**Mid-Term Evaluation Report**

**Project Title: Transforming the Market for Efficient Lighting**

**PIMS 4160**

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**Prepared for UNDP Russia**

**by**

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**List of Abbreviations**

EBRD European Bank for Reconstruction and Development

EEL Energy Efficient Lighting

CDR Combined Delivery Report

CFL Compact Fluorescent Lamp

CO2 Carbon Dioxide

CTA Chief Technical Adviser

GHG Greenhouse Gas

GWh Gigawatt-hour

GLS General Lighting System (incandescent lamp)

IO Implementing Organisation

KWh Kilowatt-hour

LED Light Emitting Diode

MTE Mid-Term Evaluation

MTT Mid-Term Target

Mtn Million Tons

NGO Non-Governmental Organisation

NPD National Project Director

OECD Organisation for Economic Cooperation and Development

PDD Project Design Document

PIN Project Information Note

PM Project Manager

PSC Project Steering Committee

RTA Regional Technical Adviser

SanPin Sanitary Regulations and Standards

SNiP Construction Norms and Regulations

ToR Terms of Reference

UNDP United Nations Development Programme

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1. **Executive Summary**
* **Brief description of project**

The goal of this project is to reduce national greenhouse gas (GHG) emissions in Russia by meeting the project objective of transforming the Russian lighting market towards the use of more energy efficient lighting technologies and phasing-out inefficient lighting products. The project will do so by developing and adopting energy efficient performance and product quality standards, including implementing national and regional policies for phasing-out inefficient light sources, and promoting effective enforcement and control mechanisms. The supply chain for energy efficient lighting will be strengthened through market research and monitoring, and support for the development of new energy efficient lighting products. Efficient lighting technologies will be piloted in Moscow and the Volga Federal District, with the latter’s capital being Nizhny Novgorod, through residential, public buildings and street lighting initiatives, and replicated broadly.

The four Outcomes of the project are:

1. Improved efficient lighting standards and policy framework.
2. Supply chain for energy efficient lighting is strengthened.
3. Energy efficient lighting is increased in Moscow residential and public buildings.
4. Energy-efficient street lighting is adopted in the Volga Federal District.

A summary of the present project status under each of the 4 above-mentioned Outcomes is provided below:

* Several laws/decrees have been introduced to promote energy efficient lighting in the country. However, no actual work on developing testing procedures has started, with the result that there are no “Internationally accepted procedures (that) are applied (to) Russia”, as per the mid-term target. Moreover, the modernisation plan for an accredited national metrology laboratory, also a mid-term target, has still not been formulated. These issues require additional efforts, if the end-of-project targets of having “Final set of drafts for standards proposed to national normalisation body” and “Several national metrology laboratories modernized” were to be met.
* Strengthening of the supply chain has proceeded very smoothly, with several mid-term targets having been met.
* Implementation of energy efficient lighting in Moscow residential and public buildings is way behind schedule. The mid-term target called for “Lighting system of 3 schools/hospitals (to be) fully upgraded”, but no physical work has even started on any upgrading. There should be a renewed focus on this activity to ensure that end-of-project targets of having the “Lighting systems of 40 schools/hospitals fully upgraded” will be met.
* Energy-efficient street lighting in the Volga Federal District has proceeded very well. Also, there are good indications for replication activities in other Municipalities of the District and elsewhere. In the latter case, the project has initiated support to the City of Sochi to implement an energy efficient street lighting programme.
* **Context and purpose of the evaluation**

In accordance with UNDP/GEF Monitoring and Evaluation policies and procedures, all projects with long implementation periods of 5 years and above are strongly encouraged to conduct mid-term evaluations. In addition to providing an independent in-depth review of implementation progress, such evaluations respond to GEF Council decisions on transparency and better access to information during implementation.

The purpose of a mid-term evaluation is to assess progress towards the achievement of stated project activities, outputs and outcomes, to evaluate their adequacy and relevance, to identify and document lessons learned to date (including lessons that might improve design and implementation of other UNDP/GEF projects), and to make recommendations regarding specific actions that might be taken to improve the project. It is expected to serve as a means of validating or filling the gaps in the initial assessment of relevance, effectiveness and efficiency obtained from monitoring. The mid-term evaluation provides the opportunity to assess early signs of project success or failure and prompt any necessary corrective actions.

* **Main conclusions, recommendations and lessons learned**

**Conclusions and Recommendations**

1. **Outcome 1: Improved efficient lighting standards and policy framework.**

**Conclusion:**The project was instrumental in working with the Government to have several pieces of legislation enacted since it came into operation. Among them are (a couple of them were enacted before the project became operational):

• Presidential Decree # 889 of June 2008 “On Certain Measures for Increasing Energy and Ecological Efficiency of Russia’s Economy”.

• Federal Law No. 261 of 11 November 2009 “On Energy Conservation and Energy Efficiency Improvement and on Amending Some Legislative Acts of the Russian Federation”.

• Government’s Decree No. 2446-r of 27 December 2010 outlining the Russian Federation State Programme “Energy Conservation and Energy Efficiency Improvement for the Period until 2020”.

• Government’s Decree No. 602 of 20 July 2011 “On Approval of the Requirements to Lighting Devices and Electric Lamps used in Alternating Current Circuits for Illumination” specifies the requirements for electric lamps and lighting devices for both outdoor and indoor lighting.

• SNiP (Construction Norms and Regulations) No. 23-05-95 on “Natural and Artificial Lighting”, which came into effect on 20 May 2011, includes specific minimum energy performance requirements of lighting systems in commercial buildings, new residential construction, street lighting, and industrial lighting. It mandates a maximum permissible mercury contents level of 5 mg in CFLs.

The project has rightfully engaged the private sector, whose active participation is crucial in transforming the market for energy efficient lighting – the main private sector players indicated that they did not require direct support from the project; however, in their view, the project can assist them in their dialogue with the Government to put in place and implement the appropriate regulatory mechanisms and standards.

Regulations exist for a gradual phase-out of inefficient lighting and for collection and recycling of CFLs, in view of their potentially high mercury content. However, enforcement of the Regulations remains a challenge. The private sector is unanimous in indicating that mechanisms for enforcement of the Regulations and Standards, that would constitute the engine of growth to the utilisation of quality products for energy efficient lighting in all sectors of the economy, are inadequate and need to be developed/strengthened. It is in this area that the private sector looks towards UNDP for support.

One of the modalities for enforcement would be to have a modern independent, accredited testing laboratory to create a level playing field for testing both imported and locally-produced lamps and lighting fixtures. At the present time, there are numerous sub-standard (and inexpensive) imported lighting products that flood the market and create an unhealthy competition for the local private sector. This issue was identified during project formulation and allocation was made in the project document for a “Plan of modernization of national metrology laboratories” as a mid-term target (MTT) in the logframe.

The project has the support of a part-time Expert for developing testing laboratories infrastructure. She has prepared several reports, including one entitled “Survey of Metrology Laboratories at Production and Research facilities for testing energy efficient lighting equipment”; it provides a clear status of what each of the laboratories in the country can do. However, the modernisation plan, as called for as a mid-term target, has not been formulated yet. In this regard, it is worth noting that, at the Steering Committee meeting held on 18 March 2010, the RTA “stressed the importance of achieving results and not on the number of activities undertaken”.

**Recommendation:** At the present time, there are 3 nationally-accredited testing laboratories in the country, viz. ARHILIGHT and the Saransky Institute named after Ladygin, both private-owned, but with the latter having somewhat outdated equipment, and the Government-owned Institute for Opto-Physical Measurements. In addition, a fourth national laboratory, the Moscow Institute for Lighting Technology, is not accredited.

On the basis of her report mentioned above, the Expert needs to make a recommendation on which of the national laboratories, in her opinion, would be the best candidate for modernisation. This recommendation would be accompanied by a list of additional state-of-the–art equipment that would be required, including their procurement costs, the costs of works associated with their installation/testing/commissioning and a time-frame for modernisation to be completed. This would constitute a modernisation plan that would be submitted to the PSC for a decision. Some funds for initiating modernisation have been allocated in the project budget.

These activities leading towards having a modernisation plan formulated and approved need to be undertaken soonest; otherwise the implementation of a modernisation plan, as indicated as an “End of project target”, runs the risk of falling behind. The more the delay in having an internationally-recognised and accredited testing laboratory in the country, the longer will be the hardship faced by the local private sector in making a dent in the domestic energy efficient lighting market.

ToRs for developing/adopting internationally accepted testing procedures for EEL products have been developed and submitted to the Government. No actual work on developing these testing procedures has started. These should also be addressed in parallel with the work on laboratory modernisation.

1. **Outcome 2: Supply chain for energy efficient lighting is strengthened**

**Conclusion:** The project formulated a methodology for investigating and analysing the lighting market, following which a report on lamps and lighting fixtures market situation covering the period 2005 – 2010 was prepared. On the issue of training curriculum, the project has been cooperating with the Moscow Power Engineering Institute to develop a course for training of Engineers/Architects in energy-efficient lighting technologies. A text-book entitled “Energy-Efficient Lighting” has completed a scientific and technical evaluation process involving academics from several technical institutions of higher learning and has been sent to the printers. It is expected that the text-book will be issued in December 2012 and that it will be adopted by a large majority of the technical institutes/universities in the country. Finally, the project organises one-day courses on a monthly basis to upgrade the knowledge and technical skills of lighting specifiers/technicians at the “Dom Sveta” in Moscow. In doing so, the project utilises user-friendly, internet-based and highly-rated lighting design tools for industry professionals, e.g. DIALUX 4.10 and others. On these issues, the project has performed very well.

**Recommendation:** The project document makes mention of “new curricula for high schools”; however, there appears to be a “misconception” on how the term “high school” is interpreted in Russia. In many countries, “high school” refers to secondary education; in Russia, the common understanding is that it relates to University-level education. Anyway, with regard to education at the University level, the issue has been addressed above. However, it makes perfect sense to introduce the concept of energy-efficient lighting at the secondary level also (as opposed to tertiary or University level) to educate students on the benefits of such lighting systems. In this connection, UNDP supported the publication of a text-book entitled “Energy Conservation” (Authors: Sergeyev, S. K., et. al., 2004) for 8th graders. The time is now opportune for the project to support a revised version of this text-book that could include a chapter on energy-efficient lighting.

It is recognised, however, that the mid-term target makes no mention of introducing course content on energy-efficient lighting at the secondary school level.

1. **Outcome 3: Energy efficient lighting is increased in Moscow residential and public buildings Conclusion:**

The project has undertaken preliminary energy audits at 10 schools in Moscow; these were jointly identified by the Moscow City Administration and the Ministry of Education. Furthermore, complete audits were undertaken at 3 of the 10 schools. The results of these 3 audits were used to initiate and complete the full feasibility and design studies and to prepare bidding documents for upgrading the lighting system at these schools with LEDs. The Hygiene Institute has provided clearance for implementing LEDs at the schools and some classes have installed LEDs, as a pilot (for evaluation purposes); however, Requests for Proposals from potential bidders cannot be issued until final approval of the associated Sanitary Regulations and Standards (SanPiN) is secured from the Ministry of Justice. This is expected by December 2012.

Hence, the introduction of energy efficient lighting systems in schools, hospitals/apartment buildings have not commenced yet. As per the MTT, lighting schemes at 3 schools/hospitals should have been upgraded by now; however, upgrading is still in its pre-tendering stages. The survey on penetration of energy efficient lamps (CFLs and LEDs), instead of being completed as per the MTT, it is still in its planning stages. Suffice it to restate, as mentioned earlier, the importance of focusing on results rather than on the number of activities undertaken. On the issue of a communication and promotion strategy, one has been prepared by the Russian Energy Agency. In addition, the project has been having on-going communication and promotional activities, including press lunches, radio interviews and film festivals and hosts a website [www.undp-light.ru](http://www.undp-light.ru)that provides useful project information. (A list of project events and publications is provided in Annex 5).

Moreover, the project has published 5 brochures, all drafted by highly-qualified specialists in their respective fields. Their contents are very technical though, except for the one dealing with CFLs, some with graphs and formulae, thus making them of value to only a captive/limited audience possessing a certain level of technical education. This may have been the target audience of the brochures; however, the project also needs to produce brochures that would be easily-understandable by the general public.

Finally, with regard to domestic CFL recycling, the Moscow City Administration has issued a decree (#1010-RZP: “On organization of work on collection, transport and recycling of waste luminescent lamps”) mandating CFL collection and recycling and the participation of NPP Ecotrom has been solicited for this purpose. However, the recycling rate has not been determined.

In a nutshell, there is no penetration yet of energy-efficient lighting in Moscow homes (except for a promotional distribution of energy saving lamps among Moscow citizens in cooperation with Philips) and buildings and it is too soon to talk about any replication.

**Recommendations:** Despite the support of a full-time Moscow Pilot Projects Coordinator funded under the project, piloting in Moscow has badly fallen short of the MTT of “lighting systems at 3 schools/hospitals fully upgraded”. Project management should redouble efforts to address this shortcoming soonest, which, otherwise, is likely to build up and fall short in the “End of Project Target” as well.

In addition, as indicated above, the 5 brochures are quite technical in nature and are of value to a limited audience. If this audience were the target of the brochures, then this is fine. However, what the project needs now, in the Evaluator’s view, is to also focus on producing brochures that will be easily understandable by the general population, providing them with information of the type(s) of energy-efficient lamps/lighting units, their costs, how in the long run they will cost less to operate (life-cycle cost), how to determine their quality on the basis of labelling, etc.; in short, brochures that will typically answer questions that the general public may have and that will assist them in making the right choice. These are generally best written by “popular science” journalists and could possibly be 2-3 pages long, rather than the 15 pages of the existing ones.

1. **Outcome 4: Energy-Efficient street lighting is adopted in Volga Federal District**

**Conclusion:**

Piloting activities in the Volga Federal District have been very well implemented. Over 2,400 improved lighting fixtures (out of a total of 9,000 ear-marked for replacement) have been installed to date. Now that the momentum has picked up, it is expected that the pace of modernising the street lighting fixtures will gather speed. Representatives of all 3 towns expressed great satisfaction of the residents towards the quality of lighting provided by the new units. They also indicated that their annual expenditures for street lighting have substantially decreased.

With regard to replication, the Sochi Administration has already contacted the project to ascertain the feasibility of energy efficient street lighting in the city. In this connection, in consultation with the Sochi Electric Utility “SochiSvet”, the project formulated a brief concept paper and performed a preliminary techno-economic study to determine costs involved, energy savings and the pay-back period.

**Recommendation**

Implementation of energy-efficient street lighting is still on-going in Dzerzhinsk, Shumerlya and Sarov and progress to-date has been very good. In fact, the (revised) MTT of having 2,000 fixtures installed has been exceeded.

With the objective of replication in mind, the project may wish to capitalize on the success of this initiative and organise a workshop, inviting the participation of neighbouring (and not so neighbouring) towns to have these 3 targeted towns share their experiences on the benefits derived from energy-efficient street lighting and how to go about implementing such initiative utilising their own resources. This is likely to produce a snow-ball effect and provide an additional boost to the private sector in terms of provision of consultancy services and sale of equipment.

1. **Project Management**

**Project Manager:** By his own account, the Project Manager’s “Moscow-based” activities require 80 -85% of his time, with the remaining devoted to the pilots in the Volga Federal District. However, he divides his time 50-50 between Nizhny Novgorod (the capital of the Volga Federal District) and Moscow. As activities in the Volga Federal District have advanced very well (his “extended” presence there may well have been one contributing factor, among others) and the “Moscow-based” activities, both in terms of regulatory work and piloting are quite behind schedule, it would appear logical that, in future, he spends the bulk of his time in Moscow. This argument is reinforced by the fact that the Chief Technical adviser (CTA) is also based in Nizhny Novgorod and his ToRs call for, among others, support to the implementation of pilot projects and this would include the pilots in the Volga Federal District.

Telecommuting is an accepted practice within UNDP, but it is understood that it would not compromise project activities and, eventually, expected results. When the expected mid-term results are quite delayed, as in the case of the “Moscow-based” activities (e.g. not a single school/hospital has even started upgrading and no plan of modernisation of national metrology laboratories exist yet), it is believed that telecommuting by the Project Manager should be reassessed.

**Recommendation**

The Project Manager should devote his future undivided attention to the outstanding “Moscow-based” activities that have accumulated delays. His permanent location in Moscow is critical for the success of the project, except for short absences on mission, and this will go a long way towards maintaining continuous “proximity” interaction with Central and Moscow Government Administrations with a view towards advancing/speeding up project activities there. A continuation of the smooth-running piloting activities in the Volga Federal District could be entrusted to the CTA, who is based there, anyway.

**Chief Technical Adviser (CTA)**

The Evaluator had a telephone conversation with the CTA, after completing his mission in Russia, and they discussed the type and level of support he provides to the project. He indicated that he worked part-time (50% of his professional time) on the project. He briefed the Evaluator on the types of interventions he undertakes on behalf of the project and, to understand these in more detail, the Evaluator enquired about the reports he submits to UNDP on his assignments, as he would have liked to read through a sample of reports. His answer was that he does not submit any report.

Incidentally, when they discussed the contents of the 5 brochures mentioned above, he did agree that, while they were of value to a certain category of readers, they were a bit too technical for the average Russian citizen and that additional brochures addressing the needs of the general public were required.

**Recommendation**

The Evaluator was provided with a 2-page ToR for the CTA and there is no mention of whom he reports to, what outputs are expected of him (only his “Responsibilities” are listed) and who certifies his outputs for payment. Unless this is normal practice with UNDP Russia, the Evaluator believes that remedial action should be implemented soonest.

**Expert on Science and Market Monitoring(Principal Scientific Consultant)**

The Expert on Science and Market Monitoring (Principal Scientific Consultant) is a highly respected specialist in the field of “SvetoTechnica” who, in the assessment of the Evaluator, sees the project as one that should be based on Science.

While it is true that the production of lighting equipment finds its basis in scientific studies, research and development, especially those related to the design and performance of lamps, regulators and lighting fixtures, the project itself deals with the principal objective of transforming the market for the application of efficient lighting. Moreover, none of the project activities, as outlined in the project document, deal with the “scientific concepts” behind energy efficient lighting, but rather the application of such lighting systems.

In light of the above, the Evaluator does not clearly see the added value to the project that a “Science” Expert brings on a subject that deals with transforming the market for energy efficient lighting. There is definitely a “technical education” component that is proposed to be dealt with very effectively by the Moscow Power Engineering Institute and this has been addressed together with the “high school issue” above. The Expert on Science and Market Monitoring does run the once-monthly training course for lighting specifiers at “Dom Sveta” and indications are that this is a very successful, project-oriented activity.

Moreover, with regard to “Market Monitoring”, the Evaluator finds the report prepared by Consultant N. I. Emelyanov (whom he did not meet) totally up to the mark; he seems to be very competent, on the basis of his report that the Evaluator reviewed, in undertaking an annual monitoring of the market. The Expert on Science and Market Monitoring indicated that, as part of his “Market Monitoring” activities, he prepared the ToRs of Consultant N. I. Emelyanov and reviewed his report. Is it efficient use of resources to have an Expert on “Market Monitoring” prepare the ToRs and review the report of another Expert on “Market Monitoring”? Could the preparation of the ToRs and report review have been more efficiently accomplished by the Project Manager and/or CTA?

**Recommendation**

It would be advisable for the project to give a fresh look as to whether the services of an “Expert on Science and Market Monitoring” are really required. Can any required expertise for services not already available be provided on an ad-hoc basis by short-term Consultants, including the present Expert? Moreover, the same issues on whom he reports to, what outputs are expected of him (only his “Responsibilities” are listed in the 2-page ToR that was provided) and who certifies his outputs for payment are pertinent.

**Project Office:** The project office is located at UNDP premises and is manned by the full-time Project Assistant and the Project Manager when he is in Moscow, i.e. 50 % of his time. In addition, the project is supported by a team consisting of a part-time Science/Monitoring Adviser \*, a full-time Moscow Pilot Coordinator and 8 other part-time national Experts working 50% of their time, including the Nizhny Novgorod-based CTA and the St. Petersburg-based Expert on Development of Production and Promotion of EEL Equipment (list provided in Table 4 below). All these Experts work from their individual locations and come to the office only when required.

In the view of the Evaluator, this is quite a novel approach in managing a project in the sense that the only person who comes to the office on a daily basis is the Project Assistant. All other experts, including the Project Manager and CTA, telecommute. This then gives rise to a very valid question: could it be that this very loose project management arrangement be the source of the project missing some mid-term targets in certain crucial areas, as evidenced in the ratings in Table 1 below?

**Recommendation:** UNDP Russia should consider making arrangements for all project Experts to work full-time/part-time daily from the project office. The only exception would be in infrequent cases of telecommuting by the Experts and, of course, for short-term consultants who work from their individual offices. Such an arrangement will necessitate the full-time presence of the Project Manager in Moscow to supervise the work of the Experts and provide guidance, as required, assist in monitoring progress on a regular basis and ensure that the targets set by the project are fully met. This will also create a team spirit among the Experts, which will greatly facilitate the exchange of information/ideas to move project activities forward towards a successful conclusion.

It is recognised that such an arrangement will require additional office space and, consequently, involve added costs; however, this forms part of the normal cost of doing business, just like the cost of maintaining the offices of any organisation anywhere in the world.

\* He erroneously, it seems, told the Evaluator that he worked full-time. UNDP Russia indicates that he works part-time (50% of the time).

* **Financial Management**

As perCDR figures for 2010 through 2012, bearing in mind that figures for 2012 are only provisional, expenditures per individual Activity are as follows:

|  |  |  |
| --- | --- | --- |
| **Activity** | **Total Expenditures ($)****(Govt. + UNDP – rounded to nearest thousand)** | **UNDP Expenditures ($)****for Consultants and Service Contracts (rounded to nearest thousand)** |
| Activity 1: EE Lighting Standards and Policy | 219,000 | 184,000 |
| Activity 2: EE Lighting Supply Chain | 250,000 | 190,000 |
| Activity 3: EE Homes and Buildings Lighting | 364,000 | 173,000 |
| Activity 4: EE Street Lighting  | 239,000 | 114,000 |
| Activity 5: Project Management | 182,000 | 101,000 |
| TOTAL | 1,254,000 | 762,000 |

The UNDP expenditures in the above Table relate only to Consultants and Individual Service Contracts (Consultants and Experts, in short), including Travel/DSA; audit fees, office rent and expenses, etc. have been excluded from the computation. They also exclude the 20% of funds that the project provides for street lighting in the Volga Federal District which, anyway, have not been yet recorded as expenditure.

