

EXECUTIVE SUMMARY

As Vietnam's economy continues to grow quickly (with figures of 7-8% annually), demand for electric energy will grow even faster (with 15% during 2001-2005). Current demand for electricity is only just being met, particularly at peak, and supply remains unstable. The challenge for the government of Viet Nam is to meet the exploding demand for electricity. Thus, the Government is pressuring local government to reduce their energy bills, e.g. by cutting back on their public lighting expenditures. Public lighting in Vietnam, including street lighting and lighting of public offices, schools and hospitals, is still small.

This has been done by cutting back lighting at night, but this action compromises lighting quality and safety and security. Therefore, cities are becoming interested in other options, such as putting in automatic control centers (enabling to match luminance with lighting needs at certain hours), higher-efficiency lamps (e.g. high-pressure sodium lamps, HPS instead of mercury lamps) and more efficient luminaires. In public buildings, such as schools, lighting is not always optimal. Better lighting design and EE lamps (e.g., by using T8 instead of T10 tubular fluorescent lamps) improve lighting efficiency and quality as well as energy efficiency.

However, a number of policy-institutional, financial, informational and capacity barriers exist, which result in market failures, preventing desired market operation for the introduction of such energy-efficient public lighting (EEPL) as mentioned above. The lowering of market barriers results in market transformation into a market situation that is more facilitating and close to ideal market conditions, as above. For this reason, the United Nations Development Program (UNDP) and the Vietnamese Academy of Science and Technology (VAST) decided to establish the Vietnam Energy Efficient Public Lighting Project (VEEPL). Funds were applied for to the Global Environment Facility (GEF). The project was endorsed by GEF Secretariat in 2005 and project started in 2006. Total investment during the execution of VEEPL project in 2006 – 2010 is estimated at USD15.6 million of which GEF contribution is USD 3.00 million.

As the project is approaching its mid way of implementation, the **purpose** of this mid-term evaluation is to review the progress of the project with its stated project activities, outputs and outcomes up to date and to evaluate their adequacy and relevance, thereby providing advice and an opportunity for the project management team to complete any pending tasks and to address any eventual shortcomings before the finalization of the project by the end of 2010. Two independent consultants, Mr. Jan van den Akker (Netherlands) and Mr. Nguyen Van Phuc (Viet Nam) were selected as evaluators and a mission was undertaken to Vietnam in the last two weeks of June 2008. During the mission, extensive discussions were held with representatives and staff from VAST, UNDP and other stakeholders, project progress and technical reports were reviewed and project demonstration sites in Hanoi, Ho Chi Minh City and Quy Nhon were visited.

The UNDP Project Document mentions as its project **goal** (global objective) “the reduction of greenhouse gas emissions from fossil fuel based power generation in Vietnam”. The project **purpose** (development objective) is the “improvement of lighting energy utilization efficiency through the removal of barriers to the widespread application of energy efficient lighting systems in the public sector in Vietnam.

The project's **components (outcomes) are:**

- *Public lighting policy development* – activities that strengthen and improve the local and national policy and regulatory framework and encourage feasible energy efficient public lighting projects in Viet Nam.
- *Public lighting technical support program* – activities that strengthen the capacity of relevant GOV agencies on energy efficient public lighting product testing, market monitoring and enforcement of standards with consumers.
- *Public lighting financing program* – activities to encourage the government, financial/banking and private sectors, to provide financial assistance for the development and implementation of energy efficient public lighting system projects.
- *Public lighting system demonstration program* – activities to provide Vietnamese stakeholders with direct experience with the design, development, financing and implementation of cost -effective, energy-efficient public lighting system projects.
- *Information dissemination* – establishment of a network of technical expertise in energy efficient public lighting in Viet Nam and the production of high quality, affordable, accessible and up-to- date information services, continuing education, and awareness improvement on the application of energy efficient public lighting systems.

