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**Evaluation of Energy Efficiency Screening Opportunities  
in World Bank Energy Sector Projects**

*A Paper  
to be used as an input for the  
Updated Energy Efficiency Scale Up Action Plan*

**Energy Anchor, Sustainable Energy Department  
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# Evaluation of Energy Efficiency Screening Opportunities in World Bank Energy Sector Projects

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## Executive Summary<sup>1</sup>

Implementation of energy efficiency (EE) measures entail multiple benefits by providing positive returns to the government, energy consumers and the environment in client countries. EE is also the *top-priority* option to facilitate utility reform and transparency through more cost-effective use of assets, and is the most important tool to make the use of clean energy (including renewable energy) generating assets more cost-effective. The critical role that EE could play, particularly in the context of climate change mitigation, has been well recognized by all stakeholders and communities, including in the World Bank's *Development and Climate Change: A Strategic Framework for the World Bank Group* (DCCSF) in 2008. One of the mandates of the DCCSF is that all projects in the World Bank portfolio, beginning with energy sector projects, should be screened to ensure that all feasible EE opportunities are included in the project design. The ultimate intention was to expand upon an approach similar to that used in the IFC, wherein every project is required to be screened for EE opportunities upon initiation. This report summarizes the results of a preliminary exercise that was implemented to evaluate the screening approach and report on the barriers faced and the results obtained. It also draws together the lessons learned to help provide direction to eventually mainstream a more comprehensive and systematic approach to screen for EE potential within energy projects in the World Bank. The report will be used as an input to the updated energy efficiency scale-up action plan for the World Bank Group, which is currently under preparation.

At the World Bank, the share of energy efficiency lending has grown steadily since the Bonn Commitment of 2004, and stood at over US\$1.7 billion in fiscal year 2010. In the World Bank context, however, the scale up has been limited to few regions, predominantly in East Asia and the Pacific and Europe and Central Asia regions, and to select sectors, models and approaches, including some dedicated Development Policy Loans (DPLs) focused on EE in the last few years. Despite its multiple benefits, EE projects usually represent small lending volumes, and entail a challenging project preparation and design process, often followed by an equally intensive implementation phase. Without the combination of a strong push from client countries and management, EE projects become lower priority compared to large infrastructure projects with large volumes. At the same time, there is a need to continue to provide countries with specific examples of how to implement promising EE activities. The assessment presented in this paper aims to bridge this gap between the strategic benefits

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<sup>1</sup> This paper was prepared by Ashok Sarkar and Varun Nangia, with support from Ashaya Basnyat, Jens Wirth, Jie Li and Xiaolu Yu, and under the guidance of Lucio Monari, Energy Sector Manager, Sustainable Energy Department, World Bank. The draft paper was peer reviewed by Todd Johnson and Daniel Kammen.

and operational realities of EE implementation, within the context of the World Bank Group.

There are no current requirements or incentive mechanisms to translate corporate objectives (such as those under DCCSF) into operational mandates, and EE achievements so far are currently largely driven by “EE champions” and dedicated EE staff within regional energy units of the Bank and, in many cases, by EE proponents in the client countries themselves. The number of staff with expertise in energy efficiency has gradually increased within the Energy Practice, particularly at the Sustainable Development Network (SDN) anchor unit, in large part supported by trust funds. However, having dedicated staff working on EE in the regional energy units is more difficult given the budget constraints and competing priorities; cross-sectoral EE projects (such as in water, urban, transport, etc.) have been even more difficult to prepare due to these limitations. WBG’s own funds have been effectively complemented by concessional resources like the Global Environment Facility (GEF) and, in more recent years, the Clean Technology Fund (CTF), which have been helpful in covering the incremental preparation and transaction costs associated with EE investment projects, which are generally higher for smaller EE measures. With stronger institutional support, this increased capacity could be translated into a comprehensive energy efficiency business line within the energy practice.

Under this activity, the team examined 63 new Project Concept Notes (PCNs) of energy sector-mapped projects that were logged into Business Warehouse at the World Bank, during the period from January 2010 to September 2010. The two main findings with respect to the distribution of these projects are:

- Over two-thirds of all the energy mapped projects for which documentation was available were found to include full or partial EE components.
- Over one-third of the projects that had EE components (including almost totally EE) were not categorized as EE projects, that is, not classified with the “LA – District Heating and Energy Efficiency” OPCS sector code, including three DPLs, one CTF-supported operation and one GEF-funded intervention.<sup>2</sup>

While designing this exercise, feedback was received from regional operations and energy practice. The feedback suggested that even as early as the PCN stage, the project design was essentially fixed as it was almost always linked to the interventions as laid out during

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<sup>2</sup> On July 5, 2011, OPCS announced the new coding system wherein EE is retained as a sector and LA has been renamed as “LA- Energy Efficiency in Power Sector Operations” and will represent projects covering “improvement of efficiency by which energy is produced, transformed and used.” It may be used for: rehabilitation of existing power plants, regardless of fuel and including fuel substitution to a cleaner fuel, that lead to higher overall efficiency (or lower heat rate) for the electricity generated; transmission and distribution projects whose primary objective is to reduce technical losses and whose financing amount can be distinguished from other project components (e.g., efficient, resizing of conductors, balancing of phases, power factor correction, reactive power compensation); district heating and district cooling; conversion to combined heat and power plants; and waste heat recovery, co-generation, and tri-generation.

the upstream and strategic country policy dialogue level. This point was re-confirmed by the exercise, which both found that a number of projects were part of a larger program of projects with previously agreed modalities, and that other teams were either unwilling or unable to accept changes to their project design, especially those in an advanced stage. From this assessment, we therefore found that the integration of EE needs to be undertaken through engagement not at the project concept level, but at an even more upstream, country macroeconomic level, where the multi-sector approach and interlinked dialogue will allow for identification of entry points where EE can contribute to the broadest economic management and energy development goals (e.g. GDP growth, fiscal balances, balance of payments, industrial competitiveness, energy security) for each country. Even if EE is not explicitly mainstreamed into CAS and CPSs, broader objectives such as sector efficiency improvements and sustainable energy developments in CAS and CPSs could drive the uptake of EE, as EE would be one of the primary contributors to achieving such broader objectives. Therefore, there is a need to pursue serious country dialogue on priorities and opportunities for EE and ways to mainstream them into the energy portfolio; potential entry-points include through country strategies, PRSPs, programmatic lending. In turn, engaging at the upstream country strategic level will require preparation of meaningful and powerful analytical work that can highlight the large benefits of EE in the context of the specific energy strategies of the partner countries, and associated staff training. Once energy sector is covered, the lessons learned could be used for upstream engagement to more effectively tap into cross-sectoral opportunities for EE, such as in the urban, water and transport sectors, along with the core energy sector opportunities.

This exercise marks a first step to fulfill the DCCSF requirement to begin screening projects for missed EE opportunities. The lessons learned from this pilot are crucial to ensure that the EE opportunities are explored effectively and in a practical manner.

- Both the evaluation of the screening process and the exercise itself show that while there is a strong understanding of what constitutes effective EE measures, there is difficulty in even qualitatively describing the impact of the proposed EE interventions.
- Currently the EE dialogue is driven by sectors and is therefore somewhat scattered both within the World Bank and client countries. However, in many countries, the respective Ministries of Finance are more aggressively raising the need for EE and it would be helpful to leverage this interest into specific country level programming through relevant sectors.
- The decentralized organizational structure of the World Bank necessitates the need to engage upstream in the country dialogue and of the importance of early intervention in the project cycle to enable effective mainstreaming of potential EE opportunities, at the country strategy stage.

- There appears to be a need for some institutionalized mechanisms to carry out the screening, along with strong management support for the processes.

