluntary agreements										
5: Policy support & framework										
6: Learning, replication										

74. Each of the six outcomes is associated with specific outputs and a set of envisaged activities as described below. By successfully implementing these activities the project will contribute towards the achievement of the goal and objectives stipulated earlier.

Activities

75. ***Outcome 1****: Selection and adoption of international test procedures, minimum energy performance standards and label classifications.*
In this outcome an inventory will be made of the most appropriate international appliance energy performance test procedures, minimum energy performance standards (MEPS) and energy label schemes for adoption in Kenya.

Output 1.1: *Selection and adoption of appropriate international test procedures for appliance energy efficiency in Kenya.*
Activities*:*
- Identification of IEC test procedures for all products on long list; if IEC not available: identification of EN norms. This serves to prepare the ground for future extensions of the programme.
- Adoption as national test procedure via KEBS technical committees.
- An appropriate test facility identified and collaboration entered.

Output 1.2: *Selection and adoption of appropriate international label classification.*
Activities*:*
- Identification of EU label classifications and other label classifications for products on long list.

- Selection of most appropriate schemes, based on similarities in product designs and manufacturers.
- Adoption of label classifications, for mandatory application for industrial motors, and domestic refrigerators, and for voluntary application for all other products.

Output 1.3: *Selection and adoption of three minimum energy performance standards and one quality standard.*

Activities*:*

- Selection and adoption of appropriate minimum energy performance standards, for motors, domestic refrigerators and air conditioners, based on (current or previous) international standards or on the thresholds of EU energy label classes.
- Selection and adoption of a CFL product quality standard will be adopted from either ELI or one of the schemes operated in the Asia-Pacific region.

76. ***Outcome 2****: Development & implementation of a verification & enforcement system.*
This outcome addresses the lack of adequate verification procedures for product (energy) quality. It includes the addition of energy performance compliance checking with the pre-export inspections currently in place for Kenya, building of capacity for KEBS and KRA (customs) for intervening with shipments of second-hand products, and the improvement of trade inspections with importers and distributors.

Output 2.1: *Integration of product energy performance compliance checking with country pre-export inspections.*

Activities:

- Development of a list of test procedures and product standards that need to be included.
- Discussion with KEBS and KRA about extending the current pre-export inspections (PSI) with these procedures and standards.
- Developing approaches for use in PSI.
- One-year trial period, to assess the impact on the market and address start-up problems.

Output 2.2: *Capacity building at the Revenue Collection Authority (KRA) for inspection of non-conforming and second-hand product imports.*

Activities:

- Assessment of the KEBS and KRA capacities for tracking second-hand products.
- Training of KEBS and KRA inspectors in new regulations for second-hand products.

Output 2.3: *Establishment of trade inspections, for distributor and retailer compliance checking on counterfeits and fraudulent products.*

Activities:

- Assessment of KEBS and KRA capacities for checking distributors and retail outlets for product compliance.
- Training of KEBS and KRA inspectors for compliance checking at distributors and retail outlets.

Output 2.4: *Establishment of a legal enforcement system, for follow-up on non-compliance with regulations.*

Activities:

- Development and implementation of an enforcement system to follow-up on product non-compliance with regulations (on import).
- Development and implementation of an enforcement system for distributor and retailer non-compliance (on sales).

77. ***Outcome 3****: Awareness raising campaign for standards and labels, targeting distributors, retailers and end-users.*
This outcome includes the provision of information, in cooperation with main importers and the power utility, about the costs and benefits of energy efficient products, information about test procedures and minimum energy performance standards, and an explanation of energy labels and classification (for home appliances and motors). A training programme will be prepared for distributor and retail staff, to help them inform end-users about the benefits of purchasing efficient products, as well as help them understand the business opportunities of selling efficient appliances.

Output 3.1: *Informing importers, distributors and retailers about appliance energy efficiency in Kenya.*
Activities:
- Providing information about appliance energy efficiency principles, the costs and benefits to end-users and the costs and benefits to retailers of more efficient appliances.
- Providing information about new energy efficiency regulations, date of entry of these other regulations, compliance requirements, the national S&L programme, support opportunities and consequences of non-compliance.

Output 3.2: *Development and delivery of a training programme for distributor and retailer staff in Kenya.*
Activities:
- Development of a training programme for distributor and retailer sales staff, focusing on the sales of these more efficient appliances.
- Trial run with a major distributor (industrial) and major retailer (domestic).
- Delivery of the training programme to the sales staff of at least the top 5 distributors and retailers.

78. ***Outcome 4****: Development of voluntary agreements for efficient commercial display refrigerators and hotel air conditioners.*
For display refrigerators and for hotel air conditioners, a discussion will be initiated with the key purchasing parties about voluntary compliance with a minimum energy performance level.

Output 4.1: *Analysis of appropriate target levels for the energy performance of commercial display refrigerators and hotel air conditioners.*
Activities:
- Analysis of internationally marketed products, and the additional costs and benefits versus the products currently marketed in Kenya.
- Selection of appropriate target levels based on a least life cycle cost analysis.

Output 4.2: *Discussion of a voluntary agreement with stakeholders, including the key importers of display refrigerators and the hotel sector; main suppliers of these products; the national utility and the government of Kenya (MTI and KEBS).*
Activities:
- Stakeholder analysis of the involved parties, focusing on incentives for their long-term involvement.
- Conducting a series of meetings with the main parties, to discuss the analysis and possible agreements.
- Setting up the East Africa energy standards and labels network

Output 4.3: *Proposing – and if agreed – implementing a voluntary agreement.*
Activities*:*

- Developing draft agreements between the government of Kenya, the national utility, the main buyers of the products, if possible the main suppliers, and other interested parties.
- Providing technical support during the implementation of the agreement, including maintaining a list of products complying with the agreement.

79. ***Outcome 5****: Policy support & policy framework.*

The outcome will review and, where necessary, refine the policy framework and the institutional arrangements necessary for the widespread uptake of energy efficient appliances in the Kenya market. Once the decision has been made to adopt energy-efficiency labeling requirements and standards, rules must be established for all the subsequent steps in the process: i.e. analysis, public input, compliance testing, certification, marketing and promotion, enforcement, monitoring, and revision. This is a time-consuming venture that evolves over the years as the initial strategy is refined.

Output 5.1: *Advise and assist on improving the policy and implementation framework to increase the uptake of energy efficient equipment and appliances by major market players in the residential, commercial and industrial sectors.*
Activities*:*

- Review the current energy regulation framework from an energy efficient product market transformation perspective and make recommendations for improvement.
- Indicate the measures to be taken to implement the recommendations. This includes a menu of policy, fiscal and other type of incentives to spur energy efficient product market transformation.
- Closely monitor the outputs of the project and distil the necessary information to update and/or revise the policy and implementation framework.

Output 5.2: *Strengthening of the capacity of individuals and institutions that are involved in implementation of the project.*
Activities*:*

- Identify the required skills and experiences for monitoring, revising and implementing an energy policy supporting energy efficient product market transformation. Design and implement a clearly focused, hands-on training programme. Monitoring energy efficiency developments will play a key role under this output and hence it will receive ample attention within the capacity strengthening activities.
- International study tours will be organized to regions of the world where successful market transformation initiatives for energy efficient products have been designed and implemented. The focus will be on supportive policies and regulations frameworks. At minimum two study tours will be organized. One in the early start of the programme and one mid-way.

80. ***Outcome 6****: Learning and replication*

This outcome is to improve the understanding (i.e. learning) of energy efficient product market transformation followed by the dissemination of experience and lessons learned to promote rapid implementation throughout Kenya and the other EAC countries (Burundi, Rwanda, Tanzania and Uganda). Lessons from the implementation of components 1 to 6 will be used to develop an improved understanding on what conditions have to be in place for larger scale dissemination of the market transformation activities.

The EAC secretariat will be involved as well as the existing committees on Energy and standards harmonization.

Output 6.1: *Preparing a programme for replication of activities implemented under outcomes 1 to 5.*

Activities:

- Closely follow the implementation of the activities under components 1 to 6 and distil the necessary elements for up-scaling these activities beyond Kenya into the EAC countries (Burundi, Rwanda, Tanzania and Uganda).
- To design a roll-out programme for similar market transformation activities in the other EAC countries.

Output 6.2: *Introduction of the test procedures, standards and labeling schemes in the other East African countries via the EAC cooperation on standards.*

Activities:

- The existing EAC cooperation on (regional) standards will be used as a platform to adopt the successfully tested and implement test procedures, MEPS and labels for regional use; i.e. in Kenya and the other EAC countries.

Output 6.3*: The impact of the market transformation activities will be monitored, evaluated and used for steering the initiative's implementation.*

Activities:

- Monitor the impacts of the various market transformations.
- Extract information that can be used by the Project Management Unit for steering the implementation of the project.

Output 6.4: *Provide support to disseminate the learning and replication experiences in the EAC countries.*

Activities:

- At each stage, prepare material on the lessons learned and results for use in other EAC countries (Burundi, Rwanda, Tanzania and Uganda).
- Organize visits to Kenya for the EAC counterparts involved in the implementation process to strengthen the implementation activities in the other EAC countries or even elsewhere in Africa.
- Coordinate activities with the EAC energy secretariat based at Arusha to ensure greater integration and institutionalization of the process.
- Engage with other projects in the country, region and world to exchange lessons, experiences, and solutions in energy efficient product market transformation.
- Present the results achieved in Kenya and the EAC through presentations at national and regional seminars/workshops. At minimum once a year a regional workshop will be organized, with national workshops – focusing on specific market transformation interventions – will be organized as appropriate to be determined by the Project Management Unit.
- Actively participate in energy standards and labels network.

The proposed initiative will allow changes as necessary during the implementation period according to market developments, but remain within the programme boundaries.

Project Indicators, Risks and Assumptions

81. Key indicators for the success of the project include the following:

- √ Average energy efficiency of electricity consuming appliances in the commercial and residential sectors has increased by 20% for the products selected for targeted interventions; residential refrigerators, commercial display refrigerators, CFL's and air conditioners
- √ Volume of sales of energy efficient equipment and appliances in the five categories will show significant increase by the end of the project.
- √ Import of second-hand domestic refrigerators will be highly restricted or banned by the end of the project.
- √ MEPS will be introduced for energy efficient motors (efficiency class 2 – 90% compliance); domestic refrigerators (EU C-level – 100% compliance); air-conditioners (EU C-level – 100% compliance).
- √ Labels will be introduced for energy efficient motors (efficiency class 1 – 30% response); domestic refrigerators (EU A/B-levels – 10% response); air-conditioners (EU A/B-levels – 10% response.
- √ Voluntary agreement (using Australian MEPS levels or other suitable standard) for commercial display refrigerators will be introduced (50% response).
- √ All pre-shipment inspections on equipment and appliances from the 5 categories will include energy efficiency as part of the pre-inspection.
- √ A roll-out programme for the other EAC countries will be in place and running.
- √ All countries in the EAC will be actively involved in creating awareness and sharing lessons learned from Kenya on Energy Efficiency Standards and Labels. One regional workshop per year and site visits will be held to share experiences.

82. Important Assumptions:

- √ Electricity tariffs will reflect real costs. This is already happening with an increase of 24% in power tarriffs in Kenya in July 2008.
- √ There will be compliance with introduced standards and adequate responses to labels.
- √ Government support (implementing and setting a legal enforcement system) will remain strong through the project.
- √ Proactive involvement by Bureau of Standards in the S&L initiative.
- √ The EAC secretariat will provide strong institutional support

Expected global, national and local benefits

83. Energy efficiency standards and labeling are highly cost-effective means to help countries reduce energy demand while stimulating economic growth. This project will transform the Kenyan and East Africa equipment and appliances market by

providing information that assists consumers to make rational decisions based on life-cycle cost rather than initial investment cost of equipment and appliances. Introduction of minimum energy performance standards (MEPS) will bring about significant improvements by phasing out inefficient appliances and equipment from the market.

Table 3: Impact estimation for Kenya

Product	Stock size	Average life time	Current replacement sales	Current new additions	Average energy consumption stock	Average energy consumption new	First impact starting	Notes
units	# units	years	Units / yr	units / yr	kWh / yr	kWh / yr	year	
Industrial motors – base case	600,000	12	50,000	0	2630	2630	2008	
- MEPS at eff 2 level						2405	2010	Assuming 90% compliance with MEPS
- label indicating eff 1 level						2505	2010	Assuming 30% response to the label
- combined impact						2365	2010	
Domestic refrigerators – base case	195,000	15	11,500	17,500	640	640	2008	
- ban second-hand products						605	2010	Assuming 100% compliance with ban
- MEPS at EU C-level						500	2010	Assuming 100% compliance with MEPS
- EU energy label						572	2010	Assuming 10% increased response to the label
- combined impact						480	2010	
Air conditioners – base case	312,500	12.5	25,000	0	6280	6280	2008	
- MEPS at EU C-level						5470	2010	Assuming 100% compliance with MEPS
- EU energy label						6130	2010	Assuming 10% response to the label
- combined impact						5400		
Domestic lighting – base case	627,000	---	---	150,000	470	470	2008	Units = households with grid connection
- promotion of CFLs		8				435	2011	Assuming 3 CFLs per household, for 40% of

								households
Commercial display refrigerators – base case	90,000	8	11,500	18,500	4500	4500	2008	
- Voluntary agreement, at Australia MEPS level						4250	2011	Assuming 50% response to agreement

This impact estimation includes motors, domestic refrigerators, air conditioners, light bulbs and commercial display refrigerators.

√ Direct impacts in Kenya

84. The direct impacts include the energy savings and associated greenhouse gas emission savings achieved as a result of the sales of more efficient appliances during the implementation period of the project (2007 – 2011). These impacts will be relevant as long as these appliances are in stock which is until 2026.

Table 4: Summary of direct impacts

	Energy (GWh)	Carbon dioxide (Mton)
Motors (MEPS & Label combined)	517	0.29
Refrigerators (ban 2nd hand, MEPS & Labels combined)	223	0.12
Air conditioners (MEPS & Label combined)	924	0.52
Lighting (CFL promotion)	703	0.39
Display refrigerators (Voluntary agreement)	143	0.08
Total	**2,510**	**1.41**

Indirect impacts in Kenya

85. The indirect impacts include the energy savings and associated greenhouse gas emission reduction resulting from the sales of more efficient appliances after completion of the project; i.e. the market transformation initiated by the project. It is assumed that the impact of the programme on the sales on appliances will maintain for 10 years after completion of the programme (2012 – 2021), before other factors (e.g., international technical developments; phasing out of obsolete technologies) make these redundant. The energy and greenhouse gas impacts will be relevant as long as these appliances are in stock, which is until 2036.