The **main outputs** of the project so far can be summarized as follows:

- *Public lighting policy development*
(1) A proposal and outline of Strategy on Urban Lighting Development up-to 2020 completed; (2) A draft circular on public lighting (PL) management completed and submitted to the Ministry of Construction (MoC), (3) A decision on integration of Urban lighting plans in the city construction planning issued by MoC , (4) A Handbook on Economic and Technical Tools published and distributed.
- *Public lighting technical support program*
(1) Study and development of Energy Performance Standards (EPS) for standards and labeling for energy-efficient (EE) lighting products (CFLs, T8, HPS, ballasts for CFL, HPS and road luminaires) completed; (2) Study and development of MEPS for streets, schools and hospitals completed; (3) Quality of 05 types of EEL products (CFLs, T8, ballasts for HPS and road luminaires) improved; (4) Testing capacity 3 labs (QUATEST1, HUT, IMS) enhanced;(5) Handbook of the guideline on use of design software: published and distributed; (6) Lighting Forum established and posted on the VEEPL Website
- *Public lighting financing program*
(1) A report on applicable appropriate EEL financing schemes completed;
- *Public lighting system demonstration program*
(1) Feasibility analyses on demo schemes completed; (2) 8 EEL models demonstrated in Ho Chi Minh, Quy Nhon and Hanoi cities; (3) An action plan for dissemination of demo results (case studies, benchmarks, identified potential cities/towns for replication) completed;
- *Information dissemination*
(1) PL database facility established with currently contains full data of 19 cities/towns and four lighting manufacturers collected and analyzed; (2) Newsletters: No1, No2 and No3 (1500 E./No); 1 VEEPL Brochure (2000 issues; 1 Leaflet (1500 issues); 6 video

clips produced and shown on VTV; 20 papers published in journals/magazines); 4 Interview on VTV and Radio Vietnam Voice; VEEPL Website updated (more than 19,000 visits) and (3) PL Information Center (PLIC) set up and in place; PLIC brochure (1000 issues).

Significant efforts and energy have been invested by VEEPL in exploratory research, technical assistance to manufacturers, capacity building and with the demo projects in HCMC, Quy Nhon and Hanoi. In terms of budget expenditures, the level of disbursements more-or-less in 2006 and 2007 follows the rate of implementation as detailed in section 2.1 of this report.

The information associated has been captured into a large number of reports. These deliverables (over 30 reports produced in the various components by project partners or subcontractors) might be taken as an indicator for the level of effort involved and the good progress being made.

However, analysis made by UNDP and the Evaluation Team indicates that the quantity of outputs produced is OK, but that quality of the reports produced differs. To the Evaluators' opinion:

- *Most success in terms of impacts has been obtained in the more technological components 2 (standards and support to industry) and 4 (demonstration schemes); here we can give a rating of satisfactory*
- *Less impact is noticeable in the policy development (component 1) and awareness raising component 5 (between marginally satisfactory and marginally unsatisfactory)*
- *The Evaluators give a rating of unsatisfactory for component 3 (finance mechanism).*

The **difference in achievements** between components can be attributed to the following:

- *Way of awarding subcontracts and monitoring of outputs and impacts. Stakeholder mobilization and a close network has been created with stakeholders from lighting companies, cities, lighting manufacturers, schools and government officials from city councils as well as national ministries. This is a very positive impact of the project. On the other hand, it has led to a tendency of 'closed shop', in which subcontracts are 'given' to members of this network (based on short-listing a few of them), rather than through a real open procedure in which national and international experts are invited to bid as well. As long as subcontracts are given to organizations according to their expertise (mostly technology-oriented) this has led to reasonable results, notably in the technical support and demonstration components 2 and 4, but when subcontracts are given to organizations in areas in which these do not have proven expertise this has sometimes resulted in very substandard results. This was notable in the areas of policy and planning analysis, identifying innovative finance and to some extent in awareness creation. However, the 'closed shop' way of awarding work to network associates and project partners, makes it difficult for the Project Management Unit (PMU) to reprimand their peers if the deliverable does not happen to be up-to-standards¹.*

¹ The Project Management Unit (PMU) has the following comment to the Evaluator's opinion; "the procurement (subcontractor and consultant recruitment) has absolutely been conducted in conformity with the National Execution Manual and on the basis of partner network establishment through the procurement results. VEEPL project has selected the right stakeholders and conformed to the procurement regulations of UNDP. What have been achieved from the project implementation in term of policy development, technical assistance, demonstration and communication are good and in line with the design of Project Document. Some activities even exceeded the targets set forth such as various policy proposals (Decree, Strategy) have been being developed and issued by MoC and the Government".

