



United Nations Development Programme

Country: Jordan

PROJECT DOCUMENT

Project Title:

Energy Efficiency Standards and Labeling in Jordan

UNDAF Outcome(s):

Sustainable management of natural resources and the environment

UNDP Strategic Plan Environment and Sustainable Development Primary Outcome:

Mainstreaming environment and energy

UNDP Strategic Plan Secondary Outcome:

Expanding access to environmental and energy services for the poor  
Environmental policies aligned to global conventions & national implementation capacities enhanced

Expected CP Outcome(s):

To influence consumption pattern by raising awareness of policy makers, manufacturers, distributors and consumers and introducing in the market energy efficiency standards and labels.

Expected CPAP Output (s):

Executing Entity/Implementing Partner:

National Energy Research Centre (NERC)

Implementing Entity/Responsible Partners:

National Energy Research Centre (NERC)

Brief Description

Jordan currently faces a serious energy challenge because it lacks domestic energy resources and exhibits an ever greater demand for energy to fuel its social and economic development. The demand for energy in Jordan is increasing at a rate of 3% annually and close to 6% in terms of the demand for electricity.

The domestic sector in Jordan accounts for 34% of the total electricity consumption in the country (2004 figures) and this is expected to increase with the growth of the population, economic growth and the number of households using electrical appliances. The Jordanian Cabinet has approved a national energy efficiency strategy, which proposes certain measures in order to reduce the burden of imported oil on the Jordanian economy. This project proposes to introduce technical norms that will set minimum standards for the energy efficiency of imported and locally manufactured equipment.

With the cooperation of Jordanian counterparts, UNDP will assist the Government of Jordan to establish an energy labeling system and set a Minimum Energy Performance Standards (MEPS) programme for household appliances in the country. This project is also in line with the Jordan Common Country Assessment, which recommends maximizing the efficient use of energy and the use of renewable energy.

The project aims at reducing greenhouse gas (GHG) emissions resulting from the energy consumption of electrical appliances in Jordan by achieving a market transformation towards high-efficiency products through the introduction of energy labels and Minimum Energy Performance Standards. The Project will address several barriers currently present in Jordan, and will include four components: 1) enhanced capacity on the part of Government and energy agency units for appliance EE policy development, implementation and market surveillance; 2) structured verification and enforcement of appliance EE labels and standards; 3) enhanced consumer awareness of appliance energy efficiency characteristics, standards and labels and the costs and benefits of more efficient products; and 4) increased capacity of manufacturers to produce and market EE appliances.

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Project ID:	00074459
PIMS #	3735
Start date:	June 2010
End Date	June 2013
Management Arrangements	NEX modality
PAC Meeting Date	27 May 2010

Total resources required	\$ 2,323,615
Total allocated resources:	\$ 2,323,615
• Regular	\$100,000
• Other:	
o GEF	\$ 965,000
o Government	\$ 100,000
o In-kind	\$ 1,123,615
o Other	
In-kind contributions	\$ 580,000 (SGP parallel funding)

Agreed by (Ministry of Planning and International Cooperation):

Agreed by (National Energy Research Centre):  
*Wahid R. Shahr*

Date/Month/Year  
*July 18, 2010*

Agreed by (UNDP):  
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Date/Month/Year  
*July 28<sup>th</sup> 2010*

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## LIST OF ACRONYMS

CEGCO	Central Electricity Generating Company
DSM	Demand Side Management
EE	Energy Efficiency
EU	European Union
GAM	Greater Amman Municipality
GEF	Global Environment Facility
GHG	Greenhouse Gas
GoJ	Government of Jordan
GWh	Gigawatt-hour
GTZ	German Agency for Technical Cooperation
HACT	Harmonized Approach to Cash Transfers
HV	High Voltage
JEA	Jordan Electricity Authority
kW	Kilowatt
LV	Low Voltage
MoEMR	Ministry of Energy and Mineral Resources
MoF	Ministry of Finance
MoIT	Ministry of Industry and Trade
MoPIC	Ministry of Planning and International Cooperation
MV	Medium Voltage
MW	Megawatt
NEPCO	National Electric Power Company
NERC	National Energy Research Center
O&M	Operation and Maintenance
RE	Renewable Energy
RET	Renewable Energy Technology
S&L	Standards and Labels
TOR	Terms of Reference
UNDAF	United Nations Development Assistance Framework
UNDP	United Nations Development Programme
UNFCCC	United Nations Framework Convention on Climate Change

## I. SITUATION ANALYSIS

### 1.1 Context and global significance: Environmental, policy and institutional:

The Hashemite Kingdom of Jordan is currently experiencing a high population growth rate, boosted by the immigration of many Iraqi business and intellectual classes to the country. The country covers an area of about 89,200 km<sup>2</sup>, sharing borders with Iraq, Israel, Syria and Saudi Arabia. More than 80% of its population of 5.7 million (2007)<sup>1</sup> lives predominantly in urban centres, particularly in the northwest of the country in areas constituting about ten percent of the country's total land area. Amman is the largest and the most important city in the country. In 2007, the population of Greater Amman was estimated at about 2.2 million, representing more than 38% of Jordan's total population<sup>2</sup>.

The country is a large importer of energy and is highly affected by the cost of energy imports, which has been a major burden on its economy. Small quantities of crude oil were discovered in the 1980s on Jordanian territory but the amount represents less than 1% of the country's oil imports. The country still depends heavily on oil imports as its main source of energy. There is no production or use of coal in Jordan. In 1987, gas was discovered in Risha and the production of natural gas has expanded subsequently. However, the country's natural gas reserves are modest and only produce about 10% of Jordan's annual electricity requirements. Most of Jordan's gas resources are imported. In 2003, the construction of a pipeline section in Egypt was completed, allowing natural gas to be delivered to the Aqaba thermal power plant, the largest station in the country. Since then, many industries and services in Jordan have converted from oil to natural gas. Jordan is currently focusing its efforts on exploring other possible indigenous resources to meet the increasing demand for energy and reduce the burden being imposed by costly energy imports: oil shale reserves are known to cover more than 60% of Jordan's territory and are estimated at about 40 billion tonnes, but their exploitation is still in the early stages.

Jordan's potential for renewable energy is significant, but renewable energy generation currently represents less than 1% of the country's electrical energy production. There are a number of regions with acceptable wind velocities to generate electricity, abundant supplies of solar energy with relatively high average daily solar radiation, and also possibilities of generating electricity using hydropower stations by exploiting the difference in elevation between the Red and Dead Seas. Jordan has been promoting renewable energy for a decade to reduce its dependence on gas imports. The Government's goal for 2015 is to generate 5% of Jordan's total energy needs through renewable sources. Research activities are ongoing and a number of small scale projects have been implemented in the areas of solar thermal, photovoltaic, hydro and wind energy.

Jordan's demand for primary energy is growing to cope with its sustainable development. In 2007, the growth rate was about 3.5% and demand is expected to continue to increase at an average annual rate of 6%. The following table presents an estimate of primary energy demand up to year 2020.

**Table 1: Forecast of the Demand for Primary Energy**

Year	2007	2010	2015	2020	Growth Rate (%)
Quantities [KTOE]	7,438	8,859	11,855	15,865	6

Source: National Electric Power Corporation (NEPCO) Annual Report 2007 (p.11)

<sup>1</sup> Population Reference Bureau: <http://www.prb.org/>

<sup>2</sup> Jordan Department of Statistics: [http://www.dos.gov.jo/sdb\\_pop/sdb\\_pop\\_e/inde\\_o.htm](http://www.dos.gov.jo/sdb_pop/sdb_pop_e/inde_o.htm)

Jordan's primary energy demands will more than double by 2020 according to current trends. It must import over 95% of its energy, and volatile fuel prices were expected to cost the Government of Jordan close to JD 2.28 billion, which is equivalent to US\$3.22 billion, representing over 19.5% of the Gross National Product (Table 2). With Jordan's energy consumption continuing to grow rapidly each year, it will be difficult for the country to sustain its current growth trends given the prevailing energy price levels.

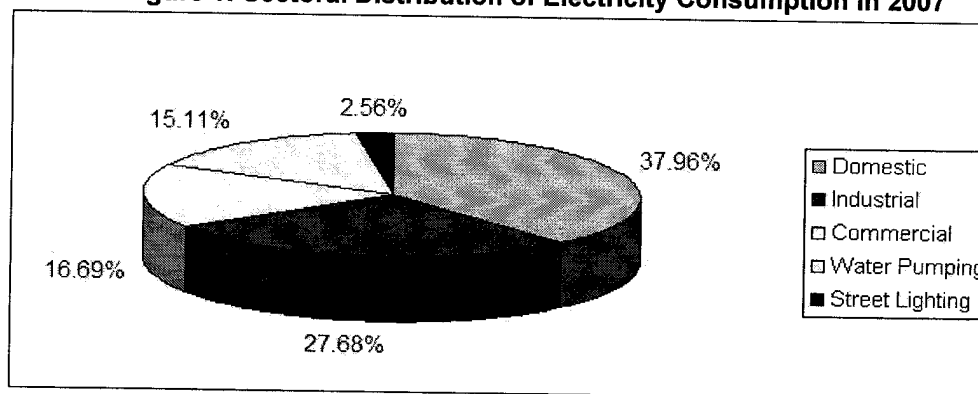
**Table 2: Demand and Cost of Energy**

Year	Gross National Product & Energy Demand		Cost of Consumed Crude Oil Relative to		
	GNP in Current Price (Million JD)	Total Energy Demand (KTOE)*	Exports (%)	Imports (%)	GNP (%)
2002	6,879	5,299	36.3	16.9	8.9
2003	7,354	5,774	41.8	18.8	17.5
2004	8,320	6,489	47.0	19.9	13.9
2005	9,231	7,028	65.4	23.9	19.2
2006	10,409	7,187	60.6	23.4	18.4
2007	11,698	7,438	66.3	23.8	19.5

Source: National Electric Power Corporation (NEPCO) Annual Report 2007 (p.11) (\* Fuel).

Jordan's electricity demand is currently growing faster than its primary energy demand. The country's total electricity consumption is boosted by demand in the domestic sector, and this is expected to increase with the growth of the population, the economy and the number of households using electrical appliances. Almost 38% of the country's electricity is consumed by the domestic sector<sup>3</sup>, which represented 4,017 kWh in 2007. With Jordan's growing population and increasing demand for electricity, the potential for energy efficiency programmes in the domestic sector is high.

**Figure 1: Sectoral Distribution of Electricity Consumption in 2007**



According to the NEPCO's most recent figures, electricity consumption increased from 9,593 million kWh in 2006 to 10,553 million kWh in 2007, representing a growth rate of 10.1%. Demand is expected to continue to increase up to 2020 with an average annual growth rate of 8.5%, as shown in the following table.

<sup>3</sup> NEPCO 2007 Annual Report

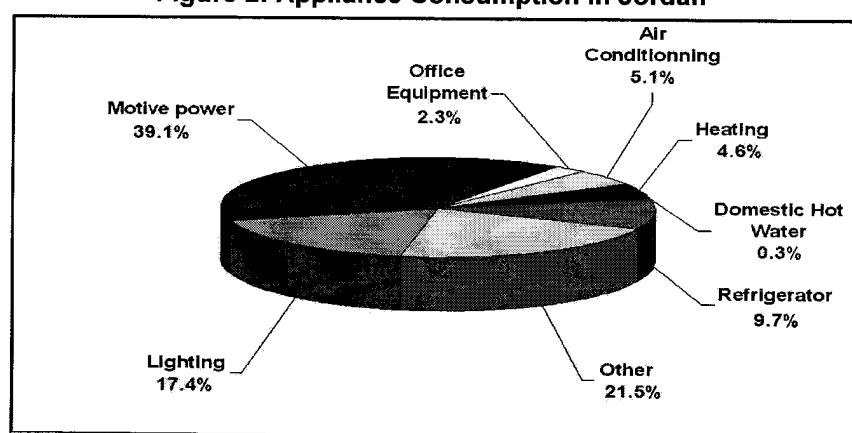
**Table 3: Forecast of Peak Load and Electricity Demand**

Year	2007	2010	2015	2020	Growth Rate (%)
Peak Load [MW]	2,160	2,759	4,149	6,238	8.5
Electricity Demand [GWh]	13,208	16,870	25,367	38,144	8.5

Source: Based on NEPCO's Planning Studies, Annual Report 2007 (p.24)

International experience suggests that 30% of the energy consumption in the domestic sector could be saved with the implementation of energy efficient electrical appliances<sup>4</sup>. An energy efficiency standards and labeling programme could pave the way to Minimum Energy Performance Standards for electrical appliances in households and contribute to a significant reduction in the electricity consumption in the residential sector.

**Figure 2: Appliance Consumption in Jordan<sup>5</sup>**



Refrigerators, air conditioners and other electrical appliances alone represent almost 20% of Jordan's energy consumption. There is significant potential for reductions in energy consumption, especially by increasing the energy efficiency of two appliances in particular: domestic refrigerators and air conditioners<sup>6</sup>. Energy Efficiency Standards and Labeling, particularly for freezers, refrigerators, air conditioners and washing machines, could also contribute noticeably to increasing energy savings in the commercial sector since small businesses in Jordan predominantly use domestic electrical appliances.

To meet the challenges in the energy sector, a comprehensive Energy Strategy was approved by the Ministry of Energy and Mineral Resources (MoEMR) in December 2004 to provide a vision for the development of the energy sector over the next ten years. The Government has expressed particular concern about ongoing energy expenditures.

Energy efficiency programmes such as EE Standards and Labeling for the domestic sector have a long and proven history, with the generation of substantial energy savings in many countries. The application of EE Standards and Labeling in Jordan will help to maintain a lower growth rate of energy consumption. For example, EE Standards and Labeling were implemented in the late 1970s in California. Compared

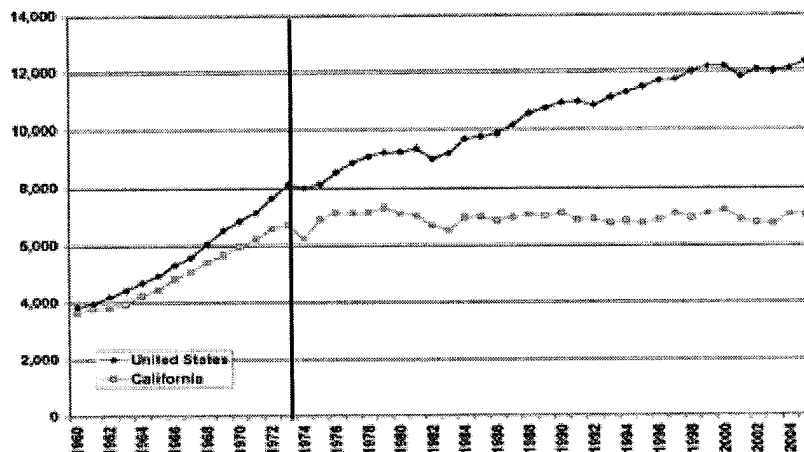
<sup>4</sup> Key Facts in Promoting EnerGuide and ENERGY STAR, <http://oee.nrcan-rncan.gc.ca/residential/>

<sup>5</sup> Jordan's Department of Statistics Annual Report, 2007

<sup>6</sup> OECD 2002, Climate Change and Development

with the rest of United States, the EE programme has been a major factor in constraining the per capita growth of electricity consumption in California.

**Figure 3: Impacts of EE Standards and Labeling on the Per Capita Electricity Use in California<sup>7</sup>**



The Government intends to transform the market by supporting EE standards as core requirements for appliances and equipment in the household sector. The Government also understands the importance of developing a multi-sectoral approach to promoting EE standards in end-use sectors. By integrating EE considerations into a national strategy, the Government aims to ensure that EE initiatives are mainstreamed into each sectoral development programme as part of the Government's ongoing policy. This approach will prevent the piece-meal approach of previous programmes by making EE standards and processes an integral part of the initiatives in the energy sector. The energy EE standards introduced via the proposed project will initially be introduced as a voluntary program, transitioning to a mandatory program once they have proved their efficacy. The Government is explicit in its support for establishing a mandatory program.

### 1.2 Threats, root causes

Energy efficiency in Jordan has essentially remained at the pilot phase level, with the notable exception of an ongoing GEF global solar water-heating project<sup>8</sup>. One of the features that is typical in developing countries, including Jordan, is that most of the appliances used in the household sector are highly energy inefficient due to a lack of awareness and incentives regarding the purchase of efficient equipment. Such appliances have a huge energy efficiency and savings potential that can be harnessed without compromising the services that these appliances provide to their users.

On a general basis, the possible barriers that prevent the implementation of S&L programs and the penetration of higher efficiency appliances have been identified as the following:

- (i) Institutional barriers
- (ii) Policy barriers
- (iii) Legal and regulatory barriers
- (iv) Technical barriers
- (v) Cost barriers

<sup>7</sup> The California Energy Commission, [http://www.energy.ca.gov/2007\\_energy/policy/](http://www.energy.ca.gov/2007_energy/policy/)

<sup>8</sup> <http://www.solarthermalworld.org/taxonomy/term/940?module=browse>



- (vi) Awareness and information barriers
- (vii) Implementation barriers

All of these barriers are discussed below, taking Jordan's specific economic and social context into consideration.

### 1.3 Long-term solutions and barriers to achieving the solution:

Without GEF support, the barriers to the development of energy efficiency in the consumer sector will remain and will result in unabated growth of electricity generation to feed growing socio-economic needs, resulting in GHG emissions that contribute to global warming. Barriers to be addressed by the project are outlined below:

#### **a. Limited Institutional Capability**

No single Government agency in Jordan has the clear responsibility of promoting energy efficiency in all Jordanian sectors, and coordination between various Jordanian Government ministries responsible for standards and labeling development, implementation and enforcement is difficult (please see the stakeholders sections for more details). There is no experience of how a structured enforcement program should be implemented, and there is no laboratory that could test the energy efficiency of household appliances.

#### **b. Lack of Policy, Legal and Regulatory Framework**

Since 2004, the Jordanian Cabinet has committed itself to developing a clear policy framework on energy efficiency. The Master Strategy for the Energy Sector for the 2007-2020 period was updated in December 2007. However, adaptation of this policy into a legal and regulatory framework will require tremendous efforts. There is currently a lack of information and know-how on how to proceed efficiently with these important steps.

As a result, no specific policy document related to energy efficiency has been published. The draft law on the establishment of an energy efficiency fund has not been issued. In addition, the Master Strategy envisages some significant investments in the energy efficiency domain, totalling US\$150 million. However, even though six sub-sectors are involved, there is no single forum for Government ministries to come together to harmonize their respective programmes in support of the implementation of a common energy efficiency strategy.

This presents a challenge as the Royal Commission in charge of reviewing and updating the Master Strategy seeks to develop a consensus around a clear set of objectives. The support of key ministries and public institutions in charge of the domestic, industrial and finance sectors will have a major impact on the success of any EE legislation for household appliances.

Another barrier is the weak linkage between the public and private sectors. There is no platform to engage public and private stakeholders in a policy dialogue on a national energy efficiency programme. Without extensive consultation with professional associations representing electrical appliance manufacturers, retailers, suppliers, etc., the Government's efforts to introduce EE legislation will have a limited impact.

Regarding the legal and regulatory framework, the electrical appliances market in Jordan is composed mostly of low energy-efficient appliances. Regulations are needed in order to promote more energy

efficient appliances or to ban or limit the sale of low-efficiency models. To date, there is no energy efficiency law that can serve as a legal basis for introducing regulations to ensure that the most inefficient appliances are pushed out of the market by legislative measures.

**c. Lack of Capability of Local Manufacturers**

Small and medium-size household appliance manufacturers currently lack the capacity and incentives to develop new improved designs that could compete with the current international proliferation of energy efficient household equipment. Manufacturers are generally unaware that a one- or two-class improvement (according to the EU classification scheme) is often possible with a minimal investment from local manufacturers, and sometimes with a reduction in production costs (as some manufacturers in Tunisia have realized during the implementation of their S&L program<sup>9</sup>). Some larger manufacturers would have the ability, owing to their size and their international contacts, to produce higher efficiency equipment, but they do not yet see the possible market for this category of appliances.

Other technical barriers are attributed to the fact that Government agencies have limited technical experience in EE Standards and Labeling design and implementation. This is particularly true in the case of the NERC, which will be responsible in the context of this project, for coordinating the design of the standards and for advising the JISM on the appropriate specifications for the EE standards for electrical appliances. In addition, there is a lack of knowledge on the part of ministries associated with the project (Energy, Industry, etc.) on how to develop support programmes for S&L in order to accelerate the market transformation process for more energy efficient appliances. The local private sector, comprised of manufacturers and electrical equipment suppliers, is also held back by the lack of understanding of energy efficiency issues for energy consuming appliances. Without a strong and informed endorsement of energy efficiency standards by market players, particularly in the private sector, the proposed regulations developed by the project will be ignored.

Another element to be taken into consideration on a technical level is the fact that higher efficiency electrical components such as compressors, which are the most important energy consuming components of air conditioners and refrigerators, are not available domestically. The reason is that local manufacturers and retailers lack expertise in the design and marketing of highly energy efficient compressors. This is also partly due to the lack of standards, which allow cheaper and less efficient products to prevail on the market. The lack of installations for testing household appliances according to international standards can also be a technical barrier to the proper implementation of energy efficiency standards in Jordan

**d. Cost Barriers**

Even when end-users understand the rationale for investing in more energy efficient products and become aware of the costs and benefits, they often lack the resources needed to make the upfront investment. Energy efficient products are often a little more expensive on the 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. The high initial cost of high efficiency appliances influences the mind-set of consumers, particularly those in low-income brackets. Besides, energy efficiency issues are not taken into account in the country's tax regime (high import VAT and duty), nor are incentives provided for using energy efficient equipment.

The uncertainty about the cost effectiveness of, as well as the market demand for, high efficiency appliances also constitutes a barrier, making manufacturers reluctant to dedicate their financial resources

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<sup>9</sup> PIMS 993 "Tunisia - Barrier removal to encourage and secure implementation of standards and labelling of cold appliances and transformation of the cold appliance market" GEF project.

to more costly plants. This also makes dealers/retailers reluctant to stock energy efficient products. Typically, few businesses are willing to provide extra budgets for non-core investments, such as those for research and development, on improvements to their products so that they become more energy efficient.

**e. Low Public Awareness and Retailer Interest**

The majority of end-users are not aware of the energy performance of energy-consuming products and the associated costs and benefits of investing in energy efficient appliances. Currently, a maximum of 10% of all end-users occasionally enquire about the energy performance of products; others never take this into consideration<sup>10</sup>. Besides, despite the fact that a consumer organization does exist in Jordan, it is understaffed and has very limited resources to work with.

Customers make purchase decisions worth JD 2.28 billion (equivalent to US\$3.22 billion) based largely on the actual cost of a product only, without consideration of its operating cost. No reliable information – even partial information – is available on energy efficiency performance in Jordan, partly because of a lack of common metrics. The lack of end-user understanding of product energy performance issues is a barrier to market transformation and the cooperation of end-users is essential for those products to take off 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, since the end-users' understanding of the rationale for such measures is essential for the long-term support of the EE policy, and thus for its sustainability.

Though some appliance and equipment distributors and retailers (typically high-end suppliers) understand the importance of product energy efficiency characteristics, most of them are not aware of this and of the benefits these products might generate in reducing running costs, providing improved quality to their clients and increasing their profit margins (adding EE characteristics to equipment typically provides manufacturers with an opportunity to market them as premium equipment). In a Standards & Labeling project undertaken in Tunisia, one manufacturer mentioned during a post-project interview that the project allowed him to find more efficient compressor and heat exchanger equipment at lower cost than his actual cost of construction. He decided nevertheless to increase the price of efficient units on the market to differentiate it from the normal equipment as a pure marketing move<sup>11</sup>. The main focus of retailers is on their sales volume only. In addition, manufacturers are not certain about the cost effectiveness and market demand for high-efficiency models of electrical appliances. This situation results in retailers not offering a sufficient range of energy efficient equipment because of the low demand for this type of appliance. Manufacturers and dealers need to offer higher efficiency products to their clients and inform them about the costs and benefits of energy efficient products. At the Government level, there is little information available on the potential impact and cost effectiveness of S&L programmes.

The consequence of all of these barriers is that the sales level for energy efficient appliances is very low. There is, therefore, a need for dissemination of information on S&L benefits and opportunities to the general public and retailers in order to raise awareness and generate activities in the sector. Such a process is key to building public confidence and acceptance regarding the energy labeling system.

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<sup>10</sup> Manufacturers' interviews concerning the interest of customer on EE (undertaken during project preparation)

<sup>11</sup> Source: Interview of manufacturers in Tunisia by Econoler and Samir Amous, 2004.

#### **f. Implementation Barriers**

In order to transform the market towards more energy efficient appliances and equipment, Jordan needs appropriate, internationally recognized testing of products. Without proper test procedures, a clear indication of the energy efficiency of a product cannot be objectively established, thus making it impossible to select better products.

Jordan has started, as part of a regional programme, pre-export inspections to verify the compliance of products with some quality standards. The energy efficiency of electrical appliances is currently not part of this programme, but 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 would only occur on paper, not in reality.

For some products (e.g. refrigerators), a restriction on the import of second-hand products is needed. Jordan Customs are experienced in the import regulations of some products, but not in the regulations applicable to appliances and equipment.

#### **1.4 Project components (long-term solution):**

The barriers presented above hinder the penetration of higher efficiency appliances in Jordan, and they lead to the fact that the procurement and operation of energy-consuming equipment is often overly focused on initial, rather than life cycle, cost optimization, to the detriment of overall efficiency. The project has been designed to remove some of the most significant barriers mentioned above and allow the market transformation process to be implemented at a more rapid rate. Each outcome has been selected to address one particular barrier category.

Regarding the legal and regulatory framework, the electrical appliances market in Jordan is composed mostly of low energy efficient appliances. Regulations are needed in order to promote more energy efficient appliances or to ban or limit the sale of low-efficiency models. To date, there is no energy efficiency law that can serve as a legal basis for introducing regulations to ensure that the most inefficient appliances are pushed out of the market by legislative measures.

The consensus reached during the preparation of the project is that the National Energy Research Centre (NERC) should assume the leadership of driving the development of the S&L system for household appliances. NERC is a legal semi-governmental and non-profit entity based in Amman, Jordan. Among NERC's purposes are research, development and training in new and renewable energy, raising the efficiency of using energy in the different economic sectors, improving legislative framework for energy conservation, etc. NERC is considered as one of the specialized science and technological centres working under the umbrella of the Higher Council for Science and Technology. Item 4 of NERC's By-Law details the organisation's mandate for the "development of different methods of energy use and rationalization to increase efficiency of energy use, decrease national energy cost and protect the environment". NERC is the body mandated to draft national regulations and policy relating to energy efficiency for submission to the Government of Jordan for endorsement and enforcement.

To this end, the NERC will coordinate with other Government institutions, including the Jordan Institution for Standards and Metrology (JISM) and the Ministry of Energy and Industry, to set up an appropriate legal and regulatory framework to achieve the project priorities.

In order to have a measurable impact, this project will undertake a multi-sectoral approach to ensure energy efficiency measures are incorporated in the country's sectoral programs. The main objective of the project is to establish an energy labeling system and a Minimum Energy Performance Standards (MEPS) program for household appliances in Jordan, with the initial focus on air conditioners, refrigerators, freezers and washing machines. These appliances have been selected because they offer a large national market with a high penetration in households (for example: penetration factor of 93.1% for domestic refrigerators), high energy saving potential and the presence of a regional market.

GEF's support is essential to provide local laboratories with the resources needed for capacity building and to train them and other stakeholders on internationally recognized ISO standards for equipment testing and adequate enforcement procedures. GEF's involvement will allow the support of awareness activities aimed at convincing local retailers and the general population of the benefit of introducing higher efficiency appliances in the market. Local NGOs' efforts will complement GEF's efforts. GEF's funding will be used to bring experienced international experts that can run complex appliance models and demonstrate the various ways in which energy gains can be achieved with minimal investment or with a reduction in production cost.

**GEF's support to the project is important to accomplish these goals and also to catalyze the intervention of many local Government and NGO co-financing partners who would not provide their support to the initiative without GEF's intervention.**

The main strategic approach of the project is to:

- Provide relevant Government ministries with technical assistance and support for the introduction of the first set of appliance standard and labelling regulations as well as support for the design and implementation of support programs.
- Provide tools and methods to the ministries responsible for enforcement so they can ensure that the new regulations are applied consistently.
- Transform the appliance market in Jordan towards more energy efficient technologies through the introduction of energy performance labelling and a set of minimum energy performance standards.
- Educate customers on the importance of selecting a high efficiency appliance to avoid medium- and long-term operating costs.
- Encourage retailers to offer more efficient products in Jordan.
- Stimulate the introduction of cost-effective, energy efficient technology.

#### **Component 1 Capacity enhancement in Government and energy agency units for appliance EE policy development, implementation and market surveillance**

This component will provide technical assistance and capacity building to the Government so that it can benefit from the experience gained in a range of countries over the past 25 years regarding S&L implementation. This support will help the Government to understand the various types of regulation and support programs that have been implemented elsewhere and to focus on the most effective approaches. It will also help the Government to build a strong business case to support the introduction of the new set of regulations by demonstrating how the expected impact of the programs can be evaluated and by providing hard figures for the expected reduction in primary energy, cost effectiveness for customers, additional revenues for manufacturers and retailers (together with added sales taxes revenues) and GHG emissions reduction. The component also includes support for the design of the legal framework and the writing of the first set of regulations. Support will also extend to the support and enforcement programs that can be introduced in parallel to the legislation. During project execution, the highest level of Government officials (Secretary General) will be involved through the Steering Committee and formal meetings concerning the project's objectives, potential impact and importance for the country. The

objective of this component is to have sufficient expertise within the Government after the project's conclusion so that it can undertake the introduction of subsequent regulations and support programs for other appliances and equipment-types.

#### **Component 2 Structuring of verification & enforcement of appliance EE labels and standards**

This component will provide Government agencies and at least one selected laboratory with support for the design of enforcement procedures and for the testing of appliances. The enforcement procedures will cover manufacturers, importers and retailers and will ensure that all market actors are informed and are conforming to the new regulation. Support will also be provided to a selected laboratory (The Jordanian Institution for Standards and Metrology's lab) so that it can perform tests on a first set of appliances (most likely refrigerators and freezers). Another identified laboratory, the Royal Scientific Society Laboratories in Amman, does currently have the capability to perform air conditioner testing but their installation is for large equipment only and it is doubtful if it would be cost-effective for them to use their laboratory to test small unitary air conditioning equipment. The support will cover both the selection of equipment required to perform the test and the training on the international test procedures that is required to perform the test consistently. It is expected that this capacity building will be done at a regional level by establishing links with the Tunisian<sup>12</sup>, Syrian or Egyptian laboratories performing similar tests<sup>13</sup>. This component also includes the development of a market follow-up tool that will be required to provide the higher level of Government with hard facts about the efficiency of the regulation, the evolution of the market and the impact of the programs introduced. This monitoring will be useful both for the evaluation of the impact of this MSP project and to support future Government policy in the S&L domain.