Expenditures under Activities 1 and 2 are costs related mainly to Consultants and Experts. Expenditures under Activity 3 again relate to Consultants and Experts, except for $ 78,000 disbursed in 2012 and labelled under “Service Contract – Construction & Engineer”. This expenditure is likely in connection with the audits, feasibility and design studies for the schools, with the balance of $ 201,000 being paid for from project funds disbursed though Government implementing partner. Similarly, under Activity 4, all expenditures relate to Consultants and Experts, except for $ 13,000 in 2011 and $ 31,000 in 2012 (total of $ 44,000 - labelled under “Service Contract - Construction & Engineer” and “Service Contract - Studies & Research Service”, respectively) in connection with the feasibility studies for energy efficient street lighting. The balance of $ 122,000 for this activity was paid from project funds disbursed though Government implementing partner.

Excluding costs associated with project management and service contracts, it can be computed from the above Table that UNDP funds in the amount of $ 539,000 was spent on Consultants and Experts. Short of analysing every single expenditure under the “Consultants and Experts” item and matching it with the output achieved (e.g. activity report), it is very difficult to make a judgement on how judiciously project funds have been utilised and how cost-effective the interventions have been. This exercise would prove to be still more difficult in the absence of reporting requirements -a copy of the “Notes to Combined Delivery Reports” that was provided to the Evaluator indicates that some consultancies/service contracts (e.g. 71305 – Local Consultants, Short- term, Technical, CTA, etc.) do not require the submission of a report.

**Recommendation**

Moving forward, the project should carefully evaluate its needs for Consultants/Experts and these should be appropriately defined to meet the objectives of the project. Moreover, clear reporting lines should be established and the submission of reports for every single assignment/contract should be made mandatory.

**Project Steering Committee (PSC)**

The PSC is chaired by the National Project Director (NPD) and the latter has changed several times since project start. This has had a negative impact on project direction, as the PSC has met only 3 times since Project Inception, the last meeting being on30 November 2011 - the previous meetings were held on 29 April 2010 and 18 March 2011, respectively. The Project Manager indicated that several issues are awaiting a decision of the PSC (e.g. recommendations on modernisation of national lighting certification systems) and these are still in abeyance.

**Recommendation:**

Hopefully, there will be no more changes of the NPD. However, in order to remove any potential bottleneck in the future, the PSC should consider appointing a Deputy NPD at its next meeting.

**Lessons Learned**

1. It is important to have brochures, leaflets, publications to sensitise the highly-educated/not so highly educated public on the benefits of energy efficient lighting and fixtures. However, prior to embarking on a publication, care should be exercised in determining its targeted audience and its contents adjusted accordingly. This may require different publications for different audiences.

*Suggested corrective action:* Define the target audience for each brochure, leaflet or publication up-front and tailor their contents to meet the level of information that each one of them wishes to convey to that particular target audience.

1. In the implementation of a project, it is important to ensure that outputs are achieved. However, the purpose of these outputs is to serve as inputs to the achievements of certain targets, with the latter providing an indication on how well the project achieved its desired results. Hence, the outputs represent a vehicle to achieve an end, be it mid-term or end-of-project, but do not constitute an end in themselves. No matter how many reports have been produced, but unless they have transformed the behaviour of the market for energy efficient lighting, it is difficult to confirm that the established targets have been achieved.

*Suggested corrective action:* Project outputs in terms of reports, for example, play an important role in implementation. However, when commissioning reports, project management should ensure that these will directly contribute towards achievement of the established targets, rather than being peripheral to them

1. Telecommuting is an accepted practice within UNDP (and within many other organisations) and it poses no problem when project activities, results and deadlines are systematically being met. However, when the situation arises that expected results are not being met in a timely fashion, like in the case of the mid-term targets for the “Moscow-based” activities, it is believed that telecommuting should be reassessed. At the present time, project management is undertaken from an almost “virtual” Moscow project office, with telecommuting by the Project Manager for 50% of his time and for the bulk of their time by the full-time/part-time Experts, except for the Project Assistant.

*Suggested corrective action:* The project should consider henceforth mandating all project staff, both full-time and part-time (50% of time), to commute to the office for work, just like the Project Assistant normally does on a daily basis.

**2. Introduction**

* **Project background**

Russia offers one of the world’s greatest potentials for energy savings and greenhouse gas (GHG) emission reductions in the lighting sector. It is estimated that 14% of the country’s overall electrical energy consumption is attributable to lighting, corresponding to 137.5 TWh per year. Total lighting energy savings potential in Russia is considerable at over 40% or 57 TWh per year (or 28.5 Mtn CO2/year).

Penetration of energy efficient lighting products and technologies is extremely low across all sectors of the economy. Of the estimated 1 to 1.2 billion lighting sources in Russia, more than half are incandescent lamps (97% of all lighting sources in the residential sector, and up to 20% in the industrial and commercial sectors). Here is a breakdown:

• Residential sector: 97% incandescent lamps (GLS, with a 75W average power); 2.7% linear fluorescent lamps (mainly T12) and 0.3% compact fluorescent lamps (CFL);

• Administrative, educational and commercial buildings: 96.2% linear fluorescent lamps (Т12 and Т8), and 3.3 % incandescent lamps;

• Industrial buildings: 45-50% linear fluorescent lamps with electromagnetic ballasts (T12 and T8); 10-20% incandescent lamps; 35% other discharge lamps (mainly mercury HID and high-pressure sodium);

• Street lighting: 30% mercury HID lamps and 60% high-pressure sodium. Metal halide lamps can be found in a few more developed regions; however, incandescent lamps are most prevalent across the country; and,

• Agricultural sector and remote rural areas: 67% high pressure HID lamps (mainly mercury); 12% linear fluorescent lamps (T12) and 10% incandescent lamps.

The prevalence of inefficient and outdated lighting technologies results in highly inefficient energy use patterns and vast energy saving potential. In public buildings alone, power demand for lighting is approximately 7 W/m2/100 lx, which is almost three times higher than the OECD average of 2.5 W/m2/100 lx. Overall, the generation of 1 M lm of light flux in Russia requires 36 kWh, compared to 25-26 kWh in the European Union.

Substantial savings, from 75% to 90% compared with conventional practices, can be achieved through the use of new energy efficient technologies, as demonstrated in several OECD and developing countries. Energy Efficient Lighting (EEL) programmes, aimed at phasing-out incandescent lamps and other inefficient technologies, reduce energy use by 30% within 5 to 7 years, while enhancing the quality of lighting.

Towards this end, the country passed Federal Law No. 621 on Energy Conservation and Energy Efficiency Improvement in November 2009. This law provides for a number of concrete measures, incentives and mechanisms that are geared towards promoting energy and ecological efficiency in all sectors of the economy. For the lighting sector, the law envisaged a gradual phase-out of incandescent lamps starting with high wattage lamps (more than 100 W) in 2011. Despite explicit policy statements, the enforcement of these policies is still inadequate and requires a lot of further regulatory work and capacity building. Supplementary regulatory framework, many by-laws and enforcement mechanisms still need to be developed.

* **Purpose of the evaluation**

As outlined in the ToRs, the purpose of a mid-term evaluation is to “identify potential project design problems, assess progress towards the achievement of objectives, identify and document lessons learned (including lessons that might improve design and implementation of other UNDP/GEF projects), and to make recommendations regarding specific actions that might be taken to improve the project”. The mid-term evaluation is also expected “to serve as a means of validating or filling the gaps in the initial assessment of relevance, effectiveness and efficiency obtained from monitoring. It provides the opportunity to assess early signs of project success or failure and prompt necessary adjustments”.

* **Key issues to be addressed**

Evaluations of GEF projects, whether mid-term or final, explore five major criteria:

(i) Relevance: the extent to which the activity is suited to local and national development priorities and organizational policies, including changes over time.

(ii) Effectiveness: the extent to which an objective has been achieved or how likely it is to be achieved.

(iii) Efficiency: the extent to which results have been delivered with the least costly resources possible.

(iv) Results: the positive and negative, and foreseen and unforeseen, changes to and effects produced by a development intervention. In GEF terms, results include direct project outputs, short- to medium-term outcomes, and longer-term impacts including global environmental benefits, replication effects and other local effects.

(v) 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.

* **The outputs of the evaluation and how will they be used**

The evaluation will provide a comprehensive overall assessment of the project and an opportunity to critically assess administrative and technical strategies, issues and constraints associated with such a large initiative involving several partners. It will also provide recommendations for strategies, approaches and/or activities to improve the potential of the project to achieve the expected outcomes and meet the objective within the project timeframe. Findings of this evaluation will be incorporated as recommendations for enhanced implementation of planned activities during the remaining timeframe of the project.

* **Methodology of the evaluation**

In preparing the evaluation, the Evaluator focused on reviewing the Project Document, Inception Report, Annual Project Review, Project Information Reports and Annual Work Plans for 2011 and 2012.In addition, during the course of the mission in Moscow, he familiarised himself with Government Decree No. 602 of 20 July2011 “On Approval of the Requirements to Lighting Devices and Electric Lamps used in Alternating Current Circuits for Illumination”, Government Decree No. 2446-r of 27 December 2010 outlining the Russian Federation State Programme “Energy Conservation and Energy Efficiency Improvement for the Period until 2020”, Federal Law No. 261 of 11 November 2009 “On Energy Conservation and Energy Efficiency Improvement and on Amending Some Legislative Acts of the Russian Federation” and several documents prepared by the project team. He also briefly met with the newly-appointed National Project Director, had discussions with Moscow City and Representatives of Municipalities in the Volga Federal District, the project management team (discussions with the Chief Technical Adviser were held by telephone)and selected Experts. Moreover, he participated over the course of one day in the plenary session of the 6thInternational LED Forum (the project is an official partner of the Forum)with the specific objective of meeting with private sector representatives who have direct interest in the outcomes of the project and their successful achievement.

The project’s “Strategic Results Framework” provides a set of mid-term targets for each of its Outcome. Some of these targets were suggested for amendment in 2011- 2012, but these are awaiting approval at the next meeting of the Steering Committee. For the review, the Evaluator used the methodology of triangulation of information and data, thus requiring verification of at least three sources of information: perception, validation and documentation, and validated the information through cross-referencing of data sources.

The evaluation was completed over a period of 25 work days, including a mission to Moscow/Volga Federal District from 6 through 14 November 2012. During his mission, the Evaluator had discussions, through electronic means, with the Bratislava-based Regional Technical Adviser (RTA). Finally, he discussed his findings at a debriefing meeting (on the day of his departure) with UNDP Moscow, the Project Manager and the RTA.

* **Structure of the evaluation**

In accordance with the GEF MTE methodology and the ToRs, the evaluation process was structured to focus on the implementation of activities described in the Project Document and the Strategic Results Framework. The Evaluation Report itself is structured in accordance with GEF’s requirements and along the lines indicated in Annex 1 of the ToRs.

**3.** **The project and its development context**

* **Project start and its duration**

Project activities were initiated in late April 2010 when the Inception Workshop was organised and the first meeting of the Project Steering Committee was held. Actual implementation commenced in late June 2010, will continue over a period of 5 years and is scheduled for completion in May 2015.

* **Implementation status**

The project is almost mid-way through its implementation schedule. Reasonable progress has been made in the implementation of activities and, naturally, substantial work remains to be accomplished by the scheduled completion date. For example, the project has engaged the private sector whose active participation is crucial in transforming the market for energy efficient lighting – the main private sector players indicated that they did not require direct support from the project; however, in their view, the project can and does assist them in their dialogue with the Government to put in place and implement the appropriate regulatory mechanisms and standards.

Regulations exist for a gradual phase-out of inefficient lighting and for collection and recycling of CFLs, in view of their potentially high mercury content. However, enforcement of the Regulations remains a challenge. The private sector is unanimous in indicating that mechanisms for enforcement of the Regulations and Standards, that would constitute the engine of growth to the utilisation of quality products for energy efficient lighting in all sectors of the economy, are inadequate and need to be developed/strengthened. It is in this area that the private sector looks towards UNDP for support.

One of the modalities for enforcement would be to have a modern independent, accredited testing laboratory to create a level playing field for testing both imported and locally-produced lamps and lighting fixtures. At the present time, there are numerous sub-standard (and inexpensive) imported lighting products that flood the market and create an unhealthy competition for the local private sector. This issue was identified during project formulation and allocation was made in the project document for a “Plan of modernization of national metrology laboratories” as a mid-term target in the logframe. While several reports on this subject have been produced, unfortunately, this “plan” does not exist yet.

With regard to piloting, very good progress has been made in the street lighting sector in the Volga Federal District; however, the project has accumulated some delays in piloting in schools/hospitals in Moscow. With regard to the residential sector, the survey on the penetration of energy efficient lamps, which should have been completed by now, is still in its planning stages. And, as per the end of project target in 2.5 years from now, 370,000 apartments should have been upgraded with energy efficient lighting.

The issue of delays in meeting the mid-term targets, as set out in the Strategic Results Framework, needs to be scrupulously analysed by project management to determine their root causes and corrective measures implemented soonest to address them.

* **Problems that the project seeks to address**

The project aims at reducing energy consumption and associated GHG emissions in the Russian lighting sector. These are planned to be achieved through improving efficient lighting standards and policy framework, strengthening the supply chain for energy efficient lighting, increasing energy efficient lighting in residential and public buildings in Moscow and adopting/replicating energy efficient street lighting in the Volga Federal District.

* **Immediate and development objectives of the project**

The immediate objective of the project is to reduce GHG emissions in Russia by improving energy efficiency related to lighting. All lighting sectors are included: residential buildings; public, tertiary and industrial sector, and street lighting. The project proposes to transform the national lighting market by promoting efficient lighting technologies, adopting and enforcing state regulations and standards, and phasing-out inefficient lighting technologies. As outlined in the project document, it is expected that within ten years after project completion, Russia will be able to capture 60% of its energy saving potential in the lighting sector, with5% of this attributed to baseline efficiency improvements and the remaining 55% would lead to additional savings promoted by the project amounting to 31 TWh/yr and an emission reduction of 15.5 million tons (Mtn) of CO2 annually.

* **Main stakeholders**

The main stakeholders involved in the implementation of the project are grouped in the following 3 categories, viz:

1. Government and institutional stakeholders: These consist mainly of the Ministry of Energy, including the Russian Energy Agency that operates under its purview, the Ministry of Natural Resources and Environment, the Moscow City Administration, Municipalities of the Volga Federal District and several other Government institutions. While the Ministry of Natural Resources and Environment is the GEF Focal Point in the country, the Ministry of Energy is tasked with putting in place the appropriate policies, regulations and standards that will regulate the market for quality lamps and lighting fixtures that would be gradually certified for introduction throughout the country. With regard to the Moscow City Administration, it proposes to implement pilot projects on energy-efficient lighting in, initially, 3 schools/hospitals and, eventually, in the housing and education/health care sectors. Finally, the Municipalities of Dzerzhinsk, Shumerlya and Sarov located in the Volga Federal District are already implementing energy-efficient street lighting.
2. Private Sector: The project is working with several private sector partners (some of those listed below participate in the National Platform for Lighting)with strong interest in a vibrant market for energy efficient lighting. Ecolight benefitted from project consultation support to prepare a business plan for producing energy efficient lighting fixtures. Philips has no production facility in Russia, but sees a huge potential for marketing and use of its energy efficient products in the country. Osram, on the other hand, does have a production facility for energy efficient lighting products in Smolensk, both geared towards the national and overseas market, and, like Philips, wants to see UNDP support directed towards working with the Government to create an enabling environment that would ensure a healthy competition among producers of quality lighting products, as opposed to the importation of low quality goods flooding the market with inexpensive, sub-standard products. Similar views are expressed by Optogan and Svetlana-Optoelektronika that produce LEDs and market lighting fixtures. Finally, ARHILIGHT, a private, accredited light testing company, is willing to assist with certification of lighting products for sale in the Russian market.
3. Academia and NGOs: The project has been working closely with the Moscow Power Engineering Institute to develop a teaching curriculum for training Engineers/Architects in energy-efficient lighting technologies, the Nizhny Novgorod State Technical University regarding piloting for street lighting in the Volga Federal District, the Russian Lighting Research Institute (VNISI) and other research institutions. NGOs such as the non-commercial partnership “Energy Efficient City”, the autonomous NGO “Russian Energy Efficiency Demonstration Zones”, the non-commercial partnership of LED Producers and the Association “Russian Light” provide their inputs to project implementation either directly or through the National Platform for Lighting. Other stakeholders include the Moscow State University, VNIOFI, VNIIIS, the Buildings Physics Institute, etc.

**4. Findings**

 **4.1 Project formulation**

* **Project Relevance**

Since the early 1990s, the Russian lighting industry has been in decline. Despite growth during 2003 to 2006, it has never fully recovered from the recession and the impacts of economic restructuring. In 2007, the national production volume was estimated at 639 million lamps, consisting primarily of incandescent lamps, linear fluorescent lamps (T12, T10 and T8) and high-pressure mercury lamps. In contrast, the import of lighting products has been steadily growing: in 2003 lighting imports were valued at US$ 30.8 million, in 2006 at US$ 87 million, and by 2008 at over US$ 154 million.

The share of EEL products in the total market remains negligible. While all modern technologies are available in principle, primarily through import, there is little domestic production of the most efficient technologies and overall supply is insufficient if market demand increases to the levels envisioned in this project. Manufacturers have indicated strong interest in supplying more efficient lighting products, provided there is effective demand, but have yet to decide whether this supply should come from domestic production, joint-ventures, or imports.

Upon achievement of the end-of-project targets, the country is expected to save 4 TWhr of energy annually, resulting in GHG emission reduction of 2 Million tons of CO2 per annum.

* **Project Effectiveness**

The project has been effective in bringing together the Government, private sector, NGOs and other stakeholders to address the important issue of providing the population with quality lighting at reduced cost in the long run, while simultaneously reducing the country’s appetite for energy used for that purpose. This initiative has also the potential to substantially decrease the country’s emission of greenhouse gases. It finally opens up the opportunity for the sector to benefit from additional resources from carbon finance, although the issue of Russia being a party to “Kyoto-2” is being debated at this very moment in Doha, Qatar. Irrespective of whether Russia continues as a party to “Kyoto-2”, there will, hopefully, be the opportunity for the project to benefit from carbon finance by participating in the voluntary carbon market.

* **Implementation Approach**

Implementation is geared towards working with the Government to set up the proper environment in terms of policy and regulations that would enable the private sector to move from producing and selling incandescent lamps, for example, in the Russian market to one where these lamps will be gradually replaced with energy efficient lighting products of approved quality. The supply chain will be strengthened and the proposed pilots in Moscow are designed to provide a level of confidence to the users to embrace the new products that would provide a better level of lighting comfort at, hopefully, a reduced cost on a life-cycle cost basis and, at the end of the day, lead to replication in the country. Finally, the pilots dealing with improved street lighting in the Volga Federal District is designed with the same objective of acceptance by the population and replication elsewhere.

* **Country Ownership/Driveness**

Over the last few years, Russia has made several policy decisions to promote energy efficiency in the various sectors of the national economy. These include the Presidential Decree # 889 of June 2008 “On Certain Measures for Increasing Energy and Ecological Efficiency of Russia’s Economy” and the Federal Law No. 261 “On Energy Conservation and Energy Efficiency Improvement and on Amending Some Legislative Acts of the Russian Federation” adopted by the State Duma in November 2009. With regard to energy efficient lighting, Government’s Decree No. 602 of 20 July 2011 “On Approval of the Requirements to Lighting Devices and Electric Lamps used in Alternating Current Circuits for Illumination” specifies the requirements for electric lamps and lighting devices for both outdoor and indoor lighting. In addition, SNiP (Construction Norms and Regulations) No. 23-05-95 on “Natural and Artificial Lighting”, which came into effect on 20 May 2011, includes specific minimum energy performance requirements of lighting systems in commercial buildings, new residential construction, street lighting, and industrial lighting. Regulations also exist for a gradual phase-out of inefficient lighting and for collection and recycling of CFLs, in view of their potentially high mercury content.

However, enforcement of the Regulations remains a challenge. The private sector is unanimous in indicating that mechanisms for enforcement of the Regulations need to be developed and strengthened.

With regard to piloting, both the Moscow City and Volga Federal District Administrations have been very receptive to the concept of demonstrating the benefits of energy efficient lighting in schools/hospitals/buildings in one case and for street lighting in the other. However, to date, progress in implementing the pilots have been uneven: Moscow City has yet to overcome some hurdles, while progress in the Volga Federal District has been very good.

* **Replication approach**

In view of the fact that the needs in regards to energy efficient lighting in the various sectors of the economy are almost endless, the evident conclusion is that the replication potential is huge.

In the buildings sector, it is too soon to discuss replication as no piloting regarding retrofitting has been implemented yet. However, given the interest of all stakeholders, there is hardly any doubt that replication will be successful, in view of the enabling environment that the project is putting in place. For new buildings, it should become mandatory for lighting to conform to new industry standards.

With regard to street lighting, the experience accumulated to date has been very positive and with proper dissemination of the results already achieved, replication in other cities/towns will not have any problem taking off. In this connection, upon learning about the street lighting initiative in the Volga Federal District, the Sochi Olympic Committee, within the context of its “Green Sochi 2014 Concept”, arranged for the Sochi Administration to contact UNDP to ascertain the potential replication of energy efficient street lighting in the city. Subsequently, in consultation with the Sochi Electric Utility “SochiSvet”, the project formulated a brief concept paper and performed a preliminary techno-economic study to determine costs involved, energy savings and the pay-back period.

* **Cost-effectiveness**

An amount of just over $ 239,000(Government and UNDP funds combined – Table 2 below) has been disbursed in relation to Consulting and Contractual Services for street lights piloting activities in the Volga Federal District. The 20% of funds that the project provides for implementing the actual street lights replacement programme have not been yet recorded as expenditure (as per the CDR). The piloting programme has resulted in the installation of 2,430 energy efficient lighting units to date and an additional 7,600 units remain to be installed. On the basis of an installed cost of $ 400/unit, project development costs (excluding capital costs) amount to 25% of total spent – this would drop down to 6% when the totality of the lighting fixtures would have been installed. As the bulk of project development costs is mainly disbursed upfront for the total work related to street lighting modernisation, the cost-effectiveness of this activity for the complete modernisation cycle looks very sound.

