**Terminal Evaluation Report of UNDP / GEF Project:**

# Energy Efficiency Standards and Labeling in Jordan

**(UNDP PIMS # 3735)**

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## National Energy Research Centre, Jordan

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## Acronyms and Abbreviations

| | |
|---|---|
| CC | Climate Change |
| CDR | Consolidated Delivery Report |
| CEGCO | Central Electricity Generating Company |
| DSM | Demand Side Management |
| EA | Executing Agency |
| EE | Energy Efficiency |
| EF | Emission Factor |
| ETR | End Term Review |
| EU | European Union |
| GAM | Greater Amman Municipality |
| GEF | Global Environment Facility |
| GHG | Greenhouse Gases |
| GoJ | Government of Jordan |
| GWh | Gigawatt-hour |
| GTZ | German Agency for Technical Cooperation |
| HACT | Harmonized Approach to Cash Transfers |
| HV | High Voltage |
| IA | Implementing Agency |
| JEA | Jordan Electricity Authority |
| KJ | Kilo Joules |
| kW | Kilowatt |
| kWh | Kilowatt Hour |
| 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 |
| MTR | Mid Term Review |
| MV | Medium Voltage |
| MW | Megawatt |
| NEPCO | National Electric Power Company |
| NERC | National Energy Research Centre |
| O&M | Operation and Maintenance |
| PAC | Project Advisory Committee |
| PB | Project Advisory Board |
| PMU | Project Management Unit |
| RE | Renewable Energy |

| | |
|---|---|
| QR | Quarterly Report |
| RET | Renewable Energy Technology |
| S&L | Standards and Labels |
| TOR | Terms of Reference |
| TT | Tracking Tool (GEF CC Tracking Tool) |
| UNDAF | United Nations Development Assistance Framework |
| UNDP | United Nations Development Programme |
| UNFCCC | United Nations Framework Convention on Climate Change |
| USAID | United Stated Agency for International Development |

# Contents

# Executive Summary

## Project Description

The goal of the project titled "Energy Efficiency Standards and Labelling of Appliances in Jordan" (EESL Project) is to reduce, Green House Gas (GHG) emissions through increased adoption of energy efficient domestic refrigerators, air conditioners, freezers and washing machines. The EESL project is a Global Environment Facility (GEF)-funded Medium-Sized Project (MSP). **Table A** provides the summary of the project in terms of its title, budget and timelines etc.

| **Table A: Summery Table of the Project** | |
|---|---|
| Project Title: | Energy Efficiency Standards and Labelling 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 |
| Expected CP Outcome(s): | Enhancing the environmental policies aligned to global conventions & national implementation capacities |
| Expected CPAP Output (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. |
| Implementing Entity/Responsible Partners: | National Energy Research Centre (NERC), Jordan |
| Program Period | 2008 – 2012 |
| Atlas award ID | 00059526 |
| Project ID | 00074459 |
| PIMS # | 3735 |
| Date of Singing of Project Document | 28 July 2010 |
| Start Date | Planned Start Date: June 2010<br>Actual Start Date: October 2010 |
| End Date | Planned End Date: June 2013<br>Actual End Date: 31 December 2014 |
| Mid Term Review | Planned: January 2012<br>Actual: September 2013 |
| Management Agreement | National Execution (NEX) Modality |
| PAC Meeting Date | 27 May 2010 |
| Total Resources required | US$ 2,288,615 |
| Total Resources Allocated | US$ 2,288,615 |
| | • Regular: US$ 100,000<br>• Others<br>○ GEF US$ 965,000<br>○ Government US$ 100,000<br>○ In-kind UD$ 1,123,615 |
| | • PPG UD$ 35,000<br>• Other in-kind contributions US$ 580,000 (SGP parallel funding) |

The four components of the project, their projected outcomes and the corresponding outputs were as given in **Table B**.

| Table B: Components of the Project: Outcomes and the Outputs | | |
|---|---|---|
| **Component** | **Outcome** | **Output** |
| **Component 1:** Capacity enhancement in Government and energy agency units for appliance EE policy development, implementation and market surveillance | **Outcome 1:** Enhanced capacities in Government and energy agency units for appliance EE policy development, implementation and market surveillance | **Output 1.1**: Political and policy decision makers' improved awareness of appliance EE option<br>**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<br>**Output 1.3:** Increased capacity of the National Energy Research Center for the selection of a label and energy classification consistent with regional Standards and Labeling efforts<br>**Output 1.4**: Increased capacity of the National Energy Research Center and PMU in appliance EE support programme development, implementation and monitoring strategies<br>**Output 1.5:** Enhanced data collection on appliance sales and stock and a structured monitoring system |
| **Component 2:** Structuring of verification & enforcement of appliance EE labels and standards | **Outcome 2:** Structured verification & enforcement of appliance EE labels and standards. | **Output 2.1**: Enhanced knowledge of state inspectors to check the compliance of shops and of appliance energy efficiency declarations<br>**Output 2.2:** Verification and enforcement plan for retailers developed, tested in a pilot project and implemented<br>**Output 2.3:** Verification and enforcement plan and facilities for product testing developed and implemented in a pilot project |
| **Component 3:** Consumers' and retailers' awareness-raising and improved marketing of appliance EE standards and labels | **Outcome 3:** Consumers' and retailers' awareness raised and improved marketing of appliance EE standards and labels. | **Output 3.1:** Enhanced consumer awareness of appliance energy efficiency characteristics, standards and labels and the costs and benefits of more efficient products<br>**Output 3.2:** Enhanced awareness and knowledge of retailers' management and retail staff on appliance energy efficiency issues and sales rationales |
| **Component 4:** Improvement of manufacturers' capacity to produce and market EE appliances | **Outcome 4:** Increased capacity of manufacturers to produce and market energy efficient appliances. | **Output 4.1:** Enhanced capacities of manufacturers in S&L regulations and related business opportunities<br>**Output 4.2:** Enhanced abilities of manufacturers in the development of more efficient appliances<br>**Output 4.3:** Manufacturers' participation in an end-user awareness campaign about S&L |

The project was executed under the United Nations Development Programme's (UNDP) National Implementation (NIM) modality, with National Energy Research Centre (NERC), Jordan as the national implementing partner. Initially-planned project implementation period was three years. The project document was signed on 28 July 2010. The project implementation start in the form of the project Inception Workshop happened on 3 October 2010. A 'no-cost' extension of one year was awarded to the project. Subsequently as a follow up of the Mid Term Review a further extension till 31 December 2014 was granted to maximize the impacts of the project.

The impact of the project as it relates to GEF objectives is reduction in GHG emissions.The project was to lead to direct[1] reduction in GHG emissions of 183 thousand tons of CO2 equivalent during its implementation. Further, direct emissions reductions post implementation were projected to be 230 thousand tons of CO2 and an additional indirect GHG reduction of 2,859 thousand tons of CO2 through to 2030 was projected to be achieved due to further market transformation. During Mid Term Review of the project the projections regarding emission reduction of GHG were revised to indirect emission reductions of 2.64 million tons of CO2 post project implementation and indirect emission reduction of 22 thousand tons during project implementation.

The outputs of the projects given in **Table B** were to be achieved by performing specific activities (detailed in **Annex 5**). Apart from the above mentioned specific components there was a provision to provide project management [2]and Monitoring & Evaluation (M&E) support. Monitoring of the impacts of the project was to be done by the Project Management Unit (PMU). Following indicators were to be used to measure the impact of the project at an aggregate level:

**Table C: Impacts of the Project and Monitored Parameters**

| Impact to be Monitored | Indicators | Verification Means |
|---|---|---|
| $CO_2$ emissions reduction | Reduction in energy consumption in the household sector | • Survey of power utilities<br>• Survey of Jordan's Department of Statistics<br>• Electricity bills analysis |
| Increased share of households that use energy efficient appliances | Number of households that use EE appliances | • Survey of Jordan's Department of Statistics<br>• Survey of enforcement agencies<br>• Project database<br>• Retail sales data |
| 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 | • Project database<br>• Statistics of the Jordan Chamber of Commerce<br>• Statistics of Jordan's Ministry of Industry |

Apart from monitoring of the impacts of the project at an aggregate level there was a provision to individually monitor the impacts of different components and outcomes of the project by using the indicators as given in **Table D**. Also given in the table is the baseline situation, the target of the project and the sources of verification as specified in the Project Document.

[1] Direct GHG emission reduction were considered to be those which would happen due to purchase of EE appliances by the households during project implementation

[2] Project management has been considered as a separate outcome (Outcome 5) at some places in the project document and the TOR for the Terminal Evaluation. However considering that it is not one of the components of the project design, it has not been considered as a separate parameter to be evaluated.

| Table D: Impacts of Components of Project, Targets and Means of Verification | | | | |
|---|---|---|---|---|
| | **Indicators** | **Baseline** | **Targets End of Project** | **Source of verification** |
| **Project Objective:** Reduce GHG emissions by supporting a market transformation towards energy efficient new appliances in Jordan. | • Sales of energy-efficient appliances increase for refrigerators / freezers, washing machines and air conditioners<br>• A two classes (EU) improvement in average refrigerator sales is observed. | • Number of energy efficient appliances (refrigerators / freezers, washing machines and air conditioners) sold per year in Jordan<br>• Current emissions of CO2 in the domestic sector. | • Increase market share of energy efficient appliances in Jordan by30%<br>• Significant amount of CO2 emissions are avoided per year due to the market transformation of energy efficient appliances in Jordan.<br>• Reduction of GHG emissions by 183,000 tons of CO2 for the improved appliances put on the market during the three years project duration. | • Project final report.<br>• Midterm and final evaluation reports.<br>• Appliance sales impact monitoring report.<br>• Laboratory testing for refrigerators and freezers. |
| **Outcome 1:** Enhanced capacities in Government and energy agency units for appliance EE policy development, implementation and market surveillance. | • National appliance energy efficiency program and impact monitoring system developed and approved by the Government. | • 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. |
| **Outcome 2:** Structured verification & enforcement of appliance EE standards and labels. | • Verification and enforcement procedures are developed, pilot tested are implemented for retailers and product compliance checking, including yearly shop visits for major retailers and spot-checking for other outlets. | • No verification and enforcement procedures in place. | • Verification and enforcement procedures in place and functional. | • Project implementation reports.<br>• Retailer compliance pilot checking and product compliance pilot checking reports from the PMU. |
| **Outcome 3:** Increased consumers' and retailers' awareness and improved marketing of appliance EE standards and labels. | • 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. | • Current number of retailers and customers who have understood the trade-off between high purchase cost and lower running cost. | • At least 50% of consumers and 80% of retailers. | • First year and final surveys of consumer and retailer understanding and perceptions of EE appliance.<br>• Project implementation reports. |
| **Outcome 4:** Increased capacity of manufacturers to produce and market EE appliances. | • Percentage of local manufacturers have developed, produced and marketed more efficient appliances. | • Current number of manufacturers producing and marketing EE appliances. | • At least 50% of local manufacturers. | • Project implementation reports. |

With the project coming to an end a 'Terminal Evaluation' of the project has been carried out during the period from 11 December 2014 to 31 December 2014. The 'Terminal Evaluation' process included an in-country mission from 27 December 2014 to 31 December 2014. The broader defined objectives of the 'Terminal Evaluation' were to compare planned outputs of the project to actual outputs and (if applicable) identify the causes and issues which contributed to non-achievement of the targets of the project. One of the other defined objectives of the evaluation was to draw lessons that can both improve the sustainability of benefits from the project, and aid in the overall enhancement of UNDP programming. The methodology for carrying out the evaluation comprised of review of project design, review of Mid Term Evaluation report and all relevant sources of information followed by interviews with key stakeholders. Findings of the 'Terminal Evaluation' are given in this report. Summary of the evaluation ratings and findings are given in the following paragraphs.

## Evaluation Ratings

**Table E** provides the evaluation rating of the project against different aspects and parameters.

**Table E: Evaluation Ratings**

| **1. Monitoring and Evaluation**[11] | ***rating*** | **2. IA& EA Execution**[11] | ***rating*** |
|---|---|---|---|
| M&E design at entry | MS | Quality of UNDP Implementation | S |
| M&E Plan Implementation | S | Quality of Execution - Executing Agency | S |
| Overall quality of M&E | S | Overall quality of Implementation / Execution | S |
| | | | |
| **3. Assessment of Outcomes**[11] | **rating** | **4. Sustainability**[22] | **rating** |
| Relevance | HS | Financial resources | L |
| Effectiveness | S | Socio-political | L |
| Efficiency | S | Institutional framework and governance | L |
| Overall Project Outcome Rating | S | Environmental | L |
| | | Overall likelihood of sustainability | L |

**Notes:**
*11) 6: Highly Satisfactory (HS), 5: Satisfactory (S), 4: Marginally Satisfactory(MS), 3: Marginally Unsatisfactory(MU), 2: Unsatisfactory(U) and 1: Highly Unsatisfactory(HU)*
*22) 4. Likely (L): negligible risks to sustainability, 3. Moderately Likely (ML):moderate risks, 2. Moderately Unlikely (MU): significant risks, 1. Unlikely (U): severe risks*

M&E activities planned at the design stage meet GEF / UNDP requirements and standard practices. However, at the design stage the indicators used and means of verification specified were not very convenient and practical to use for carrying out the actual M&E on a regular basis. For example to verify the progress towards achievement of the project objective of reducing GHG emissions, the indicator to be used was market share of EE appliances, wherein it has been assumed that all the sales of appliances in the baseline case are non EE. Further it has not been specified what level of efficiency of the appliance would qualify it to be considered as an EE appliance. Due to these reasons the **M&E design at entry** has been considered as **marginally satisfactory**. Some of the quarterly progress reports, annual progress reports and other monitoring documents were made available during the review. Mid-Term Evaluation of the project was carried out as per the requirements of the provisions in the project design, though

there was some delay in doing so. The terminal evaluation of the project is being carried out as per the requirements. Thus **Overall, M&E is considered satisfactory.** Oversight and monitoring of the project by EA (UNDP) has been conducted as per the established practices. The management of the finances of the project has been in line with UNDP quality standards. UNDP was represented on the PAC and PB. However, PB has met only twice during the entire duration of the project. Prior to the two PAC meetings during project implementation, PAC met at the time of inception of the project. In the absence of formal meetings, the members of the PMU carried out one -to -one meeting with the members of PAC and PB from time to time. Financial monitoring and evaluation of the project was carried out using the ATLAS tool of UNDP. During TE process CDR for all the years was not available. Audited financial statements for the year 2013 were made available. Mid Term Evaluation report has been used to see the financial performance for the years 2010, 2011 and 2012. CDRs have been used for the year 2014. UNDP has fulfilled its oversight and supervision responsibilities – except for the issue related to PAC and PB meetings. Although there were initial delays EA has been able to cover the delays during the extensions granted to the project and completed the tasks under different components / outcomes of the project. Thus, the **quality of execution** by the EA has been rated as **satisfactory**. **Overall quality of Implementation / Execution** has been rated as **Satisfactory**.

The project supports GEF strategic objectives, and forms part of Jordan's contributions to UNFCCC to stabilize GHG emissions below dangerous anthropogenic levels. Thus, the **relevance** of the programme is considered as **highly satisfactory.** The project could not achieve its objective of direct GHG emission reduction (both during project implementation and post implementation). However, sustained long term indirect GHG emission reductions of about 730 thousand tons will be achieved during the 10 years after the project implementation. This is due to creation of awareness and an enabling atmosphere (establishment of test labs, mandating of the EE labeling of appliances, mandating of MEPS, development of standards etc.). Projected reductions in the emission of GHG at TE are considerably lesser then those projected at the time of Project Design and at the time of MTR. The difference is not because of under performance of the project during its implementation phase but because of the corrections done in the accounting method during TE. Thus, the **effectiveness** of the project has been rated as **satisfactory**. The project initially suffered from low budget utilization (mainly due to delay in project start and the needs for midway corrections in the design); at the end of the project overall disbursements are on target (about 98% at the time of evaluation). Project management cost at the end of the project is within the norms of 10**%**. Considering that the project will lead to GHG emission reductions of 730 thousand tons of CO2 the cost effectiveness of the project is USD 1.32 per ton of CO2. Thus, ***project efficiency*** is rated as ***satisfactory***. In terms of outcomes the project has been able to achieve most of its end objectives (establishment of Performance Standards, mandating of MEPS, mandating of EE labeling, establishment of test labs, establishment of Verification and enforcement procedures). At an aggregate level this demonstrates a significant achievement for Outcome 1 and Outcome 2 of the project. However, considering the fact that there has been an overlap in terms of activities and objectives of EESL project with another program related to EE of appliances at Jordan (EU Twinning Project) which was running at the same time, it is not possible to clearly

say, what has been the contribution of EESL project towards achievement of the end results. Going by the records of the activities placed for review (funds utilization statements, PAC and PB meetings, other documents) the contribution of the project towards achievement of the above results could not be clearly established. Considering that collaborative working with other donor agencies is generally encouraged and further considering that at the end it is the result which is important, **overall outcome of the project has been rated as satisfactory**.

The Project has successfully achieved its strategic objective of removal of barriers and creation of an enabling atmosphere for EE of the home appliances. Thus, the sustainability of the outcomes of the project is more or less assured. In terms of financial sustainability the test lab which has been created needs to sustain its operations after the project. In this regard one of the sources of revenues being considered is the fee charged from the users of the lab. NIES where these labs have been established is contemplating development of a business plan to act as a regional center of excellence for testing of home appliances. It has requested support from USAID for development of a business plan. Thus, sustainability in terms of **financial resources** is **Likely**. Considering that the consumer awareness created under the project is likely to generate demand thereby creating a pull towards EE over a period of time forcing the manufacturers and the importers to offer EE variants of the appliances the impacts of the projects are likely to sustain. This is despite the resistance by the manufacturers and the importers at the initial stages of mandate regarding MEPS and EE labeling of the appliances. Thus, from the view point of **Socio political** issues the outcomes of the project are **likely to sustain**. The project has successfully put in place an institutional framework for enforcement of the mandate of MEPS and EE labeling of appliances. The project has also established a market surveillance system and procedure at JSMO which will facilitate enforcement of the MEPS and EE labeling of the appliances. There are practically no negative environmental impacts of the project. Thus, from the view point of **institutional framework and environmental sustainability** the outcomes of the project are **Likely** to sustain. The **overall sustainability** of the project results is considered **Likely**.

## Summary of conclusions, recommendations and lessons

### Project Design

The overall project design meets the requirements of GEF in terms of identification of risks, monitoring and evaluation of requirements, establishment of the problem to be addressed, objective of the projects etc. The project design has also analyzed the baseline situation and established the indicators to monitor the progress and achievement of the project over its implementation. Some of the issues with the project design are as follows:

- The impacts of the project to be monitored and the corresponding target values of indicators need to be determined in a manner that eliminates the influence on the value of the indicators as in business as usual scenario.

- The baseline situation and the corresponding value of the indicators need to be established by carrying out a detailed scoping study and quantitative analysis, rather than using the approach of growth rates.
- In order to have larger impacts, the segments of the stakeholders which have larger share needs to be targeted. For example in the case of present project 80% of the appliances were imported, thus a project activity focused on the importers / trade authorities would have benefited the project.
- In order to keep the government stakeholders interested in the project and to ensure participation of government officials it is necessary to take care of local practices. For example, it is a standard practice at Jordan to provide small honorarium to the participants in the official meetings. A provision in the project budget to do so would have ensured higher participation in the PAC and PB meetings.
- Although the project has used a results framework as per the requirements of GEF projects, it has failed to capitalize on its usefulness as a tool for the proper implementation and monitoring and evaluation of the project. The main lesson learned is the need to also cover the outputs of the project in the results framework;

### Outcomes

The outcomes of the project in terms of achievement of the objective of GHG emission reduction have been discussed in the earlier paragraphs. Summary of the achievement of targets for different components of the project in terms of different indicators of the log-frame (please see Table D) is given in **Table F**.

**Table F: Attainment of Targets of Outcomes**

| Outcome | Indicators | Targets End of Project | Attainment |
|---|---|---|---|
| **Outcome 1:** Enhanced capacities in Government and energy agency units for appliance EE policy development, implementation and market surveillance. | • National appliance energy efficiency program and impact monitoring system developed and approved by the Government. | • All the energy agencies in Government are well equipped to develop, implement and enforce appliances energy efficiency policy. | • The project has supported JSMO to develop an innovative web-based tool and database to harmonize its surveillance capacities. The project has achieved its objective of enhancing the capacity of JSMO to carry out market surveillance of EE appliances, especially fraudulent imports and locally manufactured products. |
| **Outcome 2:** Structured verification & enforcement of appliance EE standards and labels. | • Verification and enforcement procedures are developed, pilot tested are implemented for retailers and product compliance checking, including yearly shop visits for major retailers and spot-checking for other outlets. | • Verification and enforcement procedures in place and functional. | • The project developed the laboratory and equipment specifications for testing EE appliances.<br>• RSS has roped in USAID to fund the laboratory equipment for air conditioners, EU for funding the testing facilities for refrigerators.<br>• Testing facilities for washing machines were funded as a part of EESL project.<br>• The laboratory and the testing facilities have been /are being established at RSS.<br>• Field training exercises with JSMO's market surveillance personnel in conjunction with the EU Twinning Project on EE compliance checking has been |

| | | | |
|---|---|---|---|
| | | | carried out. |
| **Outcome 3:** Increased consumers' and retailers' awareness and improved marketing of appliance EE standards and labels. | • 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. | • At least 50% of consumers and 80% of retailers. | • Before the consumer awareness campaign a survey was undertaken to understand the consumer's level of awareness and behaviour patterns. This was to help make a proper design of the awareness creation campaign. The survey revealed that around 22% of the population understood the concept of EE appliances but only 2% were aware of a labelling scheme. A consumer survey post awareness creation campaign shows that the awareness level regarding the EE of appliances has increased to 80%. At the same time the awareness regarding EE labelling has increased to about 35%. |
| **Outcome 4:** Increased capacity of manufacturers to produce and market EE appliances. | • Percentage of local manufacturers have developed, produced and marketed more efficient appliances. | • At least 50% of local manufacturers. | • Not much could be achieved against this outcome.<br>• Local manufactures have been granted exemption of two years from the need to comply with the mandate regarding MEPS and S&L |

### Implementation, Monitoring and Evaluation

The main M&E activities planned at the design stage meet GEF and UNDP requirements and standard practices. During the review CDRs, QPRs and APRs for the entire duration of the project could not be made available. One of the reasons could be change of key personals of the project management team during the implementation of the project. The lesson learnt is that creation of a repository for all the key data and documents related to the project should be an integral part of the overall monitoring and evaluation plan at the project design stage.