Table 5: Summary of indirect impacts

Appliance/Equipment	**Energy (GWh)**	**Carbon dioxide (Mton)**
Motors (MEPS & Label combined)	3,061	1.71
Refrigerators (ban 2nd hand, MEPS & Labels	1,539	0.86

combined)		
Air conditioners (MEPS & Label combined)	5,192	2.91
Lighting (CFL promotion)	2,337	1.31
Display refrigerators (Voluntary agreement)	2,376	1.33
Total	**14,504**	**8.12**

Replication effect in other EAC countries

86. The replication effect is estimated by comparing the national energy demand of the other EAC countries with that of Kenya, and an estimate of the relative effectiveness of a programme in the other countries versus Kenya. These are reported as follows:

Table 6: Replication effect in other EAC countries

Country	**Unit**	**Kenya**	**Burundi**	**Rwanda**	**Tanzania**	**Uganda**
Replication factor	%	100	3	1	35	18
Energy savings potential	TWh	17.01	0.51	0.17	5.95	3.06
Carbon dioxide savings potential	Mton CO_2	9.53	0.29	0.10	3.33	1.71

87. Results Overview Using the GEF Manual for GHG reduction

Measure	**Emissions Reduction (Mt CO_2)**
Direct	1.41
Direct Post-project	NONE
Indirect Bottom-up	3.5
Indirect Top-down	9.8
Total	**14.75**

A total emission reduction of 14.75 Mt of $CO_{2\ eq}$ will be achieved.

88. Direct Emission Reductions

Part of the outputs of the project will be the following investments: ***Introduction of energy standards and labelling programme for equipment and appliances***. These investments will result in direct greenhouse gas emission reductions during the project's implementation phase. As a result of these activities during the project implementation period of ***five years, direct greenhouse gas emission reductions totalling 1,413,000 tonnes of $CO_{2\ eq}$ will be achieved over the useful lifetime of the investments of 5 years***. In the non-GEF case, these energy needs would be satisfied

by: Marginal diesel generation capacity with an emission factor of (f) 0.56 t CO_2 e / MWh.

89. Indirect Emissions Reductions

Using the GEF bottom-up methodology, indirect emission reductions attributable to the project are ***3,533,000 tonnes of $CO_{2\,eq}$***. This figure assumes a replication factor of 2***.5***. Using the GEF top-down methodology, indirect emission reductions attributable to the project are ***9,800,000 tonnes of $CO_{2\,eq}$***. This figure assumes that total technological and economic potential for GHG emission reductions in this area over 10 years is ***24,500,000 tonnes of $CO_{2\,eq}$***, and a project causality factor of ***40 percent***.

90. Using the energy saving figures, the following emission reductions will be achieved. The total estimated impact in Kenya is reduction of 9.53 million tonnes of CO_2, and in the other East African Community countries, some 5.43 million tonnes CO_2. The impact in other EAC countries will largely happen after the five years implementation period. In total, the expected impact is 14.96 million tonnes CO_2, of which 1.41 million tonnes is the direct impact, and 13.55 MTons CO_2 the indirect impact. In Kenya, the commensurate energy savings is 17,013 GWh.
91. Summary of benefits to each country:

- Higher energy efficiency of equipment and appliances
- Reduced energy costs and higher productivity
- Lower operating costs of appliances and equipment
- Improved energy security – "new" power will be available to distribute to other areas in need.
- Increased sub-regional trade and integration
- Establishment of a regional network of standards and labeling activities that will facilitate harmonization of standards
- Lower CO_2 emission.

Country Ownership: Country eligibility and country Drivenness

92. Kenya is a signatory to the United Nations Framework Convention on Climate Change (UNFCCC) and the Kyoto Protocol signed on August 1994 and the Kyoto Protocol on 25th February 2005, respectively.

93. This project has been endorsed by the National GEF Focal Point -the National Environment Management Authority (NEMA) - on 8 April 2005. NEMA has a climate change secretariat and is host to the Inter-Ministerial Committee on climate change which has representation from all key ministries/departments, academic and research institutions, NGOs and the private sector.

94. The country has a commitment to meet MDGs and wants to scale up access to modern energy services to the population. Kenya as well the other EAC countries are

implementing the strategy to scale up modern energy services in order to attain the MDGs.

95. The other EAC countries of Tanzania, Uganda, Rwanda and Burundi – have also committed themselves to energy conservation and have initiated (to different extents) national programmes on energy conservation. They have also established key institutions – like the bureau of standards, Ministries of Energy and Ministry of Trade.

96. Therefore, to sustain economic growth in combination with rural development, there will be a commensurate increase in consumption of commercial energy, in the form of fossil fuel and electricity. Kenya has some coal reserves, but no known oil and natural gas reserves. The prevailing trend of increasing the share of petroleum fuels in the commercial energy mix will lead to more dependence on imports and energy insecurity in addition to more GHG emissions.

97. Increased trade liberalization and competition have made productivity improvement, including energy cost reduction an important target for economic development. Kenya and indeed all the countries in East Africa have high energy intensity per unit of Gross Domestic Product (GDP) compared to many of its trading partners such as South Africa, China, India, etc. as can be seen from the table below[7].

Table 7: Energy intensities for selected countries

Country/year	**Energy consumption per Unit GDP Toe/USD 1 million GDP**		
	2003	**2000**	**1990**
Kenya	467.6	481.1	464.4
Tanzania	783.5	741.3	699.6
India	189.5	208.1	250.2
South Africa	265.1	270.4	257.9
Egypt	201.4	189.3	197.8
United States	221.7	240.3	272.1
China	231.3	243.1	504.5
Japan	154	159	153.1

98. For Kenya, and the East African countries, it is clear that much more energy is needed to generate one unit of wealth than other countries making these economies less competitive. To lower energy intensity, it is necessary to have in place national energy efficiency and conservation strategies that incorporate a judicial mix of investment in supply side capacity, and distribution losses and, promotion of end-use efficiency. The current transmission losses by KPLC of 20% are higher than the maximum acceptable values of 15%. (Source: KPLC annual reports, 2005, 2006).

99. Results from a previous GEF Project in Kenya, KEN98G31[8], have demonstrated that up to 30% of primary energy input in production process is wasted. This is an expensive situation for a country without adequate energy resources. These losses are

[7] Earth Trends, World Resources Institute - 2007

[8] Removal of barriers to energy efficiency and conservation to energy efficiency and conservation

due to poor energy management practices including use of inefficient technology, equipment and appliances.

100. In addition to energy wastage, inefficient energy consumption leads to increased GHG emission, thus contributing to climate change. Kenya has a per capita CO_2 production of 0.27 Kg in 2006[9] and a gross CO_2 production of 9million tons per annum.[10]

101. In 2006, the total energy related CO_2[11] emissions was 8,554,000Tons which is an increase of 83% from the 1990 CO_2 emissions of 4,664,00012 Tons of CO_2 equivalent.

Sustainability and Replicability

102. Through managing the risks and through systematically addressing the barriers that currently impede the market transformation for energy efficient products and services in Kenya and the other EAC countries, the project will bring about a positive market transformation.

103. The interventions aimed at restricting low quality, including second hand imports of equipment and appliances, will contribute greatly to the long-term sustainability of the proposed initiative. However, this positive impact will be dependent on creation of awareness, capacity development as well as verification and enforcement mechanisms of these interventions.

104. Investments in energy efficiency can be highly rewarding often with very attractive payback periods. In many cases the incremental cost is relatively low (ranging from 5-20% of the initial investment). This initiative therefore provides an interesting 'investment' opportunity for well-informed residential, commercial and industrial customers. Awareness raising activities included in this project will greatly assist consumers to make well-informed decisions.

105. The presence of a supportive energy policy and regulatory framework (Energy Act in Kenya) will establish long-term sustainability for energy efficiency interventions. It is anticipated that Government will make budget allocations to promote energy efficiency measures on a continuous basis.

106. Awareness creation through the project will spur large corporate players in the Kenyan market to take up the social responsibility more seriously and adopt the use of higher efficiency refrigerators, air conditioners, etc.

107. The introduction of energy standards and labels has proved to be highly viable in lowering energy consumption and improving energy efficiency in many countries. Due to its effectiveness, there has been growing interest in introduction of S&L throughout the world. The UNDP office in Paris has been advocating for a global approach to S&L. In Ghana, the Energy Commission has introduced energy labels

9 International Energy Agency (IEA)-2006,

10 IEA Key World Energy Statistics 2006

11 Calculated using the IPPC2006 IPCC Guidelines for National Greenhouse Gas Inventories

12 Earth Trends Source: Carbon Dioxide Information Analysis Center (CDIAC), World Resources Institute (WRI)

and developed a CDM project around the programme. The project will work closely with the UNDP Paris office to make a contribution to the global approach to S&L. This will further enable greater replication of the process in different countries at much lower costs.

108. The Renewable Energy and Energy Efficiency Partnership (REEEP) is also interested in the development of S&L in the region building on its success in Ghana. It has assisted Ghana in the development of its label and is willing to work with different countries in the region to replicate the Ghanaian experience. REEEP will be approached to work with the project in promoting S&L across the region.

109. The Collaborative Labeling and Appliance Standards Program (CLASP) is a global initiative to assist developing countries develop and implement S&L policies. CLASP has wide experience in developing and implementing S&L around the world and has expressed interest to be a partner in the project and to share experiences with others.

110. Key elements of a replication plan that will be put in place are the following:

- Stakeholders from industry, importers/retailers and consumer organizations will be fully involved in the implementation process and they will gain useful experience that can be used in similar projects.
- A comprehensive monitoring and evaluation system through the entire project. This will help to identify what works, what doesn't and why. Lessons will be extracted and through an aggressive communication and outreach plan disseminated both within Kenya, in the East-African region and beyond. The outcomes will also be integrated into national policy.
- A conformity assessment and enforcement system will be put in place to maintain the credibility of labels and standards.

Working with the EAC, the programme will be integrated in the regional energy policy framework as well as the Ministerial Committee on Energy.

Part III Management Arrangements

Project management

111. The Kenya Ministry of Trade and Industry will serve as the overall Executing Agency for the UNDP-GEF Full-Scale programme. The programme will be executed by the Government, under the UNDP National Executed (NEX) modality. Experience has shown that NEX provides the best opportunity for project support to Government Priorities and to ensure national ownership. The Kenya Bureau of Standards and the Kenya Association of Manufacturers (KAM will serve as implementing partners. In matters of standards development, enforcement and trade policies, the Ministry of Trade and Industry will take the lead.

112. KAM is an industry association whose members are drawn from manufacturing and commercial sectors. Therefore, KAM will form a crucial link to develop the labels, the MEPS and to raise awareness about them. KAM network and forums will be used to educate consumers from these sub-sectors, and to some extent, monitor and verify the extent of penetration. The major part of standards development will be carried out by KEBS who have the capacity and mandate to develop and enforce standards. Therefore, the Bureau will lead the standards development process. KAM will coordinate will focus on economic instruments, dissemination and awareness creation activities at industry level through the Centre for Energy Efficiency and Conservation.

113. For the day-to-day operation of the programme a Project Management Unit (PMU) will be established in the Ministry of Trade and industry. A full-time Project Manager (PM), a full-time senior economist/engineer and key support staff will be recruited. For the first two years of programme implementation a part-time international technical advisor with a national technical advisor focusing on programme management will be teamed up.

Composition of the PMU

- Project Manager,
- Senior Energy Standards engineer/Economist
- Administrative Assistant
- Support staff

114. Part-time national project coordinators will be appointed in Burundi, Rwanda, Tanzania and Uganda to ensure regional involvement and focus. They will be based at the focal ministry and will liaise with the PMU to coordinate activities at respective countries. These coordinators will be supported with national funds but some of their activities will be supported by GEF funds.

115. Nationally and internationally recruited experts will provide short-term consultant services as needed. Terms of reference for the project personnel are in Part III of the project document.

116. A Project Steering Committee (PSC) will be established with representatives from all the relevant national stakeholders including UNDP, KEBS, KAM, MTI, ME, consumer representatives, and national project coordinators from each country as ex-officio members. At the appropriate stage, each country will establish a PSC. The representation of the most relevant ministries in the PSC will ensure consistency with national policies and increase the likelihood of sustainability. A complete list of identified stakeholders and the Terms of Reference for the PSC are in Part III of the project document.

117. The PSC will take decisions on project implementation and will consider inputs from an advisory board that would be formed by the wider stakeholder group consisting of the national project coordinators from Burundi, Rwanda, Tanzania and Uganda, representatives of the Kenya Government, private sector, financial community, academia, NGO's, etc.

118. A Project Inception Workshop with all the key stakeholders will kick off the implementation process. A detailed work plan with budget, monitoring plan, details on coordination arrangement, will be presented and discussed and agreed upon by all the stakeholders. Targets and indicators for subsequent years would be defined annually as part of the internal evaluation and planning processes undertaken by the PMU.

119. "In order to accord proper acknowledgement to GEF for providing funding, a GEF logo should appear on all relevant GEF project publications, including among others, project hardware and vehicles purchased with GEF funds. Any citation on publications regarding projects funded by GEF should also accord proper acknowledgment to GEF. The UNDP logo should be more prominent -- and separated from the GEF logo if possible, as UN visibility is important for security purposes."

Part IV Monitoring and Evaluation Plan

120. The Monitoring and Evaluation Plan (M & E) will be based on the attached Logical Framework which is integral to the project implementation. The Project M & E will be established to conform with the GEF guidelines, and is based on SMART(Specific, Measurable, Attainable, Relevant, and Time bound) indicators. The project will be monitored and evaluated according to standard UNDP rules for nationally executed projects. For each of the seven components, a monitoring plan will be prepared during the project's inception phase. Appropriate and specific performance benchmarks will be established to effectively monitor project progress and to make crucial management decisions. An annual reporting cycle will be established for this project that will provide progress reports.

121. Project monitoring and evaluation (M&E) will be conducted in accordance with established GEF procedures as well as following new UNDP procedures in the ATLAS system. Project M&E provided by the project team, supported by UNDP, i.e., the UNDP Country Office (CO) and the UNDP-GEF Regional Coordinating Unit (RCU). The Logical Framework Matrix in Section B provides *performance* and *impact* indicators for project implementation along with their corresponding *means of verification*. These will form the basis on which the project's Monitoring and Evaluation system will be built throughout the 5-year implementation period.

122. The principle components of the Monitoring and Evaluation Plan will include: (1) establishing monitoring responsibilities and events, (2) project reporting and (3) independent evaluations. The project's Monitoring and Evaluation Plan will be presented and finalized at the Project's Inception Report following a collective fine-tuning of indicators, means of verification, and the full definition of project staff M&E responsibilities.

Monitoring responsibilities and events

123. A detailed schedule of project reviews meetings will be developed by the project management unit, in consultation with project implementation partners and stakeholder representatives and incorporated in the Project Inception Report. This schedule will include: (i) tentative time frames for Steering and Advisory Committee Meetings and (ii) project related Monitoring and Evaluation (M&E) activities.

124. Day-to-day monitoring of implementation progress will be the responsibility of Project Management Unit and the regional part time coordinators, based on the project's Annual Work plan (Strategic Planning Matrix) and its indicators. The PMU will inform the UNDP CO of any delays or difficulties faced during implementation so that the appropriate support or corrective measures can be adopted in a timely fashion.

125. Periodic monitoring of implementation progress will be undertaken by the Project Steering Committee (PSC) through its meetings. This will allow parties to take stock and to troubleshoot any problems pertaining to the project in a timely fashion to ensure smooth implementation of project activities.