Excluding costs associated with project management and service contracts, it can be computed from the same Table2 below that UNDP funds in the amount of $ 539,000 was spent on Consultants and Experts. Short of analysing every single expenditure under the “Consultants and Experts” item and matching it with the output achieved (e.g. activity report), it is very difficult to make a judgement on how judiciously project funds have been utilised and how cost-effective the interventions have been. This exercise would prove to be still more difficult in the absence of reporting requirements - a copy of the “Notes to Combined Delivery Reports” that was provided to the Evaluator indicates that some consultancies/service contracts (e.g. 71305 – Local Consultants, Short- term, Technical, CTA, etc.) do not require the submission of a report.

* **Linkages between Project and other Interventions within the Sector**

The project has established linkages with the UNDP-GEF project “Energy Efficiency Standards and Labels Project” (and the 2 other energy efficiency projects) also being implemented in Russia, specifically regarding labelling for energy efficient lamps and lighting fixtures. Also, the Communications Consultant at the UNDP Energy Efficiency and Environment Unit supports the lighting project and, through her, additional synergies are established with the other UNDP energy efficiency projects in the country. Moreover, the lighting project often is on the discussion agenda between UNDP and EBRD when progress on each organisation’s “Standards and Labels” initiatives in Russia is discussed. And finally, arrangements for cooperation have been established with UNDP-GEF projects on lighting in Kazakhstan and Ukraine, as well as with the UNEP-GEF global lighting initiative en.lighten.

* **Management Arrangements**

The project is managed by a team consisting of a Project Manager and a Project Assistant, both working full-time, with the support of a part-time CTA, an Expert on Science and Market Monitoring, a full-time Moscow Pilot Coordinator, and several other full time/part-time Experts/short-term Consultants (Table 4). It was also assisted by an International Expert on “Standards and Testing Procedures” (tasks under his 10-day contract were completed in September 2012) and an International Expert on “Carbon Finance and Financial Planning” (his contract is on-going).

The project office is located at the UNDP premises in Moscow. It is manned full-time only by the Project Assistant. The Project Manager indicated that the “Moscow-based” activities required 80 -85% of his time, with the remaining devoted to the pilots in the Volga Federal District. However, he divides his presence in Moscow and Nizhny Novgorod on a 50-50 basis. All other full-time and part-time (under half time contracts) Experts work from their individual locations and come to the office only when their presence is required.

**4.2 Project implementation**

* **Project Execution**

The Project is executed under the National Execution (NEX) modality. The Ministry of Energy serves as National Execution Agency and is in charge of planning and overall supervision over project activities and reporting, including financial reports and reports on monitoring and evaluation of the project.

A Project Steering Committee (PSC) provides high-level guidance to the implementation of project activities and ensures coordination among the various project partners. It also reviews project progress reports to ensure that the outputs produced meet the requirements of the Government and all beneficiaries. The PSC is made up of representatives of the Ministry of Energy, Ministry of Economic Development, Ministry of Regional Development, Ministry of Education and Science and other key ministries and agencies, the Moscow City and Volga Federal District Administrations, NGOs and energy efficiency centres, national and international producers of lighting technologies. The PSC has 2 different categories of membership: voting members and observers with no voting privileges.

The PSC is chaired by the Ministry of Energy and its representative serves as the National Project Director (NPD). Unfortunately, since project inception over 2 years ago, the PSC has met only 3 times, with the last one being on 30 November 2011 -the previous meetings were held on 29 April 2010 and 18 March 2011, respectively -and the NPD has changed 4 times because of changes in Government and Ministry structures. This has had a negative impact on project direction and, according to the Project Manager, decisions on several issues are still awaited from the PSC.

* **Project Implementation: Status of Project Outcomes and Rating**

While the present status of project activities is discussed in Table 1 and para. 4.3 that follow, a summary under each of the four Outcomes is provided below:

* Several laws/decrees have been introduced to promote energy efficient lighting in the country. However, no actual work on developing testing procedures has started, with the result that there are no “Internationally accepted procedures (that) are applied (to) Russia”, as per the mid-term target. Moreover, the modernisation plan for an accredited national metrology laboratory, also a mid-term target, has still not been formulated. These issues require additional efforts, if the end-of-project targets of having “Final set of drafts for standards proposed to national normalisation body” and “Several national metrology laboratories modernized” were to be met.
* Strengthening of the supply chain has proceeded very smoothly, with several mid-term targets having been met.
* Implementation of energy efficient lighting in Moscow residential and public buildings is way behind schedule. The mid-term target called for “Lighting system of 3 schools/hospitals (to be) fully upgraded”, but no physical work has even started on any upgrading. There should be a renewed focus on this activity to ensure that end-of-project targets of having the “Lighting systems of 40 schools/hospitals fully upgraded” will be met.
* Energy-efficient street lighting in the Volga Federal District has proceeded very well. Also, there are good indications for replication activities in other Municipalities of the District and elsewhere. In the latter case, the project has initiated support to the City of Sochi to implement an energy efficient street lighting programme.

**Table 1: Outcomes, Mid-Term Targets, Present Status of Achievement of Mid-Term Targets and Rating**

**Note:** Crossed-out text in the Table below relates to information contained in the Strategic Results Framework of the project document. Italicised text reflects updates suggested in June 2012 and which are still awaiting approval at the next meeting of the Project Steering Committee.

|  | Indicator | Baseline | Mid-term target | Present Status/Rating related to achievement of mid-term target |
| --- | --- | --- | --- | --- |
| Objective of the project:To transform the Russian market towards efficient lighting technologies and the phase-out of inefficient lighting | Estimated quantity of energy saved | Lighting electricity consumption: 137.5 GWh per year (14% of total national electricity consumption) | ~~6~~*1* GWh/yr (direct savings from demonstration projects) plus 0.5 TWh/yr from indirect actions | Direct savings - 0.46 GWh/yr (first phase of pilot project on street lighting in Sarov (Volga Federal District) and a promotional distribution of energy saving lamps among Moscow citizens in cooperation with Philips company). Source: 2012 APR/PIR.**Rating:** Moderately Satisfactory. |
| Outcome 1:Improved efficient lighting standards and policy framework. | Establishment of the Federal Energy Efficient Lighting Council (FEELC) | None exists | ~~Ministerial degree for FEELC establishment.~~ *FEELC is established by Project Steering Committee.* | In order to strengthen links between government and private sector lighting stakeholders, the project envisaged the establishment of a Federal Energy Efficient Lighting Council (FEELC) that would be under the purview of the Ministry of Energy. However, at the “Inception Workshop and Kick-off Meeting of the Project Steering Committee” (PSC) held at the end of April 2010, a decision was made that it would be best to have an extended PSC that would include representatives of “business and academia” with observer (non-voting) status to perform the functions of an FEELC. Consequently, in addition to providing policy and advisory support and oversight to project management, the PSC acts as an interface between market participants and regulators. **Rating:** Satisfactory. |
| Establishing new policies imposing maximum consumption of energy for lighting for non-residential indoor lighting, regulations on the maximum permissible mercury contents in CFL | 7-10 Wh/m2 per 100 lx (SNiP)  | Policies drafted | The project support, among others, approval of Government’s Decree No. 602 of 20 July 2011 “On Approval of the Requirements to Lighting Devices and Electric Lamps used in Alternating Current Circuits for Illumination” specifies the requirements for electric lamps and lighting devices for both outdoor and indoor lighting.SNiP (Construction Norms and Regulations) No. 23-05-95 on “Natural and Artificial Lighting”, which came into effect on 20 May 2011, includes specific minimum energy performance requirements of lighting systems in commercial buildings, new residential construction, street lighting, and industrial lighting. It mandates a maximum permissible mercury contents level of 5 mg in CFLs. **Rating:** Satisfactory |
| Establishment of a national EEL platform | None exists. | Platform established (members selected and action plan adopted) | The National Platform for Lighting (a thematic association) was established in October 2010 and consists of a large group of approx. 900 stakeholders, of whom some 60% are from the private sector. It is focused on preparing thematic issues of interest to the community at large, including lighting standards, monitoring the market for lighting technologies, awareness-raising campaigns, etc.**Rating:** Satisfactory |
| Testing procedures for EEL products draftedTesting lab capacity improved  | None existObsolete metrology laboratories exist | Internationally accepted procedures ~~transposed to~~ *are applied in* RussiaPlan of modernization of national metrology laboratories | ToRs for developing/adopting internationally accepted testing procedures for EEL products have been developed and submitted to the Government. No actual work on developing these testing procedures has started and, hence, there is no “application” of these procedures.**Rating:** Moderately Unsatisfactory –although some work has been done, the project has not met the mid-term target of having “Internationally accepted procedures (are) applied in Russia”.This activity is directed, as per the project Output, towards strengthening only national metrology laboratories.At the present time, there are 3 nationally-accredited testing laboratories in the country, viz. ARHILIGHT and the Saransky Institute named after Ladygin, both private-owned, but with the latter having somewhat outdated equipment, and the Government-owned Institute for Opto-Physical Measurements. In addition, a fourth national laboratory, the Moscow Institute for Lighting Technology, is not accredited. The project has signed agreements on Round Robin Testing, under the UNEP en.lighting initiative, between these four independent testing laboratories and the Global Efficient Lighting Centre.The metrology Expert has prepared several reports, including one entitled “Survey of Metrology Laboratories at Production and Research facilities for testing energy efficient lighting equipment”; it provides a clear status of what each of the laboratories in the country can do. However, the modernisation plan has not been formulated yet.On the basis of her report mentioned above, the Expert needs to make a recommendation on which of the 4 national laboratories, in her opinion, would be the best candidate for modernisation. This recommendation would be accompanied by a list of additional state-of-the–art equipment that would be required, including their procurement costs, the costs of works associated with their installation/testing/commissioning and a time-frame for modernisation to be completed. This would constitute a modernisation plan that would be submitted to the PSC for a decision. Some funds for initiating modernisation have been allocated in the project budget. The private sector is eagerly awaiting the setting up of at least one national laboratory to level the playing field vis-a-vis imported, sub-standard lighting equipment. Lack of sufficient progress in meeting the mid-term target for a plan (the actual plan should be implemented by project-end) is cause for concern, as it directly impacts on the market transformation objective of the project.The issue of utilising accredited laboratories for testing was reinforced in the Government’s Decree No. 1794-р of 27 September 2012, the drafting of which was supported by the project, and this demonstrates the Government’s interest to have them established soonest. Hence, the importance of redoubling efforts to have a modernisation plan as soon as possible.**Rating:** Moderately Unsatisfactory –while some reports have been produced, they are no substitute to the mid-term target of having a modernisation plan - this is still at least some 3 – 4 months away, if work were to commence immediately. |
| Outcome 2: Supply chain is strengthened | National Phasing out Program for Inefficient Lighting planned and adopted | Existing legislation on Energy Savings | National Roadmap for phase-out adopted | A national comprehensive phase-out roadmap is presently the subject of discussions within the Government. In the interim, a phase-out Government Order for incandescent lamps has been approved for light bulbs 100 W and above. Unfortunately, some manufacturers have found a way to produce incandescent bulbs just under 100 W (e.g. 99 W), thus defeating the purpose of the Government Order. Moreover, and as indicated above, a phase-out for CFLs with a mercury content of above 5 mg is already in place.In short, while there is no adopted phase-out plan yet, work is well advanced for having one in place in the near future.**Rating:** Moderately Satisfactory |
| Annual monitoring of market | Some partial data exist today | Market monitoring procedure designed, tested and adopted | The project formulated a methodology for investigating and analysing the lighting market, following which a report on lamps and lighting fixtures market situation covering the period 2005 – 2010 was prepared.**Rating:** Satisfactory |
| Lighting specifiers have increased awareness of the benefits of EE lighting Lighting specifiers understand the new standards | None to basicNone (new standards do not yet exist) | One university or institute creates/modernizes a lighting oriented curricula for initial training*A web based beta version tool is offered for training and validation from lighting specifiers* | The project has been collaborating with the Moscow Power Engineering Institute to develop a course for training Engineers/Architects in energy-efficient lighting technologies. A text-book entitled “Energy-Efficient Lighting” has completed a scientific and technical evaluation process involving academics from several technical institutions of higher learning and has been sent to the printers. It is expected that the text-book will be issued in December 2012 and that it will be adopted by a large majority of the technical institutes/universities in the country.On the issue of “new curricula for high schools”, as indicated in the project document, there appears to be a “misconception” in how the term “high school” is interpreted in Russia. In many countries, “high school” refers to secondary education; however, in Russia, the common understanding is that it relates to University-level education. Anyway, with regard to education at the University level, the issue has been addressed above. However, it makes perfect sense to introduce the concept of energy-efficient lighting at the secondary level also (as opposed to tertiary or University level) to educate students on the benefits of such lighting systems. In this connection, UNDP supported the publication of a text-book entitled “Energy Conservation” (Authors: Sergeyev, S. K., et. al., 2004) for 8th graders. The time is now opportune for the project to support a revised version of this text-book that could include a chapter on energy-efficient lighting. It is recognised, though, that the mid-term target makes no mention of introducing course content on energy-efficient lighting at the secondary school level.**Rating:** SatisfactoryThe project organises one-day courses on a monthly basis to upgrade the knowledge and technical skills of lighting specifiers/technicians at the “Dom Sveta” in Moscow. In doing so, the project utilises user-friendly, internet-based and highly-rated lighting design tools for industry professionals, e.g. DIALUX 4.10 and others. **Rating:** Satisfactory |
| Support to the development of new EE lighting products and modernization of national lighting industry. | Main production of national industry is incandescent lamps | One high technology EEL pilot production line inaugurated (LEDs or CFLs) | OSRAM last year launched a production line in Smolensk to begin “local production of energy-saving lamps for the Russian and European markets”.**Rating:** Satisfactory |
| Outcome 3: Penetration of energy-efficient lighting increases in Moscow homes and buildings, and local EE lighting initiatives are replicated  | Health and education sector: efficiency of current lighting stock | Existing lighting schemes of the 40 selected schools and hospitals: 1000 fixtures/building with 100W installed power per fixture, operating 2000 h/yr = 8 GWh/yr | Lighting system of ~~15~~*3*schools/hospitals fully upgradedEnergy savings: ~~1.7~~*0.2* GWh/yr or ~~0.85~~ 0.1 ktn CO2 less per year | **Schools:** The project has undertaken preliminary energy audits at 10 schools in Moscow; these were jointly identified by the Moscow City Administration and the Ministry of Education. Furthermore, complete audits were undertaken at 3 of the 10 schools. The results of these 3 audits were used to initiate and complete the full feasibility and design studies and to prepare bidding documents for upgrading the lighting system at these schools with LEDs. The Hygiene Institute has provided clearance for implementing LEDs at the schools and some classes have installed LEDs, as a demonstration; however, Requests for Proposals from potential bidders cannot be issued until final approval of the associated Sanitary Regulations and Standards (SanPiN) is secured from the Ministry of Justice. This is expected by December 2012.Hence, at the present time, no upgrading of any school has even started, let alone the mid-term target of “Lighting system of ~~15~~ 3schools/hospitals fully upgraded”.**Hospitals:** No activity has been undertaken as there is no SNiP (Construction Norms and Regulations) regarding energy efficient lighting in place for this category of users.In light of the above, no lighting system upgrading has taken place in any hospital.**Rating:** Moderately Unsatisfactory – the project has prepared RFPs for 3 schools, but is unable to solicit technical and financial proposals from potential bidders until the SanPiN is approved. Hence, the project is many months away from having the “Lighting system of ~~15~~ 3 schools/hospitals (being) fully upgraded”, as per the mid-term target.In the absence of implementation of LEDs in schools/hospitals, no energy savings have been achieved yet as well as there has been no reduction in GHG emission.**Rating:** Unsatisfactory |
| Residential sector: penetration of CFLsRecycling rate of domestic CFLs | CFL penetration rate is 0.3%Average lamps per flat in Moscow: 20 (75 W-GLS). Installed power for lighting 1.5 kW/flat | ~~Results of the study of CFL installation and use in 200 flats~~ *Survey is completed on penetration of energy efficient lamps (CFLs and LEDs)*A communication and promotion strategy is designedDomestic CFL recycling rate of at least 30% | Apartments/Buildings: A sociological survey was carried out among a sample of the population to determine the acceptability of energy efficient lighting. In addition, there was a promotional distribution of 500 energy saving lamps among Moscow citizens in cooperation with Philips.The survey on the penetration of energy efficient lamps is still in its planning stages. Hence, it is too soon to talk of completion of the survey.**Rating:** Moderately UnsatisfactoryA communication and promotion strategy has been prepared by the Russian Energy Agency.The project has been having on-going communication and promotional activities, including press lunches, radio interviews and film festivals.Moreover, the project has published 5 brochures, all drafted by highly-qualified specialists in their respective fields. Except for the brochure dealing with CFLs, the contents of the other four are very technical, some with graphs and formulae, thus making them of value to only a captive/limited audience possessing a certain level of technical education. What the project also needs is to now focus on producing brochures that will be easily understandable by the general population, providing them with information of the type(s) of energy-efficient lamps/lighting units, their costs, how in the long run they will cost less to operate (life-cycle cost), how to determine their quality on the basis of labelling, etc.; in short, brochures that will typically answer questions that the general public may have and that will assist them in making the right choice. These are generally best written by “popular science” journalists and could probably be 2-3 pages long, instead of the 15 pages contained in each of the existing ones.In addition, the project sponsors and participates in the annual LED Forum held in Moscow. It also participates in the “en.lighten” global partnership initiative for information sharing among some 50 countries. Finally, relevant information is posted on the project website www.undp-light.ru**Rating:** Satisfactory.The Moscow City Administration has issued a decree (#1010-RZP:“On organization of work on collection, transport and recycling of waste luminescent lamps”) mandating CFL collection and recycling and the participation of NPP Ecotrom has been solicited for this purpose. However, the recycling rate has not been determined.**Rating:** Moderately Satisfactory |
| Replication: Number of communities in which similar projects are replicated | Zero | Zero | N/A |
| Outcome 4: Energy-Efficient street lighting is adopted in Volga Federal District (capital, Nizhny Novgorod) and local EEL initiatives are replicated elsewhere | Efficiency of installed street lighting  | 20 000 light fixtures with 350 W lamps operating 4000 h/yr = 28 GWh/yr | ~~5 000~~*2,000*fixtures replacedEnergy savings~~: 4~~*0.8* GWh/yr or ~~2~~*0.4* ktn CO2 less per year | Dzerzhinsk (Population of 250 K): Piloting will cover 4,000 of the 5,000 street lighting units. To date, 1,000 units have been installed.Shumerlya (Population of 30 K): Piloting will cover 1,000 units, of which 430 have been installed.Sarov: (Population of 90 K): Town has 5,000 units and piloting will cover 4,000 of them. To date, 800 units have been installed, with another 200 to be installed by the end of this year.Representatives of all 3 towns expressed great satisfaction of the residents towards the quality of lighting provided by the new units. They also indicated that their expenditures for street lighting have substantially decreased.**Rating:** Highly Satisfactory 0.42 GWh/yr (as per PIR)**Rating:** Moderately Satisfactory |
| Number of municipalities that have installed EE or plan to install lighting based on Nizhny Novgorod pilot | Zero | Zero  | Implementation of energy-efficient street lighting is still on-going in Dzerzhinsk, Shumerlya and Sarov and progress to-date has been very good. With the objective of replication in mind, the project may wish to capitalize on the success of this initiative and organise a workshop, inviting the participation of neighbouring (and not so neighbouring) towns to have these 3 targeted towns share their experiences on the benefits derived from energy-efficient street lighting and how to go about implementing such initiative utilising their own resources. This is likely to produce a snow-ball effect and provide an additional boost to the private sector in terms of provision of consultancy services and sale of equipment.Already, on the basis of the experience in the Volga Federal District, a brief concept paper and a techno-economic study for street lighting have been prepared for Sochi.**Rating:** Satisfactory |
| Project Management |  |  |  | **Rating:** Unsatisfactory.The project office is manned full-time by only the Project Assistant. The Project Manager is in the office 50% of his time, with his remaining time spent in Nizhny Novgorod. Most full-time and part-time (50% of time) Experts work from outside the office; they come to the office only when required. Moreover, some experts do not even submit reports and reporting lines are not established, at least in writing – if they exist, the Evaluator did not get to see them. Such an arrangement does not lend itself to effective management of Experts’ activities and monitoring of their outputs in relation to the targets to be achieved. |
| Overall Project Rating |  |  |  | **Rating:** Moderately Satisfactory The project has done well regarding activities under Outcomes 2 and 4. However, under Outcome 1, no actual work on developing testing procedures has started, with the result that there are no “Internationally accepted procedures (that) are applied (to) Russia”. In addition, work has not commenced on formulating a “Plan of modernization of national metrology laboratories”. Both these are specified as mid-term targets in the project document.Moreover, under Outcome 3, no physical work has started on upgrading the lighting system at a single school/hospital, although the mid-term target calls for “Lighting system of 3schools/hospitals fully upgraded”.Finally, there are several issues regarding project management, as outlined above, and these need to be addressed. |

* **Project Administration**

UNDP is responsible for administering the project and for reporting to GEF. The Project Team is supervised by the Project Manager who works under the overall direction of UNDP. Project implementation is undertaken by an Implementing Organisation (IO) selected on the basis of competitive bidding and based on established criteria, including expertise in the given field, project management experience, availability of human and technical resources, etc.

* **Project Planning**

An Annual Work Plan is prepared at the end of the year by project management for activities to be implemented the following year and submitted to the Project Steering Committee for approval. The PSC has not met in a year now, although there is still some time left this year for it to meet and approve next year’s work plan, among others. The work plan, like many others, is a dynamic one and undergoes minor changes, as needed, during the course of the year.