### Recommendations

Some of the actions which will ensure continuation and enhancement of the benefits due to the project are as follows:

- Continuation of consumer awareness creation and capacity building of institutions from time to time will help towards continuation and further strengthening of the impacts of project.
- Now that the test labs are in place to enforce the mandate regarding S&L program and MEPS, it is important that these labs continue to operate. Experience shows that the traditional method of government funding for continuation of the operations don't work in most of the cases. There is a proposal to develop a business plan for these labs so that they can sustain their operation at their own. Support for development of the business plan is likely to reinforce the impacts and benefits of the project.
- The main objective of the project was to reduce emission of GHG by transforming the market and by removal of barriers towards the larger uptake of energy efficient appliances. To support the main objective of reduction in the emission of GHG and to support the country objective of continuing to meet the demand for power, projects for EE for other appliances may be initiated on the lines of the present project after

taking care of the lessons learnt. Such proposals may be developed for lights, fans, televisions, etc.

- There is already a spinoff impact of the project in term of establishment of MEPS and S&L for a host of products which were not covered under this project. However, market transformation for these products is not likely, in the absence of awareness creation of consumers and capacity building of the institutions. Small incremental efforts in this direction would help to multiply the impacts of the project.

# 1. Introduction

Jordan is dependent on imported energy and the energy bill is one of the major burdens on its economy. The challenge of continuing to meet the ever growing demand for electricity is well understood. It has been realized that demand side management can play a crucial role towards meeting this challenge. In the context of Jordan, one of the major end use sectors of electricity is the households. Thus, any demand side energy efficiency initiative has to consider the EE at the household level. Accordingly, the Energy Efficiency (EE) programme at Jordan is focused on EE Standards and Labeling for the appliances in the domestic sector. It is considered that the application of EE Standards and Labeling of appliances in Jordan will help to maintain a lower growth rate of energy consumption thereby partly addressing the challenge of continuing to meet the expected future growth in the demand, at reasonable cost to the economy. The goal of the EE Standards and Labelling of Appliances in Jordan is to reduce, Green House Gas (GHG) emissions through increased adoption of energy efficient domestic refrigerators, air conditioners, freezers and washing machines. The four planned outcomes of the project are as follows:

- **Outcome 1:** Enhanced capacities in Government and energy agency units for appliance EE policy development, implementation and market surveillance.
- **Outcome 2:** Structured verification & enforcement of appliance EE labels and standards.
- **Outcome 3:** Consumers' and retailers' awareness raised and improved marketing of appliance EE standards and labels.
- **Outcome 4:** Increased capacity of manufacturers to produce and market energy efficient appliances.

Apart from the four outcomes of the project mentioned above, the project documents have considered Project management and M&E support as a separate outcome (**Outcome 5)**. In view of the fact that M&E activity is a support function and not a component of the project to achieve the end objectives of the project, Outcome 5 has not been covered separately as an outcome in this evaluation. However M&E has been covered as one of the 'evaluated parameters'.

The EESL project is a Global Environment Facility (GEF)-funded Medium-Sized Project (MSP). The project is executed under the United Nations Development Programme's (UNDP) National Executing Agency (NEX) modality, with National Energy Research Centre (NERC), Jordan as the National Implementing Partner. According to GEF and UNDP evaluation policies, Terminal Evaluation (TE) is a recommended practice for all GEF-funded projects. TE was a planned activity of the monitoring and evaluation plan of the EESL project. The UNDP Jordan office initiated the TE in November 2014, and the TOR for the TE is provided as **Annex 1**. With the project coming to an end a TE of the project has been carried out, findings of which are given in this report. TE of the project

has been carried out during the period 11 December 2014 to 31 December 2014. The TE process included an in-country mission to Jordan from 27 December 2014 to 31 December 2014. The criteria for TE of the project and the corresponding evaluation questions along with the indicators and sources are given in **Annex 2** in the form of a matrix.

## 1.1. Purpose of the evaluation

The broader defined objectives of the terminal evaluation are to compare planned outputs of the project to actual outputs and identify (if applicable) the causes and issues which contributed to non-achievement of the targets of the project. One of the other defined objectives of the evaluation is to draw lessons that can both improve the sustainability of benefits from the project, and aid in the overall enhancement of UNDP programming. The purposes of the evaluation are as follows:

- To promote accountability and transparency, and to assess and disclose the extent of project accomplishments.
- To synthesize lessons that can help to improve the selection, design and implementation of future GEF financed UNDP activities.
- To provide feedback on issues that are recurrent across the UNDP portfolio and need attention, and on improvements regarding previously identified issues.
- To contribute to the overall assessment of results in achieving GEF strategic objectives aimed at global environmental benefit.
- To gauge the extent of project convergence with other UN and UNDP priorities, including harmonization with other UN Development Assistance Framework (UNDAF) and UNDP Country Programme Action Plan (CPAP) outcomes and outputs.

## 1.2. Scope & Methodology

Before undertaking the 'Terminal Evaluation' an inception report was presented. Prior to this, the proposed approach and methodology for carrying out the evaluation was presented at the time of proposal, which included the proposed tasks. It also identified the sources from where the information for assessing the performance of the project (e.g. documents and interviews) was to be obtained.

In accordance with the Guidance for Conducting Evaluations of UNDP-Supported, GEF-Financed Projects, the evaluation efforts (as detailed in **Annex 2**) were framed using following five criteria;

1. **Relevance:** The extent to which the activity is suited to local and national development priorities and organizational policies, including changes over time. The extent to which the project is in line with the GEF Operational Programs or the strategic priorities under which the project was funded.
2. **Effectiveness:** The extent to which an objective has been achieved or how likely it is to be achieved.
3. **Efficiency:** The extent to which results have been delivered with the least costly resources possible

4. **Results / Impacts:** The positive and negative, foreseen and unforeseen changes to and effects produced by a development intervention.
5. **Sustainability:** The likely ability of an intervention to continue to deliver benefits for an extended period of time after completion. Projects need to be environmentally, as well as financially and socially sustainable.

A summary of different criteria and the questions that have been answered is given in **Table 1.1.**

**Table 1.1: Criteria and Questions for Terminal Evaluation**

| Contents | Main Review Criteria and Questions |
|---|---|
| **3.1 Project Design / Formulation** | |
| 3.1.1 Analysis of LFA/Results Framework<br>3.1.2 Assumptions and Risks<br>3.1.3 Lessons from other relevant projects<br>3.1.4 Planned stakeholder participation<br>3.1.5 Replication approach<br>3.1.6 UNDP comparative advantage<br>3.1.7 Linkages between project and other interventions within the sector<br>3.1.8 Management arrangements | • What have been the strengths and weaknesses of the project design and the logical framework?<br>• Did the project design meet GEF standards?<br>• Was the project strategy appropriate?<br>• Were the assumptions made at the time of project design reasonable?<br>• Did the project design take into consideration the risks to the project?<br>• Did the project take into account the lessons from other relevant projects?<br>• Did the project design account for adequate participation of the stakeholders?<br>• Were the replication needs of the project taken care at the design stake of the project? |
| **3.2 Project Implementation** | |
| 3.2.1 Adaptive management<br>3.2.2 Partnership arrangements<br>3.2.3 Feedback from M&E activities<br>3.2.4 Project Finance<br>3.2.5 Monitoring and evaluation<br>3.2.6 Execution coordination, and operational issues | • Were the required changes to the project design and project outputs during implementation made?<br>• To what extent partnership with relevant stakeholders involved in the country/region was made?<br>• Was the feedback from M&E taken into account and the required changes made during the course of project implementation?<br>• To what extent the planned co-financing was realized?<br>• What is the variance between planned and actual expenditure<br>• Was the quality of execution of the Executing Agency / Implementing Partner adequate?<br>• Was the quality of support provided by the GEF Partner Agency (UNDP) appropriate?<br>• How well the Project Team and partners undertook and fulfil GEF reporting requirements? |
| **3.3 Project Results** | |
| 3.3.1 Overall results<br>3.3.2 *Relevance*[3]<br>3.3.3 *Effectiveness & Efficiency*<br>3.3.4 Country ownership<br>3.3.5 Mainstreaming<br>3,3.*6 Sustainability*<br>3.3.7 *Impact* | • What is the overall achievement of different components of the project at an aggregate level in terms of indicators in the log frame?<br>• Did the project support GEF strategic objective?<br>• Did the project adequately took into account Jordan's priorities and realities?<br>• What has been the effectiveness of the project in terms of achieving the GEF objective of GHG emission reductions?<br>• What has been the efficiency of the project in terms of the cost of GHG emission reductions? |

[3] The underlined items in this table refer to the UNDP evaluation criteria of Relevance, Effectiveness, Efficiency, Results, Sustainability

| | |
|---|---|
| | • What has been the cost of project management?<br>• Did local and national government stakeholders support the project? Did they have an active role in project decision-making?<br>• To what extent has stakeholder involvement and public awareness contributed to the progress towards achievement of project objectives?<br>• To what extent the results of this project will help main-streaming of energy efficiency in Jordan?<br>• To what extent the project was successful in being mainstreamed with other UNDP priorities, including poverty alleviation, improved governance, the prevention and recovery from natural disasters, gender?<br>• What is the likelihood that the outcomes of the project would sustain subsequent to the conclusion of the project:<br>o Are there any social or political risks that may jeopardize sustainability of project outcomes?<br>o Do the legal frameworks, policies, governance structures and processes pose risks that may jeopardize sustenance of project benefits?<br>o What is the likelihood of financial and economic resources not being available once the GEF assistance ends?<br>o Environmental: Are there any environmental risks that may jeopardize sustenance of project outcomes?<br>• What are the impacts of the project in terms of contribution to sustainable development benefits, as well as global environmental benefits (direct and indirect emission reduction)?<br>• To what extent the project has achieved the impacts as compared to the design of the project? |
| **4.0 Conclusions, Recommendations & Lessons** | |
| 4.1 Corrective actions for the design implementation, monitoring and evaluation<br>4.2Actions to follow up or reinforce initial benefits from the project<br>4.3 Proposals for future directions underlining main objectives<br>4.4 Best and worst practices in addressing issues relating to relevance, performance and success | • What are the corrective actions towards design of the project (in future) in terms of implementation modalities and monitoring & evaluation of the project?<br>• To what extent the barriers towards achieving the project objectives been removed?<br>• Which are the barriers which could not be removed (if applicable) and why. ?<br>• What are the ways and what are the actions required so that the benefits of the project can be further expanded?<br>• What are the proposals for future directions underlining main objectives of the project? |

The review of documents provided the basic facts and information for developing a first draft of the 'Terminal Evaluation Report' (TER), while the mission was needed to verify the basic facts, get missing data and to learn opinions of respondents to help interpret the facts[4]. The individual interviews with key informants were based on open discussion to allow respondents express what they feel as main issues, followed by more specific questions on the issues mentioned. The individuals for the interview during the mission were selected in consultation with UNDP CO and PMU, keeping in mind the participation level and the relevance as the criteria. The list of terminal evaluation questions of Table 1.1 was used as a checklist to raise relevant questions and issues during the interviews that correspond to the level and type of involvement of the interviewee or the organization visited.

[4] The TOR mentions the use of a pre-determined questionnaire and / or a survey. However, this was not deemed necessary in the end, as in the Evaluator's view, the open-style interviews and documents reviewed provided sufficient and valid information. Further ,it was not considered practical to carry out a structured survey of the stakeholders ,given the time frame for evaluation and five days of mission

While carrying out the review exercise a collaborative and participatory approach was followed. This was to ensure close engagement with the Project Team, the Executing Agency (GEF Operational Focal Point) and UNDP Country Office at Jordan.

The overall work was carried out in following sequential tasks

**Task 1 – Information review**

**i. Objectives**

- To systematically gather and review information and data relating to the project, including reports and information at the time of project initiation and subsequent reviews /evaluations.
- To identify information gaps and seek additional information / clarifications
- To maximise the value of the information exchange (carried out subsequently as Task 2) by ensuring that the evaluation team is familiar with previously published reports.

**ii. Issues and Considerations**

- During the information exchange (as described below) the evaluation team sought to discuss the process of gathering information and organising the mission to Jordan
- To ensure high quality analysis, it is critical to ascertain what information is available and what is not likely to be available, and that the information is collected as early as possible.

**iii. Key Activities**

- Review of project documents, evaluation reports etc. It included the following:
- GEF Project Information Form (PIF), Project Document and Log Frame Analysis (LFA)
- Project Implementation Plan
- Implementing/executing partner arrangements
- List and contact details of project staff, key project stakeholders, including Project Boards, and other partners to be consulted
- Project sites, highlighting suggested visits
- Midterm evaluation (MTE) and other relevant evaluations and assessments
- Annual Project Implementation Reports (PIR)
- Project budget, broken out by outcomes and outputs
- Project Tracking Tool
- Financial Data
- Sample of project communication materials, i.e. press releases, brochures, documentaries, etc.
- The review sought to determine the current status of each of the component / outcome of the overall project

**Task 2 – Information Exchange**

**i. Objectives**

- Ensure that there is a shared understanding and agreement between UNDP CO /other stakeholders and the evaluation team on the evaluation objectives, scope, methodology and deliverables.
- Ensure what data and information is available to validate the achievement of objectives, outcomes and outputs of the project.

**ii. Issues and Considerations**

- The information exchange and request for additional information / clarifications was done subsequent to initial information review described in Task 1. This was for planning to decide upon the critical issues which need to be analysed during the mission to Jordan.

**iii. Key Activities**

- An exchange of information (by mail) with UNDP CO. The purpose was to:
- Clarify with UNDP CO the information available and ensure that there is a common understanding of priorities.
- Understand the historical development of the project and its context within UNDP CO programs in Jordan and globally.
- Ascertain whether information gaps identified in Task 1 can be addressed prior to or during the mission to Jordan.
- Finalise the methodology to be adopted including proposed timing for the mission, format for reporting etc.
- Refine the Work Plan proposed
- Identify suitable contacts at UNDP and with other stakeholders to assist with logistical arrangements for the mission.
- Preparation of the inception report and the work plan

**Task 3 - Mission to Jordan and report preparation**

**i. Objectives**

- To collect the data and information required
- Carry out consultation with the stakeholders to validate the information and data collected and fill the data gaps
- To discuss the findings of the mission with the stakeholders and get their comments and suggestions on the findings
- Preparation of draft report

**ii. Issues and Considerations**

- If required, one extra meeting need to be organised with the stakeholders post preparation of the preliminary findings to validate some of the findings and collect additional information / data as may be required.

### iii. Key Activities

- Data collection, compilation and analysis
- Stakeholders consultation
- Draft Report preparation
- Getting feedback and comments on the draft report
- Preparation of the final report

The findings and conclusions of the evaluation as contained in this report have the following limitations and constraints:

- The evaluation has relied primarily on desk review of documents, and discussions with key stakeholders. Thus, the assessment is restricted to the extent to which documents were made available for review and the views of the stakeholders consulted.
- Evaluation has been carried out with the given resources allocated to the terminal evaluation, thus restricting the number of stakeholders which could be interviewed.
- There were some limitations regarding the data and documents which could be made available for review. This included the lack of quantitative data for the baseline efficiency of the appliances. This limitation meant that actual achievement of the project in terms of GHG emission reductions would not be that accurate.

Notwithstanding the limitations and constraints as mentioned above, the report on the findings and conclusions reached are based on adequate data and evidence, and are therefore considered to be fair.

This review has been conducted in accordance with the principles outlined in the United Nations Evaluation Group 'Ethical Guidelines for Evaluation' (**Annex 9**).

## 1.3. Structure of the report

This report provides the findings of the 'Terminal Evaluation' of the 'Energy Efficiency Standards and Labeling Program' for domestic appliances at Jordan. An introduction regarding the objectives and the methodology used has been provided in the above paragraphs. Rest of the report is organized as follows:

| | | |
|---|---|---|
| Section 2 | Project description and development context | This section of the report provides information regarding the Project start and duration, Problems that the project sought to address, Immediate development objectives of the project.<br><br>This section also provides information regarding the Baseline Indicators, Main stakeholders and the Expected Results of the project |
| Section 3 | Findings | This section of the report provides an assessment regarding the following:<br><br>• **Project Design / Formulation**: Analysis of LFA/Results Framework Project logic /strategy; Indicators), Assumptions and Risks, Lessons from other relevant projects (e.g., same focal area) incorporated into project design, Planned stakeholder participation, Replication approach, UNDP comparative advantage, Linkages between project and other interventions within the sector, Management arrangements<br>• **Project Implementation**: Adaptive management (changes to the project design and project outputs during implementation), Partnership |

| | | |
|---|---|---|
| | | arrangements (with relevant stakeholders involved in the country/region), Feedback from M&E activities used for adaptive management, Project Finance, Monitoring and evaluation design at entry and implementation, UNDP and Implementing Partner implementation / execution coordination, and operational issues<br>• **Project Results**: Overall results (attainment of objectives), Relevance, Effectiveness & Efficiency, Country ownership, Mainstreaming, Sustainability, Impact |
| Section 4 | Conclusions, Recommendations & Lessons | This section of the report provides suggested corrective actions for the design, implementation, monitoring and evaluation of the project<br><br>Specifically this section of the report provides recommendations regarding actions to follow up or reinforce initial benefits from the project, proposals for future directions underlining main objectives of the project.<br><br>This section of the report also provides the lessons learnt in terms of best and worst practices in addressing issues relating to relevance, performance and success. |

## 2. Project Description and Development Context

The EESL project is a Global Environment Facility (GEF) funded Medium-Sized Project (MSP), with GEF support of US$ 965,000 (not including PPG funding of US$ 35,000), and originally proposed co-financing of US$ 1,323,615 for a total budget of US$ 2,288,615. The project is executed under the United Nations Development Programme's (UNDP) National Implementation (NIM) modality, with National Energy Research Centre (NERC), Jordan as the national Implementing Partner. The four components of the project, their projected outcomes and the corresponding outputs are given in **Table 2.1** below.

**Table 2.1: Components of the Project and the Outcomes and the Outputs**

| Component | Outcome | Output |
|---|---|---|
| **Component 1:** Capacity enhancement in Government and energy agency units for appliance EE policy development, implementation and market surveillance | **Outcome 1:** Enhanced capacities in Government and energy agency units for appliance EE policy development, implementation and market surveillance | **Output 1.1**: Political and policy decision makers' improved awareness of appliance EE option<br>**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<br>**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<br>**Output 1.4**: Increased capacity of the National Energy Research Center and PMU in appliance EE support programme development, implementation and monitoring strategies<br>**Output 1.5:** Enhanced data collection on appliance sales and stock and a structured monitoring system |
| **Component 2:** Structuring of verification & enforcement of appliance EE labels and standards | **Outcome 2:** Structured verification & enforcement of appliance EE labels and standards. | **Output 2.1**: Enhanced knowledge of state inspectors to check the compliance of shops and of appliance energy efficiency declarations<br>**Output 2.2:** Verification and enforcement plan for retailers developed, tested in a pilot project and implemented<br>**Output 2.3:** Verification and enforcement plan and facilities for product testing developed and implemented in a pilot project |
| **Component 3:** Consumers' and retailers' awareness-raising and improved marketing of appliance EE standards and labels | **Outcome 3:** Consumers' and retailers' awareness raised and improved marketing of appliance EE standards and labels. | **Output 3.1:** Enhanced consumer awareness of appliance energy efficiency characteristics, standards and labels and the costs and benefits of more efficient products<br>**Output 3.2:** Enhanced awareness and knowledge of retailers' management and retail staff on appliance energy efficiency issues and sales rationales |
| **Component 4:** Improvement of | **Outcome 4:** Increased capacity of | **Output 4.1:** Enhanced capacities of manufacturers in S&L regulations and |

| | | |
|---|---|---|
| manufacturers' capacity to produce and market EE appliances | manufacturers to produce and market energy efficient appliances. | related business opportunities<br>**Output 4.2:** Enhanced abilities of manufacturers in the development of more efficient appliances<br>**Output 4.3:** Manufacturers' participation in an end-user awareness campaign about S&L |

The most direct impact of the project as it relates to GEF objectives is the reduction in GHG emissions.The project was to lead to direct GHG emission reduction[5] of 183,000 tons of CO2. Apart from this, the project was to lead to direct GHG emission reduction post project implementation of 230 thousand tons of CO2. An additional GHG reduction of 2,859 thousand tons of CO2 through to 2030 was projected to be achieved due to further market transformation.

Apart from the specific components of the project given in **Table 2.1**, there was a provision to provide project management and M&E support. This technical assistance was to focus on strengthening the NERC's ability to establish an EE Standards and Labeling system for household appliances. At some places in the project document and in the terms of reference for this 'Terminal Evaluation' has been considered as a separate outcome (**Outcome 5**). However, considering that project management is not one of the components of the project design, it has not been considered as a separate component to be evaluated. However M&E has been considered as one of the evaluated parameters.