- *Technology orientation.* VAST is a leading national institution for scientific and technological research and has shown capability in managing projects successfully. However, we observe that the project is being managed as if it were a *technical* academic project, while the project is about the higher goals of removing *non-technical* barrier to a nascent market of EE technology. This may explain the extreme orientation to producing reports as if they were a series of research papers, instead of focusing on the broader aim of integrating the results of the reports into understandable documents of information that are so convincing by their attractiveness in layout and message alike that they can convince decision-makers into action, both at lines ministries, the provincial People's Committee as well in similar structures and local level.
- *Project management.* Leading staff in PMU, i.e., National project director, Project manager and National senior technical advisor (NSTA), are renowned scientists in their field. However, Evaluators noticed that critique might be interpreted as attacking their academic credentials, thus creating an 'us-against-them' atmosphere, especially when such critique is coming from UNDP Country Office and the International senior technical advisor (ISTA).
- *Sustainability and replicability.* In terms of *replicability*, the demonstration schemes have been technically shown to work in Ho Chi Minh and Quy Nhon cities (street lighting) and Hanoi (schools). From the policy side some progress has been made on integrating public lighting into urban spatial planning. However, the financial side has been largely left untouched, and one cannot speak of 'technology delivery' model being developed yet, integrating technology, economic and financial aspects, in a way that it can be showcased and replicated². Regarding *sustainability* of VEEPL's activities, it is not clear which institution will have the mandate and the capacity to continue the promotion of EEPL in Vietnam after the project will end in 2010. The Vietnam Urban Lighting Association (VULA), being an association of lighting manufacturers, government representatives, would ideally be placed to play a promotional role, but may not have sufficient capacity (staff, financial resources) to do so. In terms of policy-making and formulation of standards and labeling, the appropriate Ministries, such as MoC, MoI and MoST will play a crucial role. A second concern is about the availability of all the information and knowledge generated, since currently it is difficult for outsiders and even VEEPL consultants to have access to the more than 30 technical reports produced by VEEPL.

The Evaluators have the following **recommendations**:

Project management

The PMU should adopt a culture of being more 1) outward looking, 2) less rigid and 3) delegating authority.

- Regarding the first, policy formulation and setting up innovative finance will definitely require specific expertise that may be outside the one expects to find in a technology institute or in the VEEPL network as a whole. Now we go to the second phase of integrating results into a policy and sound strategy and financial instruments, the PMU should not shy away from inviting such expertise by broadening its network to actors whose specialty, for example, is policy making and banking, and by contracting outside consultants and subcontractors;

² It should be noted that, currently and in the future, local governments cover all the expenditures for public lighting (installation, operation, maintenance and electricity bills) through the state budget allocation.

- Regarding the second, the coordinators of the various components should work as a team,
- Regarding point three, coordinators should be made more responsible (but also accountable) for their activities. Also, the ISTA should not be regarded as an ‘outsider’, but should form with NSTA and PM the ‘core management team’ of the PMU. The Evaluators have noticed that right from the beginning PMU did not feel the need for an ISTA, but prefer more targeted international consultancy in the various components. We think the services of an ISTA are needed now that the project evolves from having laid a technological base into more policy-making, informational and economic-financial issues. Budgetary concerns should not be an issue, as current system of subcontracts should be revised anyhow and money can thus be made available to be able to afford both an ISTA as well as the necessary short-term national and international consultancy, as will be discussed below.

Removing barriers in an integrated way to achieve market transformation

Significant efforts and energy have been invested by VEEPL in exploratory research, technical assistance to manufacturers, capacity building and with the demo projects in HCMC, Quy Nhon and Hanoi. The information associated has been captured into a large number of reports, although they differ in quality and, in terms of achievements, most success has been obtained in the components 2 and 4, but less impact is noticeable in policy development (component 1) and little impact in component 3 (finance mechanism). This may not be a surprise, since the nature of the executing agency, VAST, is that of a technology institute, so one can naturally expect that more results have been in the two technology-oriented components 2 and 4.