* **Financial Management**

The original total project budget was $ 72,750,000, consisting of $ 7,020,000 from GEF, $ 44,750,000 from the Government and $ 19,950,000 from OSRAM. The originally ear-marked co-financing of $ 530,000 from KOSMOS and $ 500,000 from FREESCALE did not materialised - the latter made a business decision do re-direct its activities on industrial controllers and not to focus any more on small-scale controllers used in lighting systems. Mid-way through the project, almost $ 28.5 million in co-financing has been secured, representing 43% of the total co-financing budget (Annex 5). Included in the co-financing already secured from the Government is $ 7.2 million that was utilised to perform energy audits in schools, cultural buildings and hospitals.

The project was also successful in leveraging $ 224,000 from other organisations, as detailed in the annex.

The project has been under implementation since June 2010 and is approximately mid-way through its 5-year project duration. Expenditures incurred under the UNDP budget amounted to $ 237,878 in 2010, $ 566,634 in 2011 and are budgeted to be $ 950,000 in 2012, giving a total of $ 1,754,752 since project start. This represents a project delivery of 25%, indicating that the project is quite behind schedule with only 25% of funds disbursed at the half-way point.

This low delivery figure is the result of the fact that actual piloting (implementation of works and installation of lighting systems) in Moscow schools, for which the project will cover 50% of the costs, has not yet commenced. While there is a significant risk that the pilots in Moscow may not materialize, if and when this activity gets under way, the disbursement picture should greatly improve.

* **Monitoring and Evaluation**

Monitoring of progress in project implementation is undertaken by the Project Manager under the overall responsibility of the National Project Director (NPD) and the supervision of UNDP, and is based on the project's Annual Work Plan. However, as the NPD changed 4 times over the last two and a half years, it has been difficult for the latter to keep abreast with the responsibility for monitoring progress. Monitoring of project activities is further accomplished through quarterly progress reports to the Ministry of Energy (as NEX Executing Institution) and the Ministry of Economic Development as well as through the APR/PIR.

As per the project document, annual monitoring of project activities should also occur through Tripartite Reviews (TPRs). However, the Evaluator was not made aware of TPRs having been held. The Project manager indicated that, instead of TPRs, an “annual presentation of project implementation results is held during Steering Committee meetings where all stakeholders are present”. However, there has not been a Project Steering Committee meeting since 30 November 2011.

The project is undergoing a mid-term evaluation, which is the subject of this report, and a final evaluation is scheduled to be held at project completion.

* **Identification and Management of risks (adaptive management)**

The one risk that the project may face relates to piloting activities in Moscow. The Moscow City Administration is of the opinion, as of the timing of the MTE, that piloting, be it in schools, hospitals or residential buildings, should be part of a comprehensive programme for energy efficient lighting. This comprehensive programme does not exist yet and is beyond the scope of the project, anyway. Hence, waiting for such a programme to get formulated may take a couple of years and it is not even known if/when work on this will start.

There may be merits to the line of thinking of the Moscow City Administration, but one would have thought that piloting, where applicable, provides an excellent opportunity to validate a cost/economic/social-benefit analysis before embarking on a major initiative. It is hoped that the Moscow City Administration will follow through with its commitment to the project and project management should pursue dialogue with them to get them to stay on track.

However, should piloting with Moscow City not materialise, this will be a major set-back to the project. Hence, while all activities should continue unabated as of now, it would be extremely wise for project management to already start developing alternative plans to piloting in Moscow City. This issue is proposed to be discussed at the next PSC meeting (likely in March 2013); in the interim, the Moscow City Pilot Project Coordinator is being entrusted to initiate preliminary discussions with the Moscow Oblast Administration (Plan B) to ascertain its interest and eventual commitment to “host” the pilots.

 **4.3 Results**

* **Attainment of outputs, outcomes and objectives**

**Outcome 1: Improved efficient lighting standards and policy framework**

1. Output 1.1: Federal Energy Efficient Lighting Council (FEELC) established: The PSC made the decision that it would function as the FEELC. Consequently, in addition to providing policy and advisory support and oversight to project management, the PSC acts as an interface between market participants and regulators. The FEELC worked on, among others, Government Decree No. 602 of 20 July 2011 “On Approval of the Requirements to Lighting Devices and Electric Lamps used in Alternating Current Circuits for Illumination”.
2. Output 1.2: Energy performance and product quality standards drafted and adopted, enforcement mechanisms implemented: The International Expert on “Standards and Testing Procedures” worked on this issue. The project proposed revisions to SNiP (Construction Norms and Regulations) and SanPiN (Sanitary Regulations and Standards) to include energy efficient lighting. A report on enforcement mechanisms was prepared and recommendations were made to the Ministry of Natural Resources and Environment on the maximum permissible level of mercury in CFLs.
3. Output 1.3: National Platform for Lighting (NPL) established: The National Platform for Lighting (a thematic association) was established in October 2010 and consists of a large group of approx. 900 stakeholders, of whom some 60% are from the private sector. It is focused on preparing thematic issues of interest to the community at large, including lighting standards, monitoring the market for lighting technologies, awareness-raising campaigns, etc. At the present time, it performs under the project, pending a decision to place it under “the auspices of an existing institution (e.g. one of the leading research centres on lighting)”.
4. Output 1.4: Quality-testing procedures drafted and adopted, and lighting testing laboratory capacity strengthened: ToRs for developing/adopting internationally accepted testing procedures for EEL products have been developed and submitted to the Government. In addition, recommendations have been made for labelling of energy efficient lighting equipment, within the energy efficiency labelling framework already approved by the Government. However, work has not yet started on a plan to “provide technical support to upgrade one selected laboratory, to be assigned by FEELC, which will serve as a qualification and reference centre for the other testing laboratories across the country”.

**Outcome 2: Supply chain for energy efficient lighting is strengthened**

1. Output 2.1 National Plan to Phase out Inefficient Lighting adopted: A national comprehensive phase-out roadmap is presently the subject of discussions within the Government. In the interim, a phase-out Government Order for incandescent lamps has been approved for light bulbs 100 W and above.
2. Output 2.2: Lighting market research and monitoring: The project formulated a methodology for investigating and analysing the lighting market, following which a report on lamps and lighting fixtures market situation covering the period 2005 – 2010 was prepared.
3. Output 2.3: Provide lighting specifiers with credible information, training, and tools to enable them to comply with new regulation on EEL: The project has been collaborating with the Moscow Power Engineering Institute to develop a course for training Engineers/Architects in energy-efficient lighting technologies. A text-book entitled “Energy-Efficient Lighting” has completed a scientific and technical evaluation process involving academics from several technical institutions of higher learning and has been sent to the printers. It is expected that the text-book will be issued in December 2012 and that it will be adopted by a large majority of the technical institutes/universities in the country. The project also organises one-day courses on a monthly basis to upgrade the knowledge and technical skills of lighting specifiers/technicians at the “Dom Sveta” in Moscow.
4. Output 2.4: Support to the development of new EE lighting products and modernization of national lighting industry: GLS companies do not show much interest in developing new energy efficient products, as a huge market for incandescent lamps still exists. The project supported Ecolite in developing a business plan to produce energy efficient lighting fixtures.

**Outcome 3: Energy efficient lighting is increased in residential and public buildings in Moscow**

1. Output 3.1: Health and educational buildings in the City of Moscow increase their use of energy-efficient lighting:
	* Schools: The project has undertaken preliminary energy audits at 10 schools in Moscow; these were jointly identified by the Moscow City Administration and the Ministry of Education. Furthermore, complete audits were undertaken at 3 of the 10 schools. The results of these 3 audits were used to initiate and complete the full feasibility and design studies and to prepare bidding documents for upgrading the lighting system at these schools with LEDs. However, no bids have been solicited yet, with the result that no school has implemented energy-efficient lighting, except that, as a pilot activity(for evaluation purposes), some classes at schools have installed LEDs.
	* Hospitals: No activity has been undertaken as there is no SNiP (Construction Norms and Regulations) regarding energy efficient lighting in place for this category of users.

As per the mid-term target, the “lighting system of 3 schools/hospitals (should have been) fully upgraded”; however, no upgrading activity has even commenced.

* Apartments/Buildings: A sociological survey was carried out among a sample of the population to determine the acceptability of energy efficient lighting.
1. Output 3.2: Residential campaign leads to the increased adoption of CFLs in homes: A communication and promotion strategy has been prepared by the Russian Energy Agency. The project has been having on-going communication and promotional activities, including press lunches, radio interviews and film festivals. In addition, the project sponsors and participates in the annual LED Forum held in Moscow. It also participates in the “en.lighten” global partnership initiative for information sharing among some 50 countries.

Finally, Philips undertook a promotional distribution of 500energy efficient lamps among Moscow citizens.

1. Output 3.3: Replication initiative for energy efficient lighting for residential and public buildings: No actual piloting work has been done yet; hence, it is too early to discuss replication, for which the mid-term target is “zero”.
	* Carbon Finance: This issue is linked to GHG emission reduction in schools. Although initially not included in the project document, it was introduced at the project Inception Workshop to tap the voluntary carbon market. An International Consultant was recruited and a PIN has been prepared. However, in the absence of any activity at the schools, no concrete data are available and, therefore, preparation of the PDD cannot proceed.

**Outcome 4: Energy-efficient street lighting is adopted and replicated in Nizhny Novgorod**

1. Output 4.1: Energy efficient street lighting installed in Nizhny Novgorod region: Implementation of energy-efficient street lighting is still on-going in Dzerzhinsk, Shumerlya and Sarov and progress to-date has been very good. Over 2,400 energy efficient lighting fixtures have been installed and work is still continuing.
2. Output 4.2: A replication plan is prepared, leading to replication in Nizhny Novgorod and five other oblasts: On the basis of the very good progress and results achieved to date, formulation of a replication plan will be the next step that the project will undertake. In the interim, the Sochi Administration has already contacted the project to ascertain potential replication of street lighting in the city. In this connection, in consultation with the Sochi Electric Utility “SochiSvet”, the project formulated a brief concept paper and performed a preliminary techno-economic study to determine costs involved, energy savings and the pay-back period.
* **Project’s Impact**

Policy/Regulations: While there are policies and regulations in place for promoting energy efficient lighting for both outdoor and indoor use, the private sector seems to see some disconnect between strategy and implementation. This view is motivated by the fact that the regulations governing the importation of CFLs/LEDs are not being enforced, with the result that the market is flooded with sub-quality products.

Supply chain: The supply chain is being strengthened and the increasing awareness of lighting specifiers on the benefits of energy efficient lighting is bound to make a positive impact on the whole lighting industry.

Piloting: The successful implementation of pilots in all spheres of the national economy will open the doors to greater acceptance of energy efficient lighting by the whole population. This in itself will have a great impact in reducing energy consumption substantially, accompanied by a corresponding decrease in GHG emission.

* **Prospects for Sustainability**

At the level of central government, indications are that implementation of energy efficient lighting will be sustainable in the long run. This is supported by the fact that the necessary policies are in place and once mechanisms for enforcement of Regulations have been strengthened, the market should pick up. There is also the potential for private sector ESCOs – some may even be set up as subsidiaries of in-country lighting companies – to step in and move the process forward. Should this happen, it would obviate the need for the regional/local administrations to make budgetary allocations for this purpose.

Sustainability of the project will also derive from the fact that required capacities would have been developed among specifiers of energy efficient lighting through and array of educational and capacity development activities. In addition, the “upgraded” knowledge of the general public through awareness-raising (not promotional or advertising) material, coupled with their being fully informed of the results of the piloting activities, will go a long way towards achieving sustainability of this initiative.

Finally, sustainability of the initiative will get enhanced if/when the potential for carbon finance improves in the future.

**5. Conclusions and Recommendations**

For ease of reference, the conclusions and recommendations follow the Outcomes, as they are elaborated in the project document, and the description of the “Present Status”, as discussed in the corresponding right-hand-side of column in Table1 above.

* 1. **Outcome 1: Improved efficient lighting standards and policy framework.**

The FEELC was “merged” into the PSC, as recommended at the Inception workshop. A National Energy Efficient Lighting Platform (a thematic association) was established in October 2010 and consists of a large group of approx. 900 stakeholders, of whom some 60% are from the private sector. It is focused on preparing thematic issues of interest to the community at large, including lighting standards, monitoring the market for lighting technologies, awareness-raising campaigns, etc.

ToRs for developing/adopting internationally accepted testing procedures for EEL products have been developed and submitted to the Government. No actual work on developing these testing procedures has started and, hence, there is no “application” of these procedures yet.

Several pieces of legislation have been enacted, some before the project became operational, others during the project time-frame. Among them are:

* Presidential Decree # 889 of June 2008 “On Certain Measures for Increasing Energy and Ecological Efficiency of Russia’s Economy”.
* Federal Law No. 261 of 11 November 2009 “On Energy Conservation and Energy Efficiency Improvement and on Amending Some Legislative Acts of the Russian Federation”.
* Government’s Decree No. 2446-r of 27 December 2010 outlining the Russian Federation State Programme “Energy Conservation and Energy Efficiency Improvement for the Period until 2020”.
* Government’s Decree No. 602 of 20 July 2011 “On Approval of the Requirements to Lighting Devices and Electric Lamps used in Alternating Current Circuits for Illumination” specifies the requirements for electric lamps and lighting devices for both outdoor and indoor lighting.
* SNiP (Construction Norms and Regulations) No. 23-05-95 on “Natural and Artificial Lighting”, which came into effect on 20 May 2011, includes specific minimum energy performance requirements of lighting systems in commercial buildings, new residential construction, street lighting, and industrial lighting. It mandates a maximum permissible mercury contents level of 5 mg in CFLs.

**Conclusion**

The project was instrumental in working with the Government to have those that were enacted during the project time-frame in place. The project has rightfully engaged the private sector, whose active participation is crucial in transforming the market for energy efficient lighting – the main private sector players indicated that they did not require direct support from the project; however, in their view, the project can assist them in their dialogue with the Government to put in place and implement the appropriate regulatory mechanisms and standards.

Regulations exist for a gradual phase-out of inefficient lighting and for collection and recycling of CFLs, in view of their potentially high mercury content. However, enforcement of the Regulations remains a challenge. The private sector is unanimous in indicating that mechanisms for enforcement of the Regulations and Standards, that would constitute the engine of growth to the utilisation of quality products for energy efficient lighting in all sectors of the economy, are inadequate and need to be developed/strengthened. It is in this area that the private sector looks towards UNDP for support.

One of the modalities for enforcement would be to have a modern independent, accredited testing laboratory to create a level playing field for testing both imported and locally-produced lamps and lighting fixtures. At the present time, there are numerous sub-standard (and inexpensive) imported lighting products that flood the market and create an unhealthy competition for the local private sector. This issue was identified during project formulation and allocation was made in the project document for a “Plan of modernization of national metrology laboratories” as a mid-term target (MTT) in the logframe.

The project has the support of a part-time Expert for developing testing laboratories infrastructure. She has prepared several reports, including one entitled “Survey of Metrology Laboratories at Production and Research facilities for testing energy efficient lighting equipment”; it provides a clear status of what each of the laboratories in the country can do. However, the modernisation plan, as called for as a mid-term target, has not been formulated yet. In this regard, it is worth noting that, at the Steering Committee meeting held on 18 March 2010, the RTA “stressed the importance of achieving results and not on the number of activities undertaken”.

**Recommendation**

At the present time, there are 3 nationally-accredited testing laboratories in the country, viz. ARHILIGHT and the Saransky Institute named after Ladygin, both private-owned, but with the latter having somewhat outdated equipment, and the Government-owned Institute for Opto-Physical Measurements. In addition, a fourth national laboratory, the Moscow Institute for Lighting Technology, is not accredited.

On the basis of her report mentioned above, the Expert needs to make a recommendation on which of the national laboratories, in her opinion, would be the best candidate for modernisation. This recommendation would be accompanied by a list of additional state-of-the–art equipment that would be required, including their procurement costs, the costs of works associated with their installation/testing/commissioning and a time-frame for modernisation to be completed. This would constitute a modernisation plan that would be submitted to the PSC for a decision. Some funds for initiating modernisation have been allocated in the project budget.

These activities need to be undertaken soonest; otherwise the implementation of a modernisation plan, as indicated as an “End of project target”, runs the risk of falling behind. The more the delay in having an internationally-recognised and accredited testing laboratory in the country, the longer will be the hardship faced by the local private sector in making a dent in the domestic energy efficient lighting market.

ToRs for developing/adopting internationally accepted testing procedures for EEL products have been developed and submitted to the Government. No actual work on developing these testing procedures has started. These should also be addressed in parallel with the work on laboratory modernisation.

* 1. **Outcome 2: Supply chain for energy efficient lighting is strengthened.**

A national comprehensive phase-out roadmap is presently the subject of discussions within the Government. In the interim, a phase-out Government Order for incandescent lamps has been approved for light bulbs 100 W and above. Unfortunately, some manufacturers have found a subtle way to produce incandescent bulbs just under 100 W (e.g. 99 W), thus defeating the purpose of the Government Order. Moreover, and as indicated above, a phase-out for CFLs with a mercury content of above 5 mg is already in place. The phase-out roadmap is somewhat shy of what is foreseen as an MTT: “National Roadmap for phase-out adopted”.

On the production side, OSRAM last year launched a production line in Smolensk to begin “local production of energy-saving lamps for the Russian and European markets”.

**Conclusion**

The project formulated a methodology for investigating and analysing the lighting market, following which a report on lamps and lighting fixtures market situation covering the period 2005 – 2010 was prepared. On the issue of training curriculum, the project has been collaborating with the Moscow Power Engineering Institute to develop a course for training of Engineers/Architects in energy-efficient lighting technologies. A text-book entitled “Energy-Efficient Lighting” has completed a scientific and technical evaluation process involving academics from several technical institutions of higher learning and has been sent to the printers. It is expected that the text-book will be issued in December 2012 and that it will be adopted by a large majority of the technical institutes/universities in the country. Finally, the project organises one-day courses on a monthly basis to upgrade the knowledge and technical skills of lighting specifiers/technicians at the “Dom Sveta” in Moscow. In doing so, the project utilises user-friendly, internet-based and highly-rated lighting design tools for industry professionals, e.g. DIALUX 4.10 and others. On these issues, the project has performed very well.

**Recommendation**

The project document makes mention of “new curricula for high schools”; however, there appears to be a “misconception” on how the term “high school” is interpreted in Russia. In many countries, “high school” refers to secondary education; in Russia, the common understanding is that it relates to University-level education. Anyway, with regard to education at the University level, the issue has been addressed above. However, it makes perfect sense to introduce the concept of energy-efficient lighting at the secondary level also (as opposed to tertiary or University level) to educate students on the benefits of such lighting systems. In this connection, UNDP supported the publication of a text-book entitled “Energy Conservation” (Authors: Sergeyev, S. K., et. al., 2004) for 8th graders. The time is now opportune for the project to support a revised version of this text-book that could include a chapter on energy-efficient lighting.

It is recognised, however, that the mid-term target makes no mention of introducing course content on energy-efficient lighting at the secondary school level.

* 1. **Outcome 3: Energy efficient lighting is increased in residential and public buildings in Moscow.**

The MTT called for existing lighting systems at 3 (decreased from 15 originally) schools/hospitals to be fully upgraded. The present status is as follows:

**Schools:** The project has undertaken preliminary energy audits at 10 schools in Moscow; these were jointly identified by the Moscow City Administration and the Ministry of Education. Furthermore, complete audits were undertaken at 3 of the 10 schools. The results of these 3 audits were used to initiate and complete the full feasibility and design studies and to prepare bidding documents for upgrading the lighting system at these schools with LEDs. The Hygiene Institute has provided clearance for implementing LEDs at the schools and some classes have installed LEDs, as a demonstration; however, Requests for Proposals from potential bidders cannot be issued until final approval of the associated Sanitary Regulations and Standards (SanPiN) is secured from the Ministry of Justice. This is expected by December 2012.

**Hospitals:** No activity has been undertaken as there is no SNiP (Construction Norms and Regulations) regarding energy efficient lighting in place for this category of users.

**Apartments/Buildings:** No activity, except for a promotional distribution of 500 energy saving lamps among Moscow citizens in cooperation with Philips.

**Conclusion**

The introduction of energy efficient lighting systems in schools, hospitals/apartment buildings have not commenced yet. As per the MTT, lighting schemes at 3 schools/hospitals should have been upgraded; however, upgrading is still in its pre-tendering stages. The survey on penetration of energy efficient lamps (CFLs and LEDs), instead of being completed as per the MTT, it is still in its planning stages. Suffice it to restate, as mentioned earlier, the importance of focusing on results rather than on the number of activities undertaken. On the issue of a communication and promotion strategy, one has been prepared by the Russian Energy Agency. In addition, the project has been having on-going communication and promotional activities, including press lunches, radio interviews and film festivals and hosts a website [www.undp-light.ru](http://www.undp-light.ru) that provides useful project information.(A list of project events and publications is provided in Annex 5).

Moreover, the project has published 5 brochures, all drafted by highly-qualified specialists in their respective fields. Except for the brochure dealing with CFLs, their contents are very technical, some with graphs and formulae, thus making them of value to only a captive/limited audience possessing a certain level of technical education. This may have been the target audience of the brochures; however, the project also needs to produce brochures that would be easily understandable by the general public.

Finally, with regard to domestic CFL recycling, the Moscow City Administration has issued a decree (#1010-RZP: “On organization of work on collection, transport and recycling of waste luminescent lamps”) mandating CFL collection and recycling and the participation of NPP Ecotrom has been solicited for this purpose. However, the recycling rate has not been determined.

In a nutshell, there is no penetration yet of energy-efficient lighting in Moscow homes (except for a promotional distribution of energy saving lamps among Moscow citizens in cooperation with Philips) and buildings and it is too soon to talk about any replication.

**Recommendations**

Despite the support of a full-time Moscow Pilot Projects Coordinator funded under the project, piloting in Moscow has badly fallen short of the MTT of “lighting systems at 3 schools/hospitals fully upgraded”. Project management should redouble efforts to address this shortcoming soonest, which, otherwise, is likely to build up and fall short in the “End of Project Target” as well.

In addition, as indicated above, the 5 brochures are quite technical in nature and are of value to a limited audience. If this audience were the target of the brochures, then this is fine. However, what the project needs now, in the Evaluator’s view, is to also focus on producing brochures that will be easily understandable by the general population, providing them with information of the type(s) of energy-efficient lamps/lighting units, their costs, how in the long run they will cost less to operate (life-cycle cost), how to determine their quality on the basis of labelling, etc.; in short, brochures that will typically answer questions that the general public may have and that will assist them in making the right choice. These are generally best written by “popular science” journalists and could possibly be 2-3 pages long, rather than the 15 pages of the existing ones.