The outputs given in **Table 2.1** above were to be achieved by performing different outcome-specific set of activities. The activities were updated subsequent to the formulation of the project document, due to the need to adapt due to changed situation. **Annex 5** provides a comparison of the activities originally planned with the revised activities. More details about the project in terms of its duration, context and objectives are provided in the following paragraphs of this chapter.

## 2.1. Project start and duration

The project implementation start date, in the form of the project Inception Workshop, was 3 October 2010.The anticipated duration of the EESL project was 3 years, but it was subsequently granted a one-year extension to bring the closing of the project to 1 June 2014. Following the MTE, a further no-cost extension until 31 December 2014 was provided to maximize the impacts of the project. The dates for key milestones for the project are shown in **Table 2.2**.

[5] Direct GHG emission reductions during the project have been considered as those which will happen due to purchase of energy efficient appliances by the households during the tenure of the project. Direct GHG emission reduction post project has been considered as those which will happen during the lifetime (after the project is over) of the energy efficient appliances purchased by the households during the project.

| Table 2.2: Timing of Key Project Milestones | | |
|---|---|---|
| **Milestone** | **Expected Date** | **Actual date** |
| CEO endorsement/approval | | 29 April 2010 |
| Signing of Project Document | | 28 July 2010 |
| Implementation start | | 3 October 2010 |
| Mid-term evaluation | January 2012 | 27 September 2013 |
| Project completion | September 2013 | 31 December 2014 |
| Terminal evaluation completion | | 31 December 2014 |
| Project closing | | 31 December 2014 |

## 2.2. Problems that the project sought to address

The Hashemite Kingdom of Jordan is experiencing a high population growth rate of 2.2% per year. More than 80% of its population (6.4 million in the year 2012) lives in urban centers. 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 primary energy in Jordan increased at an average annual rate of 8.1% between 2000 and 2011. Final electricity consumption increased at an average annual rate of 6.0% between 2008 and 2012. While per capita primary energy consumption did not change significantly between 2008 and 2012, the per capita consumption of electricity increased steadily (from 1,967 kWh/year in 2008 to 2,230 kWh/year in 2012) at an average increase of 3.2% per annum.

In 2012, the generation, transmission and distribution of electricity constituted 29.6% of Jordan's total primary energy consumption. The household sector in Jordan accounted for 43% of the total electricity consumption in the country (in 2012) and this is expected to increase with the growth of the population, economic growth and the number of households using electrical appliances. In order to address the challenge of continuing to meet the ever increasing demand for electricity, the Jordanian Cabinet first approved a National Energy Efficiency Strategy in 2004, which proposed measures to reduce the burden of imported oil on the Jordanian economy. The Energy Strategy 2007 has set a target of achieving economy-wide EE gains of 20% relative to the 2007 baseline by 2020, while also mentioning that this target is vital to achieve a penetration of 10% RE by the year 2020. The Jordan EE Road Map 2010 explicitly mentions establishment of policy and regulatory frameworks for labelling of machinery, equipment and appliances to facilitate customer choice based on EE. This project responds to the EE Strategy and Road Map by proposing the introduction of technical norms that will set MEPS and energy labels for the energy efficiency of imported and locally manufactured electrical appliances in the household segment.

## 2.3. Immediate and development objectives of the project

EESL are highly cost-effective means to assist countries to reduce energy demand and GHG emissions while stimulating economic growth. 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 introduction of an energy labelling system and a MEPS scheme 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 of Jordan, namely:

- 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;
- To improve the nation's standard of living;
- To achieve an equilibrium between imports and exports;
- To reduce production costs and improve the competitiveness of local industries and other sectors; and
- To reduce investments in the equipment used for the production, conversion, transport and distribution of energy.

The goal of the EESL project is to reduce electricity-related $CO_2$ emissions in Jordan by supporting a market transformation towards EE in new appliances through the introduction of MEPS. The main objective of the project is to remove the barriers to rapid and widespread uptake of EE equipment and appliances in the residential sector.

## 2.4. Baseline Indicators Established

The most direct impact of the project as it relates to GEF objectives is reduction in $CO_2$ emissions. The monitoring of the impacts of the project was to be done by the Project Management Unit (PMU) on an annual basis. Indicators which were to be used to measure the impact of the project activities are given in **Table 2.3**:

**Table 2.3: Impacts of the Project and Monitored Parameters**

| Impact to be Monitored | Indicators | Verification Means |
|---|---|---|
| $CO_2$ emissions reduction | Reduction in energy consumption in the household sector | • Survey of power utilities<br>• Survey of Jordan's Department of Statistics<br>• Electricity bills analysis |
| Increased share of households that use energy efficient appliances | Number of households that use EE appliances | • Survey of Jordan's Department of Statistics<br>• Survey of enforcement agencies<br>• Project database<br>• Retail sales data |
| 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 | • Project database<br>• Statistics of the Jordan Chamber of Commerce<br>• Statistics of Jordan's Ministry of Industry |

Apart from monitoring of the impacts of the project at an aggregate level, there was a provision to individually monitor the impacts of different outcomes of the project by using the indicators as given in **Table 2.4**. Also given in the table is the baseline situation, the target of the project and the sources of verification as specified in the Project Document.

| Table 2.4: Impacts of Components of Project, Targets and Means of Verification | | | | |
|---|---|---|---|---|
| | **Indicators** | **Baseline** | **Targets End of Project** | **Source of verification** |
| **Project Objective:** Reduce GHG emissions by supporting a market transformation towards energy efficient new appliances in Jordan. | • Sales of energy-efficient appliances increase for refrigerators / freezers, washing machines and air conditioners<br>• A two classes (EU) improvement in average refrigerator sales is observed. | • Number of energy efficient appliances (refrigerators / freezers, washing machines and air conditioners) sold per year in Jordan<br>• Current emissions of CO2 in the domestic sector. | • Increase market share of energy efficient appliances in Jordan by30%<br>• Significant amount of CO2 emissions are avoided per year due to the market transformation of energy efficient appliances in Jordan.<br>• Reduction of GHG emissions by 183,000 tons of CO2 for the improved appliances put on the market during the three years project duration. | • Project final report.<br>• Midterm and final evaluation reports.<br>• Appliance sales impact monitoring report.<br>• Laboratory testing for refrigerators and freezers. |
| **Outcome 1:** Enhanced capacities in Government and energy agency units for appliance EE policy development, implementation and market surveillance. | • National appliance energy efficiency program and impact monitoring system developed and approved by the Government. | • 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. |
| **Outcome 2:** Structured verification & enforcement of appliance EE standards and labels. | • Verification and enforcement procedures are developed, pilot tested are implemented for retailers and product compliance checking, including yearly shop visits for major retailers and spot-checking for other outlets. | • No verification and enforcement procedures in place. | • Verification and enforcement procedures in place and functional. | • Project implementation reports.<br>• Retailer compliance pilot checking and product compliance pilot checking reports from the PMU. |
| **Outcome 3:** Increased consumers' and retailers' awareness and improved marketing of appliance EE standards and labels. | • 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. | • Current number of retailers and customers who have understood the trade-off between high purchase cost and lower running cost. | • At least 50% of consumers and 80% of retailers. | • First year and final surveys of consumer and retailer understanding and perceptions of EE appliance.<br>• Project implementation reports. |
| **Outcome 4:** Increased capacity of manufacturers to produce and market EE appliances. | • Percentage of local manufacturers have developed, produced and marketed more efficient appliances. | • Current number of manufacturers producing and marketing EE appliances. | • At least 50% of local manufacturers. | • Project implementation reports. |

The baseline situation was established based on baseline analysis conducted during the preparation of Jordan National Energy Efficiency Strategy. The baseline situation for each of the selected products as per the project document has been summarized in **Table 2.5**. Some statistical information used for the projection was based on a survey conducted in 2004 in Jordanian households. This data was updated with the information available regarding market growth rates.

**Table 2.5: Baseline Situation Regarding EE parameters of Household Appliances**

| Appliance | Market Situation | Energy Consumption |
|---|---|---|
| Air Conditioners | • Information concerning air conditioner sales in previous years (2000-2004) suggests a very low sales level.<br>• 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, leading to 3% annual growth in the demand until the market reaches a saturation point estimated at 25%. | • In the year 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.<br>• Only 5% of the total sales are predicted to be second-hand products.<br>• The baseline projection assumes a 1% natural efficiency gain per year without this project.<br>• 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.<br>• Considering the household growth rate of 4% and the fact that 6% of the 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.<br>• The baseline projection assumes a 2% natural efficiency gain per year without the project.<br>• An average product life of 15 years is used in the projections. |
| Freezers | • Jordan's households represent a smaller market for freezers<br>• 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.<br>• Eighty percent of the sales, in 2012, will be new products and 20% will be second-hand.<br>• 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. | • These appliances are important and non-negligible energy-consuming devices with a unitary energy consumption estimated at 355 kWh.<br>• The baseline projection assumes a 2% natural efficiency gain per year without the project.<br>• 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.<br>• Total sales volume for washing machines to Jordan's households is | • Annual unitary energy consumption estimated at 218 kWh<br>• The baseline projection assumes a 2% natural efficiency gain per year without the project.<br>• An average product life of 15 years is |

| | | |
|---|---|---|
| | estimated at 80,726 units per year<br>• 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,<br>• An average penetration factor of 95.1% should remain constant over the project and post-project period. | considered in the projections |
| *Source: Compiled from Project Document* | | |

As is evident from the above table and as was also pointed out during mid-term review there are number of problems with the baseline establishment, which includes use of 2004-2005 data when the energy efficiency of appliances was lower compared to those in the project start year; replacement levels and new purchases of different types of appliances were assumed and were not based on any market information. The information in Table 2.5 is also inconsistent at some places. Further at the time of correction in the project design during its implementation phase, the results framework was the outputs and activities of the project were updated without providing any baselines and indicators for measuring performance.

A detailed home appliances market study was conducted during the preparatory phase of the project. The market study has estimated the baseline energy consumption given in **Table 2.6.** Based on consumption data obtained from distribution companies, electricity consumption for residential sector in the year 2005 was estimated to be 2525 GWh, which is 28% of the total electricity consumption in Jordan in that year. Based on the estimated population of appliances the energy consumption by the appliances in the year 2005 was determined to be around 586 GWh/year, which was estimated to be 23% of the total residential sector consumption. The project document has assumed that EESL program would lead to 20% energy savings in electricity consumption over the baseline figures leading to annual electricity savings of around 116 GWh. Like the information given in Table 2.5 this information also has the drawback of being old.

**Table 2.6 : Annual Electricity Consumption for 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** |

*Source: Project Document*

## 2.6. Main stakeholders

The EESL project has been implemented using a multi-stakeholder approach. The national stakeholders that were identified during the development of the project, and

their roles and functions, are summarized in **Table 2.7**. The cohort of stakeholders was modified during inception workshop and also once the implementation began.

**Table 2.7: Stakeholders of the project and their roles and functions**

| Stakeholder | Description | Roles and functions |
|---|---|---|
| National Energy Research Centre (NERC) | It is a directive of MEMR that NERC should take the lead role in driving the Government's EE Standards and Labelling system for household appliances to implement the Government's Master Energy Strategy 2007. NERC coordinates activities with other Government institutions and private sector entities involved in the project. | NERC is the implementing agency for the project |
| Jordan Standards and Metrology Organization (JSMO) | JSMO plays a proactive role in enhancing the competitiveness of Jordanian products in the national, regional and international markets. To achieve this, JSMO 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. | In this project, JSMO is responsible for adopting EU standards and labels, and carrying out conformity tests and market surveillance for EE appliances. JSMO also plays a key role in establishing the specifications for laboratory testing equipment and their commissioning. |
| Ministry of Energy and Mineral Resources (MEMR) | MEMR is responsible for defining Government policies on energy efficiency, as well as proposing a legislative framework for implementing EE regulations. | |
| Ministry of Finance (MoF) | MoF is involved in study and analysis of the fiscal, monetary and economic conditions as well as the evaluation of policies and tax procedures. | MoF is 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 Trade and Industry (MoTI) | MoTI 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. MoTI'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. | MoTI was responsible for negotiating and concluding the Agreement on Conformity Assessment and Acceptance (ACAA) of industrial products (i.e. EE products) with the EU as part of the EU-Jordan Twinning Project. |
| Electricity Regulatory Commission | ERC has the responsibility for monitoring and regulating the power sector. One of the tasks performed by ERC is to ensure | ERC is committed to participate in raising consumer awareness about energy saving. Recommendations to save electricity were |

| | | |
|---|---|---|
| (ERC) | 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 electricity is being provided to customers. | to be made available through the ERC's website to inform consumers. ERC was to therefore benefit from this project through its participation in project information dissemination, especially the awareness campaigns on the benefits of EE standards and labels. |
| 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. |
| Jordanian Renewable Energy Society (JRES) | The vision of the Jordanian Renewable Energy Society is to stimulate the exploitation of renewable energy resources in Jordan and use that energy efficiently and feasibly. | As JRES is involved in efficient utilisation of energy at the country level, it is one of the important stakeholders in the project |
| 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 reducing their annual electricity bills by operating energy efficient household appliances. | Consumer associations – and notably the leading association, the Jordan Association of Consumers – was involved with the design and delivery of public awareness campaigns related to the promotion of the energy labelling system and MEPS for household appliances. |
| Retailers and distributors of EE appliances | Retailers and distributors acts as an important link between the manufacturer and the consumer. They influence the buying decision of the consumers to a great extent. | A detailed investigation of the household electrical appliances industry in Jordan and discussions with retailers and distributors were necessary to develop and implement a strategy that will help to overcome barriers and to strengthen markets for energy efficient appliances. Through a comprehensive marketing and dissemination campaign, the project has involved retailers and distributors in the regulatory changes |
| Local manufacturers | Local manufacturers of appliances are a special stakeholder of the EESL project. Compared to the importers of appliances, local manufacturers currently do not have the capacity to manufacture electrical appliances that would meet the MEPS. | The EESL project was to support local manufacturers by investigating policy options that would first establish a transition period for allowing local manufacturers to adjust their production facilities to meet MEPS, as well as defining alternative policy instruments to support this transition. |
| Royal Scientific Society (RSS) | RSS is the umbrella institution for NERC. | Under the project RSS was to house the third-party laboratory for testing the performance of washing machines that will be funded by the EESL project. |
| Ministry of Environment (MoE) | MoE hosts the Focal Point for climate change and the UNFCCC. | MoE is a member of the PAC |
| Jordanian | The JES is an environmental NGO that is | JES was to be solicited to take an active |

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|---|---|---|
| Environment Society (JES) | very active in carrying out awareness campaigns for the protection and conservation of the environment. | part in public awareness campaign part of the project. |
| Jordan Chamber of Commerce (JCC) | The key objectives of the JCC are to participate with public bodies in drawing up policies related to trade and service sectors including strategies and plans needed to be implemented, and promoting development and promotion of trade and service sectors including small and medium-sized enterprises | The project was to work closely with the JCC to reach and support local manufacturing of electrical appliances to face the challenging task of adjusting to MEPS and labels. |
| Jordan Chamber of Industry (JCI) | The JCI is an umbrella organization that represents the manufacturing enterprises in Jordan. The mandate of JCI is to support the interests of the Jordanian manufacturing industry, including supporting its members to remain competitive and productive in a more liberalized global trading system. | The EESL project was to interact with the JCI to reach local manufacturing enterprises of electrical appliances, both in terms of awareness raising and developing policy options for restructuring of local manufacturing to adjust to more stringent EE standards. |

## 2.6. Expected Results

The expected outcomes and results for the EESL project are as shown in the logical framework given in **Table 2.4**. The logical framework shows the objectively verifiable targets and indicators against which performance was to be measured and progress reported. It is pointed out that the results framework shown in **Table 2.4** is limited to the level of outcomes only and no details are given about the outputs. The outputs and activities were reformulated in 2011. The updated outputs form the basis for performance analysis. The main strategic approach of the project was to:

- Provide relevant Government ministries with technical assistance and support for the introduction of the first set of appliance standard and labeling regulations as well as support for the design and implementation of support programs;
- Provide tools and methods to the ministries responsible for enforcement so that 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; and
- Stimulate the introduction of cost-effective, energy efficient technology.

Through execution of activities under the four different components, four different (each specific to a component) key outcomes and related results as detailed out in **Table 2.1** were expected.

# 3. Findings

This section of the report provides an assessment regarding the Project Design / Formulation, Project Implementation, and Project Results. The findings are based on review of the document and discussions with the officials of the PMU and the stakeholders. Based on the findings as discussed on this section of the report, the suggested corrective actions for the design, implementation, monitoring and evaluation of the project, recommendations regarding actions to follow up or reinforce initial benefits from the project, proposals for future directions underlining main objectives of the project and the lessons learnt are provided in section 4 of the report.

## 3.1. Project Design / Formulation

The EESL project at Jordan was designed to address country-specific barriers for the rapid and widespread uptake of EE equipment and appliances in the residential sector. Details of the project design have been provided in Table **2.1** in the earlier section of this report. The outputs of the project were to be achieved by performing different tasks as described in **Annex 5**. The outcomes and the impacts of the project were to be monitored and determined by carrying out the analysis as per the Logical Framework given in **Table 2.3 and 2.4**. Post end of the project, an analysis of the project design and the logical framework has been provided in the subsequent paragraphs with the aim of examining its strengths and limitations.

***The key questions for evaluation regarding project formulation / design are given below (Please see table 1.1)***

- What have been the strengths and weaknesses of the project design and the logical framework?
- Did the project design meet GEF standards?
- Was the project strategy appropriate?
- Were the assumptions made at the time of project design reasonable?
- Did the project design take into consideration the risks to the project?
- Did the project take into account the lessons from other relevant projects?
- Did the project design account for adequate participation of the stakeholders?
- Were the replication needs of the project taken care at the design stake of the project?

The project was in line with the priorities of the country as well as the climate change mitigation priorities of GEF. The project design meets the standards of GEF and the project strategy was appropriate for the context in which the project was to operate.

### 3.1.1. Analysis of LFA/Results Framework

The problem statement was well articulated and based on baseline studies. However, the baseline data were only indicative due to lack of solid statistics. The design and conceptualization of the project failed to identify Phase I of the Jordan – EU Twinning Project that was implemented between 2005 and 2007, and which led to a Phase II of the Twinning Project that had several overlaps with the EESL project.

Stakeholder's participation has been one of the strengths of the project design. The project concept originated from NERC, and the project development phase included inputs from relevant national institutions and organizations. Relevant regional institutions were also included at the project formulation in the implementation phase of the project.

The overall project design meets the requirements of GEF in terms of identification of risks, monitoring and evaluation requirements, establishment of the problem to be addressed, objective of the projects etc. The project design has also analyzed the baseline situation and established the indicators to monitor the progress and achievement of the project over its implementation. However, there are some issues with the project design which are discussed in the following paragraphs.

In the log-frame, impacts of the project to be monitored and the corresponding indicators have been broadly defined. For example, over a period of time there can be significant variation in the electricity consumption due to a variety of reasons. Thus, reduction in electricity consumption as determined by the electricity bill does not seem to be an appropriate indicator to monitor reduction in the emissions of GHG due to the project. Further, the suggested means of verification for the indicators doesn't seem to be appropriate. For e.g., it is not clear how analysis of electricity bills or a survey would be carried out to segregate the impacts on the value of indicators due to the project or the variation in the value of the indictors due to other reasons.

In the log frame of the project, use of qualitative aspects has been used. For example, one of the end objectives is set as 'significant reduction in the emissions of GHG'. Due to use of qualitative terms it is difficult to validate the outcome of the project.

The background analysis, baseline analysis, and incremental analysis at the project design are very generic and qualitative; not quantitative in nature. The baseline information given in the 'Project Document' doesn't seem to be the result of any specific quantitative analysis. The derivation of projected GHG emission reductions has come from the application of arbitrary annual growth rate projections of household appliances and the share of energy efficient appliances (please see Table 2.5) vis a vis their inefficient counter parts.

Early Jordan EESL project activities were initiated in a very timely fashion, with a pivotal Market Assessment study findings available. This study showed that about 80% of the existing annual sales of household appliances were imported. However, there is no evidence that the knowledge of the dominance of the imported appliances was used to guide any subsequent EESL project specific activity. The activities of the EESL project focused more on the domestic manufacturers of appliances.

Direct GHG emission reduction has been considered to be those which would happen during the project implementation due to purchase of EE appliances by the households. Similarly direct GHG emission reduction post implementation has been considered as and end result of what would happen after the project has been implemented (due to EE appliances purchased by the households during project implementation). Against this GEF definition of direct GHG emission reduction (Manual for Calculating GHG

Benefits of GEF Projects) by the project are those which happen due to specific investments made (or leveraged) as a part of the project.

The indicators used and means of verification specified were not very convenient and practical to use for carrying out the actual M&E on a regular basis. For example, to verify the progress towards achievement of the project objective of reducing the GHG emissions, market share of EE appliances as an indicator was to be used, wherein it has been assumed that all the sales of appliances in the baseline case are non EE. Further it has not been specified what level of efficiency of the appliance would qualify it to be considered as an EE appliance.