#### **Component 3 Consumers' and retailers' awareness-raising and improved marketing of appliance EE standards and labels**

This component will support the information and awareness activities that are needed to change the perception of customers about the importance of purchasing higher efficiency appliances and the cost effectiveness of doing so. This will be achieved through the preparation of a marketing plan and the implementation of marketing activities by local and international retailers. International and local manufacturers will be invited to introduce information about the S&L program into their existing marketing activities. There are also parallel activities that will be initiated by the Jordan Small Grant Programme to support NGOs that will implement information campaigns in the country. This component will prompt some of the largest appliance distributors in the country to use energy efficiency as one of the rationales for selling their equipment and to support the labeling scheme in their advertisement campaigns. Customers, through better information, will react and begin to pay attention to the label and to the efficiency category of the appliance they purchase, which will eventually lead to the desired market transformation.

#### **Component 4 Improvement of manufacturers' capacity to produce and market EE appliances**

This component will support local manufacturers to help them design and then produce higher efficiency appliances. The component will set improvement targets that are achievable by manufacturers without retooling or other heavy investments. The experience from other countries has shown that significant improvement in efficiency can be achieved by working on the design and on the selection of equipment components. Manufacturers need to understand the relationship between the various components and their interaction which result in a specific efficiency of the final products. Often, a simulation of the actual operating efficiency of some models, and discussions about alternative sources to supply components, are all that is needed to achieve an improvement of 1 or 2 class levels (EU classification) for a

<sup>12</sup> <http://www.anme.nat.tn/index.asp?pld=158>

<sup>13</sup> <http://www.clasponline.org/clasp.online.worldwide.php?rc=22111>

manufacturer. This component will also establish a network with manufacturers where the various elements of the regulation and particularly the MEPS aspects will be discussed and announced well in advance for them to take appropriate action to adjust their products. The manufacturers will also be encouraged to participate in collaborative advertisement campaigns that will focus on the energy efficiency aspect of products.

## 1.5 Stakeholders Analysis

UNDP's previous experience shows that standard-setting and labeling is most effective when the process involves all stakeholders from the onset and when all analyses, interactions and decisions are open to full scrutiny by all parties. In this project, work on Standards and Labeling development and implementation will be as transparent as possible, with the active involvement of the Government, industry (including importers and manufacturers), retailers, NGOs, consumer representatives, technical bodies including test laboratories, certification and accreditation bodies, utilities, etc.

A list of stakeholders and an accompanying stakeholder involvement plan is provided in Annex 1. A broad programme of stakeholder consultation was conducted in Jordan through a series of presentations, interviews and workshops during the preparatory phase.

- **Government Ministries**

- **Ministry of Energy and Mineral Resources (MoEMR):** The MoEMR is responsible for defining Government policies on energy efficiency, as well as proposing a legislative framework for implementing EE regulations. The MoEMR was established in 1984 and entrusted with administering and organizing the energy sector in a way that achieves Jordan's national objectives. In light of the challenges faced by the energy sector, the responsibilities of the Ministry were amended to include the comprehensive planning process of the sector, establishing the Master Strategy for the Energy Sector and ensuring the implementation of its operational programmes in a way that achieves the overall goals of the energy sector.
- **Technical Committee (TC):** At the policy level, the project will rely on the Technical Committee formed within the Ministry of Energy and Mineral Resources by the Royal Commission to deal with the Master Strategy. This Technical Committee was formed under the chairmanship of His Excellency the Secretary General of the MoEMR; its members include representatives of the MoEMR and other bodies concerned with the energy sector. The Technical Committee will bring together public and private stakeholders to engage in a national policy dialogue and advise the Government on the implementation of the EE Standards and Labeling system for household appliances as well as for other orientations in EE policies. The Committee will also play an important role in aligning sectoral policies in the industrial, commercial and domestic sectors with the Government's energy consumption efficiency programmes. It will also ensure that the provisions for the application of the EE Standards and Labeling system are fully integrated into the Government's annual budget.
- **Ministry of Finance (MoF).** The MoF will be concerned with the project's objectives as its mission involves "study and analysis of the fiscal, monetary and economic conditions as well as the evaluation of policies and tax procedures". The following public departments, whose roles are critical to the project, are connected to the Ministry of Finance: Jordan Customs, Income & Sales Tax Department, General Budget Department and the Free Zones Corporation.
- **Ministry of Industry and Trade (MoIT).** According to its organizational law, the MoIT takes on the responsibility of regulating industry by type, classifying it, registering it according to an internal regulation, and preparing the programmes and studies that work on developing the industry and increasing its competitiveness. The MoIT's mission includes developing and implementing policies, legislation and programmes aimed at boosting business and the

investment environment in a form that increases Jordan's economic attraction and ensures the rights and benefits of consumers and the business sector. The design and implementation of the EE appliances S&L programme will require the full participation of the MoIT's appropriate departments.

- **Jordan Institution for Standards and Metrology (JISM):** The JISM plays a proactive role in enhancing the competitiveness of Jordanian products in the national, regional and international markets. To achieve this, the JISM fulfils its mandate to build, implement and update systems compatible with international practices in the fields of standardization, metrology, conformity assessment, market surveillance, accreditation, information and related areas. Its strategic objectives are the following: (i) adoption of a national system for standardization and metrology based on accepted international practices; (ii) keeping pace with scientific and technical developments in the fields of standards, metrology, conformity assessment and laboratory accreditation; (iii) ensuring the health and safety of the Kingdom's citizenry and protection of the environment by ensuring that products are in compliance with the technical regulations adopted by the Institution; and (iv) testing the quality of local products through the adoption of appropriate Jordanian standards in order to enhance their competitiveness on the local and international markets and thus support the national economy. The JISM will be closely associated with the setting up of the EE Standards and Labeling system for household appliances through its participation in the work of the EE S&L Technical Committee.
  - **Department of Specification and Metrology (DOSM):** The normative framework to develop and approve the energy efficient appliances Standards and Labeling system is already in place. The DOSM on renewable energy will be expanded to handle energy efficiency standards. This extension was deemed a natural choice since it already deals with solar water heating standards, a technology that involves both the RE and EE sector.
- **Municipalities**
    - **Greater Amman Municipality (GAM):** Amman has become known as an inclusive and socially responsible city by adopting a programme of Corporate Social Responsibility in 2006. The GAM also created a 'social contract' between the private sector, non-governmental organizations, international donors and the Government to assist those with special needs. This relationship has provided affordable housing, developed centres for those with special needs, retrofitted the city for Ammanis with disabilities, and created a community development programme that secures meaningful employment for under-privileged residents. This project will provide the opportunity for the GAM to integrate energy efficiency issues into the design and equipment of social housing for its low-income populations.
- **Electricity Sector Bodies**
    - **Electricity Regulatory Commission (ERC):** As part of the Government's policy on reforming the Jordanian economy by restructuring economic corporations and amending legislation to attract investment, the Government adopted a number of measures to restructure the electricity sector. The responsibility for monitoring and regulating the sector was given to the Electricity Regulatory Commission (ERC). One of the tasks performed by the ERC is to ensure the compliance of activities in the sector with applicable environmental protection standards and general public safety conditions as well as to ensure that a sufficient supply of electrical power is being provided to customers. The ERC is also committed to participating in consumer awareness-raising about energy saving. Recommendations to save electricity have been made available through the ERC's website to inform consumers<sup>14</sup>. The ERC will therefore benefit from this project through its participation in project information dissemination.

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<sup>14</sup> See ERC website: <http://www.erc.gov.jo>



- **Power Utilities (PUs).** Power utilities (two power producers, three distributors and one responsible for the power transmission system) will significantly benefit from the introduction of an energy labeling system and the establishment of a MEPS programme for household appliances. They will benefit from the impact of the appliances Standards and Labeling system on the power peak load, as they believe these benefits outweigh the immediate loss of revenue associated with reduced demand due to EE measures. As the growth in energy demand slows, they will likely be able to postpone investments in new generation transport and distribution facilities, while experiencing an improved power load profile.
- **Industry Representatives**
  - **Local Manufacturers and Importers:** Although some local manufacturers and importers (such as Hair, LG and Petra) market energy efficient models of electrical appliances and equipment, the range is limited compared with that of non-efficient models. Many industry associations (such as Chambers of Commerce, Amman Chamber of Industry, and the Jordan Chamber of Industry) were consulted during the project preparation phase they are highly supportive of the project idea.
  - **Retailers and Distributors:** A detailed investigation of the household electrical appliances industry in Jordan and discussions with retailers (such as The National Company for Cooling, Abdeen Industrial Corporation, and The Muhammad Sa'eed Company) and distributors (such as Hair and Petra) is necessary to develop and implement a strategy that will help to overcome barriers and to strengthen markets for energy efficient appliances. The preparatory phase of this project has meaningfully commenced this process, with consultations with 8 retail and distribution organisations. Through a comprehensive marketing and dissemination campaign, the proposed project will involve retailers and distributors in the regulatory changes and the implications of these changes.
- **Professional Associations**
  - **Jordan Engineers Association (JEA).** JEA is considered to be the largest professional association in Jordan. It incorporates a large number of Arab and foreign engineers practicing in Jordan. The JEA aims at organizing engineering practices, upgrading engineers' professional and scientific knowledge and participating in studies of an inter-Arab nature. The Association has a long tradition of collaboration with relevant Government departments since it is officially a consultative entity in its field of specialization. Professionals such as equipment engineers, electrical appliance engineers and engineering firms involved in monitoring the construction of homes and the application of building codes will benefit from technical training and a better understanding of EE requirements in their profession.
- **Consumer Groups**
  - **Jordan Association of Consumers (JAOC):** With this project, Jordan's urban families will improve their living conditions by improving the indoor air temperature in their homes through better air conditioning equipment as well as by operating energy efficient household appliances, thus reducing their annual electricity consumption bills. Consumer associations – and notably the leading association, the Jordan Association of Consumers – will therefore be involved in the design and delivery of public awareness campaigns related to the promotion of the energy labeling system and MEPS for household appliances.
- **Quasi-nongovernmental organisations:**
  - **National Energy Research Center (NERC):** The NERC will assume overall responsibility for managing the project. It will be the first point of contact for project implementation. The NERC

will coordinate activities with other Government institutions and private sector entities involved in the project, such as the NEPCO, the JISM, consumer associations, manufacturers, appliance distributor/retailer associations, etc. The NERC will be responsible for conducting technical studies related to the development of the S&L system.

The Government's ownership of, and preparedness for, the proposed project is best illustrated by the Minister of Energy and Mineral Resources' directive that the NERC take the lead role in driving the Government's EE Standards and Labeling system for household appliances to implement the Government's Master Strategy updated in December 2007. As a financially autonomous research institution, the NERC has a considerable amount of flexibility to implement innovative public-private partnership initiatives. The NERC is the executing agency for a number of donor-funded energy related projects.

Despite its overall mandate, the NERC lacks the capacity to launch major EE initiatives. Its technical resources are primarily focused on renewable energy projects such as wind and solar power. In order to be able to develop the EE Standards and Labeling system for household appliances and provide technical advice to the Jordan Institution for Standards and Metrology (JISM), the NERC will need to develop a small technical department (with technical assistance from this project) to conduct technical and economic analyses on the proposed EE Standards and Labeling system. The technical work will be performed by working groups specially set up by the NERC in close liaison with the JISM to develop the technical specifications related to the main sections of the household appliances EE Standards and Labels.

- **Non-Government Organization:**

- **Jordanian Renewable Energy Society (JRES):** the vision of the Jordanian Renewable Energy Society is to stimulate the exploitation of Renewable Energy resources in Jordan or anywhere, worldwide, and use that energy efficiently and feasibly for the benefit of Jordan and for all Arabic countries and invest in the now how of renewable energy technology for the benefit of the Arabic world and concentrate on the future energy from the sun.

It is important to note that the majority of the Government institutions and other stakeholders cited above have also been identified for the implementation of the national strategy for improving the efficiency of Jordan's energy consumption. The proposed project will explicitly complement and synergise the national strategy.

In the early stages of the project's initiation, an inception workshop will be conducted with the participation of all stakeholders including the concerned Government authorities and appliance stakeholders. This workshop is likely to be instrumental because of the complementary role each stakeholder will be playing in the S&L design and implementation process.

Women (equally with men) can play a key role in promoting the use of the Energy Efficiency Standards and Labels. Women have the potential to be key actors in the energy sector, mainly the promotion of the use of energy efficiency appliances in Jordan because of their very proactive behaviour in protection and well-being of their household, and their involvement in family community-based activities and neighbourhoods.

Involving women equally with men in all levels of decision-making positions (in this project, in education, public awareness, capacity development and planning) will enhance the potential contribution they can make in the use of EE appliances.

## **Baseline Analysis**

During the preparation of the Jordan National Energy Efficiency Strategy, a baseline analysis was conducted by the Technical Committee under the supervision of the Ministry of Energy and Mineral Resources. As part of the Committee's activities, a long list of appliances was developed, representing all significant energy-using products in Jordan and the neighbouring Arab countries. Out of this list, four products were selected for further analysis: air conditioners, domestic refrigerators, freezers and washing machines.

The baseline situation for each of the selected products is summarized in the following sections, including information about the sales and usage of appliances. Some statistical information used for the projection is based on a survey conducted in 2004 in Jordanian households. This data has been updated with the most recent information available concerning market growth rates. The number of households in Jordan in 2009 is more than 1 million and is increasing at an approximate growth rate of 4% each year. A detailed home appliances market study was conducted during the preparatory phase of the project, attached as Annex 2

- **Air Conditioners**

Information concerning air conditioner sales in previous years (2000-2004) suggests a very low sales level. Due to the fall in prices of air conditioners forecasted for the next few years, it is assumed that the penetration factor will increase at a faster pace, reaching 3% annual growth until the market reaches a saturation point estimated at 25%.

In 2010, it is estimated that the penetration factor of air conditioners will be about 15%, representing an average total sales volume of 6,322 air conditioner units with an average air conditioner unitary energy consumption of 3,057 kWh. Only 5% of the total sales are predicted to be second-hand products. The baseline projection assumes a 1% natural efficiency gain per year without this project. An average product life of 15 years is used in the projections.

- **Domestic Refrigerators**

The 2004 household survey reported a penetration factor of 93.1% for domestic refrigerators, which translates into approximately 1,020,230 households that will have a refrigerator in 2010. Considering the household growth rate of 4% and the fact that 6% of units (i.e. 6% of the installed base) are replaced each year because they reach the end of their useful life, it is projected that 118,817 refrigerators will be purchased annually, 20% of which will be second-hand products and 70% will be imports. Not counting second-hand products, the total stock affected by the project equals 95,054 units, with an average unitary energy consumption of 340 kWh. The baseline projection assumes a 2% natural efficiency gain per year without the project. An average product life of 15 years is used in the projections.

- **Freezers**

Jordan's households represent a smaller market for freezers, but these appliances are important and non-negligible energy-consuming devices with a unitary energy consumption estimated at 355 kWh. The average annual sales volume for freezers totals approximately 11,869 units, 15% of which are replacement units of the existing stock, or 7,949 units, and 4% of which are purchased by new households, which amounts to 3,920 units. Eighty percent of the sales, in 2012, will be new products and 20% will be second-hand. The stock affected by the project in 2010 should totalize 9,495 units with a constant penetration factor in households of 9.3% for the subsequent years. The baseline projection assumes a 2% natural efficiency gain per year without the project. An average product life of 15 years is used in the projections.

- ***Washing Machines***

In 2010, about 95.1% of Jordan's population will have a washing machine, representing 1,042,144 units. The total sales volume for washing machines to Jordan's households is estimated at 80,726 units per year with a household growth rate of 4% and 15% of the existing stock being replaced. It is estimated that about 5% of the machines will be second-hand products and the stock affected by the programme in 2010 will total 76,690 units, with an annual unitary energy consumption estimated at 218 kWh. An average penetration factor of 95.1% should remain constant over the project and post-project period. The baseline projection assumes a 2% natural efficiency gain per year without the project. An average product life of 15 years is considered in the projections.

## II. STRATEGY

### 2.1 Project rationale, policy conformity and coordination with other related initiatives:

As the standard of living in Jordan improves, energy expenditures are growing rapidly as more people demand hot water, heating and cooling for their basic comfort and household energy needs. The average efficiency of electrical domestic appliances currently sold in Jordan is significantly below that of the best products on the market, largely because of the strong emphasis on the part of customers and businesses on initial cost considerations, but also because of other barriers (including lack of policies, legal and regulatory frameworks, limited institutional capacities, lack of public awareness and retailers' interest and lack of local manufacturers' capacities) that impede the widespread introduction of more energy efficient appliances, not only in the residential sector, but in the commercial sector as well.

A regional project<sup>15</sup> completed in 2005 targeted greenhouse gas emission reductions by establishing energy codes for buildings and initiating a transformation in the construction industry in Lebanon and Palestine. In the project implementation framework, engineers from Jordan were trained on building codes. Through this collaboration, the Government of Jordan benefitted from the experiences of other neighbouring countries (such as Egypt, where energy labels have recently been introduced<sup>16</sup>) and from the opportunity to reduce some costs, for example on appliance testing. The present proposal will build on the experiences that the Government of Jordan, represented by the National Energy Research Centre, gained from participation in the regional projects.

Moreover, the project will also be coordinated with UNDP's ongoing initiatives in the country. In fact, UNDP has initiated technical assistance projects in the energy sector in Jordan, foremost among which is the Reduction of Methane Emissions and Utilization of Municipal Waste for Energy in Amman (funded by GEF, DANIDA, UNDP, and the Government of Jordan)<sup>17</sup>, as well as a newly developed project to support the Expansion of Russeifeh Landfill Gas Utilization System for Electric Power Generation funded by the Greater Amman Municipality (GAM) and UNDP. During the past few years, UNDP has undertaken other projects aimed at strengthening Jordan's energy sector through the planning of energy needs, demand forecasting and oil and gas production sharing agreements. All of these projects demonstrate the ability and seriousness of the Jordanian Government to pursue its efforts towards a more efficient energy sector. The Amman Call for Ecocities (October 2008), which mayors and environmentalists from the Mediterranean region declared, identifies various measures to be taken to improve urban sustainability, including energy efficiency codes and legislation with the active participation of the private sector.

Furthermore, and under the framework of the Master Strategy for the Energy Sector in Jordan, the Ministry of Energy and Mineral Resources (MoEMR) is planning to implement a nation-wide appliance efficiency programme using Standards and Labeling as a key policy instrument for promoting energy efficiency in the residential sector. This project will support the Government of Jordan in achieving the Master Strategy for the Energy Sector in Jordan's targets in relation to Energy Standards and Labeling.

This project will contribute to meeting the objectives set out in the UNDP Country Program Action Plan for Jordan, and will be implemented within the Country Program Action Plan. Jordan's CCA/UNDAF (2008-2012)<sup>18</sup> addresses assistance in responding to the identified key areas. The project is in line with Jordan's Common Country Assessment, which recommends maximizing the efficiency of energy use and the use of renewable energy, and contributes to **UNDAF Outcome 3: Sustainable management of natural**

<sup>15</sup> Capacity Building for the Adoption and Application of Energy Codes for Buildings, LEB/99/G35

<sup>16</sup> Efficiency Improvement and Greenhouse Gas Reduction, PIMS: 452, Project: 0012326

<sup>17</sup> Reduction of Methane Emissions and Utilization of Municipal Waste for Energy in Amman [JOR/96/G31] 00013180

<sup>18</sup> <http://www.undp-jordan.org/Default.aspx?tabid=97>

**resources and the environment and the Country Programme Outcome 2: Environmental policies aligned to global conventions & national implementation capacities enhanced<sup>19</sup>.**

Moreover, this project links closely with **Jordan's Human Development Report** and the **National Millennium Development Goals for Jordan. Jordan's 2<sup>nd</sup> Human Development Report (2004)<sup>20</sup>**, which had sustainable livelihoods as its focus, identified the issue of energy delivery to households as one of the main issues. It was found that the poorest households cannot afford to pay the costs of utility services (including electricity). Implementing a S&L system can result in some energy and cost savings at the household level and may reduce the burden of operating household appliances for the poor. Moreover, the **Arab Human Development Report (2002)<sup>21</sup>** identified the environment, halting environmental degradation and promoting cleaner production as being among the key issues confronting the region.

The project is strongly supportive of Jordan's National Energy Efficiency Strategy, which places heavy emphasis on electricity tariffs to achieve its energy efficiency goals. The Strategy involves the gradual removal of subsidies on electricity and the application of a pricing structure based on actual cost, and the maintenance of a tiered tariff regime according to consumer electricity usage. The electricity tariffs for residential customers are currently divided into four blocks: consumers who use 1-160 kWh per month and pay 0.032 JD/kWh; consumers who use 161-300 kWh per month and pay 0.071 JD/kWh; consumers who use 301-500 kWh per month and pay 0.085 JD/kWh; and consumers who use more than 500 kWh per month and pay 0.113 JD/kWh. The residential electricity tariff structure therefore incentivizes consumers to economise on their electricity usage, and the project will provide them with a means of doing so.

Finally, this project contributes to Jordan's achievement of national MDG goals where it relates to **Target 9: integrate the principles of sustainable development into country policies and programs, and reverse the loss of environmental resources**. More specifically, it relates to the following two indicators within Target 9: GDP per unit of energy use (as a proxy for energy efficiency) and carbon dioxide emissions (per capita).

## **2.2 Project's consistency with the GEF focal area strategies and strategic programs:**

The proposed project is expected to contribute to meeting the Climate Change focal area strategy and the GEF Strategic Program 1 (CC-SP1), "Promoting energy efficiency in residential and commercial buildings". The domestic sector represents 38% of Jordan's total electricity consumption and is expected to increase with population and economic growth. With an increase in market penetration of energy efficient appliances, energy demand growth in the household sector will be constrained below the business-as-usual trajectory. In turn, it will constrain the GHG emissions growth rate. The proposed project will support the adoption and enforcement of verified energy efficiency standards for the appliance industry. It is expected that the avoided electricity generation resulting from the project will lead to 230,000 tonnes of reduced CO<sub>2</sub> emissions (direct project impact) by the end of 2026, considering a 3-year program (2010-2012) and equipment life-times of 15 years: see Table 4 and Annex 3. An additional 2,859 ktonnes of CO<sub>2</sub> reductions, the indirect project impact, will be achieved by 2030 due to market transformation resulting from the project. Efforts will be made to link the project with the country's HCFC Phase-out Management Plan (HPMP) being implemented by UNIDO, so as to avoid a waste stream of HCFCs associated with disposal of energy-inefficient appliances.

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<sup>19</sup> <http://jo.one.un.org/>

<sup>20</sup> <http://www.undp-jordan.org/Default.aspx?tabid=81>

<sup>21</sup> <http://www.arab-hdr.org/publications/other/ahdr/ahdr2002e.pdf>

**Table 4: Reduced CO<sub>2</sub> emissions**

Type of Power Generation	Power Plants Capacity (MW)	% of contribution in Power Capacity	Annual Power Generation (GWh)	% of contribution in Power Generation	Individual Emission Factor kg CO <sub>2</sub> /kWh	% of Contribution in Emission Factor (based on power capacity percentage)
steam-HFO	363	19.38%	2855.6	29.58%	0.87	0.17
steam- NG	650	34.70%	5113.37	52.97%	0.6	0.21
Diesel	43	2.30%	73	0.76%	0.85	0.02
GT-Diesel	353	18.84%	341	3.53%	0.85	0.16
GT-NG	150	8.01%	648	6.71%	0.606	0.05
Combined-NG	300	16.01%	558	5.78%	0.399	0.063
Hydro	12	0.64%	57	0.59%	0	0
Wind	1.4	0.07%	3	0.03%	0	0
Biogas	1	0.05%	5	0.05%	0.6	0.00
<b>Total</b>	<b>1873.4</b>	<b>100.00%</b>	<b>9653.97</b>			<b>0.68</b>

Source: NERC

The **GEF intervention strategy** of the project will be to address the policy, financial, information and technological barriers to both the adoption of high efficiency equipment technologies by local manufacturers and to the acceptance of such technologies by Jordanian consumers. To this end, the MoEMR proposes to use GEF funds to: 1) provide Government ministries with technical assistance and support for the introduction of the first set of appliance Standards and Labeling regulations as well as support for the design and implementation of support programmes; 2) provide tools and methods to the ministries responsible for enforcement so that they can ensure that the new regulations are applied consistently; 3) transform the appliance market in Jordan towards more energy efficient technologies by the introduction of energy performance labels and a set of Minimum Energy Performance Standards; 4) educate the public on the importance of selecting energy efficient appliances to avoid medium- and long-term operating costs; 5) encourage retailers and distributors to offer more efficient products in Jordan; and 6) stimulate the introduction of cost-effective, energy efficient appliances. The project's design combines a market transformation strategy, including: i) 'technology push' – to encourage manufacturers to increase the efficiency of their products; and ii) 'market pull' – to create consumer demand for energy efficient appliances based on awareness and understanding.

The project's **global objective** is to reduce Jordan's energy-related GHG emissions by removing barriers to the widespread commercialization of energy efficient appliances in the household sector. This will be achieved through the introduction of an energy labeling system and a MEPS programme for household appliances in Jordan with an initial focus on air conditioners, refrigerators, freezers and washing machines.

The **development objectives** coincide with the goals of the National Energy Efficiency Strategy, namely: 1) to reduce energy consumption without negatively affecting production or the population's standard of living, to lower the import oil bill at the national level and to reduce the emission of harmful gases to the environment; 2) to improve the nation's standard of living; 3) to achieve an equilibrium between imports and exports; 4) to reduce production costs and improve the competitiveness of local industries and other sectors; and 5) to reduce investments in the equipment used for the production, conversion, transport and distribution of energy.

The requirements for a comprehensive household capacity and outreach programme, along with strengthening the necessary legal, regulatory and institutional frameworks and targeting retailers and manufacturers who play a crucial role in influencing consumers' purchasing decisions, are in line with GEF operational principles and strategic programmes for climate change. **Without GEF intervention, it is not clear that the Government would be able to put in place a comprehensive multi-sectoral policy initiative to integrate appliance labeling and Minimum Energy Performance Standards in the household sector and it is very unlikely that local retailers and manufacturers would take the needed leap in marketing and technology needed to do so.**

GEF funding will help overcome the barriers to the development and implementation of Energy Efficiency Standards and Labeling of Household Appliances in order to reduce electricity in the residential sector and associated greenhouse gas emissions. The GEF funding provided through a grant will be used to fund incremental costs related to the project. The GEF financing of USD 965,000 will leverage USD 1,267,118 million as co-financing from the Government of Jordan, private sector, NGOs and others. The funding requested from GEF represents about 43% of the total project costs.

**Without the GEF support, it is likely that full implementation of energy efficiency standards and labelling of building appliances would take longer than if the Jordanian Government can benefit from the experiences gained in other countries.** The proposed project addresses this barrier with a comprehensive component on the policy, legal and regulatory system development. **GEF's involvement will provide the necessary resources for capacity building and this will be a primary catalyst to increase the efficiency of the in-kind effort that the Government and other stakeholders will provide.**

Finally, this project is aligned with a number of regional and national GEF projects that have sought to promote energy efficiency in the domestic sector, especially in improving the rational use of energy by households. It seeks to build upon lessons learned from previous initiatives by ensuring a tight integration between Government agencies responsible for establishing the appropriate regulatory framework and the private sector operators and consumers who will play a key role in the market transformation for energy efficient products. Extensive consultations with public and private sector stakeholders and consumer associations through Master Strategy Technical Committee meetings have reaffirmed the willingness of members of the private sector to support this initiative as long as they are involved in it from the conceptual and design phase.

### **2.3 Country ownership: Country eligibility and country drivenness:**

#### **Country eligibility:**

Jordan has ratified the United Nations Convention on Climate Change (UNFCCC) and is a Non-Annex I Party to it. It also accepted the Kyoto Protocol on January 17, 2003, coming into force on February 16, 2005. The Ministry of Planning and International Cooperation (MoPIC) hosts the GEF Focal Point. Jordan issued its Initial National Communication in March 1997 (updated in November 1997) and its Second National Communication was published on 12 November 2009 and was submitted to the UNFCCC COP.

#### **Country drivenness:**

In its Initial National Communication, Jordan recognizes the importance of regulations, energy efficiency and customer awareness in achieving the goal of reducing greenhouse gas emissions. The project is in line with the Act of Confining Sources of Greenhouse Gases Emanation issued in accordance with articles (11, 18) of the Environment Protection Law. No. (1) 2003 for Jordan. The Jordanian Cabinet has also recently approved (2004) a national energy efficiency strategy, which proposes certain measures in order to reduce the burden of imported oil on the Jordanian economy. The general strategy section sets out the objective of introducing "technical standards which will set the minimum standards for energy efficiency of imported and locally manufactured equipments". Furthermore, the section on the implementation procedure of the document states in Item 8 that the Government wants to "oblige importers and manufacturers of energy consuming appliances to fix energy efficiency labels indicating the annual consumption of the equipment on their product". Thus, the strategy calls for the establishment of an energy-labeling and MEPS program for household appliances. H.E. Minister of Energy and Mineral Resources has personally instructed the Jordanian Institution for Standards and Metrology to prepare technical standards for various household appliances. The initial work that is underway is the transposition of the ISO equipment testing procedures for three appliances into the Jordanian format to



be approved as a national standard. Initial work to see if harmonization with the Egypt label could be beneficial has also been initiated. The proposed project piggybacks on this early effort to provide more comprehensive support for the subsequent steps and for other appliances.

In order to implement the national energy efficiency strategy, a Steering Committee and several sub-committees have been established. The Steering Committee members are:

- Minister of Energy and Mineral Resources / President.
- Secretary General of Ministry of Energy and Mineral Resources
- Secretary General of Ministry of Planning and International Cooperation
- Secretary General of Ministry of Finance
- General Manager of Electricity Sector Regulatory Commission
- General Manager of Public Transport Regulatory Commission
- President of National Energy Research Center
- Director of Energy Conservation and Environment Department (Ministry of Energy and Mineral Resources).

Technical committees have also been formed to follow up on the suggested implementation measures. The following is a list of the different committees and their members:

1) Information and Awareness Committee

- Ministry of Energy and Mineral Resources
- National Energy Research Center
- Ministry of Education and Scientific Research
- Jordan Engineers Association

2) Taxes Committee

- Ministry of Energy and Mineral Resources
- National Energy Research Center
- Electricity sector regulatory commission
- Ministry of Planning and International Cooperation
- Ministry of Industry and Trade

3) Specification Committee

- Electricity department (Ministry of Energy and Mineral Resources).
- Electricity sector regulatory commission
- National Energy Research Center
- Department of Specification and Metrology
- Jordan Engineers Association

4) Pilot Projects Committee

- Ministry of Energy and Mineral Resources
- National Energy Research Center
- Jordan Engineers Association
- Ministry of Planning and International Cooperation

5) Building Codes Committee

- Ministry of Energy and Minerals Resources
- Ministry of Public Works and Housing
- Ministry of Municipalities

- Municipality of Greater Amman
- National Energy Research Centre
- Jordan Engineers Association

#### 6) Public Transportation Committee

- Ministry of Energy and Mineral Resources
- Ministry of Public Works and Housing
- Ministry of Municipalities
- Municipality of Greater Amman
- Department of Cars and Drivers Licensing
- National Energy Research Centre
- Public Transportation Corporation

Of the six committees put in place, two have special relevance to the proposed project:

- Specification Committee: The Specification Committee is a supervisory body with the mandate to find the best approach to transform Government policies concerning S&L into concrete actions. The Committee's first initiative, which started in 2006, is to transpose the appliances testing standard from ISO and IEC into a national Jordanian standard. However, capacity building and support will be needed to proceed to the next steps of preparing MEPS standards to match the testing standard and labeling procedures. The Specification Committee fully supports the proposed project, as it will provide an opportunity for know-how transfer and support during the preparation of the first three appliance S&L programs. The intention of the Committee is to learn from the proposed project, and then to apply similar approaches for other household appliances, followed by other commercial and industrial equipment-types.
- Information and Awareness Committee: The Information and Awareness Committee is in charge of coordinating all awareness and information dissemination programs for all sectors. Committee members have expressed interest in the proposed project because of its potential impact on household energy usage. The project includes awareness activities that must be coordinated with other Government initiatives and the Committee intends to be very active in supervising this task.