* 1. **Outcome 4: Energy-Efficient street lighting is adopted in Volga Federal District.**

The present status is as follows:

**Dzerzhinsk** (Population of 250 K): Piloting will cover 4,000 of the 5,000 street lighting units. To date, 1,000 units have been installed.

**Shumerlya** (Population of 30 K): Piloting will cover 1,000 units, of which 430 have been installed.

**Sarov:** (Population of 90 K): Town has 5,000 units and piloting will cover 4,000 of them. To date, 800 units have been installed, with another 200 to be installed by the end of this year.

**Conclusion**

The activities have been very well implemented. Over 2,400 improved lighting fixtures (out of a total of 9,000 ear-marked for replacement) have been installed to date. Now that the momentum has picked up, it is expected that the pace of modernising the street lighting fixtures will gather speed. Representatives of all 3 towns expressed great satisfaction of the residents towards the quality of lighting provided by the new units. They also indicated that their annual expenditures for street lighting have substantially decreased.

With regard to replication, the Sochi Administration has already contacted the project to ascertain the feasibility of energy efficient street lighting in the city. In this connection, in consultation with the Sochi Electric Utility “SochiSvet”, the project formulated a brief concept paper and performed a preliminary techno-economic study to determine costs involved, energy savings and the pay-back period.

**Recommendation**

Implementation of energy-efficient street lighting is still on-going in Dzerzhinsk, Shumerlya and Sarov and progress to-date has been very good. In fact, the (revised) MTT of having 2,000 fixtures installed has been exceeded.

With the objective of replication in mind, the project may wish to capitalize on the success of this initiative and organise a workshop, inviting the participation of neighbouring (and not so neighbouring) towns to have these 3 targeted towns share their experiences on the benefits derived from energy-efficient street lighting and how to go about implementing such initiative utilising their own resources. This is likely to produce a snow-ball effect and provide an additional boost to the private sector in terms of provision of consultancy services and sale of equipment.

* 1. **Project Management**

The project is managed by a Project Manager with the support of a team of full-time and part-time Experts, and Consultants. The Evaluator had the opportunity of meeting with/talking to some of the project Consultants/Experts; others were either sick or were not available – he had telephone conversations with those he could not meet.

**Project Manager:** By his own account, the Project Manager’s “Moscow-based” activities require 80 -85% of his time, with the remaining devoted to the pilots in the Volga Federal District. However, he divides his time 50-50 between Nizhny Novgorod (the capital of the Volga Federal District) and Moscow. As activities in the Volga Federal District have advanced very well (his “extended” presence there may well have been one contributing factor, among others) and the “Moscow-based” activities, both in terms of regulatory work and piloting are quite behind schedule, it would appear logical that, in future, he spends the bulk of his time in Moscow. This argument is reinforced by the fact that the Chief Technical adviser (CTA) is also based in Nizhny Novgorod and his ToRs call for, among others, support to the implementation of pilot projects and this would include the pilots in the Volga Federal District.

Telecommuting is an accepted practice within UNDP, but it is understood that it would not compromise project activities and, eventually, expected results. When the expected mid-term results are quite delayed, as in the case of the “Moscow-based” activities (e.g. not a single school/hospital has even started upgrading and no plan of modernisation of national metrology laboratories exist yet), it is believed that telecommuting by the Project Manager should be reassessed.

**Recommendation**

The Project Manager should devote his future undivided attention to the outstanding “Moscow-based” activities that have accumulated delays. His permanent location in Moscow is critical for the success of the project, except for short absences on mission, and this will go a long way towards maintaining continuous “proximity” interaction with Central and Moscow Government Administrations with a view towards advancing/speeding up project activities there. A continuation of the smooth-running piloting activities in the Volga Federal District could be entrusted to the CTA, who is based there, anyway.

**Chief Technical Adviser (CTA)**

The Evaluator had a telephone conversation with the CTA, after completing his mission in Russia, and they discussed the type and level of support he provides to the project. He indicated that he worked part-time (50% of his professional time) on the project. He briefed the Evaluator on the types of interventions he undertakes on behalf of the project and, to understand these in more detail, the Evaluator enquired about the reports he submits to UNDP on his assignments, as he would have liked to read through a sample of reports. His answer was that he does not submit any report.

Incidentally, when they discussed the contents of the 5 brochures mentioned above, he did agree that, while they were of value to a certain category of readers, they were a bit too technical for the average Russian citizen and that additional brochures addressing the needs of the general public were required.

**Recommendation**

The Evaluator has a 2-page ToR for the CTA and there is no mention of whom he reports to, what outputs are expected of him (only his “Responsibilities” are listed) and who certifies his outputs for payment. Unless this is normal practice with UNDP Russia, the Evaluator believes that remedial action should be implemented soonest.

**Expert on Science and Market Monitoring(Principal Scientific Consultant)**

The Expert on Science and Market Monitoring (Principal Scientific Consultant) is a highly respected specialist in the field of “SvetoTechnica” who, in the assessment of the Evaluator, sees the project as one that should be based on Science.

While it is true that the production of lighting equipment finds its basis in scientific studies, research and development, especially those related to the design and performance of lamps, regulators and lighting fixtures, the project itself deals with the principal objective of transforming the market for the application of efficient lighting. Moreover, none of the project activities, as outlined in the project document, deal with the “scientific concepts” behind energy efficient lighting, but rather the application of such lighting systems.

In light of the above, the Evaluator does not clearly see the added value to the project that a “Science” Expert brings on a subject that deals with transforming the market for energy efficient lighting. There is definitely a “technical education” component that is proposed to be dealt with very effectively by the Moscow Power Engineering Institute and this has been addressed together with the “high school issue” above. The Expert on Science and Market Monitoring does run the once-monthly training course for lighting specifiers at “Dom Sveta” and indications are that this is a very successful, project-oriented activity.

Moreover, with regard to “Market Monitoring”, the Evaluator finds the report prepared by Consultant N. I. Emelyanov (whom he did not meet) totally up to the mark; he seems to be very competent, on the basis of his report that the Evaluator reviewed, in undertaking an annual monitoring of the market. The Expert on Science and Market Monitoring indicated that, as part of his “Market Monitoring” activities, he prepared the ToRs of Consultant N. I. Emelyanov and reviewed his report. Is it efficient use of resources to have an Expert on “Market Monitoring” prepare the ToRs and review the report of another Expert on “Market Monitoring”? Could the preparation of the ToRs and report review have been more efficiently accomplished by the Project Manager and/or CTA?

**Recommendation**

It would be advisable for the project to give a fresh look as to whether the services of an “Expert on Science and Market Monitoring” are really required. Can any required expertise for services not already available be provided on an ad-hoc basis by short-term Consultants, including the present Expert? Moreover, the same issues on whom he reports to, what outputs are expected of him (only his “Responsibilities” are listed in the 2-page ToR that was provided) and who certifies his outputs for payment are pertinent.

* 1. **Project Office**

The project office is located at UNDP premises and is manned by the full-time Project Assistant and the Project Manager when he is in Moscow, i.e. 50 % of his time. In addition, the project is supported by a team consisting of a part-time Science/Monitoring Adviser\*, a full-time Moscow Pilot Coordinator and 8other part-time national Experts working 50% of their time, including the Nizhny Novgorod-based CTA and the St. Petersburg-based Expert on Development of Production and Promotion of EEL Equipment (list provided in Table 4 below). All these Experts work from their individual locations and come to the office only when required.

In the view of the Evaluator, this is quite a novel approach in managing a project in the sense that the only person who comes to the office on a daily basis is the Project Assistant. All other experts, including the Project Manager and CTA, telecommute. This then gives rise to a very valid question: could it be that this very loose project management arrangement be the source of the project not meeting some mid-term targets in certain crucial areas, as evidenced in the ratings in Table 1?

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\* He erroneously, it seems, told the Evaluator that he worked full-time. UNDP Russia indicates that he works part-time (50% of the time).

Recommendation: UNDP Russia should consider making arrangements for all project Experts to work full-time/part-time daily from the project office. The only exception would be in infrequent cases of telecommuting by the Experts and, of course, for short-term consultants who work from their individual

offices. Such an arrangement will necessitate the full-time presence of the Project Manager in Moscow to supervise the work of the Experts and provide guidance, as required, assist in monitoring progress on a regular basis and ensure that the targets set by the project are fully met. This will also create a team spirit among the Experts, which will greatly facilitate the exchange of information/ideas to move project activities forward towards a successful conclusion.

It is recognised that such an arrangement will require additional office space and, consequently, involve added costs; however, this forms part of the cost of doing business, just like the cost of maintaining the offices of any organisation anywhere in the world.

**5.7 Financial Management**

As per CDR figures for 2010 through 2012, bearing in mind that figures for 2012 are only provisional, expenditures per individual Activity are as follows:

Table 2: Expenditures

|  |  |  |
| --- | --- | --- |
| **Activity** | **Total Expenditures ($)****(Govt. + UNDP – rounded to nearest thousand)** | **UNDP Expenditures ($)****for Consultants and Service Contracts (rounded to nearest thousand)** |
| Activity 1: EE Lighting Standards and Policy | 219,000 | 184,000 |
| Activity 2: EE Lighting Supply Chain | 250,000 | 190,000 |
| Activity 3: EE Homes and Buildings Lighting | 364,000 | 173,000 |
| Activity 4: EE Street Lighting  | 239,000 | 114,000 |
| Activity 5: Project Management | 182,000 | 101,000 |
| TOTAL | 1,254,000 | 762,000 |

The UNDP expenditures in the above Table relate only to Consultants and Individual Service Contracts (Consultants and Experts, in short), including Travel/DSA; audit fees, office rent and expenses, etc. have been excluded from the computation. They also exclude the 20% of funds that the project provides for street lighting in the Volga Federal District which, anyway, have not been yet recorded as expenditure.

Expenditures under Activities 1 and 2 are costs related mainly to Consultants and Experts. Expenditures under Activity 3 again relate to Consultants and Experts, except for $ 78,000 disbursed in 2012 and labelled under “Service Contract – Construction & Engineer”. This expenditure is likely in connection with the audits, feasibility and design studies for the schools, with the balance of $ 201,000 being paid for from project funds disbursed though Government implementing partner. Similarly, under Activity 4, all expenditures relate to Consultants and Experts, except for $ 13,000 in 2011 and $ 31,000 in 2012 (total of $ 44,000 - labelled under “Service Contract - Construction & Engineer” and “Service Contract - Studies & Research Service”, respectively) in connection with the feasibility studies for energy efficient street lighting. The balance of $ 122,000 for this activity was paid for from project funds disbursed though Government implementing partner.

Excluding costs associated with project management and service contracts, it can be computed from Table 2 above that UNDP funds in the amount of $ 539,000 was spent on Consultants and Experts. Short of analysing every single expenditure under the “Consultants and Experts” item and matching it with the output achieved (e.g. activity report), it is very difficult to make a judgement on how judiciously project funds have been utilised and how cost-effective the interventions have been. This exercise would prove to be still more difficult in the absence of reporting requirements - a copy of the “Notes to Combined Delivery Reports” that was provided to the Evaluator indicates that some consultancies/service contracts (e.g. 71305 – Local Consultants, Short- term, Technical, CTA, etc.) do not require the submission of a report.

**Recommendation**

Moving forward, the project should carefully evaluate its needs for Consultants/Experts and these should be appropriately defined to meet the objectives of the project. Moreover, clear reporting lines should be established and the submission of reports for every single assignment/contract should be made mandatory.

**Project Steering Committee (PSC)**

The PSC is chaired by the National Project Director (NPD) and the latter has changed several times since project start. This has had a negative impact on project direction, as the PSC has met only 3 times since Project Inception, the last meeting being on 30 November 2011 - the previous meetings were held on 29 April 2010 and 18 March 2011, respectively. The Project Manager indicated that several issues are awaiting a decision of the PSC (e.g. recommendations on modernisation of national lighting certification systems) and these are still in abeyance.

**Recommendation:**

Hopefully, there will be no more changes of the NPD. However, in order to remove any potential bottleneck in the future, the PSC should consider appointing a Deputy NPD at its next meeting.

* **Corrective actions for the design, duration, implementation, monitoring and evaluation of the Project**

The project was well-formulated from the very beginning, with careful thinking going into the issues that need to be addressed, the challenges laying ahead, the benchmarks for mid-term/end-of-project status and the duration of activities. Likely through oversight, implementation of LED technology for energy efficient lighting was not included as one of the very promising options. However, this was promptly brought to light and corrective action was taken at the Inception Workshop.

A similar “oversight” was related to potentially utilising the benefits of energy efficient lighting in terms of CO2 emission reduction to access carbon finance. This was likely due to the fact that when the project was formulated GEF was fairly strict then not to allow projects to engage in carbon finance related activities. However, this situation has evolved over time and GEF has now “relaxed” its rules when the voluntary market is proposed to be accessed for carbon finance. This issue was also taken care of at the Inception Workshop when the project agreed to add a focus on carbon finance to the project activities.

Finally, over the course of implementation, the project came to the view that certain specific revisions could be made to the mid-term and end-of-project targets without compromising the overall structure of the project. Accordingly, a revised “Strategic Results Framework” was prepared and is scheduled for discussion/approval at the next meeting of the Project Steering Committee.

Although called for in the project document, no formal TPR has been held since the project became operational. On this issue, the Project Manager indicated that an “annual presentation of project implementation results is held during Steering Committee meetings where all stakeholders are present”. The Project Manager needs to ensure that TPRs are held annually, as specified in the project document.

* **Actions to strengthen or reinforce benefits from the project**

The project had recruited an International Expert on “Standards and Testing Procedures” with a 10-day contract that ended in September 2012 and the Evaluator had the opportunity to discuss his inputs with him by phone. There are 2 crucial areas in project implementation that can make a real difference when it comes to transforming the market for energy efficient lighting and this does not imply that the other elements are less important. These are the piloting in Moscow and eventual replication in other large Russian cities and at least one international-level and fully accredited metrology laboratory for providing certification for lighting bulbs and fixtures to ensure quality assurance for locally-produced items and to keep out imported ones that are below standard.

Hence, it may be advisable for project management to consider recruiting the above-mentioned International Expert, if appropriate (or any other suitable Expert(s), for that matter) to support the project in these 2 crucial areas. The best option would be to have the International Expert(s) on a retainer contract for a specific number of days (e.g. some 50 work days and 2 missions per year, with clearly-defined objectives) to provide targeted inputs that would advance the subject of market transformation for energy efficient lighting.

* **Proposals for future directions underlining main objectives**

It may be beyond the scope of the project, but it may still be useful to consider if the project could do some ground work, at a later stage, with the private sector to venture into ESCOs for refurbishing lighting at various institutions and for street lighting. Of course, this will only materialise when the private sector has concrete data, accumulated on the basis of the pilots, which would enable it to perform economic and financial analyses to determine IRRs under various scenarios of equity and debt financing and any subsidies/incentives that may be available in terms of reduced value-added tax, income tax, etc.

Such an approach, if it materialises, will be of great interest to industries, municipalities, etc. in that it would enable them to benefit from a greatly improved lighting service without incurring any upfront investment costs.

* **Suggestions for strengthening ownership, management of potential risks**

The different stakeholders have demonstrated clear ownership of the project: the Government has put in place conducive policies, and the Moscow City and Volga Federal District Administrations have to date shown interest in implementing the pilots. However, as indicated above under “Identification and Management of risks (adaptive management)”, the one risk that the project may face relates to the Moscow City Administration potentially toying with the idea that piloting in schools, hospitals and residential buildings should form part of a comprehensive programme for energy efficient lighting which does not exist as yet. Hence, project management should maintain a close dialogue with the Moscow City Administration to ensure that it stays on track regarding the piloting issue. It would also be prudent for project management to start thinking of alternatives to piloting in Moscow City, just in case difficulties arise in the future; hopefully, everything will work out as per plans. This issue is proposed to be discussed at the next PSC meeting (likely in March 2013); in the interim, the Moscow City Pilot Project Coordinator is being entrusted to initiate preliminary discussions with the Moscow Oblast Administration (Plan B) to ascertain its interest and eventual commitment to “host” the pilots.

**6. Lessons learned**

1. It is important to have brochures, leaflets, publications to sensitise the highly-educated/not so highly educated public on the benefits of energy efficient lighting and fixtures. However, prior to embarking on a publication, care should be exercised in determining its targeted audience and its contents adjusted accordingly. This may require different publications for different audiences.

*Suggested corrective action:* Define the target audience for each brochure, leaflet, and publication up-front and tailor their contents to meet the level of information that each one of them wishes to convey to that particular target audience.

1. In the implementation of a project, it is important to ensure that outputs are achieved. However, the purpose of these outputs is to serve as inputs to the achievements of certain targets, with the latter providing an indication on how well the project achieved its desired results. Hence, the outputs represent a vehicle to achieve an end, be it mid-term or end-of-project, but do not constitute an end in themselves. No matter how many reports have been produced, but unless they have transformed, or attempted to transform, the behaviour of the market for energy efficient lighting, it is difficult to confirm that the established targets have been achieved.

*Suggested corrective action:* Project outputs in terms of reports, for example, play an important role in implementation. However, when commissioning reports, project management should ensure that these will directly contribute towards achievement of the established targets, rather than being peripheral to them

1. Telecommuting is an accepted practice within UNDP (and within many other organisations) and it poses no problem when project activities, results and deadlines are systematically being met. However, when the situation arises that expected results are not being met in a timely fashion, like in the case of the mid-term targets for the “Moscow-based” activities, it is believed that telecommuting should be reassessed. At the present time, project management is largely undertaken from an almost “virtual” Moscow project office, with telecommuting by the Project Manager for 50% of his time and for the bulk of their time by the full-time/part-time Experts, except for the Project Assistant.

*Suggested corrective action*: The project should consider henceforth mandating all project staff, both full-time and part-time (50% of time), to commute to the office for work, just like the Project Assistant normally does on a daily basis.

**Table 3: Project Ratings**

|  |  |
| --- | --- |
| Project Component or Objective | **Rating** |
| **Ratings of Relevance, Efficiency and Effectiveness\***(6 - Highly Satisfactory, 5 - Satisfactory, 4 - Marginally Satisfactory, 3 - Marginally Unsatisfactory, 2 - Unsatisfactory, 1 - Highly Unsatisfactory) |
| **Project Formulation** |
| **Overall Project Formulation (Relevance)** | 5 |
| 1. Conceptualization/design
 | 5 |
| 1. Stakeholder participation
 | 5 |
| **Project Implementation** |
| **Implementation Approach (Efficiency)** | 3 |
| 1. Use of the logical framework
 | 4 |
| 1. Adaptive management
 | 4 |
| 1. Use/establishment of information technologies
 | 5 |
| 1. Operational relationships between the institutions involved
 | 5 |
| 1. Technical capacities
 | 5 |
| **Monitoring and Evaluation** | 5 |
| **Stakeholder Participation** | 5 |
| 1. Production and dissemination of information
 | 5 |
| 1. Local resource users and NGOs participation
 | 5 |
| 1. Establishment of partnerships
 | 5 |
| 1. Involvement and support of governmental institutions
 | 5 |
| **Project Results** |
| **Overall Achievement of Objective and Outcomes (Effectiveness)** | 4 |
| 1. Objective
 | 4 |
| 1. Outcome 1
 | 3 |
| 1. Outcome 2
 | 5 |
| 1. Outcome 3
 | 3 |
| 1. Outcome 4
 | 6 |
| **Sustainability Ratings\*\***(4 - Likely, 3 - Moderately Likely, 2 - Moderately Unlikely, 1 - Unlikely) |
| **Sustainability** |  |
| 1. Financial sustainability
 | 3 |
| 1. Institutional sustainability
 | 3 |
| 1. Socio-economic sustainability
 | 3 |
| 1. Ecological sustainability
 | 3 |
| **Overall Project Achievement and Impact** | 3 |

**Table 4: List of National Project Experts (as of November 2012)**

|  |  |  |
| --- | --- | --- |
|  **Name** |  **Responsibility** | **Full-Time (F/T)/Part-Time (P/T)** |
| Mr A. Averchenkov | Energy and Climate Change Adviser | F/T for UNDP, but PT for project. |
| Mr J. Aizenberg | Expert on Science and Market Monitoring | P/T\* |
| Mr E. Dolin (based in St. Petersburg) | Expert on Development of Production and Promotion of EEL Equipment | P/T |
| Ms T. Gorshkova | Expert on Test Laboratories | P/T |
| Mr S.Gvozdev | Expert on Standards | P/T |
| Mr A. Martynov | Coordinator, National Platform for EEL | P/T |
| Mr Y. Tiknonenko | Moscow Pilot Project Coordinator | F/T |
| Mr E. Nadezdin | Policy Expert | P/T |
| Ms e. Surovikina | Communications Expert | F/T for UNDP, but P/T for project. |
| Mr E. Zenyutich (based in Nizhny Novgorod) | CTA | P/T |

\* He erroneously, it seems, told the Evaluator that he worked full-time. UNDP Russia indicates that he works part-time (50% of the time).