Introducing upstream review and EE screening mechanisms to ensure that countries with large EE potential are targeted for EE policy dialogue could help in the EE scale up effort, but it is crucial that the screening tools are not interpreted in the same way as “safeguards”. In addition, integrating EE into short, medium and long term investment programming strategies of client countries and selectively applying the World Bank’s policy-based and investment lending instruments is crucial to ensure EE interventions are mainstreamed at both the country and project levels. The key recommendations and next steps are summarized as follows:

- The integration of EE needs to be undertaken through engagement at the country macroeconomic and upstream strategic level. It needs to focus first on core energy sector measures and subsequently on cross-sectoral opportunities, in addition to end-use EE.
- The experience with successful “business-as-usual” EE interventions which are currently focused on supply-side and key consuming sub-sectors, and limited to investments related to the core energy practice, could be expanded across other sectors. This requires initial focus on sectors where energy costs are a major component.
- Task team leaders (TTLs) need to be incentivized to identify the opportunities as part of the project approval process, as the country/regional energy teams are most well -positioned by virtue of their knowledge about the target sector. TTLs can effectively identify and mainstream EE into energy policy dialogue and energy project portfolio at the strategic level.
- A central core EE team that can also provide support to the individual, regional project teams, helping them with identifying, designing, preparing, implementing EE projects and quantifying EE benefits, is needed. The support could be provided by the central team or through the EE Thematic Group platform, to the regional team in preparing sector work and to demonstrate the benefits of EE in those countries. In addition this team could support EE training, capacity building and outreach within the regions, and through the regional networks, within the client countries. This team can be integrated with the current support by central team to the “SDN Corporate Review Process” wherein all CAS, CPS, PRSPs, DPLs and investment lending operations are reviewed through the energy sector strategic perspective at the central level and wherein EE could be encouraged as a sectoral good practice and a strategic level, even if explicit EE projects are not identified.



# Evaluation of Energy Efficiency Screening Opportunities in World Bank Energy Sector Projects<sup>3</sup>

*A Paper to be used as an input for the Updated Energy Efficiency Scale Up Action Plan*

## I. Background

- 1. The critical role that energy efficiency (EE) plays in cost-effective efforts to address climate change is well recognized by all stakeholders and communities.** Scientific agencies (such as the Intergovernmental Panel on Climate Change), practitioners (such as the International Energy Agency, IEA), the private sector and NGOs (such as the UN Foundation) have all promoted EE as one of the most effective clean energy options to mitigate the increase of global greenhouse gases (GHGs) from energy sector in the near term. Many supply-side and demand-side EE interventions are feasible in the short-term with current technology and at relatively low cost, on a life cycle cost basis. Recognizing that much of the developing world's energy demand will come from power systems, buildings, appliances, lighting, transport, and other sources that are yet to be designed or built, a window of opportunity exists to influence the design of these sources to be more efficient. Existing infrastructure is also being replaced at a tremendous pace to cope with increased demands placed on them, which further expands the scope of impact that EE interventions can have. The multitude of proven available interventions, the presence of this window of opportunity, and the relatively high rate of return on EE investments makes EE one of the most effective greenhouse gas reducing solutions and a preferred choice for mitigating the impact of energy on climate change at many development institutions.
- 2. Most well-designed EE programs entail multiple benefits by providing positive returns to the government, energy consumers and the environment in client countries.** In many partner countries where the World Bank is engaged with, there is a supply-demand imbalance in the energy sector, and the business case for EE is especially clear with positive returns on investment, reduction of energy costs and energy dependency. There are sometimes significant co-benefits associated with EE actions; these could include socio-economic benefits such as job creation. In these countries, EE measures provide the opportunity to help save the government and public sector utilities funds that will be otherwise required to buy or build supply (megawatt) capacities that are much more expensive, than it takes to save "negawatts" through EE measures. Promoting EE not only helps achieve higher economic growth and enhanced energy security in the developing partner countries, but also contributes to reduction in levels of GHG emissions from the energy sector in these countries, which leads to climate change mitigation in the global context. EE is also the top-priority option to facilitate utility reform and

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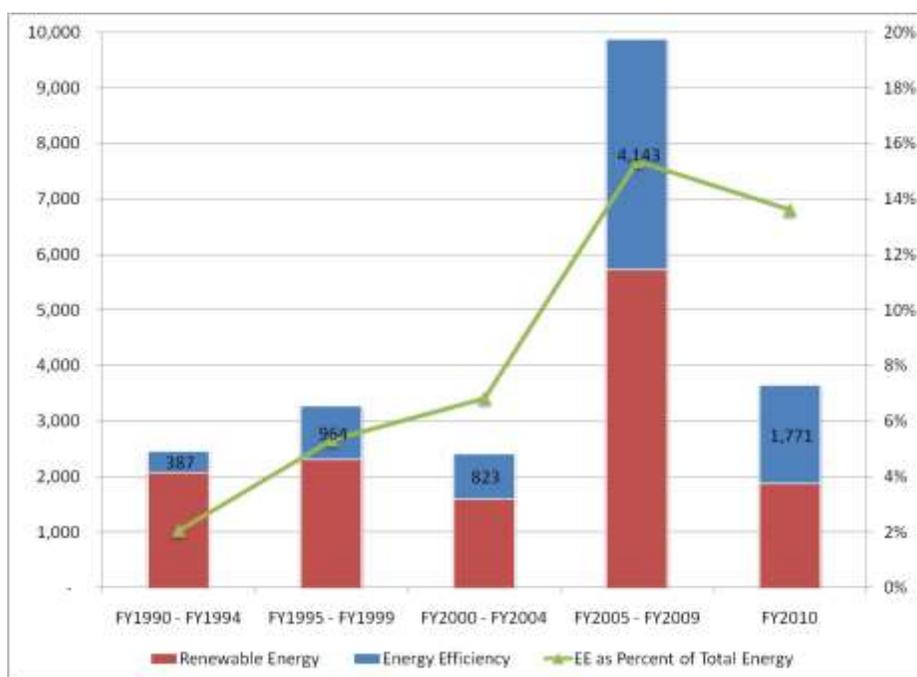
<sup>3</sup> This paper was prepared by Ashok Sarkar and Varun Nangia, with support from Ashaya Basnyat, Jens Wirth, Jie Li and Xiaolu Yu, and under the guidance of Lucio Monari, Energy Sector Manager, Sustainable Energy Department, World Bank. The draft paper was peer reviewed by Todd Johnson and Daniel Kammen.

transparency through more cost-effective use of assets, and is the most important tool to make the use of clean energy (including renewable energy) generating assets more cost-effective.

3. Cost effective “negawatts” are only the beginning of the benefits that EE can provide. If EE is combined with advances in information technology (IT) investments, **EE can often provide superior service to the larger expenditures on other forms of energy that it replaces.** Emerging opportunities include “smart grids”, where the combination of IT and EE enables the active participation of consumers in responding to the availability of energy, smoothing out demand for power supply and increasing resilience against power disturbances, which cuts down the need for redundant centralized backup power sources. Many of these technologies are easier and more cost-effective to install in developing country clients as part of the initial grid rollout than to retrofit to an existing system.<sup>4</sup>

4. **The WBG has steadily increased its financing of EE in recent years.** Much of the increase has been driven by its commitment made at the 2004 Bonn Conference to increase its share of investments in New Renewable Energy and EE. Between the national energy security imperatives and global mitigation objectives, EE has grown from just 2.5 percent of WBG energy financing twenty years ago, to 14 percent now. As Figure 1 shows, total amounts have also risen dramatically, from just US\$387 million over a five-year period twenty years ago, to US\$1,771 million in fiscal year 2010 (that ended in June 2010).