Through the collaboration proposed within the context of this project, the Government of Jordan will benefit from the experiences of other neighbouring countries (such as Egypt, where energy labels have recently been introduced) and from the possibility of reducing some costs, for example relating to testing of appliances. Hence the present proposal focuses on efforts and programs to ensure the success of domestic implementation of energy efficiency standards and labels.

## 2.4 Design principles and strategic considerations

The project has been designed with extensive inputs from the major line ministries (Finance, Energy, Planning, Industry, and Environment) in the course of consultative meetings that have been held at regular intervals to review the objectives of the project and discuss the overall results. It fits within the Government's overall plan to reduce energy costs in its household sector by integrating EE Standards and Labeling schemes in the country's energy sector strategy. The project would address key issues in the Government's strategy, such as increasing institutional capacity for EE promotion and development.

To reaffirm its commitment to EE, the Government requested that the Ministry of Energy and Mineral Resources establish a standing Technical Committee on energy efficiency promotion with members from the energy sector, including the power utilities. The proposed project is consistent with, and supportive of, national development priorities as well as internationally agreed programmes of action for sustainable development.

The project is relevant to the UNDP mandate through its strong emphasis on capacity development and technical training for the public and private sectors in order to provide officials and professionals with the necessary know-how and technical skills to fully participate in the market transformation process for EE appliances and provide other decision makers with information on EE standards and labels to integrate them in their operations.

Jordan's sustainable development mainly depends on the availability of energy resources and on how efficiently they are utilized. As the standard of living in Jordan improves, energy expenditures have been rapidly increasing as more people demand hot water, heating and cooling for their basic comfort and household energy needs. In order to meet the challenges faced by the energy sector, a comprehensive Energy Strategy was issued at the end of 2007 by the Government. One of the crucial elements of this strategy is the provision of reliable energy supply through the development of local energy resources as well as the promotion of energy efficiency to reduce the dependence on imported oil.

## 2.5 Project objective, outcomes and outputs/activities

The project **goal** is the reduction of Jordan's energy-related greenhouse gas emissions through increased adoption of energy efficient domestic refrigerators, air conditioners, freezers and washing machines.

The **objective** is to remove the barriers that are currently present in Jordan for the rapid and widespread usage of energy efficient appliances in the domestic sector.

**Outcomes:** The project includes five outcomes that are designed to overcome the barriers for an energy efficient appliances market transformation. These outcomes are the following:

***Outcome 1: Enhanced capacities in Government and energy agency units for appliance EE policy development, implementation and market surveillance.*** This outcome will focus on: (i) establishing the necessary legal and institutional frameworks, including the preparation of an enabling energy efficiency law, to support the introduction of a Standards and Labeling system; (ii) providing technical assistance and tools to the National Energy Research Center to establish an energy labeling system and a Minimum Energy Performance Standards programme for household appliances in Jordan; and (iii) strengthening the institutional and operational capacities of Government ministries and enforcement agencies so that they can ensure that the new regulations are applied consistently.

***Outcome 2: Structured verification & enforcement of appliance EE labels and standards.*** This outcome will focus on: (i) the selection and adoption of international test procedures, Minimum Energy Performance Standards and label classifications tailored to national conditions, and (ii) the development and implementation of a verification and enforcement system.

***Outcome 3: Consumers' and retailers' awareness raised and improved marketing of appliance EE standards and labels.*** This outcome will focus on: (i) setting up comprehensive consumer awareness campaigns to inform end-users about the energy efficiency of appliances and equipment as well as the costs and benefits of more efficient products; (ii) providing support to retailers for marketing energy efficient appliances. This will result in an increased market share of energy efficient air conditioners, refrigerators, freezers and washing machines.

***Outcome 4: Increased capacity of manufacturers to produce and market energy efficient appliances.*** This outcome will focus on the capacity building of local manufacturers to allow them to make the necessary assessments related to the potential of technological upgrades and energy efficiency improvements as well as to the marketing of energy efficient appliances.

**Outcome 5: Project management and M&E support.** Operational support will be provided to the MoPIC and the NERC to assist with key project management functions. This technical assistance will focus on strengthening the NERC's ability to establish an EE Standards and Labeling system for household appliances. This outcome will also help coordinate sectoral policies among Government ministries and enforcement agencies to facilitate the adoption of the Minimum Energy Performance Standards and energy label schemes in Jordan and will ensure the monitoring and evaluation of the project.

All of these outcomes are, to a large extent, inter-dependent: hence, all have to be addressed to remove the barriers identified in the Jordanian market. Each of these outcomes includes a number of specific outputs and a series of activities planned to achieve them.

### **Outcome 1: Enhanced capacities in Government and energy agency units for appliance EE policy development, implementation and market surveillance**

This outcome will provide technical assistance and capacity building to the Government so that it can benefit from the experience gained in several countries over the last 25 years regarding S&L programme development and implementation. The outcome also includes support for the design of the legal framework and the writing of the first set of regulations. Support will also target information on the types of support and enforcement programmes that can be introduced in parallel to the legislation. The objective of this component is to facilitate the development and adoption of the first set of regulations for the adoption of EE standards and labels for the first 4 appliances targeted under this programme and create sufficient expertise within the Government after the project's conclusion, so that it can undertake the introduction of additional regulations and support programmes for other appliances and equipment.

#### **Output 1.1: Political and policy decision makers' improved awareness of appliance EE options**

The most efficient ways to raise awareness among political and policy decision makers and Government representatives entrusted with policy matters are information and appropriate training. Without adequate information and training, decision makers lack understanding and are often not aware of the impact of EE policy options, which has been a major shortcoming in the past.

#### **Activities:**

- Set up an inter-ministerial forum for policy dialogue
- Organize training sessions for both political and policy decision makers on the benefits of EE policy options for Jordan
- Monitor the outputs of the proposed project and disseminate the necessary information to decisions-makers.

#### **Output 1.2: Increased capacity of the Ministry of Energy and Natural Resources for the elaboration/adoption of the legal and regulatory frameworks for EE appliances, including an enabling EE law**

A "Renewable Energy and Energy Conservation Law" is under development. This will provide the Ministry of Energy and Mineral Resources with the legal authority to establish an appropriate framework for setting up an Energy Efficiency Standard and Labeling system for household appliances and enforcing Minimum Energy Performance Standards. On behalf the Ministry of Energy and Mineral Resources, an Energy Conservation Law can be prepared that is sufficiently broad to authorize the Government to develop a number of energy efficiency regulations and programmes, including an energy labeling system and a MEPS programme for household appliances as well as a financing mechanism to support EE promotion.

There can be no effective enforcement of EE regulations without the appropriate capacity of the Ministry of Energy and Mineral Resources among the various institutions with skills on policy matters. The project will contribute to reinforcing the capacity of the National Energy Research Center as well as the Project Management Unit (PMU) for the elaboration and adoption of the legal and regulatory frameworks for household EE appliances.

**Activities:**

- Review the current energy policy from an energy efficient product market transformation perspective and make recommendations for improvement of the current energy efficiency policy and its implementation framework.
- Increase the capacity of the National Energy Research Center to deal with EE policies and regulations through specific training on policies and regulations
- Organize information seminars for Government ministries and regulation bodies on the Energy Conservation Law and EE appliance regulations

**Output 1.3: Increased capacity of the National Energy Research Center for the selection of a label and energy classification consistent with regional S&L efforts**

Government officials typically face difficulties in determining what is suitable between labels and standards when beginning a new labeling and/or standards-setting programme. Officials find it easier to start by creating an energy labeling programme rather than a programme that sets minimum efficiency standards, since labels do not require the phase-out of existing low-efficiency products and provide consumers with information that can encourage a *voluntary* shift toward higher efficiency products. Minimum Energy Performance Standards are more difficult to develop because they impose more significant and immediate market changes, which mean more resources to achieve the programme's goals. To that end, the project will provide adequate technical assistance to strengthen the capacity of Government ministries and enforcement agencies to select labels and classes consistent with regional S&L efforts.

**Activities:**

- Identification of EU label classifications and other label classifications for products on a short list for further analysis to guide the selection of a label for adoption in Jordan.
- Selection of the most appropriate schemes, based on similarities in product designs and manufacturers and consistent with regional S&L efforts (harmonization and alignment).
- Adoption of label classifications, for mandatory application, regarding air conditioners, refrigerators, freezers and washing machines.

**Output 1.4: Increased capacity of the National Energy Research Center and PMU in appliance EE support programme development, implementation and monitoring strategies**

With the assistance of the Project Management Unit, the National Energy Research Centre will be responsible for determining the action plan for appliance EE programme development, implementation and monitoring that will capitalize on the partnership of public and private sector stakeholders. The NERC will have the overarching responsibility of developing an overall label and standards-setting plan, but, as noted above, it will do so by working closely with officials from the Ministry of Energy and Mineral Resources and advisors representing different interest groups in the Jordanian appliances market. The S&L task-force, which will include the NERC and other Government bodies, will develop the energy efficiency standards for household appliances at a level that is technically feasible and economically justified in the current national context.

The NERC will provide regular reports on the progress of the S&L development to the Inter-Ministerial High-Level Forum for policy dialogue to ensure that all participating line ministries and trade associations representing private sector interests are consulted on a regular basis and are given opportunities to comment on the direction of the regulatory document developed by the S&L task force. The project will fund the development of the first version of the labeling system for a set of four household appliances, namely: air conditioners, refrigerators, freezers and washing machines. Based on the experience of other countries in the region, it can be expected that the labeling system will be updated on a regular basis, possibly every 3 years or so. The activities to be undertaken are defined below.

**Activities:**

- Assess existing institutional capacity for developing, implementing and maintaining a Standards and Labeling programme
- Carry out training courses to reinforce the capacity of the National Energy Research Center, Ministry of Energy and Mineral Resources and PMU in appliance EE programme development and implementation
- Review existing legislation and establish framework legislation to develop a legal basis for, and political commitment to, labels and standards
- Develop an overall label and standards-setting plan, and assign primary responsibility to the NERC to drive each element of the programme
- Adopt labels and energy classes consistent with regional S&L efforts
- Formulate separate energy conservation standards for each class
- Explore the potential for technological improvements in the design and manufacturing of energy efficient electrical appliances

**Output 1.5: Enhanced data collection on appliance sales and stock and a structured monitoring system**

To optimize the design of a labeling and standards-setting programme, it is necessary to gather, organize and analyze a large number of diverse data sets. The data needed for labels and standards development can be placed into five broad groups: market, engineering, usage, behavioural and ancillary. The project will sustain the capacity of the National Energy Research Center and public agencies involved, particularly the NERC, to establish a procedure for collecting the data that is needed to justify the type of Standards and Labeling system suitable for the Jordanian market. The project will clearly specify the data gathering process as well as define the monitoring system. The data collection process will be designed to establish a baseline to better understand the current appliances market and energy efficient models of different types of appliances available on the Jordanian market. In addition to the selected appliances, the data will also track information on other products where a potential for EE savings exists.

A monitoring system to assess the overall impact of the EE S&L programme will be developed and implemented to better understand how changing energy consumption patterns is occurring due to the proposed EE appliances S&L project. Minimum Energy Performance Standards need to be periodically reviewed and increased as the overall energy efficiency of products on the market improves and new technical options become available. The project will provide the necessary resources to allow the monitoring of the impacts of the EE S&L project as well as find a home for the data collected. Periodic meetings of the task force, under the coordination of the NERC along with the Inter-Ministerial High-level Forum, will be organized, where information will be shared with political and policy decision-makers on the impacts of the EE S&L programme according to the data collected and analyzed

**Activities:**

- Identify the skills and experience required for data collection and monitoring
- Develop the capacity of the National Energy Research Center, Ministry of Energy and Mineral Resources and PMU to collect data on appliance sales and stock and monitor the outputs of the proposed project
- Characterize the structure of the residential appliances industry and markets (quality & quantity)
- Establish minimum data needs and develop a plan for collecting the data necessary to conduct analyses to support the programme
- Carry out cost-effectiveness analyses to screen the new products to be included in the programme and establish an order of priority
- Plan to periodically review and update the labels and standards every three years.

**Outcome 2: Structured verification and enforcement of appliance EE labels and standards**

The process of developing an Energy Efficiency Standards and Labeling programme requires creating an energy testing capability. This must begin before a Labeling or Standards programme is launched. The

test procedure is critical for energy efficiency standards, labels and other related programmes. It provides manufacturers, regulatory authorities and consumers with a way to consistently compare the energy use and savings of different appliance models. A well-designed test procedure meets the needs of its users economically and with an acceptable level of accuracy and correspondence to specific conditions. The adoption of established test procedures, especially those of internationally recognized testing organizations, makes it easy to compare the efficiency of different models.

Government agencies and an independent laboratory will be given support on enforcement procedures design and in appliance testing. The enforcement procedures will cover manufacturers, importers and retailers and will ensure that all market actors are informed and follow the new regulations. Support will also be provided to a selected laboratory so it can test appliances. This also includes the development of a market follow-up tool required to provide the highest Government level with the hard facts about the efficiency of the regulations, the evolution of the market and the impact of the programmes introduced. Such monitoring will be useful to both assess the impact of this MSP project and to support future Government policies in the S&L domain.

**Output 2.1:** *Enhanced knowledge of state inspectors to check the compliance of shops and of appliance energy efficiency declarations*

This output addresses the lack of adequate verification capacity on the part of Governmental institutions to ensure compliance and minimize the cost of this critical activity. The project will provide technical assistance to build the capacity of state inspectors to check the compliance of shops and of appliance energy efficiency declarations. It includes the adoption of energy performance compliance checking with the pre-export inspections currently in place in Jordan, the capacities of appliances inspectors in Jordan's Customs Department to intervene with shipments of second-hand products and the improvement of trade inspections with importers and distributors. The Jordan Customs Department, under the Ministry of Finance, oversees all imports into the Kingdom of Jordan.

**Activities:**

- Assess the Jordan Customs Department's (JCD) capacities for tracking second-hand products
- Develop an overall plan to strengthen the state inspectors' organizational, technical and operational capacities in compliance checking
- Training of JCD inspectors on the new regulations relating to the energy efficiency of household appliances
- Prepare the necessary decree to empower the Jordan Customs Department to ensure compliance

**Output 2.2:** *Verification and enforcement plan for retailers developed, tested in a pilot project and implemented*

Once standards-setting and labeling programmes are in place, energy performance verification procedures are needed to support the market transformation process for energy efficient appliances. Verification is the process specified by the agency authorizing the standards and labels to determine whether the declared energy performance of the equipment available on the market is accurate. Verification procedures can be separated into two broad categories: those that apply when a product is first introduced on the market and those that apply to products already on the market. The project will support the implementing agency, NERC, in the development of a verification and enforcement plan for retailers and distributors to allow existing and new products to meet certain requirements.

**Activities:**

- Establish trade inspections for distributor and retailer compliance, checking on counterfeits and fraudulent products
- Assess the capacities of the JCD and Ministry of Planning and International Cooperation for checking distributors and retail outlets for product compliance.

- Training of JCD inspectors for compliance checking at distributor and retail outlets

**Output 2.3:** *Verification and enforcement plan and facilities for product testing developed and implemented in a pilot project*

A verification and enforcement plan and facilities are needed to perform energy tests. Almost every appliance requires a unique energy test setup. For example, a refrigerator requires an environmental chamber and an air conditioner requires a calorimeter chamber. The project will provide the necessary technical assistance to build an enabling environment for product testing. To that end, a shortlist of firms or institutions capable of performing internationally recognized energy tests will be established in view of developing the same capacities in a selected institution in Jordan. Emphasis will be placed on promoting modern facilities that can serve multiple purposes to test several units at one time and to collect all data on a data logger system to reduce operational costs.

**Activities:**

- Identify IEC test procedures for the selected appliances (air conditioners, refrigerators, freezers, washing machines)
- Adopt national test procedures
- Identify national institutional candidates to perform the verification and testing of household appliances
- Create facilities for testing and monitoring compliance (test facilities must be certified)
- Adopt a significant budget for testing
- Create the administrative apparatus for enforcement to incorporate testing into enforcement
- Maintain political support for EE S&L programme development and operation
- Harmonize energy performance test procedures with international protocols to facilitate testing and reduce barriers to trade
- Establish a legal verification and enforcement system to follow up on non-compliance with the regulations
- Develop and implement a verification and enforcement system to follow up on the non-compliance of products with the regulations (on imports) as a pilot project
- Develop and implement a verification and enforcement system on the non-compliance of distributors and retailers (on sales) as a pilot project
- Draft practical guides for testing professionals based on best practices

**Outcome 3: Consumers' and retailers' awareness raised and improved marketing of appliance EE standards and labels**

The information and awareness activities needed to change customers' perception of the importance of purchasing higher efficiency appliances and the cost effectiveness of doing so will be supported in this component. It will be achieved through the preparation of a marketing plan and the implementation of marketing activities by local and international retailers. Better informed customers will react and begin to pay attention to labels and to the efficiency category of purchased appliances.

**Output 3.1:** *Enhanced consumer awareness of appliance energy efficiency characteristics, standards and labels and the costs and benefits of more efficient products*

This activity includes the provision of information, in cooperation with major importers and the power utilities, about the costs and benefits of energy efficient products, the test procedures and Minimum Energy Performance Standards as well as an explanation of energy labels and classifications for household appliances.

**Activities:**

- Organize national campaigns targeting the consumers to inform them about appliance energy efficiency benefits.



- Develop and promote awareness materials (leaflet, posters, brochures, websites, etc.) to provide end-users with information about appliance energy efficiency principles and the costs and benefits of more efficient products.

**Output 3.2:** *Enhanced awareness and knowledge of retailers' management and retail staff on appliance energy efficiency issues and sales rationales*

In addition to the campaigns that are planned to sensitize consumers, country-wide campaigns for raising retailers' awareness and knowledge about appliance energy efficiency will be launched, which will be an ongoing activity until the end of the project.

**Activities:**

- Inform importers, distributors and retailers about appliance energy efficiency in Jordan
- Provide information to retailers' management about the national S&L programme, new energy efficiency regulations, date of entry of these regulations, compliance requirements, support opportunities and consequences of non-compliance
- Develop a training course for distributor and retailer staff, focusing on the sales of more efficient appliances
- Delivery of the training programme of the sales staff of the majority of distributors and retailers (at least 85%)

**Outcome 4: Improved manufacturers' capacity to produce and market EE appliances**

Local manufacturers will receive help to design and produce higher efficiency appliances, with an initial focus on air conditioners, refrigerators, freezers and washing machines. The achievable improvement targets of manufacturers will be set without retooling or other heavy investments. The capacity building activities under this component will include formal training sessions on best practices for appliance design and one-on-one meetings between experts for each type of appliance (or several if an expert in multiple appliances can be found) and the R&D or engineering department of individual manufacturers. A network will also be established with manufacturers.

Various regulation elements and particularly the MEPS aspects will be discussed and announced well in advance so that manufacturers take appropriate action to adjust their products. Manufacturers will be encouraged to participate in collaborative advertisement campaigns that will focus on the energy efficiency aspect of products.

**Output 4.1:** *Enhanced capacities of manufacturers in S&L regulations and related business opportunities*

Energy performance improvements in consumer products are essential elements in any government's portfolio of energy efficiency policies and climate-change-mitigation programmes. Many governments are engaged in developing balanced programmes, both voluntary and regulatory, that remove cost-ineffective, energy-wasting products from the marketplace and stimulate the development of cost-effective energy efficient technologies. If designed effectively, energy efficiency standards and labels can make local businesses more profitable in the long run; make local appliance manufacturers more competitive on the global marketplace; and make local markets more attractive for multinational commerce. To that end, the proposed project will enhance the capacities of local manufacturers in S&L regulations and related business opportunities through information sharing and special training.

**Activities:**

- Inform manufacturers about the new energy efficiency regulations, date of entry of other regulations, compliance requirements, the national S&L programme and consequences of non-compliance
- Provide manufacturers with business opportunities relating to EE improvements of appliances.

#### **Output 4.2: Enhanced abilities of manufacturers in the development of more efficient appliances**

Reinforcing the capacities of manufacturers in the development of more efficient appliances is a valuable activity that will enhance the effectiveness of the energy S&L programme. At least two training sessions per year targeting local manufacturers on the design and marketing of their energy efficient products will take place during the course of the project. The project will also encourage the publication of lists of efficient appliance models on the market through easily accessible brochures and a website.

##### **Activities:**

- Assist in the assessment of the potential for energy efficiency improvements to household appliances
- Identify the required skills of manufacturers in the development of more EE appliances
- Develop an overall plan to strengthen the organizational, technical and operational capabilities of municipal code enforcement agencies
- Support international study tours for manufacturer managers for best practice sharing
- Inform importers, distributors and retailers about appliance energy efficiency in Jordan
- Provide technical support during the implementation of the S&L programme

#### **Output 4.3: Manufacturers' participation in an end-user awareness campaign about S&L**

The adoption and placement of labels is only one step in attempting to influence consumers' purchase decisions. With the proposed project, an appliance-specific consumer awareness campaign on labeling will be undertaken with the participation of key stakeholders. The campaign will inform consumers about the label features and the importance and potential impact of selecting efficient products for their household. The consumer awareness sub-component will urge consumers to consider the performance and life-cycle costs of owning an electrical product, and not just the product's initial cost. A specific training programme will be prepared for distributor and retail staff to help them directly inform end-users about the benefits of purchasing efficient products as well as help them understand the business opportunities of selling efficient appliances.

##### **Activities:**

- Mobilize manufacturers to participate in a nation-wide consumer awareness campaign
- Assist manufacturers in the development of adequate materials for the end-user awareness campaign
- Help manufacturers in the delivery of the end-user awareness campaign

### **Outcome 5: Project management and M&E support**

This outcome is designed to improve the overall project management and will also focus on monitoring and impact assessment through the formulation and implementation of an adapted methodology. Operational support will be provided to the NERC to assist with key project management functions.

#### **Output 5.1: Project management and implementation support**

The technical assistance to be provided will focus on strengthening the NERC's ability to set up a programme relating to S&L development in Jordan and to manage the project activities, including preparing the project's work plan, preparing the TORs and bid specifications, managing the contracts signed with operators and entities responsible for each component and providing adequate reporting to UNDP and GEF. This activity will also help the NERC coordinate the project with the MoPIC and line ministries to facilitate the implementation of the S&L programme to ensure that appliance EE regulations are incorporated into the EE regulatory framework.

##### **Activities:**

- Provide technical assistance to NERC in the implementation of project activities
- Conduct regular monitoring, evaluation and reporting

**Output 5.2: Monitoring and Evaluation activities**

Monitoring and evaluation activities will be performed according to the M&E plan described in this document based on UNDP procedures. In particular, two independent evaluations will be carried out: one mid-term evaluation after approximately 18 months and one terminal evaluation to be carried out towards the end of the programme.

**Activities:**

- Conduct independent mid-term and terminal evaluations
- Organize the steering committee meetings to share information with key stakeholders

**2.6 Key indicators, risks and assumptions**

**Indicators**

The most direct impact of the project as it relates to GEF objectives is the reduction in CO<sub>2</sub> emissions by the power sector. Associated impacts, such as (i) increased energy efficiency in Jordan's household sector, and (ii) transformed local market for EE appliances, will contribute to the overall sustainability of the project and are thus critical to the continued reduction in nationwide CO<sub>2</sub> emissions.

A strong baseline, along with measurable indicators, will need to be established in order to properly monitor the impact of the project. This will need to be done before EE standards and labels are adopted and implemented in the household sector. The impact monitoring should be conducted on an annual basis by the Project Management Unit (PMU), and the results will be used by the project implementing agency, NERC, to improve and/or revise the proposed EE standards and labels for household appliances.

The following indicators could be used to measure the impact of the proposed initiatives:

Impact to be Monitored	Indicators	Verification Means
CO <sub>2</sub> emissions reduction	Reduction in energy consumption in the household sector	<ul style="list-style-type: none"> <li>• Survey of power utilities</li> <li>• Survey of Jordan's Department of Statistics</li> <li>• Electricity bills analysis</li> </ul>
Increased share of households that use energy efficient appliances	Number of households that use EE appliances	<ul style="list-style-type: none"> <li>• Survey of Jordan's Department of Statistics</li> <li>• Survey of enforcement agencies</li> <li>• Project database</li> <li>• Retail sales data</li> </ul>
Increased use of EE appliance labels and standards by key market players (manufacturers, importers, distributors, retailers)	Number of appliances market players trained in household appliance EE improvements through S&L and applying such skills/knowledge	<ul style="list-style-type: none"> <li>• Project database</li> <li>• Statistics of the Jordan Chamber of Commerce</li> <li>• Statistics of Jordan's Ministry of Industry</li> </ul>

## **Risks and Assumptions (see Annex 4 for full risk analysis):**

There are two risk areas linked to this project outcome: economic stability and stakeholder commitments. The climate change risk is not likely to prevent the objectives being met but may render the need for the project even more acute (due to an increased use of air conditioning).

The economic stability risk is linked to the region's broad stability. Should the economic growth rate slow down, the need for the project and its achievements would be less dramatic as the capacity of households to acquire new appliances or exchange them would be constrained by the stress on their purchasing power. On the other hand, one of the main justifications for the project is the elevated oil price and the need to adopt energy efficiency systems. Although the transition to an energy efficient economy remains a high strategic priority in Jordan, an oil price reduction might entail a risk of lowering direct interest from partners and a state of hesitation from the market in developing EE appliances. The project cannot mitigate such risk. The trend of the last few years has been consistently towards a higher economic growth rate while the energy efficiency option is becoming a major strategic drive for Jordan.

The stakeholder commitment risk is more directly linked to the project. Many stakeholders are to be actively involved for successful project implementation, among which are Government entities, manufacturers, retailers and testing laboratories. Without their commitment, or should there be resistance on their part, the project will face difficulties delivering its outcomes.

Other risks associated with this project were assessed during the project preparation phase, and appropriate activities and measures to be taken to mitigate them are as follows:

**Government weakening its commitment:** Owing to political, financial, institutional or other reasons, Jordan may choose not to implement or delay the introduction of energy labels and MEPS for end-use appliances. However, the country's National Energy Efficiency Strategy as well as the Master Strategy for the Energy Sector firmly identifies mandatory labeling and standards as an ultimate goal. In addition, the structure of the proposed project is to first identify and focus on the removal of barriers, then to develop a menu of options suited to the specific situation in Jordan and demonstrate these based on a wide range of measures successfully used in the region and elsewhere in the world. This project strategy will substantially offset this risk.

**Low technical capacity:** Successful implementation of this project requires an increase in the technical capacity of NERC staff and adequate capacity in the private sector. The project will seek to mitigate this risk by providing sufficient capacity building support to the Project Management Unit in developing the necessary in-house technical skills and by providing specific training to NERC and JISM engineers as well as professionals in partnership with their respective trade associations.

The NERC and the Technical Standards Committee of JISM will ensure that the necessary technical and field studies are conducted before defining the proposed appliance EE Standards and Labeling system.

**Manufacturers' reluctance to participate in the implementation of efficiency labels and standards:** The implementation of new regulations resulting in additional costs to manufacturers is usually of great concern and a central issue in discussions between governments and manufacturers. However, the proposed project will take into account the financial situation of manufacturers and is designed to assess this situation as part of any decision to move forward with the development of EE labels and MEPS.

**Consumers' lack of awareness:** End-users do not understand the energy efficiency labeling process and avoid purchasing energy efficient models owing to their higher initial costs. While the project cannot eliminate the potential higher initial costs of energy efficient models for consumers who prefer to spend less money for less efficient models, label development will be accompanied by substantial efforts in

information dissemination, consumer education, retail-directed educational materials and other activities to both raise awareness of the labels and to educate consumers on the benefits of energy efficiency purchasing. Moreover, it is important to note that the project will complement the Government's National Energy Efficiency Strategy. Through a gradual reduction in energy subsidies and a tiered residential electricity pricing structure, the Strategy aims to encourage consumers to undertake energy economising measures. The project will service this consumer need by facilitating the purchase of energy-efficient appliances.

**Critical risks and possible mitigation measures are summarized in the following table:**

Risk	Risk Rating	Risk Mitigation Measure
Lack of political commitment	S	Political, institutional and financial commitments reached, thanks to the adoption of the revised version of the Master Strategy for the Energy Sector in Jordan for the 2007-2020 period
Low technical capacity	S	A series of capacity building activities to help remove technical barriers to the design and implementation of EE S&L in Jordan
Manufacturers not willing to implement S&L programme	H	A comprehensive awareness-raising plan to allow the full participation of the private sector in project implementation
Consumers not interested in purchasing products with a high initial cost	S	Awareness campaigns during project implementation by public and private sector partners
<b>Overall Risk Rating</b>	<b>S</b>	

Note: M: moderate; S: substantial; H: high.

## 2.7 Financial modality

The project will follow the modality of national execution and the Executing Agency will be the National Energy Research Centre (NERC). The NERC is a legal, semi-governmental and non-profit entity, which was established in Amman, Jordan for the purposes of research, development and training in the fields of new and renewable energy, raising the efficiency in energy use in the different economic sectors, improving legislative frameworks for energy conservation, etc. NERC is considered as one of the specialized science and technological centres working under the umbrella of the Higher Council for Science and Technology.

UNDP has been requested by the Government to provide technical and substantive assistance in setting-up the project. UNDP is in a prime position to assist the Government through its ability to build partnerships, coordinate between the various parties involved, obtain knowledge from global sources and experiences, build capacities, and assist with fund raising efforts. Cost sharing funds will be channelled through the UNDP bank account, and funds will be disbursed through the direct payments modality, with the implementing partner (NERC) responsible for keeping records of payments. The project must open a separate bank account in order to receive and disburse any funds transferred from UNDP.