**ANNEX 1**

|  |  |
| --- | --- |
|  | **UNITED NATIONS DEVELOPMENT PROGRAMME****TERMS OF REFERENCE / INDIVIDUAL CONTRACT** |

|  |
| --- |
| **I. Position Information** |
| Position Title: Type:Project Title/Department: Duration of the service:Duty station:Reports to: | International Consultant/Mid-term EvaluatorIndividual Contract (International)UNDP/GEF Project00072576 “Transforming the Market for Efficient Lighting”25working days, from 1October to 15November 2012Home-based with one mission to Moscow and Volga Federal DistrictHead of Environment and Energy Unit, UNDP Russia |

|  |
| --- |
| **II. Background**  |
| **1.Standard UNDP/GEF Monitoring and Evaluation Requirements**The Monitoring and Evaluation (M&E) policy at the project level in UNDP/GEF has four objectives: i) to monitor and evaluate results and impacts; ii) to provide a basis for decision making on necessary amendments and improvements; iii) to promote accountability for resource use; and iv) to document, provide feedback on, and disseminate lessons learned. A combination of tools should be used to ensure effective project M&E. These might be applied continuously throughout the lifetime of the project – e.g. periodic monitoring of indicators -, or as specific time-bound exercises such as mid-term review, audit reports and independent evaluations.In accordance with UNDP/GEF M&E policies and procedures, all projects with long implementation period (e.g. over 5 or 6 years) are strongly encouraged to conduct mid-term evaluations. In addition to providing an independent in-depth review of implementation progress, this type of evaluation is responsive to GEF Council decisions on transparency and better access to information during implementation.Mid-term evaluations are intended to identify potential project design problems, assess progress towards the achievement of objectives, identify and document lessons learned (including lessons that might improve design and implementation of other UNDP/GEF projects), and to make recommendations regarding specific actions that might be taken to improve the project. It is expected to serve as a means of validating or filling the gaps in the initial assessment of relevance, effectiveness and efficiency obtained from monitoring. The mid-term evaluation provides the opportunity to assess early signs of project success or failure and prompt necessary adjustments.This evaluation is to be undertaken taking into consideration the GEF Monitoring and Evaluation policy (<http://www.thegef.org/gef/node/4184>) and the UNDP/GEF Monitoring and Evaluation Policy (<http://www.undp.org/gef/monitoring/policies.html> ).**2. Project Background and Overview**The lighting sector consumes significant amounts of energy, whereas substantial savings, from 75% to 90% compared with conventional practices, can be achieved through the use of new energy efficient technologies. At the national level, several OECD and developing countries have prepared and enacted Energy-Efficient Lighting (EEL) programs aimed at phasing-out incandescent lamps and other inefficient technologies. Such programs reduce energy use by 30% within 5 to 7 years, while quality and even quantity of lighting is enhanced. Representatives of the leading lighting manufacturers announced their support for this ambitious market transformation calling for a coordinated effort among all countries worldwide.Despite the fact that Russia offers one of the world’s greatest potentials for energy savings and greenhouse gas (GHG) emission reductions in the lighting sector, the country has so far stayed outside of the global market transformation efforts in this field. Today, around 14% of the country’s overall electric energy consumption is attributable to lighting, corresponding to 137 bln KWh per year. Total lighting energy savings potential in Russia is estimated at over 40% or 57 bln KWh per year .A new Federal Law on *Energy Conservation and Energy Efficiency Improvement* was adopted in November 2009. It provides a number of concrete measures, incentives and mechanisms to promote energy and ecological efficiency in all sectors of the economy. For the lighting sector, the law envisaged a gradual phase-out of incandescent lamps starting with high wattage lamps (more than 100 W) in 2011. Despite explicit policy statements, the enforcement of these policies is still to be seen and requires a lot of further regulatory work and capacity building. Supplementary regulatory framework, many by-laws and enforcement mechanisms still need to be developed.The implementation of the full-scale UNDP/GEF Project “Transforming the Market for Efficient Lighting” started in July 2010. The project is planned for 5 years. It is nationally executed by the Ministry of Energy of the Russian Federation. The total project budget is $72,750,000 with GEF contribution of $7,020,000.The project aims at reducing energy consumption and associated GHG emissions in Russian lighting sector. Its main objective is to transform the lighting market in Russia through promotion of EEL technologies and systems and phasing-out inefficient lighting. These are planned to be reached by achieving 4 key outcomes:* Outcome 1. Improved efficient lighting standards and policy framework.
* Outcome 2. Supply chain for energy efficient lighting is strengthened.
* Outcome 3. Energy efficient lighting is increased in residential and public buildings in Moscow.
* Outcome 4. Energy-efficient street lighting is adopted and replicated in the Volga Federal District.
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|  |
| --- |
| **III. Functions / Key Outputs Expected** |
| **1. EVALUATION OBJECTIVES**This Mid Term Evaluation (MTE) is initiated by UNDP as the GEF Implementing Agency for this project and it aims to provide managers (at the Project Implementation Unit, National Implementing Partner – Ministry of Energy of Russia, UNDP Russia Project Support Office and UNDP-GEF levels) with strategy and policy options for more effectively and efficiently achieving the project’s expected results and for replicating the results. It also provides the basis for learning and accountability for managers and stakeholders.The evaluation will play a critical role in the future implementation of the project by providing advice on: (i) how to strengthen the adaptive management and monitoring function of the project; (ii) how to ensure accountability for the achievement of the GEF objective; (iii) how to enhance organizational and development learning; and (iv) how to enable informed decision – making. The evaluation will have to provide to the GEF Secretariat with complete and convincing evidence to support its findings/ratings. The evaluator should prepare specific ratings on specific aspects of the project, as described in section “Scope of the Evaluation” and ANNEX C of this Terms of Reference. Particular emphasis should be put on the current project results and the possibility of achieving the objective and outcomes in the established timeframe, taking into consideration the speed, at which the project is proceeding. The evaluation is intended to provide a comprehensive overall assessment of the project and provides an opportunity to critically assess administrative and technical strategies issues and constrains associated with large international and multi-partner initiatives. The evaluation should also provide recommendations for strategies, approaches and/or activities to improve the potential of the Project to achieve expected outcomes and meet the objective within the Project timeframe. Findings of this evaluation will be incorporated as recommendations for enhanced implementation of the current project phase in the future years.The purposes of the MTE are:1. To assess overall performance against the project objective and outcomes as set out in the Project Document, project’s Logical Framework, and other related documents;
2. To assess the effectiveness and efficiency of the project;
3. To analyze critically the implementation and management arrangements of the project;
4. To assess the progress to date towards achievement of the outcomes;
5. To review planned strategies and plans for achieving the overall objective of the project within the timeframe;
6. To assess the sustainability of the project’s interventions;
7. To list and document initial lessons concerning project design, implementation and management;
8. To assess project relevance to national priorities;
9. To provide guidance for the future project activities and, if necessary, for the implementation and management arrangements;
10. To provide lessons learned for the future.

In particular, this evaluation will assess progress in establishing the information baseline, and identifying any difficulties in project implementation and their causes, and recommend corrective course of action. Effective action to rectify any identified issues hindering implementation will be a requirement prior to determining whether implementation should proceed.Project performance will be measured based on Project’s Logical Framework Matrix (see Annex B), which provides clear performance and impact indicators for project implementation along with their corresponding means of verification. Success and failure will be determined in part by monitoring changes in baseline conditions. During the inception period the Logical Framework Matrix was updated, along with a number of indicators which were revised to render more clarity and rigidity to the system.The evaluator is expected to work with key project stakeholders, including UNDP Russia Project Support Office, Ministry of Energy of the Russian Federation, Ministry of Natural Resources and Environment of the Russian Federation, Russian Energy Agency, Moscow Government, local governments of the Volga Federal District municipalities, main education institutions (Moscow Power Engineering Institute, Nizhny Novgorod State Technical University, etc.), private companies, NGOs, Internet community on energy efficiency.The Report of the Mid-Term Evaluation will be stand-alone document that substantiates its recommendations and conclusions.**2. SCOPE OF THE EVALUATION**The evaluation should assess the range of aspects described below. The applicable rating criteria are as follows:6: Highly Satisfactory (HS): no shortcomings5: Satisfactory (S): minor shortcomings4: Moderately Satisfactory (MS): moderate shortcomings3: Moderately Unsatisfactory (MU): significant shortcomings.2: Unsatisfactory (U): major problems1: Highly Unsatisfactory (HU): severe problemsRatings for **Sustainability** assessment are as follows:4: Likely (L): negligible risks to sustainability3: Moderately Likely (ML): moderate risks2: Moderately Unlikely (MU): significant risks1: Unlikely (U): severe risks.**Additional ratings** where relevant:N/A: Not ApplicableU/A: Unable to AssessAll ratings given should be properly substantiated.**Project Concept and Design:** The evaluator will review the problem addressed by the project and the project strategy, encompassing an assessment of the appropriateness of the objectives, planned outputs, activities and inputs as compared to cost-effective alternatives. The executing modality and managerial arrangements should also be judged. The evaluator will assess the achievement of indicators and review the work plan, planned duration and budget of the project.**Project Implementation:** The evaluation will assess the implementation of the project in terms of quality and timeliness of inputs and efficiency and effectiveness of activities carried out. Also, the effectiveness of management as well as the quality and timeliness of monitoring and backstopping by all parties to the project should be evaluated. In particular, the evaluation is to assess the Project team’s use of adaptive management in project implementation.**Project outputs, outcomes and impact:** The evaluation will assess the outputs, outcomes and impact achieved by the project as well as the likely sustainability of project results. This should encompass an assessment of the achievement of the immediate objectives and the contribution to attaining the overall objective of the project. The evaluation should also assess the extent to which the implementation of the project has been inclusive of relevant stakeholders and to which it has been able to create collaboration between different partners. The evaluation will also examine if the project has had significant unexpected effects, either of beneficial or detrimental character.To determine the level of achievement of project outcomes and objectives following three criteria should be assessed according to the ratings provided above:* ***Relevance*:** Are the project’s outcomes consistent with the GEF focal areas/operational program strategies and country priorities?
* ***Effectiveness*:** Are the actual project outcomes commensurate with the original or modified project objectives? In case the original or modified expected results are merely outputs/inputs then the evaluators should assess if there are any real outcomes of the project and if yes then whether these are commensurate with the realistic expectations from such a project.
* ***Efficiency*:** Is the project cost effective? Is the project the least cost option? Is the project implementation delayed and if it is, then does that affect cost-effectiveness? Wherever possible, the evaluator should also compare the cost-time vs. outcomes relationship of the project with that of other similar projects.

The evaluation will also cover the following aspects:**2.1. Progress towards Results**a. Changes in development conditions: * Are project outcomes contributing to national development priorities and plans in accordance with the Federal Law of the Russian Federation #261on *Energy Conservation and Energy Efficiency Improvement* of 11.11.2009?
* How and why project outcomes and strategies contribute to the achievement of the expected results?
* Did the project consult and make use of the skills, experience and knowledge of the appropriate government entities, NGOs, community groups, private sector, local governments and academic institutions in project activities?

b. Measurement of change:Progress towards results should be based on a comparison of indicators before and after (so far) the project intervention, e.g. by comparing current conditions for energy efficiency in lighting (legal and regulatory frameworks, results of energy efficiency and energy conservation activities, etc.) to the baseline ones.The evaluation should specifically look into:* Adequacy of the level and proposed modes of enforcement of the regulatory and programmatic documents developed within the project for creation of an enabling environment for energy efficiency in lighting funded from the national budget;
* Adequacy to the Federal Law of the Russian Federation #261on *Energy Conservation and Energy Efficiency Improvement* of 11.11.2009;
* Verification of compliance of pilot projects to the new version of SNiP 23-05-59\*, which came into effect on 20.05.2011 (Decree of the Ministry of Regional Development #783 dt. 27.12.2010 (SP 52.13330.2011);
* Assessment of efficiency of energy audits and development of replication programs of energy efficient lighting in state-financed sector;
* Verification of compliance of the following pilot project designs:
* Energy efficient lighting in 3 Moscow schools;
* Energy efficient lighting in 3 towns of the Volga Federal District;
* Timeliness of the existing lighting oriented curricula for the initial training (University courses);
* Verification of analysis and assessment of metrological and testing laboratories of energy efficient lighting equipment;
* Verification of market monitoring (lighting equipment) results;
* Adequacy and effectiveness of the developed project awareness raising products on energy efficient lighting:
* Project’s web-site
* Promo materials;
* Communication and promotion strategy.

c. Project strategy:* How and why outcomes (listed as outputs in the project document) and strategies contribute to the achievement of the expected results?
* Do the changes suggested during the inception phase still represent the best project strategy for achieving the project objectives (in light of updated underlying factors)? *Consider alternatives.*

d. Sustainability:* Assess the extent to which the benefits of the project will continue, within or outside the project scope, after it has come to an end; commitment of the government to support the initiative beyond the project
* The evaluators may look at factors such as mainstreaming project objectives into the broader development policies and sectoral plans and economies.

The sustainability assessment will give special attention to analysis of the risks that are likely to affect the persistence of project outcomes. The sustainability assessment should also explain how other important contextual factors that are not outcomes of the project will affect sustainability. The following four dimensions or aspects of sustainability should be addressed:* + ***Financial resources:*** Are there any financial risks that may jeopardize sustenance of project outcomes? What is the likelihood of financial and economic resources not being available once the GEF assistance ends (resources can be from multiple sources, such as the public and private sectors, income generating activities, and trends that may indicate that it is likely that in future there will be adequate financial resources for sustaining project’s outcomes)?
	+ ***Socio-political:*** Are there any social or political risks that may jeopardize sustenance of project outcomes? What is the risk that the level of stakeholder ownership (including ownership by governments and other key stakeholders) will be insufficient to allow for the project outcomes/benefits to be sustained? Do the various key stakeholders see that it is in their interest that the project benefits continue to flow? Is there sufficient public / stakeholder awareness in support of the long term objectives of the project?
	+ ***Institutional framework and governance:*** Do the legal frameworks, policies and governance structures and processes pose risks that may jeopardize sustenance of project benefits? While assessing this parameter, also consider if the required systems for accountability and transparency, and the required technical know-how are in place.
	+ ***Environmental:*** Are there any environmental risks that may jeopardize sustenance of project outcomes? The terminal evaluation should assess whether certain activities will pose a threat to the sustainability of the project outcomes.

Each sustainability dimension of the project outcomes should be rated as described above in application to Sustainability.**2.2 Project’s Adaptive Management Framework**a. Monitoring systems* + Assess the monitoring tools currently being used:
* Do they provide the necessary information?
* Do they involve key partners?
* Are they efficient?
* Are additional tools required?
	+ Assess the use of the logical framework as a management tool during implementation and any changes made to it.
	+ What impact did the retro-fitting of impact indicators have on project management, if such?
	+ Assess whether or not M&E system facilitates timely tracking of progress towards project’s objectives by collecting information on chosen indicators continually; annual project reports are complete, accurate and with well justified ratings; the information provided by the M&E system is used to improve project performance and to adapt to changing needs.

b. Risk Management* + Validate whether the risks identified in the project document and PIRs are the most important and whether the risk ratings applied are appropriate. If not, explain why.
	+ Describe any additional risks identified and suggest risk ratings and possible risk management strategies to be adopted.
	+ Assess the project’s risk identification and management systems:
* Is the UNDP-GEF Risk Management System[[1]](#footnote-2) appropriately applied?
* How can the UNDP-GEF Risk Management System be used to strengthen the project management?

c. Work Planning* + Assess the use of routinely updated work plans.
	+ Assess the use of electronic information technologies to support implementation, participation and monitoring, as well as other project activities.
	+ Are work planning processes result-based[[2]](#footnote-3)? If not, suggest ways to re-orientate work planning.

d. Financial management* + Consider the financial management of the project, with specific reference to the cost-effectiveness of interventions. (Cost-effectiveness: the extent to which results have been delivered with the least costly resources possible.). Any irregularities must be noted.
	+ Is there due diligence in the management of funds and financial audits?
	+ Did promised co-financing materialize (please fill out the co-financing form provided in Annex A)?

e. Reporting * + Assess how adaptive management changes have been reported by the project management.
	+ Assess how lessons derived from the adaptive management process have been documented, shared with key partners and internalized by partners.

f. Delays* + Assess if there were delays in project implementation and what were the reasons.
	+ Did the delay affect the achievement of project’s outcomes and/or sustainability, and if it did then in what ways and through what causal linkages?

**2.3Contribution of Implementing and Executing Agencies*** Assess the role of UNDP and the Ministry of Energy of the Russian Federation against the requirements set out in the UNDP Programme and Operations Policies and Procedures[[3]](#footnote-4). Consider:
* Field visits;
* Participation in Steering Committee meetings;
* Project reviews, PIR preparation and follow-up;
* GEF guidance;
* Operational support.
* Consider the new UNDP requirements outlined in the UNDP Programme and Operations Policies and Procedures, especially the Project Assurance role, and ensure they are incorporated into the project’s adaptive management framework.
* Assess the contribution to the project from UNDP and the Ministry of Energy of the Russian Federation in terms of “soft” assistance (i.e. policy advice & dialogue, advocacy, and coordination).
* Suggest measures to strengthen UNDP’s and Ministry’s soft assistance to the project management.

**2.4 Stakeholder participation, partnership strategy** * Assess whether or not and how local stakeholders participate in project management and decision-making. Include an analysis of the strengths and weaknesses of the approach adopted by the project and suggestions for improvement if necessary.
* Does the project consult and make use of the skills, experience and knowledge of the appropriate government entities, NGOs, community groups, private sector, local governments and academic institutions in the implementation and evaluation of project activities?
* Consider the dissemination of project information to partners and stakeholders and if necessary suggest more appropriate mechanisms.
* Identify opportunities for stronger partnerships.

**3. METHODOLOGY FOR EVALUATION APPROACH**The evaluator should seek guidance for his/her work in the following materials, which could be found at www.undp.org/gef:* UNDP Handbook on Monitoring and Evaluation for Results
* UNDP Evaluation Policy kit

It is recommended that the evaluation methodology include the following:* Documentation review (desk study), to include Project Document, Inception Report, annual GEF Project Implementation Reports, Minutes of the Steering Committee meetings, GEF quarterly project updates (for more details see ANNEX D);
* Interviews with Project Management Unit and key project stakeholders, including UNDP Russia Project Support Office, Ministry of Energy of the Russian Federation, Ministry of Natural Resources and Environment of the Russian Federation, Russian Energy Agency, Moscow Government, local governments of the Volga Federal District municipalities, main education institutions (Moscow Power Engineering Institute, Nizhny Novgorod State Technical University, etc.), private companies, NGOs, Internet community on energy efficiency;
* In-country field visits, if necessary.

The evaluation must provide evidence-based information that is credible, reliable and useful. It must be easily understood by project partners and applicable to the remaining period of the project.**4. EVALUATION DELIVERABLES**The core product of the Mid-Term Evaluation will be the Mid-Term Evaluation Report that will include:* Executive summary;
* Introduction;
* Findings and conclusions in relation to issues to be addressed identified under the *Scope of Evaluation* section of this TOR;
* Recommendations;
* Lessons Learned;
* Annexes.

The draft and final report will be written in the format outlined in ANNEX A of this TOR. The expected length of the report is around 50 pages in total. The first draft of the report is expected to be submitted to the UNDP Russia Project Support Office within approximately **3 weeks** (will be agreed upon in the beginning of the consultancy assignment) of the in-country mission for subsequent circulation to the key project stakeholders for comments. Any discrepancies between the interpretations and findings of the evaluator and the key project stakeholders will be explained in an annex to the final report.The report will be submitted both electronically and in printed version, in Russian and English. The report will be supplemented by rate tables (ANEX 3). |

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| --- |
| **IV. Tentative timeframe** |
| The evaluation mission in Russia will take place in October - November 2012. The total duration of the assignment will be 25 working days during the calendar period of 1.5 months (1 October – 15 November 2012). The following tentative timetable is recommended for the evaluation, however, the final schedule will be agreed upon in the beginning of the consultancy assignment:Desk review, development of methodology 4 days (tentatively during 1-5October, 2012)In-country field visits, interviews 10 days (tentatively during 8-19 October, 2012)Drafting report 3 days (tentatively during 22-24October, 2012)Draft report circulation 5 days (tentatively during 29 October-2 November, 2012)Finalization of report 3 days (tentatively during 8-15 November, 2012)Prior to approval of the final report, a draft version shall be circulated for comments to the stakeholders and project management. UNDP and the stakeholders will submit comments and suggestions within 5 working days (within the calendar period agreed) after receiving the draft. All comments and suggestions (if any) shall be addressed and the report will be considered as the final deliverable as soon it is accepted by UNDP.The final version of the evaluation report should be submitted in electronic format (MS Word) to UNDP Russia Project Support Office(Ms. Nataly Olofinskaya, address: 9, Leontyevsky Pereulok, 125009, Moscow, Russian Federation, tel. +7 495 787-21-00; fax +7 495 787-21-01, e-mail: nataly.olofinskaya@undp.org and olga.martynenko@undp.org) no later than **November 15, 2012**. |
| **Deliverable** | **Timeframe** |
| 1. Desk review, development of methodology
 | 4 days |
| 1. Mission to the Russian Federation, including briefings for evaluators by project management and UNDP Project Support Office,in-country field visits, interviews, de-briefings for UNDP CO
 | 10 days |
| 1. Drafting of the evaluation report
 | 3 days |
| 1. Draft report circulation for comments and other types of feedback mechanisms
 | 5 days |
| 1. Finalization of the evaluation report (incorporating comments received on first draft)
 | 3 days |
|  |  |
| **V. Payment Conditions** |
| This is a lump sum contract that should include costs of consultancy and international travel costs (in-country travel cost will be covered by the project), accommodation and meal (DSA or per diems in Moscow and the Volga Federal District) costs required to produce the above deliverables. Payment will be released in 2 installments:* First installment (40% of total contract amount) to be made upon achievement of Deliverables 1, 2, 3.
* Second installment (60% of total contract amount) to be made upon achievement of Deliverables 4, 5.

upon timely submission of respective deliverables and their acceptance by UNDP Russia Project Support Office |
| **V. Recruitment Qualifications** |
| The mid-term evaluation will be undertaken by an individual consultant or a team of two external consultants, who will be assisted by a translator/interpreter (when needed) and will receive the support of UNDP Russia Project Support Office and Project Management Team. The evaluators selected should not have participated in the project preparation and/or implementation and should not have conflict of interest with project related activities.  |
| **Education:** | Advanced university degree in economics, energy, or related area |
| **Experience:** | * Extensive (at least 5-year) experience and proven track record with policy advice and/or project development/implementation in energy efficiency;
* Proven track record of application of results-based approaches to evaluation of projects focusing on energy efficiency (relevant experience in the CIS region is a requirement; and relevant experience within UN system would be an asset);
* Familiarity with energy efficiency principles and relevant international best-practices;
* Knowledge of and recent experience in applying UNDP and GEF M&E policies and procedures
 |
| **Language Requirements:** | Excellent English communication and writing skills, knowledge of Russian would be an asset |
| **Others:** | Demonstrable analytical skills |

# **Annex A.OUTLINE OF MID-TERM EVALUATION REPORT**

1. **Executive summary**
* Brief description of project
* Context and purpose of the evaluation
* Main conclusions, recommendations and lessons learned
1. **Introduction**
* Project background
* Purpose of the evaluation
* Key issues to be addressed
* The outputs of the evaluation and how will they be used
* Methodology of the evaluation
* Structure of the evaluation
1. **The project and its development context**
* Project start and its duration
* Implementation status
* Problems that the project seeks to address
* Immediate and development objectives of the project
* Main stakeholders
* Results expected
1. **Findings and Conclusions**

 ***4.1 Project formulation***

* + - Project relevance
		- Implementation approach
		- Country ownership/Driveness
		- Stakeholder participation
		- Replication approach
		- Cost-effectiveness
		- Sustainability
		- Linkages between project and other interventions within the sector
		- Management arrangements

 ***4.2 Project implementation***

* + - Project execution
		- Project implementation
		- Project administration
		- Project planning
		- Financial management
		- Monitoring and evaluation
		- Management and coordination
		- Identification and management of risks (adaptive management)

 ***4.3 Results***

* + - Attainment of outputs, outcomes and objectives
		- Project’s Impact
		- Prospects for sustainability
1. **Conclusions and recommendations**
* Corrective actions for the design, duration, implementation, monitoring and evaluation of the project
* Actions to strengthen or reinforce benefits from the project
* Proposals for future directions underlining main objectives
* Suggestions for strengthening ownership, management of potential risks
1. **Lessons learned**
* Good practices and lessons learned in addressing issues relating to effectiveness, efficiency and relevance
1. **Annexes**
* Evaluation TOR
* Itinerary
* List of persons interviewed
* Summary of field visits
* List of documents reviewed
* Questionnaire used (if any) and summary of results
* Co-financing and leveraged resources (see Table 1 attached)
* Comments by stakeholders (only in case of discrepancies with evaluation findings and conclusions)
1. **Other relevant materials**

*Table 1.*CO-FINANCING AND LEVERAGED RESOURCES

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Co financing(Type/Source)** | **IA own Financing(mill US$)** | **Government****(mill US$)** | **Other\*****(mill US$)** | **Total(mill US$)** | **Total****Disbursement(mill US$)** |
| **Planned\*\*** | **Actual** | **Planned** | **Actual** | **Planned** | **Actual** | **Planned** | **Actual** | **Planned** | **Actual** |
| * Grants
 |  |  |  |  |  |  |  |  |  |  |
| * Loans/Concessional (compared to market rate)
 |  |  |  |  |  |  |  |  |  |  |
| * Credits
 |  |  |  |  |  |  |  |  |  |  |
| * Equity investments
 |  |  |  |  |  |  |  |  |  |  |
| * In-kind support
 |  |  |  |  |  |  |  |  |  |  |
| * Other types \*\*\*
 |  |  |  |  |  |  |  |  |  |  |
| Totals |  |  |  |  |  |  |  |  |  |  |

**\*** Other is referred to contributions mobilized for the project from other multilateral agencies, bilateral development cooperation agencies, NGOs, the private sector and beneficiaries.