Some of the weaknesses in the project design could be attributed to the need to change the outputs, while not changing the outcomes during the course of the project. These changes were carried out to account for changed circumstances which could not be captured at the design, conceptualization and inception stages of the project

### 3.1.2. Assumptions and Risks

The Project Document provides an analysis of risks that may confront implementation of the project and achievement of the objectives. The categories of risks that were identified at the project design are:

- The socioeconomic stability risk related to region's broad stability.
- Stakeholder's Commitment Risk

Adequate provisions were made in the project design to take care of the risks in the eventuality to the risks becoming true. The provision was made in the design of the project to take care of the following specific risks:

- **Government weakening its commitment**: This was taken care of at the project strategy level wherein the efforts were dedicated towards removal of barriers.
- **Low technical capacity:** This risk was taken care 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 other concerned stakeholders.
- **Manufacturers' reluctance to participate in the implementation of efficiency labels and standards:** This risk was addressed by having an activity to assess the financial impacts on the manufacturers and take this aspect into account while developing the plans for enforcement of EE labels and MEPS.
- **Consumers' lack of awareness:** This risk was taken care of by making adequate provision in the project design towards 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.

One of the specific risks which could not be identified at the design stage and due to which the project implementation suffered, is the lack of interest by the members of the PAC and PB to support the project.

### 3.1.3. Lessons from other relevant projects incorporated into the project design

There are 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 the households. Keeping in mind the lessons learnt from these projects, the following specific provisions were made in the project design; - :

- 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.
- Involvement of the private sector and consumer associations from the conceptual and design phase itself to ensure their participation in the project and to ensure their willingness to support the project.

### 3.1.4. Planned Stakeholder Participation

As has been mentioned before, one of the key strengths of the design of the EESL project at Jordan has been the planned participation of a wide range of stakeholders. Details of the stakeholders which were included at the design stage and their respective roles were provided in **Table 2.7** in the earlier in this report.

Wider stakeholder participation in the project design was based on the lessons learnt from previous experiences of GEF projects in the same focal area which show 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.

Thus, at the design stage it was ensured that in this project, the work on Standards and Labeling development and implementation should be as transparent as possible. At the design stage, provision was made to actively involve the Government, industry (including importers and manufacturers), retailers, NGOs, consumer representatives, technical bodies (including test laboratories), certification and accreditation bodies, utilities, etc.

### 3.1.5. Replication Approach

At the design state the key requirements for replicability, which was identified, is the need to overcome the reluctance of market players (consumers and industry) to produce, sell or consume energy efficient products due to their initial higher costs.

In the project design this was addressed through provision of comprehensive consumer awareness and information dissemination campaigns. Provision was also made to provide assistance to local manufacturers in the form of assessments of the technological upgrading and energy efficiency improvement potential and marketing support.

However the project design doesn't have an outreach and information dissemination activity. Provision of such activities would have facilitated replication of the project in other countries / regions. 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. Information dissemination and outreach to the stakeholders specific to these products would have been of help for the replication in these sectors.

### 3.1.6. UNDP comparative advantage

The EESL Jordan project fits with the UN Development Assistance Framework (UNDAF), for Jordan (UNDAF Outcome 3: Sustainable management of natural resources and environment). This is also in line with the national priority of 'Infrastructure up gradation'. The project corresponds to UNDP country program outcome 'Environmental policies aligned to global conventions and national implementation capacities enhanced'. UNDP played an instrumental role in the preparation of the CCA and the UNDAF in Jordan. It is the largest contributor to UNDAF and is committed to joint programming with other UN organisations.

UNDP Jordan has done considerable work in related area, which includes contribution to the formulation of national frameworks, strengthening institutional capacities and implementation of community based initiatives. Some of the past results include preparation of the National Biodiversity Strategy and Action Plan in 2003 and the National Strategy and Action Plan to Combat Desertification in 2006. The Small Grants Programme of the Global Environmental Facility (GEF) contributed to conservation of the environment by developing income-generating projects in local communities. In case of this project, 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.

### 3.1.7. Linkages between project and other interventions within the sector

The EESL project was expected to develop MEPS and labels for the four electrical appliances in Jordan. JSMO and MoIT had meanwhile entered into a bilateral agreement with the EU for the adoption of EU standards and labels. This was done in the context of a Jordan-EU Twinning project (Phase II that started in 2011 and completed in May 2013). This made the results of Outcome 1 of the EESL project redundant, as well as the results of its other outcomes overlap with those of the Twinning Project.

During implementation phase, changes were made in the design of EESL project to align it with EU Twinning Project. While the outcomes of the EESL project remained unchanged, its outputs and results were revised to be aligned with the new national circumstances. These changes in the project design were carried out at the end of 2011 and beginning of 2012. First phase of the Twinning Project was carried out between 2005 and 2007. This project and its outcomes were not captured in the Project Design of the EESL project.

Taking into account the forthcoming Twinning Project at the IW of the EESL project, it might have avoided delays by creating more synergies between the Twinning Project and the EESL project at an earlier time. This situation revealed: (1) the need to reinforce coordination within and between institutions and donors/development partners; and (2) while an institution may be represented on a committee (e.g. JSMO on PAC), high-level representation that can deal with both technical and administrative issues is necessary for adequate decision-making to take place right at the design stage of the project.

#### 3.1.8. Management arrangements

The project design has provided for a structured management arrangement. UNDP had the responsibility as the budget holder under the NEX execution modality. NERC had the role of EA. The Ministry of Planning and International Cooperation had the role of government and coordinating authority and was responsible for EA's performance. In line with the standard practice in case of GEF projects, provisions were made in the project design for Mid-term review and a terminal evaluation. Provisions were also made for periodic financial audit. The project design had a provision for establishing a Project Board (PB) to provide management decisions. Provisions were made to establish a Project Advisory Committee (PAC) to oversee the implementation of the project.

## 3.2. Project Implementation

This sub-section of the report describes the appropriateness and functioning of project management and administration, work planning, monitoring and evaluation.

The project has been implemented by NERC as the national implementing agency. Oversight and monitoring of the project was done by UNDP as the executing agency. Although there were initial delays, the planned activities were completed during the extensions granted to the project. There were a couple of issues related to implementation of the project which have been highlighted in the following paragraphs.

***The key questions for evaluation regarding the project implementation are given below (Please see table 1.1)***

- Were the required changes to the project design and project outputs during implementation made?
- To what extent partnership with relevant stakeholders involved in the country/region was made?
- Was the feedback from M&E taken into account and the required changes made during the course of project implementation?
- To what extent the planned co-financing was realized?
- What is the variance between planned and actual expenditures?
- Was the quality of execution of the Executing Agency / Implementing Partner adequate?
- Was the quality of support provided by the GEF Partner Agency (UNDP) appropriate?
- How well did the Project Team and partners undertake and fulfil GEF reporting requirements?

### 3.2.1. Adaptive Management

The project was run in a flexible and adaptive manner. The outputs of the EESL project were reformulated late in 2011 when it became known to the PMU and project stakeholders that JSMO would adopt the EE regulations and standards of the EU under

the EU 'Twinning Project'. Project implementation has responded to changing conditions and risks, and to take advantage of opportunities for partnerships and actions that support the overall project objective. The main example of adaptive management and flexibility is the reformulation of the project results (outputs and activities) to accommodate the objectives of the Government of Jordan regarding the forthcoming ACAA.

### 3.2.2. Partnership Arrangements

The project implementation approach represents an important partnership between key government institutions. Beyond this, the project has been not been able to successfully create private sector partnerships. The project has been able to develop key partnerships with USAID and the EU-Jordan Twinning project, which has benefited the project outcomes. For example, while the EESL project has funded establishment of testing facilities for washing machines, USAID and EU were roped in to fund the test laboratory for air conditioners and refrigerators respectively.

### 3.2.3. Feedback from M&E Activities

Mid-term review of the project provided a good feed back to the management regarding the progress of the project along with recommendations to facilitate achievement of the end objectives of the project. Management responded positively to the recommendations of the MTR report. Some of the key changes which were carried out based on the recommendations in the MTR report are as follows:

- GHG emission calculations were modified to include more realistic assumptions for all appliances.
- Companion document was produced to explain the reasoning behind each individual assumption in the GHG emission calculations.
- Integration of M&E with the execution of the awareness campaign to assess increased awareness levels.
- No-cost extension of the project was obtained from UNDP-GEF for the purpose of the labs and the awareness campaign.

### 3.2.4. Project Finance

The project initially suffered from low budget utilization (mainly due to delay in project start and the needs for midway corrections in the design), at the end of the project overall disbursements are on target (about 98% at the time of evaluation).Project management cost at the end of the project was within the norms of 10**%. Table 3.1** gives as on end 2014 status of the sources of funds and utilisation of funds.

| Table: 3.1 Planned and Actual Funds Utilisation and Sources of Funds | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Co-financing** | **UNDP own financing** | | **Government** | | **NGO** | | **GEF** | | **Total** | |
| | **Plan** | **Exp. Till Dec 2014** | **Plan** | **Exp. Till Dec 2014** | **Plan** | **Exp. Till Dec 2014** | **Plan** | **Exp. Till Dec 2014** | **Plan** | **Exp. Till Dec 2014** |
| Grants | 100000 | 99972 | 100000 | 95236 | | | 965000 | 943911 | 1165000 | 1139119 |
| In-kind support | 0 | 0 | 423615 | 465976 | 700000 | 805000 | 0 | 0 | 1123615 | 1270976 |
| Other | | | | | | | | | | |
| **Totals** | **100000** | **99972** | **523615** | **561212** | **700000** | **805000** | **965000** | **943911** | **2288615** | **2410095** |
| *Source: Prepared based on data provided by PMU*<br>*All figures are in US$* | | | | | | | | | | |

### 3.2.5. Monitoring and Evaluation

The main M&E activities planned at the design stage meet GEF and UNDP requirements and standard practices. However, at the design stage the indicators used and means of verification specified were not very convenient and practical to use for carrying out the actual M&E on a regular basis. For example, to verify the progress towards achievement of the project objective of reducing the GHG emissions, market share of EE appliances as an indicator was to be used, wherein it has been assumed that all the sales of appliances in the baseline case are non EE. Further, it has not been specified what level of efficiency of the appliance would qualify it to be considered as an EE appliance. Due to these reasons the **M&E design at entry** has been considered as **marginally satisfactory**.

Only some of the Quarterly progress reports, annual progress reports and other monitoring documents could be made available during the review. There are gaps both in terms of quality as well periodicity of monitoring reports (quarterly and annual reports). Mid-Term Evaluation of the project was carried out as per the requirements of the provisions in the project design though there was some delay in doing so. The end term evaluation of the project is being carried out as per the requirements. Thus, **Overall, M&E at implementation** has been considered as **satisfactory.** This is considering that at the design stage, the use of indicators has been restricted to outcome level and there are no indicators and means of verification for outputs and activities in the results framework.

### 3.2.6. Execution, Coordination, and Operational Issues

The project has been implemented under National Execution (NEX) Modality with UNDP being the EA and NERC being the IA. Oversight and monitoring of the project by UNDP has been conducted as per the established practices. The management of the finances of the project has been in line with the UNDP quality standards. The project suffered initial delays. The delay was due to the need to align the project with the work plan of the EU Twinning project in Jordan. Second phase of EU Twinning project, implemented

from 2011 to 2013 was aimed at adoption of EU standards for appliances in Jordan. The changes in the activities of EESL project were made to align it with EU Twinning project. The changes were carried out at the end of 2011 and beginning of 2012, and the changes were validated by the PB in April 2012.

Financial monitoring and evaluation of the EESL project was to be carried out using the ATLAS tool of UNDP, which generates reports such as the CDR to gauge the level of delivery on all the outcomes of the project. Audited financial statements for the year 2013 were made available. Mid Term Evaluation report has been used to see the financial performance for the years 2010, 2011 and 2012. CDRs have been used for the year 2014.

UNDP was represented on the PAC and PB to ensure UNDP's overall accountability for the project results. However, PB has met only twice during the entire duration of the project. Prior to these two meetings, the PAC met at the time of inception meeting of the project. This has been one of the shortcomings of the project in terms of quality assurance.

UNDP has fulfilled its oversight and supervision responsibilities – except for the issue related to PAC and PB meetings. The project supervision has also benefited from the in-country presence of UNDP at the country level, and its dedicated Environment and Climate Change Unit. Thus, **the IA and EA supervision and execution has been rated as Satisfactory**.

### 3.3. Project Results

This sub-section of the report provides details of the achievement of the project towards its planned outcomes and outputs. Changes between the planned and actual results are described and explained. Factors that may have affected the achievements of the intended results have also been explained.

***The key questions for evaluation regarding project results are as given below (Please see table 1.1)***

- What are the overall achievement of different components of the project and the overall project at an aggregate level in terms of indicators in the log frame?
- Did the project support GEF strategic objective?
- Did the project adequately take into account Jordan's priorities and realities?
- What has been the effectiveness of the project in terms of achieving the GEF objective of GHG emission reductions?
- What has been the efficiency of the project in terms of the cost of GHG emission reductions?
- What has been the cost of project management?
- Did local and national government stakeholders support the project? Did they have an active role in the project decision-making?
- To what extent has stakeholder involvement and public awareness contributed to the progress towards achievement of project objectives?
- To what extent the results of this project will help in main-streaming of energy efficiency in Jordan?
- To what extent the project was successful in mainstreaming with other UNDP priorities, including poverty alleviation, improved governance, the prevention and recovery from natural disasters, gender?
- What is the likelihood that the outcomes of the project would sustain subsequent to the conclusion of the project:
  - Are there any social or political risks that may jeopardize sustainability of project outcomes?
  - Do the legal frameworks, policies, governance structures and processes pose risks that may jeopardize sustenance of project benefits?
  - What is the likelihood of financial and economic resources not being available once the GEF assistance ends?

- Environmental: Are there any environmental risks that may jeopardize sustenance of project outcomes?
- What are the impacts of the project in terms of contribution to sustainable development benefits, as well as global environmental benefits (direct and indirect emission reduction)?
- To what extent the project has achieved the impacts as compared to the design of the project?

### 3.3.1. Overall results

Although the project could not achieve its objective of reduction in direct emission of GHG (during and after the project implementation period), sustained long term indirect GHG emission reductions due to the project will be achieved after the project. This is due to creation of awareness and an enabling atmosphere (establishment of test labs, mandating of the EE labeling of appliances, development of standards etc.).

The project faced start-up delays. However, initial delays in implementation were to some extent covered up during later period of time. The project has especially benefited due to extension granted till December 2014. The situation at the time of end term review with regard to MEPS, S&L is as follows:

- Performance Standards for home appliances are in place.
- MEPS for the home appliances covered under the UNDP project are in place.
- EE labeling of the appliances is mandatory.
- Establishment of test labs for testing the EE performance of the appliances is currently underway.
- Verification and enforcement procedures have been established.

At an aggregate level this demonstrates achievement of objectives for Outcome 1 and Outcome 2 of the project. In terms of specific components the outcomes and outputs of the project as against the targets and objectives given in the log-frame (please see Table 2.4) are given below.

**Outcome 1:** The project has supported JSMO to develop an innovative web-based tool and database to harmonize its surveillance capacities. The project has achieved its objective of enhancing the capacity of JSMO to carry out market surveillance of EE appliances, especially fraudulent imports and locally manufactured products.

**Outcome 2:** The project developed the laboratory and equipment specifications for testing EE appliances. One of the implementation strengths of the project has been collaborative working with other donor agencies. Due to collaborative working it became possible to pool in the resources. RSS was able to rope in USAID to fund the laboratory equipment for air conditioners, EU for funding the testing facilities for refrigerators. While the testing facilities for washing machines were funded as a part of EESL project. The laboratory and the testing facilities have been /are being establishes at RSS. The capacity to carry out accredited tests of the minimum energy performance standards of EE appliances is an integral component of ensuring that electrical appliances meet the regulatory EE standards. Field training exercises with JSMO's market surveillance

personnel in conjunction with the EU Twinning Project on EE compliance checking has been carried out.

**Outcome 3**: Before the consumer awareness campaign, a survey was undertaken to understand the consumer's level of awareness and behavior patterns. This was to help to create a proper design of awareness creation campaign. The survey revealed that around 22% of the population understood the concept of EE appliances but only 2% were aware of a labelling scheme. A consumer survey post awareness creation campaign shows that the awareness level regarding the EE of appliances has increased to 80%. At the same time the awareness regarding EE labeling has increased to about 35%.

**Outcome 4**: Due to the costs and complexities involved in upgrading production lines the set targets against this outcome could not be achieved. Technical market assessments and an analysis of the manufacturing options has been carried out which will help the manufacturers to upgrade their production facilities. Also an economic impact analysis has been carried out which will allow manufacturers and suppliers to understand the long term market transformation process they will endure. Considering the difficulties that the manufacturers are facing they have been granted two years exemption from the compliance with the mandated MEPS.

The project has projected direct **GHG emission reductions** of 183 thousand tons of CO2 during its implementation and direct GHG emission reductions of 230 thousand tons post implementation[6] of the project. Apart from direct GHG emission reductions, indirect GHG emission reductions[7] of 2859 thousand tons were projected to be achieved up to the year 2030 due to further market transformation.

Direct GHG emission reductions (both during the project and after the project) have been considered to be those which will happen due to purchase of energy efficient appliances by the households during implementation phase of the project. Whereas the definition of direct GHG emission reductions as per GEF guidelines are those which happen due to investments made by GEF or leveraged by the project as a part of the project. Further it is important that as most of the achievements of the project could have been achieved only towards the end of the project, it is not likely that the project would have led to purchase of EE appliances by the households. However, this is just an accounting detail and the issue relating to classification of GHG emission reduction amongst direct and indirect reductions. The fact remains that the project was expected to lead to reduction in the emission of GHG and it has done so. However the question is regarding the extent of emission reductions.

The baseline considerations and the project considerations which were the basis for projects of GHG emission reductions have been discussed in Section 2.4 and Tables 2.5 and Table 2.6. As can be seen, projected GHG emission reductions were based on

[6] Not mentioned in the log-frame but is mentioned elsewhere in the project document

[7] Log-frame does mention significant reduction but has not mentioned any figure. However, figure of 2859 thousand tons of CO2 is mentioned elsewhere in the project document.

old data and a set of assumptions. During Mid Term Review of the project one of the recommendation by the evaluation team was re-calculation of indirect GHG emission reductions based on updated surveys of electrical appliances in consumer markets, assessment of the market evolution of EE appliances, annual sales volume of new appliances based on the grid emission factor of registered CDM projects in Jordan.

At the time of MTR the evaluation team reviewed the GHG emission reduction calculation methodology and cumulative indirect GHG emission reductions accruing over a 15-year (post-project) period, which were projected to be 2.64 Million Tons of CO2. MRT has also projected indirect GHG emission reduction of 22 thousand tons to CO2 in the year 2014. These projections were based on the assumptions about: the technology improvement factor; the emission factor; the percentages of imported and locally manufactured appliances; the baseline energy efficiency of imported and locally manufactured appliances; and the market size of different appliances as given in **Table 3.2**. For air-conditioners, additional assumptions were made regarding their use for heating and the relative usage rates during winter and summer. The grid emission factor was taken as 0.67 tons of tCO2 / MWh.

**Table 3.2: Assumptions for GHG Emission Reduction Calculations at MTR**

| | AC - Summer | AC - Winter | Washing Machine | Ref. | Freezers |
|---|---|---|---|---|---|
| Market Size (2012) – Numbers | 57671 | 57671 | 98267 | 93816 | 25747 |
| Annual Growth in Demand (%) | 3% | 3% | 3% | 3% | 3% |
| Average Life of Appliance (Yrs.) | 15 | 15 | 15 | 15 | 15 |
| Average Size of Appliance | 1.35 T | 1.35 T | 7Kg | 450 Lt. | 450 Lt. |
| EE Class of Appliance - Baseline (Imported) | D | D | B | B | B |
| EE Class of Appliance – Baseline (Domestic) | E | E | C | C | D |
| EE Class of Appliance - Project Case | A | A | A | A | A |
| Annual Tech Improvement (%). | 1% | 1% | 1% | 1% | 1% |
| Domestically Manufactured as a % of whole | 20% | 20% | 20% | 20% | 20% |
| Operation (hrs. / year) | 360** | 360** | | | |
| % of Owner Use | 100% | 30% | | | |
| Power Consumption (kWh) - (EE) | 1.48/Hr. | 1.31/Hr. | 445.4/Yr. | 358.7/Yr. | 306.5/Yr. |
| Power Consumption (kWh) – Imported (Baseline) | 1.82/Hr. | 1.58/Hr. | 492.8/Yr. | 526.2/Yr. | 417.4/Yr. |
| Power Consumption (kWh)– Domestic (Baseline) | 1.97/Hr. | 1.69/Hr. | 563.6/Yr. | 667.7/Yr. | 613.1/Yr. |
| *** Three months 4 hours a day operation each for winter and summer season* | | | | | |

The MTR has recommended that the global environmental benefits in terms of reduction in the emission of GHG be reviewed at the time of Terminal Evaluation based on the market situation and other parameters at that time. Computations of GHG emission reductions due to the project, has been reviewed. Following are the critical observations upon the review.

- Market conditions and situation has not changed significantly since last one and half year (MTR was carried out during August 2013). Thus, it is not necessary to make changes in the set of assumptions made at the time of MTR.

- As a result of the project, MEPS and EESL at Jordan has got mandated only towards the end of 2014. Thus, there won't be any indirect emission reductions during implementation of the project.
- Relaxation of two years has been provided to the manufacturers of appliances at Jordan to comply with the mandate regarding MEPS and EESL. This is to enable them upgrade their technical skills and manufacturing facilities.
- GHG emission reduction computations at the time of MTR have considered the natural technical improvements leading to improvement of 1% per annum in the EE of the appliances. However, while making the projections GEF causality factor has not been taken into account.
- GEF methodology for computation of indirect reductions in GHG emission[8] due to the project allows for computation for maximum ten years post implementation of the project. Whereas, during computations at the time of MTR, emission reduction has been computed for the projected life (15 years) of the appliance.