126. UNDP Country Office and UNDP-GEF Regional Coordination Unit are responsible for monitoring the project on a continuous basis and can conduct, as appropriate, visits to the project and field sites to assess first hand project progress. Any other member of the Project Steering Committee can also accompany, as decided by the Committee. A Field Visit Report will be prepared by the CO and circulated no less than one month after the visit to the project team, all PSC members and UNDP-GEF.

127. Annual Monitoring will occur through the APR-PIR process. The APR-PIR will highlight policy issues and recommendations for the decision of the PSC participants. The Project Manager will inform the project participants of any agreement reached by stakeholders during the APR preparation on how to resolve operational issues. Separate reviews of each project component may also be conducted if necessary.

Project reporting; learning and knowledge sharing

128. The Project Manager will be responsible for the preparation and submission of the following reports that form part of the monitoring process as well as those related to knowledge sharing.

129. Work Planning. A Project Inception Workshop will be organized with all the key stakeholders to kick off the implementation process. A detailed work plan with budget, monitoring plan, and details on coordination arrangement will be presented and discussed and agreed upon by all the stakeholders. Targets and indicators for subsequent years would be defined annually and approved by the PSC as part of the internal evaluation and planning processes undertaken by the PMU.

130. Annual Project Report (APR) - Project Implementation Review (PIR). The APR-PIR is a UNDP and GEF requirement to facilitate central oversight, monitoring and project management. It is a self-assessment report by project management to the CO, providing inputs to the CO reporting process, as well as forming a key input to the UNDP/GEF M&E Unit, which analyzes the APR-PIRs by focal area, theme and region for common issues/results and lessons.

131. Quarterly Progress and Financial Reports. Short reports outlining main updates in project progress will be provided quarterly to the local UNDP Country Office (and forwarded to the UNDP-GEF RCU) by the Project Manager.

132. Baseline and end-of-project reports. The PMU will commission an independent consultant to prepare a report, describing the baseline situation. The baseline study will establish a baseline which will be used for the quantitative evaluation of outputs and impacts of the project. A study will be undertaken at the end of the project to capture the impacts.

Table 8: Indicative M&E work plan and budget for the project

Type of M&E activity	Responsible Parties	Budget US$	Time frame
Strategic Planning Matrix (annual work plan)	▪ Project Team ▪ UNDP CO	0	Annually, first SPM immediately following approval of the project
Baseline and End-of Project Study of Project Indicators	▪ PMU ▪ Hired consultant	12,000	Start and end of project.
Measurement of Means of Verification for Project Progress and Performance (measured annually)	▪ Oversight by UNDP-GEF RCU and Project Manager ▪ Counterpart organizations in the field or hired consultants on an as-needed basis	Part of the SPM's preparation.	Annually prior to APR/PIR and to the definition of annual work plans
APR-PIR	▪ PMU ▪ UNDP-CO ▪ UNDP-GEF	0	Annual
Steering Committee Meetings	▪ Project Manager ▪ UNDP CO		Following Project IW and held regularly
Technical reports	▪ PMU ▪ Hired consultants	As part of project activities	To be determined by Project Team and UNDP-CO
Mid-Term Evaluation	▪ PMU ▪ Hired consultants	36,000	Half a year before end of Phase I
Final External Evaluation	▪ PMU ▪ UNDP-CO ▪ UNDP-GEF RCU ▪ External Consultants (i.e. evaluation team)	40,000	At the end of project implementation
Terminal Report	▪ PMU ▪ UNDP-CO		At least one month before the project's end
Lessons learned	▪ PMU ▪ UNDP-GEF RCU (suggested formats for documenting best practices, etc)		Annual
Audit	▪ UNDP-CO ▪ PMU		Annual
Visits to field sites (UNDP staff travel costs to be charged to IA fees)	▪ UNDP CO ▪ UNDP-GEF RCU (as appropriate) ▪ Government representatives		Annual
TOTAL INDICATIVE COST Excluding project team staff time and UNDP staff and travel expenses.		US$88,000	

133. Project Terminal Report. During the last three months of the project the project team will prepare the Project Terminal Report. This comprehensive report will summarize all activities, achievements and outputs, objectives met (or not achieved!) of the Project, as well as lessons learnt and structures and systems implemented. It

will also lay out recommendations for any further steps that need to be taken to ensure sustainability and replicability of the Project's activities.

134. Project reports and publications. Technical Reports are detailed documents covering specific areas of analysis, usually done in consultancy assignment in selected activities. The PMU revises and regularly updates a Reports List that is included in subsequent APR-PIRs.

135. Results from the project will be disseminated through a number of existing information sharing networks and forums. The project will participate, as appropriate, in UNDP and GEF sponsored knowledge networks, particularly the energy efficiency networks organized for staff working on activities that share common characteristics. The project will identify, analyze, and share lessons learned that might be beneficial in the design and implementation of similar future projects.

Independent evaluation

136. The project will be subjected to at least two independent external evaluations as follows:

137. Mid-term Evaluation

An independent Mid-Term Evaluation would be conducted at the mid-point of the implementation process. The Mid-Term Evaluation will focus on the effectiveness, efficiency and timeliness of project implementation, highlight issues and present some lessons learned about project design, implementation and management. This report will recommend the direction, pace and activities of the remaining half of the project implementation.

138. Final Evaluation

An independent Final Evaluation will take place prior to the project's termination. The Terms of Reference for this Final Evaluation will be prepared by both the UNDP CO, and the UNDP-GEF RCU based on prevailing guidelines.

139. Audit Clause

The Government will provide the Resident Representative with certified periodic financial statements, and with an annual audit of the financial statements relating to the status of UNDP (including GEF) funds according to the procedures set out in Section 30503 of the UNDP Policies and Procedures Manual (PPM) and Section 10404 of the UNDP Finance Manual. The Audit will be conducted by the legally recognized auditor of the Government, or by a commercial auditor engaged by the Government.

Part V Legal Context and Other Arrangements

140. This Project Document shall be the instrument referred to as such in Article I of the Standard Basic Assistance Agreement between the Government of Kenya and the United Nations Development Programme, signed by the parties in January 1991. The host country implementing agency shall, for the purpose of the Standard Basic Assistance Agreement, refer to the government co-operating agency described in that Agreement.

141. The UNDP Resident Representative in Nairobi is authorized to effect in writing the following types of revision to this Project Document, provided that he/she has verified the agreement thereto by the UNDP-GEF Unit and is assured that the other signatories to the Project Document have no objection to the proposed changes:

a Revision of, or addition to, any of the annexes to the Project Document;

b Revisions which do not involve significant changes in the immediate objectives, outputs or activities of the project, but are caused by the rearrangement of the inputs already agreed to or by cost increases due to inflation;

c Mandatory annual revisions which re-phase the delivery of agreed project inputs or increased expert or other costs due to inflation or take into account agency expenditure flexibility; and

d Inclusion of additional annexes and attachments only as set out here in this Project Document

SECTION II. STRATEGIC RESULTS FRAMEWORK AND GEF INCREMENTAL COSTS

Part I Incremental Cost Analysis

139. The incremental costs associated with this project are considered to be the costs of the activities designed to remove the primary barriers to the market transformation of energy efficient products and services.

140. The total cost of the project is US$ 11.21 million, with US$ 2.35 million of that corresponding to the incremental costs to be funded by GEF, or approximately 21% of the overall budget. Cash co-financing contributions amount to US$5.7 million distributed as follows: Government of Kenya, ($5.48 million), Kenya Association of Manufacturers ($ 0.26 million) and UNDP Kenya ($ 0.25 million). The in-kind contributions amount to US$ 2.76 million) and comes from a variety of sources in the Kenya including public and private sectors. A total of US$ 1.39 million will be provided for investments in energy efficient equipment and appliances by industry players and is considered parallel financing.

Incremental Costs Matrix

Project Outcomes	Baseline	Alternative	GEF-Increment
Outcome 1: *Selection and adoption of international test procedures, minimum energy performance standards and label classifications.*	Under the baseline scenario it is not anticipated that international test procedures, minimum energy performance standards and label classifications will be identified, adopted and introduced in Kenya.	International test procedures, minimum energy performance standards and a minimum of three EU label classifications will be identified, adopted and introduced in Kenya.	International test procedures, minimum energy performance standards and a minimum of three EE label classifications will be successfully introduced in Kenya and replicated into the other EAC countries, thereby creating the basis for energy efficiency improvements in the residential, commercial and industrial sectors.
	Cost: USD 0	Cost: USD 200,000 (GEF) USD 700,000 (cash Governments) USD 450,000 (in-kind Governments) Total: USD 1,350,000	**Incremental cost:** USD 200,000 (GEF) USD 700,000 (cash Governments) USD 450,000 (in-kind Governments) **Total: USD 1,350,000**
Outcome 2:	As test procedures, minimum	Product energy performance compliance will be	Pre-export inspections will be

Development & implementation of a verification & enforcement system.	energy performance standards and label classification are not anticipated to be implemented under the baseline scenario; there will be no need – and consequently no action – for the development & implementation of a verification and enforcement system under the baseline scenario.	added to existing – and possibly expanded – pre-export inspections. Establishment of trade inspections to enhance distributor and retailer compliance checking on counterfeits and fraudulent products. Capacity strengthening of inspectors of second-hand product imports. Establishment of a legal enforcement system for follow-up on non-compliance with regulations.	enhanced with product energy performance compliance (MEPS and labels). Trade inspections in place to enhance compliance checking on counterfeits and fraudulent products as well as a legal enforcement system for follow-up on non-compliance with regulations Capacity of inspectors of second-hand product imports will be strengthened.
	Cost: USD 0	Cost: USD 600,000 (GEF) USD 2,519,791 (cash Governments) USD 750,000 (in-kind Governments) Total: USD 3,869,791	**Incremental cost:** USD 600,000 (GEF) USD 2,519,791 (cash Governments) USD 750,000 (in-kind Governments) **Total: USD 3,869,791**
Outcome 3: *Awareness raising campaign for standards and labels, targeting distributors, retailers and end-users.*	Under the baseline scenario no specific awareness raising on standards and labels is anticipated although some general awareness raising on energy conservation and energy efficiency will be undertaken that can be considered relevant parallel activities.	Awareness raising campaign for standards and labels targeting distributors, retailers and end-users will be undertaken. Importers, distributors and retailers will be made aware of appliance energy efficiency and minimum energy performance standards. Activities will be replicated in other EAC countries.	Awareness raising campaign for standards and labels targeting distributors, retailers and end-users will be undertaken in Kenya and other EAC countries Importers, distributors and retailers will be made aware of appliance energy efficiency and minimum energy performance standards in Kenya .
	Cost: USD 100,000 (in-kind)	Cost: USD 200,000 (GEF) USD 800,000 (cash Governments) USD 537,111 (in-kind Governments) Total: USD 1,537,111	**Incremental cost:** USD 200,000 (GEF) USD 800,000 (cash Governments) USD 437,111 (in-kind Governments) **Total: USD 1,437,111**

Outcome 4: *Development of voluntary agreements for efficient commercial display refrigerators and hotel air conditioners.*	No voluntary agreements between Government(s) and purchasers of commercial display refrigerators and hotel air-conditioners are anticipated under the baseline scenario.	Analysis of appropriate levels of energy performance standards for commercial refrigerators and hotel air conditioners. Discussions between DTI and MofE in Kenya and key procurers of commercial refrigerators and hotel air conditioners (bottlers, breweries and hotel chains) of a voluntary agreement on energy performance levels. Propose – and if agreed – implement the voluntary agreement(s).	Analysis, discussion and implementation – if considered appropriate – of voluntary agreements on (minimum) energy performance levels of commercial refrigerators and hotel air conditioners.
	Cost: USD 0	Cost: USD 100,000 (GEF) USD 400,000 (cash Governments) USD 300,000 (in-kind Governments) Total: USD 800,000	**Incremental cost:** USD 100,000 (GEF) USD 400,000 (cash Governments) USD 300,000 (in-kind Governments) **Total: USD 800,000**
Outcome 5: *Policy support & policy framework.*	In the context of the existing energy policies in Kenya and the other EAC countries, activities for refining and fine-tuning energy policies to include energy efficiency and energy conservation measures will be undertaken under the baseline scenario. It is however anticipated that this will be rather slow and will hardly focus on standards and labels. These activities will however assist the here presented initiative.	Refining and putting in place a policy and implementation framework that increases the uptake of energy efficient equipment and appliances by major market players in the residential, commercial and industrial sectors. Strengthening of the capacity of individuals and institutions that are involved in creating the enabling policy setting and implementation environment for increased uptake of energy efficient equipment and appliances.	A favorable energy efficiency policy and policy framework that includes standards and labels, has been prepared and put in place. The individual and institutional capacities required to set such policy and the implementation thereof has been strengthened.
	Cost: USD 250,000	Cost: USD 200,000 (GEF)	**Incremental cost:** USD 200,000 (GEF)

		USD 900,000 (cash Governments) USD 550,000 (in-kind Governments) Total: USD 1,650,000	USD 900,000 (cash Governments) USD 300,000 (in-kind Governments) **Total: USD 1,400,000**
Outcome 6: *Learning and replication.*	No structured learning and dissemination of activities in the baseline scenario. Limited ability to learn from projects both within Kenya and the other EAC countries.	Closely follow the implementation of activities under components 1 to 6 in Kenya and prepare a programme for replication of these activities in the other EAC countries. The impact of the market transformation activities will be closely measured and monitored making use of pre-determined indicators that will be finalized during project inception. Dissemination of lessons learned and replication of experiences into the other EAC countries.	Detailed information on project implementation will be available for steering project implementation. Lessons learned are properly documented in a format that can be easily disseminated to main actors in Kenya and the other EAC countries.
	Cost: USD 0	Cost: USD 600,000 (GEF) USD 600,000 (cash Governments) USD 400,000 (in-kind Governments) Total: USD 1,600,000	**Incremental cost:** USD 600000 (GEF) USD 600,000(cash Governments) USD 400,000 (in-kind Governments) **Total: USD 1,600,000**
(Impact) Monitoring and Evaluation	No monitoring of impacts on CO2 emission reductions will occur.	To design a baseline, indicators and means of verification for monitoring impacts on CO2 emission reductions Implement the impact monitoring and evaluation scheme on an annual basis.	Impacts resulting from the proposed intervention have been measured, analyzed and serve as a management tool for the project management team.
	Cost: USD 0	Cost: USD 100,000 (GEF) USD 80,000 (cash Governments) USD 24,000 (in-kind Governments) Total: USD 204,000	**Incremental cost:** USD 100,000 (GEF) USD 80,000(cash Governments) USD 24,000 (in-kind Governments) **Total: USD 204,000**

Total Costs	Cost: USD 400,000 (in-kind)	Cost: USD 450,000 (PDF Block B) USD 2,000,000 (GEF) USD 5,999,791(cash) USD 3,161,111 (in-kind) Total: USD1 1,610,902	**Incremental cost:** USD 450,000 (PDF Block B) USD 2,000,000 (GEF) USD 5,999,791 (cash) USD 2,761,111 (others) **Total: USD 11,210,902**
Global Environmental Benefits	An estimated 1.6 million tonnes of CO2 emissions avoided over 20-30 years in Kenya and the other EAC countries due to anticipated baseline activities in the context of energy efficiency and energy conservation.	In total, the expected impact is the reduction of almost 15 million tonnes CO_2, of which about 2 million tonnes is the direct impact (2007-2026), and 13 million the indirect impact calculated over the period 2007-2036.	The total estimated impact in Kenya is a reduction of 8.5 million tonnes of CO_2, and in the other East African Community countries 4.85 million tonnes CO_2. In total, the expected impact is the reduction of 13.36 million tonnes CO_2, of which 1.96 million tonnes is the direct impact (2007-2026), and 11.38 million the indirect impact calculated over the period 2007-2036.
Domestic Benefits	Limited energy savings will be achieved under the baseline scenario, thereby creating limited financial benefits for electricity end-users and moreover industry and commerce will reduce their (inter) national competitiveness.	The proposed activities under components 1 to 6 lead to reduced energy consumption, resulting in reduced energy costs, improved competitiveness of the manufacturing of products and provision of processes.	Nationwide in Kenya the energy savings as a result of the combined direct and indirect impacts are 17 TWh. As most additional energy in Kenya in the future years is to come from imported fossil fuels, this will have a substantial impact on saving foreign currencies. Total energy savings of the other EAC countries amounts to 9.7 TWh, which is also largely based on power generated from imported

			fossil fuels and hence the proposed initiative will have a substantial impact on saving foreign currencies. Improved competitiveness for the manufacturing and commercial sectors, which is especially true for energy (electricity) intensive production processes and or services.