Upon the request of the implementing partner through the project manager, UNDP will be responsible for the recruitment and contracting of project staff in coordination with the Project Advisory Committee and will be responsible for the purchase of non-expendable equipment in accordance with UNDP rules and procedures. In accordance with the decisions and directives of UNDP's Executive Board, the following contribution shall be shared:

- 3% cost recovery for the provision of general management support (GMS) by UNDP headquarters and country office
- Direct cost for Implementation Support Service (ISS) provided by UNDP to the project for these services in accordance with the UNDP cost recovery policy and the latest update of the UNDP Universal Price List

## 2.8 Cost-effectiveness

Considering an average lifetime of 15 years for all four domestic appliances, with the estimated project impact of 230,000 tonnes of CO<sub>2</sub> reduced (for the 2010-2026 period), the cost effectiveness of GEF's support can be estimated at US\$4.2 per tonne CO<sub>2</sub> reduced. An additional 2,859 ktonnes through to 2030 can be achieved due to further market transformation. By taking this into account and applying a GEF causality factor of 80% (level 4), GEF's cost effectiveness intervention can be further estimated to be US\$0.31 per tonne of CO<sub>2</sub> reduced.

These impacts were estimated using the appliance models that CLASP<sup>22</sup> developed and adapted for this study. Manufacturers and the Statistics Department provided the market data. The grid emission factor was established as 669 tonnes of CO<sub>2</sub> per GWh.

## 2.9 Sustainability

The establishment of effective energy efficiency labels and/or standards leads to a more sustainable energy future. First of all, energy standards and labels are introduced through a formalized process requiring Government regulations or endorsement. Once established with clear Government backing and a solid institutional infrastructure, the programme effectively transforms the market to a higher level of energy efficiency with a gradual fine-tuning of energy efficiency standards over time to take into account new technological developments and the country's capacity to pay for those technologies.

Since the proposed GEF project comprises a strong capacity building element, the main outputs of this project will not only be new energy efficiency standards and labels, but also institutional structural growth with a capacity to effectively maintain and revise the Energy Efficiency Standards and Labeling programme over time. The project will specifically focus on addressing issues related to financial barriers by mobilizing potential financing sources for Energy Efficiency Standards and Labeling within Jordan (Government, utilities' DSM programmes, manufacturers for appliance testing) as well as by promoting and providing training on innovative financing schemes to reduce the high initial investment cost barrier for lower-income households.

In other words, the strategy to reach full sustainability of the project is based on a programmatic approach, depending on a certain number of conditions related to the regulatory, institutional, organizational, economic and financial context:

- For the regulatory aspects, the installation of a clear and appropriate legal framework is a crucial condition to the sustainability of the project's impacts. This MSP itself would provide inputs for the Government in formulating new legal, institutional and regulatory framework for integration of energy efficiency appliances.

<sup>22</sup> <http://webapps01.un.org/dsd/partnerships/public/partnerships/179.html>, a program initiated in the USA which stands for "Collaborative Labeling and Appliance Standards Program".

- The future development and application of regulatory measures is, however, dependent on the institutional capacity to develop and enforce them after the initial efforts undertaken in the MSP project. The relevant national institutions currently lack sufficient human and financial resources to ensure full compliance with the law. In the current context, they will be unable to ensure respect for the law without the provision of additional funds and professional resources. One of the objectives of the project will thus be to provide feedback and rationale to Government decision makers on the importance for the economy and environment to support strongly the introduction of S&L regulations and support programs;
- At the economic and financial levels, the conformity to the minimum energy performance standards (MEPS) may create additional costs and important investment for the manufacturers if the planning is inadequate. The project will thus define minimum energy performance standards that will be achievable by the manufacturers in a given time frame using known technology and resulting in reasonable incremental cost (some improvements may even result in a reduction in manufacturing costs).

The objective of energy labeling and performance programs is for appliance product labels to become a factor in consumer choice-making, and thus to increase the volume of energy efficient appliances sales. The success of the S&L program will result in diminution of the need for information campaigns, financing schemes and other policy dimensions, while appliance manufacturers are expected to absorb the cost of providing labels and ensuring that their products stay competitive compared to the others market actors as part of the cost of doing business.

Through the implementation of the proposed medium size project, appliance energy efficiency regulations and policies will become firmly rooted in the country, and will be de facto irreversible at the end of the project.

The introduction of impact modelling, energy saving projections as well as economic impacts and environmental impacts evaluation will send continued positive feedback to policy makers about the benefits of standards and labels for the country. The sensitization of policy makers and training of Government key resources will prepare a solid foundation for the country to pursue energy efficiency efforts after the project.

Experience from other countries shows that standards and labeling regulations initiate a rapid response in the market, with retailers paying more attention to the advertisement of labels. In addition, they will develop adequate sale rationales for consumers. For manufacturers and importers, the standards and labeling regulation will induce a radical improvement in the share of higher energy efficiency products offered. In a fully transformed market, the efforts of the manufacturers to keep their appliances well positioned in term of efficiency compared to competitors will result in a natural trend of improvement.

The awareness of consumers of energy labels and appliance energy efficiency issues, once established, continues without much further effort, as long as labels are dominant in the market (which is secured by both the verification and enforcement activities). Once retailers and NGOs (customer protection organizations) are accustomed to the energy-efficient labeling program, they will pursue their education and information dissemination efforts after the project.

Financial incentives are not included in the MSP, but the issue will be discussed in parallel with the feedback of program impact to policy makers and high Government officials. If the correct rationale is built, based on the evidence of the initial efforts supported by the MSP, then financial support can be provided for a limited time. This approach is in line with market transformation theory, which indicates that financial support should be used to start a market transformation, but should be reduced and finally abandoned when markets are responding and the sales share of efficient appliances increases.

## 2.10 Replicability

The project is designed to create an enabling environment for market transformation of more energy efficient appliances in the household sector through technical and financial support to Government ministries, enforcement agencies and private sector operators in the design and implementation of the S&L programme. One of the key requirements for replicability is to overcome the reluctance of market players (consumers and industry) to produce, sell or consume energy efficient products due to their initial costs. This will be addressed through comprehensive consumer awareness and information dissemination campaigns as described above. Assistance will also be provided to local manufacturers in the form of assessments of the technological upgrading and energy efficiency improvement potential and marketing support.

Another issue is the need for a suitable performance-based mechanism for channelling resources and incentives to project participants during the initial period of EE appliance market development. Specific attention will be given to addressing financial barriers, while potential funding sources for the implementation of the S&L programme are being mobilized. The technical experience gained during implementation and the increasing cost of fossil fuels should make the environment more attractive for both consumers and EE appliance suppliers.

The key elements of a replication strategy that will be put in place are the following:

- A comprehensive monitoring and evaluation system will accompany the proposed project. This will help to identify what works, what doesn't and why. Lessons will be extracted from that experience and, through a comprehensive communication and outreach plan, be disseminated both within Jordan and in the region.
- Stakeholders from industry, retailers and consumer organizations will be fully involved in the regulatory process regarding the short list of four targeted appliances to allow the scaling-up of the S&L programme to a large list of household, commercial and industry appliances and equipment.
- A conformity assessment and enforcement system will be put in place to maintain the credibility of new labels and standards adopted by the Jordanian market.

Successful implementation of this program for air conditioners, refrigerators, freezers and washing machines will serve as a model for scaling-up to other priority consumer appliances such as lighting products, dishwashers, dryers, heat-pumps, pumps, hot water systems, electric irons, televisions, computers, etc.

The experiences of this project will constitute the basis to define future national energy efficiency standards and labeling policies and programs and an opportunity to inform policy makers about the relevant tools and successful experiences at the regional and global level to go beyond the first targeted appliances.



### III. PROJECT RESULTS FRAMEWORK:

<p>This project will contribute to achieving the following Country Programme Outcome as defined in CPAP or CPD: CPAP Outcome 3.2.: Environmental policies aligned to global conventions and national implementation capacities enhanced.</p>					
<p><b>Country Programme Outcome Indicators:</b></p> <ul style="list-style-type: none"> <li>Percentage of local manufacturers involved in the production and marketing of energy efficient appliances.</li> <li>Percentage increase in the sale of energy efficient appliances.</li> </ul>					
<p><b>Primary applicable Key Environment and Sustainable Development Key Result Area:</b> Mainstreaming environment and energy</p>					
<p><b>Applicable GEF Strategic Objective and Program:</b> (CC-SP1) "Promoting Energy Efficiency in residential and commercial buildings"</p>					
<p><b>Applicable GEF Expected Outcomes:</b> Outcome # 1: Energy-Efficient - Buildings</p>					
<p><b>Applicable GEF Outcome Indicators:</b> Quantity of Energy saved (to be saved or MWh saved)</p>					
Project Objective:	Indicator	Baseline	Targets End of Project	Source of verification	Risks and Assumptions
Reduce GHG emissions by supporting a market transformation towards energy efficient new appliances in Jordan.	-Sales of energy-efficient appliances increase rapidly, for refrigerators / freezers, washing machines and air conditioners; A two classes (EU) improvement in average refrigerator sales is observed.  -Reduction of GHG emissions by 183,000 tons of CO <sub>2</sub> for the improved appliances put on the market during the three years project duration.	-Number of energy efficient appliances (refrigerators / freezers, washing machines and air conditioners) sold per year in Jordan  -Current emissions of CO <sub>2</sub> in the domestic sector.	-Increase market share of energy efficient appliances in Jordan by 30%  -Significant amount of CO <sub>2</sub> emissions are avoided per year due to the market transformation of energy efficient appliances in Jordan.	-Project final report.  -Midterm and final evaluation reports.  -Appliance sales impact monitoring report.  -Laboratory testing for refrigerators and freezers.	-Government budgets for compliance checking are present or can be raised.  -Improvement in economic situation continues.
<b>Outcome 1:</b> Enhanced capacities in Government and energy agency units for appliance EE	-National appliance energy efficiency program and impact monitoring system developed and approved by the	-No energy efficient policy for refrigerators / freezers, washing machines and air conditioners.	-All the energy agencies in Government are well equipped to develop, implement and enforce appliances energy efficiency policy.	-Project implementation reports.	-Government staff are willing to commit sufficient time for participation in capacity building activities, then in program preparation.

<p><b>policy development, implementation and market surveillance.</b></p> <p><b>Outcome 2:</b>  <b>Structured verification &amp; enforcement of appliance EE standards and labels.</b></p>	<p><b>Government.</b></p> <p>-Verification and enforcement procedures are developed, pilot tested and implemented for retailers and product compliance checking, including yearly shop visits for major retailers and spot-checking for other outlets.</p>	<p>-No verification and enforcement procedures in place.</p>	<p>-End term target: Verification and enforcement procedures in place and functional.</p>	<p>-Project implementation reports.</p> <p>-Retailer compliance pilot checking and product compliance pilot checking reports from the PMU.</p>	<p>-Government budgets for compliance checking are present or can be raised.</p>
<p><b>Outcome 3:</b>  <b>Increased consumers' and retailers' awareness and improved marketing of appliance EE standards and labels.</b></p>	<p>-Percentage of consumers and retailers understand the trade-off between higher purchase cost and lower running cost of EE appliances and apply this knowledge in their purchase decisions and purchasing advice, respectively.</p>	<p>-Current number of retailers and customers who have understood the trade-off between high purchase cost and lower running cost.</p>	<p>-At least 50% of consumers and 80% of retailers.</p>	<p>-First year and final surveys of consumer and retailer understanding and perceptions of EE appliance.</p> <p>-Project implementation reports.</p>	<p>-Improvement in economic situation continues.</p>
<p><b>Outcome 4:</b>  <b>Increased capacity of manufacturers to produce and market EE appliances.</b></p>	<p>-Percentage of local manufacturers have developed, produced and marketed more efficient appliances.</p>	<p>-Current number of manufacturers producing and marketing EE appliances.</p>	<p>-At least 50% of local manufacturers.</p>	<p>-Project implementation reports.</p>	<p>-Manufacturers are willing to commit staff time for appliance S&amp;L training and financial resources to improve their products.</p>

**TOTAL BUDGET AND WORKPLAN**

<b>Award ID:</b>	00059526	<b>Project ID(s):</b>	00074459	3215 Jordan: Energy Efficiency Standards and Labeling of Building Appliances
<b>Award Title:</b>	Jordan: Energy Efficiency Standards and Labeling of Building Appliances			
<b>Business Unit:</b>	JOR10			
<b>Project Title:</b>	Jordan: Energy Efficiency Standards and Labeling of Building Appliances			
<b>PIMS no.:</b>	3735			
<b>Implementing Partner (Executing Agency):</b>	National Energy Research Center (NERC)			

GEF Outcome/Atlas Activity	Responsible Party/Implementing Agent	Fund ID	Donor Name	Atlas Budgetary Account Code	ATLAS Budget Description	Amount Year 1 (USD)	Amount Year 2 (USD)	Amount Year 3 (USD)	Total (USD)		
<b>OUTCOME 1:</b> Enhanced capacities in Government and energy agency units for appliance EE policy development, implementation and market surveillance	National Energy Research Center	62000	GEF	71200	International Consultants	15,500.00	15,000.00	15,000.00	45,500.00		
		62000	GEF	71300	Local Consultants	7,500.00	7,500.00	7,500.00	22,500.00		
		62000	GEF	72500	Supplies	3,000.00	4,000.00	3,000.00	10,000.00		
		62000	GEF	73300	Rental & Maint of Info Tech Eq	3,000.00	3,000.00	3,000.00	9,000.00		
		62000	GEF	72100	Contractual Services-Companies	0.00	17,000.00	18,000.00	35,000.00		
		62000	GEF	74200	Audio Visual & Print Prod Costs	0.00	4,000.00	5,000.00	9,000.00		
		62000	GEF	74500	Miscellaneous Expenses	3,000.00	3,000.00	3,000.00	9,000.00		
						<b>sub-total GEF</b>	<b>32,000.00</b>	<b>53,500.00</b>	<b>54,500.00</b>	<b>140,000.00</b>	
				30071	MOPIC	71300	Local Consultants	9,500 \$	20,900 \$	17,100 \$	47,500 \$
				30071	MOPIC	75100	Facilities & Administration	500 \$	1,100 \$	900 \$	2,500 \$
					<b>sub-total MoPIC</b>	<b>10,000 \$</b>	<b>22,000 \$</b>	<b>18,000 \$</b>	<b>50,000 \$</b>		
					<b>Total Outcome 1</b>	<b>42,000</b>	<b>75,500</b>	<b>72,500.00</b>	<b>190,000.00</b>		
<b>OUTCOME 2:</b> Structured verification & enforcement of appliance EE labels and standards	National Energy Research Center	62000	GEF	71200	International Consultants	22,000	22,000	22,000	66,000		
		62000	GEF	71300	Local Consultants	17,000	17,000	17,000	51,000		
		62000	GEF	72500	Supplies	5,000	8,000	8,000	21,000		
		62000	GEF	73300	Rental & Maint of Info Tech Eq	8,000	9,000	8,000	25,000		
		62000	GEF	72100	Contractual Services-Companies	0	20,000	20,000	40,000		
		62000	GEF	74200	Audio Visual & Print Prod Costs	0	16,000	8,000	24,000		
		62000	GEF	74500	Miscellaneous Expenses	3,000	5,000	5,000	13,000		
						<b>sub-total GEF</b>	<b>55,000</b>	<b>97,000</b>	<b>88,000</b>	<b>240,000</b>	
				30071	MoPIC	71300	Local Consultants	9,500.00	20,900.00	17,100.00	47,500.00
				30071	MoPIC	75100	Facilities & Administration	500.00	1,100.00	900.00	2,500.00

		sub-total MoPIC		10,000.00	22,000.00	18,000.00	50,000.00	
		<b>Total Outcome 2</b>		<b>65,000</b>	<b>119,000</b>	<b>106,000</b>	<b>290,000</b>	
<b>OUTCOME 3</b> Consumers' and retailers' awareness raised and improved marketing of appliance EE standards and labels	National Energy Research Center	62000	GEF	71200	International Consultants	29,000	29,000	87,000
		62000	GEF	71300	Local Consultants	18,000	18,500	55,000
		62000	GEF	72100	Contractual Services-Companies	24,000	30,000	84,000
		62000	GEF	74200	Audio Visual & Print Prod Costs	0	4,000	9,000
		62000	GEF	74500	Miscellaneous Expenses	5,000	5,000	15,000
		<b>sub-total GEF</b>		<b>76,000</b>	<b>86,500</b>	<b>87,500</b>	<b>250,000</b>	
		<b>Total Outcome 3</b>		<b>76,000</b>	<b>86,500</b>	<b>87,500</b>	<b>250,000</b>	
<b>OUTCOME 4:</b> Increased capacity of manufacturers to produce and market energy efficient appliances	National Energy Research Center	62000	GEF	71200	International Consultants	30,000	30,000	90,000
		62000	GEF	71300	Local Consultants	21,000	21,000	63,000
		62000	GEF	72100	Contractual Services-Companies	0	28,000	55,000
		62000	GEF	74200	Audio Visual & Print Prod Costs	0	12,000	23,000
		62000	GEF	74500	Miscellaneous Expenses	3,000	3,000	9,000
		<b>sub-total GEF</b>		<b>54,000</b>	<b>94,000</b>	<b>92,000</b>	<b>240,000</b>	
		<b>Total Outcome 4</b>		<b>54,000</b>	<b>94,000</b>	<b>92,000</b>	<b>240,000</b>	
<b>OUTCOME 5:</b> Project Management		62000	GEF	71300	Local Consultants	25,840	27,360	79,040
		62000	GEF	73300	Rental & Maint of Info Tech Eq	0	3,990	7,980
		62000	GEF	74500	Miscellaneous Expenses	0	3,990	7,980
		04000	UNDP	71300	<b>sub-total GEF</b>	<b>25,840</b>	<b>33,820</b>	<b>95,000</b>
				<b>sub-total UNDP</b>		<b>35,000</b>	<b>35,000</b>	<b>30,000</b>
		<b>Total Outcome 5</b>		<b>60,840</b>	<b>68,820</b>	<b>65,340</b>	<b>195,000</b>	
		<b>PROJECT TOTAL</b>		<b>297,840</b>	<b>443,820</b>	<b>423,340.00</b>	<b>1,165,000</b>	

Summary of Funds:<sup>23</sup>

	Amount Year 1	Amount Year 2	Amount Year 3	Total
GEF	\$242,840	\$364,820	\$357,340	\$965,000
UNDP-GEF agency	\$35,000	\$35,000	\$30,000	\$100,000
Ministry of Planning and International Cooperation, (cash) / Government.	\$20,000	\$44,000	\$36,000	\$100,000
Ministry of Planning and International Cooperation, (cash and in-kind) / Government.	\$15,000	\$15,000	\$10,000	\$40,000
Ministry of Environment, (in-kind) / Government.	\$10,000	\$10,000	\$10,000	\$30,000
Jordan Institution for Standards and Metrology (in-kind) / Government.	\$20,000	\$30,000	\$20,000	\$70,000
Ministry of Energy and Mineral Resources (in-kind) / Government.	\$30,000	\$40,000	\$30,000	\$100,000
Ministry of Industry and Commerce (in-kind) / Government.	\$50,000	\$50,000	\$41,243	\$141,243
Electricity Regulatory Commission (in-kind) / Government.	\$7,062	\$7,062	\$7,062	\$21,186
Jordan Customs (in-kind) / Government.	\$7,062	\$7,062	\$7,062	\$21,186
National Energy Research Center (in-kind)	\$65,000	\$70,000	\$65,000	\$200,000
Jordan Environment Society	\$100,000	\$100,000	\$100,000	\$300,000
Jordanian Society for Renewable Energy	\$30,000	\$30,000	\$40,000	\$100,000
Royal Scientific Society (in-kind)	\$30,000	\$40,000	\$30,000	\$100,000
<b>TOTAL</b>	<b>\$661,964</b>	<b>\$842,944</b>	<b>\$783,707</b>	<b>\$2,288,615</b>

<sup>23</sup> Summary table should include all financing of all kinds: GEF financing, co financing, cash, in-kind, etc...

## **IV. MANAGEMENT ARRANGEMENTS:**

### **4.1 Results of capacity assessment of implementing partner**

UNDP Jordan has initiated the HACT assessment for NERC (see annex 5): it is expected that the result will be ready by end of March 2010. The recommendations of the HACT will be discussed and incorporated in the project document during the project inception workshop.

### **4.2 UNDP Support Services:**

UNDP will assist in its ability to build partnerships, especially with the GEF, coordinate between the various parties involved, obtain knowledge from global sources and experience and assist with fund-raising efforts. UNDP will be the budget holder under the National Execution modality and will provide training to the Project Staff if needed on the execution modality. UNDP will charge 3% on the management of the Government cost share contribution (Annex 6.1). Financial advances will be transferred to the project on a quarterly basis upon request from the Project Manager, in accordance with Article VII of the Project Cooperation Agreement (Annex 6.2). The project must open a separate bank account in order to receive and disburse the funds transferred from UNDP.

### **4.3 A brief description/summary of the inputs to be provided by all partners**

The project will be implemented over 36 months with a total budget of US \$2,267,118. UNDP Jordan will provide US \$100,000 from its own TRAC resources; the Government of Jordan will provide US \$100,000 in cash; various Ministries, Government initiatives, the private sector and NGOs will provide US \$1,067,118 (in-kind, see Annex 6.3); and GEF will provide US \$965,000.

The project will follow the national execution modality. The executing agency will be the National Energy Research Centre (NERC). NERC is a legal semi-Governmental and non-profit entity, which has been established in Amman, Jordan. Among NERC's purposes are research, development and training in new and renewable energy, raising the efficiency of using energy in the different economic sectors, improving legislative framework for energy conservation, etc. NERC is considered as one of the specialized science and technological centres working under the umbrella of the Higher Council for Science and Technology.

The Ministry of Planning and International Cooperation, in its role as Government Coordinating Authority, will be responsible for the Executing Agency's performance supervision, assessment of progress, technical quality and objectives achievement. While the day-to-day project responsibility lies with the executing agency, the Government Coordinating Authority retains ultimate responsibility on behalf of the Government.

NERC will be responsible for the planning and overall management of project activities including reporting, accounting and monitoring, recruitment, procurement and services solicitation, supervision of the implementing partner and project resources management. It will be accountable to the Government Coordinating Authority (i.e. Ministry of Planning and International Cooperation) and to UNDP for the production of outputs, achievement of project objectives and use of project resources. It will facilitate dialogue and networking between partners and utilize relevant expertise to support the project.

Government ministries, energy agencies and the local private sector will provide the following areas of support to the project:

- Funding for the project (including a grant of US \$100,000 from UNDP) in order to support the project's successful implementation.
- Exposure for project-supporting events, advocating for the project and creating linkages with partners, donors and other initiatives.
- Promoting and facilitating linkages with relevant Governmental and non-Governmental initiatives.
- Facilitating partnerships, coordinating roles and mobilizing resources.

#### 4.4 Audit Arrangements:

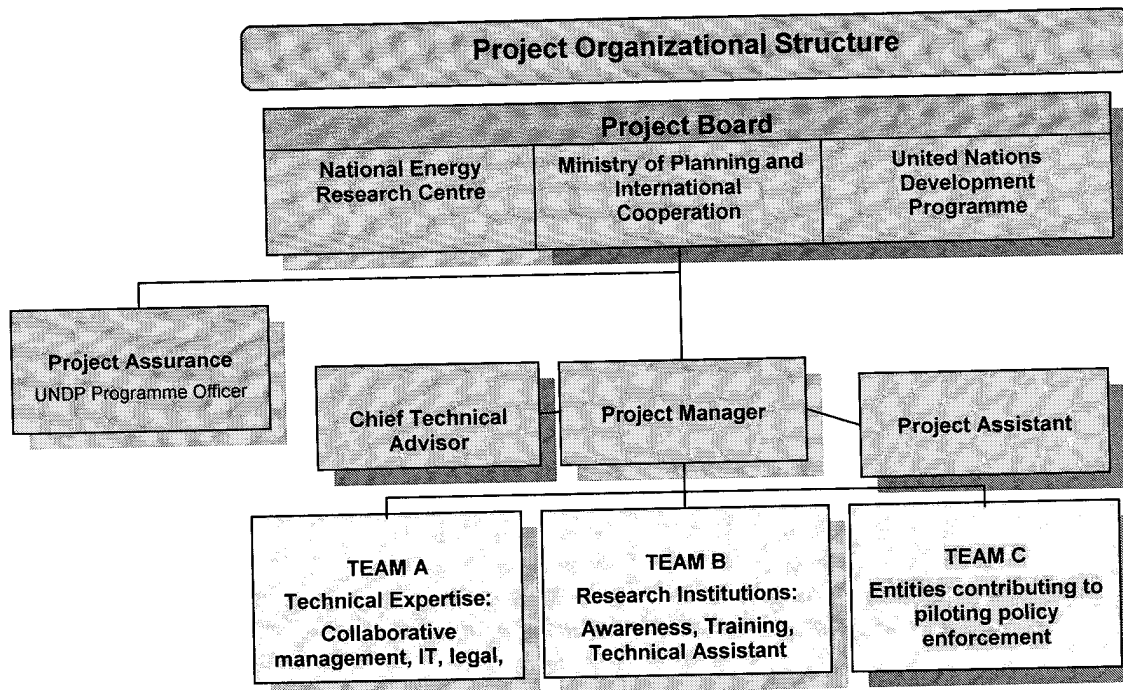
The project will be subjected to at least two independent external evaluations as follows:

- **Mid-Term Evaluation:** An independent Mid-Term Evaluation will be undertaken at the end of the second year of implementation. The Mid-Term Evaluation will determine the progress being made towards the achievement of outcomes and will identify course corrections if needed. It will focus on the effectiveness, efficiency and timeliness of project implementation; will highlight issues requiring decisions and actions; and will present initial lessons learned about project design, implementation and management. The findings of this evaluation will be incorporated as recommendations for enhanced implementation during the final half of the project's term. The organization, Terms of Reference and timing of the Mid-Term Evaluation will be decided upon after consultation between the parties in the project document. The Terms of Reference for this Mid-Term Evaluation will be prepared by the UNDP Country Office (UNDP-CO) based on guidance from the Regional Coordinating Unit and UNDP-GEF.
- **Final Evaluation:** An independent Final Evaluation will take place three months prior to the terminal tripartite review meeting and will focus on the same issues as the Mid-Term Evaluation. The Final Evaluation will also look at the impacts and sustainability of results, including the contribution to capacity development and the achievement of global environmental goals. The Final Evaluation will also provide recommendations for follow-up activities. The Terms of Reference for this evaluation will be prepared by the UNDP-CO based on guidance from the Regional Coordinating Unit and UNDP-GEF.
- **Financial Audit According to UNDP/GEF Rules and Regulations.** The NERC will provide the UNDP Resident Representative with certified periodic financial statements and with an Annual Audit of the financial statements relating to the status of the UNDP (including GEF) funds according to the established procedures set out in the Programming and Finance Manuals. The Audit will be conducted by a legally recognized commercial auditor hired by the UNDP Jordan Country Office.

#### AGREEMENT ON INTELLECTUAL PROPERTY RIGHTS AND USE OF LOGO ON THE PROJECT'S DELIVERABLES

In order to accord proper acknowledgement to GEF for the funding provided, the 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 project management structure can be illustrated as follows:



The recruitment for human resources will take place in the first quarter of project implementation. NERC will appoint the Project Manager (PM) (Annex 7.1). The Project Manager will have the authority to run the project on a day-to-day basis on behalf of the Project Board within the constraints laid down by the Project Board. The Project Manager will be responsible for the day-to-day management of the project and decision-making for the project. The Project Manager will be supported by the Project Assistant.

The following people will be also hired to facilitate the NERC's work in implementing the project:

- Chief Technical Advisor (CTA): The Project Technical Advisor's prime responsibility will be to ensure that the project produces the results specified in the project document, to the required standards of quality and within the specified constraints of time and cost.
- Project Assistant (PA).

A Project Board (PB) (for full TORs see Annex 7.2) that meets once every four months or when the Project Manager deems it necessary will be established to oversee the implementation of the project. This will be the group responsible for making, on a consensus basis, management decisions for the project when guidance is required by the Project Manager. The Project Board will consist of representatives from the MoPIC, UNDP and NERC. The Project Manager will consult the Project Board for critical decisions.

A Project Advisory Committee (PAC) (Annex 7.3) will be established to oversee project implementation and will comprise the Project Manager, the project's CTA, MoPIC, MoEMR, MoEnv, UNDP and the project's stakeholders. Potential members of the Project Board will be reviewed and recommended for approval during the PAC meeting. Representatives of other stakeholders can be included in the Board as appropriate. The Project Advisory Committee members will meet once every four months or as needed. The Project Assistant role supports the Project Board by carrying out objective and independent project



oversight and monitoring functions. This role ensures appropriate project management milestones are managed and completed; the respective UNDP Program Officer holds the Project Assistant role for the UNDP Board member.

The Project Assurance's role will be to support the Project Board by carrying out objective and independent project oversight and monitoring functions. This role ensures that appropriate project management milestones are managed and completed, the respective UNDP Programme Officer will hold the Project Assurance role for the UNDP Board members.

## **V. MONITORING FRAMEWORK AND EVALUATION**

The following sections outline the principal components of the Monitoring and Evaluation Plan and indicative cost estimates related to M&E activities. The project's Monitoring and Evaluation Plan will be presented and finalized at the Project's Inception Workshop following a collective fine-tuning of the indicators, means of verification and the full definition of the M&E responsibilities of the project staff.

The Project strategy and objectives, intended outcomes and outputs, implementation structure, work plans and emerging issues will be regularly reviewed and evaluated annually by the Project Board. Periodic Status Reports will be prepared at the request of the Board for presentation at key meetings associated with the project.

In accordance with the programming policies and procedures outlined in the UNDP User Guide, the project will be monitored through several mechanisms including annual review reports, annual project reviews, quarterly progress reports, updating of the various ATLAS logs, field visits and audits.

The M & E plan will be based on the project results framework provided earlier, which includes success indicators and means of verification. When necessary, interim evaluation results will be used to modify project activities for long-term monitoring of project impacts, development of matrix and formats for information collection and analysis, undertaking of biannual information collection and evaluation, tracking and measurement of consumers' reactions and results of education activities and implementation oversight. The NERC will prepare and submit to each tripartite review meeting a project performance evaluation report.

### **5.1 Monitoring Responsibilities and Events:**

The day-to-day monitoring of implementation progress will be the responsibility of the Project Manager and the project CTA (depending on the established project structure) based on the project's Annual Work Plan and its indicators. The Project Team will inform the UNDP Country Office (UNDP-CO) of any delays or difficulties faced during implementation so that the appropriate support or corrective measures can be adopted in a timely and remedial fashion.

A detailed schedule of project review 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 timeframes for annual reviews, Project Board meetings, and (ii) project-related Monitoring and Evaluation activities. In accordance with the programming policies and procedures outlined in the UNDP User Guide, the project will be monitored through the following:

#### **Project Inception Phase**

A Project Inception Workshop will be conducted with the Project Team within the first two months of project start, involving relevant Government counterparts, co-financing partners, the UNDP-CO and representation from the UNDP-GEF Regional Coordinating Unit as appropriate; special attention will be given to make sure that academia, Greater Amman Municipality research institutions and other NGOs will be invited due to their potential role in the implementation of the project. The objective of this Inception Workshop will be to help the Project Team to understand and take ownership of the project's goals and objectives, as well as to finalize the preparation of the project's first annual work plan on the basis of the project's log-frame matrix. This will include reviewing the log-frame (indicators, means of verification,

assumptions), imparting additional details as needed and, on the basis of this exercise, finalize the Annual Work Plan (AWP) with precise and measurable performance indicators and in a manner consistent with the expected outcomes.