**Figure 1: World Bank Group Financing for Energy Efficiency and Renewable Energy, Fiscal Year 1990 – Fiscal Year 2010 (US\$ Millions)**



<sup>4</sup> In FY2011, a joint Working Group was established between the Energy Practice and the Information and Communication Technologies Practice, to further explore and work on the synergies between the two sectors.

## II. Evolving Context and Approaches for Promoting Energy Efficiency

5. **The adoption of *Development and Climate Change: A Strategic Framework for the World Bank Group (DCCSF)* in October 2008 has driven much of WBG's current corporate agenda for climate change, renewable energy and energy efficiency.** The DCCSF sets out several overarching goals to reduce the impact of the development of the energy sector, the single largest lending sector at the WBG, on climate change. Some of the DCCSF goals include commitments to increase lending for EE and new renewable energy, excluding hydropower plants larger than 10MW, by 30 percent per annum average through fiscal year 2011, and for the share of "low carbon" projects (including hydropower) to reach 50 percent of all WBG energy financing by fiscal year 2011, up from about 40 percent when the DCCSF was adopted. This trend is likely to be boosted by the overall objectives of scaling up EE efforts to new, higher targets envisaged under the new Energy Strategy, currently under preparation.

### **BOX 1: Definition of Energy Efficiency used in World Bank projects**

**Energy Efficiency:** Energy efficiency covers both demand side efficiency and supply side efficiency components. **New** high efficiency thermal power plants (such as super-critical or ultra-critical thermal power plants) are considered in the "thermal generation" category, and not "energy efficiency".

- **Demand side efficiency** includes improvements in efficiency due to load management, demand response programs, and direct load control; improvements in end-use energy efficiency in residential, commercial, industrial, public/municipal, agricultural and transport sectors; and energy conservation. Also included are energy efficiency improvements through institutional development, regulatory reforms, and improvements in utility management performance, introduction of improved building codes and appliance energy efficiency standards and labeling systems, retrofits to meet new standards, energy audits, waste heat recovery, improved fuel-efficiency standards for automobiles, use of drip irrigation or irrigation pumping in agricultural systems, municipal water pumping, energy efficiency financing through financial intermediaries, and implementation of consumer awareness programs.
- **Supply-side energy efficiency** encompasses transport systems (including modal shifts from cars to mass transit systems), district heating enhancements, improved power transmission and distribution including enhanced metering systems, capacitors, substations rehabilitation, etc, power system optimization and increasing the efficiency of existing thermal power generation, plant rehabilitation (including plants that offset conventional fuels), improved O&M and converting heat-only plants to combined heat and power plants.
- The projects or project components for EE include investments in rehabilitation of transmission and/or distribution networks only when the share of EE improvements in such projects can be clearly disaggregated from other objectives, such as network expansion and load increase. Interventions in Development Policy Loan commitments are included only when the share attributable to energy efficiency can be clearly demarcated.

6. **From FY2003 through FY2010 (July 2003 – June 2010), the WBG has invested over US\$6 billion to support EE programs.** These projects have included a variety of instruments and sectors, ranging from IDA-and GEF-funded residential sector energy efficient lighting interventions, to IBRD and CTF funded buildings EE projects, to carbon finance projects. The overall share of EE projects within the WBG portfolio has however been dominated by a high number of projects in IFC.

7. **Despite numerous attempts, including significant efforts using the various models in accelerating EE scale up, the results have been limited vis-à-vis the EE potential** and have been generally difficult to accomplish. An EE Scale Up Plan was prepared in 2007 to help boost the EE portfolio in the Bank. Since then, the number of staff with expertise in energy efficiency has gradually increased within the energy practice of the World Bank, particularly at the Sustainable Development Network (SDN), in large part supported by trust funds. There is also an active EE Thematic Group which interacts on a regular basis and is used as a platform to test out innovative ideas and for pursuing scale up efforts. However, having dedicated staff working on EE in the regional energy units is more difficult given the budget constraints and competing priorities. To the extent possible, regional task team leaders (TTLs) rely on SDN support and consultants, but this approach has its own limitations. The level of expertise available at the country offices is also generally limited. The issue of incremental costs for preparing EE projects and addressing EE transaction costs, which are higher for smaller projects, has continued to be a major barrier in scaling up the EE portfolio at the World Bank. At the same time, there is a need to continue to provide countries with specific examples of how to implement promising EE activities.

8. **Without a strong push from the client countries and WBG management, EE projects become lower priority compared to large infrastructure projects with large volumes.** To a large extent, EE represents small lending volumes (to demonstrate how low hanging opportunities can be realized) as well as a challenging project preparations and design process often followed by an equally intensive implementation phase. This is a predominant barrier in the World Bank context, which focuses more on the public, buildings, and residential sectors (through electric utilities) where projects tend to be small, compared to the large industry sector EE projects which are covered mostly within the IFC domain (except for some World Bank EE financial intermediation projects). Smaller-sized projects entail high transaction costs which could translate to a lack of staff incentives for EE projects.<sup>5</sup> Furthermore, there are no current requirements or incentive mechanisms to translate corporate objectives (such as those under DCCSF) to operational mandates, and achievements so far are currently largely driven by “EE champions” and dedicated EE

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<sup>5</sup> The transaction costs associated with preparing and implementing the small-sized EE projects (such as costs of consumer awareness, costs of institutional coordination, costs of savings monitoring and verification, and costs of deploying/distributing the measures amongst end-use consumers for instance) are high on a specific basis. For instance a smaller EE measure like an efficient light bulb entails higher transaction cost to implement compared to a large waste heat recovery unit on a \$ per MWh saved basis.

staff within regional energy units of the Bank and, in many cases, by EE proponents in the client countries themselves.

9. **Within the constraints, much of the EE scale up in the World Bank has been limited to few regions, predominantly ECA and EAP regions, and to selected sectors and approaches.** Without large clusters of viable projects, service providers and financiers are reluctant to enter the market. Determining how dispersed EE projects can be organized, packaged, financed and implemented in the most effective and efficient manner has proven relatively difficult. Viable projects, in turn, are difficult to identify and develop without the supporting market actors to realize a project's implementation. Most of the EE scale up models and project delivery modalities applied in developing countries so far are rooted in developed country experiences and have often been adapted to developing country constraints and characteristics. The various models and approaches that have been used in the World Bank EE portfolio are briefly described in Annex 1, and include utility demand side management (DSM) programs, development of energy service companies (ESCOs), financial incentive programs through special funds, credit lines and loan guarantees (including partial credit guarantees), and market transformation interventions. However, in last two years, there has also been a proliferation of dedicated Development Policy Loans (DPLs) focused on EE. These DPLs have become an important instrument to push EE scale up across the World Bank, especially for ramping up through EE regulatory policy interventions such as building EE codes, appliance minimum EE performance standards, etc. While the challenges of EE implementation have been complex and diverse across client countries, some models have proven to be more successful and significant lessons can be learned from the past EE portfolio, which could also lead the way for the future. The lessons learned from the past EE projects in the World Bank portfolio are summarized in Annex 2. The assessment presented in this paper aims to bridge the gap between the strategic benefits and operational realities of EE implementation, within the context of the World Bank Group.

10. **The future push towards more EE interventions within the World Bank should rely on an optimal mix and balance of different approaches, with more emphasis on policy intervention.** The different approaches broadly fall under: Enabling Regulations and Institutional Governance Structures; Targeted Financial Incentives; and Knowledge Sharing and Information Dissemination Mechanisms. Over the years, gaps have emerged on the World Bank's efforts on the EE regulatory policy front because, with constraints, focus has largely been on straightforward, and relatively less transaction and preparation cost-intensive investment type EE interventions. Since IEG's 2009 evaluation of climate change activities<sup>6</sup> at the WBG emphasized the importance of the putting more focus on regulatory and policy interventions, recent DPLs targeting energy efficiency have come in particularly handy in effectively strengthening the policy component of the World Bank's EE portfolio.; some recent examples include DPLs in Mexico, Poland and Vietnam.