Part II Logical Framework Analysis

Annex A: Project Planning Matrix

PROJECT STRATEGY (Objectives, outcomes, outputs)	Baseline Indicator	Final Target Indicator	Sources of verification	Assumptions/risks
The **goal** of the proposed initiative is to reduce Kenya's energy related CO_2 emissions by improving the energy efficiency of selected appliances and equipment in the residential, commercial and industrial sectors	• Kenya has a high energy intensity per unit GDP compared to many of its trading partners. • Opportunities for improving energy efficiency lie in the supply of more efficient models of electric and non-electric appliances and equipment. • Based on the extent of usage, degree of consumption and energy conservation potential, main equipment and appliances include motors, boilers, heaters and furnaces, freezers, ventilation and lighting in the industrial sector and air conditioning, refrigeration, water heaters and cooking stoves in the commercial and	• Average energy efficiency of electricity consuming appliances in the commercial and residential sectors has been increased by 20% for the products selected for targeted interventions • MEPS introduced for energy efficient motors (efficiency class 2 – 90% compliance); domestic refrigerators (EU C-level – 100% compliance); air-conditioners (EU C-level – 100% compliance). • Labels will be introduced for energy efficient motors (efficiency class 1 – 30% response); domestic refrigerators (EU A/B-levels – 10% response); air-conditioners (EU A/B-levels – 10% response. • Voluntary agreement (using Australian MEPS levels) for commercial display refrigerators will be introduced (50% response). • Energy efficiency recognized in national polices and activities started in all the countries of the EAC	• Target industrial end-user surveys(energy audits) • Monitoring reports that will be prepared at 12 months intervals assessing the situation against the baseline at the inception of project. • National Development Plans and other government planning reports.	• Electricity tariffs will reflect real costs. • Compliance with introduced standards and adequate responses to labels. • Government support to the proposed initiative will remain strong from beginning to end of the 5-year project implementation

PROJECT STRATEGY (Objectives, outcomes, outputs)	Baseline Indicator	Final Target Indicator	Sources of verification	Assumptions/risks
	residential sectors			
DEVELOPMENT OBJECTIVE The **objective** is to remove the barriers that are currently hampering the rapid and widespread uptake of energy efficient motors in the industrial sector; refrigerators in the residential; display refrigerators in the commercial sector; air-conditioners in the commercial sector; and lighting in the residential, commercial and industrial sectors.	Kenya still needs much more energy to keep pace with its development objectives. In 2004 it consumed 616,830 million tonnes of fuel oil that went up from 534,691 in 2003, an increase of 15%. Power consumption also surged by 100 MW in the same period. It is therefore necessary to have a national energy efficiency and conservation strategy that incorporates a judicial mix of investment in supply side capacity, improving operational efficiency of existing power generating stations, reduction of transmission and distribution losses, and promotion of end-use efficiency.	• Volume of sales of energy efficient equipment and appliances in the five categories has been increased by 40% by the end of the project	• Project implementation and progress reports. • Dealer surveys. • Market surveys. • Information from the revenue authority	• Electricity tariffs will reflect real costs. • • Compliance with introduced standards and adequate response to labels
OUTCOME 1 **Outcome 1: Selection and adoption of international test procedures, minimum**	No standard and label programme in existence at present.	• National Test Procedures adopted by Bureau of Standards • Label scheme identified and adopted • Printed labels	• Bureau of Standards committee minutes and reports • Publication by KEBs and	• Bureau of Standards (pro) active involvement in the proposed initiative.

PROJECT STRATEGY (Objectives, outcomes, outputs)	Baseline Indicator	Final Target Indicator	Sources of verification	Assumptions/risks
energy performance standards and label classifications.			consumer groups	
Output 1.1: Selection and adoption of appropriate international test procedures for appliance energy efficiency in Kenya	No standard and label programme in existence at present.	• Inventory of appropriate test procedures • Adoption and use of relevant test procedures for appliances and equipment • Voluntary agreement (using Australian MEPS levels) for commercial display refrigerators will be introduced (50% response).	• Project implementation and progress reports. • Reports from the Bureau of Standards. • Documents from the Revenue Authorities. • Labels placed on appliances in retail shops. • End-user surveys.	• Compliance with introduced standards and adequate responses to labels. • Bureau of Standards (pro) active involvement in the proposed initiative.
Output 1.2: Selection and adoption of appropriate international label classification.	No standard and label programme in existence at present.	• MEPS will be introduced for energy efficient motors (efficiency class 2 – 90% compliance); domestic refrigerators (EU C-level – 100% compliance); air-conditioners (EU C-level – 100% compliance). • Labels will be introduced for energy efficient motors (efficiency class 1 • domestic refrigerators (EU A/B-levels • air-conditioners (EU A/B-levels • Voluntary agreement (using Australian MEPS levels) for commercial display refrigerators will be introduced (50% response).	• Project implementation and progress reports. • Reports from the Bureau of Standards. • Documents from the Revenue Authorities. • Labels placed on appliances in retail shops. • End-user surveys.	• Compliance with introduced standards and adequate responses to labels. • • Bureau of Standards (pro) active involvement in the proposed initiative.
Output 1.3: Selection and adoption of three minimum energy performance standards and one quality standard.	No standard and label programme in existence at present.	• MEPS will be introduced for energy efficient motors (efficiency class 2 – 90% compliance); domestic refrigerators (EU C-level – 100% compliance); air-conditioners (EU C-level – 100% compliance).	• Project implementation and progress reports. • Reports from the Bureau	• Compliance with introduced standards and adequate responses to labels. • Bureau of Standards (pro)

PROJECT STRATEGY (Objectives, outcomes, outputs)	Baseline Indicator	Final Target Indicator	Sources of verification	Assumptions/risks
		• Labels will be introduced for energy efficient motors (efficiency class 1 – 30% response); domestic refrigerators (EU A/B-levels – 10% response); air-conditioners (EU A/B-levels – 10% response. • Voluntary agreement (using Australian MEPS levels) for commercial display refrigerators will be introduced (50% response). • CFL quality standards introduced from ELI	of Standards. • Documents from the Revenue Authorities. • Labels placed on appliances in retail shops. • End-user surveys.	active involvement in the proposed initiative.
Outcome 2: Development & implementation of a verification & enforcement system	No standard and label programme in existence at present. No enforcement of energy efficiency products	• A legal enforcement system has been designed and (pilot) tested for imports and local sales. • Inspectors at Bureau of standards trained in energy efficiency compliance and regulations • 30% of Revenue Authority staff involved in trade inspections will be made aware and trained in energy efficiency regulations, compliance checking of energy efficient products and banning inefficient domestic refrigerators.	• Pre-shipment schedules and inspection reports. • Project implementation and progress reports. • Notices from Revenue authorities or Bureau of Standards. • KRA inspection reports. • Documentation on the legal enforcement system.	• Bureau of Standards, Revenue authority and trade authorities (pro)actively involved in the proposed initiative. • Government support for setting up – and implementing – a legal enforcement system.
Output 2.1: Integration of product energy performance compliance checking with Kenyan pre-export inspections	No standard and label programme in existence at present.	• Pre-shipment inspections that are currently being carried out on equipment and appliances from the 5 categories will add energy efficiency as part of the pre-inspection.	• Pre-shipment inspection reports. • Project implementation and progress reports. • Pre-shipment inspection documents. • Documentation on the	• Bureau of Standards, Revenue authority and trade authorities (pro)actively involved in the proposed initiative. • Government support for setting up – and implementing – a legal enforcement system

PROJECT STRATEGY (Objectives, outcomes, outputs)	Baseline Indicator	Final Target Indicator	Sources of verification	Assumptions/risks
			legal enforcement system.	
Output 2.2: Capacity building at the KRA for inspection of second-hand product imports.	No standard and label programme in existence at present. No training on S&L	• 30% of Revenue Authority staff involved in trade inspections will be made aware and trained in energy efficiency regulations, compliance checking of energy efficient products and banning inefficient domestic refrigerators.	• Training reports • Revenue authority reports • Certificates of attendance • Kenyan pre-inspection documents (from KEBS and KRA).	• KEBS and KRA (pro)actively involved in the proposed initiative. • Government support for setting up – and implementing – a legal enforcement system
Output 2.3: Establishment of trade inspections, for distributor and retailer compliance checking on counterfeits and fraudulent products.	No standard and label programme in existence at present	• All pre-inspections that are currently being carried out on equipment and appliances from the 5 categories will add energy efficiency as part of the pre-inspection. • Throughout the project lifetime 50% of KRA staff involved in trade inspections will be made aware and trained in energy efficiency regulations, compliance checking of energy efficient products and banning inefficient domestic refrigerators	• Pre-shipment inspection reports. • Project implementation and progress reports. • Kenyan pre-inspection documents (from KEBS and KRA).	• KEBS and KRA (pro)actively involved in the proposed initiative. • Government support for setting up – and implementing – a legal enforcement system
Output 2.4: Establishment of a legal enforcement system, for follow-up on non-compliance with regulations.	No standard and label programme in existence at present	• All pre-inspections that are currently being carried out on equipment and appliances from the 5 categories will add energy efficiency as part of the pre-inspection. • Throughout the project lifetime 50% of KRA staff involved in trade inspections will be made aware and trained in energy efficiency regulations, compliance checking of energy efficient products and banning inefficient domestic refrigerators	• Pre-shipment inspection reports. • Project implementation and progress reports.	• KEBS and KRA (pro)actively involved in the proposed initiative. • Government support for setting up – and implementing – a legal enforcement system
Outcome 3: Awareness raising campaign for standards and labels, targeting distributors, retailers and end-users.	No standard and label programme in existence at present	• At the end of the project the top-10 retailers and distributors will be fully aware of the energy efficiency benefits of the equipment and appliances from all 5 categories and will be able to transmit energy efficiency benefits to consumers and (industrial) end-users	• Distributors and retailer surveys, including urban retailer shops. • Information and awareness packages in other EAC countries.	• Interested consumers and end-users. • Market actors are willing to cooperate in providing this information

PROJECT STRATEGY (Objectives, outcomes, outputs)	Baseline Indicator	Final Target Indicator	Sources of verification	Assumptions/risks
		• Compared with the baseline, at the end of the project 40% of the urban, electricity consumers (residential and commercial) are aware of the benefits of energy efficient domestic refrigerators, air conditioners and CFLs. • Compared with the baseline, at the end of the project 50% of appropriate staff in the industrial sectors will be aware of the benefits of energy efficient motors and will know how to act on improving the energy efficiency in their industrial environments. • Energy efficiency awareness in other EAC countries has increased	• Regional end-user and market survey in the other EAC countries to determine EE awareness	
Output 3.1: Informing importers, distributors and retailers about appliance energy efficiency in Kenya	No standard and label programme in existence at present	• Material developed and applied for informing importers and import authorities. • At the end of the project the top-10 retailers and distributors will be fully aware of the energy efficiency benefits of the equipment and appliances from all 5 categories and will be able to transmit energy efficiency benefits to consumers and (industrial) end-users	• Distributors and retailer surveys, including urban retailer shops. • Information and awareness packages in other EAC countries. • Regional end-user and market survey in the other EAC countries	• Interested consumers and end-users. • Market actors are willing to cooperate in providing this information
Output 3.2: Development and delivery of a training programme for distributor and retailer staff in Kenya.	No standard and label programme in existence at present	• Training delivered in major towns. • At the end of the project the top-10 retailers and distributors will be fully aware of the energy efficiency benefits of the equipment and appliances from all 5 categories and will be able to transmit energy efficiency benefits to consumers and (industrial) end-users	• Distributors and retailer surveys, including urban retailer shops. • Information and awareness packages in other EAC countries. • Regional end-user and market survey in the other EAC countries	• Interested consumers and end-users. • Market actors are willing to cooperate in providing this information

PROJECT STRATEGY (Objectives, outcomes, outputs)	Baseline Indicator	Final Target Indicator	Sources of verification	Assumptions/risks
Output 3.3: Awareness raising in other East African countries.	No standard and label programme in existence at present	• Awareness on S&L created among government, trade authorities, Bureau of standards , importers and traders. • At the end of the project the top-10 retailers and distributors will be fully aware of the energy efficiency benefits of the equipment and appliances from all 5 categories and will be able to transmit energy efficiency benefits to consumers and (industrial) end-users	• At the end of the project the top-10 retailers and distributors will be fully aware of the energy efficiency benefits of the equipment and appliances from all 5 categories and will be able to transmit energy efficiency benefits to consumers and (industrial) end-users • Distributors and retailer surveys, including urban retailer shops. • Information and awareness packages in other EAC countries. • Regional end-user and market survey in the other EAC countries	• Interested consumers and end-users. • Market actors are willing to cooperate in providing this information
Outcome 4: Development of voluntary agreements for efficient commercial display refrigerators and hotel air conditioners.	No standard and label programme in existence at present	• Appropriate levels of energy consumption for commercial display refrigerators in Kenya have been set based on international levels and experiences before the end of the first year of the project. • If appropriate 2-4 voluntary agreements will be designed and entered into.	• Minutes of meetings with market actors involved in commercial display refrigerators. • Project files. • Draft and final voluntary agreements.	The 2-4 main market actors are willing to cooperate
Output 4.1: Analysis of appropriate target levels for the energy performance of commercial display refrigerators and hotel air conditioners.	No standard and label programme in existence at present	• Appropriate levels of energy consumption standards for commercial display refrigerators in Kenya have been set based on international levels and experiences before the end of the first year of the project. • Air conditioners energy consumption standards established • If appropriate 2-4 voluntary agreements will be designed and entered into.	• Project files. • Draft and final voluntary agreements.	• The 2-4 main market actors are willing to cooperate