- An assessment should be made of the final reports and the quality of the analysis and recommendations therein by PMU management (PM, NSTA, ISTA) with the aid of an outside consultant (national or international). The central idea is that, almost half-way, some stock-taking should take place to ascertain as to where the info generated in the reports has led to. The analysis and recommendations in these reports should be reviewed in a holistic approach, i.e. in an integrated way (meaning outputs produced under one component can have meaningful input in other components) and with the idea in mind how recommendations will lead to higher-level goal of lowering of barriers to achieve market transformation. Where gaps exist, such gaps should be identified and evaluated. As a consequence, the objective and methodology of the remaining activities and subcontracts should be reviewed and where needed revised, while new activities should be introduced if needed and some activities/subcontracts may need to be redone. This will imply deviating from the original list of activities as laid down in the project document (adaptive management) and updating the list. We recommend that not only a work plan 2009 is made, but a work plan is drafted too by PMU for the whole remaining 2008-2010 period. Given that this is a GEF project, it should be noted that the components’ objectives cannot be changed. Deviation from the original list of activities in each project component can only be for the purposes of bolstering or enhancing the achievement of the component objective; and for modifying activities to suit present conditions and/or circumstances thereby ensuring the achievement of the component objective.
- In the future, the practice of hiring consultants and subcontractors should be opened up by announcing vacancies by mass e-mail distribution and/or by announcing in national newspapers and on the VEEPL and UNDP website. The current practice of short-listing partners and picking members from the VEEPL network is not sufficient to attract expertise in a competitive way;

- Although a quality control mechanism is in place, it is not functioning well. Thus, a number of opportunities exist for further improvement of output quality insurance:
 - The reports should be subject to certain rigor in providing name of authors, presenting results, including table of contents, data sources used, methodology used, recommendations and action plan for follow-up;
 - Terms of Reference (ToRs) should be clear, reflect earlier work done in other outputs/activities and should make clear how it feeds into the desired outcome and overall objectives of the project;
 - Core management personnel (PM, NSTA, ISTA) should sign off reports;
 - To insure that reports are actually used, it would be useful to include the main beneficiaries in the process of drafting/revising ToRs, selection of contracted party and evaluation of the final report or output. For example, if drafting a report on as standard for appliance X, someone from MoST should review. In case of a report on financing schemes, representatives from MoF , a commercial and state-owned financial lending institution could be on board;

- The logical framework should be revised in accordance with the new work plan 2008 - 2010. In addition, indicators should be revised in such a way that they quantitatively and qualitatively measure the output achievement and more indicators should be included that measure impacts (outcome) instead of lower-level outputs. This could be the task of ISTA and/or external consultant;

- Regarding impact evaluation, a national consultant has been hired, resulting in a report on ‘methodology and tools for the calculations of energy savings and CO₂ emission reduction’. The report describes the methodology in a detailed way. However, the Evaluation Team has two observations. First, referring to a ‘tool’ means that besides a report an Excel spreadsheet should be made available for others to check and replicate CO₂ emission reduction calculations. Second, impact analysis is much wider than just measuring energy and CO₂ reduction, but should encompass social and economic indicators as well.

Sustainability

The Evaluation Team has the following recommendations:

- All final reports of the various subcontracts or ‘standard letter’ assignments should be made publicly available as downloads on the VEEPL website; in case this is not technically feasible or confidentiality is an issue, at least a good executive summary should be made available; ‘Easy-to-read’ leaflets and two/four-pagers should be made that summarize the essence of a report or group of reports, using tables, graphs in a colorfully attractive layout. Copies of the final versions of project reports, including the project activity reports should be provided to UNDP-Hanoi in both Vietnamese and English languages.