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<sup>6</sup> Independent Evaluation Group. *Climate Change and the World Bank, Phase II: The Challenge of Low-Carbon Development*. Washington, DC, 2009: The World Bank.

**11. One important developing issue for energy efficiency is how the World Bank codes EE interventions.** Currently, EE appears as a sector in OPCS' coding system, under the "LA – District Heating and Energy Efficiency" sector code. As the energy sector has effectively "owned" the code in past years, by being the main conduit through which efficiency investments are made, the present setup has been satisfactory for both the practice and OPCS. As part of ongoing discussions with SDN, OPCS has indicated that as efforts are made to expand the scope of projects classified as efficiency interventions (for example, high efficiency water pumps in agriculture), energy efficiency should be moved from the "sector" axis to the "theme" axis, allowing for other sectors to code their interventions as energy efficient. While in the long-term this may encourage EE to enter earlier in the design phase of projects in other sectors (for example, in the agriculture, urban and transport sectors), the likely immediate impact will be to rapidly discourage the coding of projects as EE, as it would compete with 94 other theme codes, whereas it has effectively competed with five other codes in the past ten years. OPCS is also unwilling to increase the number of themes a project may be coded with, which especially limits the coding of cross-sectoral EE projects. It is important that EE is retained as a sector, and important to encourage the coding of projects as EE by providing guidance both to individual project teams, and to the OPCS coding team that evaluates whether projects are appropriately coded.<sup>7</sup> The latter team is institutionally codified and some training could help them to recode projects that occur outside of the energy practice and could help capture some EE interventions in projects beyond the scope of the practice.

**12. In the past, WBG's own funds have been effectively complemented by concessional resources like Global Environment Facility (GEF) and, in more recent years, by the Clean Technology Fund (CTF), which have been helpful in covering the incremental costs of preparation and transaction costs associated with EE investment projects.** As the future targets for EE in the World Bank will have to be higher than in the past to support new, more ambitious targets for clean energy lending, the CTF funds could also be used to develop DPLs which need more different preparatory support compared to investment projects in EE area. Carbon finance, as an incentive mechanism, has failed so far to catalyze the EE scale up agenda, compared to what was anticipated when flexible mechanisms such as CDM were conceived under the Kyoto Protocol. A very small share of global carbon market trade through CDM has been for demand-side EE projects so far. This is primarily due to the barriers that EE traditionally faces being further exacerbated by complex and demanding CDM rules and procedures, particularly with the required level of robustness in measurement and verification of energy savings. In this respect, new CDM market approaches such as programmatic CDM and sectoral crediting,

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<sup>7</sup> On July 5, 2011, OPCS announced the new coding system wherein EE is retained as a sector and LA has been renamed as "LA- Energy Efficiency in Power Sector Operations" and will represent projects covering "improvement of efficiency by which energy is produced, transformed and used." It may be used for: rehabilitation of existing power plants, regardless of fuel and including fuel substitution to a cleaner fuel, that lead to higher overall efficiency (or lower heat rate) for the electricity generated; transmission and distribution projects whose primary objective is to reduce technical losses and whose financing amount can be distinguished from other project components (e.g., efficient, resizing of conductors, balancing of phases, power factor correction, reactive power compensation); district heating and district cooling; conversion to combined heat and power plants; and waste heat recovery, co-generation, and tri-generation

and the development of Nationally Appropriate Mitigation Actions (NAMAs) could help scale up EE investments in developing countries, however subject to the pace at which the practical monitoring, reporting and verification (MRV) framework and approaches could be developed and agreed upon, within the context of the international climate change negotiations.

### III. Assessment Framework

**13. Amongst the several major GHG mitigation initiatives included in the DCCSF, there is a mandate that all projects, beginning with energy sector projects, should be screened to ensure that all feasible EE opportunities are included in project design.**

With this background and mandate under DCCSF, a preliminary review of energy sector projects was carried on an experimental basis, to initiate the screening process and to understand the issues related to screening all projects better. Under this objective, all the new Project Concept Notes (PCNs) mapped under the energy portfolio from January 2010 through September 2010 were targeted and reviewed. Furthermore, in parallel, the World Bank's EE Scale-Up Action Plan of 2007 is currently being reviewed and updated and the screening framework will eventually become a part of that effort. The report is going to be used as a background paper to the update

**14. This report summarizes the preliminary evaluation of the screening approach, barriers faced, the results obtained, and the lessons learned that could help provide directions to eventually mainstream a more comprehensive and systematic approach and suggest practical methodologies to screen for EE potential within energy projects in the future.**<sup>8</sup> Through this "learning" process, perceived problems of identifying potential EE components or of implementation were examined. It is apparent that new modalities, which have a combination of both mandate and incentive-based upstream screening system (as at IFC), will eventually be required to incorporate potentially-feasible EE components, which otherwise may continue to be missed. A gradual step-by-step approach appears to be the most feasible solution towards reaching the ultimate goals.

**15. The results of this activity should be interpreted within its limited context.** Under this activity, the team looked at only the new Project Concept Notes (PCNs) of energy sector-mapped projects, once every month, covering the period from January 2010 to September 2010.<sup>9</sup> This screening exercise only applies to projects at the World Bank, and not IFC or MIGA. The projects were either IBRD/IDA projects, either as stand-alone projects or blended with specialized climate financing from the GEF or Carbon Finance.

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<sup>8</sup> IFC has a system of upstream screening, wherein the investment officers (TTLs) are mandated to check for EE opportunities while initiating projects through preparation of PCN.

<sup>9</sup> The original PCN for this activity had indicated that energy mapped projects for the period of January to June 2010 will be reviewed. However, this was extended to September 2010 in order to capture a broader project dataset.

IBRD/IDA guarantees were also included, as were two projects from the dedicated trust funds for East Timor and the West Bank and Gaza. Cross-sectoral EE opportunities, such as those in transport, water, urban or agricultural sectors, were generally not examined unless an energy code was also attached to the project. In the context of a more systematic and comprehensive approach, these cross-sectoral interventions could present a significant EE opportunity which continued to get missed or incorrectly mapped/coded (see paragraph 10), while presenting different barriers that need differentiated approaches to mainstream EE. Nevertheless, this exercise helped draw lessons on the preliminary screening process as well as provided directions for areas of future emphasis and the practical methodologies that could be used in the subsequent phases.<sup>10</sup>

**16. The lack of information on nearly a dozen projects – 1 in 6 of the reviewed projects – made it difficult to ensure the completeness of the exercise.** Projects without data fell into two categories: (a) those which had slipped in the project preparation stage and had not had their timelines updated to reflect the slippage; and, (b) projects whose TTLs did not respond to repeated attempts to contact them to provide even limited sketches of the project design. Extensions to other sectors will likely prove even more difficult, where knowledge of the DCCSF is less thorough than in the energy practice.

#### **IV. Screening Methodology**

**17. The broader objective of the screening activity (as originally envisaged) was to help identify possible opportunities for EE components - on both demand and supply side - in World Bank's energy sector projects.** It was also expected that awareness of EE opportunities and EE financing would begin to be built through this screening exercise. This could ultimately help increase the share of EE within the World Bank's energy practice, as the screening process evolves and becomes a more routine modality in the future. It was hoped that the screening of new PCNs, early in the project processing/preparation stage, would also give sufficient time for EE to be incorporated, if feasible. The original design of this screening exercise as proposed in the activities' concept note suggested that a set of senior EE specialists would carry out an intensive review.