Additionally, the purpose and objective of the Inception Workshop (IW) will be to: (i) introduce the project staff to the UNDP-CO programme officer and operations and finance teams who will support the project during its implementation; (ii) detail the roles, support services and complementary responsibilities of UNDP-CO staff vis-à-vis the Project Team; (iii) provide a detailed overview of UNDP-CO reporting and monitoring and evaluation (M&E) requirements, with particular emphasis on the Annual Project Implementation Reviews (PIRs) and related documentation, the Annual Project Report (APR) as well as mid-term and final evaluations; (iv) plan and schedule Project Board meetings. Roles and responsibilities of all project organisation structures will be clarified and meetings planned.

The Project Manager and the Project CTA will fine-tune the progress and performance/impact indicators of the project in consultation with the Project Team at the Inception Workshop, with support from the UNDP-CO programme officer. Specific targets for the first year implementation progress indicators together with their means of verification will be developed at this Workshop.

The first Project Board meeting will be held within the first 12 months following the Inception Workshop and the Inception Workshop report will be a key reference document and will be prepared and shared with participants to formalize various agreements and plans decided during the meeting.

#### **Quarterly:**

**Quality assessment:** On a quarterly basis, a quality assessment will record progress towards the completion of key results, based on quality criteria and methods captured in the Quality Management table that will be prepared by the Project Manager. An Issue Log will be activated in Atlas and updated by the Project Manager to facilitate tracking and resolution of potential problems or requests for change.

**Risk Mitigation Report:** Based on the initial risk analysis submitted, a risk log will be activated in Atlas and regularly updated by reviewing the external environment that may affect project implementation.

**Quarterly Progress Reports (QPRs):** Based on the above information recorded in Atlas, QPRs will be submitted by the Project Manager to the Project Board through Project Assurance, using the standard report format available in the Executive Snapshot.

**Lessons-Learned Report:** A project lessons-learned log will be activated and regularly updated to ensure ongoing learning and adaptation within the organization and to facilitate the preparation of the Lessons-Learned Report at the end of the project.

**Monitoring Schedule Plan:** A Monitoring Schedule Plan will be activated in Atlas and updated to track key management actions/events.

#### **Annually**

**Annual Review Report:** an Annual Review Report will be prepared by the Project Manager and shared with the Project Board and the Outcome Board. As a minimum requirement, the Annual Review Report will be in the standard Atlas format for the QPRs covering the whole year with updated information for each component of the QPRs mentioned above as well as a summary of results achieved against pre-defined annual targets at the output level.

**Annual Project Review:** based on the above report, an Annual Project Review will be conducted during the fourth quarter of the year, or soon thereafter, to assess the performance of the project and appraise the Annual Work Plan (AWP) for the following year. In the last year, this review will be a final assessment. This review is driven by the Project Board and may involve other stakeholders as required. It will focus on the extent to which progress is being made towards the outputs and on the fact that these remain aligned to the appropriate outcomes.

**Periodic Monitoring through site visits:** the UNDP CO and the UNDP RCU will conduct visits to project sites based on the agreed schedule in the project's Inception Report/Annual Work Plan to assess first hand project progress. Other members of the Project Board may also join these visits. A Field Visit Report/BTOR will be prepared by the CO and UNDP RCU and will be circulated no less than one month after the visit to the project team and Project Board members.

**Mid-term of project cycle:** The project will undergo an independent Mid-Term Evaluation at the mid-point of project implementation. The Mid-Term Evaluation will determine progress being made toward the achievement of outcomes and will identify course correction if needed. It will focus on the effectiveness, efficiency and timeliness of project implementation; will highlight issues requiring decisions and actions; and will present initial lessons learned about project design, implementation and management. Findings of this review will be incorporated as recommendations for enhanced implementation during the final half of the project's term. The organization, terms of reference and timing of the mid-term evaluation will be decided after consultation between the parties to the project document. The Terms of Reference for this Mid-term evaluation will be prepared by the UNDP CO based on guidance from the Regional Coordinating Unit and UNDP-GEF. The management response and the evaluation will be uploaded to UNDP corporate systems, in particular the UNDP Evaluation Office Evaluation Resource Center (ERC).

## 5.2 Learning and knowledge sharing:

Results from the project will be disseminated within and beyond the project intervention zone through a number of existing information sharing networks and forums.

In addition:

- The project will participate, as relevant and appropriate, in UNDP/GEF sponsored networks, organized for senior personnel working on projects that share common characteristics. UNDP/GEF will establish a number of networks, which will largely function on the basis of an electronic platform.
- The project will identify and participate in, as relevant and appropriate, scientific, policy-based and/or any other networks, which may be of benefit to project implementation through lessons learned.

The project will identify, analyze and share lessons learned that might be beneficial in the design and implementation of similar future projects. Identifying and analyzing lessons learned is an ongoing process, and the need to communicate such lessons as one of the project's central contributions is a requirement to be delivered no less frequently than once every 12 months. UNDP/GEF will provide a format and assist the Project Team in categorizing, documenting and reporting on lessons learned. To this end a percentage of project resources will be allocated to these activities.

### M& E workplan and budget

Type of M&E Activity	Responsible Parties	Budget US\$	Time Frame
Strategic Planning Matrix (Annual Work Plan)	<ul style="list-style-type: none"> <li>▪ Project Team</li> <li>▪ UNDP-CO</li> </ul>	0	Annually, first SPM immediately following approval of the project
Baseline and End-of Project Study of Project Indicators	<ul style="list-style-type: none"> <li>▪ PMU</li> <li>▪ Hired Consultant</li> </ul>	45,000	Start and end of project
Measurement of Means of Verification for Project Progress and Performance (measured annually)	<ul style="list-style-type: none"> <li>▪ Overseen by UNDP-GEF RCU and Project Manager</li> <li>▪ Counterpart organizations in the field or hired Consultants on an as-needed basis</li> </ul>	Part of the SPM's preparation.	Annually, prior to APR/PIR and to the definition of Annual Work Plans
APR-PIR	<ul style="list-style-type: none"> <li>▪ PMU</li> <li>▪ UNDP-CO</li> </ul>	0	Annually
Steering Committee Meetings	<ul style="list-style-type: none"> <li>▪ Project Manager</li> <li>▪ UNDP-CO</li> </ul>	0	Following Project IW and held regularly
Technical Reports	<ul style="list-style-type: none"> <li>▪ PMU</li> <li>▪ Hired Consultants</li> </ul>	As part of project activities	To be determined by Project Team and UNDP-CO
Mid-Term Evaluation	<ul style="list-style-type: none"> <li>▪ PMU</li> <li>▪ Hired Consultants</li> </ul>	15,000	Half a year before end of Phase I
Final External Evaluation	<ul style="list-style-type: none"> <li>▪ PMU</li> <li>▪ UNDP-CO</li> <li>▪ External Consultants (i.e. evaluation team)</li> </ul>	15,000	At the end of project implementation
Terminal Report	<ul style="list-style-type: none"> <li>▪ PMU</li> <li>▪ UNDP-CO</li> </ul>	0	At least one month before the project's end
Lessons Learned	<ul style="list-style-type: none"> <li>▪ PMU</li> <li>▪ UNDP-CO (suggested formats for documenting best practices, etc)</li> <li>▪ External Consultant</li> </ul>	10,000	Yearly
Audit	<ul style="list-style-type: none"> <li>▪ UNDP-CO</li> <li>▪ PMU</li> <li>▪ External Auditor</li> </ul>	5,000	Yearly
Visits to Field Sites (UNDP staff travel costs to be charged to IA fees)	<ul style="list-style-type: none"> <li>▪ UNDP-CO</li> <li>▪ Government Representatives</li> </ul>	40,000	Yearly
<b>TOTAL indicative COST</b> Excluding Project Team staff time and UNDP staff and travel expenses.		<b>US\$ 130,000</b>	

## VI. LEGAL CONTEXT

This Project Document shall be the instrument referred to as such in Article I of the Standard Basic Assistance Agreement between the Government of the Hashemite Kingdom of Jordan and the United Nations Development Programme, signed by the parties on January 12, 1976. 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.

The UNDP Resident Representative in Amman, Jordan, 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 that 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

Furthermore this document together with the CPAP signed by the Government and UNDP which is incorporated by reference constitute together a Project Document as referred to in the SBAA [or other appropriate governing agreement] and all CPAP provisions apply to this document.

Consistent with the Article III of the Standard Basic Assistance Agreement, the responsibility for the safety and security of the implementing partner and its personnel and property, and of UNDP's property in the implementing partner's custody, rests with the implementing partner.

The implementing partner shall:

- a) Put in place an appropriate security plan and maintain the security plan, taking into account the security situation in the country where the project is being carried;
- b) Assume all risks and liabilities related to the implementing partner's security, and the full implementation of the security plan.

UNDP reserves the right to verify whether such a plan is in place, and to suggest modifications to the plan when necessary. Failure to maintain and implement an appropriate security plan as required hereunder shall be deemed a breach of this agreement.

The implementing partner agrees to undertake all reasonable efforts to ensure that none of the UNDP funds received pursuant to the Project Document are used to provide support to individuals or entities associated with terrorism and that the recipients of any amounts provided by UNDP hereunder do not appear on the list maintained by the Security Council Committee established pursuant to resolution 1267 (1999). The list can be accessed via <http://www.un.org/Docs/sc/committees/1267/1267ListEng.htm>. This provision must be included in all sub-contracts or sub-agreements entered into under this Project Document.

## VII. ANNEXES

### 1. List of Organizations Consulted During the Preparatory Phase

#### Stakeholders List, Sorted by group

	Agency	Contact Person	Position
	<b>Public Sector</b>		
1	Ministry of Energy & Mineral Resources	-Eng. Farouq Hiary -Abd Arahim	Manager of Industrial Power Directorate (Member of sub-committee on standard and Labelling)
		Eng. Wijdan Rabadi	Cost & Pricing Director (member of the board of standard and metrology)
		Eng. Mahmoud Al-Ees	Planning Department
		M. Hani Noual	Alternative Energy and Energy Efficiency Dept.
2	Committee for the implementation of the National Energy Efficiency Strategy (2004)	Mr. Kabariti (from NERC)	Chair the Sub-committee on Awareness
3	Institution of Standards & Metrology	Mr. Amer Fakhoori	
4	Ministry of Industry & Trade	Eng. Abeer Abu Azam	Head of Sectorial Tech. Affairs
		Mona Habahbeh	
5	Ministry of Planning & International Cooperation	Dr. Saleh Kharabsheh (OP focal point)	GEF Focal Point
		Ahmad Jazar	
		Mohamad Assaf	
		Ms. Jeihan Moh'd Abu-Tayed	Head of the International Agencies & Commission Division (UN coordination unit)
6	Ministry of Environment	Eng. Hussein Badarin	Director
	<b>Civil Non Profit</b>		
7	Amman Chamber of Commerce	Head	
8	Jordan Chamber of Industry	Roz Al-Smadi	
9	General Association for electrical and electronics merchants	Mr. Riyad Qaysiyah	Manager
10	The National Society for Consumer Protection	Dr. Muhammed Obeidat	Manager
11	Jordanian Society for Quality	Mrs. Aedah Esteiteyeh	Executive Manager

12	Friends of Environment Society	Ramzi Qu'war	Head of the Society
13	Jordan Engineers Association	Abdalla Al-zebin	
14	Jordan Society for Environment	Dr. Mohamad Sawaleha Ms. Salwa Khairi	
<b>Laboratory and Testing</b>			
15	Royal Scientific Society	Emad Abu Hamdi	Head of Thermal Testing Unit
16	MELTTS (RSS & Veritas)	Mr. Mazen Al-Momani	Head of Laboratory
17	Petra Laboratory for AC		
18	Jordan Accreditation Commissions	Mrs. Ola Zattawi	
<b>End-User Associations</b>			
19	Civil Service Consumer Corporation	Mr. Bassam Kiswany	Assistant Manager of Quality & Marketing Dep.
<b>Regulatory and Utilities</b>			
20	Electricity Regulatory Commission ERC	Dr. Ghaleb M. Maabreh Imad M. Nejdawi	Commissioners
21	National Electricity Power Company (NEPCO)	Eng. Suliman Hiyary Mansour Al kouz	Head of Energy Department
22	JEPCO		
23	CEGECO electricity producer Manufacturers	M. Seing Alleyan	
24	Haier Middle East Appliances Co.	Eng. Majd Shakib Eng. Salah Aljamel	
25	Petra Engineering Industries Co.		
<b>Importers &amp; Retailers</b>			
26	FA Kettaneh Company	Mr. Nobar Krakeshian	General Manger
27	Muhammed Yahia Pepers	Mr. Hassan Pepers	General Manger
28	Jordanian Cie for Home suppliers	Mohamad Al Qahtan	
29	El-Hafro Trading Company		
30	Jordanian Company for electrical & electronic appliances		
31	South Company for Electronics		
32	Ha Ahned Esa Murad Yaser Mahani		
33	Tahbob for appliances company		



<b>Source for Co-Financing</b>			
34	Small Grant Programme (SGP)	Munir Al Adgham Khawla Fayyad	
35	EU Delegation	M. Omar Abu-Eid	Programme Assistant
36	Jordan Upgrading and Modernisation Programme (JUMP)	Eng. Samer L. Samman	Enterprise Development Officer, Technical Assistance Unit
<b>Academic</b>			
37	Jordan University for Sciences and Technology	Dr. Yousef Al Najar	Energy Centre
38	The Hashemite University	Dr. Basam Mraian	Centre of Environmental Studies
<b>Private consultation firm</b>			
39	Bureau Veritas		
40	Sustainable Environment business corporation	Muhammad Hassan	General Manager
<b>Others</b>			
41	Jordan Biogas Company	Hatem Ababneh	
42	Greater Amman Municipality		

## 2. Home Appliances Market Study

### 1. Energy Situation and Consumption

#### 1.1 General Information

Kingdom's population (million persons):	5,485
Gross Domestic product(GDP) at current prices (million JD)	9,118
Per capita annual income (JD):	1,662
Energy intensity (Toe/1000 JD at 1994 prices):	0.97
Per capita share of energy consumption (kgoe):	1,281
Per capita share of electricity consumption (Kwh):	1,586
Electricity generation (Gwh)	9,654
Electricity Consumption (Gwh):	8,712
Percentage of population supplied with electricity (%):	99.9
Overall domestic energy production (1000 Toe):	262.5
Oil imports (crude oil, oil products, natural gas, electricity):	7,163
Primary energy consumption (1000 Toe):	7,028
Cost of energy consumption (Million JD):	1,776
<b>Cost of energy consumption according to:</b>	
Exports (%):	58.1
Imports (%):	23.9
Gross Domestic Product (%):	19.5
<b>• Jordan Dinar (JD) = 1000 Fils = 1.41 US\$ in 2010</b>	

In order to achieve the general objectives of the energy and electricity sector, namely providing all forms of energy needed for the comprehensive development at the lowest possible cost and according to the best standards and specifications, and as an implementation of the energy sector's comprehensive national strategy approved by the Council of Ministers in January 2004, the Ministry of Energy has adopted a clear policy for the forthcoming phases, basically intended to secure energy supplies by diversifying the sources and forms of imported energy and improving and utilizing the sources of conventional and renewable local sources of energy. This policy is also designed to liberate the energy markets including the oil products and electricity markets, prepare and encourage the private sector to invest in the energy sector infrastructure, consolidate the regional energy linkage projects, maximize the benefits from these projects, and upgrade the efficient consumption of energy in all economic sectors.

#### Energy Efficiency Strategy

In view of the importance underlying the rationalized consumption of energy along with improving the efficient use of energy, a national strategy for this purpose was approved in 2004 in order to reduce the

volume of energy consumption without affecting the standards of living and production, and subsequently reducing the impact of the imported energy bill on the national economy and improving the competitiveness of the national industries. Seven specialized technical committees were formed to follow-up on the major components of this strategy. These committees are: The Pilot Projects Committee, Electricity Sector Efficiency Improving Committee, Building Codes Committee, Information Committee, Taxation Committee, Standards and Measurements Committee, and the Transportation Committee.

The most important achievements made by these committees according to the components of the strategy are:

- A Pricing policy has been adopted for gradual elimination of subsidies to fuel the year 2007, and adopting a pricing policy based on international prices
- The esteemed Council of Ministers has taken several decisions according to the directive issued by the ad hoc committees formed. These decisions include exempting the registered public bus from the customs duties in return for scrapping two medium-size passenger vehicles, reducing the sales tax to 10% instead of 16%, exempting the energy-saving lamps from customs duties, and creating a special customs clause on these within the customs tariff.
- In June 2005, technical and economic studies were launched through the Japanese Grant and in cooperation with a specialized consultant in the field of the rationalized consumption of energy related to (20) different installations within the industrial and trade sector. The 17 studies which were completed proved that 20% of energy consumption in these installations could be saved at short recovery intervals ranging between two and three years. The relevant institutions are now taking the necessary measures for improving energy consumption in light of this study.
- Work is now underway to carry out the Energy Efficiency Labeling Project intended to provide the necessary information on the optimal consumption of energy appliances and equipment. Thus, the consumer will be able to choose appliances and equipment which consume the least quantity of energy. Drawing up the standards for various electric appliances (Laundries, refrigerators, air conditioners) has already been completed. Regulations will be established to the end that importing energy consuming appliances and equipments will not be permitted unless they carry the power efficiency label.
- Preparations are underway to establish the Energy Efficiency Fund. A Ministerial Committee has been formed of their Excellencies: Minister of Energy and Mineral Resources, Minister of Finance, Minister of Planning and International Cooperation, and Minister of Industry and Trade. This Committee will draw up the principles according to which the fund will be established
- National Energy Research Center holds a series of programmed training courses on a monthly basis for the energy managers and engineers at the major factories, hotels, and firms. These courses have been attended by many participants from the Arab countries. The Center issues periodical bulletins to introduce methods of energy consumption and provides question-and-answer-services on the energy consumption by both the public and private institutions.
- Guidance announcements are now being published in the local newspapers on the methods of rationalized consumption of energy along with the radio programs and lectures delivered in cooperation with the Ministry of Education to the school students on the same subject.
- As a continuation of the program on the rationalized consumption of fuel by the government vehicles, the esteemed Council of Ministers decided in its session held on 10.05.2005, and according to the recommendation made by the Socioeconomic Development Committee, to issue instructions towards determining the government vehicles' average consumption of fuel.

Accordingly, the Ministry amended in 2005 the ratios of fuel consumption by the vehicles working within some 32 government ministries and departments with participation of representatives from the Ministry of Public Works and Housing, Accounting Bureau, and the department concerned with the amendment.

## **1.2 Institutional Position of the Energy Sector**

Energy institutions have emerged historically isolated from each other without any framework to combine them together. Energy matters have been split among numerous institutions and committees which hampered the drafting of a clear policy or the energy sector. So, the optimal efficiency could not be reached for operating this sector. In view of the important role which this sector plays in terms of the socioeconomic aspects, and as this sector's activities are directly related to the political and economic aspects, the government has been interested in re-organizing this sector in order to enhance its efficiency and increase its effectiveness. In light of the new institutional amendments, the current institutional framework of the energy sector consists of the following:

### **a. Ministry of Energy and Mineral Resources (MEMR):**

The Ministry sponsors the process of comprehensive planning for this sector in terms of regulation, drawing up general policies, following up on the implementation of such policies towards carrying out the assigned tasks. Most important of these tasks include providing all forms of the energy needed for the purposes of comprehensive development at the lowest possible cost and with the best specifications. Besides, tasks included attracting global capital funds for investing in the Kingdom in the various fields of energy such as generating electricity, producing oil products, utilizing local sources and resources of energy.

### **b. Electricity sector's institutions**

These institutions which are responsible for regulating, generating, transporting, and distributing electricity inside the Kingdom, include the following:

#### **▪ Electricity Sector Regulatory Commission (ESRC)**

It is an independent commission established in 2001 whose most important tasks involve determining electricity prices, subscription fees, and costs of the necessary services, issuing licenses to the companies generating, transmitting, and distributing electricity, and monitoring their compliance with the conditions stipulated in these licenses. This Commission is also responsible for providing amicable solutions to the disputes arising between the electricity sector's companies and the consumers, and also between the companies themselves, inasmuch as the public interest will be secured, as well as for extending consultancies and advice concerning any matters to the electricity sector.

#### **▪ National Electric Power Company (NEPCO)**

It is a public shareholding company which is owned by the government and which is responsible for the building, operation, and maintenance of the transmission system within the borders of the Kingdom. The company owns transmission lines of the voltages 132 and 400 KV along with the transmission system linking the electric system with the electric systems of the neighboring countries with a voltage of 400 KV. The company is responsible for implementing the relevant agreements and makes electric power purchases or sales from outside the Kingdom with the approval of the Council of Ministers.

#### **▪ Central Electric Power Generation Company (CEGCO)**

It is a public shareholding company responsible for generating and whole-selling electricity to the (NEPCO). This company whose shares are owned in full by the government was founded in 1999. The Company generated 94.1% of the total electricity produced in 2005.

- **Samra Electric Power Generation Company**

It is a shareholding company whose shares are fully owned by the government and was founded according to the Council of Minister's decision taken on 20.01.2004 with a nominal value of JD 50 million. It was registered within the Private Shareholding Companies Registers under No. 40 on 21.04.2004. The company is implementing the Samra Electric Power Generation Plant Project with a voltage of 302 Mw and the Compound Circuit Technology whereby natural gas as basic fuel and diesel as secondary fuel are burnt in order to meet the growing demand for electricity during the period 2005-2007. The company generated 0.3% of the total electricity produced in 2005. The Black & Veatch and Gama Company Consortium has been selected on 06.07.2004 for the tender to build the generation plant which will operate as a simple circuit in the summer of 2005. The project will, however, be concluded as a compound circuit in October 2006.

- **Electricity Distribution Companies**

These are three companies each with a concession area as follows:

- **Jordan Electric Power Company (JEPCO)**

It is a public shareholding company responsible for distributing electricity in the Metropolis, Zarqa, Madaba and Balqa Governorates apart from the Central Jordan Valley, according to a 50-year concession contract which will expire in 2012. The government owns 0.75% of this company's shares, and the Social Insurance general Corporation owns another 11.5% of these shares. The remaining shares are owned by other shareholders.

- **Irbid District Electricity Company (IDECO)**

It is a public shareholding company responsible for distributing the electricity in Irbid, Mafraq, Jerash, and Ajloun apart from the Northern Jordan Valley and Eastern areas, according to a 50-year concession contract which will expire in 2011. Some 55.4% of this company's shares are owned by the government. Meanwhile, the municipalities own 26.568% of this company's shares, and the remaining shares are owned by other shareholders.

- **Electricity Distribution Company (EDCO)**

It is a public shareholding company responsible for distributing electricity in the areas beyond the concession of both the (JEPCO) and (IDECO), namely in the Southern, Eastern and Jordan Valley areas. This company's shares are fully owned by the government.

- **Rural Electrification Project**

Work on this project has been started in 1992 when the Council of Ministers decided to add one fils to the price of each kilo watt consumed, which it increased to two fils in 1997. The amounts collected through these two fils are designed to finance the Jordanian Rural Electrification Project. This project's management is supervised by the Ministry.

- c. **Petroleum, gas, and mineral ores institutions**

These institutions carry out operations related to prospecting for oil and mineral resources inside the Kingdom along with refining crude oil. These institutions include:

– **Natural Resources Authority (NRA)**

It is involved in implementing works related to prospecting for mineral resources, conducting geological, geophysical, and geochemical surveys along with issuing licenses for stone quarries, exploration, and monitoring the operations thereof.

– **National Petroleum Company (NPCO)**

It is a government-owned public shareholding company which carries out works pertaining to research, exploration and production of oil and gas in the concession area to the north east of the Kingdom on the Iraqi borders. The concession area covers 7000 square kilometers including the Risha Gas Field area of around 1500 square kilometers. The concession period is renewable and lasts for 50 years effective from 1996.

– **Jordan Petroleum Refinery Company (JPRCO)**

It is a public shareholding company with 0.02% of its shares owned by the government. The company is responsible for refining crude oil, producing and distributing oil products inside the Kingdom, according to the concession contract which will expire in early 2008.

**d. National Energy Research centre (NERC)**

It is a scientific center affiliated with the Higher Council for Science and Technology which was founded in 1998 for carrying out the tasks of scientific research and development, technology related to the transfer of new and renewable energy, energy conservation, and oil shale. These tasks used to be shared by several authorities including the Ministry of Energy and Mineral Resources, Royal Scientific Society, and the Natural Resources Authority. The Center's Board of Directors is headed by the Minister of Energy and Mineral Resources.

**e. Jordanian Nuclear Energy Commission**

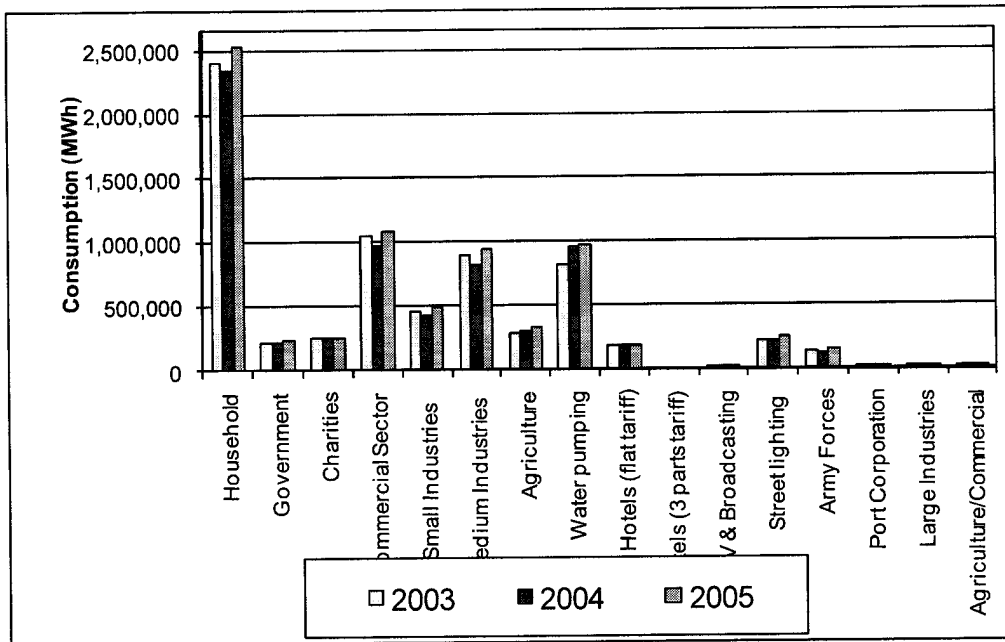
It is an independent government commission which has been founded in 2001 to take care of such affairs as those pertaining to the transfer and development of nuclear energy technology for peaceful purposes and preventive radiation.

**f. Bio-Gas Company**

It is a shareholding company jointly owned by the (CEGCO) and the Greater Amman Municipality. The company has been founded in the year 2000 for utilizing methane gas extracted out of the organic waste towards generating electricity.

### **1.3 Electricity Consumption in Residential Sector**

As previously mentioned, residential sector consumed 2989 GWh in 2005 which represents 34% of the total electricity consumption in Jordan. This illustrates the consumption for both household and government consumption. But the detailed consumption data obtained from distribution companies showed that the actual consumption for residential sector was 2525 GWh which only represents 28% of the total electricity consumption in Jordan in 2005. Figure 3 show the sectorial consumption of electricity in Jordan 2003-2005. It is clearly shown that the consumption of residential sector represents the highest one among all sectors.



**Detailed Electricity consumption for 2003-2005**

According to the available information on home appliances distributed among Jordanian homes from Department of Statistics and the average consumption per appliance shown in Table 1, the estimated total annual electricity consumption for these appliances is around 586 GWh/year. This represents 23% of the total residential sector consumption.

If assumed that Energy Label program leads to 20% energy savings in electricity consumption for the mentioned home appliances, the annual electricity savings would be around 116 GWh. This will lead to an annual saving in oil imports of around 55964 barrels. If assumed that the cost of one barrel is \$60, the annual cost saving would be around \$3.4 million.

**Table 1: Annual Electricity Consumption for 4 household appliances**

Particular	No. of household Appliances	Average Annual Consumption per unit (kWh)	Total Annual Consumption (GWh)
washing machines	815655	236	192
Refrigerators	597657	329	197
Freezers	79165	386	31
Air Conditioning	51806	3181	165
Total	1544283		584

**Distribution of Household Appliances**

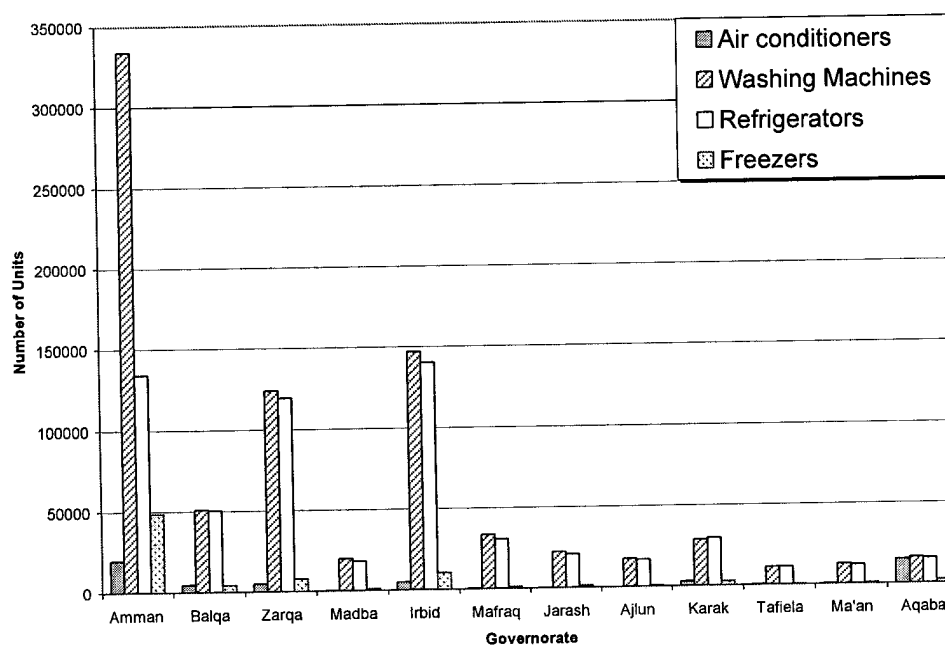
The distribution of the electrical appliances in Jordan according to Department of Statistics is as shown in the table below.

### Distribution of electrical appliances in Jordan

Governorate	estimated number of air conditioners	estimated number of washing machines	estimated number of refrigerators	estimated number of freezers
Amman	19421	334035	134003	48552
Balqa	4503	50568	50221	4156
Zarqa	4588	123873	119285	7647
Madba	130	19624	18064	910
Irbid	4641	146670	140172	10211
Mafraq	244	33454	30768	977
Jarash	154	22119	20583	1075
Ajlun	0	17334	16740	475
Karak	2654	28586	29607	2450
Tafiela	376	10914	10914	301
Ma'an	189	12347	11782	471
Aqaba	14906	16131	15519	1940
<b>TOTAL</b>	<b>51806</b>	<b>815655</b>	<b>597657</b>	<b>79165</b>

The figure below shows the distribution of the household appliances in Jordanian Governorates.