- An outside consultant should be hired to assess the stakeholders’ capacity and interest of the main players in VEEPL (in particular of VAST, MoC and VULA) to continue EEPL promotional activities after 2010. VULA would be the obvious candidate since it is already managing the database and PL Information Center (PLIC). In the end the VEEPL website should be hosted by VULA. However, the commitment of VULA should be confirmed and its capacity to promote EEPL should be strengthened, in terms of having core staff and budget available, rather than VULA associates making themselves available on a part-time basis. This capacity assessment should result in clear recommendations for a post-2010 exit strategy that should be designed by PMU.

Replicability

- Currently, the Newsletter is distributed at a limited scale. The Newsletter should be expanded to a wider public to become a more effective tool for information dissemination for such a specialized community as in the case of public lighting. The Newsletter can play a critical role in reaching out to policy and decision-makers and provide opportunities for networking, promotion of EE products and services and sharing of experiences.
- Promotion and awareness creation should differ according to the various categories of target audiences, e.g. (1) policy/planning decision-makers at national, provincial and local level, (2) designers/architects/lamp manufacturers/lighting consultants, (3) staff responsible for procurement, maintenance and operation of PL systems, (4) general public. Since the number of people involved in PL system presents only a small fraction of the Vietnamese population, probably face-to-face meetings and well-targeted workshops are the most effective communication tool rather using mass media. However, when targeting staff in public office by means of newspapers and magazine ads may be fruitful. Anyway, using mass media should be coordinated with the efforts of MoI's National Energy Efficiency Program; maybe the VEEPL project can piggyback on EE awareness campaigning already being undertaken. Second, printed materials, such as the above-mentioned report summaries, stickers, brochures, leaflets, can create significant level of awareness, especially when distributed in targeted group meetings.
- A 'technology delivery model' goes further than just demonstrating technology (say, e.g. 1000 efficient street lighting in street A in city B in Vietnam) but linking it with an appropriate financing scheme and feeding the results into local and national policy making. Here, a thorough assessment should be done on current financing flows for public lighting (street lighting), the potential role of banks (such as Vietin bank or Vietnam Development Bank) in setting up EEPL schemes as commercially viable projects) as well as the role of the actors involved (schools, public lighting companies, power companies, people's committees) and of the institutional limitations these actors may face in getting involved in such schemes. If the finance barrier can be tackled (in general, initial investment in EEPL will be more expensive than normal PL schemes although more cost-effective over the technology's lifetime) than the model showcased in HCMC, Quy Nhon and the Hanoi schools can convince local decision-makers to be replicated in other cities.
- Such EEPL technology delivery model should be supported with appropriate policy instruments that promote EE with a 'carrot and stick' approach. The project has in policy so far concentrated on the 'stick' (decree, standards) that force people to do something, and the Evaluators do not deny that VEEPL has contributed to progress here. But an appropriate policy should also have a 'carrot' component (e.g., financial incentives and providing independent information) and here the link between components 1 and 3 becomes crucial. Similarly, components 2 and 1 should be linked. For example, it is nice to have formulated MEPSs (apart from the EPS for the labeling schemes), but if in future no government decision will be made to actually have mandatory MEPSs the output (the MEP) has been achieved but impact will have been zero (no introduction or enforcement). This may, e.g. require extending activities in Component 1 in lobbying

government officials and even parliamentarians, Ministers, etc., with the aim of having mandatory MEPSs by the year 2010.

- Thus, urban lighting, in particular the activities of Component 1, should be clearly embedded in the overall energy efficiency efforts of national and local governments, in particular the National Energy Efficiency Program as well as with EVN on demand-side management activities. For this, VEEPL should closely coordinate with the Ministries involved, such as MoI (Energy Efficiency Office), MoST, MoF and EVN. One way to achieve this is by putting representatives of these organizations (if not there already) on the Steering Committee of VEEPL.