PROJECT STRATEGY (Objectives, outcomes, outputs)	Baseline Indicator	Final Target Indicator	Sources of verification	Assumptions/risks
Output 4.2: Discussion of a voluntary agreement with stakeholders, including the two key procurers of display refrigerators and the hotel sector; main suppliers of these products; the national utility and the government of Kenya (DTI and MofE).	No standard and label programme in existence at present	• Appropriate levels of energy consumption for commercial display refrigerators in Kenya have been set based on international levels and experiences before the end of the first year of the project. • A minimum of 3 meetings will be conducted in years 2, 3 and 4 of the project implementation between the PMU and the 2-4 main market actors involved in commercial display refrigerators. • If appropriate 2-4 voluntary agreements will be designed and entered into.	• Project files. • Draft and final voluntary agreements.	• The 2-4 main market actors are willing to cooperate
Output 4.3: Proposing – and if agreed – implementing a voluntary agreement.	No standard and label programme in existence at present	• Appropriate levels of energy consumption for commercial display refrigerators in Kenya have been set based on international levels and experiences before the end of the first year of the project. • A minimum of 3 meetings will be conducted in years 2, 3 and 4 of the project implementation between the PMU and the 2-4 main market actors involved in commercial display refrigerators. • If appropriate 2-4 voluntary agreements will be designed and entered into.	• Project files. • Draft and final voluntary agreements.	• The 2-4 main market actors are willing to cooperate
Outcome 5: Policy support & policy framework.	No standard and label programme in existence at present	• The Centre for Energy Efficiency and Conservation at KAM is successfully operating and continues to receive active Government support. • Energy efficiency activities taken up in other countries	• National Development Plans and budget • Other Government planning reports. • Project files. • CEEC annual reports	• Government will continue commitment in energy efficiency •
Output 5.1: Refining and putting in place a policy and implementation framework that increases the uptake of energy efficient equipment and appliances by major	No standard and label programme in existence at present	• Energy efficiency recognized in national polices and activities started in all the countries of the EAC	National Development Plans and other Government planning reports. Project files. CEEC annual reports.	•

PROJECT STRATEGY (Objectives, outcomes, outputs)	Baseline Indicator	Final Target Indicator	Sources of verification	Assumptions/risks
market players in the residential, commercial and industrial sectors.				
Output5.2: strengthening of the capacity of individuals and institutions that are involved in creating the enabling policy setting and implementation environment for increased uptake of energy efficient equipment and appliances.	No standard and label programme in existence at present	• Targeted officers in ministries of trade and Energy and those involved in S&L programme fully exposed and experienced in s&l application and benefits •	• Training reports • Project files. • Study tour reports • M&E reports	
Outcome 6: Learning and replication	No standard and label programme in existence at present	• A rollout programme for the other EAC countries designed. • The EAC countries actively involved in the S&L programme • A monitoring plan developed at the outset of the project implementation to extract information needed for appropriate steering of the project's implementation. • All countries in the EAC actively involved in creating awareness and sharing lessons learned from Kenya on Energy Efficiency Standards and Labels. •	• Regional market survey • Monitoring plan. • Lessons learned reports. • Project files, monitoring reports.	• Platform for EAC standardizations functions properly and is actively involved in the proposed initiative • Successful implementation of the proposed initiative.
Output 6.1: Preparing a programme for replication of activities implemented under components 1 to 5.	No standard and label programme in existence at present	• A rollout programme for the other EAC countries designed. • A monitoring plan developed to extract information needed for appropriate steering of the project's implementation. •	• Regional market survey • Monitoring plan. • Lessons learned reports. • Project files, monitoring reports.	• Platform for EAC standardizations functions properly and is actively involved in the proposed initiative • Successful implementation of the proposed initiative.
Output 6.2: Introduction of the test procedures, standards	No standard and label programme in	• A monitoring plan will be developed at the outset of the project implementation to extract	• Regional market survey	• Platform for EAC standardizations functions

PROJECT STRATEGY (Objectives, outcomes, outputs)	Baseline Indicator	Final Target Indicator	Sources of verification	Assumptions/risks
and labeling schemes in the other East African countries via the EAC cooperation on standards.	existence at present	information needed for appropriate steering of the project's implementation. • A rollout programme for the other EAC countries will be designed.	• Monitoring plan. • Lessons learned reports. • Project files, monitoring reports	properly and is actively involved in the proposed initiative • Successful implementation of the proposed initiative.
Output 6.2: Introduction of the test procedures, standards and labeling schemes in the other East African countries via the EAC cooperation on standards.	No standard and label programme in existence at present	• Up to 50% of the Kenya-based interventions will be adopted in the EAC mainly by use of the EAC standards platform. • A monitoring plan will be developed at the outset of the project implementation to extract information needed for appropriate steering of the project's implementation. • A rollout programme for the other EAC countries will be designed.	• Regional market survey • Monitoring plan. • Lessons learned reports. • Project files, monitoring reports	• Platform for EAC standardizations functions properly and is actively involved in the proposed initiative • Successful implementation of the proposed initiative.
Output 6.4: Provide support to disseminate the learning and replication experiences in the EAC countries	No standard and label programme in existence at present	• A minimum of 1 regional workshop and 2 site visits held to share experiences. • A monitoring plan developed at the outset of the project implementation to extract information needed for appropriate steering of the project's implementation. • A rollout programme for the other EAC countries will be designed.	• Regional market survey • Monitoring plan. • Lessons learned reports. • Project files, monitoring reports	• Platform for EAC standardizations functions properly and is actively involved in the proposed initiative • Successful implementation of the proposed initiative.

SECTION III. TOTAL BUDGET AND WORKPLAN

The Project budget

Award ID:	00045898
Award Title:	PIMS 3513 Kenya Development and Implementation of a Standards and Labeling Programme
Business Unit:	KEN10
Project ID:	00054346
Project Title:	PIMS 3513 Kenya Development and Implementation of a Standards and Labeling Programme
Implementing Partner (Executing Agency)	Ministry of Trade and Industry through the Kenya Association of Manufacturers and the Kenya Bureau of Standards

GEF Outcome/Atlas Activity	Responsible Party/ Implementing Agent	Fund ID	Donor Name	Atlas Budgetary Account Code	ATLAS Budget Description	Amount 2009(USD)	Amount 2010 (USD)	Amount 2011 (USD)	Amount 2012 (USD)	Amount 2013 (USD)	Total (USD)	See Budget Note:
OUTCOME 1: **Selection and adoption of international test procedures, minimum energy performance standards and label classifications.**	**Ministry of Trade and Industry (MTI)**	**62000**	**GEF**	71200	International consultants	5,000	20,000	10,000			35,000	1.1
				71300	Local Consultants	5,000	15,000	10,000	20,000	5,000	55,000	1.2
				71400	Contractual services - Ind	15,000	15,000	15,000	5,000	5,000	55,000	1.3
				71600	Travel	3,000	3,000	2,000	1,000	1,000	10,000	1.4
				72100	Contractual services - Co.	12,000	15,000	15,000			42,000	1.5
				72200	Equipment and Furniture	3,000	2,000				5,000	1.6
				72400	Communic & Audio Visual Equip	3,000			3,000		6,000	1.7

				72800	Information Technology Equipment	1,500	2,000				3,500	1.8
				73200	Premises Alterations	4,000	2,000				6,000	1.9
				73300	Rental & Maint of Info Tech Eq			2,000	1,000	1,000	4,000	1.10
				74200	Audio Visuals&Print Prod Costs		1,500	1,000	1,000		3,500	1.11
				74500	Miscellaneous		1,000	1,000	1,000	1,000	4,000	1.12
					sub-total GEF	**51,500**	**76,500**	**56,000**	**32,000**	**13,000**	**229,000**	
		04000	**UNDP**	71600	Travel		1,500	1,500	1,000		4,000	1.13
				72200	Equipment and Furniture		1,500				1,500	1.14
					sub-total UNDP	**-**	**3,000**	**1,500**	**1,000**	**-**	**5,500**	
					Total Outcome 1	**51,500**	**79,500**	**57,500**	**33,000**	**13,000**	**234,500**	
OUTCOME 2: Development & implementation of a verification & enforcement system	**MTI**	**62000**	**GEF**	71200	International Consultants	5,000	20,000	10,000	10,000	10,000	55,000	2.1
				71300	Local Consultants	5,000	20,000	15,000	15,000	10,000	65,000	2.2
				71400	Contractual services - Ind	-	12,000	22,000	15,000	15,000	64,000	2.3
				71600	Travel		5,000	7,000	8,000	4,000	24,000	2.4
				72100	Contractual services - co		20,000	38,000	25,000	20,000	103,000	2.5
				72200	Equipment and Furniture	5,000		5,000			10,000	2.6
				74200	Audio Visual and Printing Production Costs				3,000	4,000	7,000	2.7
				74500	Miscellaneous		2,000	2,000	2,000	2,000	8,000	2.8
					sub-total GEF	**15,000**	**79,000**	**99,000**	**78,000**	**65,000**	**336,000**	
		04000	**UNDP**									
					sub-total UNDP	**-**	**-**	**-**	**-**	**-**	**-**	

					Total Outcome 2	**15,000**	**79,000**	**99,000**	**78,000**	**65,000**	**336,000**	
Outcome 3: **Awareness raising campaign for standards and labels, targeting distributors, retailers and end-users**		**62000**	**GEF**	71200	International Consultants		10,000				10,000	3.1
				71300	Local Consultants	5,000	10,000	15,000	15,000	5,000	50,000	3.2
				71400	Contractual services - indiv	10,000	12,000	25,000	25,000	38,000	110,000	3.3
				71600	Travel	3,000	5,000	6,000	6,000	3,000	23,000	3.4
				72100	Contractual services - co	8,000	14,000	25,000	20,000	17,000	84,000	3.5
				72200	Equipment and Furniture						-	
				72400	Communic & Audio Visual Equip			3,000			3,000	3.6
				72800	Information Technology Equipmt			2,000	2,000		4,000	3.7
				73300	Rental & Maint of Info Tech Eq		3,400		3,000		6,400	3.8
				74200	Audio Visual and Printing Production Costs				3,000	2,000	5,000	3.9
				74500	Study Tour (Europe)		32,000				32,000	3.10
				74500	Miscellaneous	1,000	1,000	1,000	2,000	2,000	7,000	3.11
					sub-total GEF	**27,000**	**87,400**	**77,000**	**76,000**	**67,000**	**334,400**	
	MTI	**04000**	**UNDP**	71600	Travel		2,000	1,000	1,000		4,000	3.12
					sub-total UNDP	**-**	**2,000**	**1,000**	**1,000**	**-**	**4,000**	
					Total Outcome 3	**27,000**	**89,400**	**78,000**	**77,000**	**67,000**	**338,400**	
Outcome 4: Development of voluntary agreements for efficient commercial display		**62000**	**GEF**	71200	International Consultants		10,000	10,000	5,500		25,500	4.1
				71300	Local Consultants		17,000	18,000	14,000	12,000	61,000	4.2
	MTI			71400	Contractual services Indv.		5,000	10,000	7,000	6,000	28,000	4.3

refrigerators and hotel air conditioners.				72100	Contractual services - Co.		12,000	20,000	25,000	8,000	65,000	4.4
				73300	Rental & Maint of Info Tech Eq		2,000		3,000		5,000	4.5
				74500	Study Tour (Asia)			27,600			27,600	4.6
					sub-total GEF	**-**	**46,000**	**85,600**	**54,500**	**26,000**	**212,100**	
		04000	**UNDP**								-	
					sub-total UNDP	-	-	-	-	-	-	
					Total Outcome 4	**-**	**44,000**	**85,600**	**54,500**	**26,000**	**212,100**	
Outcome 5: Policy support & Institutional framework.		**62000**	**GEF**	71200	International consultants			3,000	3,000	5,000	11,000	5.1
				71300	Local Consultants		20,000	15,000	15,000	12,000	62,000	5.2
				71400	Contractual services Ind.		25,000	30,000	30,000	23,000	108,000	5.3
				71600	Travel				4,000	4,000	8,000	5.4
				73300	Rental & Maint of Info Tech Eq			2,000	1,000	1,000	4,000	5.5
				74200	Audio Visual and Printing Production Costs			1,000	2,500	3,000	6,500	5.6
					Miscellaneous		2,000	1,500	1,500	2,500	7,500	5.7
					Sub-Total GEF	**-**	**47,000**	**52,500**	**57,000**	**50,500**	**207,000**	
		04000	**UNDP**	71600	Travel		2,000		2,000		4,000	5.8
					sub-total UNDP	**-**	**2,000**	**-**	**2,000**	**-**	**4,000**	
	MTI				**Total Outcome 5**	**-**	**49,000**	**52,500**	**59,000**	**50,500**	**211,000**	
Outcome 6: Learning and replication.		**62000**	**GEF**	71200	International Consultants		10,000	25,000	10,000	20,000	65,000	6.1
				71300	Local Consultants	8,000	22,000	29,000	35,000	29,000	123,000	6.2
				71400	Contractual services Ind.	-	26,000	38,000	46,000	40,000	150,000	6.3
				71600	Travel		5,500	5,000	10,000	15,000	35,500	6.4
	MTI			72100	Contractual services – co.		40,000	40,000	50,000	33,000	163,000	6.5

				72400	Communic & Audio Visual Equip			5,000	4,000	4,000	13,000	6.6
				72800	Information Technology Equipmt				5,000	5,000	10,000	6.7
				73300	Rental & Maint of Info Tech Eq			3,000	3,000	3,000	9,000	6.8
				74200	Audio Visual and Printing Production Costs				10,000	10,000	20,000	6.9
				74500	Miscellaneous	1,500	1,500	2,000	3,000	5,000	13,000	6.10
					sub-total GEF	**9,500**	**105,000**	**147,000**	**176,000**	**164,000**	**601,500**	
											-	
		04000	**UNDP**		**sub-total UNDP**	-	-	-	-	-	-	
					Total Outcome 6	**9,500**	**105,000**	**147,000**	**176,000**	**164,000**	**601,500**	
		62000	**GEF**	71400	Contractual Services - Individuals	12,000	14,000	16,000	18,000	20,000	80,000	7.1
											-	
					sub-total GEF	**12,000**	**14,000**	**16,000**	**18,000**	**20,000**	**80,000**	
		04000	**UNDP**	72100	Contractual Services - Co	2,000					2,000	7.2
				71400	Contractual Services - Individuals	25,000	40,000	44,000	44,000	45,000	198,000	7.3
				72200	Equipment and Furniture	3,000					3,000	7.4
				72800	Information Technology Equipmt	2,000					2,000	7.5
				73300	Rental & Maint of Info Tech Eq	2,000	1,000	2,000	1,000		6,000	7.6

				74500	Miscellaneous Expenses	1,000	1,500	2,000	1,000	2,000	7,500	7.7
				74200	Audio Visual and Printing Costs	1,000	2,000	3,000	3,000	3,000	12,000	7.8
				71600	Travel	1,000	3,000		2,000		6,000	7.9
					sub-total UNDP	**37,000**	**47,500**	**51,000**	**51,000**	**50,000**	**236,500**	
					Total Project Management	**49,000**	**61,500**	**67,000**	**69,000**	**70,000**	**316,500**	
					PROJECT TOTAL	**152,000**	**507,400**	**559,000**	**543,500**	**455,500**	**2,250,000**	