These factors, when taken into account would lower (than projected) the actual indirect GHG emission reduction due to the project. GEF causality factor is used to correct the 10-year potential of GHG emission reductions by the "baseline shift," i.e., that part of the potential that would have been tapped by the market without a GEF intervention. The GEF causality factor describes how much of the emission reduction can be attributed to the GEF intervention, and how much would have happened in the business-as-usual scenario in the long-term. In the case of ESSL project at Jordan, GEF causality factor at level 3[9] is considered to be appropriate. The value of causality factor corresponding to level 3 is 60%. Causality factor at level 3 seems to be most appropriate considering that at Jordan there are other strong factors leading to improvement in the EE of appliances, e.g., EU Twining project. In the past due to water shortage of water at Amman the household's preferred the washing machines which use lesser water and such washing machines were also more energy efficient.

Considering the above observations and a GEF casualty factor of 0.6, the i**ndirect GHG emission reductions** due to the project are estimated to be **730 thousand tons of CO2** up to the year 2024. There are no direct GHG emission reductions due to the project. This value is considerably less than the projected indirect GHG emission reductions at the time of Project Design and at the time of MTR. The difference in the value is not because of under performance of the project during its implementation phase but largely because of corrections done at the time of Terminal Evaluation, in the accounting method.

Considering the fact that there has been an overlap in terms of activities and objectives of EESL project with another program (EU Twinning Project) which was running at the same time, it is not possible to clearly say, what has been the contribution of EESL project towards achievement of the end results given above. Going by the records of the

[8] Manual for Calculating GHG Benefits for GEF Projects: Energy Efficiency and Renewable Energy Projects - 2008

[9] Level 3 is the situation where GEF contribution is substantial, but modest indirect emission reductions can be attributed to the baseline

activities placed for review (funds utilization statements, PAC and PB meetings, other documents) the contribution of the project towards achievement of the above results could not be clearly established. However, considering that collaborative working with other donor agencies is generally encouraged and further considering that at the end it is the result which is important, the **overall results of the project have been rated as satisfactory**.

### 3.3.2. Relevance

Relevance of the EESL project at Jordan is determined in the context of the support it provides to GEF strategic objectives and in the context of the considerations of Jordan's priorities. Demand side demand management plays a crucial role towards meeting the challenge of mismatch between power supply and demand and in the context of Jordan where one of the major end user is the household sector. Thus, the EESL project addresses are in line with Jordan's priorities and realities.

The project supports the goal of GEF in climate change mitigation, which is to support developing countries and economies in transition to go for low-carbon growth path. EESL project at Jordan was approved under the strategic priorities for GEF-4 (July 2006 – June 2010). The project is also aligned with the strategic priorities for GEF-5 (July 2010 – June 2014). This project aimed at EE at the household level is highly relevant. The project is also supporting the relevant GEF strategic objectives, and forms part of Jordan's contributions to the United Nations Framework Convention on Climate Change (UNFCCC) to stabilize GHG emissions below dangerous anthropogenic levels. Thus, the **relevance** of the programme is considered as **highly satisfactory.**

### 3.3.3. Effectiveness & Efficiency

The effectiveness of the project is determined in terms of it meeting the objective of GHG emission reduction while efficiency is determined in terms of the cost of emission reductions and the cost of project management. As explained before, the project could not achieve its objective of direct GHG emission reductions (either during project implementation or after project implementation). However, sustained long term indirect GHG emission reductions due to the project will be achieved after the project.

Long term indirect GHG emission reductions of about 730 thousand tons are projected to be achieved during 10 years after the project implementation. This is due to creation of awareness and an enabling atmosphere (establishment of test labs, mandating of the EE labeling of appliances, mandating of MEPS, development of standards etc.). Projected reductions in the emission of GHG at Terminal Evaluation are considerably lesser than the projected GHG emission reductions at the time of Project Design and at the time of MTR. The difference in the value is not because of under performance of the project during its implementation phase but because of the corrections done in the accounting method during the TE. Thus, the **effectiveness** of the project has been rated as **satisfactory**. The project initially suffered from low budget utilization (mainly due to delay in project start and the needs for midway corrections in the design),but at the end of the project overall disbursements are on target (about 98% at the time of evaluation). Project management cost at the end of the project is within the norms of 10**%**.

Considering that the project will lead to indirect GHG emission reductions of 730 thousand tons over a period of 10 years post project implementation the cost effectiveness of the project is USD 1.32 per ton of GHG. Thus, ***project efficiency*** is rated as ***satisfactory***.

### 3.3.4. Country ownership

In terms of country ownership the project was supported by the local government national stakeholders both during its inception stage and its implementation stage. Stakeholders were actively involved in project management and Monitoring and evaluation of the project.

The concept of the project was developed by NERC. One of the other factors which contributed towards country ownership is its relevance to the ongoing efforts at the national level to address mismatch between supply and demand of electricity. The project supports Renewable Energy and Energy Efficiency Law 2012 and the Energy Efficiency By-law 2012 of the country. The project staffs were housed at NERC, which is the implementing institution of the EESL project and PB and PAC were both chaired by the Director of NERC.

However, one of the issues the project faced during its implementation is the clear lack of interest on the members to attend the PAC and PB meetings. PAC could meet only twice during the entire duration of the project. One of the reasons given for this lack of interest is that there was no provision to meet the cost of attendance by the participants in the meetings.

### 3.3.5. Mainstreaming

While examining the issue of the extent to which the project has helped in main streaming energy efficiency in Jordan, it is important to consider that the Government of Jordan has supported the project to transform the market for EE appliances and equipment in the household sector as a part of its national strategy. The government understands the importance of developing a multi-sectorial approach to promoting EE standards in end-use sectors.

The success of this project will help the government to mainstream EE in into each sectorial development programme as part of the Government's ongoing policy. This approach will help, making EE standards and processes an integral part of the initiatives in the energy sector. The EE standards introduced via this project have already been transitioned to a mandatory program. The positive results of this project have already led to the development of the MESP and S&L for the appliances which were not covered in this project. Thus, the project has contributed positively towards mainstreaming of EE in the country.

At the level of UNDP, although there is no direct contribution of this project towards mainstreaming its other priority areas of work like poverty alleviation, improved governance, prevention and recovery from disasters, gender equality, it has no negative impact on any of the other priority areas of the UNDP.

### 3.3.6. Sustainability

The project strategy was to remove barriers and create an enabling atmosphere for EE of the home appliances. Thus, once the project has achieved its outcomes the sustainability of the outcomes of the project is more or less assured. Thanks to extra support and help the project got from USAID and EU Twinning project, the EESL project has achieved its outcomes and objectives to a fairly large extent. As most of the allocation of funds was towards enabling activities like creation of awareness, capacity building etc., the outcomes of the project would be able to sustain in the absence of funding as well.

In terms of financial sustainability the test labs which have been created need to sustain their operations at their own. In this regard one of the sources of revenues being considered is the fee charged by the users for testing of their products. NIES, where these labs have been established is contemplating development of a business plan to act as a regional center of excellence for testing the home appliances. It has requested the support from USAID for development of the business plan. Thus, sustainability in terms of **financial resources** is **Likely**.

Considering that the consumer awareness created under the project is likely to generate demand, thereby creating a pull towards EE over a period of time forcing the manufacturers and the importers to offer EE variants of the appliances, the impacts of the projects are likely to sustain. This is despite the resistance by the manufacturers and the importers at the initial stages of mandate regarding MEPS and labeling of appliances. Thus, from the view point of **Socio political** issues the outcomes of the project are **likely to sustain**.

The project has successfully put in place an institutional framework for enforcement of the mandate of MEPS and EE labeling of appliances. The project has also established a market surveillance system and procedures at JSMO which will facilitate enforcement of the MEPS and EE labeling of the appliances. There are practically no negative environmental impacts of the project. Thus, from the view point of **institutional framework and environmental sustainability** the outcomes of the project are **Likely** to sustain. The **overall sustainability** of project results is considered **Likely**.

### 3.3.7. Impact

The most direct projected impact of the project in terms of GEF objectives is reduction in the emission of GHG. As has been mentioned in section 3.3.1, the project has projected direct GHG emission reductions of 183 thousand tons of CO2 during its implementation and direct GHG emission reductions of 230 thousand tons post implementation of the project. Apart from direct GHG emission reductions, indirect GHG emission reductions of 2859 thousand tons was projected to be achieved up to the year 2030 due to further market transformation. As most of the achievements of the project could have been achieved only towards the end of the project, it is not reasonable to expect the project to have any direct reduction of GHG due to purchase of EE appliances by the households.

However, this is just an accounting detail and the issue relating to classification of GHG emission reduction amongst direct and indirect reductions. The fact remains that the project was expected to lead to reduction in the emission of GHG and it has done so. However, the question is regarding the extent of emission reduction. .

At the time of MTR the evaluation team reviewed the GHG emission reduction calculation methodology and cumulative indirect GHG emission reductions accruing over a 15-year (post-project) period were projected to be 2.64 Million Tons of CO2. MRT has also projected indirect GHG emission reduction of 22 thousand tons to CO2 in the year 2014. These projections were based on a set of assumptions provided in **Table 3.2**. The MTR has recommended that the global environmental benefits in terms of reduction in the emission of GHG be reviewed at the time of Terminal Evaluation based on the market situation and other parameters at that time. Computations of GHG emission reductions due to the project, has been reviewed.

Upon review at TE direct GHG emission reductions due to the project are estimated to be 730 thousand tons of CO2 up to the year 2024. There are no direct GHG emission reductions due to the project. This value is considerably less then the projected indirect GHG emission reductions at the time of Project Design and at the time of MTR. The difference in the value is not because of under performance of the project during its implementation phase but largely because of corrections done at the time of Terminal Evaluation, in the accounting method.

Although the project could not achieve its objective of direct reduction in the emission of GHG, during the project period it sustained a long term indirect GHG emission reduction which will be achieved after the project. This is due to creation of awareness and an enabling atmosphere as evident by establishment of test labs, mandating of the EE labeling of appliances, development of standards etc.

In-spite of start-up delays the project could deliver its expected outcomes due to benefit of extension of time. Following are some of the significant outcomes of the project:

- Performance Standards for home appliances are in place
- MEPS for the home appliances covered under the UNDP project are in place
- EE labeling of the appliances is mandatory
- Establishment of test labs for testing the EE performance of the appliances is currently underway
- Verification and enforcement procedures have been established

These outcomes will impact the GHG emissions in Jordan. Due to the project strategy of removal of barriers and creation of an enabling atmosphere for EE of the home appliances, the impacts of the project will be sustained over a long period of time.

# 4. Conclusions, Recommendations & Lessons

In view of the finding of the terminal evaluation of the project, this section of the report provides suggested corrective actions for the design, implementation, monitoring and evaluation of projects to be carried out under similar situations. Further, this section of the report provides recommendations regarding actions to follow up to reinforce benefits from the project, proposals for future directions underlining the main objectives of the project. This section of the report also provides the lessons learnt in terms of best and worst practices in addressing issues relating to relevance, performance and success.

***The key questions while making the recommendations are given below (Please see table 1.1)***

- What are the corrective actions towards design of the projects (in future) in terms of implementation modalities and monitoring & evaluation of the project?
- To what extent have the barriers towards achieving the project objectives been removed?
- Which are the barriers which could not be removed (if applicable) and why?
- What are the ways and what are the actions required so that the benefits of the project can be further expanded?
- What are the proposals for future directions underlining the main objectives of the project?

## 4.1. Corrective actions for the design, implementation, monitoring and evaluation

As has been mentioned in earlier parts of the report the project is in line with the priorities of the country as well as the climate change mitigation priorities of GEF. The project design meets the standards of GEF and the project strategy was appropriate for the context in which the project was to operate.The project has been implemented by NERC as the national implementing agency.

Oversight and monitoring of the project was done by UNDP as the executing agency. Although there were initial delays, the planned activities were completed during the extensions granted to the project. The main M&E activities planned at the design stage meet GEF and UNDP requirements and standard practices. There are some issues with the indicators used for M&E at the design stage of the project. There were issues with regular reporting (quarterly and annual) both in terms of quality and periodicity of reporting. One of the problems with project implementation and regular M&E was lack of interest of the members of PAC and PB to attend the meetings.

The project sought to remove following barriers towards higher uptake of energy efficient appliances at Jordan.

- Institutional barriers
- Policy barriers
- Legal and regulatory barriers
- Technical barriers
- Cost barriers
- Awareness and information barriers
- Implementation barriers

The project due to its successful implementation has been able to address most of the barriers, expect for the technical barriers in terms of the capacity of the local manufacturers to produce energy efficient appliances.

Although the project design meets the requirement of GEF and the implementation, monitoring & evaluation has been carried out as per the requirements, given below are some of the lessons learned and suggestions for design, implementation and M&E of projects in similar situations.

- The impacts of the project are to be monitored and the corresponding target values of indicators need to be determined in a manner that eliminates the influence on the value of the indicators as in business as usual scenario.
- The baseline situation and the corresponding value of the indicators need to be established by carrying out a detailed scoping study and quantitative analysis, rather than using the approach of growth rates.
- In order to have larger impacts, the segments of the stakeholders which have larger share needs to be targeted. For example, in the case of present project 80% of the appliances were imported, thus a project activity focused on the importers / trade authorities would have benefited the project.
- In order to keep the government stakeholders interested in the project and to ensure participation of government officials it is necessary to take care of local practices. For example, it is a standard practice at Jordan to provide small honorarium to the participants in the official meetings. A provision in the project budget to do so would have ensured higher participation in the PAC and PB meetings.

## 4.2. Actions to follow up or reinforce initial benefits from the project

As the project has achieved its broader objectives of removal of barriers towards MEPS and S&L for the home appliances, sustained long term indirect GHG emission reductions will happen over a period of time. Awareness creation of consumers and capacity building of institutions has been the key activities which have benefited the project. Some of the actions which will ensure continuation of the benefits for the project are as follows:

- Continuation of consumer awareness creation and capacity building of institutions from time to time will help towards continuation and further strengthening of the impacts of project.
- Now that the test labs are in place to enforce the mandate regarding S&L program and MEPS, it is important that these labs continue to operate. Experience shows that the traditional method of government funding for continuation of the operations don't work in most of the cases. There is a proposal to develop a business plan for these labs so that they can sustain their operation at their own. Support for development of the business plan is likely to reinforce the impacts and benefits of the project.

## 4.3. Proposals for future directions underlining main objectives

The main objective of the project was to reduce emissions of GHG by transforming the markets by removal of barriers towards larger uptake of energy efficient appliances. To support the main objective of reduction in the emission of GHG and to support the country objective of continuing to meet the demand for power, projects of EE for other appliances may be initiated on lines of the present project after taking care of the lessons learnt. Such proposals may be developed for lights, fans, televisions, etc.

In fact there is already a spinoff impact of the project in terms of establishment of MEPS and S&L for a host of products which were not covered under this project. However market transformation for these products is not likely, in the absence of awareness creation of consumers and capacity building of the institutions. Small incremental efforts in this direction would help to multiply the impacts of this project.

## 4.4. Best and worst practices

Following are the worst and the best practices.

- **Adaptive management**: One of the best practices in the case of EESL project at Jordan has been adaptive management. The project was run in a flexible and adaptive manner. During implementation phase of the project, the outputs of the project were reformulated when it became known to the PMU and project stakeholders that JSMO would adopt the EE regulations and standards of the EU.
- **Collaborative Working**: The project was collaborated well with other similar projects and agencies due to which the result of the project multiplies. For example, it collaborated with USAID and EU for funding of the testing facilities for Air conditioners and refrigerators (Freezers included) respectively.
- **Lack of periodic M&E**: One of the worst practices in the case of the project has been lack of proper periodic M&E. The project suffered due to lack of regular monitoring and evaluation of the project which is evident by the deficiency in the quarterly reports in terms of both quality of reporting and periodicity of reporting. The reason attributed to this is the change of team both at the UNDP CO level and at the project management unit level during implementation phase of the project. The lesson learnt is that to the extent possible change in the team may be avoided. As a fall back option development and maintenance of the project document repository needs to be an integral part of project management and M&V plan.
- **Inability to capture and account for baseline situation:** The project suffered as it could not identify and account for some of the critical aspects at the design stage of the project. For example, the project could not identify and account for the upcoming EU twining project; it did not account for the fact that about 80% of the appliances at Jordan were imported.
- **Usefulness of the results framework**: Although the project has used a results framework as per the requirements of GEF projects, it has failed to capitalize on its usefulness as a tool for the proper implementation, monitoring and evaluation of the project. The main lesson learned is the need to also cover the outputs of the project in the results framework.

# Annex 1: Terms of Reference

## INDIVIDUAL CONSULTANT PROCUREMENT NOTICE

Date: Nov. 25th, 2014

**Country: Jordan**
**Description of the assignment:**
**International Consultant to Conduct a Final Term Evaluation**

| | |
|---|---|
| **Post Title:** | **International Consultant to Conduct a final-term Evaluation** |
| **Duration:** | 12 working days in Dec. out of which 5 working days in Jordan. |
| **Location:** | Jordan – Amman and home based |
| **Project:** | **Energy Efficiency Standards and Labelling in Jordan** |

### 1. BACKGROUND & CONTEXT

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 $km^2$, sharing borders with Iraq, Israel, Syria and Saudi Arabia. More than 80% of its population of 5.7 million (2007)[10] lives predominantly in urban centers, 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[11].

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,

[10] Population Reference Bureau: http://www.prb.org/
[11] Jordan Department of Statistics: http://www.dos.gov.jo/sdb_pop/sdb_pop_e/inde_o.htm

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.

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.

**PROJECT GOAL, OBJECTIVES, OUTCOMES and OUTPUTS:**

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.

Note that the activities have been modified from the Project Document and the updated list is found at
https://skydrive.live.com/redir?resid=B75380CFAEC19BBD!890&authkey=!AI84km4K6S9doqQ

## 1. Scope of work

In the context outlined above, UNDP seeks the recruitment of an international consultant to support the achievement of the following project final-term evaluation objectives:
Conduct a final-term evaluation of the Energy Efficiency Project in line with internal procedures of UNDP and GEF guidelines. The scope of Objective One should cover the following:

The scope of the evaluation will cover all activities undertaken in the framework of the project. The evaluator will compare planned outputs of the project to actual outputs and assess the actual results to determine their contribution to the attainment of the project objectives. He/she will also attempt to evaluate the efficiency of project management, including the delivery of outputs and activities in terms of quality, quantity, timeliness and cost efficiency as well as features related to the process involved in achieving those outputs and the impacts of the project. The evaluation will also address the underlying causes and issues contributing to targets not adequately achieved.

The key product expected from the final-term evaluation is a comprehensive analytical report in English that should, at least, follow the requirements as indicated in Annex E.
The terminal evaluation report will be a stand-alone document that substantiates its recommendations and conclusions. The report will have to provide convincing evidence to support its findings/ratings.

The report together with its annexes shall be presented in electronic form in MS Word format.
The consultant is expected to follow a participatory and consultative approach ensuring engagement with the project team, project partners and key stakeholders.
The consultant is expected to use project data, third-party data and interviews as a means of collecting data on the performance and success of the project. Questionnaires prepared by the consultant can be distributed to national project partners, facilitated by participating implementing agencies.

## 2. METHODOLOGY

An overall approach and method12 for conducting project evaluations of UNDP supported and GEF financed projects has developed over time. The evaluator is expected to frame the evaluation effort using the criteria of **relevance, effectiveness, efficiency, sustainability, and impact,** as defined and explained in the UNDP Guidance for Conducting Evaluations of UNDP-supported, GEF-financed Projects. A set of questions covering each of these criteria have been drafted and are included with this TOR (Annex A). The evaluator is expected to amend, complete and include it as an annex to the final report.

The evaluation must provide evidence-based information that is credible, reliable and useful. The evaluator is expected to follow a participatory and consultative approach ensuring close engagement with government counterparts, in particular the National Energy Research Center and other stakeholder agencies, the GEF OFP, the UNDP Country Office, the project team, the UNDP GEF Technical Adviser based in the region and key stakeholders.

The evaluator will review all relevant sources of information, such as the project document, project reports – including Annual APR/PIR, project budget revisions, progress reports, GEF focal area tracking tools, project files, national strategic and legal documents, etc. – and any other materials that the evaluator considers useful for this evidence-based assessment.

**Evaluation criteria and ratings**

An assessment of project performance will be carried out, based against expectations set out in the Project Logical Framework/Results Framework (see Annex A), which provides performance and impact indicators for project implementation along with their corresponding means of verification. The evaluation will at a minimum cover the criteria of: **relevance, effectiveness, efficiency, sustainability and impact.** The obligatory rating scales are included in Annex C.

| **Evaluation Ratings:** | | | |
|---|---|---|---|
| **1. Monitoring and Evaluation** | ***rating*** | **2. IA& EA Execution** | ***rating*** |
| M&E design at entry | | Quality of UNDP Implementation | |
| M&E Plan Implementation | | Quality of Execution - Executing Agency | |
| Overall quality of M&E | | Overall quality of Implementation / Execution | |
| **3. Assessment of Outcomes** | **rating** | **4. Sustainability** | **rating** |
| Relevance | | Financial resources: | |
| Effectiveness | | Socio-political: | |
| Efficiency | | Institutional framework and governance: | |
| Overall Project Outcome Rating | | Environmental : | |
| | | Overall likelihood of sustainability: | |

**Project finance / co-finance**

The Evaluation will assess the key financial aspects of the project, including the extent of co-financing planned and realized. Project cost and funding data will be required, including annual

[12] For additional information on methods, see the Handbook on Planning, Monitoring and Evaluating for Development Results, Chapter 7, pg. 163

expenditures. Variances between planned and actual expenditures will need to be assessed and explained. Results from recent financial audits, as available, should be taken into consideration. The evaluator(s) will receive assistance from the Country Office (CO) and Project Team to obtain financial data in order to complete the co-financing table below, which will be included in the terminal evaluation report.

| Co-financing (type/source) | UNDP own financing (mill. US$) | | Government (mill. US$) | | Partner Agency (mill. US$) | | Total (mill. US$) | |
|---|---|---|---|---|---|---|---|---|
| | Planned | Actual | Planned | Actual | Planned | Actual | Actual | Actual |
| Grants | | | | | | | | |
| Loans/Concessions | | | | | | | | |
| In-kind support | | | | | | | | |
| Other | | | | | | | | |
| Totals | | | | | | | | |

**Mainstreaming**

UNDP supported GEF financed projects are key components in UNDP country programming, as well as regional and global programmes. The evaluation will assess the extent to which the project was successfully mainstreamed with other UNDP priorities, including poverty alleviation, improved governance, the prevention and recovery from natural disasters, and gender.