**\*\*** Planned stands for co-financing proposed at CEO endorsement

**\*\*\*** Please briefly describe other types of co-financing identified

## Leveraged Resources

Leveraged resources are additional resources—beyond those committed to the project itself at the time of approval—that are mobilized later as a direct result of the project. Leveraged resources can be financial or in-kind and they may be from other donors, NGO’s, foundations, governments, communities or the private sector. Please briefly describe the resources the project has leveraged since inception and indicate how these resources are contributing to the project’s ultimate objective.

***Annex B.* Revised Logical Framework**

| **Project Strategy** | **Objectively Verifiable Indicators** |
| --- | --- |
| **Goal** | Reduce GHG emissions from energy consumption related to lighting in Russia |

|  | **Indicator** | **Baseline** | **Mid-Term Target** | **End of Project Target** | **Sources of Verification** | **Risks and Assumptions** |
| --- | --- | --- | --- | --- | --- | --- |
| **Objective of the project:**To transform the Russian market towards efficient lighting technologies and the phase-out of inefficient lighting | Estimated quantity of energy saved | Lighting electricity consumption: 137.5 GWh per year (14% of total national electricity consumption) | 6 GWh/yr (direct savings from demonstration projects) plus 0.5 TWh/yr from indirect actions | 4 TWh/yr (includes direct and indirect savings)orapproximately 2 Mtn CO2 less per year | Measurements in the demonstration projects and extrapolation based on market monitoring | Standards and related legislation will be responsible for the larger part of this saving |
| **Outcome 1**:Improved efficient lighting standards and policy framework. | Establishment of the Federal Energy Efficient Lighting Council (FEELC), Commission on EEL | None exists | Ministerial degree for FEELC establishment | FEELC becomes a legal body | FEELC minutes and official degrees | Ministry refuses to recognize FEELC as legitimate partner. |
| Establishing new policies imposing maximum consumption of energy for lighting for non-residential indoor lighting | 7-10 Wh/m2 per 100 lx (SNiP)  | Policies drafted | Policies adopted, imposing 2.5-4Wh/m2 per 100 lx | Legislative record | Inability to update existing SNiP or inability to impose effective enforcement mechanisms |
| Establishing new policies and regulations on the maximum permissible mercury contents in CFL |  | Policies drafted | Mercury content 5 mg mercury per lamp | Legislative record | Inability to update existing SNiP or inability to impose effective enforcement mechanisms |
| Establishment of a national EEL platform (group of experts) | None exists. | Platform established (members selected and action plan adopted) | Participants wish to continue platform beyond end of program, and it is financially sustainable | Platform minutes | Assumes local stakeholders will be willing to work together on the platform |
| Testing procedures for EEL products draftedTesting lab capacity improved  | None existObsolete metrology laboratories exist | Internationally accepted procedures transposed to RussiaPlan of modernization of national metrology laboratories | Final set of drafts for standards proposed to national normalization bodyPlan of modernization of national metrology laboratories is being implemented (Several national metrology laboratories modernized) | Normalization body official recordsGovernment decisions and application degrees | Inability to transpose international standardsExtremely high investment costs or inability to provide high qualified staff |
| **Outcome 2:** Supply chain is strengthened | National Phasing out Program for Inefficient Lighting planned and adopted | Existing legislation on Energy Savings | National Roadmap for phase-out adopted | Inefficient light source phase-out implemented | Government decisions and application degrees | National industry of ILs lobbying |
| Annual monitoring of market | Some partial data exist today | Market monitoring procedure designed, tested and adopted | National database with data on Russian market is available | Number of data and periodicity of monitoring | Private companies or retailers do not share market data |
| Lighting specifiers have increased awareness of the benefits of EE lighting Lighting specifiers understand the new standards | Lighting oriented curricula in higher education institutions without chapters on energy efficiencyNone (new standards do not yet exist) | One university or institute creates/modernizes a lighting oriented curricula for initial training by introducing chapters on energy efficiencyA web based beta version tool is offered for training and validation from lighting specifiers | 2 or 3 additional institutions offers lighting oriented curricula for initial and life-long trainingFully operational toolboxes are available to lighting specifiers via web or under license system | Number of trainees, training follow-up questionnaireNumber of trainees, training follow-up questionnaire | Inability to create lighting oriented curricula with chapters on energy efficiencyInability to develop user-friendly and attractive tools for lighting specifiers; Lighting specifiers ignore standards and refuse use proposed tools |
| Support to the development of new EE lighting products and modernization of national lighting industry. | Main production of national industry is incandescent lamps | One high technology EEL pilot production line inaugurated (LEDs or CFLs) | One Production line fully operational and products marketed(LEDs or CFLs) | Number of EEL products developed or manufactured in Russia | No private investment available |
| **Outcome 3:**Penetration of energy-efficient lighting increases in Moscow homes and buildings, and local EE lighting initiatives are replicated | Health and education sector: efficiency of current lighting stock | Existing lighting schemes of the 40 selected schools and hospitals: 1000 fixtures/building with 100W installed power per fixture, operating 2000 h/yr = 8 GWh/yr | Lighting system of 15 schools/hospitals fully upgradedEnergy savings: 1.7 GWh/yr or 0.85 ktn CO2 less per year | Lighting systems of 40 schools/hospitals fully upgradedEnergy savings: 4.6 GWh/yr or 2.3 ktn CO2 less per year | Lighting energy audit of a sample of buildings | Pilot realization and construction delays |
| Residential sector: penetration of CFLs | Energy saving lamps penetration rate is 0.3%Average lamps per flat in Moscow: 20 (75 W-GLS). Installed power for lighting 1.5 kW/flat | Results of the study of energy saving lamps installation and use in 200 flats A communication and promotion of energy saving lamps strategy is designed | 370,000 flats (10%) upgrade 2 GLS to 2 20W CFLsEnergy savings: 48.4 GWh/yr or 24.2 ktn CO2 less per year | Survey of CFL penetrationMeasurements in specifically equipped flats  | Low quality of certain products on the market give CFLs overall a bad reputation; high price as compared to incandescent lamps remains a barrier |
| Recycling rate of domestic CFLs |  | Domestic CFL recycling rate of at least 30% | Domestic CFL recycling rate of at least 70% | Reports from waste lamp recyclers |  |
| Replication: Number of communities in which similar projects are replicated | Zero | Zero | Pilots have been replicated twice in Moscow, and in 5 municipalities outside Moscow | Information provided by project partners | Assumes results of pilot are compelling enough and well enough communicated that project will be replicated |
| **Outcome 4:**Energy-Efficient street lighting is adopted in the Volga Federal District and local EEL initiatives are replicated elsewhere | Efficiency of installed street lighting  | 20 000 light fixtures with 350 W lamps operating 4000 h/yr = 28 GWh/yr | 5 000 fixtures replacedEnergy savings: 4GWh/yr or 2 ktn CO2 less per year | 20 000 fixtures replacedEnergy savings: 16 GWh/yr or 8 ktn CO2 | Post-installation measurements | Pilot construction delays |
| Number of municipalities that have installed EE or plan to install lighting based on the Volga Federal District pilot | Zero | Zero  | Replication has begun 2x within the Volga Federal District, and in 5 other regions | Completed EE lighting projects, or letters of commitment, purchase orders, etc. from towns. | Assumes results of pilot are compelling enough and well enough communicated that project will be replicated |
| **Outcome 1**Output 1.1: Federal Energy Efficient Lighting Council establishedOutput 1.2: Energy performance and product quality standards drafted and adopted, enforcement mechanisms implementedOutput 1.3: National Platform for Lighting establishedOutput 1.4: Quality-testing procedures drafted and adopted, and lighting testing laboratory capacity strengthened**Outcome 2**Output 2.1: National Plan to Phase out Inefficient Lighting adoptedOutput 2.2: Lighting market research and monitoringOutput 2.3: Provide lighting specifiers with credible information, training, and tools to enable them to comply with new regulation on EELOutput 2.4: Support to the development of new EE lighting products and modernization of national lighting industry**Outcome 3**Output 3.1: Health and educational buildings in the City of Moscow increase their use of energy-efficient lightingOutput 3.2: Residential campaign leads to the increased adoption of CFLs in homesOutput 3.3: Replication initiative for energy efficient lighting for residential and public buildings**Outcome 4**Output 4.1: Energy efficient street lighting installed in the Volga Federal DistrictOutput 4.2: A replication plan is prepared, leading to replication in Nizhny Novgorod and five other oblasts |

**Annex C: RATE TABLES**

***Table 1.*STATUS OF OBJECTIVE / OUTCOME DELIVERY AS PER MEASURABLE INDICATORS**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **OBJECTIVE** | **MEASURABLE INDICATORS FROM PROJECT LOGFRAME** | **MID TERM TARGET** | **RISKS AND ASSUMPTIONS** | **MEANS OF VERIFICATION** | **STATUS OF DELIVERY\*** | **RATING\*\*** |
|  |  |  |  |  |  |  |
| **OUTCOMES** | **MEASURABLE INDICATORS FROM PROJECT LOGFRAME** | **MID TERM TARGET** | **RISKS AND ASSUMPTIONS** | **MEANS OF VERIFICATION** | **STATUS OF DELIVERY** | **RATING** |
| **Outcome 1**    |  |  |  |  |  |  |
| **Outcome 2**  |  |  |  |  |  |  |
| **Outcome 3** |  |  |  |  |  |  |
| **Outcome 4** |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
| **\* Status of Delivery:** |  |  |  |  |
| GREEN / COMPLETED | = Indicators show successful achievement |
| YELLOW | = Indicators show expected completion by end of Project |
| RED  | = Indicators show poor achievement - unlikely to be completed by end of Project |

###### \*\*For RATING see Table 2.

***Table 2.*PROJECT RATINGS**

|  |  |
| --- | --- |
| Project Component or Objective | **Rating** |
| **Ratings of Relevance, Efficiency and Effectiveness\***(6 - Highly Satisfactory, 5 - Satisfactory, 4 - Marginally Satisfactory, 3 - Marginally Unsatisfactory, 2 - Unsatisfactory, 1 - Highly Unsatisfactory) |
| **Project Formulation** |
| **Overall Project Formulation (Relevance)** |  |
| 1. Conceptualization/design
 |  |
| 1. Stakeholder participation
 |  |
| **Project Implementation** |
| **Implementation Approach (Efficiency)** |  |
| 1. Use of the logical framework
 |  |
| 1. Adaptive management
 |  |
| 1. Use/establishment of information technologies
 |  |
| 1. Operational relationships between the institutions involved
 |  |
| 1. Technical capacities
 |  |
| **Monitoring and Evaluation** |  |
| **Stakeholder Participation** |  |
| 1. Production and dissemination of information
 |  |
| 1. Local resource users and NGOs participation
 |  |
| 1. Establishment of partnerships
 |  |
| 1. Involvement and support of governmental institutions
 |  |
| **Project Results** |
| **Overall Achievement of Objective and Outcomes (Effectiveness)** |  |
| 1. Objective
 |  |
| 1. Outcome 1
 |  |
| 1. Outcome 2
 |  |
| 1. Outcome 3
 |  |
| 1. Outcome 4
 |  |
| **Sustainability Ratings\*\***(4 - Likely, 3 - Moderately Likely, 2 - Moderately Unlikely, 1 - Unlikely) |
| **Sustainability** |  |
| 1. Financial sustainability
 |  |
| 1. Institutional sustainability
 |  |
| 1. Socio-economic sustainability
 |  |
| 1. Ecological sustainability
 |  |
| **Overall Project Achievement and Impact** |  |

**\***Evaluations pertaining to the relevance, effectiveness and efficiency of the project to be evaluated using the six ratings recommended by GEF:

**6: Highly Satisfactory (HS)** The project has no shortcomings in the achievement of its objectives, in terms of relevance, effectiveness or efficiency

**5: Satisfactory (S)** The project has minor shortcomings in the achievement of its objectives, in terms of relevance, effectiveness or efficiency

**4: Moderately Satisfactory (MS)** The project has moderate shortcomings in the achievement of its objectives, in terms of relevance, effectiveness or efficiency

**3: Moderately Unsatisfactory (MU)** The project has significant shortcomings in the achievement of its objectives, in terms of relevance, effectiveness or efficiency

**2: Unsatisfactory (U)** The project has major shortcomings in the achievement of its objectives, in terms of relevance, effectiveness or efficiency

**1: Highly Unsatisfactory (HU)** The project has severe shortcomings in the achievement of its objectives, in terms of relevance, effectiveness or efficiency

\*\* Evaluations pertaining to the sustainability of the project to be evaluated using a using the four ratings recommended by GEF:

**4: Likely (L)** There are no or negligible risks that affect this dimension of sustainability

**3: Moderately Likely (ML)** There are moderate risks that affect this dimension of sustainability

**2: Moderately Unlikely (MU)** There are significant risks that affect this dimension of sustainability

**1: Unlikely (U)** There are severe risks that affect this dimension of sustainability

**Additional ratings** where relevant:

**N/A:** Not Applicable

**U/A:** Unable to Assess

**Annex D:List of documents to be reviewed by the evaluators**

**General documentation**

* UNDP Programme and Operations Policies and Procedures
* UNDP Handbook for Monitoring and Evaluating for Results
* GEF Monitoring and Evaluation Policy
* GEF focal area strategic program objectives

**Project documentation**

* GEF approved project document and Request for CEO Endorsement
* Project Inception Report
* Annual work plans
* Annual GEF Project Implementation Reports for 2010 and 2011
* CDRs
* Financial audit reports
* GEF Quarterly Reports
* Project Steering Committee minutes
* Updated risk log

**Other relevant documentation**

* Federal Law of the Russian Federation #261on *Energy Conservation and Energy Efficiency Improvement* of 11.11.2009
* Decree #602 *On Approval of the Requirements to Lighting Devices, Electric Lamps Used in Alternating-current Circuit for Illumination and on Introduction of Changes into Regulatory Documents of Russian Federation* of 20.07.2011
* Russian Federation State Programme *Energy Conservation and Energy Efficiency Improvement for the Period till 2020* (approved by Government Decree #2446-r on 27.12.2010)
* SNiP 23-05-59\* (SP 52.13330.2011)
* Report on market monitoring of lighting products
* Communication and promotion strategy
* Promotion materials
* Press articles

**Annex E. GEF TERMINOLOGY AND PROJECT REVIEW CRITERIA**

**Implementation Approach** includes an analysis of the project’s logical framework, adaptation to changing conditions (adaptive management), partnerships in implementation arrangements, changes in project design, and overall project management.

Some elements of an effective implementation approach may include:

* The logical framework used during implementation as a management and M&E tool
* Effective partnerships arrangements established for implementation of the project with relevant stakeholders involved in the country/region
* Lessons from other relevant projects (e.g., same focal area) incorporated into project implementation
* Feedback from M&E activities used for adaptive management.

**Country Ownership/Driveness** is the relevance of the project to national development and environmental agendas, recipient country commitment, and regional and international agreements where applicable. Project Concept has its origin within the national sectoral and development plans

Some elements of effective country ownership/driveness may include:

* Project Concept has its origin within the national sectoral and development plans
* Outcomes (or potential outcomes) from the project have been incorporated into the national sectoral and development plans
* Relevant country representatives (e.g., governmental official, civil society, etc.) are actively involved in project identification, planning and/or implementation
* The recipient government has maintained financial commitment to the project
* The government has approved policies and/or modified regulatory frameworks in line with the project’s objectives

For projects whose main focus and actors are in the private-sector rather than public-sector (e.g., IFC projects), elements of effective country ownership/driveness that demonstrate the interest and commitment of the local private sector to the project may include:

* The number of companies that participated in the project by: receiving technical assistance, applying for financing, attending dissemination events, adopting environmental standards promoted by the project, etc.
* Amount contributed by participating companies to achieve the environmental benefits promoted by the project, including: equity invested, guarantees provided, co-funding of project activities, in-kind contributions, etc.
* Project’s collaboration with industry associations

**Stakeholder Participation/Public Involvement** consists of three related, and often overlapping processes: information dissemination, consultation, and “stakeholder” participation. Stakeholders are the individuals, groups, institutions, or other bodies thathave an interest or stake in the outcome of the GEF-financed project. The term also applies to those potentially adversely affected by a project.

Examples of effective public involvement include:

Information dissemination

* Implementation of appropriate outreach/public awareness campaigns

Consultation and stakeholder participation

* Consulting and making use of the skills, experiences and knowledge of NGOs, community and local groups, the private and public sectors, and academic institutions in the design, implementation, and evaluation of project activities

Stakeholder participation

* Project institutional networks well placed within the overall national or community organizational structures, for example, by building on the local decision making structures, incorporating local knowledge, and devolving project management responsibilities to the local organizations or communities as the project approaches closure
* Building partnerships among different project stakeholders
* Fulfilment of commitments to local stakeholders and stakeholders considered to be adequately involved.

**Sustainability** measures the extent to which benefits continue, within or outside the project domain, from a particular project or program after GEF assistance/external assistance has come to an end. Relevant factors to improve the sustainability of project outcomes include:

* Development and implementation of a sustainability strategy;
* Establishment of the financial and economic instruments and mechanisms to ensure the ongoing flow of benefits once the GEF assistance ends (from the public and private sectors, income generating activities, and market transformations to promote the project’s objectives);
* Development of suitable organizational arrangements by public and/or private sector;
* Development of policy and regulatory frameworks that further the project objectives;
* Incorporation of environmental and ecological factors affecting future flow of benefits;
* Development of appropriate institutional capacity (systems, structures, staff, expertise, etc.);
* Identification and involvement of champions (i.e. individuals in government and civil society who can promote sustainability of project outcomes);
* Achieving social sustainability, for example, by mainstreaming project activities into the economy or community production activities;
* Achieving stakeholders consensus regarding courses of action on project activities.

**Replication approach**, in the context of GEF projects, is defined as lessons and experiences coming out of the project that are replicated or scaled up in the design and implementation of other projects. Replication can have two aspects, replication proper (lessons and experiences are replicated in different geographic area) or scaling up (lessons and experiences are replicated within the same geographic area but funded by other sources). Examples of replication approaches include:

* Knowledge transfer (i.e., dissemination of lessons through project result documents, training workshops, information exchange, a national and regional forum, etc);
* Expansion of demonstration projects;
* Capacity building and training of individuals, and institutions to expand the project’s achievements in the country or other regions;
* Use of project-trained individuals, institutions or companies to replicate the project’s outcomes in other regions.

**Financial Planning** includes actual project cost by activity, financial management (including disbursement issues), and co-financing. If a financial audit has been conducted the major findings should be presented in the TE.

Effective financial plans include:

* Identification of potential sources of co-financing as well as leveraged and associated financing*[[4]](#footnote-5)*;
* Strong financial controls, including reporting, and planning that allow the project management to make informed decisions regarding the budget at any time, allows for a proper and timely flow of funds, and for the payment of satisfactory project deliverables;
* Due diligence in the management of funds and financial audits.

*Co-financing includes:* grants, loans/concessional (compared to market rate), credits, equity investments, in-kind support, other contributions mobilized for the project from other multilateral agencies, bilateral development cooperation agencies, NGOs, the private sector and beneficiaries. Please refer to Council documents on co-financing for definitions, such as GEF/C.20/6.

*Leveraged resources* are additional resources—beyond those committed to the project itself at the time of approval—that are mobilized later as a direct result of the project. Leveraged resources can be financial or in-kind and they may be from other donors, NGO’s, foundations, governments, communities or the private sector. Please briefly describe the resources the project has leveraged since inception and indicate how these resources are contributing to the project’s ultimate objective.