Summary of Funds:
[1]

Donor	**2008**	**2009**	**2010**	**2011**	**2012**	**Total**
GEF	115,000	452,900	505,500	488,500	405,500	**2,000,000**
UNDP	37,000	54,500	53,500	55,000	50,000	**250,000**
Government in Cash						**5,588,888**
Government in kind						**2,619,444**
Private sector in cash						**41,667**
Private sector in kind						**260,903**
TOTAL	**152,000**	**507,400**	**559,000**	**543,500**	**455,500**	**10,760,902**

Total Work plan Budget Notes

Budget Note No:	Description of Services and/or Expenditure
1.1	International Expert in energy standards and labels to provide technical and international experience in selection of test procedures based on IEC or EN standards. He will also work with bureau of standards to establish Minimum Energy Performance Standards, testing and classification systems.
1.2	Local consultants to work closely with IC in the selection of test procedures, data collection, workshops and writing
1.3	Designers and producers to develop communication and information dissemination materials on the minimum energy performance standards and test procedures.
1.4	Travel for EA country delegates and consultants to workshops and practical visits
1.5	This will cover use of HR firms that may be used to recruit project personnel, as well as the production of promotional materials. It will also cover costs of the KEBS technical committees for the selection of test procedures and minimum energy performance standards.
1.6	Purchase of basic furniture for the project management unit – including desks, chairs, cabinets and shelves.
1.7	The project will purchase communication equipment such as telephone and others. Also it will purchase LCD projectors for seminar and training use.
1.8	Some desktop computers and accessories will be purchased as well as necessary internet connections
1.9	The offices may require to be altered to functionally accommodate the PMU.
1.10	The amount will be used on voice equipment whenever needed and to contract IT support services.
1.11	Production of posters - Audio visual material for awareness and publicity will be produced
1.12	Focal running expenses, office costs, postage and deliveries, meeting costs,
1.13	To fiancé Consultants and project management Unit travel within east Africa
1.14	See 1.6 above
2.1	International expert will be hired to assist bureau of standards to include selected energy products in pre-import inspection, b) capacity building for bureau of standards and revenue authority, c) design of verification and enforcement system, d) testing for one year and, implementing enforcement with retailers and distributors
2.2	In the above tasks, the IC will be assisted by local consultants who will work alongside the consultant and facilitate local knowledge transfer and provide local and regional perspectives.
2.3	Individuals will engaged for market surveys, data collection and support for verification and enforcement
2.4	The bureau of standards and revenue authority staff, plus inspectors and consultants will travel. Standards bureau staff will travel for capacity building and inspection missions.
2.5	Pre-shipment companies, contract experts who will be involved in the development of the verification and enforcement system
2.6	Equipment and furniture for starting up the project will be purchased
2.7	Audio visual material such as labels will be produced. Information leaflets will be produced and disseminated. Occasional translation in Burundi and Rwanda
2.8	Meeting costs, postage, internet fees, and unexpected expenses.

3.1	The expert will be retained to provide support at regular intervals in the duration of the process and to design a training programme for retailers and distributors.
3.2	Consultants will be hired to extract and package information on energy standards from importers, develop training programmes for distributors and retailers and sales staff, b)provide information on new energy standards and labels, developing cost benefit analysis models
3.3	Contractual services individual: to develop awareness creation materials, facilitate workshops and conduct specific campaigns
3.4	Travel will be required to create awareness in different parts of East Africa, and to enable participants from outside main centres to attend awareness and training workshops. Also part of study tour costs.
3.5	Conduct trial runs with industrial and domestic distributor. Printing of awareness materials
3.6	This will purchase extra audio visual equipment or replace old ones for the outreach programme
3.7	Need for extra IT equipment to support the learning process, and to be used in the replication component.
3.8	Hiring of extra IT equipment to reach the distributors and retailers in different parts of the country. Maintenance costs.
3.9	Production of various publicity materials - Posters, energy standards network newsletter/publication, newspaper adverts where necessary.
3.10	One delegate from each country will travel to Europe to see first-hand the application of S&L and the impact on the markets. As well they will study the enforcement process, and pre-shipment inspection.
3.11	Communication costs, meeting costs, postage,
3.12	As in 3.4 above
4.1	Expert to assist in identifying international trends and best practices in MEPS for display refrigerators and air-conditioners. Evaluation of cost benefits and setting of appropriate levels for Kenya
4.2	Local experts will be hired to work closely with the international expert. They will also undertake discussions with leading suppliers of these appliances with a view to arriving at suitable MEPS. Also the setting up of the energy standards and labels network/association.
4.3	To provide market research information; Legal services will also be sought for drafting and implementing the voluntary standards. Experts will be sought to asses and develop suitable incentive mechanisms to promote the standards
4.4	Some of the activities in 4.3 will be undertaken by market research firms, legal firms as well as promotional agencies. Strategic marketing firms will be identified to provide technical support in the implementation of the agreement and keeping a record of compliance trends.
4.5	Equipment to be used in reaching the target groups in various countries. Internet charges.
4.6	Study tour – Asia. A visit will be organized to one Asian country which has recently introduced S&L programme to learn some of the key challenges and establish links for possible future collaboration in information sharing and best practice.
5.1	International expert will be retained to analyze the existing institutional framework for S&L and propose suitable policy and strategies for promoting S&L. Develop training programme for skills update in key institutions, organize international study tour for delegates to see successful S&L programme

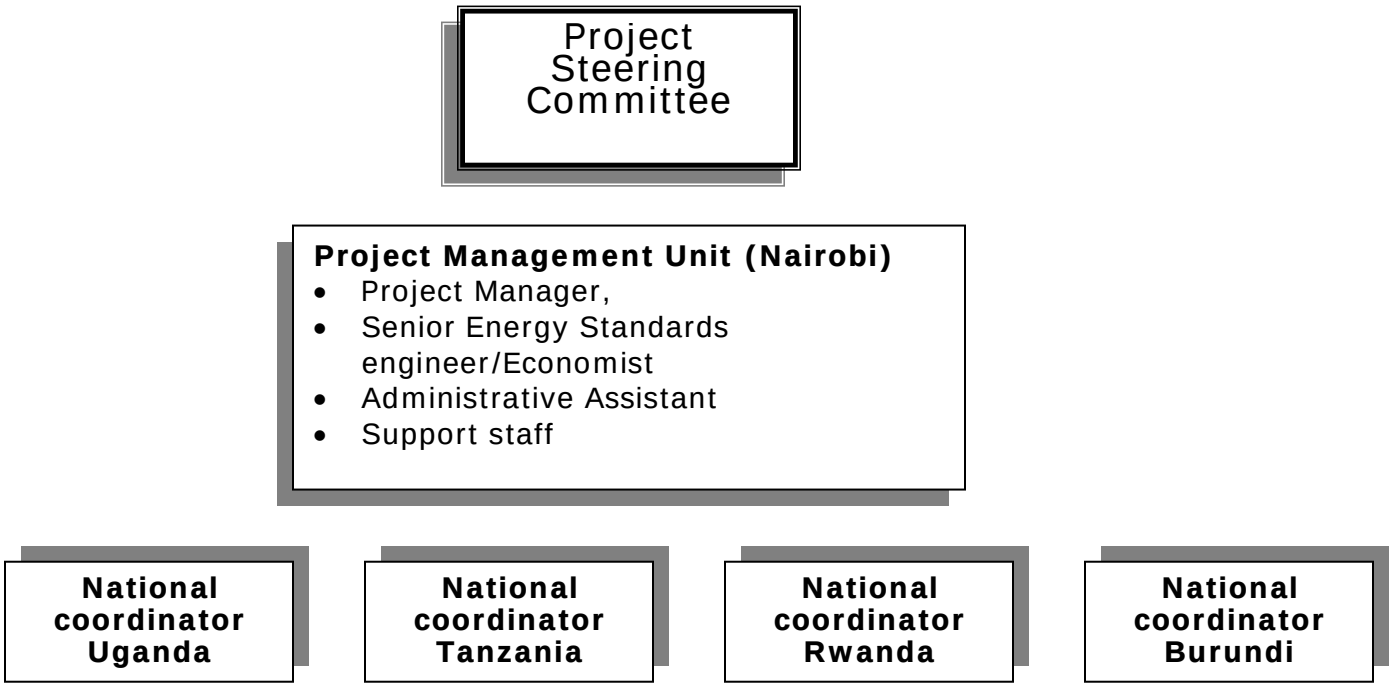
5.2	Local experts will work together with the international experts to review local policy setting, closely monitor the impacts of the project and develop lessons, b) evaluate proposed measures in terms of local conditions and modify as necessary. They will also engage with key institutions to develop support frameworks and will also hold workshops and create awareness on the standards.
5.3	Contract services to be used for the development of policy and institutional support strategy. Training of KEBS and KRA staff as well as other key institutions to build capacity. This will also include work to be done with the bureau of standards and the technical standards committees and part of the study tour.
5.4	This will cover travel for the consultants and the project staff.
5.5	Audio visual and IT equipment, support services and internet charges
5.6	Audio visual material for awareness and publicity will be produced. This will include annual reports, and a newsletter to inform on the implementation of the S&L.
5.7	Meeting costs, communication and translation expenses
5.8	As in 5.4 above
6.1	The international expert will elaborate the plan for the introduction of S&L in East African countries and the best way to make use of the resources available – such as testing laboratories, bureau of standards and role of the East Africa Community. An international expert will also be engaged for the final evaluation.
6.2	Consultants will be hired to monitor the impact of S&L on market transformation and apply the lessons to the other EAC countries. They will also facilitate workshops and undertake country specific assessments.
6.3	Experts will be retained to prepare the other four EAC countries for adoption of the standards and labels programme – covering policy and institutional setups for Standards selection, testing procedures and as well as develop lessons and case studies for dissemination. They will facilitate workshops to disseminate the information and increase learning. They will work with the EAC for further integration of the programme within the region.
6.4	Travel costs by consultants in the region as well as delegates to regional workshops. Part of study tour costs.
6.5	Contractor services will be required to develop replication mechanisms and adopting label to fit East Africa taking into consideration the different levels of the markets development. They will also undertake vigorous campaigns via electronic and print media to facilitate the replication. Use of bill boards will be made as well. Marketing companies will be hired to track penetration and impact of the labels programme. There will also be some translation costs in Rwanda and Burundi.
6.6	Renewal or upgrading of ICT equipment to enhance the data collection and analysis of trends
6.7	This will cover purchase of computers for the offices of the coordinators of each country so they can communicate and share information effectively.
6.8	In Burundi and Rwanda, there will be need for simultaneous interpretation in workshops – and hiring of communication equipment.
6.9	Many of the learning and replication documents will require translation (English/French/Swahili). Also translation will be needed in workshops in Rwanda and Burundi. Development and production of publicity materials. A documentary on the experiences and lessons learnt will be produced. In addition there will be publication of newsletter and other publicity materials
6.10	Communication, meeting and running costs
7.1	Project Staff – part salary for project manager,
7.2	Communication and connection set-up charges, Project management advisory services.
7.3	Project Staff – Standards engineer/economist and project assistant
7.4	Some additional furniture and accessories
7.5	Communication and information equipment for project management.

7.6	Equipment maintenance and IT support
7.7	To cover Meeting costs for the PSC and TPR, local running, phone and internet charges
7.8	Documentation, photography and recording of project activities such as workshops and other events
7.9	Project management related travel

SECTION IV: ADDITIONAL INFORMATION

Part I: Endorsement and Co-finance Letters (see separate file)

PART II: Organigram of Project (optional)



PART III: Terms of References for key project staff and main sub-contracts

1. Project Manager
2. Energy Standards Engineer/economist
3. National coordinators
4. Project Steering Committee

5. Administrative Assistant

1 Project Manager (PM)

Duties and Responsibilities

Provision of overall coordination, management and supervision for program administrative, financial, and technical activities. Liaise with relevant Government, bilateral and multilateral donor/lending agencies, and the private sector for the purposes of achieving the project objectives.

The National Project Manager is responsible for the operational management and the day-to-day operations of the project in line with the project document as well as policies/procedures for nationally executed projects, ensuring high quality and effective and project delivery. For this reason, s/he must be able to work full-time on the post. The NPM shall will report to the PSC and liaise directly with designated officials of the Ministry of Trade and Industry, UNDP Country Office, the GEF Operational Focal Point, KAM, KEBS and the national coordinators of each of the EAC countries involved in the project. S/he will also liaise with the existing and potential additional project co- financiers and others as deemed appropriate and necessary by the PSC/PMU. The NPM will develop a budget and workplan for approval by the PSC, which will provide guide the implementation of the approved Project Document. He/she shall be responsible for delivery of all substantive, managerial and financial reports from and on behalf of the Project.

Specific Requirements, Duties and Responsibilities

1. Prepares and updates quarterly and annual project work plans and budgets, and submits these to the PSC for approval and UNDP CO.

2. Organize meetings and workshops for the implementation of the project to permit an orderly and logical organization of the objectives, activities and results of the project, as well as identify and hire the facilities required for that purpose.

3. Drafts TORs for key inputs (i.e. personnel, sub-contracts, training, and procurement) and administers the mobilization of such inputs.

4. Ensure throughout the project a systematic coordination of the various consultants, subcontracted institutions and other entities in order to guarantee that the resulting materials/reports will be made with the greatest degree of coordination and completeness to reach the project objectives.

5. Liaise with the appointed representatives of the 4 EAC countries involved in the project.

6. Ensure that all agreements with other partners are well prepared, negotiated and consented to and in this regard:

   (a) Ensures that these agencies mobilize and deliver the inputs in accordance with their letters of agreement or contracts, and

(b) Provides overall supervision and/or coordination of their work to ensure the production, quality and timeliness of the expected outputs.

5. Assumes direct responsibility for managing the project budget as Committing Officer, by ensuring that:

(a) Project funds are made available when needed, and are disbursed properly,
(b) Expenditures are in accordance with the project document and/or existing project work plan,
(b) Accounting records and supporting documents are kept,
(c) Required financial reports are prepared,
(d) Financial operations are transparent and applicable financial procedures/regulations are properly applied; and
(e) Facilitate audits as required.

6. Assumes direct responsibility for managing the Project's physical assets (e.g. vehicles, office equipment, furniture, stationary etc.).

7. Supervises the project staff and local or international experts/consultants working for the project. Is responsible for work plan management and field operations supervision.

8. Drafts project progress reports of various types (e.g. quarterly and standard report, annual report, Programme Implementation report (PIR) and the Final Project Report as scheduled, and organizes review meetings and evaluation missions in coordination with UNDP.