**Impact**

The evaluators will assess the extent to which the project is achieving impacts or progressing towards the achievement of impacts.

**Conclusions, recommendations and lessons**

The evaluation report must include a chapter providing a set of **conclusions**, **recommendations** and **lessons**.

**Implementation arrangements**

The principal responsibility for managing this evaluation resides with the UNDP Jordan CO. UNDP Jordan will issue and manage the contract. The Project Team and Country Office will be responsible for liaising with the Evaluator to set up stakeholder interviews, coordinate with the Government, etc.

*Although the Consultant should feel free to discuss with the authorities concerned all matters relevant to his/her assignment, he/she is not authorized to make any commitment or statement on behalf of UNDP, the GEF or the project management.*

**Evaluator ethics**

Evaluation consultant will be held to the highest ethical standards and are required to sign a Code of Conduct (Annex D) upon acceptance of the assignment. UNDP evaluations are conducted in accordance with the principles outlined in the UNEG 'Ethical Guidelines for Evaluations'.

## 4. DELIVERABLES

Below are the required activities and expected outputs (deliverables), based on the objectives and scope of work stated above, respective timelines/deadlines and number of working days:

| Output | Timeline |
|---|---|
| 1. Agenda of meetings and report submission time-plans | 2 days after signing the contract and discussion with Project's management team for initial sources of information |
| 2. Debriefing meeting on evaluation results with Project stakeholders, and delivery of an inception report | After conclusion of the mission |
| 3. A first draft of the evaluation report and GEF climate change mitigation tracking tool | Two weeks after signing the contract |
| 4. Final evaluation report responding to all comments from Project stakeholders. | Three weeks after signing the contract |

**DURATION OF MISSION**

The expected duration of this assignment is up to 3 weeks maximum, expected to consist of approximately 12 working days to conduct necessary meetings and finalize the evaluation report.

# Annex 2: Evaluation Question Matrix

| Evaluative Criteria | Questions | Indicators | Sources | Methodology |
|---|---|---|---|---|
| **Relevance: How does the project relate to the main objectives of the GEF focal area, and to the environment and development priorities at the local, regional and national levels?** | | | | |
| The extent to which the activity is suited to local and national development priorities and organizational policies, including changes over time. The extent to which the project is in line with the GEF Operational Programs or the strategic priorities under which the project was funded | • Do the project outcomes contribute to national development priorities and plans? | • In line with the national development priorities of Jordan | • Development plans of Jordan<br>• Project Design Document<br>• MTR report | • Documents analyses<br>• Interviews with UNDP and project team |
| | • Does the project objective's confirm to agreed priorities in the UNDP country program document? | • In line with Jordan's national priorities mentioned in the UNDP Country Programme Document | • UNDP Country Programme Document<br>• Project document<br>• MTR report | • Documents analyses<br>• Interviews with UNDP and project team |
| **Effectiveness: To what extent have the expected outcomes and objectives of the project been achieved?** | | | | |
| The extent to which an objective has been achieved or how likely it is to be achieved. | • To what extent have the project objectives and outcomes, as set out in the Project Document, project's Logical Framework and other related documents, have been achieved? | • As per the log frame of the project | • Project documents<br>• Project team and relevant stakeholders<br>• Data reported in project annual and quarterly reports<br>• MTR report | • Documents analysis<br>• Interviews with project team<br>• Interviews with relevant stakeholders |
| **Efficiency: Was the project implemented efficiently, in-line with international and national norms and standards?** | | | | |
| The extent to which results have been delivered with the least costly resources possible and the extent to which the project has been implemented efficiently | • To what extent the results in terms of direct and indirect GHG mitigation has been delivered<br>• What has been the overall cost of the project | • Cost effectiveness of direct and indirect GHG mitigation | • Project Documents and evaluation<br>• GEF tracking tool for Climate Change Mitigation Projects | • Evaluation of GHG mitigation<br>• Document Analysis |
| | • How efficiently the resources has been used | • Management cost as percentage of overall cost<br>• Availability and quality of financial and progress reports<br>• Timeliness and adequacy of reporting provided<br>• Level of discrepancy between planned and utilized financial | • Project documents And evaluations<br>• UNDP Project team | • Document analysis<br>• Key interviews |

| | | | | |
|---|---|---|---|---|
| | | expenditures | | |
| **Sustainability: To what extent are there financial, institutional, social-economic, and/or environmental risks to sustaining long-term project results?** | | | | |
| The likely ability of the intervention to continue to deliver benefits for an extended period of time after completion. Projects need to be environmentally, as well as financially and socially sustainable. | • Are there financial risks that may jeopardize the sustainability of project outcomes?<br>• What is the likelihood of financial and economic resources not being available once GEF grant assistance ends? | • Likely hood of continued availability of funds to sustain the outcomes of the project | • Project Documents<br>• Mid Term Review report<br>• UNDP, project team, and relevant stakeholders | • Document analysis<br>• Interviews |
| | • Is the Project environmentally and socially sustainable?<br>• Are there ongoing activities that may pose an environmental threat to the sustainability of project outcomes? | • Environmental and social impacts of the project | • Project Documents<br>• UNDP, project team, and relevant stakeholders | • Document analysis<br>• Interviews |
| | • To what extent the stakeholders will sustain the project?<br>• Are there social or political risks that may threaten the sustainability of project outcomes?<br>• Do the various key stakeholders see that it is in their interest that project benefits continue to flow?<br>• Is there sufficient public/stakeholder awareness in support of the project's long-term objectives? | • Political risks to continued operations of the project | • Project Documents<br>• UNDP, project team, and relevant stakeholders | • Document analysis<br>• Interviews |
| **Impacts: Are there indications that the project has contributed to, or enabled progress toward, reduced environmental stress and/or improved ecological status?** | | | | |
| The positive and negative, foreseen and unforeseen changes to and effects produced by a development intervention | • How has the project contributed to the reduced environmental stress and/or improved ecological status? | • Development impacts of the project intervention | • Project documents<br>• GEF climate change mitigation tracking tool<br>• UNDP, project team, and relevant stakeholders | • Document analysis<br>• Interviews |
| | • Has the project resulted in verifiable, long term GHG emission reductions which are permanent in nature<br>• Has the project resulted to regulatory and policy changes at regional, national and/or local levels | • Assessment of the likely performance (long lasting nature) of the outcomes of the project | • Project documents<br>• GEF climate change mitigation tracking tool<br>• UNDP, project team, and relevant stakeholders | • Document analysis<br>• Interviews |

# Annex 3: List of Documents Reviewed

| Document | Contents | Comments |
|---|---|---|
| **Annual Work Plans** | | |
| Annual work plan – 2012 with procurement plan | Gives month wise break up of activities against each outcome and output given in the project document. | • Provides procurement plans for the year |
| Annual work plan - 2012 June revision | Revised version of the above | |
| Annual work plan - 2013 June revision | Gives month wise break up of activities against each outcome and output given in the project document. | • Provides procurement plans for the year |
| **Annual Project Implementation Review Reports** | | |
| Annual report 2011 | Annual Progress report for 2011 | • Don't mention the period covered<br>• Without financials |
| PIR 2013 | Annual Project Review (APR), Project Implementation Review (PIR) for 2013 | |
| **Combined Delivery Reports (CDRs)** | | |
| CDR Jan to March 2014 | Combined Delivery Report for Q1 – 2014 | |
| CDR Jan to June 2014 | Combined Delivery Report for H1 – 2014 | |
| CDR Jan to Sep 14 | Combined Delivery Report | |
| **Quarterly Reports** | | |
| QRT Report | Quarterly report | • Don't mention the period of reporting<br>• Seems to be for one of the quarters for year 2010-11 |
| QRT Report | Quarterly report | • Don't mention the period of reporting<br>• Seems to be for one of the quarters for year 2010-11 |
| QTR report | Quarterly report | • Period not mentioned<br>• Seems to be one of the early quarterly reports |
| QTR report | Quarterly report | • Period not mentioned<br>• Seems to be one of the early quarterly reports |
| Q3 2011 Report | Quarterly report | • Don't mention the period covered in the report<br>• Financials not covered |
| Q1 2012 Report | Quarterly report | • Don't mention the period covered in the report<br>• Financials not covered |
| Q2 2013 Report | Quarterly report | • Don't mention the period covered in the report<br>• Financials not covered |
| Q1 2014 Report | Quarterly report | • Don't mention the period covered in the report |

| | | |
|---|---|---|
| | | • Financials not covered |
| Q2 2014 Report | Quarterly report | • Don't mention the period covered in the report<br>• Financials not covered |
| Q3 2014 Report | Quarterly report | • Don't mention the period covered in the report<br>• Financials not covered |
| **Project Documents / Monitoring and Evaluation Documents** | | |
| Project Document | Provides the design and other parameters of the project | • It is an unsigned version of the project document |
| Inception workshop report | Nov 2010 | |
| GEF Tracking tool dated June 2013 | Provides the status of the GHG emission reductions at the time of Mid Term review is filled | • No data in the sheet at the stage for CEO endorsement<br>• No data in the sheet at the stage of end term review |
| Mid Term Evaluation Report | Mid-term evaluation report dated October 2013 | • Report covers the period from the project start date to August 2013 |
| Management response to MTR with comments | October 2013 | |
| Auditors report - Energy 2013 | Provides an independent auditors report on the expenditure done in the year Dec 2013 | • Similar audit reports for other years is not available |
| GHG Assumption June 2014 | Gives assumptions regarding sales and imports of appliances and the assumption of the break up in terms of efficient and inefficient appliances over a period of time. | • Provides projected reduction in the direct GHG emissions reductions for the year 2014 and indirect GHG emission reduction's after the project |
| GHG Companion document | Provide details of the data from Technical Market Assessment regarding the energy consumption of different grades of appliances in the baseline as well as after the project | |
| EESL extension | Official communication regarding extension of the project up to Dec 2014 | |
| **Documents Pertaining to PAC / PB Meetings** | | |
| PAC Agenda second meeting | 6 June 2011<br>Agenda for second PAC meeting | |
| PAC Agenda | Feb 2012 | |
| PAC minutes | Main points regarding Minutes of meeting of PAC dated March 2014 | |
| PAC Meeting 2014 | Provide a couple of bullet point of the PAC meeting held in March 2014 | • Details provides are not sufficient for it to be considered as a board meeting |
| PB Minutes of Meeting April 2014 | Provides minutes of meeting of the Project Board in April 2014 | |
| **Outputs / Deliverables of Activities of the project** | | |
| Report on Survey of Consumer Behaviour and Preferences | Provides findings related to the survey targeted at identification of the awareness of respondents from Jordan regarding EE home appliances, and energy saving behaviours. | • Report dated December 2012<br>• Survey was carried out prior to launching of consumer awareness program on the mass media |
| Legal Energy Report | Report of the existing energy | |

| | | |
|---|---|---|
| | sector policies and regulatory framework in Jordan | |
| Report on Evaluation of awareness campaign results | Provides the results of a survey to capture the impacts of awareness campaign | |
| Draft EEco Technical regulation refrigerators | Draft dated 8 Nov 2012<br>Technical regulation mandating Eco design of refrigerators | |
| Draft EEL technical regulation - refrigerators | Draft dated: 8 Nov 2012<br>Technical regulation mandating EE labelling of refrigerators | |
| Draft EEL technical regulation – washing machines | Technical regulation mandating EE labelling | |
| Draft EEL technical regulation – air conditioners | Technical regulation mandating EE labelling | |
| Impact assessment of potential policy options for EE standards and labelling | Report - Year 2014<br>Prepared by NIES / RSS | |
| CEEE Jordan Closure Report | Assessment of the workshop conducted by MENAPRO in December 2014 aiming to enhance the technical capability of professionals in the public sector in assessing the impacts of energy projects, with a particular focus on energy efficiency | |
| Cost effectiveness training | Dec 2014: Training material | |
| Companies Kit – EE Campaigning material | Campaigning material, Flyers etc. | |
| Impacts of EE standards in Jordan | Report - Year 2014<br>Prepared by NIES / RSS | |
| Pictures 4 – Flyers used during EE Campaigning | Promotional material | |
| Pictures 5 – Flyer used during EE Campaigning | Promotional material | |
| **Other Documents** | | |
| Report CC policy | The National Climate Change Policy of the Hashemite Kingdom of Jordan 2013-2020 | |
| Expenses till Dec 2014 | Statement of expanses by the project till December 2014 prepared for the terminal evaluation | Provides details only for UNDP, GEF and Government Funds totalling to US$ 1165000 |
| JSMO Data Base TOR | June 2013<br>TOR for development of data base for EE appliances | |
| Back to office report | October 2011<br>Back to office report for visit to Egypt | |
| Contract of training on cost effectiveness of EE | 2014 | |
| Contract for training on energy bench marking, modelling and forecasting | 2013 | |

| | | |
|---|---|---|
| EU Twinning Project overview | | |
| EESL Country Related Projects | | This documents aims to highlight the projects that are currently taking place in the country which have some degree of overlap with the EESL Project. |

# Annex 4: List of persons interviewed

| DATE/TIME | Activity / Meeting with | Person (s) |
|---|---|---|
| **27 Dec 2014** | UNDP – kick off meeting | Mr. Mohamad Alatoom<br>Mr. Anas Khasawneh |
| | Amman Chamber of Commerce | Mr. Ali Tamini<br>Mr. Anas Khasawneh (UNDP) |
| | Jordan Chamber of Industry | Ms. Nada Al Waked<br>Mr. Anas Khasawneh |
| **28 Dec 2014** | NERC | |
| | Energy & Minerals Regulatory Commission | Mr. Khaluoun Habahbeh |
| **29 Dec 2014** | JSMO | Qais Azzam |
| | UNDP CO | |
| | UNDP – PMU | |
| **30 Dec 2014** | Reporting | |
| **31 Dec 2014** | Ministry of Industry | Eng. Abeer Ramadna |
| | Reporting | |
| | Debriefing, presentation of initial findings and draft report | Ms. Majida Alassaf – UNDP<br>Mr. Mohamad Alatoom<br>Mr. Anas Khasawneh |

## Annex 5 - Comparison of original and revised activities

| Original Outputs | Original Activities | Proposed Outputs | Proposed Activities |
|---|---|---|---|
| **Outcome 1: Enhanced capacities in Government and energy agency units for appliance EE policy development, implementation and market surveillance** | | | |
| 1.1 - *Political and policy decision makers' improved awareness of appliance EE options* | 1.1.1 Set up an inter-ministerial forum for policy dialogue | 1.1 - *Political and policy decision makers' improved awareness of appliance EE options* | 1.1.1 Set up an inter-ministerial forum for policy dialogue on implementing the National Energy Efficiency Action Plan (NEEAP) |
| | 1.1.2 Organize training sessions for both political and policy decision makers on the benefits of EE policy options for Jordan | | 1.1.2 Organize workshop for government decision makers outlining the achievements and goals of the project as well as the importance of a long term EE strategy for Jordan |
| | 1.1.3 Monitor the outputs of the proposed project and disseminate the necessary information to decision makers | | 1.1.3 Use the inter-ministerial forum for updating decision makers on project status twice per year |
| 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* | 1.2.1 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. | 1.2 - *Increased government capacity for the development of the legal and regulatory frameworks for EE appliances, including an enabling EE law* | 1.2.1 Cooperate with JSMO and the EU Twinning Project on reviewing the EU electrical appliance regulations that will be implemented within JSMO |
| | 1.2.2 Increase the capacity of the National Energy Research Centre to deal with EE policies and regulations through specific training on policies and regulations | | 1.2.2 Increase NERC's involvement in the development of EE policies with MEMR through involvement in the committees responsible for policy development |
| | 1.2.3 Organize information seminars for Government ministries and regulation bodies on the Energy Conservation Law and EE appliance regulations | | 1.2.3 Engage PAC members and update them on project progress through quarterly meetings |
| *1.3 - Increased capacity of the National Energy Research Centre for the selection of a label and energy classification* | 1.3.1 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. | 1.3 - *Increased government capacity for the development of an energy labeling strategy consistent with regional S&L efforts* | 1.3.1 Support JSMO and the EU Twinning Project in the approximation of EU legislation relating to EU EE Directives through NERC's involvement in the legal committees. |
| | 1.3.2 Selection of the most appropriate schemes, based on similarities in product designs and manufacturers and consistent with regional S&L | | 1.3.2 NERC and JSMO with technical input from the EU Twinning Project to produce regional publication on Jordan's experiences, successes and failures in |

| Original Outputs | Original Activities | Proposed Outputs | Proposed Activities |
|---|---|---|---|
| *consistent with regional S&L efforts* | efforts (harmonization and alignment). | | implementing EU regulations in the pursuit of the open market agreement |
| | 1.3.3 Adoption of label classifications, for mandatory application, regarding air conditioners, refrigerators, freezers and washing machines. | | 1.3.3 NERC to assist MEMR with its efforts to produce a draft of an EE bylaw through NERC's involvement in the consultation process |
| | | | |
| *1.4 - Increased capacity of the National Energy Research Centre and PMU in appliance EE support programme development, implementation and monitoring strategies* | 1.4.1 Assess existing institutional capacity for developing, implementing and maintaining a Standards and Labeling programme | 1.4 - *Increased government and PMU capacity in appliance EE support programme development, implementation and monitoring strategies* | 1.4.1 JSMO to produce assessment of its internal procedures for the rapid adoption, implementation and maintenance of EU EE regulations |
| | 1.4.2 Carry out training courses to reinforce the capacity of the National Energy Research Centre, Ministry of Energy and Mineral Resources and PMU in appliance EE programme development and implementation | | 1.4.2 Harmonize through TOT workshops the EE scenario modeling techniques used by MEMR, ERC and NERC and integrate these techniques within the evaluation process of each organization |
| | 1.4.3 Review existing legislation and establish framework legislation to develop a legal basis for, and political commitment to, labels and standards | | 1.4.3 Assist the MoEnv and NERC in forecasting the project impact on the reduction of GHG emission through the LEAP software |
| | 1.4.4 Develop an overall label and standards-setting plan, and assign primary responsibility to the NERC to drive each element of the programme | | 1.4.4 Harmonize through TOT workshops the EE project baseline, indicator and benchmarking techniques used by MEMR, ERC and NERC and integrate these techniques within the evaluation process of each organization |
| | 1.4.5 Adopt labels and energy classes consistent with regional S&L efforts | | 1.4.5 Harmonize through TOT workshops the EE cost effectiveness evaluation techniques used by MEMR, ERC and NERC and integrate these techniques within the evaluation process of each organization |
| | 1.4.6 Formulate separate energy conservation standards for each class | | |
| | 1.4.7 Explore the potential for technological improvements in the design and manufacturing of energy efficient electrical appliances | | |
| 1.5 - *Enhanced data collection on appliance sales and stock and a structured monitoring system* | 1.5.1 Identify the skills and experience required for data collection and monitoring | 1.5 - *Enhanced data collection on appliance sales and stock and a structured monitoring system* | 1.5.1 NERC to establish a procedure for the collection of data on appliance sales and stock |
| | 1.5.2 Develop the capacity of the National Energy Research Centre, Ministry of Energy and Mineral Resources and PMU to collect data on appliance sales and stock and monitor the outputs of the | | 1.5.2 NERC to establish internally hosted EE home appliance database to allow for continuous analysis of the market |

| Original Outputs | Original Activities | Proposed Outputs | Proposed Activities |
|---|---|---|---|
| | proposed project | | |
| | 1.5.3 Characterize the structure of the residential appliances industry and markets (quality & quantity) | | |
| | 1.5.4 Establish minimum data needs and develop a plan for collecting the data necessary to conduct analyses to support the programme | | |
| | 1.5.5 Carry out cost-effectiveness analyses to screen the new products to be included in the programme and establish an order of priority | | |
| | 1.5.6 Plan to periodically review and update the labels and standards every three years. | | |
| **Original Outputs** | **Original Activities** | **Proposed Outputs** | **Proposed Activities** |
| **Outcome 2: Structured verification & enforcement of appliance EE labels and standards** | | | |
| 2.1 - *Enhanced knowledge of state inspectors to check the compliance of shops and of appliance energy efficiency declarations* | 2.1.1 Assess the Jordan Customs Department's (JCD) capacities for tracking second-hand products | 2.1 - *Enhanced knowledge of state inspectors to check the compliance of appliance energy efficiency declarations* | 2.1.1 NERC to develop a methodology for the tracking of second-hand products |
| | 2.1.2 Develop an overall plan to strengthen the state inspectors' organizational, technical and operational capacities in compliance checking | | 2.1.2 NERC to implement second-hand product tracking as per the methodology |
| | 2.1.3 Training of JCD inspectors on the new regulations relating to the energy efficiency of household Appliances | | 2.1.3 Assess JSMO's existing market surveillance structure, capabilities and human resources used for effective market inspection |
| | 2.1.4 Prepare the necessary decree to empower the Jordan Customs Department to ensure Compliance | | 2.1.4 JSMO to develop an overall training plan to strengthen the state inspectors' organizational, technical and operational capacities in compliance checking |
| | | | 2.1.5 Improve JSMO market surveillance personnel knowledge of EE regulations |
| 2.2 - *Verification and enforcement plan for retailers developed, tested in a pilot project and Implemented* | 2.2.1 Establish trade inspections for distributor and retailer compliance, checking on counterfeits and fraudulent products | 2.2 - *Verification and enforcement plan for retailers developed and implemented* | 2.2.1 JSMO to establish a procedure and database for the minimization of fraudulent compliance declarations at the border |
| | 2.2.2 Assess the capacities of the JCD and Ministry of Planning and International Cooperation for checking distributors and retail outlets for product compliance. | | 2.2.2 Conduct field training exercises with JSMO's market surveillance personnel in conjunction with the EU Twinning Project on EE compliance checking |