**Cost-effectiveness** assesses the achievement of the environmental and developmental objectives as well as the project’s outputs in relation to the inputs, costs, and implementing time. It also examines the project’s compliance with the application of the incremental cost concept. Cost-effective factors include:

* Compliance with the incremental cost criteria (e.g. GEF funds are used to finance a component of a project that would not have taken place without GEF funding.) and securing co-funding and associated funding;
* The project completed the planned activities and met or exceeded the expected outcomes in terms of achievement of Global Environmental and Development Objectives according to schedule, and as cost-effective as initially planned;
* The project used either a benchmark approach or a comparison approach (did not exceed the costs levels of similar projects in similar contexts).

**Monitoring & Evaluation:** Monitoring is the periodic oversight of a process, or the implementation of an activity, which seeks to establish the extent to which inputs, work schedules, other required actions and outputs are proceeding according to plan, so that timely action can be taken to correct the deficiencies detected. Evaluation is a process by which program inputs, activities and results are analyzed and judged explicitly against benchmarks or baseline conditions using performance indicators. This will allow project managers and planners to make decisions based on the evidence of information on the project implementation stage, performance indicators, level of funding still available, etc, building on the project’s logical framework.

Monitoring and Evaluation includes activities to measure the project’s achievements such as identification of performance indicators, measurement procedures, and determination of baseline conditions. Projects are required to implement plans for monitoring and evaluation with adequate funding and appropriate staff and include activities such as description of data sources and methods for data collection, collection of baseline data, and stakeholder participation. Given the long-term nature of many GEF projects, projects are also encouraged to include long-term monitoring plans that are sustainable after project completion.

**ANNEX 2**

![Minenergo1[1]]()  

*Russia*

RF Ministry of Energy Global Environment Facility United Nations

 Development program

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**VISIT PROGRAM**

**Of Mid-Term Evaluator**

**Of UNDP/GEF Project *Transforming the Market for Efficient Lighting***

|  |  |  |
| --- | --- | --- |
| **Time** | **Meeting/event** | **Place** |
|  |  | **November 5 (Monday)**Arrival in Moscow |  |  |
|  |  | **November 6 (Tuesday)** |  |  |
| **11.00 – 11.30** |  | Anatoly Shevchenko, *Project Manager* |  | UNDP CO |
| **11.30 – 12.30** |  | Nataly Olofinskaya, *Head of Energy and Environment Unit, UNDPCO* |  | UNDP CO |
| **12.30 – 13.00** |  | Alexander Martynov, *National Platform for Lighting and Internet Community on Energy Efficiency Moderator* |  | UNDP CO |
| **13.00 – 13.30** |  | Zura Nukusheva, *UNEP/GEF en.lighten initiative* |  | UNDP CO (by phone) |
| **13.30 – 14.00** |  | Transfer to Department of Fuel and Energy of Moscow City Government |  |  |
| **14.00 – 14.30** |  | Alexander Tatarnikov, *Deputy Head of Department of Fuel and Energy of Moscow City Government* |  | Department of Fuel and Energy of Moscow City Government |
| **14.30 – 16.30** |  | Lunch and transfer to UNDP CO |  |  |
| **16.30 – 17.00** |  | Alexander Averchenkov, *UNDP expert on climate issues* |  | UNDP CO |
|  |  | **November 7 (Wednesday)** |  |  |
| **11.00 – 13.00** |  | International LED Forum. Plenary session. |  | Exhibition Center |
| **13.00 – 15.00** |  | Meetings with private companies representatives:Sergey Gvozdev-Karelin, *Osram,*Sergey Borovkov, *Philips,*Alexander Bogdanov, *Svetlana-Optoelectronica,*Daria Plavskaya, *Optogan*Alexander Saveliev, *Kosmos (did not meet),*Alexey Sukhonin, *Navigator (did not meet),*Evgeny Kuzin, *Association of Russian Producers of Lighting ‘Rossiysky svet’(did not meet)* |  | Exhibition Center |
| **15.00 – 16.00** |  | Julian Aizenberg, *VNISI, project expert on science and market monitoring (by phone on 4 December 2012)* |  | Exhibition Center |
| **16.00 – 16.30** |  | Evgeny Dolin, *Head of Non-Commercial Partnership of LED Producers* |  | Exhibition Center |
|  |  | **November 8 (Thursday)** |  |  |
| **10.00 – 11.00** |  | Igor Frolov, *Head of State Company ‘Energetika’* |  | Department of Fuel and Energy of Moscow City Government |
| **11.00 – 11.30** |  | Transfer to UNDP CO |  |  |
| **11.30 – 12.30** |  | Yury Tikhonenko, *Moscow Pilot Project Coordinator* |  | UNDP CO |
| **12.30 – 13.00** |  | Sergey Varga, *Project Manager of UNDP/GEF Project on lighting in Ukraine,*Syrym Nurgaliev, *Project Manager of UNDP/GEF Project on lighting in Kazakhstan* |  | UNDP CO |
| **13.00 – 14.30** |  | Lunch and transfer to REA |  |  |
| **14.30 – 15.30** |  | Alexey Tulikov, *Russian Energy Agency(did not meet)* |  | Russian Energy Agency |
| **15.30 – 16.00** |  | Transfer to the RF Ministry of Energy |  |  |
| **16.00 – 16.30** |  | Anton Inyutsin, *National Project Director* |  | RF Ministry of Energy |
| **16.30 – 17.30** |  | Dmitry Melnikov, *RF Ministry of Energy, Assistant to NPD* |  | RF Ministry of Energy |
|  |  | **November 9 (Friday)** |  |  |
| **10.00 – 11.00** |  | Dmitry Panfilov (instead, met with Valery Polyakov and Tatyana Remizevich), *Moscow Power Engineering Institute* |  | Moscow Power Engineering Institute |
| **11.00 – 13.00** |  | Lunch and transfer to the RF Ministry of Natural Resources and Environment |  |  |
| **13.00 – 13.30** |  | Alexander Evdokimov, *RF Ministry of Natural Resources and Environment* |  | RF Ministry of Natural Resources and Environment |
| **13.30 – 14.30** |  | Transfer to UNDP CO |  |  |
| **14.30 – 15.30** |  | Igor Ganin, *Non-Commercial Partnership ‘Energy Efficient City’* |  | UNDP CO |
| **15.30 – 16.30** |  | Tatiana Gorshkova, *VNIOFI, project expert on test laboratories(by phone on 30 November 2012)* |  | UNDP CO |
|  | **November 10 (Saturday)**Meetings with experts, reserve day |  |
| **16.45 – 21.25** |  | **November 11 (Sunday)**Departure to Nizhny Novgorod (by train) |  |  |
|  |  | **November 12 (Monday)** |  |  |
| **11.00 – 12.00** |  | Evgeny Solntsev, *Research Company ‘NICE-NN’(did not meet)* |  | Nizhny Novgorod State Technical University |
| **12.00 – 13.00** |  | Nikolay Babanov (instead, met with Alexei Loskutov), *Nizhny Novgorod State Technical University* |  | Nizhny Novgorod State Technical University |
| **13.00 – 14.00** |  | Lunch |  |  |
| **14.00 – 15.00** |  | Sergey Lobanov (instead, met with Alexander Kuznetsov), *Deputy Head of Sarov Administration* |  | Nizhny Novgorod State Technical University |
| **15.00 – 16.00** |  | Sergey Novichkov, *Head of Shumerlya Administration* |  | Nizhny Novgorod State Technical University |
|  |  | **November 13 (Tuesday)** |  |  |
| **9.00 –15.00** |  | Departure to Dzerzhinsk (by car)Alexander Dryakhlov, *Head of Dzerzhinsk Area Administration*Visit to the pilot project |  | Dzerzhinsk Administration |
| **15.07 – 18.40** |  | Departure to Moscow (by train) |  |  |
|  |  | **November 14 (Wednesday)** |  |  |
| **10.00 – 13.00** |  | Debriefing on mission outcome |  | UNDP CO |
| **13.00** |  | Departure for Airport |  |  |

**ANNEX 3**

**List of Persons Consulted**

**Ministry of Energy**

Mr Inyutsin, A. Y. Deputy Minister

Mr Melnikov, D. A. Assistant to Deputy Minister

**Moscow City Administration**

Mr Frolov, I.A. Director, Department of Fuel and Energy

Mr Tatarnikov, A. V. Deputy Manager, Department of Fuel and Energy

**Chuvash Republic**

Mr Novichkov, S. N. Head, Shumerlya Administration

**Dzerzhinsk City Administration**

MrDryakhlov, A. Y. Head of Dzerzhinsk Area Administration

**Sarov City Administration**

Mr Kuznetsov, A. V. Adviser to Head of Administration

**Moscow Power Engineering Institute**

Mr Polyakov, V. D. Faculty of Industrial Electronics

Ms Remizevich, T. V. Technical Director, “Freescale Semiconductor” Research Centre

**EBRD**

Mr Alexei Zakharov Product Development Manager

**Private Sector**

Mr Bogdanov, A. A. Deputy Director, Svetlana-Optoelectronica

Mr Borovkov, S. Senior Manager, Market Development, Philips

Mr Dolin, Evgeny Chairman, Russian LED & SSL Industry Association

Mr Gvozdiev, S. M. Head, Design Office, Ecolight

Mr Gvozdiev-Karelin, S. V. Head of Department, Government Relations and Energy Efficiency, OSRAM

Mr Nikiforov, S. G. Head of Light Equipment Certification Centre “ARHILIGHT”

Ms Plavskaya, D. D. Expert in Technical Regulation and Standardisation, OPTOGAN

**UNDP Russia**

Ms Olofinskaya, N. E. Head of Environment Unit

Mr Shevchenko, A. S. Project Manager

Ms Martynenko, Olga Project Assistant

Mr Averchenkov, A. A. Senior Adviser, Energy Efficiency and Climate Change

Mr Julian Aizenberg Expert on Science and Market Monitoring (by phone)

Ms Tatiana Gorshkova Expert on Test Laboratories (by phone)

Ms Surovikina, E. M. Communications Consultant, EE and Environment Unit

Mr Tikhonenko, Yury Moscow Pilot Project Coordinator

Mr Zenyutich, E. A. Chief Technical Adviser (by phone)

**Others**

Mr Ganin, I.A. Non-Commercial Partnership “Energy Efficient City”

Mr Gutbrod, Max Baker & McKenzie (by phone)

Mr Ketting, Jeroen Director, Lighthouse Russia B. V.

Mr Loskutov, A. B. Nizhny Novgorod State Technical University

Mr Martynov, A. C. Moderator, National Platform for Lighting (Interfax Information Group)

Ms Nukusheva, Zura UNEP/GEF “en.lighten Initiative” (by phone)

Mr Nurgaliyev, Syrym Project Manager, EE Lighting Project, UNDP Kazakhstan

Mr Sitnikov, Sergei Baker & McKenzie (by phone)

Mr Varga, S. I. Project Manager, EE Lighting Project, UNDP Ukraine

**ANNEX 4**

**List of documents consulted**

Project document: Transforming the Market for Energy Efficient Lighting.

Inception Report.

2012 Annual Project Review/Project Implementation Report

2011 Annual Project Review/Project Implementation Report

Project Budget Revisions

Combined Delivery Reports for 2010, 2011 and 2012

UNEP 2012 Toolkit: Achieving the Global Transition to Energy Efficient Lighting

Summary of Presidential Decree # 889 of June 2008 “On Certain Measures for Increasing Energy and Ecological Efficiency of Russia’s Economy”.

Summary of Federal Law No. 261 “On Energy Conservation and Energy Efficiency Improvement and on Amending Some Legislative Acts of the Russian Federation” adopted by the State Duma in November 2009.

Summary of SNiP (Construction Norms and Regulations) No. 23-05-95 on “Natural and Artificial Lighting”.

Введение, (УЧЕБНОЕ ПОСОБИЕ): ЭНЕРГОЭФФЕКТИВНОЕ ЭЛЕКТРИЧЕСКОЕ ОСВЕЩЕНИЕ

The following documents provided by Project Manager/Project Assistant:

1. Постановление Правительства РФ от 20 июля 2011 г. N 602 "Об утверждении требований к осветительным устройствам и электрическим лампам, используемым в цепях переменного тока в целях освещения".
2. Первоочередные меры повышения энергоэфффективности осветительных устройств в контексте выполнения ФЗ №261: Разработка и создание программы обеспечения соответствия требованиям энергоэффективности (программа соответствия), включая создание надлежащей нормативно-правовой и административной инфраструктуры.
3. Постановление Правительства РФ от 31 декабря 2009 г. №1221: Об утверждении Правил установления требований энергетической эффективности товаров, работ, услуг, размещение заказов на которые осуществляется для государственных или муниципальных нужд.
4. ПРИЛОЖЕНИЕ к постановлению Правительства Российской Федерации от 31 декабря 2009 г. № 1222: П Е Р Е Ч Е Н Ь видов товаров, на которые распространяется требование о содержании информации о классе энергетической эффективности в технической документации, прилагаемой к этим товарам, в их маркировке, на их этикетках.
5. Постановление Правительства РФ от 31 декабря 2009 г. №1222: О видах и характеристиках товаров, информация о классе энергетической эффективности которых должна содержаться в технической документации, прилагаемой к этим товарам, в их маркировке, на их этикетках, и принципах правил определения производителями, импортерами класса энергетической эффективности товара.
6. ТЕХНИЧЕСКОЕ ЗАДАНИЕ на выполнение работ «Разработка концепции создания сети национальных испытательных лабораторий светотехнической продукции».
7. ПРАВИТЕЛЬСТВО РОССИЙСКОЙ ФЕДЕРАЦИИ Р А С П О Р Я Ж Е Н И Е от 27 сентября 2012 г. №1794-р: Утвердить прилагаемый план мероприятий по совершенствованию государственного регулирования в области энергосбережения и повышения энергетической эффективности в Российской Федерации.
8. Н. И. Емельянов: Отчет по результатам исследования российского светотехнического рынка: электрических ламп и осветительных устройств в 2005 - 2010 годах.
9. Отчет о выполнении 1-го этапа работ по теме «Разработка типовых технических решений энергоэффективного освещения для школ Москвы», Москва 2012.
10. А.С. Шевченко: Отчет о проделанной работе в третьемквартале2012г., 01 октября 2012 г.
11. Комплексный информационно – образовательный проект по стимулированию энергосбережения в жилых домах Москвы и продвижению инновационных схем финансирования энергосбережения.
12. Project Work Plan 2012.
13. Tatiana Gorshkova: Survey of Metrology Laboratories at Production and Research facilities for testing energy efficient lighting equipment.
14. Brochures on 2012 Film Festivals re. Environment, organized by UNDP Russia (provided by Elena Surovikina).

**ANNEX 5**

**CO-FINANCING AND LEVERAGED RESOURCES**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Co financing(Type/Source)** | **IA own Financing(mill US$)** | **Government****(mill US$)** | **Other\*****(mill US$)** | **Total(mill US$)** | **Total****Disbursement(mill US$)** |
| **Planned\*\*** | **Actual** | **Planned** | **Actual** | **Planned** | **Actual** | **Planned** | **Actual** | **Planned** | **Actual** |
| * Grants
 |  |  |  |  |  |  |  |  |  |  |
| * Loans/Concessional (compared to market rate)
 |  |  |  |  |  |  |  |  |  |  |
| * Credits
 |  |  |  |  |  |  |  |  |  |  |
| * Equity investments
 |  |  |  |  |  |  |  |  |  |  |
| * In-kind support
 | n/a | n/a | 44.750 | 8.0931 | 20.980 | 19.9502 | 65.730 | 28.043 | n/a | n/a |
| * Other types \*\*\*
 |  |  |  |  |  |  |  |  |  |  |
| Totals |  |  | 44.750 | 7.693 | 20.980 | 20.450 | 65.730 | 28.413 |  |  |

**\***Other is referred to contributions mobilized for the project from other multilateral agencies, bilateral development cooperation agencies, NGOs, the private sector and beneficiaries.

**\*\*** Planned stands for co-financing proposed at CEO endorsement

**\*\*\*** Please briefly describe other types of co-financing identified

1. Shumerlya Administration – USD 157,000.00

Sarov Administration – USD 330,000.00

Dzerzhinsk Administration – USD 400,000.00

Moscow City Government – USD 7,206,000.00

1. OSRAM – USD 19,950,000

## Leveraged Resources

Leveraged resources are additional resources—beyond those committed to the project itself at the time of approval—that are mobilized later as a direct result of the project. Leveraged resources can be financial or in-kind and they may be from other donors, NGO’s, foundations, governments, communities or the private sector. Please briefly describe the resources the project has leveraged since inception and indicate how these resources are contributing to the project’s ultimate objective.

|  |  |  |  |
| --- | --- | --- | --- |
| **Donor** | **Description** | **Amount** | **Type** |
| CSJC Dom Sveta | Organization of National Platform for Lighting meetings, trainings for lighting engineers, promotion of efficient lighting sources | USD 25,000.00 | In-kind |
| LLC OstWest Partner/Messe Frankfurt | Organization of international LED-Forum | USD 160,000.00 | In-kind |
| UNDP/LLC Philips/LLC Nissan/LLC CoolConnections/ Moscow City Government | Organization of H2O film festival dedicated to the International Year of Sustainable Energy for All (distribution of energy saving lams, organization of public lectures on efficient lighting, information dissemination) | USD 39,000.00 | In-kind |
| **Total:** | **USD 224,000.00** |  |

**ANNEX 6**

**Мероприятия, организованные при участии проекта**

**(Project Events and Publications)**

6-й Московский международный форум «Светодиоды в светотехнике» (7-8 ноября 2012 г.)

Круглый стол «Энергия города: от энергосберегающих лампочек до «умных сетей» в рамках фестиваля экологического кино «Н2О», приуроченного к году Устойчивой энергетики для всех (24 мая 2012 г.)

Обмен лампочек накаливания на энергосберегающие Партнёром проекта -Philips в рамках фестиваля экологического кино «Н2О», приуроченного к году Устойчивой энергетики для всех (24 мая 2012 г.)

«День светотехника -2012», посвященный системам автоматического управления осветительными установками (1 марта 2012 г.)

5-й Московский международный форум «Светодиоды в светотехнике» (9-10 ноября 2011 г.)

Пресс-полдник "Энергоэффективность в России - нестандартный подход. Или почему так трудно у нас продвигать экологические стандарты" (11 октября 2011 г.)

Пресс-полдник «Школы на пути к интеллектуальному освещению, или как влияют на здоровье и успеваемость школьников космические технологии» (16 июня 2011 г.)

«День светотехника -2011», посвященный световым приборам со светодиодами для народного хозяйства и населения (3 марта 2011 г.)

**Публикации в СМИ о проекте/публикации экспертов проекта**

[28.05.2012. СмартГрид."Кинозрителю – об экологии и «зеленой» энергетике".](http://www.smartgrid.ru/smartgrid/analytics/2012/analytics45.html#.T8UEUBvbI6M.facebook)

[22.05.2012. РИА Новости. "Гости экофестиваля "H2O" в Москве смогут обменять лампы накаливания".](http://eco.ria.ru/nature/20120522/655293599.html)

[26.04.2012. RusCavble.Ru.""Смоленскэнергосбыт" присоединился к реализации международного проекта в сфере энергосбережения".](http://www.ruscable.ru/news/2012/04/26/Smolenskenergosbyt_prisoedinilsya_k_realizatsii_me/)

[23.04.2012. Журнал "Экопрогресс". "Переработчикам ртутных ламп прибавят работы".](http://экопрогресс.рф/latest-issue/interview/interview_238.html)

[20.01.2012. Радио ООН. "Что такое световое загрязнение и как с ним бороться?".](http://www.unmultimedia.org/radio/russian/archives/104432)

[20.01.2012. Агентство социальной информации (АСИ). "ПРООН поможет РФ с энергоэффективным освещением школ и улиц".](http://www.asi.org.ru/asi3/rws_asi.nsf/va_WebPages/7F102AC0295BF4624425798B002B22C6Rus)

[18.01.2012. РИА Новости. "ГЭФ направит до $2,5 млн на проекты по энергосбережению в РФ"](http://eco.ria.ru/business/20120118/542580648.html)

[08.11.2011. КоммерсантЪ (Приложение BusinessGuide)."Сбережение в законе".](http://www.kommersant.ru/doc-y/1809208)

[01.09.2011. Газета "Трибуна": Педиатры: не более десяти процентов выпускников российских школ могут считаться полностью здоровыми](http://www.tribuna.ru/news/society/pediatrics_not_more_than_ten_percent_of_graduates_of_russian_schools_can_be_considered_completely_he/?sphrase_id=3965)

[Журнал "Энергосовет" №6, ноябрь-декабрь 2011 г. "Энергоэффективное освещение в школах – путь к сохранению здоровья учащихся"](http://www.undp.ru/download.php?$1804)

[Журнал "Коммунальщик" №9 2011 г. "Школы на пути к интеллектуальному освещению"](http://www.undp.ru/download.php?$1719)

[Журнал "Энергосбережение", сентябрь 2011 г."Как и зачем улучшать освещение в школах"](http://www.undp.ru/download.php?$1718)

Журнал "Электроэнергия" №3 2010г. "Кто сказал, что нам до лампочки?"

[4-й Московский международный форум «Светодиоды в светотехнике»](http://www.undp.ru/download.php?$1588)

[Энрегоэффективность – ключевой ресурс экономики](http://www.undp.ru/download.php?$1560)

Журнал «Рынок светотехники» №4 2012 г. «Компактные люминесцентные лампы»

Журнал «Рынок светотехники» №5 2012 г. «Новое поколение энергоэффективных тонких люминесцентных ламп типа Т5»

1. UNDP-GEF’s system is based on the Atlas Risk Module. See the UNDP-GEF Risk Management Strategy resource kit, available as Annex XII at http://www.undp.org/gef/05/monitoring/policies.html [↑](#footnote-ref-2)
2. RBM Support documents are available at http://www.undp.org/eo/methodologies.htm [↑](#footnote-ref-3)
3. Available at <http://content.undp.org/go/userguide/results/project/> [↑](#footnote-ref-4)
4. Please refer to Council documents on co-financing for definitions, such as GEF/C.20/6. The following page presents a table to be used for reporting co-financing. [↑](#footnote-ref-5)