In addition, the Project Manager shall:

- Act as the Secretary to the Project Steering Committee and the Tri-partite Review Committee and maintain records/minutes of proceedings;
- Report to the Project Steering Committee.
- Draft project reports for tri-partite review, steering committee meetings, and as otherwise required.
- Coordination and liaison of Government, donor, financial institutions, NGOs and private sector enterprises.
- Perform other project duties as requested by the PSC and the UNDP

3. Qualifications

- University degree in engineering or physical sciences and a postgraduate degree in a relevant field.
- Have solid management and coordination skills
- Strong foundation in energy efficiency, energy technologies and energy standards and labels
- Previous project management experience in private sector in Kenya.

- Ability to deal/negotiate with government ministries, private sector representatives, financial institutions and donor agencies.
- Knowledge of energy sector, the private sector set up in Kenya and in the East Africa Region.
- Must be computer literate.
- Demonstrated commitment to team work
- Be familiar with the guidelines and operational procedures of the GEF.
- Be familiar with UNDP procedures.

2 **Energy Standards Engineer/economist**

The ESEn reports directly to the NPM. Provision of technical and administrative support to the NPM, the PMU and the national project coordinators in each of the four EAC countries.

Specific duties

- Assist the NPM in administering project and supervising technical and field operations.
- Work collaboratively with the PMU staff members in planning and implementing technical activities, providing support to project stakeholders including Kenya Bureau of Standards, KAM, private enterprises, participating financial institutions and end-users.
- In collaboration with the NPM assist in preparing monthly and quarterly technical reports for the PSC, MTI and UNDP.
- He will liaise with the Bureau of Standards as well as other accredited internal standard bodies to develop suitable MEPs to be implemented in the country.
- In consultation with the NPM organize technical review meetings to develop the standards.
- Prepare awareness materials for all the stakeholders and participate in forums to promote the standards and the project
- Work collaboratively with PMU staff to coordinate expatriate technical assistance for the project.
- Participate in the evaluation and monitoring of equipment and appliances in the field for the purposes of monitoring awareness and impact.
- Prepare project and equipment lists/budgets as necessary
- Perform other duties as requested by the NPM
-

Qualifications

- University degree in Electrical Engineering.
- Prior administrative experience.
- Theoretical and/or practical experience with Energy efficiency and Energy conservation technologies.
- Ability to relate well to industry representatives, government officials, financial institutions, equipment suppliers, distributors and end users.
- Ability to prepare technical reports, scopes of work, evaluation documents and equipment specifications.

- Willingness to spend extended periods of time working in the field
- Previous Energy Audit experience desirable.
- Demonstrated commitment to team work
- Must be computer literate.

3 Energy Standards Economist

The ESEc reports to the NPM. Provision of economic, market, and promotional support to the NPM and the PMU

Specific duties

- Analysis of policy, economic and administrative barriers to S&L implementation and development of solutions to address the same in Kenya and the region.
- The areas to be looked into include tax regimes, tariff structures, incentives, marketing
- Working collaboratively with the NPM and the PMU, develop and implement awareness and promotional programmes
- Advise NPM and the project team on marketing and financial matters related to the standards development and implementation.
- Prepare a guide on available options for providing incentives to speed up uptake of S&L for use by the EAC countries
- Perform other duties as requested by the NPM.

Qualifications

- University degree in Economics
- Several years experience in Industrial policy analysis work, economics or marketing especially with an established institution and with technical bias.
- Demonstrated experience in working with commercial enterprises, government bodies financial institutions and product consumers.
- Experience in research/ survey work.
- Ability to write technical reports from surveys/ studies.
- Ability to communicate effectively
- Demonstrated commitment to team work
- Willingness to spend extended periods of time in fieldwork with private enterprises, Government bodies, other policy and administrative bodies.
- Must be Computer Literate.

4 Administrative Assistant

Provision of secretarial and accounting support to the NPM, the PMU and the other project staff. Report to the NPM.

Specific Duties

- Provide administrative and accounting services to the project.
- Ensure financial monitoring and accounting for all aspects of the project.
- Assist NPM in management of all project assets
- Supervise support staff on the project
- Manage project petty cash fund.
- Monitor expendable materials required by the project and reorder when necessary.
- -Receive and distribution of correspondence for the project (faxes, e-mails and letters).

- Send outgoing mail (faxes, e-mails and letters).
- Receive and make phone calls on behalf of project staff.
- Receive visitors and direct them to appropriate PMU staff.
- Maintain project files and a document database.
- Maintain a small project library with publications and reference books.
- Do word processing and preparing document packages.
- Maintain project inventory
- Photocopying.
- Other tasks as requested by the NPM staff.

Qualifications

- Certificate of completion of studies from an approved secretarial or accounting training program.
- Five years previous experience in areas relating to secretarial and basic accounting practices.
- Experience in project management and junior staff supervision

5 National (Part-time) Project Coordinators (Uganda, Rwanda, Burundi and Tanzania)

The NPC is responsible for coordination of country level project activities. The NPC reports to the Ministry which has signed collaboration agreement with the UNDP Kenya country office for the implementation of the project.
S/He will liaise with all the stakeholders in the country and facilitate replication of energy standards and labels at country level.

- Liaise with NPM and PMU in Nairobi
- Organize workshops as agreed in workplan
- Seek additional resources to support project activities at country level,
- Attend regional workshops and consultative meetings as requested
- Prepare quarterly and annual progress and status reports
- Be responsible for managing the project budget and ensure that:

  (a) Project funds are made available when needed, and are disbursed properly,
  (b) Expenditures are in accordance with the project document and/or existing project work plan,
  (c) Accounting records and supporting documents are kept,
  (d) Required financial reports are prepared,
  (e) Financial operations are transparent and applicable financial procedures/regulations are properly applied.
  (f) Facilitate financial audits as may be required

Drafts project progress reports of various types (e.g. quarterly and standard report, annual report, Programme Implementation report (PIR) and the Final Project Report as scheduled, and organizes review meetings and evaluation missions in coordination with PMU and UNDP.

Terms of Reference for the Project Steering Committee

Article 1
These rules will govern the operation of the Project Steering Committee, herein after called the Committee.
Article 2
The Committee comprises:

- The Director of Industries – Ministry of Trade and Industry
- Managing Director Kenya Bureau of Standards
- Permanent Secretary Ministry of Energy
- Consumer organization representative
- Energy Regulatory Commission
- The KAM Chief Executive
- The UNDP representative
- The Project Manager (ex-officio)
- Some Members will be coopted when necessary from time to time. Typical examples are the representatives of equipment importers and distributors,
- .

In case that there are changes in the persons or institutions, these will be notified to the Chair of the committee.

Article 3
The Committee will be chaired by the Director of Industries. If he/she is absent, the meeting will be presided by his/her representative, or in the absence of both, the representative of the UNDP.

The National Project Director will report to the Committee on the development of the project activities before each invitation to a meeting.

Article 4
The Committee will meet at……, and more often if required. The meetings will take place at the ……...

Article 5
The meetings of the Committee will be by invitation from the Chairperson and/or matters to be dealt with in the meeting will be attached to the invitation.

Article 6
At the beginning of each meeting the Minutes corresponding to the previous meeting will be approved and signed, handing over one copy of them to each of the members of the Committee.

Article 7

The agreements arrived at by the Committee will be unanimous. The Committee will develop its actions in the framework of the Agreement signed by the Ministry of Trade and Industry and UNDP.

Transitory Provision
To the functions of the Committee may be expanded if according to its judgment are deemed necessary for attaining the objectives of the project.

These rules were approved in the installation meeting of the Committee.

PART IV: Stakeholder Involvement Plan

Main stakeholders *(although not specifically referred to here similar type organizations in Burundi, Rwanda, Tanzania and Uganda are considered stakeholders as well)*	***Function***
Ministry of Trade and Industry	Efficiency standards, labeling, education and awareness, certification, compliance
Kenya Bureau of Standards (KEBS)	Certification and accreditation, labeling efficiency standards, policy, regulation
Kenya Association of Manufacturers (KAM)	Education and awareness, energy audits, coordination
Kenya, Ministry of Energy	Energy policy, regulations, support for a centre on energy efficiency and conservation
National Environment Management Authority (NEMA)	Enforcement of standards as part of statutory environmental audit. Standards development
Kenya Power and Lighting Company (KPLC)	Education and awareness, R&D, finance, standards and labeling, energy audits
Kenya Industrial Research and Development Institute (KIRDI)	Education and awareness, R&D, standards development, baseline studies
Universities and NGOs	Education and awareness, energy audits, labeling, R&D
Users of equipment and appliances (companies and consumers)	Labeling, efficiency standards, education & awareness, energy audits, finance
Kenya, Energy Regulatory Commission (ERC)	Education and awareness, regulation, energy management, policy, finance, certification
Financial sector	Finance
Ministry of Finance	Financial incentives, regulation
Consumer organizations	Education, awareness

Part V OTHER ADDITIONAL INFORMATION

Selection of Products for a Product Policy Intervention Strategy

Energy efficiency and conservation is key to managing the costs of generation, transmission, distribution and utilization of energy. This has been recognized in the new Energy Policy which has committed the Kenya Government to the promotion of energy conservation and efficiency.

The use of more efficient energy consuming equipment and appliances in the industrial, commercial and residential sectors presents a good opportunity for improving energy efficiency. Energy standards and labels have been used successfully to force market shift towards higher efficiency devices. These standards target a selected group of equipment and appliances based on criteria that optimizes the impact and cost effectiveness. In Kenya, a number of equipment and appliances were identified based on the extent of usage in each sector, energy saving potential and ease of standardization. They include motors, variable-speed drives, boilers, heaters and furnaces, freezers, air-conditioners, refrigerators, light bulbs, boilers, water heaters and cooking stoves in the industrial, commercial and residential sectors. These appliances and equipment are mostly imported into the Kenya and the EAC market.

The list of products is presented in the Table 7.This list was subjected to the criteria described below in order to make a final selection.

- *Share of energy consumption nationwide.* What is the present share of the national energy demand for the products and what is it likely to be in the next decade. Only products with a significant national energy demand have been selected.
- *Industrially manufactured and standardized products.* Product policy is typically effective for mass-manufactured products, so only those mass produced products have been selected for further analysis. Therefore burners, boilers, furnaces and similar equipment that are custom made were dropped.
- *Internationally targeted by standards and/or labels.* Developing standards from scratch is a laborious task for which Kenya does not have the capacity. Furthermore, Kenya and the Region being a small market relatively, does not have the clout to dictate major product policy changes. Therefore, only products that were already subject to product policy (targeted for S&L) in one of the major global trade blocks (EU, US, Asia) were selected.

- *Availability of intervention opportunities* within the Kenyan and EAC context. Only those products that showed a realistic potential for successful intervention were selected based on availability of information and market characteristics of each product..
- *Estimated savings potential of the product.* An estimate was made of the potential energy and carbon dioxide emission savings for each selected product and prioritized. This was intended to remove products with a low savings potential from the selection.

Long list of Products

Table 7: Products list and selection criteria.

Products	**High energy consumption**	**Industrially mass-manufactured**[13]	**Internationally subject to Standards and /or Labels**
Industrial products			
Motors / Variable Speed Drives	Y	Y	L & S – partial
Air conditioning	Y	N	none
Refrigerators / freezers	Y	N	S - partial (and Aus/NZ only)

[13] This criterion relates to the assembled product, and if that is purchased 'off the shelve'. Custom-build or assembled products may have components which are mass-manufactured and standardized, but are not purchased separately.

Lighting	Y	Y	L & S
Air compressors	?	N	none
Pumps	?	N	none
Industrial furnaces	Y	N	none
Industrial boilers	Y	N	none
Commercial products			
Air conditioning	Y	Y	S&L
Refrigerators / freezers	Y	Y	S - partial (and Aus/NZ only)
Water heating	Y	Y	S – partial[6]
Lighting	Y	Y	L & S
Office equipment	N	Y	L-partial[6]
Residential products			
Air conditioning	Y	Y	S & L
Refrigerators / freezers	Y	Y	S & L
Water heating	Y	Y / N[14]	S-partial[6]
Cooking stoves	Y	Y / N[6]	none
Lighting	Y	Y	L
Irons	Y	Y	none
Televisions	Y	Y	L & S - partial (and Japan only)
Other			
Low-voltage DC appliances	N	Y	none

Index: Y = yes; N = no; S = standard; L= label; L&S = both, but labels more dominant than standards; S&L = both, but standards more dominant than labels; partial indicates that only an aspect of the product is regulated.

1. Industrial motors;
2. Domestic refrigerators;
3. Commercial display refrigerators;
4. Air conditioners;
5. Lighting; and
6. Water heaters

(a) Baseline Information for the Selected Products

The baseline situation for each of the selected products is summarized in the following sections, including information about sales and usage of appliances. Though this information relates to Kenya the state and the trends that are visible in Kenya also largely apply to the other EAC countries.

1. Industrial motors

Importers and distributors are currently selling about 50,000 pieces per annum. Most of the motors are for replacement, and it is assumed that the total number of motors in the Kenyan market is stable (all sales are for replacement, none for expansion of the stock). These do not include motors that are imported fully embedded in equipment/machinery. The total industrial

[14] Depending on the sub-type.

energy consumption per year is 2,661GWh per annum as of 2004. International reference information indicates that 50 to 70% of this is consumed by motors.

There are three main importers of motors, and the exporters are from Europe and the Far East. No motors are manufactured locally. Some imported motors come with an energy efficiency indication, based on IEC test standards and the European efficiency classifications.

The current range of motor efficiency in the Kenyan market is estimated to be 60 to 98%. The estimated share of each energy efficiency class is given in table.

Table 8: Distribution of motors

Class	Efficiency	Estimated yearly energy demand	Market share
Eff 1	> 98%	2,235 kWh	1 – 2 %
Eff 2	> 92%	2,380 kWh	8 – 9 %
Eff 3	Unregulated	2,660 kWh	90%

International information indicates that the average life time is 12 years for motors in the range 0–7.5 kW; 15 years for motors in the range 11–75 kW; and 20 years for motors above 75 kW. Given that most motors in Kenya are small-sized, an average life time of 12 years is assumed for Kenya. This leads to a total stock size of 600,000 units of average size of 0.3 kW, and an average yearly energy consumption of 2,630 kWh assuming average efficiency of 80%.

2. Domestic refrigerators

The current sales level of refrigerators is approx 29,000 units per year, of which 25,000 is new products, and approximately 4,000 units comprised imported second-hand products. Research by Consumer Insight, a Kenya-based research firm, shows a product saturation level of 3.3% of the population, translating into approximately 195,000 households having a refrigerator. Out of these, 16% are reported to be purchased as second-hand products, partially from imports. Some of the imports come with an energy efficiency indication, typically the data strip of an EU-energy label.

The Consumer Insight report [REF] indicates that 40% of all purchases were for replacement, and 60% new additions to the stock. Based on this, and taking into account the average lifetime of appliances (internationally 15 years), it is estimated that each year approximately 11,500 units are purchased for replacement (10,000 new; 1,500 second hand), and approximately 17,500 units for new additions to the stock (15,000 new; 2,500 second hand).