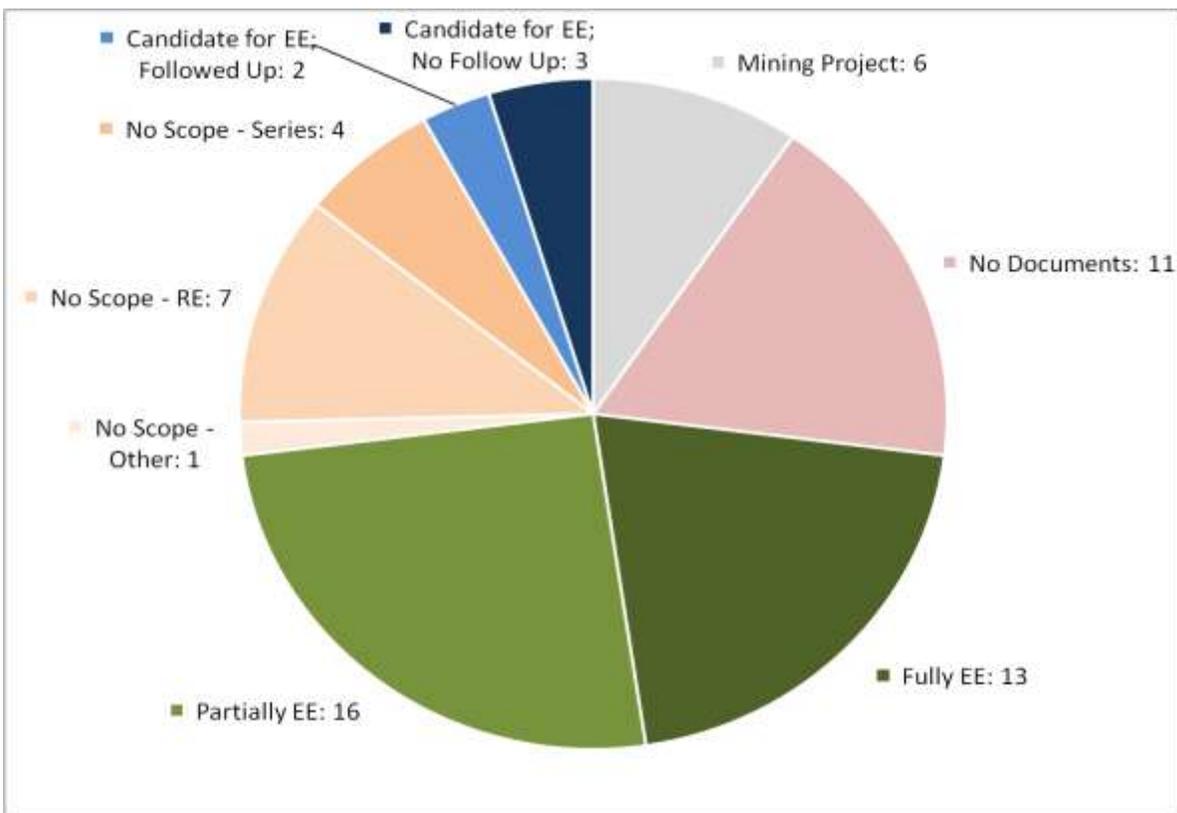
**18. However, based on the feedback during the peer review process, the actual exercise was scaled back and focused differently.** The emphasis shifted to evaluating and understanding better the EE screening opportunities and the associated options available within the given constraints. The feedback suggested that there would be relatively little scope to add EE components in projects by the time the PCN was prepared and made available. Indeed, after the PCN was prepared, the preparation budget for the project was essentially set and adding EE interventions would not be feasible. This meant that even if any viable EE opportunities were identified, they could not necessarily always

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<sup>10</sup> The findings of this EE screening exercise may be discussed in Energy and Mining Sector Board meeting, for wider dissemination within the Energy Practice, and within the broader context of developing an Energy Efficiency Scale Up Action Plan in 2011.

be incorporated. Based on the better understanding of these challenges and perceptions, the exercise was redesigned as it became apparent that the preparation schedules of lending projects and resource constraints did not permit an intensive study. This resulted in scaling down the exercise to simply reviewing the PCNs, evaluating them for EE components and potential opportunities, and reporting whether there was any scope for EE intervention that was not included. A larger team of junior staff reviewed the PCNs of energy sector projects and contacted individual TTLs of these projects to determine if there was scope for an EE intervention when the initial analysis suggested there was an entry point<sup>11</sup>.

**Figure 2: Summary of Results from EE Screening of Energy Sector PCNs in the World Bank (January-September 2010)**



## V. Findings of the Screening Exercise

19. **This screening exercise looked at 63 PCNs of energy sector mapped projects submitted in the World Bank’s Business Warehouse between January and September 2010.** The list of projects is provided in Annex 3. These projects each had at least one

<sup>11</sup> In some cases, if the TTL expressed strong interest in carrying out a further analysis, then he or she was put into contact with the EE focal point for the World Bank, to determine what modifications could be made to the project design to incorporate EE measures in the project.

energy or mining sector code<sup>12</sup> at the time the PCN was reviewed, and, should they all be approved, cumulatively account for US\$5.5 billion of lending over the next few fiscal years. Annex 4 provides the detailed project-by-project description and analysis based on the review of the PCNs, vis-à-vis scope of any potentially viable EE opportunities. Figure 2 summarizes these findings.

20. The results from the EE screening process were generally positive. **It is encouraging to see that many projects have mainstreamed EE to a large extent.** Of the 63 projects reviewed, six projects were found to be mainly or entirely about mining, and were thus excluded from the analysis. Of the remaining 57, about half (29 projects) were either fully or partially EE interventions in their original design, an encouraging result. A further 12 projects had no scope for the further inclusion of EE interventions because they were renewable energy projects or part of a larger program of lending that did not allow for EE to be added on. There was no information at all for 11 projects. Many of these were projects that had slipped in the preparation process, but the respective TTLs had not updated dates at the time the screening exercise was carried out. **It is interesting to note that 18 projects which had EE components (including many which were completely EE) were not reported as EE projects;** that is, not classified with the “LA – District Heating and Energy Efficiency” OPCS sector code in Business Warehouse.<sup>13</sup> This included three DPLs, one CTF-supported operation and one GEF-funded intervention.

21. The broad inclusion of EE measures is especially visible when the mining projects and the projects without documentation are put aside, and only the 46 projects for which there is information and documentation are analyzed. **Of this sample, two-thirds of projects included EE measures by design, and the EE interventions helped projects meet their development objectives.** Of the remaining 17 projects, a dozen did not have scope for EE measures, while only five projects had scope for further EE interventions, but did not include them in the original design.

22. **The final results of the screening showed that there were five potential candidate projects that could have benefitted from including EE measures as part of the project design.** Two of the teams requested further help to incorporate EE interventions in the final project design. An EE specialist contacted the relevant teams to offer guidance on how best to incorporate EE interventions in the project design, and some of the suggestions made were incorporated into the design of those projects to reduce energy consumption. Three projects did not feel further EE interventions were appropriate at this stage, though one of the projects was designed as a fast-disbursing emergency project and the timeline did not allow for a change in the design of the project. It is not

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<sup>12</sup> This is due to the fact that there are some shared codes between energy and mining. As a result, the 63-project sample unavoidably included some mining projects. When further analysis indicated that these were mining projects, no attempt was made to find EE opportunities, but the projects are included in the final table for the sake of completeness.

<sup>13</sup> To be noted here is that on July 5, 2011, OPCS announced the new coding system wherein EE is retained as a sector and LA has been renamed as “LA- Energy Efficiency in Power Sector Operations” and will represent projects covering “improvement of efficiency by which energy is produced, transformed and used.”

known whether these projects modified their projects in response to queries from the team.