| Original Outputs | Original Activities | Proposed Outputs | Proposed Activities |
|---|---|---|---|
| | 2.2.3 Training of JCD inspectors for compliance checking at distributor and retail outlets | | |
| 2.3 - *Verification and enforcement plan and facilities for product testing developed and implemented in a pilot project* | 2.3.1 Identify IEC test procedures for the selected appliances (air conditioners, refrigerators, freezers, washing machines) | 2.3 - *Facilities for product testing developed and implemented* | 2.3.1 Identify the required harmonized and non-harmonized standards used in the testing of EE compliance in the appliances included within the project |
| | 2.3.2 Adopt national test procedures | | 2.3.2 Identify potential 3rd party host organizations capable of implementing quality assurance services for EE compliance |
| | 2.3.3 Identify national institutional candidates to perform the verification and testing of household Appliances | | 2.3.3 Develop the capability of host organization to perform quality test procedures for EE appliances |
| | 2.3.4 Create facilities for testing and monitoring compliance (test facilities must be certified) | | 2.3.4 Conduct hands on training for quality testing staff members to improve the performance and accuracy of performed testing |
| | 2.3.5 Adopt a significant budget for testing | | 2.3.5 Produce a business development plan for the quality testing organization to position the organization as a regional center of excellence for the testing of EE in home appliances |
| | 2.3.6 Create the administrative apparatus for enforcement to incorporate testing into enforcement | | |
| | 2.3.7 Maintain political support for EE S&L programme development and operation | | |
| | 2.3.8 Harmonize energy performance test procedures with international protocols to facilitate testing and reduce barriers to trade | | |
| | 2.3.9 Establish a legal verification and enforcement system to follow up on non-compliance with the Regulations | | |
| | 2.3.10 Develop and implement a verification and enforcement system to follow up on the noncompliance of products with the regulations (on imports) as a pilot project | | |
| | 2.3.11 Develop and implement a verification and enforcement system on the non-compliance of distributors and retailers (on sales) as a pilot | | |

| Original Outputs | Original Activities | Proposed Outputs | Proposed Activities |
|---|---|---|---|
| | project | | |
| | 2.3.12 Draft practical guides for testing professionals based on best practices | | |
| **Original Outputs** | **Original Activities** | **Proposed Outputs** | **Proposed Activities** |
| **Outcome 3: Consumers' and retailers' awareness raised and improved marketing of appliance EE standards and labels** | | | |
| 3.1 - *Enhanced consumer awareness of appliance energy efficiency characteristics, standards and labels and the costs and benefits of more efficient products* | 3.1.1 Organize national campaigns targeting the consumers to inform them about appliance energy efficiency benefits. | 3.1 - *Enhanced consumer awareness of appliance energy efficiency characteristics, standards and labels and the costs and benefits of more efficient products* | 3.1.1 NERC to have oversight of a national EE survey executed by an external agency providing baseline data for implementing awareness campaign |
| | 3.1.2 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. | | 3.1.2 NERC to develop awareness materials (leaflets, posters, brochures) in conjunction with external agency to educate consumers on benefits of EE appliances |
| | | | 3.1.3 NERC to develop in conjunction with an external agency a social media hub and website for engaging consumers using an interactive approach and tracking this engagement through established media metrics |
| | | | 3.1.4 NERC to develop informative segments in conjunction with an external agency using the traditional media approach of radio, television and newspapers / written media |
| 3.2 - *Enhanced awareness and knowledge of retailers' management and retail staff on appliance energy efficiency issues and sales rationales* | 3.2.1 Inform importers, distributors and retailers about appliance energy efficiency in Jordan | 3.2 - *Enhanced awareness and knowledge of retailers' management and retail staff on appliance energy efficiency issues and sales rationales* | 3.2.1 NERC and JSMO to train existing information Centre staff in JSMO on delivering information to manufacturers, suppliers, retailers and consumers 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 |
| | 3.2.2 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 | | 3.2.2 NERC to develop in conjunction with an external agency a manual for retailers informing corporate salesmen on basic knowledge and strategy of selling EE appliances |
| | 3.2.3 Develop a training course for distributor and | | 3.2.3 NERC to deliver training to retailer marketing |

| Original Outputs | Original Activities | Proposed Outputs | Proposed Activities |
|---|---|---|---|
| | retailer staff, focusing on the sales of more efficient Appliances | | managers using the developed retail manual |
| | 3.2.4 Delivery of the training programme of the sales staff of the majority of distributors and retailers (at least 85%) | | 3.2.4 NERC to provide information to importers and manufacturers on EU electrical appliances requirements and encourage them to voluntarily adopt the EE label prior to its mandatory enforcement |
| **Outcome 4: Increased capacity of manufacturers to produce and market EE appliances** | | | |
| 4.1 - *Enhanced capacities of manufacturers in S&L regulations and related business opportunities* | 4.1.1 Inform manufacturers about the new energy efficiency regulations, date of entry of other regulations, compliance requirements, the national S&L programme and consequences of noncompliance | 4.1 - *Enhanced capacities of manufacturers and suppliers in S&L regulations and related business opportunities* | 4.1.1 NERC to have oversight of a full economic impact analysis publication developed in conjunction with an external agency for the EE label, associated standard and regulations to allow manufacturers and suppliers to understand the long term market transformation process they will endure |
| | 4.1.2 Provide manufacturers with business opportunities relating to EE improvements of appliances. | | 4.1.2 NERC to have oversight of a technical analysis developed in conjunction with an external agency detailing the financial and operational impact on the manufacturing process of each of the project's appliances |
| 4.2 - *Enhanced abilities of manufacturers in the development of more efficient appliances* | 4.2.1 Assist in the assessment of the potential for energy efficiency improvements to household Appliances | 4.2 - *Enhanced abilities of manufacturers in the development of more efficient appliances* | 4.2.1 Train NERC staff on the technical aspect of upgrading manufacturer production lines to provide a sustainable knowledge base within NERC as an information hub for manufactures wishing to upgrade their facilities |
| | 4.2.2 Identify the required skills of manufacturers in the development of more EE appliances | | 4.2.2 NERC to deliver individual consultations for local manufacturers regarding the expected costs and technical requirements of upgrading their EE appliances manufacturing facilities |
| | 4.2.3 Develop an overall plan to strengthen the organizational, technical and operational capabilities of municipal code enforcement agencies | | 4.2.3 NERC to organize international study tours for manufacturers to observe foreign manufacturing capabilities in the home appliances sector aiming to implement international best practices in Jordan |
| | 4.2.4 Support international study tours for | | |

| Original Outputs | Original Activities | Proposed Outputs | Proposed Activities |
|---|---|---|---|
| | manufacturer managers for best practice sharing | | |
| | 4.2.5 Inform importers, distributors and retailers about appliance energy efficiency in Jordan | | |
| | 4.2.6 Provide technical support during the implementation of the S&L programme | | |
| 4.3 - *Manufacturers' participation in an end-user awareness campaign about S&L* | 4.3.1 Mobilize manufacturers to participate in a nation-wide consumer awareness campaign | 4.3 – *Manufacturer and supplier participation in an end-user awareness campaign about S&L* | 4.3.1 NERC to approach manufacturers and suppliers to ensure their support and commitment to long term awareness and marketing efforts encouraging consumers to switch to EE appliances |
| | 4.3.2 Assist manufacturers in the development of adequate materials for the end-user awareness Campaign | | 4.3.2 NERC to assist individual manufacturers and suppliers in identifying and simplifying appliance technical details to allow the information to be communicated to consumers with no technical knowledge of EE |
| | 4.3.3 Help manufacturers in the delivery of the end-user awareness campaign | | 4.3.3 NERC to assist suppliers and manufacturers in including EE as a focus of their own marketing campaign |

# Annex 6: Achievement of Expected Objective and Outcomes

| **Objective : Reduce GHG emissions by supporting market transformation towards energy efficient new appliances in Jordan** |
|---|
| ***Increase market share of energy efficient appliances in Jordan by 30% by the end of the project.***<br><br>***Remark At TE***: As MEPS and mandatory S&L of the appliance was to be achived only towards the end of the project, any increse in the market share of EE appliances or reduction in the emission of GHG should not have been expected as an outcome of the project. |
| ***Reduction of GHG emissions by 183,000 tonnes of $CO_2$ for the improved appliances put on the market during the three year project duration.***<br><br>***Remark at TE***: As MEPS and mandatory S&L of the appliance was to be achived only towards the end of the project, any increse in the market share of EE appliances or reduction in the emission of GHG should not have been expected as an outcome of the project. |

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

***All the energy agencies in Government are well equipped to develop, implement and enforce appliances energy efficiency policy.***

| Activity / Target | Status at the time of MRE | Status at TE | Remarks |
|---|---|---|---|
| 1.1 – *Political and policy decision makers' improved awareness of appliance EE options* | | | |
| 1.1.1: Set up an inter-ministerial forum for policy dialogue on implementing the National Energy Efficiency Action Plan (NEEAP). | The project supported policy dialogue through ad hoc workshops and dialogues, but an inter-ministerial forum has not been set up. | Not achieved | |
| 1.1.2: Organize workshop for government decision makers outlining the achievements and goals of the project as well as the importance of a long term EE strategy for Jordan. | Planned to be done alter | Achieved<br>One Workshop organized in May 2014 | |
| 1.1.3: Use the inter-ministerial forum for updating decision makers on project status twice per year. | Not done | Not done | Not done since inter-ministerial forum has not been established. |
| 1.2 - *Increased government capacity for the development of the legal and regulatory frameworks for EE appliances, including an enabling EE law* | | | |
| 1.2.1: Cooperate with JSMO and the EU Twinning Project on reviewing the EU electrical appliance regulations that will be implemented within JSMO | Achieved | Achieved. | This has been achieved successfully, with the EU Twinning project coming to closure in May 2013. The main outcome of this cooperation has been the review of all relevant EU regulations and the drafting of equivalent standards that are in |

| | | | |
|---|---|---|---|
| | | | the process of being approved by JSMO. |
| 1.2.2: Increase NERC's involvement in the development of EE policies with MEMR through involvement in the committees responsible for policy development | Ongoign activity | Not much achievement | |
| 1.2.3: Engage PAC members and update them on project progress through quarterly meetings. | On target. | Not achieved | PAC meetings did not happen on regular basis |
| 1.3 - *Increased government capacity for the development of an energy labelling strategy consistent with regional S&L efforts* | | | |
| 1.3.1: Support JSMO and the EU Twinning Project in the approximation of EU legislation relating to EU EE Directives through NERC's involvement in the legal committees | Completed | Completed | |
| 1.3.2: NERC and JSMO, with technical input from the EU Twinning Project, to produce regional publication on Jordan's experiences, successes and failures in implementing EU regulations in the pursuit of the open market agreement | To be carried out towards the end of the project. | Not done | |
| 1.3.3: NERC to assist MEMR with its efforts to produce a draft of an EE by-law through NERC's involvement in the consultation process | Completed | Completed | |
| 1.4 - *Increased government and PMU capacity in appliance EE support programme development, implementation and monitoring strategies* | | | |
| 1.4.1: JSMO to produce an assessment of its internal procedures for the rapid adoption, implementation and maintenance of EU EE regulations | Completed | | This was completed in a study on policy review in 2011. |
| 1.4.2: Harmonize through Training of Trainers (TOT) workshops the EE scenario modeling techniques used by MEMR, ERC and NERC and integrate these techniques within the evaluation process of each organization. | Being planned. | Completed in Nod-Dec 2013 | |
| 1.4.3: Assist the MoEnv and NERC in forecasting the project impact on the reduction of GHG emission through the LEAP software. . | Being planned. | Not done | |
| 1.4.4: Harmonize through TOT workshops the EE project baseline, indicator and benchmarking techniques used by MEMR, ERC and NERC and integrate these techniques within the evaluation | Being planned | Not done | |

| | | | |
|---|---|---|---|
| process of each organization. | | | |
| 1.4.5: Harmonize through TOT workshops the EE cost effectiveness evaluation techniques used by MEMR, ERC and NERC and integrate these techniques within the evaluation process of each organization. | Being planned | Done in Dec 2014 | |
| 1.5 - *Enhanced data collection on appliance sales and stock and a structured monitoring system* | | | |
| 1.5.1: NERC to establish a procedure for the collection of data on appliance sales and stock | Not yet achieved<br>Is expected to be completed by the end of the project. | Done | |
| 1.5.2: NERC to establish internally hosted EE home appliance database to allow for continuous analysis of the market | Not yet achieved<br>Is expected to be completed by the end of the project. | Done | This was combined with 1.5.1 |

| **Outcome 2: Structured verification & enforcement of appliance EE standards and labels** | | | |
|---|---|---|---|
| **Activity / Target** | **Status at the time of MRE** | **Status at TE** | **Remarks** |
| 2.1 - *Enhanced knowledge of state inspectors to check the compliance of shops and of appliance energy efficiency declarations* | | | |
| 2.1.1: NERC to develop a methodology for the tracking of second-hand products | Not done<br>Will be done during remainder of the project | Not done | |
| 2,1,2: NERC to implement second-hand product tracking as per the methodology | Not done<br>Will be done during remainder of the project | Not done | |
| 2.1.3: Assess JSMO's existing market surveillance structure, capabilities and human resources used for effective market inspection | Under progress | Completed | |
| 2.1.4: JSMO to develop an overall training plan to strengthen the state inspectors' organizational, technical and operational capacities in compliance checking | Completed | Completed | |
| 2.1.5: Improve JSMO market surveillance personnel knowledge of EE regulations | Completed | Completed | |
| 2.2 - *Verification and enforcement plan for retailers developed and implemented* | | | |
| 2.2.1: JSMO to establish a procedure and database for the minimization of fraudulent compliance declarations at the border | Under progress<br>Partially completed | Completed | |
| 2.2.2: Conduct field training exercises with JSMO's market surveillance personnel in conjunction with the EU Twinning Project on EE compliance checking | Completed | Completed | |

| 2.3 - *Facilities for product testing developed and implemented* | | | |
|---|---|---|---|
| 2,3.1: Identify the required harmonized and non-harmonized standards used in the testing of EE compliance in the appliances included within the project | Completed | Completed | |
| 2.3.2: Identify potential third-party host organizations capable of implementing quality assurance services for EE compliance | Completed | Completed | |
| 2.3.3: Develop the capability of the host organization to perform quality test procedures for EE appliances | To be done later | Underway at a part of process of test laboratory established | It has been done as a part of the contract to the vendor for establishing the laboratory |
| 2.3.4: Conduct hands-on training for quality testing staff members to improve the performance and accuracy of performed testing | To be done later | Underway at a part of process of test laboratory established | It has been done as a part of the contract to the vendor for establishing the laboratory |
| 2.3.5: Produce a business development plan for the quality testing organization to position the organization as a regional centre of excellence for the testing of EE in home appliances | To be done later | Planed to be done once the labs are in place | Funding for this has already been requested from USAID |

| **Outcome 3: Increased consumers' and retailers' awareness and improved marketing of appliance EE standards and labels** | | | |
|---|---|---|---|
| ***Target: At least 50% of consumers and 80% of retailers aware of the trade-off between high purchase cost and lower running cost***<br><br>Based on the project's consumer survey, around 22% of the population understands the concept of EE appliances but only 2% are aware of a labelling scheme.<br>A survey after the consumer awareness creation complaining has demonstrated achievement of the target | | | |
| **Activity / Target** | **Status at the time of MRE** | **Status at TE** | **Remarks** |
| 3.1 - *Enhanced consumer awareness of appliance energy efficiency characteristics, standards and labels and the costs and benefits of more efficient products* | | | |
| 3.1.1: NERC to have oversight of a national EE survey executed by an external agency providing baseline data for implementing awareness campaign | Completed | Completed | |
| 3.1.2: NERC to develop awareness materials (leaflets, posters, brochures) in conjunction with an external agency to educate consumers on the benefits of EE appliances | Ongoing<br>A consultant has been recruited to develop awareness materials. Materials are expected to be ready by the end of 2013. | Completed | |
| 3.1.3: NERC to develop, in conjunction with an external agency, a social media hub and website for engaging consumers using an interactive approach and tracking this engagement through established media metrics | Ongoing<br>Expected be completed by the end of September 2013. | Done | www.eejordan.net |
| Target 3.1.4: NERC to develop informative segments in conjunction with an external agency using the traditional media approach of radio, television and | Ongoing<br>A consultant has already been recruited. | Done | Done as a part of awareness creation activity |

| | | | |
|---|---|---|---|
| newspapers / written media | | | |
| 3.2 - *Enhanced awareness and knowledge of retailers' management and retail staff on appliance energy efficiency issues and sales rationales* | | | |
| 3.2.1: NERC and JSMO to train existing information centre staff in JSMO on delivering information to manufacturers, suppliers, retailers and consumers about the national S&L project, new energy efficiency regulations, date of entry of these regulations, compliance requirements, support opportunities and consequences of non-compliance | To be done later<br><br>This was to be an integral part of the forthcoming awareness campaign. | Completed | Done as part of overall awareness creation for manufacturers and retailers |
| 3.2.2: NERC to develop, in conjunction with an external agency, a manual for retailers, informing corporate salesmen on basic knowledge and strategy of selling EE appliances | To be done later<br>This was to be an integral part of the forthcoming awareness campaign. | Completed | Done with Jordan Chamber of Commerce in the form of flyers |
| 3.2.3: NERC to deliver training to retailer marketing managers using the developed retail manual | To be done later<br>This was to be an integral part of the forthcoming awareness campaign. | Completed | Done with Jordan Chamber of Commerce |
| 3.2.4: NERC to provide information to importers and manufacturers on EU electrical appliances requirements and encourage them to voluntarily adopt the EE label prior to its mandatory enforcement | To be done later<br>This was to be an integral part of the forthcoming awareness campaign. | Completed | |

| **Outcome 4: Increased capacity of manufacturers to produce and market EE appliance** | | | |
|---|---|---|---|
| ***At least 50% of local manufacturers producing and marketing EE appliances***<br><br>***Remark at MTR***: Due to the costs and complexities involved in upgrading production lines, it is impossible for manufacturers to do so during the lifetime of the project.<br>***Remark at MTR***: Given time and financial assistance (i.e. technical market assessments and options for manufacturing processes that will be produced under 4.1.1 and 41.22, respectively), it is highly likely that manufacturers will be fully compliant with EU regulations by 2017-2018.<br>***Remark at TE***: Local Manufacturers has been provided a grace period of two years to comply with the mandated MEPS and S&L for appliances | | | |
| **Activity / Target** | **Status at the time of MRE** | **Status at TE** | **Remarks** |
| 4.1 - *Enhanced capacities of manufacturers and suppliers in S&L regulations and related business opportunities* | | | |
| 4.1.1: NERC to have oversight of a full economic impact analysis publication developed in conjunction with an external agency for the EE label, associated standard and regulations to allow manufacturers and suppliers to understand the long term market transformation process they will endure | Ongoing<br>Expected to be achieved by the end of September 2013. | Completed | |
| 4.1.2: NERC to have oversight of a technical analysis developed in conjunction with an external agency detailing the financial and operational impact on the manufacturing process of each of the project's | Ongoing<br>Expected to be achieved by the end of September 2013. | Completed | Completed along with 4.1.1 |

| | | | |
|---|---|---|---|
| appliances | | | |
| 4.2 - *Enhanced abilities of manufacturers in the development of more efficient appliances* | | | |
| 4.2.1: Train NERC staff on the technical aspects of upgrading manufacturer production lines to provide a sustainable knowledge base within NERC as an information hub for manufactures wishing to upgrade their facilities | To be done later | Completed | |
| 4.2.2: NERC to deliver individual consultations for local manufacturers regarding the expected costs and technical requirements of upgrading their EE appliances manufacturing facilities | To be done later | Partially done | Not done individually. However outputs of 4.1.1 and 4.1.2 covers them to some extent |
| 4.3.3: NERC to organize international study tours for manufacturers to observe foreign manufacturing capabilities in the home appliances sector, aiming to implement international best practices in Jordan | Partially completed | | A study tour was carried out in 2011 in Egypt.<br>No more study tours are expected during the remainder of the project, principally because of project redesign |
| 4.3 – *Manufacturer and supplier participation in an end-user awareness campaign about S&L* | | | |
| 4.3.1: NERC to approach manufacturers and suppliers to ensure their support and commitment to long-term awareness and marketing efforts encouraging consumers to switch to EE appliances | To be done later<br>This was to be an integral part of the forthcoming awareness campaign. | Manufacturers and suppliers were approached but not much achievements | There is resistance from local manufacturers to participate and co-operate |
| 4.3.2: NERC to assist individual manufacturers and suppliers in identifying and simplifying appliance technical details to allow the information to be communicated to consumers with no technical knowledge of EE | To be done later<br>This was to be an integral part of the forthcoming awareness campaign. | Done | Was done as a part of awareness creation efforts |
| 4.3.3: NERC to assist suppliers and manufacturers in including EE as a focus of their own marketing campaigns | To be done later<br>This was to be an integral part of the forthcoming awareness campaign. | Done | Was done as a part of awareness creation efforts |