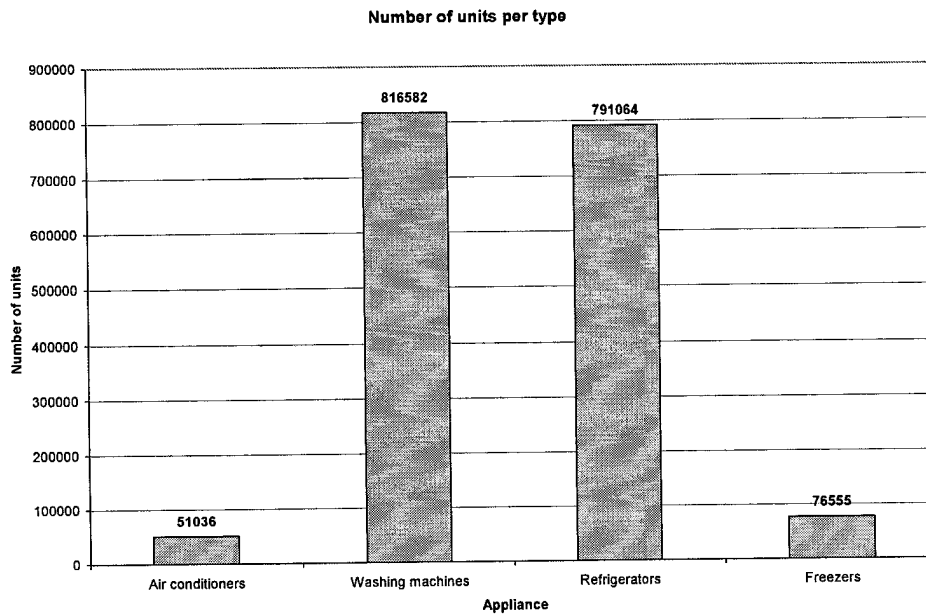
Distribution of Appliances in Jordanian Governorates



**Distribution of the household appliances in Jordanian Governorates**

The number of household appliances in Jordan, according to data obtained from the Department of Statistics (Population and Housing Census 2004), is shown in the figure below.





### Number of Household appliances in Jordan

#### Home Appliance Industry and Market in Jordan

- **Distribution of consumer products**

About 25% of the country's populations reside in the capital, Amman. The capital, however, does not have any large retail facilities, such as a department store or shopping center. Home appliances are sold at small retail shops that are scattered all over the city. These retailers are not organized in manufacturer centered distribution and marketing schemes; each carries a variety of brands.

In 2001 imports accounted for 60-70% of consumer goods, ranging from household goods, to tableware, furniture and apparel, sold at supermarkets and small retailers. In fact, imports are estimated to account for over 60% of all industrial products sold in the country.

In Jordan, consumers seem to select product on the basis of price, rather than brand. This is widely seen in home appliances and many other products. Number of Import and Export of items during 2005 – 2006 are listed below in the table.

- **Home appliance industry and market**

The types of home appliances produced in Jordan are refrigerators, washing machines, air-conditioners, telephones, TV sets, and microwave ovens. The home appliance industry is relatively young, and many manufacturers were originally importers who still handle foreign products in addition to producing their own brands. No foreign home appliance manufacturer operates in the country nor are plans for such direct investment known to exist. There is no local manufacturer that receives technical support from or has a partnership with a foreign home appliance company, except for arrangements for purchase of parts and molds. As a result, local companies have little of the production know-how needed to make competitive products. This serves as a handicap for product development, preventing them from developing new products and improving international competitiveness. As a result, local products account for only 20-40% of the home market, depending on product type.

HS.CODE	COMMODITY	EXPORT QUANTITY	EXPORT VALUE	RE-EXPORT QUANTITY	RE-EXPORT VALUE	IMPORT QUANTITY	IMPORT VALUE	import - re export
			Number	JD	Number	JD	Number	JD
								Number
<b>Air Conditioning</b>								
841510000	AIR CONDITIONING MACHINES, COMPRISING A MOTOR-DRIVEN FAN AND ELEMENTS FOR WINDOW OR WALL TYPES, SELF-CONTAINED (At 74.1 kilo average and 250 JD value per unit, Oct 2006)	49103	12512018	16500	3553912	55994	13982133	39495
841581000	AIR CONDITIONING MACHINES, COMPRISING A MOTOR-DRIVEN FAN AND ELEMENTS OF INCORPORATING A REFRIGERATING UNIT AND A VALVE FOR REVERSAL OF THE COOLING/HEAT CYCLE. (at 134.6 kg per unit average and 450 JD value per unit)	305	193546	352	315459	1731	778580	1379
<b>Refrigerator-Freezer</b>								
841810900	COMBINED REFRIGERATOR-FREEZERS, FITTED WITH SEPARATE EXTERNAL DOORS OTHER THAN THOSE FOR INDUSTRIAL OR MEDICAL USE- NUMBER	0	0	0	0	1282	233772	1282
841821000	REFRIGERATORS, HOUSEHOLD TYPE, COMPRESSION-TYPE - NUMBER	7061	965529	5012	359786	58948	10145330	53936
<b>Freezers</b>								
841830900	FREEZERS OF THE CHEST TYPE, NOT EXCEEDING (800) LITRE CAPACITY, OTHER THAN THOSE FOR INDUSTRIAL OR MEDICAL USE- NUMBER	245	23574	424	95300	3407	636521	2983
841840900	FREEZERS OF THE UPRIGHT TYPE, NOT EXCEEDING (900) LITRE CAPACITY, OTHER THAN FOR INDUSTRIAL OR MEDICAL USE-NUMBER.	482	41290	0	0	1698	411544	1698
<b>Dishwasher</b>								
842211000	DISH WASHING MACHINES, OF THE HOUSEHOLD TYPE-NUMBER	0	0	0	0	0	0	0
<b>Washing machines</b>								
845011000	HOUSEHOLD OR LAUNDRY-TYPE WASHING MACHINES, EACH OF A DRY LINEN CAPACITY NOT EXCEEDING (10) KG FULLY-AUTOMATIC MACHINES-NUMBER.	0	0	186	44316	20331	2355073	20145
845012000	HOUSEHOLD OR LAUNDRY-TYPE WASHING MACHINES, EACH OF A DRY LINEN CAPACITY NOT EXCEEDING (10) KG, WITH BUILT-IN CENTRIFUGAL DRIER-NUMBER.	115364	12945639	1456	112227	33667	3604071	32211
845019000	OTHER HOUSEHOLD WASHING MACHINES, EACH OF A DRY LINEN CAPACITY NOT EXCEEDING (10) KG, OTHER THAN FULLY-AUTOMATIC OR WITH BUILT-IN CENTRIFUGAL DRIER MACHINES - NUMBER	39112	3346607	2512	126118	151270	9210313	148758
845020000	HOUSEHOLD OR LAUNDRY-TYPE WASHING MACHINES, EACH OF A DRY LINEN CAPACITY EXCEEDING (10) KG-NUMBER	0	0	16	82534	2127	515876	2111

Table: Import and Export Markets during 2005 – 2006

Among imports, Korean products have a high share, of 50-60%. Japanese products are rare (1% or less), except for Sharp which maintains the relatively large share of 10% in refrigerator and washing machine markets.

Local and import brands of home appliances available in Jordan are shown in the tables below.

**Table: Local Brands of Home Appliances**

Refrigerator	Mistral, NRC, LG, Nord, General Deluxe
Air conditioner	LG, Petra
Washing machine	LG, Hajdo, Super Hi, MEC

**Table: Brands of Imported Home Appliances**

Refrigerator	Samsung (Korea), White Westinghouse (US), Frigidare (US), Nord (US), Sharp (Japan)
Air conditioner	Gebson (US), Carrie (US), Mitsubishi (Japan), Sanyo (Japan)
Washing machine	Samsung (Korea), Sharp (Japan), Candy (Italy), National (China)

The following presents the salient feature of home appliance markets by product:

**- Refrigerators:**

Domestic demand amounts to around 48,000 units per year, domestic products account for 26,000 and imports 22,000. Among imports, American brands represent 20%, Korean 20%, and Japanese 20%, with supply from the latter produced in Thailand Malaysia or Japan.

MEC is the largest local manufacturer, supplying 12,000 units per year, following by NRC (4,000) and HAMCO (1,800).

**- Washing machines:**

Domestic demand totalled approximately 40,000 units in 1999, of which 26,000 units were of twin type, 8,000 single tubs, and 6,000 fully automatic.

The twin tub type includes both local and imported products, while the single tub type is entirely locally produced. All fully automatic machines are imported.

Imports are made from Italy, Germany, U.S, Korea and Japan. Overall, imports dominate over domestic products.

**Table: Market Size of Home Appliances in Middle East Markets**

Country	Refrigerator	Washing machine
Turkey	500,000	450,000
Egypt	400,000	400,000
Sudan	100,000	70,000
Gulf Area	1,000,000	1,200,000

<b>Yemen</b>	100,000	80,000
<b>Iraq</b>	20,000	15,000
<b>Jordan<sup>24</sup></b>	40,000	35,000
<b>Syria</b>	200,000	200,000
<b>Lebanon</b>	40,000	40,000
<b>Others</b>	800,000	1,000,000
<b>Total</b>	3,200,000	3,490,000

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<sup>24</sup> Based on JICA Study, 2001

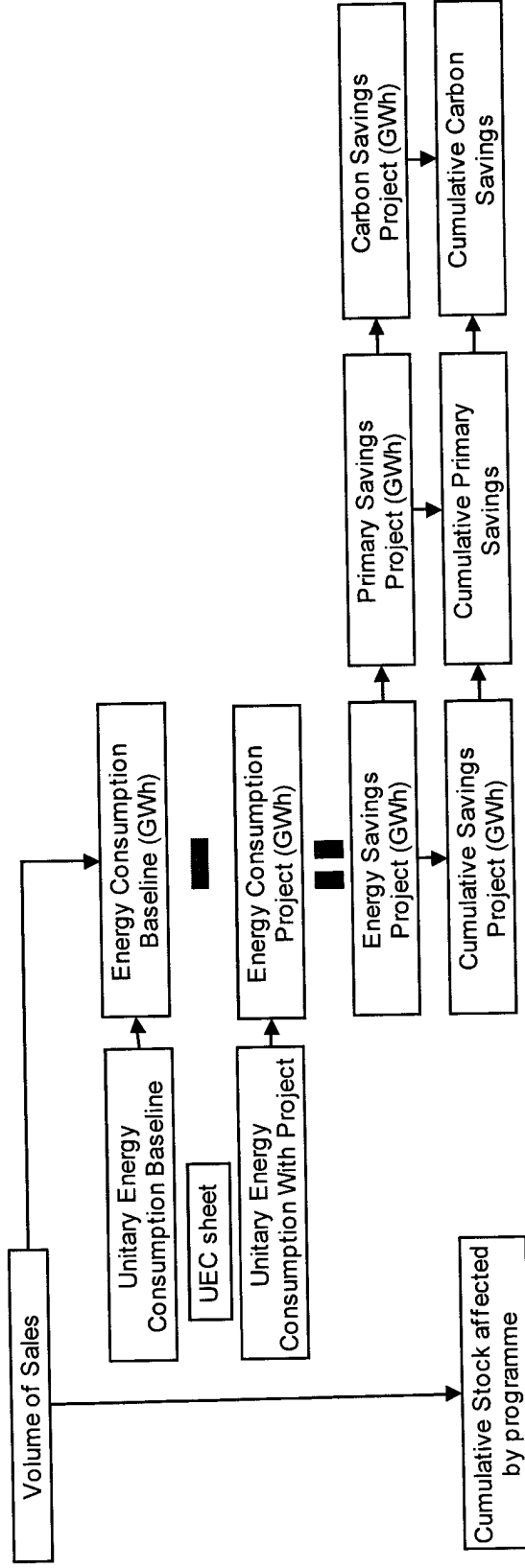
### 3. Grid Emission Factor & Emissions Reduction Calculations:

#### a. Grid Emission Factor

Type of Power Generation	Power Plants Capacity (MW)	% of Contribution	Annual Power Generation (GWh)	% of Contribution to Power	Individual Emission Factor (kgCO <sub>2</sub> /kWh)	% of Contribution to Emission Factor (based on power production)
Steam - HFO	363	19.4%	2,855.6	29.6%	0.87	0.26
Steam - NG	650	34.7%	5,113.37	53.0%	0.6	0.32
Diesel	43	2.3%	73	0.8%	0.85	0.01
GT - Diesel	353	18.8%	341	3.5%	0.85	0.03
GT - NG	150	8.0%	648	6.7%	0.606	0.04
Combined - NG	300	16.0%	558	5.8%	0.399	0.02
Hydro	12	0.6%	57	0.6%	0	0.00
Wind	1.4	0.1%	3	0.0%	0	0.00
Biogas	1	0.1%	5	0.1%	0.6	0.00
<b>TOTAL</b>	<b>1,873.4</b>	<b>100.0%</b>	<b>9,653.97</b>	<b>100.0%</b>		<b>0.68</b>

**b. Emissions Reductions**

Project savings correspond to energy savings from the appliances put on the market during the 3 years of project duration, considering their life expectancy. The total volume of appliances is considered and the additional marginal UEC (Unitary Energy Consumption) achieved because of the project over the baseline is imputed. This type of model represents the standard approach to calculating market effects of S&L policies. The Collaborative Labeling and Appliance Standards Program (CLASP) uses this approach in its Policy Analysis Models (PAMs).



Population and GDP growth projections are used to estimate the future purchase volumes of each type of appliance (air conditioners, refrigerators, freezers and washing machines), using statistical relationships between GDP and appliance sales, amended to the circumstances of Jordan (Table 1 below). Estimation of Unitary Energy Consumption is based on the usage of models and label categories using COLD II as a reference data set<sup>25</sup>, with the results then weighted by the share of model categories in Jordan and by their labelling category to determine an average UEC for each model (Table 2). Results are presented below (Table 3).

<sup>25</sup> Waide, P., et al., 2000. Cold II. The revision of energy labelling and minimum energy efficiency standards for domestic refrigeration appliances: Final Report, December 2000.

Table 1: Relationship Between GDP Growth and Appliance Sales

Appliance	Sales Growth vs GDP Growth factor		Comments
	Freedonia Study 1992-2007	Adjusted values	
Refrigerators		0.94	No adjustment needed
Freezers	0.94	0.50	Freedonia aggregate refrigerator and freezer in a single category. The trend for freezer is in reality much lower than for refrigerator.
Washing Machines		1.13	No adjustment needed
Dryers	1.13	0.50	Dryers are aggregated with washer in the Freedonia study. In reality, the trend for dryer sales is significantly lower than for washing machines.
Dishwashers	0.16	1.13	Dishwasher shows a rapid increase in sales in the recent years. This trend is too recent to be captured by the Freedonia study.
Air-conditioners	0.16	1.13	Air-conditioner sales shows a rapid increase in the recent years. This trend is too recent to be captured by Freedonia study.
Ovens	1.52	0.90	Poor statistical fit and evidence in the market that the progression of sales is below the GDP.

Table 2: Unitary Energy Consumption

	Jordan Baseline (kWh)	Jordan Target for UEC (kWh)
Refrigerator-Freezer	329	226
Stand-Alone Freezer	386	292
Washing Machine	236	197
Dishwasher	360	253
Dryer	306	252
Air-conditioner	3181	2334

Table 3: Summary of Modelling Results

Appliance	Affected Stock - Project	Affected Stock - Post-Project	Cumulative Energy Savings - Project	Cumulative Energy Savings - Post-Project
	Units (thousands)	Units (thousands)	GWh, counted through life of appliance	GWh, counted through life of appliance
Refrigerator-Freezers	264	1141	138	1369
Stand-Alone Freezers	26	114	14	151
Washing Machines	213	921	71	902
Dishwashers	0	0	0	0
Dryers	0	0	0	0
Air-conditioners	9	108	50	1627
Total	512	2283	273	4049

Appliance	Cumulative Abatement - Project	Cumulative Abatement - Post-Project	Utility Bill Savings - Project	Utility bill savings - Post-Project
	KtCO <sub>2</sub> , counted through life of appliance	KtCO <sub>2</sub> , counted through life of appliance	Euros (millions)	Euros (millions)
Refrigerator-Freezers	92	916	11	119
Stand-Alone Freezers	10	101	1	13
Washing Machines	48	604	6	78
Dishwashers	0	0	0	0
Dryers	0	0	0	0
Air-conditioners	33	1088	4	142
Total	183	2708	22	352



4. Risk Analysis.

#	Description	Date Identified	Type	Impact & Probability	Countermeasures / Mitg response	Owner	Submitted, updated by	Last Update	Status
1	Lack of political commitment	During project formulation stage	Regulatory	Owing to political, financial, institutional or other reasons, Jordan may choose not to implement or delay the introduction of energy labels and MEPS for end-use appliances. However, the country's National Energy Efficiency Strategy as well as the Master Strategy for the Energy Sector firmly identifies mandatory labeling and standards as an ultimate goal. In addition, the structure for the proposed project is to first identify and focus on the removal of barriers, then to develop a menu of options suited to the specific situation in Jordan and demonstrate these based on a wide range of measures successfully used in the region and elsewhere in the world. This project strategy will substantially offset this risk. <b>P = 2</b> <b>I = 2</b>	Satisfactory and political institutional commitments reached, thanks to the adoption of the revised version of the Master Strategy for the Energy Sector in Jordan for the 2007-2020 period	Will be appointed during the project IW	Project Developer		
2	Low technical capacity	During project formulation stage	Organizational	Successful implementation of this project requires an increase in the technical capacity of NERC staff and adequate capacity in the private sector. The project will seek to mitigate this risk by providing sufficient capacity building support to the Project Management Unit in developing the necessary in-house technical skills and by providing specific training to NERC and JISM engineers as well as professionals in partnership with their respective trade associations. NERC and the Technical Standards Committee of JISM will ensure that the necessary technical and field studies are conducted before defining the proposed appliance EE Standards and Labeling	A series of capacity building activities to help remove technical barriers to the design and implementation of EE S&L in Jordan	Will be appointed during the project IW	Project Developer		

3	Manufacturers not willing to implement S&L programme	During project formulation stage	Operational / Regulatory	<p>system. P = 2 I = 2</p> <p>The implementation of new regulations resulting in additional costs to manufacturers is usually of great concern and a central issue in discussions between governments and manufacturers. However, the proposed project will take into account the financial situation of manufacturers and is designed to assess this situation as part of any decision to move forward with the development of EE labels and MEPS. P = 4 I = 4</p>	A comprehensive awareness-raising plan to allow the full participation of the private sector in project implementation	Will be appointed during the project IW	Project Developer		
4	Consumers not interested in purchasing products with a high initial cost	During project formulation stage	Operational	<p>End-users do not understand the energy efficiency labeling process and avoid purchasing energy efficient models owing to their higher initial costs. While the project cannot eliminate the potential higher initial costs of energy efficient models for consumers who prefer to spend less money for less efficient models, label development will be accompanied by substantial efforts in information dissemination, consumer education, retail-directed educational materials and other activities to both raise awareness of the labels and to educate consumers on the benefits of energy efficiency purchasing. P = 2 I = 2</p>	Awareness campaigns during project implementation by public and private partners	Will be appointed during the project IW	Project Developer		

## **5. Capacity Assessment: Results of capacity assessments of Implementing Partner**

UNDP Jordan has initiated the HACT assessment for NERC: it is expected that the result will be ready by end of March 2010. The recommendations of the HACT will be discussed and incorporated in the project document during the project inception workshop.

**6. Agreements:**

- 6.1 Cost Sharing Agreement
- 6.2 Project Cooperation Agreement
- 6.3 Project Co-financing letters
- 6.4 Government Endorsement letter
- 6.5 Project's PIF

## 6.1 Cost Sharing Agreement:

### AGREEMENT BETWEEN THE UNITED NATIONS DEVELOPMENT PROGRAMME AND THE GOVERNMENT OF JORDAN

WHEREAS the United Nations Development Programme (hereinafter referred to as "UNDP") and the Government of (Jordan) (hereinafter referred to as the "Government") have agreed to co-operate in the implementation of a project/programme in the (programme country) (hereinafter referred to as "the Project ") which Project is summarized in Attachment A to this Agreement;

WHEREAS the Government has informed UNDP of its willingness to contribute funds (hereinafter referred to as "the contribution") to the UNDP on a cost-sharing basis to increase the resources available for the Project;

WHEREAS the UNDP shall designate an executing entity or implementing partner for the implementation of each project financed from the contribution (hereinafter referred to as "the Executing Agency/ Implementing Partner")

NOW THEREFORE, UNDP and the Government hereby agree as follows:

#### Article I

1. The Government shall, in the manner referred to in paragraph 2 of this Article, place at the disposal of UNDP the contribution of US\$100,000.
2. The Government shall, in accordance with the schedule of payments set out below, deposit the contribution in"

Name of account holder:	United Nations Development Programme
Bank account number:	01-2058170-01
Name of Bank:	Standard Chartered Bank, Shmeisani Branch,
Address of Bank	P.O. Box: 9997 Amman 11191
SWIFT code:	SCBLJOAX

	<u>Date payment due</u>	<u>Amount(US\$)</u>
(a)	March 2011	50,000
(b)	March 2010	50,000

The above schedule of payments takes into account the requirement that contributions shall be paid in advance of the implementation of planned activities. It may be amended to be consistent with the progress of project delivery.

3. All financial accounts and statements shall be expressed in United States dollars.
4. UNDP may agree to accept contribution-payments in a currency other than United States dollars provided such currency is fully convertible or readily usable by UNDP and subject to the provisions of paragraph 5, below. Any change in the currency of contribution-payments shall be made only in agreement with UNDP.
5. The value of a contribution-payment, if made in a currency other than United States dollars, shall be determined by applying the United Nations operational rate of exchange in effect on the date of payment. Should there be a change in the United Nations operational rate of exchange prior to the full utilization by UNDP of the contribution-payment, the value of the balance of funds still held at that time will be adjusted accordingly. If, in such a case, a loss in the value of the balance of funds is recorded, UNDP shall inform the Government with a view to determining whether any further financing could be provided by the Government. Should such further financing not be available, the assistance to be provided to the Project under this Agreement may be reduced, suspended or terminated by UNDP.
6. Any interest income attributable to the contribution shall be credited to the UNDP Account and shall be utilized in accordance with established UNDP procedures.

#### **Article II**

1. In accordance with the decisions and directives of UNDP's Executive Board reflected in its Policy on Cost Recovery from Other Resources, the Contribution shall be subject to cost recovery for indirect costs incurred by UNDP headquarters and country office structures in providing General Management Support (GMS) services. To cover these GMS costs, the contribution shall be charged a fee equal to 3%. Furthermore, as long as they are unequivocally linked to the specific project(s), all direct costs of implementation, including the costs of executing entity or implementing partner, will be identified in the project budget against a relevant budget line and borne by the project accordingly.
2. The aggregate of the amounts budgeted for the project, together with the estimated costs of reimbursement of related support services, shall not exceed the total resources available to the project under this Agreement as well as funds which may be available to the project for project costs and for support costs under other sources of financing.

#### **Article III**

1. The contribution shall be administered by the UNDP in accordance with UNDP regulations, rules and directives, applying its normal procedures for the execution of its projects.
2. Project management and expenditures shall be governed by the regulations, rules and directives of UNDP and, where applicable, the regulations, rules and directives of the Executing Entity/Implementing Partner.

#### **Article IV**

1. The implementation of the responsibilities of the UNDP and of the Executing Agency/Implementing Partner pursuant to this Agreement and the relevant project document shall be dependent on receipt by the UNDP of the contribution in accordance with the schedule of payments set out in Article I, paragraph 2, above.
2. If unforeseen increases in expenditures or commitments are expected or realized (whether due to inflationary factors, fluctuation in exchange rates or unforeseen contingencies) UNDP shall submit to the Government on a timely basis a supplementary estimate showing the further financing that will be necessary. The Government shall use its best endeavors to obtain the additional funds required.
3. If the contribution-payments referred to in Article I, paragraph 2, above, are not received in accordance with the payment schedule, or if the additional financing required in accordance with paragraph 2, above, is not forthcoming from the Government or other sources, the assistance to be provided to the Project under this Agreement may be reduced, suspended or terminated by UNDP.

#### **Article V**

Ownership of equipment, supplies and other property financed from the contribution shall vest in UNDP. Matters relating to the transfer of ownership by UNDP shall be determined in accordance with the relevant policies and procedures of UNDP.

#### **Article VI**

The contribution shall be subject exclusively to the internal and external auditing procedures provided for in the financial regulations, rules and directives of UNDP.

#### **Article VII**

UNDP shall provide the Government on request with financial and other reports prepared in accordance with UNDP reporting procedures.

#### **Article VIII**

1. UNDP shall notify the Government when all activities relating to the contribution have been completed.
2. Notwithstanding the completion of all activities relating to the contribution, UNDP shall continue to hold unutilized contribution-payments until all commitments and liabilities incurred in implementation of the activities finance by the contribution have been satisfied and these activities brought to an orderly conclusion.

3. If the unutilized contribution-payments prove insufficient to meet such commitments and liabilities, UNDP shall notify the Government and consult with the Government on the manner in which such commitments and liabilities may be satisfied.
4. Any contribution-payments that remain unexpended after such commitments and liabilities have been satisfied shall be disposed of by UNDP in consultation with the Government.

#### Article IX

After consultations have taken place between the two Parties to this Agreement and provided that the contribution-payments already received are, together with other funds available to the Project, sufficient to meet all commitments and liabilities incurred in the implementation of the Project, this Agreement may be terminated by UNDP or by the Government. The Agreement shall cease to be in force thirty days after either of the Parties may have given notice in writing to the other Party of its decision to terminate the Agreement.

1. If the unutilized contribution-payments, together with other funds available to the Project, are insufficient to meet such commitments and liabilities, UNDP shall notify the Government and consult with the Government on the manner in which such commitments and liabilities may be satisfied.
2. Notwithstanding termination of this Agreement, UNDP shall continue to hold unutilized contribution-payments until all commitments and liabilities incurred in implementation of the activities financed by the contribution have been satisfied and these activities brought to an orderly conclusion.
4. Any contribution-payments that remain unexpended after such commitments and liabilities have been satisfied shall be disposed of by UNDP in consultation with the Government.

#### Article X

This Agreement shall enter into force upon signature and deposit by the Government of the first contribution-payment to be made by the Government in accordance with the schedule of payments set out in Article I, paragraph 2 of this Agreement.

IN WITNESS WHEREOF, the undersigned, being duly authorized thereto, have signed the present Agreement in the English language in two copies.

For the Government:

For the United Nations Development Programme

(Signature)

Name: Dr. Jafar Hassan

Title: Minister (MoPIC)

Date: 30 June 2010

Place: Amman, Jordan

(Signature)

Name: Luc Stevens

Title: Resident Representative

Date: 30 June 2010

Place: Amman, Jordan



## **6.2 Project Corporation Agreement:**

**PROJECT COOPERATION AGREEMENT**  
**between**  
**THE UNITED NATIONS DEVELOPMENT PROGRAMME**  
**and**  
**The NATIOANL ENERGY RESERACH CENTER**

Whereas the United Nations Development Programme ("UNDP") and The National Energy Research Centre ("the NGO") have, on the basis of their respective mandates, a common aim in the furtherance of sustainable human development;

Whereas UNDP has been entrusted by its donors with certain resources that can be allocated for programmes and projects, and is accountable to its donors and to its Executive Board for the proper management of these funds and can, in accordance with the UNDP Financial Regulations and Rules, make available such resources for cooperation in the form of a Project;

Whereas the NGO, its status being in accordance with national regulations, is committed to the principles of participatory sustainable human development and development cooperation, has demonstrated the capacity needed for the activities involved, in accordance with the UNDP requirements for management; is apolitical and not profit-making;

Whereas the NGO and UNDP agree that activities shall be undertaken without discrimination, direct or indirect, because of race, ethnicity, religion or creed, status of nationality or political belief, gender, handicapped status, or any other circumstances;

Now, therefore, on the basis of mutual trust and in the spirit of friendly cooperation, the NGO and UNDP have entered into the present Agreement.

## Article I. Definitions

For the purpose of the present Agreement, the following definitions shall apply:

- (a) "Parties" shall mean the NGO and UNDP;
- (b) "UNDP" shall mean the United Nations Development Programme, a subsidiary organ of the United Nations, established by the General Assembly of the United Nations;
- (c) "The NGO" shall mean NERC, a non-governmental organization that was established in and incorporated under the laws of The Hashemite Kingdom of Jordan with the purpose of research, development and training in the fields of new and renewable energy; and raising the efficiency of using energy in the different economic sectors;
- (d) "The Agreement" or "the present Agreement" shall mean the present Project Cooperation Agreement, the Project Document (attached), which incorporates the Project Outputs and Activities, Project Work Plan, Project Inputs being provided by UNDP resources, and Project Budget, and all other documents agreed upon between the Parties to be integral parts of the present Agreement;
- (e) "Project" shall mean the activities as described in the Project Document;
- (f) "Government" shall mean the Government of Jordan/ Ministry of Planning and International Cooperation;
- (g) "UNDP resident representative" shall mean the UNDP official in charge of the UNDP office in the country, or the person acting on his/her behalf;
- (h) "Project Manager" shall mean the person appointed by the NGO, in consultation with UNDP and with the approval of the Government coordinating authority, who acts as the overall co-ordinator of the Project and assumes the primary responsibility for all aspects of it;
- (i) "Expenditure" shall mean the sum of disbursements made and valid outstanding obligations incurred in respect of goods and services rendered;
- (j) "To advance" shall mean a transfer of assets, including a payment of cash or a transfer of supplies, the accounting of which must be rendered by the NGO at a later date, as herein agreed upon between the Parties;
- (k) "Income" shall mean the interest on the Project funds and all revenue derived from the use or sale of capital equipment, and from items purchased with funds provided by UNDP or from revenues generated from Project outputs;
- (l) "*Force majeure*" shall mean acts of nature, war (whether declared or not), invasion, revolution, insurrection, or other acts of a similar nature or force;

(m) "Project Work Plan" shall mean a schedule of activities, with corresponding time frames and responsibilities that is based upon the Project Document deemed necessary to achieve Project results, prepared at the time of approval of the Project, and revised annually.

## **Article II. Objective and Scope of the Present Agreement**

1. The present Agreement sets forth the general terms and conditions of the cooperation between the Parties in all aspects of achieving the Project Objectives, as set out in the Project Document (Attached to the present Agreement).
2. The Parties agree to join efforts and to maintain close working relationships, in order to achieve the Objectives of the Project.

## **Article III. Duration of Project Agreement**

1. The term of the present Agreement shall commence on 1 July 2010 and terminate on 30 June 2013. The Project shall commence and be completed in accordance with the time frame or schedule set out in the Project Document.
2. Should it become evident to either Party during the implementation of the Project that an extension beyond the expiration date set out in paragraph 1, above, of the present Article, will be necessary to achieve the Objectives of the Project, that Party shall, without delay, inform the other Party, with a view to entering into consultations to agree on a new termination date. Upon agreement on a termination date, the Parties shall conclude an amendment to this effect, in accordance with Article XVII, below.