The energy efficiency of refrigerators in Kenya could not be established. However, based on the origin of the products, the following efficiencies are assumed:

Table 9: Motors market share

Class	Efficiency	Estimated yearly energy demand	Market share
High-end	EU-A (EEI = 55%)	320 kWh	Approx 10 %
Low-end	EU-E (EEI = 110%)	635 kWh	Approx 75%
Second-hand	EU-G (EEI = 150%)	870 kWh	Approx 15%

The standard energy demand of a refrigerator in the EU is 463 kWh/year (at EEI = 100%). It is estimated that this should be increased by 25% for east Africa to reflect the different climatic conditions (sub-tropical to tropical climate). This leads to an estimated average yearly energy demand per refrigerator of 640 kWh.

3. Commercial display refrigerators

Commercial display refrigerators are primarily purchased by two major beverage distributors, for placement in bars and various outlets. The sales volume is approximately 30,000 units per year. All units are imported, from various countries.

Australian research indicates that the average yearly energy consumption of a display refrigerator is approx 4,500 kWh/year, and that of an efficient product approximately 4,000 kWh/year. The average life time of this product is around 8 years.

Table 10: Refrigerators distribution

Class	Efficiency	Estimated yearly energy demand	Market share
Efficient	Compliant with AUS-standard	4000 kWh	0 %
Average	Unregulated	4500 kWh	100 %

It is assumed that the growth of the market is in line with the average growth in grid connections, which is expected to be around 20% per year. Taking this into account, it is estimated that the total stock consists of approximately 90,000 units, that there are approximately 11,500 units purchased each year for replacement, and approximately 18,500 units as new additions.

4. Air conditioners

The sales volume for air conditioners is approximately 25,000 units per year of which 70 % of the units are sold in the commercial sector while 30% are sold in the residential sector. Air-conditioners in the commercial sector especially in restaurants, hotels and office buildings are operated 70% of the day-time. Residential air-conditioning units are operated on a need basis. The size of the units varies from 3.5 to 10.6 kW. Some units come with an energy efficiency indication, according to the IEC test procedure.

Virtually all units are imported, from the Far-East. Information from sales in previous years (2000 – 2004) suggests a stable sales level.
In Europe (with low-quality regulation for air conditioners) the average air conditioner energy efficiency is EER = 2.44, and the average product life time 12.5 years. The estimated stock size is 312,500 units. Assuming an average unit size of 5 kW cooling load, and usage of 8.4 hours / day (70% of day-time), this leads to an average yearly energy consumption of 6280 kWh/year. An efficient unit (EER = 3.2) would have a yearly energy consumption of 4790 kWh.

Table 11: Air conditioners distribution

Efficiency	Estimated yearly energy demand	Market share
EU-A (EER = 3.2)	4790 kWh	0 %
EU-E (EER = 2.44)	6280 kWh	100 %

5. Lighting

In Kenya there are 627,000 households connected to the national grid with a consumption of 1,478 GWh per annum as per 2004 or approximately 2,350 kWh/year per household.

Information about household ownership and usage of lighting is not available, although it is assumed that all households with electricity have several lights and use these regularly. There are also 136,000 commercial & industrial establishments connected to the grid, and the lights are switched on most of the day due to the nature of the business.

In OECD countries, the share of household electricity consumption for lighting increased from 11.5 to 12.9% between 1995 and 2000. For Kenya, which has much lower appliance saturation than OECD countries, it is assumed that 20% of the residential electricity demand is spent on lighting, equaling 470 kWh/year. It is assumed that the average Kenyan household uses 12 lights in the house, which is well below the average in OECD countries. Main lights are typically used 1000 hours per year per light bulb, and a typical Kenyan light bulb is a 40W incandescent. This could be replaced by a 9W or 11 W CFL, consuming approx 10 kWh/year instead of the 40 KWh of an incandescent light bulb.

Table 12: Light bulbs distribution

Class	Efficiency	Estimated yearly energy demand	Market share
Efficient	CFL (EU-A)	10 kWh	0 %
Average	Incandescent (EU-E)	40 kWh	100 %

6. Water heaters

There are many types of water heaters in use in Kenya, and a small section of these are electric storage water heaters. On average, 6,000 units of storage water heaters are sold in a year. There is no information about the stock of these products, but there are 51,700 households with a special hot water tariff. There are other households with storage water heaters that do not utilize the tariff. The commercial establishments with storage hot water heater tariff are 2,050 mostly represented by hotels and restaurants. In the commercial sectors the appliances are normally switched on for 24 hours basis, while in residential sector the appliances are switched on and off depending on need, mostly in the mornings and evenings for about 1 to 3 hrs.

Assuming an average product lifetime of 15 to 20 years, in can be established that the market for electric storage water heaters is stable or declining. The difference between an average and an energy-efficient storage water heater is in the standstill losses, which are a result of the quality of the insulation of the product (and the size and usage of it). Given that households typically use a storage water heater only for a short period, and don't store hot water during the day, the savings potential is expected to be minimal.
There may be a savings potential in the commercial sector (hotels and restaurants), but the available information is insufficient to assess this potential.

Final Selection of Products for the proposed intervention

The baseline information indicates that there are significant savings potentials for the five selected products: Energy saving 17,013 GWh and CO_2 emission reduction of 9.53 million tons. (See Table 13) Industrial motors; Residential refrigerators; Commercial display refrigerators; Air conditioners; and Lighting. The savings potential for water heaters is considered to be minimal, due to the typical application of these products in the residential sector in addition to insufficient information is available on them.

The final selection criterion that has been applied is the availability of intervention opportunities. This has been assessed as follows:

1. Industrial motors

- Potential for a minimum energy performance standard, at the eff2 level, provided sufficient lead-time is given and customs and trade inspections are improved.
- Potential for a label indicating the eff1 level, in cooperation with lead importers, provided that customs and trade inspections are improved.

2. Domestic refrigerators

- Potential for a ban on imports of second-hand products, or a levy to make these as expensive as low-end new products that are generally at higher energy efficiency levels.
- Potential for a minimum energy performance standard, at an EU-label class level (e.g., C-level), provided sufficient lead time is given; customs and trade inspections are improved; and a ban or levy for second-hand products is introduced.
- Potential for adopting the EU energy label for voluntary application, in cooperation with lead importers, provided that customs and trade inspections are improved.

3. Commercial display refrigerators

- In this specific situation the buyer of the appliance is not the user as commercial display refrigerators are placed and/or leased by for example hotels, restaurants, and commercial centres. Therefore there is no direct incentive for the buyer to purchase (more expensive) energy efficient appliances as they will not be paying the electricity bill.
- Therefore there could only be a potential for a voluntary agreement by the two main buyers of these products, based on their social responsibility. The end users can also demand higher efficiency if they are made aware.

4. Air conditioners

- Potential for a minimum energy performance standard, at an EU-label class level (e.g., C-level), provided sufficient lead time is given, and customs and trade inspections are improved.
- Potential for adopting the EU energy label for voluntary application, in cooperation with lead importers and hotel operators, provided that customs and trade inspections are improved. Based on this, a voluntary agreement by main buyers of these products (hotel chains) can be discussed, to organize a coordinated demand for more efficient products.

5. Lighting

- Potential for a CFL quality standard (comparable to the ELI and Asia-Pacific quality standards for CFLs), to identify good-quality CFLs.
- Potential for the promotion of CFLs, provided a quality standard is adopted and customs and trade inspections are improved.

Table 13: Summary of energy savings estimation

Pre-selected Products	**Significant savings potential**	**Availability of intervention options**
Industrial motors	Y	Y
Domestic refrigerators	Y	Y
Commercial display refrigerators	Y	Limited
Air conditioners	Y	Y
Lighting	Y	Y
Water heaters	N	---

The resulting final selection of products, as indicated above, includes: **Industrial motors; Domestic refrigerators; Air conditioners; Lighting;** and possibly *Commercial display refrigerators*.

Global Environmental Significance

The potential impact of a standards and labels programme has been estimated for Kenya, based on the baseline information presented in Table 13. Given the scarcity of available data about the Kenyan stocks and market of appliances and equipment, the estimation includes only the basic elements of an impact assessment, estimations of the current and future stock of products is in part based on assumptions of internationally common product energy efficiency levels.

The potential programme impact in the other East African countries is estimated as a share of the impact that is expected for Kenya. This share is estimated based on a comparison of the national energy demand in Kenya and the other countries, and an estimate of the relative effectiveness of a programme in the other countries versus Kenya.

This estimation should be considered as a first-order approximation of the potential impact, and not a full impact analysis.

Lessons learnt on the benefits of standards & labels in selected countries

Because energy-using products are increasingly traded globally, there is an increasing tendency to harmonize elements of product policy between countries and major trade blocks. Countries can benefit from this trend by taking advantage of the product energy efficiency policies applied in major trade blocks of the world, by harmonizing their policies with those of their trade partners.

Australia

This is probably best demonstrated by the Australian policy of adopting the world's best standards for their own use. Because the Australian market (consisting of some 20 million relatively wealthy customers) is too small to induce the development of more efficient products, Australia decided some years ago to focus their attention on aligning national policies with those of their most ambitious trade partner. The success, so far, has been remarkable: this new policy has ended years of stagnation in their market transformation policy, and resulted in a rapid increase in energy efficiency levels for a range of products[15].

Europe and the United States

Nations around the world are increasingly recognizing the power of energy efficiency standards and labels. The first mandatory minimum energy efficiency standards in modern times are reputed to have been introduced in Poland for a range of electrical appliances as early as 1962. The French government set standards for refrigerators in 1966 and for freezers in 1978. Other European governments, including Russia, introduced legislation mandating energy efficiency performance standards throughout the 1960s and 1970s. Much of this early legislation, however, was weak and poorly implemented, had little impact on appliance energy consumption, and was repealed in the late 1970s and early 1980s under pressure to harmonize European trading conditions. The first energy efficiency standards that dramatically impacted manufacturers and significantly reduced the consumption of energy were introduced in the U.S. by the State of California in 1974 and became effective in 1978. Since then, standards and

[15] Matching World's Best Regulated Efficiency Standards – Australia's success in adopting new refrigerator MEPS, Lloyd Harrington, Energy Efficient Strategies, Australia & Shane Holt, Australian Greenhouse Office, ACEEE, 2002

labels have been used successfully to affect manufacturers and significantly reduce the consumption of energy.

Driven by greenhouse gas abatement as well as energy conservation goals, 57 countries have now applied standards and/or labels to a total of 46 products. Products subject to standards or labels cover all end-uses and fuel types with a focus on appliances, information technology, lighting, heating and cooling equipment, and other energy-consuming products used in homes and offices, as well as the commercial and industrial equipment, such as motors and electric transformers[16].

Some experiences from other African countries:

Tunisia
Tunisia has recently introduced its first appliance energy efficiency policy: a minimum energy performance standard and an energy label for refrigerators and freezers. The Tunisian project has made an extensive analysis of the Tunisian appliance market, after which it was decided that Tunisia would benefit most from adopting the European appliance policy for refrigerators, with minor adaptations.

Starting September 2004, Tunisian law requires the display of an EU-style energy label (with eight classes, the top one representing the recently added EU A+ and A++ classes) in a bilingual version (French and Arabic, and the numbers 1 – 8 indicating classes instead of letters). From July 2006 onwards, the lowest two energy classes (7 and 8) will be banned from the Tunisian market, followed in July 2007 with the classes 5 and 6. It is planned that class 4 will be banned from 2010 on. In addition to introducing the energy label and the standard based on this, Tunisia has provided technical support to national appliance manufacturers for bringing their production in line with the requirements. Anecdotal evidence indicates that this has resulted in a 20% improvement of the energy performance of national production, at a 20% reduction in the cost of production.

South Africa
The Department of Minerals and Energy (DME) decided in 2004 to implement a nation-wide appliance efficiency programme using standards and labeling as key instruments. During the cause of 2004 wide consultations with the many stakeholders have taken place in order to bring the market players in position to handle the standards, the labeling, the policing of the label and the standards, the information material etc.

In 2004, South Africa adopted energy labels refrigerators, freezers and clothes washers. The label is identical to the informative label used in EU member states with the only difference being that the EU flag is replaced by the unique South African symbol. This symbol is the DME symbol for our Energy Efficiency Initiative. Similarly, the test procedures for these labels are the relevant European Norms, or related ISO standards. Application of the label is voluntary for now, but is planned to become mandatory in the future.

Ghana
In 2002, Ghana introduced a minimum energy performance standard, and in 2005 energy label, for room air conditioners. Under the Ghana Appliance Standards and Labeling programme, importers of air conditioners will be required to import and sell only products that meet minimum energy efficiency and performance standards approved by the Ghana Standards Board (GSB). Furthermore appliance manufacturers and retailers are obliged to display a label which indicates the energy efficiency rating of the product before the first retail sale.

[16] Energy Efficiency Labels and Standards – A Guidebook for Appliances, Equipment and Lighting, Wiel and McMahon, CLASP, 2005

The Energy Guide Label affixed to the product provides important information on the model, manufacturer, and energy efficiency star rating (a one-star to five- star energy efficiency rating in which the ascending number of stars represents a higher energy efficiency ratio), estimated annual energy consumption, cooling output and type of refrigerant. The energy label was introduced as a voluntary label, and application of it will become mandatory in 2006.

Egypt

In 2002, Egypt started regulating appliance energy efficiency, with the introduction of a minimum energy performance standard and an energy label for refrigerators and freezers. This was followed by minimum energy performance standards and energy labels for washing machines and air conditioners. Egypt has not sought harmonization of the standards and labels with other parts of the world, but chose to analyze the national market, and decide on appropriate standards levels based on the spread of products available in Egypt. The design of the Egyptian energy label is loosely based on the European energy label.

It is difficult to compare the standards and labels developed in Egypt with those in other countries. It should be noted, though, that the refrigerator minimum energy performance standard for Egypt specifies consumption levels of 700 to 1,100 KWh/year, which is probably not very ambitious and certainly well above most other standards around the world.

SECTION II. SIGNATURE PAGE:

Country: Kenya

UNDAF Outcome(s)/Indicator(s): # 11: Effective Community Based Natural Resources Management

Expected Outcome(s)/Indicator (s): Development and distribution of sustainable energy services to meet household needs, to offer income generating and employment opportunities and to service all sectors of the economy.

Expected Output(s)/Indicator(s): Sustainable energy strategies, action plans, and pilots that support broader development goals and objectives including information tools and development of standards and regulations.

Implementing partner: Ministry of Trade and Industry

Other Partners: Bureau of Standards (KEBS)

Kenya Association of Manufacturers Kenya

Programme Period: 2009-2013
Programme Component:
Project Title: Development and Implementation of a Standards and Labeling Programme in Kenya
Project ID: 00054346
Proposal ID: 00045898
PIMS ID: 3513
Project Duration: 5 years
Management Arrangement: NEX

Total Project Budget	**USD**
Allocated Resources:	
GEF	2,000,000
Co-financing:	
GEF Agency	250,000
National Contribution	8,208,332
Others	302,570
Sub-Total Co-financing	8,760,902
TOTAL Budget	**10,760,902**

Agreed by:

On behalf of:	**Signature**	**Date**	**Name/Title**
Government of Kenya: Ministry of Trade			**Dr. (Eng) Silas Njiru** **Permanent Secretary**
UNDP:			**Mr. Aeneas Chuma** **Resident Representative**