## VI. Conclusions and Lessons Learned

23. **Both this screening exercise and previous surveys of data show that while there is a strong understanding of what constitutes effective EE measures, there is difficulty in even qualitatively describing the impact of the proposed EE interventions.** While a select few projects, mainly those that are attempting to obtain carbon financing or financing from the GEF, do rigorously quantify the expected benefits, the majority of the others do not attempt to measure the impact of EE interventions. In the absence of even a rudimentary counterfactual, it is difficult to say whether the interventions will actually lower the impact of an energy project.

24. **Currently EE dialog is driven by sectors and therefore somewhat scattered both within the World Bank and client countries. However, in many countries, the respective Ministries of Finance are more aggressively raising the need for EE and it would be helpful to leverage this interest into specific country level programming through relevant sectors.** In the design of this exercise, feedback was received that suggested that even as early as the project concept note stage, the project design was essentially fixed as it was almost always linked to the interventions as laid out during the upstream and strategic country policy dialogue level. This assertion has been largely borne out by this exercise, which both found that a number of projects were part of a larger program of projects with previously agreed modalities, and that other teams were either unwilling or unable to accept changing their project design especially those in an advanced stage. This leads to the conclusion that the integration of EE needs to be undertaken through engagement not at the project concept level but at an even more upstream, country macroeconomic level, where the multi-sector approach and interlinked dialogue will allow for identification of entry points where EE can contribute to the broadest economic management and energy development goals (e.g. GDP growth, fiscal balances, balance of payments, industrial competitiveness, energy security) for each country. Since the majority of projects are agreed upon as part of the CAS/CPS, engaging with and screening during the CAS/CPS development stage will have greater impacts on work downstream. Even if EE is not explicitly mainstreamed into CAS and CPSs, broader objectives such as sector efficiency improvements and sustainable energy developments in CAS and CPSs could drive the uptake of EE, as EE would be one of the primary contributors to achieving such broader objectives. Furthermore, additional upstream and downstream opportunities to engage on EE dialogue should also be taken advantage of, where possible – for example, in regional energy or core non-energy sector strategies, in workshops and informal discussions with client countries, and during negotiation stages for programmatic lending. Converting such interest in EE into awareness of possible opportunities will help in ensuring EE is adequately considered in project design, both immediately and in future projects. However, the screening tools should not be interpreted in the same way as “safeguards”.

25. **This exercise marks the first step to fulfill the DCCSF requirement to begin screening projects for missed EE opportunities.** The lessons learned from this pilot are crucial to ensure that the EE opportunities are explored effectively and in a practical manner from an operational perspective. In summary, the key lessons are: First, both the evaluation of screening process and the exercise itself show that while there is a strong understanding of what constitutes effective EE measures, there is difficulty in even qualitatively describing the impact of the proposed EE interventions. Second, the decentralized organizational structure of the World Bank necessitates the need to engage upstream in the country dialogue, and of the importance of early intervention in the project cycle to enable effective mainstreaming of potential EE opportunities, at the country strategy stage. Third, there appears to be a need for some institutionalized mechanisms to carry out the screening, along with strong management support for the processes.

## VII. Recommendations and Next Steps

26. **The integration of EE needs to be undertaken through engagement at the country macroeconomic level and will therefore support core energy sector measures and, subsequently, cross-sectoral opportunities.** Introducing upstream review mechanisms to ensure that countries with large EE potential are targeted for EE policy dialogue could help in the EE scale up effort. In addition, integrating EE into short, medium and long term investment programming strategies of client countries and selectively applying the World Bank's policy-based and investment lending instruments is crucial to ensure EE interventions are mainstreamed at both country and project levels. Therefore, there is a need to pursue serious country dialogue (on priorities and opportunities for EE and ways to mainstream them (possibly through programmatic lending) into the energy portfolio. The multi-sector approach and interlinked dialogue is crucial as it will allow for identification of entry points where energy efficiency can contribute to the broadest economic management goals (e.g. GDP growth, fiscal balances, balance of payments, industrial competitiveness) for each country. In turn, engaging at the upstream country strategic level will require preparation of meaningful and powerful analytical work than can highlight the large benefits of EE in the context of the specific energy strategies of the partner countries. By drawing upon the core energy sector experience, upstream engagement could also provide the opportunity to more effectively tap into potential cross-sectoral opportunities for EE, such as in the urban, water and transport sectors, along with the core energy sector opportunities.<sup>14</sup> This requires initial focus on sectors where energy costs are a major component (like water supply and treatment).

27. **The successful “business-as-usual” EE interventions are currently focused on supply-side and key consuming sub-sectors, and limited to investments related to the core energy practice.** Progress on EE screening needs to move on two fronts – ensuring the core energy sector is thoroughly screened and opportunistically expanding

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<sup>14</sup> Urban sector has already started taking the lead on analytical work which shows significant energy efficiency potential.

into non-energy, non-core sectors. Some non-core sectors provide more EE opportunities than the others. A comprehensive, cross-sectoral approach will need to be adopted to mainstream EE opportunities in non-core energy sectors by building upon either existing best practice models adapted from the core energy practice to these other sectors or develop new approaches. These non-core sectors include: Transport; Urban (households, buildings, urban transport); Water; Social (including education, health); Agriculture/Rural Development. While this process has begun to some extent, further work is needed to mainstream EE in project design universally.

28. Ultimately, to successfully screen all projects for missed EE opportunities, **it may be necessary to require TTLs to identify the opportunities as part of the project development.** For moving the review upstream to the country strategy stage, the country/regional energy teams are most well -positioned by virtue of their knowledge about the target sector, and can effectively identify and mainstream EE into energy policy dialog and energy project portfolio at the strategic level. These actions that are necessary to mainstream EE in project design may be considered as “additional” and may require additional resources and support, the need for which could evolve and become clear as the EE screening experience is gained. If this approach is followed at the regional energy level, then TTLs should be provided with training and resources to help them find EE measures, understand any cost-benefit or environmental implications of the interventions, and fill the missed opportunities. While this may increase preparation costs of projects, very often EE interventions can reduce the overall cost of the project by more efficiently and effectively targeting the development needs of client countries. After approval, the OPCS coding team should be taught to identify EE interventions that are not coded as such in existing projects, and where possible given the five code limit, recode projects to reflect the “hidden” EE components.

29. **A central core EE team that can also provide support to the individual, regional project teams, helping them with identifying, designing, implementing and quantifying EE benefits.** A Bank-wide central core EE team, possibly administered within the SDN/Sustainable Energy Department, can provide support to the individual, regional project teams, helping them with identifying, designing, preparing, implementing and quantifying EE benefits. The support to the regional energy team to prepare sector work and to demonstrate the benefits of EE in those countries, would be through organized technical assistance or “just in time” interventions and could draw upon the EE Thematic Group platform. The support could be provided by the central team or through the EE Thematic Group platform, to the regional team in preparing sector work and to demonstrate the benefits of EE in those countries. In addition this team could support EE training, capacity building and outreach within the regions, and through the regional networks, within the client countries. With stronger institutional support, this increased capacity could be translated into a comprehensive energy efficiency business line, within the energy practice.