The following table attempts to summarize main issues and suggested actions;

Problem/issue	Cause	Action (numbers in chronological order)
<p>1. Management style is inward-looking, rigid and centralised:</p> <p>1a. Inward-looking: VEEPL has managed to mobilise some actors in a closed network. The bad side is that contracts and standard letters are given to project partners and other actors (closed shop) rather than real transparent procedures. As long as contracts are given to entities with the right expertise this has led to reasonable results (demos, industry support), but in other cases this has not been the case</p> <p>1b. Rigid: VEEPL's own quality control exists on paper but is not put into practice; even feeble reports have been signed of by PM and NSTA as good.</p> <p>1c. Regarding day-to-management, decisions are made by PMU and NSTA with little role of coordinators, while ISTA is not considered part of PMU team</p>	<p>I Background of VAST and PMU management, which is technological-academic,</p> <ul style="list-style-type: none"> - PMU may be capable of judging quality of deliverables in the technological, but less so in areas outside the typical VAST expertise, i.e. financial, informational and policy-making. <p>II Management style:</p> <ul style="list-style-type: none"> - 'Closed shop' implies that for PMU it may be difficult to criticize subcontracted project partners; - Conflicts of interest can incur if independent reviewers are chosen from the network and are not independent anymore - Website is weak, more information should be made available 	<p>B. Change management style</p> <p>B.1 Form core management team within PMU, consisting of PM, NSTA and ISTA and change in culture: outside support should not be shunned, but encouraged; If this cannot be achieved in an effective way, UNDP should not hesitate to take back some management functions (including going from NEX to DEX)</p> <p>B.2 Change quality control system. For new assignments a quality team should be formed that:</p> <ul style="list-style-type: none"> - reviews/updates ToR according to new work plans (point 2) - selects consultants & subcontractors in transparent way (e.g. by publishing in newspapers or e-mail distribution) - signs off reports. The team consists of core team management team and one outside evaluator with proven expertise <p>B.3 Make reports available in PDF format on website as standard practice (with at least executive summary)</p>

		of confidential materials) B.4 Stronger role of project Steering Committee
<p>2. Project design has some flaws:</p> <p>2a. Indicators are output-oriented and quantitative rather than impact-oriented and qualitative</p> <p>2b. From the onset, the structure of ‘standard letter’ construction and subcontracts has favoured the above-mentioned ‘closed shop’</p> <p>2c. No link is made with overall energy conservation strategy of Vietnam; No justification is given why public lighting should be stressed over other EE options</p>	<p>III Background of VAST and PMU management, which is technological-academic,</p> <ul style="list-style-type: none"> - Project is designed as if it were an academic project, with the aim of producing reports and deliverables, rather than a cap. building project in which such outputs are a means to achieve the higher goals of impacts; <p>IV Other actors should have been involved from the onset, especially in the area of policy making (MoI, MoST), finance (MoF, financial sector) and information (e.g. PR company)</p>	<p>C. Perform the following assessments:</p> <p>C.1 Hire external consultants to review and assess deliverables with PMU ‘core management’ (PM, ISTA, NSTA);</p> <ul style="list-style-type: none"> - Revise list of activities from a holistic approach, building on results of deliverables so far, identifying gaps (especially in area of policy-making, PR, financial-economic analysis and financial mechanism); - Make a work plan / budget 2008-2010; - Revise logical framework accordingly and put in quantitative and qualitative indicators as well as impact indicators <p>C.2 Stop subcontracting & assignments until B.1 is done</p>
<p>3. Sustainability and replicability:</p> <ul style="list-style-type: none"> - Demo’s have been done, but there is no convincing ‘technology delivery model’ which integrating techno demo with viable financial schemes supported by policy instruments - It is not clear which institution will or can continue VEEPL promotional activities 	<p>V Rigid management style (see above):</p> <ul style="list-style-type: none"> - No integration of results of individual components into integrated results/impact-oriented recommendations - No clear exit strategy for post-VEEPL period 	<p>D. Perform the following assessment:</p> <p>D.1 Hire external consultants to redo the following activities in an integrated way: (1) economic analysis of EEPL/demo system, (2) benefit analysis (if EEPL is implemented, who will profit, PC, PLC, power company, central government), (2) analyse source of finance and financing mechanisms, (3) institutional analysis (e.g. decision-making on in People Committee, PLCs, etc.) , (4) policy instruments to promote EEPL that fit within the</p>