# Annex 7: GEF Tracking Tool

## Tracking Tool for Climate Change Mitigation Projects (For CEO Endorsement)

**Special Notes: reporting on lifetime emissions avoided**

**Lifetime direct GHG emissions avoided:** Lifetime direct GHG emissions avoided are the emissions reductions attributable to the investments made **during the project's supervised implementation period**, totaled over the respective lifetime of the investments.
**Lifetime direct post-project emissions avoided:** Lifetime direct post-project emissions avoided are the emissions reductions attributable to the investments made outside the project's supervised implementation period, but supported by financial facilities put in place by the GEF project, totaled over the respective lifetime of the investments. These financial facilities will still be operational after the project ends, such as partial credit guarantee facilities, risk mitigation facilities, or revolving funds.
**Lifetime indirect GHG emissions avoided (top-down and bottom-up):** indirect emissions reductions are those attributable to the long-term outcomes of the GEF activities that remove barriers, such as capacity building, innovation, catalytic action for replication.
Please refer to the Manual for Calculating GHG Benefits of GEF Projects.
Manual for Energy Efficiency and Renewable Energy Projects
Manual for Transportation Projects
For LULUCF projects, the definitions of "lifetime direct and indirect" apply. Lifetime length is defined to be 20 years, unless a different number of years is deemed appropriate. For emission or removal factors (tonnes of CO2eq per hectare per year), use IPCC defaults or country specific factors.

| General Data | Target at CEO Endorsement | Notes |
|---|---|---|
| Project Title | Energy Efficiency Standards and Labelling | |
| GEF ID | 3215 | |
| Agency Project ID | 3735 | |
| Country | Jordan | |
| Region | MENA | |
| GEF Agency | UNDP | |
| Date of Council/CEO Approval | April 29, 2010 | Month DD, YYYY (e.g., May 12, 2010) |
| GEF Grant (US$) | 10,00,000 | |
| Date of submission of the tracking tool | | Month DD, YYYY (e.g., May 12, 2010) |
| | | |
| Is the project consistent with the priorities identified in National Communications, Technology Needs Assessment, or other Enabling Activities under the UNFCCC? | 1 | Yes = 1, No = 0 |
| Is the project linked to carbon finance? | 0 | Yes = 1, No = 0 |
| Cofinancing expected (US$) | 200000 | |

| Objective 2: Energy Efficiency | | |
|---|---|---|
| | | |
| **Please specify if the project targets any of the following areas** | | |
| Lighting | 0 | Yes = 1, No = 0 |
| Appliances (white goods) | 1 | Yes = 1, No = 0 |
| Equipment | 0 | Yes = 1, No = 0 |
| Cook stoves | 0 | Yes = 1, No = 0 |
| Existing building | 0 | Yes = 1, No = 0 |
| New building | 0 | Yes = 1, No = 0 |
| Industrial processes | 0 | Yes = 1, No = 0 |
| Synergy with phase-out of ozone depleting substances | 0 | Yes = 1, No = 0 |
| Other (please specify) | | |
| | | |
| Policy and regulatory framework | 1 | 0: not an objective/component<br>1: no policy/regulation/strategy in place<br>2: policy/regulation/strategy discussed and proposed<br>3: policy/regulation/strategy proposed but not adopted<br>4: policy/regulation/strategy adopted but not enforced<br>5: policy/regulation/strategy enforced |
| Establishment of financial facilities (e.g., credit lines, risk guarantees, revolving funds) | 0 | 0: not an objective/component<br>1: no facility in place<br>2: facilities discussed and proposed<br>3: facilities proposed but not operationalized/funded<br>4: facilities operationalized/funded but have no demand<br>5: facilities operationalized/funded and have sufficient demand |
| Capacity building | 0 | 0: not an objective/component<br>1: no capacity built<br>2: information disseminated/awareness raised<br>3: training delivered<br>4: institutional/human capacity strengthened<br>5: institutional/human capacity utilized and sustained |
| | | |
| Lifetime energy saved | | MJ (Million Joule, IEA unit converter: http://www.iea.org/stats/unit.asp) Fuel savings should be converted to energy savings by using the net calorific value of the specific fuel. End-use electricity savings should be converted to energy savings by using the conversion factor for the specific supply and distribution system. These energy savings are then totaled over the respective lifetime of the investments. |
| Lifetime direct GHG emissions avoided | 1,83,000 | tonnes CO2eq (see Special Notes above) |
| Lifetime direct post-project GHG emissions avoided | 2,30,000 | tonnes CO2eq (see Special Notes above) |
| Lifetime indirect GHG emissions avoided (bottom-up) | 28,59,000 | tonnes CO2eq (see Special Notes above) |
| Lifetime indirect GHG emissions avoided (top-down) | | tonnes CO2eq (see Special Notes above) |

***Comment: Data has been filled at the time of TE using GHG emission reductions mentioned in Project Document***

# Tracking Tool for Climate Change Mitigation Projects
## (For Mid-term Evaluation)

**Special Notes: reporting on lifetime emissions avoided**

**Lifetime direct GHG emissions avoided:** Lifetime direct GHG emissions avoided are the emissions reductions attributable to the investments made **until the mid-term evaluation**, totaled over the respective lifetime of the investments.
Please refer to the Manual for Calculating GHG Benefits of GEF Projects.
Manual for Energy Efficiency and Renewable Energy Projects
Manual for Transportation Projects

For LULUCF projects, the definition of "lifetime direct" applies. Lifetime length is defined to be 20 years, unless a different number of years is deemed appropriate. For emission or removal factors (tonnes of CO2eq per hectare per year), use IPCC defaults or country specific factors.

| General Data | Results at Mid-term Evaluation | Notes |
|---|---|---|
| Project Title | Energy Efficiency Standards and Labelling | |
| GEF ID | 3215 | |
| Agency Project ID | 3735 | |
| Country | Jordan | |
| Region | MENA | |
| GEF Agency | UNDP | |
| Date of Council/CEO Approval | April 29, 2010 | Month DD, YYYY (e.g., May 12, 2010) |
| GEF Grant (US$) | 10,00,000 | |
| Date of submission of the tracking tool | | Month DD, YYYY (e.g., May 12, 2010) |
| | | |
| Is the project consistent with the priorities identified in National Communications, Technology Needs Assessment, or other Enabling Activities under the UNFCCC? | 1 | Yes = 1, No = 0 |
| Is the project linked to carbon finance? | 0 | Yes = 1, No = 0 |
| Cumulative cofinancing realized (US$) | 200000 | |
| Cumulative additional resources mobilized (US$) | - | additional resources means beyond the cofinancing committed at CEO endorsement |
| | | |
| **Objective 2: Energy Efficiency** | | |
| | | |
| **Please specify if the project targets any of the following areas** | | |
| Lighting | 0 | Yes = 1, No = 0 |
| Appliances (white goods) | 1 | Yes = 1, No = 0 |
| Equipment | 0 | Yes = 1, No = 0 |
| Cook stoves | 0 | Yes = 1, No = 0 |
| Existing building | 0 | Yes = 1, No = 0 |
| New building | 0 | Yes = 1, No = 0 |
| Industrial processes | 0 | Yes = 1, No = 0 |
| Synergy with phase-out of ozone depleting substances | 0 | Yes = 1, No = 0 |
| Other (please specify) | | |
| | | |
| Policy and regulatory framework | 4 | 0: not an objective/component<br>1: no policy/regulation/strategy in place<br>2: policy/regulation/strategy discussed and proposed<br>3: policy/regulation/strategy proposed but not adopted<br>4: policy/regulation/strategy adopted but not enforced<br>5: policy/regulation/strategy enforced |
| Establishment of financial facilities (e.g., credit lines, risk guarantees, revolving funds) | 0 | 0: not an objective/component<br>1: no facility in place<br>2: facilities discussed and proposed<br>3: facilities proposed but not operationalized/funded<br>4: facilities operationalized/funded but have no demand<br>5: facilities operationalized/funded and have sufficient demand |
| Capacity building | 3 | 0: not an objective/component<br>1: no capacity built<br>2: information disseminated/awareness raised<br>3: training delivered<br>4: institutional/human capacity strengthened<br>5: institutional/human capacity utilized and sustained |
| | | |
| Lifetime energy saved | 23,81,94,000 | MJ (Million Joule, IEA unit converter: http://www.iea.org/stats/unit.asp) Fuel savings should be converted to energy savings by using the net calorific value of the specific fuel. End-use electricity savings should be converted to energy savings by using the conversion factor for the specific supply and distribution system. These energy savings are then totaled over the respective lifetime of the investments. |

# Tracking Tool for Climate Change Mitigation Projects
## (For Terminal Evaluation)

**Special Notes: reporting on lifetime emissions avoided**

**Lifetime direct GHG emissions avoided:** Lifetime direct GHG emissions avoided are the emissions reductions attributable to the investments made **during the project's supervised implementation period**, totaled over the respective lifetime of the investments.
**Lifetime direct post-project emissions avoided:** Lifetime direct post-project emissions avoided are the emissions reductions attributable to the investments made outside the project's supervised implementation period, but supported by financial facilities put in place by the GEF project, totaled over the respective lifetime of the investments. These financial facilities will still be operational after the project ends, such as partial credit guarantee facilities, risk mitigation facilities, or revolving funds.
**Lifetime indirect GHG emissions avoided (top-down and bottom-up):** indirect emissions reductions are those attributable to the long-term outcomes of the GEF activities that remove barriers, such as capacity building, innovation, catalytic action for replication.
Please refer to the Manual for Calculating GHG Benefits of GEF Projects.
Manual for Energy Efficiency and Renewable Energy Projects
Manual for Transportation Projects

For LULUCF projects, the definitions of "lifetime direct and indirect" apply. Lifetime length is defined to be 20 years, unless a different number of years is deemed appropriate. For emission or removal factors (tonnes of CO2eq per hectare per year), use IPCC defaults or country specific factors.



| General Data | Results at Terminal Evaluation | Notes |
|---|---|---|
| Project Title | Energy Efficiency Standards and Labelling | |
| GEF ID | 3215 | |
| Agency Project ID | 3735 | |
| Country | Jordan | |
| Region | MENA | |
| GEF Agency | UNDP | |
| Date of Council/CEO Approval | April 29, 2010 | Month DD, YYYY (e.g., May 12, 2010) |
| GEF Grant (US$) | 10,00,000 | |
| Date of submission of the tracking tool | January 30, 2015 | Month DD, YYYY (e.g., May 12, 2010) |
| | | |
| Is the project consistent with the priorities identified in National Communications, Technology Needs Assessment, or other Enabling Activities under the UNFCCC? | 1 | Yes = 1, No = 0 |
| Is the project linked to carbon finance? | 0 | Yes = 1, No = 0 |
| Cumulative cofinancing realized (US$) | | |
| Cumulative additional resources mobilized (US$) | | additional resources means beyond the cofinancing committed at CEO endorsement |
| | | |
| **Objective 2: Energy Efficiency** | | |
| | | |
| **Please specify if the project targets any of the following areas** | | |
| Lighting | 0 | Yes = 1, No = 0 |
| Appliances (white goods) | 1 | Yes = 1, No = 0 |
| Equipment | 0 | Yes = 1, No = 0 |
| Cook stoves | 0 | Yes = 1, No = 0 |
| Existing building | 0 | Yes = 1, No = 0 |
| New building | 0 | Yes = 1, No = 0 |
| Industrial processes | 0 | Yes = 1, No = 0 |
| Synergy with phase-out of ozone depleting substances | 0 | Yes = 1, No = 0 |
| Other (please specify) | | |
| | | |
| Policy and regulatory framework | 5 | 0: not an objective/component<br>1: no policy/regulation/strategy in place<br>2: policy/regulation/strategy discussed and proposed<br>3: policy/regulation/strategy proposed but not adopted<br>4: policy/regulation/strategy adopted but not enforced<br>5: policy/regulation/strategy enforced |
| Establishment of financial facilities (e.g., credit lines, risk guarantees, revolving funds) | 0 | 0: not an objective/component<br>1: no facility in place<br>2: facilities discussed and proposed<br>3: facilities proposed but not operationalized/funded<br>4: facilities operationalized/funded but have no demand<br>5: facilities operationalized/funded and have sufficient demand |
| Capacity building | 4 | 0: not an objective/component<br>1: no capacity built<br>2: information disseminated/awareness raised<br>3: training delivered<br>4: institutional/human capacity strengthened<br>5: institutional/human capacity utilized and sustained |
| | | |
| Lifetime energy saved | | MJ (Million Joule, IEA unit converter: http://www.iea.org/stats/unit.asp) Fuel savings should be converted to energy savings by using the net calorific value of the specific fuel. End-use electricity savings should be converted to energy savings by using the conversion factor for the specific supply and distribution system. These energy savings are then totaled over the respective lifetime of the investments. |
| Lifetime direct GHG emissions avoided | - | tonnes CO2eq (see Special Notes above) |
| Lifetime direct post-project GHG emissions avoided | - | tonnes CO2eq (see Special Notes above) |
| Lifetime indirect GHG emissions avoided (bottom-up) | 7,30,000 | tonnes CO2eq (see Special Notes above) |
| Lifetime indirect GHG emissions avoided (top-down) | - | tonnes CO2eq (see Special Notes above) |

# Annex 8: Audit Trail

| Author | # | Para No./ comment location | Comment/Feedback on the draft TE report | TE team response and actions taken |
|---|---|---|---|---|
| | 1 | | Please include an Audit trail addressing the comments received on this draft TE report. | Audit trail included in the report |
| | 2 | | The formatting of the document is problematic and it's difficult to read in the current word format. The consultant should reformat it with proper margins and pages numbers and a page-numbered table of contents. | Required corrective action taken |
| | 3 | | The executive summary is way too long and should be 2-3 pages maximum and provide a succinct and clear summary of all ratings in a table so the reader can see all ratings in one table. See pg. 2 of the ToR for the table to be presented. | Corrective action taken. However could not accommodate all the important points in 2-3 pages |
| | 4 | | The main thing the report is missing from a content-based perspective is an analysis and presentation of the GHG emission reductions. The CCM TT **must be filled out** with the direct and indirect emission reductions from the MTR and now the TE. | Corrective action taken. Presentation on GHG emission reductions has been included in the main body of the text (section 3.3.1, page 45) of the report as well in the summery (page 9) of the report,<br>CCM has also been filled and included in the report (Annex 7) |
| | 5 | | Its fine if the direct emissions are less than envisioned because the importance thing is not the emissions during the project period but the regulations put in place that will determine the project's contribution to reduced emissions versus the baseline going forward. The consultant must mention a final figure for each metric (direct and indirect) and then assess progress on that (and provide comments) versus the targets. | Corrective action has been taken and GHG emission figures included in the report.(Section 3.3.1 page 46) |
| | 6 | Executive Summery - Page 13 | Some of the ratings given are not consistent throughout the report. For example, the text in the Sustainability section lists sustainability in terms of financial recourse as 'Likely', yet the following ratings summary table lists the financial recourse sustainability as 'Not applicable.' Please have the consultant correct these inconsistencies. | Corrective action taken |
| | 7 | Table 4 – Page 9 | Project Outcome 5 is missing. There are only four outcomes listed for the project in these tables/lists, while the | Project management has been considered as a separate outcome |

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| | | Table 2.1 – Page 22)<br><br>Table 2.4 - Page 25-26<br><br>Executive Summary - Conclusions section<br><br>Annex 6 - Page 63-72) | ToR lists five project outcomes. If Outcome 5 was intentionally left out from these tables/lists, it should be explained why. | (Outcome 5) at some places in the project document and the TOR for the Terminal Evaluation. However considering that it is not one of the components of the project design, it has not been considered as a separate parameter to be evaluated<br><br>This explanation has now been included in the report (footnote 2 in the Executive Summary; section 1,page 17; section 2, page 26 |
| | 8 | Section 1.2 'Scope and Methodology"<br><br>(Page18). | The report should have additional information on how the interviewees were chosen for the TE There should also be a discussion of the limitations of the evaluation in this section. | Corrective action taken. Additional information included on the limitations ( page 23) and selection of interviewees (page 20) |
| | 9 | | The ProDoc signature date should be included in the final report. | Corrective action taken |
| | 10 | Section 3.3.1 "Effectiveness and Efficiency" | "Effectiveness and Efficiency" only addresses and gives a rating for effectiveness. The consultant needs to also discuss and rate efficiency (cost-effectiveness). See section 2.8 of the prodoc. | Corrective action taken |
| | 11 | Page 40<br>Page 37 | Certain categories require more analysis and discussion in order to justify the rating given. For example, there are ratings given for five categories of Sustainability (financial recourses, socio-political, institutional framework and governance, environmental, and overall), yet there is only discussions around two categories of sustainability: financial resources and overall. The consultant should also discuss and justify the sustainability ratings given for the other three categories of the project. Similarly, the consultant should expand their discussion to include M&E plan implementation (pg. 37), so that the rating for this category is justified. | Corrective action taken |
| | 12 | Section 3.3.7 | Section 3.3.7 on Impacts should also include a discussion on any (a) unintended impacts of the project, and summarize any (b) catalytic effects. | Corrective action taken |
| | 13 | Page 40 | In regards to mainstreaming of UNDP priorities, the consultant states uses the words "improved governess" and "gender extra" when I think they may have meant "improved governance" and "gender equality" (pg. 40). | Typo errors has been corrected |
| | 14 | Page 43 | The recommendations are not easy to | Corrective action taken |

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|---|---|---|---|---|
| | | | identify in the report. We advise to have the consultant separate out the recommendations from the conclusions and lessons section (pg. 43). It is also recommended to have the consultant include a short recommendations summary table in the Executive Summary. | |
| | 15 | Page 44 | The "corrective actions for the design, implementation, monitoring and evaluation of the project" are not easy to understand and are not complete sentences in some cases. For example, the consultant lists "the log frame of use of qualitative aspects as the end objective need to be avoided." Please have the consultant reformulate these statements so they are S.M.A.R.T. recommendations. Likewise, the "best and worst practices" (p. 44) are not really best and worst practices, but rather conclusions about the project. This section should be revised. | Corrective action taken |
| | 16 | Annex 4 | Annex 4 (Evaluation Consultant Agreement Form) - please have the consultant sign the form and include it in the final draft: see ToR for form. | Corrective action taken |
| | 17 | Annex 5 | Annex 5 (List of Updated Outputs and Activities) can probably be removed since it is redundant with parts of Annex 6 (Comparison of Original and Revised Activities). | Corrective action taken |
| | 18 | Annex 7 | Annex 7 (Achievement of Expected Objective and Outcome) - This table needs to be updated and completed in the final report. | Corrective action taken |
| | 19 | | Please have the consultant list the documents reviewed – **I assume he received all PIRs and other relevant info?** | Corrective action taken |
| | 20 | | Following the UNDP-GEF TE Guidance, in addition to the annexes already listed, the consultant **should also include the following annexes:**<br>- Evaluation Question Matrix<br>- Questionnaire/Interview Guide Used and Summary of Results<br>- Evaluation Report Clearance Form: | Corrective action taken |

## Annex 9: Evaluation Consultant Agreement Form

**Evaluators:**

1. Must present information that is complete and fair in its assessment of strengths and weaknesses so that decisions or actions taken are well founded.
2. Must disclose the full set of evaluation findings along with information on their limitations and have this accessible to all affected by the evaluation with expressed legal rights to receive results.
3. Should protect the anonymity and confidentiality of individual informants. They should provide maximum notice, minimize demands on time, and respect people's right not to engage. Evaluators must respect people's right to provide information in confidence, and must ensure that sensitive information cannot be traced to its source. Evaluators are not expected to evaluate individuals, and must balance an evaluation of management functions with this general principle.
4. Sometimes uncover evidence of wrongdoing while conducting evaluations. Such cases must be reported discreetly to the appropriate investigative body. Evaluators should consult with other relevant oversight entities when there is any doubt about if and how issues should be reported.
5. Should be sensitive to beliefs, manners and customs and act with integrity and honesty in their relations with all stakeholders. In line with the UN Universal Declaration of Human Rights, evaluators must be sensitive to and address issues of discrimination and gender equality. They should avoid offending the dignity and self-respect of those persons with whom they come in contact in the course of the evaluation. Knowing that evaluation might negatively affect the interests of some stakeholders, evaluators should conduct the evaluation and communicate its purpose and results in a way that clearly respects the stakeholders' dignity and self-worth.
6. Are responsible for their performance and their product(s). They are responsible for the clear, accurate and fair written and/or oral presentation of study imitations, findings and recommendations.
7. Should reflect sound accounting procedures and be prudent in using the resources of the evaluation.

**Evaluation Consultant Agreement Form**

**Agreement to abide by the Code of Conduct for Evaluation in the UN System**

**Name of Consultant:** Dinesh Aggarwal

**Name of Consultancy Organization** (where relevant)**:** _____

**I confirm that I have received and understood and will abide by the United Nations Code of Conduct for Evaluation.**

Signature: 

Evaluation Report Reviewed and Cleared by

UNDP Country Office

Name: _____

Signature: _____ Date: _____

UNDP GEF RTA

Name: _____

Signature: _____ Date: _____