30. While a formal system screening is being developed, **in the interim, the current practice of SDN Corporate Review could provide an opportunity to help mainstream EE and provide support to EE.** The SDN Corporate Review entails a mechanism wherein

all CAS, CPS, PRSPs, DPLs and investment lending operations are reviewed through the energy sector strategic perspective at the central level. This intervention provides the opportunity to allow initiating and influencing a specific dialogue on EE further upstream which, in turn, will provide the opportunity to get EE reflected at the country strategy level, in a more effective manner, and wherein EE could be encouraged simply as a sectoral good practice and incorporated into strategies, even if EE projects are not explicitly integrated. On average, the central energy unit within SDN receives, evaluates and provides comments on 25-30 documents a month – including CAS/CPS, PRSP, DPLs and investment lending project documents. In theory, this would be an ideal time to do the screening for EE and other SDN initiatives. Unfortunately, the current process falls short of being able to provide robust EE screening for two reasons: (i) by the time SDN anchor units receive documents as part of the normal review process, the design of most projects and strategies is almost finalized and there is little to no scope to build EE into the project; and, (ii) the comments are returned to the project team in summary form, which usually omit specific EE concerns raised by EE specialists located within the network anchor. However, in order for this to be more effective, the SDN operations team should try to move the SDN Corporate Review Process upstream to allow for comments during the concept stage and send complete comments as an annex to the project and country teams. This is especially true for CAS and CPS documents, which define the overall focus of country support for future years and also develop a potential pipeline of projects.

**31. To ensure that future screening exercises are able to access more complete information about the projects, two additional steps are essential.** First, the exercises should be carried out on a predictable schedule. Second, unit-level management should communicate routinely to their staff to expect the exercise. By moving to a predictable schedule (for example, every three months, or the week after the concept note is due), TTLs should expect to see the request for screening and have a chance to update project schedules, addressing the first issue this pilot exercised faced, as discussed above. By having reminders from direct management, TTLs are more likely to respond to the requests from the screening team, addressing the second concern above.

**31. Before making EE screening routine within the energy practice, it would help to develop a base and efficient scenario for common types of interventions supported by the WBG.** A first step might be to encourage task teams to use the IFC Carbon Emissions Estimate Tool (IFC-CEET), and developing “with project” and “without project” scenarios within the tool to quantify estimates of carbon savings. In expanding to other sectors, the screening exercise should include the development of at least a simple, perhaps qualitative, baseline against which to measure the impact of interventions that are claimed to be EE – perhaps working with subject matter experts to develop a list of activities that could conceivably be classed as efficiency interventions (see Box 1 for an example used in the energy sector).

## **Annex 1 – Summary Description of Different Energy Efficiency Models and Approaches in the World Bank Energy Portfolio**

**Utility DSM.** Utility demand-side management, or DSM, programs implemented by electric utility to change the consumption patterns of their customers, and reduce peak loads have been implemented in several countries (Argentina, Bangladesh, Brazil, India, Mexico, Pakistan, Philippines, South Africa, Sri Lanka, Thailand, Uruguay, and Vietnam) mainly to address power shortage situations. A number of these programs have yielded impressive results. The housing EE programs with local utilities have been successful because these utilities often have the strongest technical and implementation capacity amongst energy sector stakeholders. In Thailand, for example, the Electricity Generating Authority of Thailand invested some \$60 million between 1993 and 2000 and saved 566 MW and 3,140 GWh/year. From 2000-04, Brazilian power utilities invested almost \$200 million that saved 500 MW and 1,500 GWh/year. DSM implementation is difficult and requires a long-term, dedicated focus. In recent years, the World Bank has supported over 20 countries on implementing short-term, quick impact DSM programs focused on efficient lighting with Compact Fluorescent Lamps (CFLs), many funded with IBRD loans, IDA credits, GEF and/or carbon financing.

**ESCO Development.** The World Bank has developed about 40 projects to support the development of local Energy Service Company (ESCO) industries, including Brazil, Bulgaria, China, Croatia, India, Poland, Thailand, Tunisia, Turkey, Uruguay, and Vietnam. ESCOs serve as market aggregators, by allowing financiers to support a portfolio of EE projects. Worldwide experiences have generally concluded that ESCO promotion and development is a long-term undertaking and must have significant government support in order to succeed. The case of China where World Bank got engaged in ESCO industry development in 1990s is the case to this point. In China, the ESCO industry, referred to as energy management companies or EMCs, has grown to over 400 companies, with a combined investment of more than US\$1 billion in 2007; a recent strong policy push has further caused the EMC market to swell, reaching more than US\$2.8 billion in 2009. While the development of local ESCO industries can often take more than a decade, the benefits can be substantial. On the other hand, despite the promising attributes of the ESCO model, development of sustainable ESCO business models in developing countries has proved slow and complicated because of the lack of legal and financial policies and systems to accept and enforce such complex contractual models.

**Special EE Funds, Credit Lines, and Loan Guarantee Programs.** To overcome the barriers which many energy consumers (and ESCOs) experienced accessing appropriate and affordable financing sources, dedicated financing programs have been set up in many countries through World Bank support. There has been a wide range of mechanisms under this category, including credit lines, revolving funds, special purpose funds (including equity, mezzanine), partial credit guarantees and loss reserves, special purpose vehicles, etc. Since 1997, the WBG and other development financial institutions have supported numerous projects dealing with EE financing, including Bulgaria, China, Hungary, India, Lithuania, Philippines, Romania, Russia, Thailand, Tunisia, Turkey, and Uruguay. In many cases, access to local capital was not an issue, so some designed their

interventions to mobilize local commercial capital for EE programs. Others saw little prospects in the near-term to influence local banks and developed parallel mechanisms to provide financing until the local banks were able and willing to pick up the business line.

**EE Market Transformation.** Market transformation strategies and financial incentive-based interventions lead to increase in market penetration rates of the efficient models of appliances and equipment like refrigerators, light bulbs, or chillers, and seek longer-term goals to shift the market on a sustained basis. These programs generally target one or more products (or end uses) at the industry/manufacturer level, and do not depend on actions by consumers (or end users) that, being small and dispersed, is more difficult to implement. In this category, introduction of regulatory mechanisms (e.g., appliance EE labels, voluntary EE standards, building EE codes) first before mandatory ones (e.g., standards, import bans) has also worked better in many markets. As financial incentives are required to implement these programs, the GEF has financed much of these efforts in developing countries, mostly through the UNDP, but the WBG has also implemented programs in India, Mexico, Philippines, Poland, South Africa, Thailand, and Vietnam. Much of the successes for these programs remain in the developed world, given their stronger ability to regulate and enforce standards and their larger markets, but experiences in developing countries is growing fast. Use of market-based mechanisms has the best prospects for sustainability; however, where barriers exist, strategic government intervention can be very helpful. As an alternative approach to market transformation, many of countries (e.g., Bangladesh, China, Ethiopia, India, Mexico, Rwanda, Sri Lanka, Thailand, Uganda, and Vietnam) have promoted efficient equipment, such as light bulbs (mostly CFLs) through bulk procurement and distribution. By aggregating the market, these countries were often able to negotiate very low prices, often at a dollar or less, which greatly helped overcome the first cost barrier and create a larger, sustained market demand.

## Annex 2 – Lessons Learned from Energy Efficiency Projects in the World Bank

The implementation complexities continue to pose challenge to EE market transformation to achieve energy savings, particularly through demand side EE measures. Despite numerous attempts, including significant efforts on part of the development community and national governments in accelerating EE scale up, results have been modest. Many market failures and gaps in information and perception that can be very difficult to overcome in EE markets. Without large clusters of viable projects, serviced providers and financiers are reluctant to enter the market. Determining how dispersed EE projects can be organized, packaged, financed and implemented in the most effective and efficient manner has also proved elusive. Viable projects, in turn, are difficult to identify and develop without the supporting market actors to realize a project's implementation. Through the cross-section of projects that the World Bank Group has implemented in the past years, many lessons have emerged.