		<p>overall national EE strategy coordinated by MoI; (5) define appropriate ‘technology delivery model’ that could be tested for further replication</p> <p>D.2 Assessment of willingness and capacity organisations , such as VULA, VAST, EEO to sustain (part of) activities post-VEEPL and formulate exit strategy</p> <p>D.3 Hire external consultant to formulate a PR and awareness plan</p>
4. Suggestions by UNDP management on the above issues has been ignored	<p>VI Management style:</p> <ul style="list-style-type: none"> - Tendency of ‘us-against-them when confronted with critique, especially when coming from ISTA and UNDP; 	<p>A. Immediate actions:</p> <p>A.1 Discuss Evaluation Report at next PSC meeting</p> <p>A.2 PMU should respond to UNDP on proposed actions, how they will be implemented and within which timetable</p> <p>A.3 UNDP should made clear that if actions agreed upon are not implemented this could have financial consequences for VEEPL; even going from NEX to DEX</p>

Some **lessons learnt** are:

- The building of strong working PMU is important that brings together a multi-disciplinary core team as well as short-term consultants and subcontractors is important. The latter should be contracted by open and transparent procedures;
- Creating a strong partnership and effective coordination with project partners and stakeholders from national and local governments, local and international industry, financial sector, NGOs/research institutes and beneficiaries (public lighting companies, schools, public offices) is important to promote EE PL;
- In capacity building and institutional strengthening projects, the main aim is not only improving the development and support base for the particular technology the project focuses on, but ultimately removing technology, policy, informational and financial-economic barrier in a integrated way, using a results-based holistic approach in implementing

making. Here, a thorough assessment should be done on current financing flows for public lighting (street lighting), the potential role of banks (such as Vietin bank or Vietnam Development Bank) in setting up EEPL schemes as commercially viable projects) as well as the role of the actors involved (schools, public lighting companies, power companies, people's committees) and of the institutional limitations these actors may face in getting involved in such schemes. If the finance barrier can be tackled (in general, initial investment in EEPL will be more expensive than normal PL schemes although more cost-effective over the technology's lifetime) than the model showcased in HCMC, Quy Nhon and the Hanoi schools can convince local decision-makers to be replicated in other cities.

- Such EEPL technology delivery model should be supported with appropriate policy instruments that promote EE with a 'carrot and stick' approach. The project has in policy so far concentrated on the 'stick' (decree, standards) that force people to do something, and the Evaluators do not deny that VEEPL has contributed to progress here. But an appropriate policy should also have a 'carrot' component (e.g., financial incentives and providing independent information) and here the link between components 1 and 3 becomes crucial. Similarly, components 2 and 1 should be linked. For example, it is nice to have formulated MEPSs (apart from the EPS for the labeling schemes), but if in future no government decision will be made to actually have mandatory MEPSs the output (the MEP) has been achieved but impact will have been zero (no introduction or enforcement). This may, e.g. require extending activities in Component 1 in lobbying government officials and even parliamentarians, Ministers, etc., with the aim of having mandatory MEPSs by the year 2010.
- Thus, urban lighting should be clearly embedded in the overall energy efficiency efforts of national and local governments, in particular the National Energy Efficiency Program as well as with EVN on demand-side management activities. For this, VEEPL should closer coordinate with the Ministries involved, such as MoI (Energy Efficiency Office), MoST, MoF and EVN. One way to achieve this is by putting representatives of these organizations (if not there already) on the Steering Committee of VEEPL.

Recommendation on specific activities are presented in Annex E

3.3 Lessons learnt

Some lessons learnt are:

- The building of strong working PMU is important that brings together a multi-disciplinary core team as well as short-term consultants and subcontractors. The latter should be contracted by open and transparent procedures;
- Creating a strong partnership and effective coordination with project partners and stakeholders from national and local governments, local and international industry, financial sector, NGOs/research institutes and beneficiaries (public lighting companies, schools, public offices) is important to promote EE PL;
- In capacity building and institutional strengthening projects, the main aim is not only improving the development and support base for the particular technology the project focuses on, but ultimately removing technology, policy, informational and financial-economic barrier in a integrated way, using a results-based holistic approach in implementing the individual project activities.