## **Article IV. General Responsibilities of the Parties**

1. The Parties agree to carry out their respective responsibilities in accordance with the provisions of the present Agreement, and to undertake the Project in accordance with UNDP policies and procedures as set out in the UNDP Programme and Operations Policies and Procedures (POPP), which forms an integral part of the present Agreement.
2. Each Party shall determine and communicate to the other Party the person (or unit) having the ultimate authority and responsibility for the Project on its behalf. The Project Manager shall be appointed by the NGO, in consultation with UNDP and with the approval of the government coordinating authority.
3. The Parties shall keep each other informed of all activities pertaining to the Project and shall consult once every three months or as circumstances arise that may have a bearing on the status of either Party in the country or that may affect the achievement of the Objectives of the Project, with a view to reviewing the Work Plan and Budget of the Project.
4. The Parties shall cooperate with each other in obtaining any licenses and permits required by national laws, where appropriate and necessary for the achievement of the Objectives of the Project. The parties shall also cooperate in the preparation of any reports, statements or disclosures, which are required by national law.
3. The NGO may use the name and emblem of the United Nations or UNDP only in direct connection with the Project, and subject to prior written consent of the UNDP Resident Representative in Jordan.

6. The activities under the present Agreement are in support of the efforts of the Government, and therefore the NGO will communicate with the Government as necessary. The Project Manager will be responsible for day-to-day contacts with the relevant national authorities and UNDP on operational matters during the implementation of the Project. The UNDP Resident Representative will act as the principal channel for communicating with the Government coordinating authority regarding the activities under the Project Cooperation Agreement unless otherwise agreed with the Parties and the Government.

7. The UNDP Resident Representative will facilitate access to information, advisory services, technical and professional support available to UNDP and will assist the NGO to access the advisory services of other United Nations organizations, whenever necessary.

8. The Parties shall cooperate in any public relations or publicity exercises, when the UNDP Resident Representative deems these appropriate or useful.

#### **Anti-terrorism:**

9. The NGO agrees to undertake all reasonable efforts to ensure that none of the UNDP funds received under this Agreement are used to provide support to individuals or entities associated with terrorism and that the recipients of any amounts provided by UNDP hereunder do not appear on the list maintained by the Security Council Committee established pursuant to resolution 1267 (1999). The list can be accessed via <http://www.un.org/Docs/sc/committees/1267/1267ListEng.htm>. This provision must be included in all sub-contracts or sub-agreements entered into under this Agreement.

#### **Security:**

1. The responsibility for the safety and security of the NGO and its personnel and property, and of UNDP's property in the NGO's custody, rests with the NGO.
2. The NGO shall:
  - (a) put in place an appropriate security plan and maintain the security plan, taking into account the security situation in the country where the services are being provided;
  - (b) assume all risks and liabilities related to the NGO's security, and the full implementation of the security plan.
3. UNDP reserves the right to verify whether such a plan is in place, and to suggest modifications to the plan when necessary. Failure to maintain and implement an appropriate security plan as required hereunder shall be deemed a breach of this contract. Notwithstanding the foregoing, the NGO shall remain solely responsible for the security of its personnel and for UNDP's property in its custody as set forth in paragraph 3.1 above.

#### **Article V. Personnel Requirements**

1. The NGO shall be fully responsible for all services performed by its personnel, agents, employees, or contractors (hereinafter referred to as "Personnel").
2. The NGO personnel shall not be considered in any respect as being the employees or agents of UNDP. The NGO shall ensure that all relevant national labour laws are observed.
3. UNDP does not accept any liability for claims arising out of the activities performed under the present Agreement, or any claims for death, bodily injury, disability, damage to property or other hazards that may be

suffered by NGO personnel as a result of their work pertaining to the project. It is understood that adequate medical and life insurance for NGO personnel, as well as insurance coverage for service-incurred illness, injury, disability or death, is the responsibility of the NGO.

4. The NGO shall ensure that its personnel meet the highest standards of qualification and technical and professional competence necessary for the achievement of the Objectives of the Project, and that decisions on employment related to the Project shall be free of discrimination on the basis of race, religion or creed, ethnicity or national origin, gender, handicapped status, or other similar factors. The NGO shall ensure that all personnel are free from any conflicts of interest relative to the Project Activities.

#### **Article VI. Terms and Obligations of Personnel**

The NGO undertakes to be bound by the terms and obligations specified below, and shall accordingly ensure that the personnel performing project-related activities under the present Agreement comply with these obligations:

(a) The personnel shall be under the direct charge of the NGO, which functions under the general guidance of UNDP and the Government;

(b) Further to subparagraph (a) above, they shall not seek nor accept instructions regarding the activities under the present Agreement from any Government other than the Government of *[name of programme country]* or other authority external to UNDP;

(c) They shall refrain from any conduct that would adversely reflect on the United Nations and shall not engage in any activity which is incompatible with the aims and objectives of the United Nations or the mandate of UNDP;

(d) Subject to the requirements outlined in the document "UNDP public information disclosure policy", information that is considered confidential shall not be used without the authorisation of UNDP. In any event, such information shall not be used for individual profit. The Project Manager may communicate with the media regarding the methods and scientific procedures used by the NGO; however, UNDP clearance is required for the use of the name UNDP in conjunction with Project Activities in accordance with Article IV, paragraph 5, above. This obligation shall not lapse upon termination of the present Agreement unless otherwise agreed between the Parties.

#### **Article VII. Supplies, Vehicles and Procurement**

1. UNDP shall contribute to the Project the resources indicated in the Budget section of the Project Document.

2. Equipment, non-expendable materials, or other property furnished or financed by UNDP shall remain the property of UNDP and shall be returned to UNDP upon completion of the Project or upon termination of the present Agreement, unless otherwise agreed upon between the Parties, and in consultation with the government coordinating authority. During Project implementation and prior to such return, the NGO shall be responsible for the proper custody, maintenance and care of all equipment. The NGO shall, for the protection of such equipment and materials during implementation of the Project, obtain appropriate insurance in such amounts as may be agreed upon between the Parties and incorporated in the Project Budget.

3. The NGO will place on the supplies, equipment and other materials it furnishes or finances such markings as will be necessary to identify them as being provided by UNDP.

4. In cases of damage, theft or other losses of vehicles and other property made available to the NGO, the NGO shall provide UNDP with a comprehensive report, including police report, where appropriate, and any other evidence giving full details of the events leading to the loss of the property.
5. In its procedures for procurement of goods, services or other requirements with funds made available by UNDP as provided for in the Project Budget, the NGO shall ensure that, when placing orders or awarding contracts, it will safeguard the principles of highest quality, economy and efficiency, and that the placing of such orders will be based on an assessment of competitive quotations, bids, or proposals unless otherwise agreed to by UNDP.
6. UNDP shall make every effort to assist the NGO in clearing all equipment and supplies through customs at places of entry into the country where Project activities are to take place.
7. The NGO shall maintain complete and accurate records of equipment, supplies and other property purchased with UNDP funds and shall take periodic physical inventories. The NGO shall provide UNDP annually with the inventory of such equipment, property and non-expendable materials and supplies, and at such time and in such form as UNDP may request.

### **Article VIII. Financial and Operational Arrangements**

1. In accordance with the Project Budget, UNDP has allocated and will make available to the NGO funds up to the maximum amount of **US\$1,165,000**. The first instalment will be advanced to the NGO within 60 working days following signature of the present Agreement. The second and subsequent instalments will be advanced to the NGO quarterly, when a financial report and other agreed-upon documentation, as referenced in Article X, below, for the activities completed have been submitted to and accepted by UNDP as showing satisfactory management and use of UNDP resources.
2. The NGO agrees to utilise the funds and any supplies and equipment provided by UNDP in strict accordance with the Project Document. The NGO shall be authorised to make variations not exceeding 20 per cent on any one line item of the Project Budget provided that the total Budget allocated by UNDP is not exceeded. The NGO shall notify UNDP about any expected variations on the occasion of the quarterly consultations set forth in Article IV, paragraph 3, above. Any variations exceeding 20 per cent on any one-line item that may be necessary for the proper and successful implementation of the Project shall be subject to prior consultations with and approval by UNDP.
3. The NGO further agrees to return within two weeks any unused supplies made available by UNDP at the termination or end of the present Agreement or the completion of the Project. Any unspent funds shall be returned within two months of the termination of the present Agreement or the completion of the Project.
4. UNDP shall not be liable for the payment of any expenses, fees, tolls or any other financial cost not outlined in the Project Work Plan or Project Budget unless UNDP has explicitly agreed in writing to do so prior to the expenditure by the NGO.

### **Article IX. Maintenance of Records**

1. The NGO shall keep accurate and up-to-date records and documents in respect of all expenditures incurred with the funds made available by UNDP to ensure that all expenditures are in conformity with the provisions of the Project Work Plan and Project Budgets. For each disbursement, proper supporting

documentation shall be maintained, including original invoices, bills, and receipts pertinent to the transaction. Any Income, as defined in Article I, paragraph 1 (k), above, arising from the management of the Project shall be promptly disclosed to UNDP. The Income shall be reflected in a revised Project Budget and Work Plan and recorded as accrued income to UNDP unless otherwise agreed between the Parties.

2. Upon completion of the Project/or Termination of the Agreement, the NGO shall maintain the records for a period of at least four years unless otherwise agreed upon between the Parties.

#### **Article X. Reporting Requirements**

1. The NGO shall provide UNDP and the government coordinating authority with periodic reports on the progress, activities, achievements and results of the Project, as agreed between the Parties. As a minimum, the NGO shall prepare an annual progress report.

2. Financial reporting will be quarterly:

(a) The NGO prepares a financial report and submits it to the UNDP Resident Representative no later than 30 days after the end of each quarter, in English.

(b) The purpose of the financial report is to request a quarterly advance of funds, to list the disbursements incurred on the Project by budgetary component on a quarterly basis, and to reconcile outstanding advances and foreign exchange loss or gain during the quarter.

(c) The financial report has been designed to reflect the transactions of a project on a cash basis. For this reason, unliquidated obligations or commitments should not be reported to UNDP, i.e., the reports should be prepared on a "cash basis", not on an accrual basis, and thus will include only disbursements made by the NGO and not commitments. However, the NGO shall provide an indication when submitting reports as to the level of unliquidated obligations or commitments, for budgetary purposes;

(d) The financial report contains information that forms the basis of a periodic financial review and its timely submission is a prerequisite to the continuing funding of the Project. Unless the Financial Report is received, the UNDP Resident Representative will not act upon requests for advances of funds from UNDP;

(e) Any refund received by an NGO from a supplier should be reflected on the financial report as a reduction of disbursements on the component to which it relates.

3. Within two months of the completion of the Project or of the termination of the present Agreement, the NGO shall submit a final report on the Project activities and include a final financial report on the use of UNDP funds, as well as an inventory of supplies and equipment.

#### **Article XI. Audit Requirements**

1. The NGO shall submit to the UNDP Resident Representative in [name of country] a certified annual financial statement on the status of funds advanced by UNDP. The Project will be audited at least once during its lifetime but may be audited annually, as will be reflected in the annual audit plan prepared by UNDP Headquarters (Office of Audit and Performance Review) in consultation with the Parties to the Project. The audit shall be carried out by the auditors of the NGO or by a qualified audit firm, which will produce an audit report and certify the financial statement.

2. Notwithstanding the above, UNDP shall have the right, at its own expense, to audit or review such Project-related books and records as it may require and to have access to the books and records of the NGO, as necessary.
3. Each invoice paid by UNDP shall be subject to a post-payment audit by auditors, whether internal or external, of UNDP or the authorized agents of the UNDP at any time during the term of the Agreement and for a period of three (3) years following the expiration or prior termination of the Agreement. The UNDP shall be entitled to a refund from the NGO for any amounts shown by such audits to have been paid by the UNDP other than in accordance with the terms and conditions of the Agreement. Should the audit determine that any funds paid by UNDP have not been used as per contract clauses; the NGO shall reimburse such funds forthwith. Where the NGO fails to reimburse such funds, UNDP reserves the right to seek recovery and/or to take any other action as it deems necessary.
4. The NGO acknowledges and agrees that, at anytime, UNDP may conduct investigations relating to any aspect of the Agreement, the obligations performed under the Agreement, and the operations of the NGO generally. The right of UNDP to conduct an investigation and the NGO's obligation to comply with such an investigation shall not lapse upon expiration or prior termination of the Agreement. The NGO shall provide its full and timely cooperation with any such inspections, post-payment audits or investigations. Such cooperation shall include, but shall not be limited to, the NGO's obligation to make available its personnel and any documentation for such purposes and to grant to UNDP access to the NGO's premises. The NGO shall require its agents, including, but not limited to, the NGO's attorneys, accountants or other advisers, to reasonably cooperate with any inspections, post-payment audits or investigations carried out by UNDP hereunder.

#### **Article XII. Responsibility for Claims**

1. The NGO shall indemnify, hold and save harmless, and defend at its own expense, UNDP, its officials and persons performing services for UNDP, from and against all suits, claims, demands and liability of any nature and kind, including their cost and expenses, arising out of the acts or omissions of the NGO or its employees or persons hired for the management of the present Agreement and the Project.
2. The NGO shall be responsible for, and deal with all claims brought against it by its Personnel, employees, agents or subcontractors.

#### **Article XIII. Suspension and Early Termination**

1. The Parties hereto recognise that the successful completion and accomplishment of the purposes of a technical cooperation activity are of paramount importance, and that UNDP may find it necessary to terminate the Project, or to modify the arrangements for the management of a Project, should circumstances arise that jeopardise successful completion or the accomplishment of the purposes of the Project. The provisions of the present Article shall apply to any such situation.
2. UNDP shall consult with the NGO if any circumstances arise that, in the judgement of UNDP, interfere or threaten to interfere with the successful completion of the Project or the accomplishment of its purposes. The NGO shall promptly inform UNDP of any such circumstances that might come to its attention. The Parties shall cooperate towards the rectification or elimination of the circumstances in question and shall exert all reasonable efforts to that end, including prompt corrective steps by the NGO, where such circumstances are attributable to it or within its responsibility or control. The Parties shall also cooperate in assessing the consequences of possible termination of the Project on the beneficiaries of the Project.
3. UNDP may at any time after occurrence of the circumstances in question, and after appropriate consultations, suspend the Project by written notice to the NGO, without prejudice to the initiation or



continuation of any of the measures envisaged in paragraph 2, above, of the present Article. UNDP may indicate to the NGO the conditions under which it is prepared to authorise management of the Project to resume.

4. If the cause of suspension is not rectified or eliminated within 14 days after UNDP has given notice of suspension to the NGO, UNDP may, by written notice at any time thereafter during the continuation of such cause: (a) terminate the Project; or (b) terminate the management of the Project by the NGO, and entrust its management to another institution. The effective date of termination under the provisions of the present paragraph shall be specified by written notice from UNDP.

5. Subject to paragraph 4 (b), above, of the present Article, the NGO may terminate the present Agreement in cases where a condition has arisen that impedes the NGO from successfully fulfilling its responsibilities under the present Agreement, by providing UNDP with written notice of its intention to terminate the present Agreement at least 30 days prior to the effective date of termination if the Project has a duration of up to six months and at least 60 days prior to the effective date of termination if the Project has a duration of six months or more.

6. The NGO may terminate the present Agreement only under point 5, above, of the present Article, after consultations have been held between the NGO and UNDP, with a view to eliminating the impediment, and shall give due consideration to proposals made by UNDP in this respect.

7. Upon receipt of a notice of termination by either Party under the present Article, the Parties shall take immediate steps to terminate activities under the present Agreement, in a prompt and orderly manner, so as to minimise losses and further expenditures. The NGO shall undertake no forward commitments and shall return to UNDP, within 30 days, all unspent funds, supplies and other property provided by UNDP unless UNDP has agreed otherwise in writing.

8. In the event of any termination by either Party under the present Article, UNDP shall reimburse the NGO only for the costs incurred to manage the project in conformity with the express terms of the present Agreement. Reimbursements to the NGO under this provision, when added to amounts previously remitted to it by UNDP in respect of the Project, shall not exceed the total UNDP allocation for the Project.

9. In the event of transfer of the responsibilities of the NGO for the management of a Project to another institution, the NGO shall cooperate with UNDP and the other institution in the orderly transfer of such responsibilities.

#### **Article XIV. Force Majeure**

1. In the event of and as soon as possible after the occurrence of any cause constituting *force majeure*, as defined in Article I, paragraph 1, above, the Party affected by the *force majeure* shall give the other Party notice and full particulars in writing of such occurrence if the affected Party is thereby rendered unable, in whole or in part, to perform its obligations or meet its responsibilities under the present Agreement. The Parties shall consult on the appropriate action to be taken, which may include suspension of the present Agreement by UNDP, in accordance with Article XIII, paragraph 3, above, or termination of the Agreement, with either Party giving to the other at least seven days written notice of such termination.

2. In the event that the present Agreement is terminated owing to causes constituting *force majeure*, the provisions of Article XIII, paragraphs 8 and 9, above, shall apply.

**Article XV. Arbitration**

The Parties shall try to settle amicably through direct negotiations, any dispute, controversy or claim arising out of or relating to the present Agreement, including breach and termination of the Agreement. If these negotiations are unsuccessful, the matter shall be referred to arbitration in accordance with United Nations Commission on International Trade Law Arbitration Rules. The Parties shall be bound by the arbitration award rendered in accordance with such arbitration, as the final decision on any such dispute, controversy or claim.

**Article XVI. Privileges and Immunities**

Nothing in or relating to the present Agreement shall be deemed a waiver, express or implied, of any of the privileges and immunities of the United Nations and UNDP.

**Article XVII. Amendments**

The present Agreement or its Annexe may be modified or amended only by written agreement between the Parties.

**IN WITNESS WHEREOF**, the undersigned, being duly authorised thereto, have on behalf of the Parties hereto signed the present Agreement at the place and on the day below written.

For the NGO:

Signature: Walid Shaheen  
Name: Walid Shaheen  
Title: Acting President  
Place: Amman  
Date: July 18, 2010

For UNDP:

Signature: Jacques Bessier  
Name: Luc Stevens  
Title: Resident Representative  
Place: Amman  
Date: 28 Jul 2010

## STANDARD LETTER OF AGREEMENT BETWEEN UNDP AND THE NATIONAL ENERGY RESEARCH CENTRE FOR THE PROVISION OF SUPPORT SERVICES

Dear Eng. Walid Shaheen,

1. Reference is made to consultations between officials of the *National Energy Research Centre* (hereinafter referred to as "NERC") and officials of *UNDP* with respect to the provision of support services by the UNDP country office for nationally managed programmes and projects. UNDP and the NERC hereby agree that the UNDP country office may provide such support services at the request of the Government through its institution designated in the relevant programme support document or project document, as described below.
2. The UNDP country office may provide support services for assistance with reporting requirements and direct payment. In providing such support services, the UNDP country office shall ensure that the capacity of the Government-designated institution is strengthened to enable it to carry out such activities directly. The costs incurred by the UNDP country office in providing such support services shall be recovered from the administrative budget of the office.
3. The UNDP country office may provide, at the request of the designated institution, the following support services for the activities of the programme/project:
  - (a) Identification and/or recruitment of project and programme personnel;
  - (b) Identification and facilitation of training activities;
  - (c) Procurement of goods and services;
4. The procurement of goods and services and the recruitment of project and programme personnel by the UNDP country office shall be in accordance with the UNDP regulations, rules, policies and procedures. Support services described in paragraph 3 above shall be detailed in an annex to the programme support document or project document, in the form provided in the Attachment hereto. If the requirements for support services by the country office change during the life of a programme or project, the annex to the programme support document or project document is revised with the mutual agreement of the UNDP resident representative and the designated institution.
5. The relevant provisions of the Standard Basic Assistance Agreement (SBAA) between the Authorities of the Government of Jordan and the United Nations Development Programme (UNDP), signed by the Parties on 12 January 1976 (the "SBAA"), including the provisions on liability and privileges and immunities, shall apply to the provision of such support services. The Government shall retain overall responsibility for the nationally managed programme or project through its designated institution. The responsibility of the UNDP country office for the provision of the support services described herein shall be limited to the provision of such support services detailed in the annex to the programme support document or project document.
6. Any claim or dispute arising under or in connection with the provision of support services by the UNDP country office in accordance with this letter shall be handled pursuant to the relevant provisions of the SBAA.


7. The manner and method of cost-recovery by the UNDP country office in providing the support services described in paragraph 3 above shall be specified in the annex to the programme support document or project document.

8. The UNDP country office shall submit progress reports on the support services provided and shall report on the costs reimbursed in providing such services, as may be required.

9. Any modification of the present arrangements shall be effected by mutual written agreement of the parties hereto.

10. If you are in agreement with the provisions set forth above, please sign and return to this office two signed copies of this letter. Upon your signature, this letter shall constitute an agreement between your organization and UNDP on the terms and conditions for the provision of support services by the UNDP country office for nationally managed programmes and projects.

Yours sincerely,

  
Signed on behalf of UNDP  
*Luc Stevens*  
Resident Representative



For the NERC  
Walid Shaheen  
Acting Director  
30 June 2010

Attachment

**DESCRIPTION OF UNDP COUNTRY OFFICE SUPPORT SERVICES**

1. Reference is made to consultations between the National Energy Research Centre (NERC), the institution designated by the Government of Jordan and officials of UNDP with respect to the provision of support services by the UNDP country office for the nationally managed project Energy Efficiency Standards and Labeling in Jordan, *the Project*".

2. In accordance with the provisions of the letter of agreement signed on 30 June 2010 the project support document, the UNDP country office shall provide support services for the *Project* as described below.

3. Support services to be provided:

Support services (insert description)	Schedule for the provision of the support services	Cost to UNDP of providing such support services (where appropriate)	Amount method reimbursement of UNDP (where appropriate)	and of reimbursement of UNDP (where appropriate)
1. Procurement of goods:  • Vehicle • Computers • Software	Third Quarter 2010 – Fourth Quarter 2010	According to the UPL	According to the UPL	the
2. Procurement of Services:  Contractual services for Companies	First Quarter 2011	According to the UPL	According to the UPL	the
2. Identification and/or recruitment of project personnel  • Project CTA • Project Assistant	Third Quarter 2010	According to the UPL	According to the UPL	the
3. Identification and facilitation of training activities and technical studies	Third Quarter 2010 – Fourth Quarter 2012	According to the UPL	According to the UPL	the

**6.3 Letters of financial commitments and endorsement: Attached in a separate pdf document**

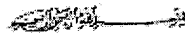
**6.4 Government Endorsement Letter:**

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**THE HASHEMITE KINGDOM  
OF JORDAN**  
Ministry of planning and  
International Cooperation  
عمان



**المملكة الأردنية الهاشمية**  
وزارة التخطيط والتعاون الدولي  
عمان

Ref. No. ....  
Date.....

الرقم .....  
التاريخ .....  
الموافق .....

To: Ms. Mona K. Hider  
United Nations Development Programme  
Amman, Jordan

**Re: Energy Efficiency Standard and Labeling in Jordan Project**

Dear Ms Hider,

Kindly be informed that the objectives of the above proposed project are found to be consistent with the Government of Jordan National Energy Efficiency Strategy and will help Jordan to meet its obligations towards the United Nations Framework Convention on Climate Change.

Therefore, the Ministry of Planning and International Cooperation in its capacity as Political and Operational Focal Point for the Global Environmental Facility (GEF) is pleased to support and endorse the above proposal for GEF support and funding with an allocation of 700,000 USD from Jordan's RAP allocation. The Government of Jordan will be committed to provide cash contribution of up to US\$100,000 towards the implementation of this vital project. Additional co-financing is expected to be confirmed by separate letters.

I would highly appreciate it if you could kindly take the necessary action in this regard, and communicate this endorsement letter to the GEF Secretariat.

Please accept my high esteem and consideration.

*already received*

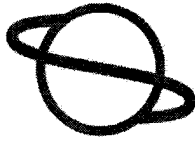
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UNEP - JORDAN

STAFF	ACTION	INFO
MR		
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Sincerely  
*Saleh Al-Kharabsheh*  
Saleh Al-Kharabsheh  
Director, Projects Department  
GEF OFF  
Minister of Planning And  
International Cooperation

6.5 Project PIF:



GEF

**PROJECT IDENTIFICATION FORM (PIF)**

**PROJECT TYPE: Medium-sized Project**  
**THE GEF TRUST FUND**

Submission Date: 23 July 2007

Re-submission Date: 12 Dec. 2007 and  
05 March 2008

**PART I: PROJECT IDENTIFICATION**

GEFSEC PROJECT ID<sup>26</sup>: 3215

GEF AGENCY PROJECT ID: 3735

COUNTRY(IES): Jordan

PROJECT TITLE: Energy Efficiency Standards and Labeling of Building Appliances

GEF AGENCY(IES): UNDP

OTHER EXECUTING PARTNER(S): National Energy Research Center

GEF FOCAL AREA (S): Climate Change

GEF-4 STRATEGIC PROGRAM(S): CC-SP1

NAME OF PARENT PROGRAM/UMBRELLA PROJECT: N/A

INDICATIVE CALENDAR	
Milestones	Expected Dates
Work Program (for FSP)	N/A
CEO Endorsement/Approval	Jul 2008
GEF Agency Approval	Aug 2008
Implementation Start	Sep. 2008
Mid-term Review (if planned)	Mar. 2010
Implementation Completion	Aug. 2011

**A. PROJECT FRAMEWORK (Expand table as necessary)**

**Project Objective:** Increase market penetration of energy efficient products in the residential market in Jordan

Project Components	Investmt, TA, or STA**	Expected Outcomes	Expected Outputs	Indicative GEF Financing*		Indicative Co-financing*		Total (\$)
				(\$)	%	(\$)	%	
1. Capacities enhancement in government and energy agency units for appliance EE policy development, implementation and market surveillance	TA	A supportive legal and initial regulatory framework for appliance EE standards, certification and labelling adopted.	See Annex A	140,000	36	250,000	64	390,000
2. Structuring of verification and enforcement of appliance EE labels and standards	TA	Structured verification and enforcement of labels and standarts	See Annex A	240,000	41	340,000	59	580,000
2. Consumers' and retailers' awareness-raising and support to marketing of appliance EE standards and labels	TA	Consumer and retailers aware of benefits and increased marketing of EE appliances	See Annex A	250,000	60	170,000	40	420,000
4. Improvement of manufacturer's capacities to produce and market EE appliances	TA	New EE labelled appliances entering the market with the initial focus on air conditioners, refrigerators, freezers and washing machines	See Annex A	240,000	48	260,000	52	500,000
5. Project management				95,000	49	100,000	51	195,000
<b>Total project costs</b>				<b>965,000</b>		<b>1,120,000</b>		<b>2,085,000</b>

\* List the \$ by project components. The percentage is the share of GEF and Co-financing respectively to the total amount for the component.

\*\* TA = Technical Assistance; STA = Scientific & technical analysis.

<sup>26</sup> Project ID number will be assigned initially by GEFSEC.



**B. INDICATIVE FINANCING PLAN SUMMARY FOR THE PROJECT (\$)**

	Project Preparation	Project	Agency Fee	Total
GEF	35,000 <sup>1</sup>	965,000	100,000	1,100,000 <sup>2</sup>
Co-financing	10,000	1,120,000		1,130,000
<b>Total</b>	<b>45,000</b>	<b>2,085,000</b>	<b>100,000</b>	<b>2,230,000</b>

- 1) consisting of a PDF A already approved and disbursed with funding from GEF 3. The submission of the actual proposal pending the approval of the PIF
- 2) of which USD 1,065,000 requested from GEF 4

**C. INDICATIVE CO-FINANCING FOR THE PROJECT (including project preparation amount) BY SOURCE and BY NAME (in parenthesis) if available, (\$)**

Sources of Co-financing	Type of Co-financing	Amount
Project Government Contribution (Ministry of Planning and International Cooperation)	Grant	100,000
	In -Kind	40,000
Project Government Contribution (Ministry of Planning and International Cooperation, Ministry of Environment, Ministry of Energy and Mineral Resources, Ministry of Trade and Industry, JSEM)	In-kind	300,000
GEF Agency (UNDP Jordan)	Grant	100,000
NGO (NERC)	In-kind	200,000
Private Sector Companies	In-kind	280,000
Others (RSS)	In-kind	100,000
<b>Total co-financing</b>		<b>1,120,000</b>

**D. GEF RESOURCES REQUESTED BY FOCAL AREA(S), AGENCY (IES) SHARE AND COUNTRY(IES)\***

GEF Agency	Focal Area	Country Name/ Global	(in \$)			
			Project Preparation	Project	Agency Fee	Total
(select)	(select)					
(select)	(select)					
(select)	(select)					
(select)	(select)					
(select)	(select)					
(select)	(select)					
<b>Total GEF Resources</b>						

\* No need to provide information for this table if it is a single focal area, single country and single GEF Agency project.

## **PART II: PROJECT JUSTIFICATION**

### **A. STATE THE ISSUE, HOW THE PROJECT SEEKS TO ADDRESS IT, AND THE EXPECTED GLOBAL ENVIRONMENTAL BENEFITS TO BE DELIVERED:**

Jordan faces today a serious energy challenge because it lacks domestic energy resources but has an ever greater demand for energy to fuel its social and economic development. The demand for energy in Jordan increases at the rate of 3% annually, and close to 6% for the electricity. In 2005, the energy bill constituted 19,5% of the gross domestic product (GDP) and around 58,1% of the value of exported goods, which is considered a heavy burden by international standards. In addition, large investments are required in energy production, refining, transport and distribution, which also put stress on the economy.

Household electricity consumption in Jordan is increasing dramatically due to an increased level of lighting and the rising of ownership of household appliances and electronic equipment. In 2004, it represented 34% of the consumption of electricity and a large part of the demand growth.

The types of home appliances produced in Jordan include refrigerators, washing machines, air-conditioners, telephones, TV sets, and microwave ovens. The home appliance industry is relatively young, and many manufacturers were originally importers and still handle foreign products in addition to producing their own brands. No foreign home appliance manufacturer operates in the country, although there is a company that owns the licenses to manufacture some foreign brands. Other than this, no local manufacturer receives technical support from or has a partnership with a foreign home appliance company, except for arrangements concerning purchasing of parts and molds. As a result, small and medium size local companies have little of the production know-how needed to manufacture competitive products. This represents a handicap for product development, preventing them from developing new products and improving international competitiveness. As a result, local products account for only 20 - 40% of the home appliance market, depending on the type of the product.

Among imports, Korean products have the highest share, estimated at 50%-60%, while the Japanese products account for about 11%.

According to the available information on four types of home appliances distributed among Jordanian homes, the estimated total annual electricity consumption for these appliances is around 586 GWh/year. This represents 23% of the total residential sector energy consumption. According to the estimates by local manufacturers, Jordan currently has appliances (like refrigerators and freezers) that are as much as 20% less efficient than the least-efficient models for sale in the EU.

To slow down and even reverse such trend, many countries have introduced energy efficiency programs. Among the different tools available, labeling programs<sup>27</sup> and minimum energy performance standards (MEPS)<sup>28</sup> have proven to be highly effective approaches when targeting household demand. The tools and best practice guidelines developed by CLASP can be refined to suit this proposed project and bring about harmonization of those appliances with EU and/or

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<sup>27</sup> Energy Efficiency Standards and Labels (S&L) are complementary policy tools, which are instrumental in promoting a sustainable energy path. S&L programs compare favorably to other governmental energy policies because of their low cost of implementation and ability to transform the market of appliances in the long term.

<sup>28</sup> MEPS are regulations that prescribe a minimum energy performance for equipment or appliances. Energy efficiency labels are informative labels affixed to manufactured products indicating their energy performance and aiming at changing the perception and purchasing habits of customers. Energy Efficiency Standards and Labels (S&L) are complementary

regional policies and practices faster than if countries simply let the market change naturally over the years. It is reasonable to assume that Energy Label program can lead to 20% energy savings in electricity consumption for the mentioned home appliances. The annual electricity savings would be around 116 GWh. This will lead to an annual saving in oil imports of around 55 964 barrels. With an assumption of an purchase price of 60USD per barrel, the annual monetary saving for Jordan society would be around 3.4 M\$.

Many barriers, however, prevent the implementation of labeling and minimum energy performance standards program and the penetration of higher efficiency appliances in Jordan such as:

- Lack of knowledge in the ministries and institutions in charge of enforcing labeling regulations on how to specifically proceed to implement and enforce regulations and how to develop support programs for S&L in order to speed up the market transformation process.
- Little information is available at the government level on the potential impact and cost effectiveness of S&L programs.
- No framework currently exists for regulations to introduce Standard and Labeling.
- Customers lack information about the availability of energy efficient equipments and the cost effectiveness of investing in efficient appliances.
- Salesmen do not know how to market such efficient appliances. This and the former point leads retailers not to offer a sufficient range of efficient equipment because of the low demand for this type of appliance.
- Local medium size manufacturers lack capacity to develop and market more efficient appliance and are uncertainty about the market demand of high efficiency models.
- Little national experience and installations for testing household appliances according to international standards.

The project has been designed to erase some of the most significant barriers above and allow a faster transformation process for the market. Each outcome has been selected to address one particular category of barriers. The project is to establish an energy labeling system and set a Minimum Energy Performance Standards (MEPS) program for household appliances in Jordan with the initial focus on air conditioners, refrigerators, freezers and washing machines. These appliances have been selected because they combine large national market with a high penetration in household, high energy saving potential, and the presence of a regional market.

The project has four components:

*Component 1 Capacities enhancement in government and energy agency units for appliance EE policy development, implementation and market surveillance*

This component will provide technical assistance and capacity building to the government so it can benefit from the experience gained in several countries over the last 25 years about S&L implementation. The component also includes support for the design of the legal framework and the writing of the first set of regulations. Support will also target the information on the types of support and enforcement programs that can be introduced in parallel to the legislation. The objective of this component is to facilitate the development and adoption of the first set of regulations for the adoption of EE standards and labels for the first 4 appliances targeted under this program and create sufficient expertise within the government after the project's conclusion, so they can undertake the introduction of additional regulations and support programs for other appliances and equipments.

*Component 2 Structuring of verification & enforcement of appliance EE labels and standards*

This component will provide the government agencies and at least one selected laboratory with support for the design of enforcement procedures and for the testing of appliances. The enforcement procedures will cover the manufacturers, importers and retailers and will insure that all market actors are informed and are following the new regulation. Support will be provided also to selected laboratory so it can perform tests on a first few types of appliances. This also includes the development of a market follow-up tool that will be required to provide the higher level of government with hard facts about the efficiency of the regulation, the evolution of the market and the impact of the programs introduced. Such monitoring will be useful both for the evaluation of impact of this MSP project and to support the future government policy in the S&L domain.

*Component 3 Consumers' and retailers' awareness-raising and improved marketing of appliance EE standards and labels*

This component will support the information and awareness activities that are needed to change the perception of the customers about the importance of purchasing higher efficiency appliances and the cost effectiveness of doing so. This will be achieved through the preparation of a marketing plan and the implementation of marketing activities by local and international retailers. The customers, through better information, will react and begin to pay attention to the label and to the category of efficiency of the appliance they purchase.

*Component 4 Improvement of manufacturers' capacity to produce and market EE appliances*

This component will support local manufacturers to help them to design and produce higher efficiency appliances. It will set improvement targets that are achievable by manufacturers without retooling or other heavy investments

The capacity building activities under this component will include formal training sessions on best practices for appliances design and one to one meetings between experts for each type of appliance (or several if an expert with expertise in multiple appliances can be found) and the R&D or engineering department of individual manufacturers. The experience from other countries has shown that an interesting improvement in efficiency can be achieved by this type of training and twinning by working on the design and on the selection of components. Manufacturers need to understand the relationship between the various components and their interaction, which result in a specific efficiency of the final products. Often, a simulation of the actual operating efficiency of some models, and discussions about alternative sources to supply components are all that is needed to achieve an improvement of 1 or 2 class level (EU classification) for a manufacturer.

This component will also establish a network with manufacturers where the various elements of the regulation and particularly the MEPS aspects will be discussed and announced well in advance for them to take appropriate action to adjust their products. The manufacturers will also be encouraged to participate in collaborative advertisement campaigns that will focus on the energy efficiency aspect of products.

It is estimated that taking the case of energy efficiency for refrigerators, implementation of standards and labeling directives under the project in Jordan would result in a 15% improvement in 3 years whereas otherwise, with a business as usual situation, it would have taken from 10 to 15 years for this to be achieved. At the global level, the project will limit the growth in energy demand from the household sector, and will ensure measurable and sustainable global benefits in slowing the growth rate of GHG emissions resulting from the combustion of carbon based fuels and the consumption of electric power, which in-turn will

contribute to the mitigation of climate change. An estimation of the GHG reduction is provided in part C below.

**B. DESCRIBE THE CONSISTENCY OF THE PROJECT WITH NATIONAL PRIORITIES/PLANS:**

In its initial communication to UNFCCC, Jordan recognizes the importance of regulations, energy efficiency and customer awareness in achieving the goal of reducing greenhouse gas emissions. The project is in line with the Act of Confining Sources of Greenhouse Gases Emanation issued in accordance with articles (11, 18) of the Environment Protection Law. No. (1) 2003 for Jordan.

The Jordanian cabinet has also recently approved (2004) a national energy efficiency strategy, which proposes certain measures in order to reduce the burden of imported oil on the Jordanian economy. The general strategy section sets the objective to introduce "Technical standards which will set the minimum standards for energy efficiency of imported and locally manufactured equipments". Furthermore, the section on the implementation procedure of the document states in Item number 8 that the government wants to "oblige importers and manufacturers of energy consuming appliances to fix energy efficiency label indicating the annual consumption of the equipment on their product". Thus, the strategy calls for the establishment of an energy-labeling and MEPS program for household appliances.

Moreover, this project links closely with Jordan's Human Development Report and National Millennium Development Goals for Jordan. Jordan's 2<sup>nd</sup> Human Development Report (2004), which had sustainable livelihoods as its focus, identified the issue of energy delivery to households as one of the main issues. It was found that the poorest of the poor cannot afford to pay the costs of utility services (including electricity). Implementing a S&L system can result in some energy and cost savings at the household level and may reduce the burden of operating household appliances for the poor.

Finally, this project contributes to Jordan's achievement of national MDG goals where it relates to Target 9: integrate the principles of sustainable development into country policies and programs, and reverse the loss of environmental resources. More specifically, it relates to the following two indicators within Target 9: GDP per unit of energy use (proxy for energy efficiency) and carbon dioxide emissions (per capita).

**C. DESCRIBE THE CONSISTENCY OF THE PROJECT WITH GEF STRATEGIES AND STRATEGIC PROGRAMS:**

The proposed project is expected to contribute to meeting the Climate Change focal area strategy and the GEF Strategic Program 1 (CC-SP1) "Promoting Energy Efficiency in residential and commercial buildings".

The domestic sector in Jordan consumes 34% of the total electricity consumption in the country (2004 figures), and this is expected to increase with population and economic growth, which allows more households to rely on electrical appliances. By increasing the market penetration of energy efficient appliances, the growth in energy demand from the household sector will be limited, which in turn will slow the growth rate of GHG emissions resulting from the required generation to meet the demand. The proposed project will support the adoption and enforcement of verified energy efficiency standards for the appliance industry. It is expected that the avoided electricity generation resulting from the project would lead to 183,000 t of reduced CO<sub>2</sub> emissions (direct project impact). An additional 607 kt of CO<sub>2</sub> by 2019 and 2,708 kt by 2029 will be achieved due to the market transformation resulting from the project.

GEF funding for this project will be critical to secure the said global benefits. Moreover, it will gain from and also contribute further to the international experiences and lessons learnt in promoting EE standards and labels in other countries.

#### **D. OUTLINE THE COORDINATION WITH OTHER RELATED INITIATIVES:**

The targeted end-uses (domestic refrigerators, freezers, washing machines and air conditioners...) evolve in a regional market. The Government of Jordan has shown interest for a participation in a regional GEF medium size knowledge management project under preparation and aiming at a close collaboration between governments in the North African and Middle East regions in coordinating activities related to energy efficiency standards and labels. Through this collaboration, the Government of Jordan will benefit from the experiences of other neighboring countries (such as Egypt, where energy labels have recently been introduced) and from the possibility to reduce some costs, for example on testing of appliances. Hence the present proposal focuses on efforts and programs to succeed in the domestic implementation of energy efficiency standards and labels.

UNDP has initiated technical assistance projects in the energy sector in Jordan, foremost among which is the Reduction of Methane Emissions and Utilization of Municipal Waste for Energy in Amman (funded by GEF, DANIDA, UNDP, and the Government of Jordan), as well as the newly developed project for the Support to the Expansion of Russeifeh Landfill Gas Utilization System for Electric Power Generation funded by the Greater Amman Municipality and UNDP. During the past few years, UNDP has undertaken other projects aimed at strengthening Jordan's energy sector by supporting activities related to the planning of energy needs, demand forecasting and oil and gas production sharing agreements. All of these projects were successful and demonstrate the ability and seriousness of the Jordanian government in pursuing its efforts towards a more efficient energy sector.

#### **E. DISCUSS THE VALUE-ADDED OF GEF INVOLVEMENT IN THE PROJECT DEMONSTRATED THROUGH INCREMENTAL REASONING :**

As mentioned in part A, Jordan is faced with an ever growing demand for electricity from the household sector. Attempts to limit this demand growth are faced with many hurdles. Without GEF support, these hurdles will remain and will result in unabated growth of electricity produced and the resulting GHG emissions. Barriers to be addressed by the GEF supported project are:

##### *Lack of Policy, Legal and Regulatory Framework*

In Jordan, a general policy for S&L has been issued recently by the government. However, the adaptation of this policy into the legal and regulatory framework will require tremendous efforts. There is currently a lack of information and know-how about how to proceed efficiently with these important steps. Without support, it is likely that the full implementation will take more time than if the Jordanian Government can benefit from the experience gathered in other countries. The present project addresses this barrier with a comprehensive component on the policy, legal and regulatory system development. GEF involvement will provide the necessary resources for capacity building and this will be main catalyst to increase the efficiency of the in-kind effort that will be provided by the government and stakeholders.

##### *Limited Institutional capability*

In Jordan, the coordination between the various government ministries responsible for standard and labeling development, then implementation and enforcement is difficult. There is currently no experience on how a structured enforcement program should be implemented, and there is no laboratory that could perform energy efficiency test on household appliances. Often, the laboratory equipment does not exist and when it exists, the human resources of the laboratory are not trained to perform the required tests according to international standard. In order to have

a measurable impact, this project will undertake a multi-sectoral approach to ensure that the energy efficiency measures are incorporated in the sectoral programs of the country. The GEF support is also here essential to bring the resources needed for capacity building at the local laboratories and to train them and others stakeholders about internationally recognized ISO standards for equipment testing and adequate procedures for enforcement.

*Low Public Awareness and Retailers Interest*

Some stakeholders' perception is to the effect that the energy labeling system is not yet mature for the economic environment of Jordan and in general is better suited for industrialized markets where the purchasing power is higher. Awareness of the opportunities offered by the energy labeling system for household appliances and the associated energy savings is low among the general public and the retailers. This lack of information and awareness implies that both the demand and the supply for energy efficient appliances are minimal. As a consequence, the sales levels are very low for energy efficient appliances. There is therefore a need for dissemination of information on Standards and Labels benefits and opportunities to the general public and retailers in order to raise public awareness and generate activities in the sector. Such a process is the key option to building public confidence and acceptance regarding the energy labeling system. GEF involvement will allow the support of targeted awareness activities aimed at convincing the local retailers and the general population of the benefit of introducing higher efficiency appliances in the market. These efforts from the GEF will be complemented by local NGOs efforts.

*Lack of Capability from Local Manufacturers*

The small and medium size household appliances manufacturers currently lack the capacity and incentives to develop new improved designs that could compete with the current international trend of energy efficient household equipments. The manufacturers are generally unaware that a one or two class improvement (according to EU classification scheme) is often possible for local manufacturers with a minimal investment, and sometimes with a reduction in production costs as some manufacturers in Tunisia have realized during the implementation of their S&L program. Some larger manufacturers would have the ability, owing to their size and their international contacts, to produce higher efficiency equipment, but they do not see the possible market for this category of appliances yet. The GEF funding will be used to bring experienced international experts that can run complex model of appliances and demonstrate the various ways, by which energy gains can be achieved with minimal investment or with a reduction in production cost. Without GEF support, it is very unlikely that local manufacturers will achieve this leap in technology in the near future.

The barriers presented above slow down the penetration of higher efficiency appliances in Jordan. The project has been designed to overcome some of these most significant barriers and allow a faster transformation process for the market. The GEF support to the project will also catalyze the intervention of many local co-financing partners of government and NGO origin. These partners would not provide their support to the initiative without GEF intervention.

**F. INDICATE RISKS, INCLUDING CLIMATE CHANGE RISKS, THAT MIGHT PREVENT THE PROJECT OBJECTIVE(S) FROM BEING ACHIEVED, AND IF POSSIBLE INCLUDING RISK MEASURES THAT WILL BE TAKEN:**

There are two areas of risks linked to the achievement of the outcome of this project; economic stability and stakeholder commitments. The climate change risk is not likely to prevent the

objectives to be met and more likely to render the need for the project even more acute (increased use of air-conditioning).

The *economic stability risk* is linked to the broad stability of the region as was demonstrated in Lebanon recently. Should the current rate of economic growth slow down, the need for the project and its achievements would be less dramatic as the capacity of households to acquire new or exchange their appliances would be constrained by the stress on their purchasing power. Such risk can not be mitigated by the project, but is unlikely because the trend of the last few years was consistently towards higher growth rate not lower.

The *stakeholder commitment risk* is more directly linked to the project. Many stakeholders are to be actively involved for a successful implementation of the project, among which are government entities, manufacturers, retailers and testing laboratories. Without their commitments, or should there be resistance on their part, the project will face difficulties in delivering its outcomes.

- On the government side, the availability of budget and staff time will be the key, together with maintaining the political commitment to proceed promptly with the actual adoption of the required legal framework and new regulations to support EE appliances and standards. Sufficient time should be allowed for participation in capacity building and training activities, then in program preparation including time to develop the regulation and select the label and energy classes. The State inspectorate organization will also have to commit to undertake compliance checking activities. The risk of non or delayed adoption of the new regulations is also to be mitigated by identifying possible bottlenecks in the legal process in advance and taking them into account in the final project design and during implementation. In general, this risk is mitigated by the fact that the government has issued a clear policy about supporting energy efficiency and the topic is rather high on the national priorities.
- On the manufacturers' side, involvement is often slowed by a complex mix of technical, commercial and management barriers that make the adoption of new technologies, designs and manufacturing processes difficult. They will need to commit staff time for appliance S&L training and to develop efficient products. They will need financial resources to transform their production lines and to improve their products. Retailers will also need to commit staff time for appliance S&L training and together with manufacturers they will need to insert S&L information in their communication campaigns. This risk cannot be entirely mitigated, but experience in others countries has shown that working with a small initial group of interested manufacturers and retailers can have a carry-over effect on the whole market.
- One laboratory has been identified to test refrigerators and freezers in this project. As this laboratory is private, its commercial priorities and workload may influence its commitment to the project by the time it is ready to be implemented. As a risk mitigation strategy, other laboratories (one national and several at regional level) have been identified as potential replacement for equipment testing.

Support of all the stakeholders has been ensured through close co-operation established early in the design of the project with the key private sector stakeholders, consumers associations, Government bodies and NGOs so as to identify and promote the mutual benefits of the proposed labeling program. Their commitment was obtained to develop, introduce and enforce regulations (government), enhance their capabilities for testing (laboratories), technology up grade (manufacturers), public awareness programs (retailers, manufacturers and NGOs) for pushing the energy efficient products in the market.



**G. DESCRIBE, IF POSSIBLE, THE EXPECTED COST-EFFECTIVENESS OF THE PROJECT:**

With the estimated project impact of 183,000 tons of CO<sub>2</sub> reduced (for 2009-2013 period), the cost effectiveness of the GEF support can be estimated at USD 3.82 per ton CO<sub>2</sub> reduced. An additional 607 kt of CO<sub>2</sub> through 2019 and 2,708 kt through 2029 can be achieved due to further market transformation. By taking this into account and by applying a GEF causality factor of 80% (level 4), the cost effectiveness of the GEF intervention can be further improved down to USD 0.30 per ton of CO<sub>2</sub> reduced.

These impacts were estimated using the appliances models developed by CLASP and adapted for the need of this study. Market data was provided by either manufacturers or the statistic department. Proxy data was used when data was not available based on the multi-years European Union market evolution between 1990 and 2007. The emission factors were established at 669 Tons of CO<sub>2</sub> per GWh.

**H. JUSTIFY THE COMPARATIVE ADVANTAGE OF GEF AGENCY:**

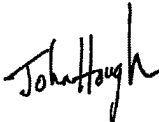
The comparative advantage of UNDP is justified by the nature of the project (being a "pure" capacity building / technical assistance project) and taking into account UNDP's past experience with similar projects

**PART III: APPROVAL/ENDORSEMENT BY GEF OPERATIONAL FOCAL POINT(S) AND GEF AGENCY(IES)**

**A. RECORD OF ENDORSEMENT OF GEF OPERATIONAL FOCAL POINT (S) ON BEHALF OF THE GOVERNMENT(S):** (Please attach the country endorsement letter(s) or regional endorsement letter(s) with this template).

<p><i>Dr. Saleh Kharabsheh</i>  <i>GEF OFF</i>  <i>Ministry of Planning and International Cooperation</i></p>	<p><i>Date: 20 December 2006</i></p>
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**B. GEF AGENCY(IES) CERTIFICATION**

<p>This request has been prepared in accordance with GEF policies and procedures and meets the GEF criteria for project identification and preparation.</p>	
<p>          John Hough          Deputy Executive Coordinator a.i.          UNDP/GEF</p>	<p>Project Contact Person          Vesa Rutanen</p>
<p>Date: 12 December 2007</p>	<p>Tel. and Email: + 358 50 320 9287,          vesa.rutanen@undp.org</p>

## Annex A – Project outputs for each outcome

<b>Outcome 1:</b>	<b>Outcome 2:</b>	<b>Outcome 3:</b>	<b>Outcome 4:</b>
A supportive legal and initial regulatory framework for appliance EE standards, certification and labelling adopted.	Structured verification & enforcement of appliance EE labels and standards.	Increased consumer's and retailer's awareness and improved marketing of appliance EE standards and labels.	New EE labelled appliances entering the market with the initial focus on air conditioners, refrigerators, freezers and washing machines
<b>Output 1.1</b> Enhanced awareness of the political and policy decision makers' on appliance EE options.	<b>Output 2.1</b> Enhanced knowledge of state inspectors in compliance checking of shops and of appliance energy efficiency declarations.	<b>Output 3.1</b> Enhanced consumers' awareness of appliance energy efficiency characteristics, standards and labels, and of costs and benefits of more efficient products.	<b>Output 4.1</b> Enhanced awareness and capacities of manufacturers in S&L regulation and related business opportunities
<b>Output 1.2</b> The required new regulations drafted and ready for formal Government approval.	<b>Output 2.2</b> Verification and enforcement plan for retailers developed, tested in a pilot project, and implemented.	<b>Output 3.2</b> Enhanced awareness and knowledge of retailer's management and retail staff trained in appliance energy efficiency issues and sales rationales.	<b>Output 4.2</b> With local manufacturers agreed, revised EE design of the locally manufacturer appliances under the targeted categories and enhanced local capacity to implement and further develop the identified EE improvements
<b>Output 1.3</b> The label and energy classes selected for the first four appliances.	<b>Output 2.3</b> Verification and enforcement plan and facilities for products testing developed, and implemented in a pilot project.		<b>Output 4.3</b> Joint marketing campaigns with the manufacturers' to raise the end users' awareness of the S&L.
<b>Output 1.4</b> Increased capacities of the government policy unit, energy agency unit and PMU trained in appliance EE support program development, implementation and monitoring strategies.			
<b>Output 1.5</b> Enhanced data collection on appliances sales and stocks and a structured monitoring system.			

**7. Terms of Reference:**

7.1 Project Manager

7.2 Project Board

7.3 Project Advisory Committee

## 7.1 The National Project Manager:

### Description of Responsibilities

The Project Manager has the authority to run the project on a day-to-day basis on behalf of the Project Board within the constraints laid down by the Board. The Project Manager is responsible for day-to-day management and decision-making for the project. The Project Manager's prime responsibility is to ensure that the project produces the results specified in the project document, to the required standard of quality and within the specified constraints of time and cost.

The Implementing Partner appoints the Project Manager, in consultation with UNDP, who should be different from the Implementing Partner's representative in the Board.

**Specific responsibilities** would include:

*Overall project management:*

- Manage the realization of project outputs through activities;
- Provide direction and guidance to project team(s)/ responsible party (ies);
- Liaise with the Project Board or its appointed Project Assurance roles to assure the overall direction and integrity of the project;
- Identify and obtain any support and advice required for the management, planning and control of the project;
- Responsible for project administration;
- Liaise with any suppliers;
- May also perform Team Manager and Project Support roles;

*Running a project*

- Plan the activities of the project and monitor progress against the initial quality criteria.
- Mobilize goods and services to initiative activities, including drafting TORs and work specifications;
- Monitor events as determined in the Monitoring & Communication Plan, and update the plan as required;
- Manage requests for the provision of financial resources by UNDP, using advance of funds, direct payments, or reimbursement using the FACE (Fund Authorization and Certificate of Expenditures);
- Monitor financial resources and accounting to ensure accuracy and reliability of financial reports;
- Manage and monitor the project risks as initially identified in the Project document, submit new risks to the Project Board for consideration and decision on possible actions if required; update the status of these risks by maintaining the Project Risks Log;
- Be responsible for managing issues and requests for change by maintaining an Issues Log.
- Prepare the Project Quarterly Progress Report (progress against planned activities, update on Risks and Issues, expenditures) and submit the report to the Project Board and Project Assurance;
- Prepare the Annual review Report, and submit the report to the Project Board;

- Based on the review, prepare the AWP for the following year, as well as Quarterly Plans if required.

#### *Closing a Project*

- Prepare Final Project Review Reports to be submitted to the Project Board;
- Identify follow-on actions and submit them for consideration to the Project Board;
- Manage the transfer of project deliverables, documents, files, equipment and materials to national beneficiaries;
- Prepare final CDR/FACE for signature by UNDP and the Implementing Partner.

#### **Relationships**

The National Project Manager will:

- Report directly to the UNDP and NERC regarding project performance, administrative and financial issues.
- Be accountable to the UNDP for the achievement of project objectives, results, and all fundamental aspects of project execution.
- Maintain regular communication with UNDP and the National Steering Committee members.

#### **Qualifications and Experience**

The National Project Manager will have the following qualifications, or be able to demonstrate:

##### **Education**

- An advanced university degree (MSc) in any appropriate discipline related to Engineering, Energy, and Project management.
- Additional qualifications or experience related to marketing and communication will be advantageous

##### **Experience, Skills and Competencies**

- A minimum of 10 years national experience in project development and management; related to Energy, or any other related field.
- Proven knowledge of the environmental and/or Energy sector in the country; overview knowledge of the region is an added asset.
- Previous success in resource mobilization;
- Proven ability to work with a variety of people including government officials, international and national NGOs, local stakeholders, experts and consultants.
- Strong leadership, managerial and team-building skills; committed to enhancing and bringing additional value to the work of the team as a whole.
- Proven experience in facilitating and chairing meetings and/or workshops.
- Excellent communication, presentation and facilitation skills.
- A proven ability to manage budgets.
- Good organizational and planning skills and a proven ability to adhere to deadlines.

- A proven ability to provide financial and progress reports in accordance with reporting schedules.
- Good computer skills;
- Fluency in verbal and written English and Arabic.

## 7.2 Project Board (BP)

### Overall responsibilities:

The Project Board is the group responsible for making by consensus management decisions for a project when guidance is required by the Project Manager, including recommendation for UNDP/NERC approval of project plans and revisions. In order to ensure UNDP's ultimate accountability, Project Board decisions should be made in accordance to standards that shall ensure best value to money, fairness, integrity transparency and effective international competition. Project reviews by this group are made at designated decision points during the running of a project, or as necessary when raised by the Project Manager. This group is consulted by the Project Manager for decisions when PM tolerances (normally in terms of time and budget) have been exceeded.

Based on the approved annual work plan (AWP), the Project Board may review and approve project quarterly plans when required and authorizes any major deviation from these agreed quarterly plans. It is the authority that signs off the completion of each quarterly plan as well as authorizes the start of the next quarterly plan. It ensures that required resources are committed and arbitrates on any conflicts within the project or negotiates a solution to any problems between the project and external bodies. In addition, it approves the appointment and responsibilities of the Project Manager and any delegation of its Project Assurance responsibilities.

### Composition and organization:

- 1) UNDP Jordan
- 2) Ministry of Planning and International Cooperation
- 3) National Energy Research Centre

### Specific responsibilities:

#### *Initiating a project*

- Agree on Project Manager's responsibilities, as well as the responsibilities of the other members of the Project Management team;
- Delegate any Project Assurance function as appropriate;
- Review the Progress Report for the Initiation Stage;
- Review and appraise detailed Project Plan and AWP, including Atlas reports covering activity definition, quality criteria, issue log, updated risk log and the monitoring and communication plan.

#### *Running a project*

- Provide overall guidance and direction to the project, ensuring it remains within any specified constraints;
- Address project issues as raised by the Project Manager;
- Provide guidance and agree on possible countermeasures/management actions to address specific risks;
- Agree on Project Manager's tolerances in the Annual Work Plan and quarterly plans when required;



- Conduct regular meetings to review the Project Quarterly Progress Report and provide direction and recommendations to ensure that the agreed deliverables are produced satisfactorily according to plans.
- Review Combined Delivery Reports (CDR) prior to certification by the Implementing Partner;
- Appraise the Project Annual Review Report, make recommendations for the next AWP, and inform the Outcome Board about the results of the review.
- Review and approve end project report, make recommendations for follow-on actions;
- Provide ad-hoc direction and advice for exception situations when project manager's tolerances are exceeded;
- Assess and decide on project changes through revisions;

#### *Closing a project*

- Assure that all Project deliverables have been produced satisfactorily;
- Review and approve the Final Project Review Report, including Lessons-learned;
- Make recommendations for follow-on actions to be submitted to the Outcome Board;
- Commission project evaluation (only when required by partnership agreement)
- Notify operational completion of the project to the Outcome Board.

#### **Procedures**

- The PB shall conduct business through meetings convened three times per year.
- At the first meeting of the PB, the PB members will review this TOR and the PB membership, and adopt changes as appropriate
- The National Project Manager will organize the meetings and act as Secretary and will prepare and distribute all concerned documents in advance of meetings, including the meeting agenda.
- In between meetings, PB business will be conducted through e-mail, coordinated by the Project Manager

#### **Input**

At least 3 formal meeting per year through the duration of the project

### **7.3 Project Advisory Committee (PAC)**

#### **Composition**

- UNDP-Jordan
- National Energy Research Centre
- Ministry of Planning and International Cooperation
- Swiss Agency for Development and Cooperation

#### **Duties**

- Provide strategic guidance to project implementation
- Coordinate information sharing among the major project stakeholders
- Plan and guide external project reviews and evaluations
- Guide response to external project reviews and evaluations
- Monitor project implementation against the project strategy and guide adjustments in implementation
- Identify and secure support and supporters to the project from the private sector;
- Facilitate co-ordination with other government projects and programmes;
- Facilitate consultation with, and participation of, a broad range of stakeholders;

#### **Procedures**

- The PTC shall conduct business through meetings convened three times per year.
- At the first meeting of the PTC, the PTC members will review this TOR and the PTC membership, and adopt changes as appropriate
- The Project Coordinator will organize the meetings and act as Secretary and will prepare and distribute all concerned documents in advance of meetings, including the meeting agenda.
- In between meetings, PTC business will be conducted through e-mail, coordinated by the Project Coordinator

#### **Input**

At least 3 formal meetings per year throughout the duration of the project

**SIGNATURE PAGE**

**Country: JORDAN**

**UNDAF Outcome (s)/Indicator (s):**

Sustainable management of natural resources and the environment

**CPAP Outcome (s)/Indicator (s):**

Environmental policies aligned to global conventions & national implementation capacities enhanced

**CPAP Output (s)/Indicator (s):**

To influence consumption pattern by raising awareness of policy makers, manufacturers, distributors and consumers and introducing in the market energy efficiency standards and labels.

**Executing Entity/Implementing Partner:  
Implementing entity/Responsible Partner**

National Energy Research Centre  
National Energy Research Centre

Programme Period:	<u>2008-2012</u>
Atlas Award ID:	<u>00059526</u>
Project ID:	<u>00074459</u>
PIMS #	<u>3735</u>
Start date:	June 2010
End Date	June 2013
Management Arrangements	NEX modality
PAC Meeting Date	27 May 2010

Total resources required	<u>\$ 2,288,615</u>
Total allocated resources:	<u>\$ 2,288,615</u>
• Regular	<u>\$100,000</u>
• Other:	
o GEF	<u>\$ 965,000</u>
o Government	<u>\$ 100,000</u>
o In-kind	<u>\$ 1,123,615</u>
o Other	
In-kind contributions	<u>\$580,000</u> SGP <u>parallel funding</u>

**Agreed by (The Ministry of Planning and International Cooperation):**

Dr. Jafar Hassan



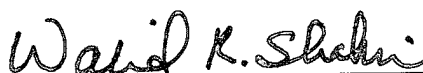
NAME

SIGNATURE

Date/Month/Year

**Agreed by (National Energy Research Centre):**

Walid Shaheen



July 18, 2010

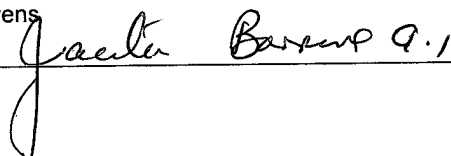
NAME

SIGNATURE

Date/Month/Year

**Agreed by (UNDP):**

Luc Stevens



28<sup>th</sup> Aug 2010

NAME

SIGNATURE

Date/Month/Year