**Barriers and implementation challenges remain in most developing countries.** The barriers such as informational, technical, financial, institutional and behavioral across a wide range of stakeholders are particularly significant in case of demand side EE. In addition to these project level barriers, there are other, more systemic, issues that affect developing countries in particular:

- Lack of consensus on best practices to promote EE, i.e., regulation vs. incentives/subsidies vs. market-based schemes vs. awareness/informational issues, the right balance between these mechanisms, and the appropriate role of government;
- Project-by-project solutions to address what are inherently larger and more systemic challenges, requiring a more ambitious and concerted engagement at all levels of government and in all sectors;
- Overreliance on Western EE program models (e.g., DSM and ESCOs), which can help guide developing countries but need to be significantly adapted to suit local markets and conditions;
- Lack of EE data, which is compounded by the lack of internationally recognized indicators to adequately compare countries relative EE levels to take into account their economic structure, climate, geography, population, and other factors, and to effectively determine the real potential for improvements;
- Poor EE governance among EE and related institutions which can undermine government policy frameworks and initiatives, including inability to enforce or govern EE regulations and coordinate different level of government, the international community, the private sector and civil society;
- Small EE markets, where there is limited demand for high efficiency products, in part due to the limited discretionary income among consumers and lack of awareness, and thus limited domestic supply of EE goods and services.
- Energy subsidies which continue to diminish the returns from EE improvements and, even where pricing may be adequate, insufficient or uneven bill collections; and,

- Lack of institutions and capacities for public agencies to organize, transform, incentivize and develop new and nascent markets for EE goods and services, and for local private sectors to adopt state-of-the-art EE technologies and practices.

**For promoting energy efficiency market transformation, both regulatory policies and financial incentives are required.** There is no single model for scaling up energy efficiency, especially when it comes to demand-side energy efficiency improvements. The greatest contributions come through systematic efforts to reduce the energy intensity of specific end-use sectors, and through efficiency improvements in technology, rational energy pricing, and market liberalization. The important approaches to scale up energy efficiency—(a) regulations and institutional governance structures that foster scale-up, (b) targeted financial incentives, and (c) knowledge sharing and information dissemination mechanisms—must be tailored to meet each of the different market situations. The emphasis on one or the other and the right mix between regulation and financial incentives varies from one country to another.

For lights, motors, and buildings, mandatory energy efficiency policies (such as energy efficiency codes for building and equipment standards) can achieve much greater savings at a lower cost than financial incentives. This has not worked that well in developing countries, although some voluntary programs using financial incentives, such as many of the Bank's CFL bulk purchase-based utility DSM programs, have had better results in visibly shifting energy efficiency markets.

In some situations, policy setting is conducive to project's success. For instance, in the Bulgaria District Heating project, before the project started and in the early years of implementation, a number of policy measures were taken that supported the project. Also, a tariff regulatory system helped regularly increase the tariffs, which made energy efficiency investments attractive.

Emphasis on institutional development, coordination and capacity building is crucial for successful implementation of energy efficiency projects and programs. The major constraints to increased energy efficiency financing and implementation are inherently institutional in nature. A successful institutional framework for energy efficiency must take into account the country context; its technical and management capacity; new legislation and rules to enable energy efficiency investment; the level of integration between energy efficiency and other clean energy and clean development goals; the requirements for organizational autonomy, flexibility, and agility; and funding mechanisms. Because energy efficiency financing has often involved small transaction sizes, one of the primary lessons learned at the IFC has been to work through financial institutions and, where conditions are right, through microfinance.

**It is important to convey the right message about how energy efficiency helps in economic prosperity, and focus on other important issues besides climate change mitigation.** In the energy sector development agenda of most World Bank Group client countries, meeting basic energy needs at affordable prices and in a reliable manner is the first and foremost development priority. Energy efficiency interventions in the developing

countries are a means to enhancing energy reliability of future energy supplies and bridging the supply-demand gaps which results in fewer power system outages, less load shedding, and fewer industries getting closed down. It also reduces vulnerability to energy prices, and other relevant dividends that include economic prosperity, job creation, better health, reduced vulnerability to crime, and higher industrial and commercial competitiveness. Therefore, the message for selling energy efficiency, especially demand side energy efficiency project ideas, must be packaged to include not only the technical and financial benefits but also the economic and social development benefits. These benefits, however, are rarely measured or tracked, which have kept energy efficiency low on the agenda, beyond the other traditional options. If these positive elements of energy efficiency can be conveyed in the messages to the decision makers, energy efficiency can become an attractive option to be pursued in the energy sector policy making and action plans of many developing countries.

**For policymaking and investment decisions, using GHG mitigation costs based on just technology costs could be misleading.** The energy efficiency debate must shift its focus beyond energy efficiency technologies to delivery of energy savings and emphasize the importance of transaction costs of energy efficiency. When it comes to implementing the EE options, particularly the end-use or demand side EE measures which are generally small and dispersed, converting the “low hanging” EE technical potential options into real, “delivered” energy savings faces multiple barriers and is relatively more complex<sup>15</sup> in comparison to many alternatives, including most supply-side generation options. The barriers to EE implementation could be institutional, policy, technology or financial barriers and entail actions that results in relatively higher transaction costs for EE. Governments, public sector (ranging from utilities to municipalities) and markets have to often intervene to push the EE envelope, but these interventions cost money and pose high implementation-level transaction costs, which are incremental costs of offsetting the fundamental market failures and barriers for delivering energy efficiency savings, and should be considered along with the EE technology costs, while designing EE projects. In a business-as-usual scale up of EE, the barriers of high up-front costs need to be covered, and can be done through innovative financing models (as has been done in projects in the Bank’s EE portfolio) because these projects do payback. However, there are implementation-level transaction costs of EE which are caused by barriers that go beyond the high up-front costs of EE. These transaction costs vary by country and sector and their magnitude depends on various factors, such as the level of economic distortions (e.g., irrational tariffs), the delivery mechanism or transaction modality (e.g., delivering through regulatory policies like building EE codes or appliance EE performance standards or

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<sup>15</sup> Project complexity here refers to the complexity of implementing EE projects. For instance, if all conditions were the same, that is technology, financing and policy environment are in place, it is relatively easy to implement large supply side projects (such as a 100 MW power station) that generate megawatts compared to implementing equivalent energy saving projects (such as distributing a million efficient light bulbs) that saves negawatts. This complexity is often exacerbated by lack of appropriate EE-relevant institutional frameworks and capacity for EE that make it less likely EE options are considered. Another aspect of this complexity might be overcoming lowest-cost procurement guidelines, which make it difficult for an energy efficient lighting option to be considered over a traditional incandescent bulb, even though life-cycle costs of the EE option is lower.

delivering through ESCOs), level of awareness amongst end-users, and the EE institutional structure and governance systems<sup>16</sup>. In some cases, the actual savings can be different from savings estimated because of conditions in which equipment is operated.

**For some EE projects, the upfront incremental cost required for development and preparation of the projects could also be very high.** These upfront preparation costs could become a hindrance, especially on the demand side, where projects are small, dispersed and create higher risk perception (because EE projects are based on savings estimates) amongst financiers and EE market stakeholders. Based on the experience gained from numerous projects, such as the Romania Energy Efficiency in 2003 to the Mexico Energy Efficiency Appliances and Lighting project in 2010, the project preparation related incremental (transaction) costs are recognized to be high and clients require considerable pre-investment TA support (feasibility studies, structuring finance and finding attractive financing, etc.) before large scale EE implementation is possible.

**Developing client consensus, buy-in and ownership, and mainstreaming the operation and implementation measures, into the ongoing functions or reforms process is key to the success of policy lending in energy efficiency.** Emphasis on wide consultation and consensus, which is integrated into the operations design, is reflected in many successful projects such as the Morocco Energy Sector Development Policy Loan. In this project, the integration was done through the following: (i) the creation and close coordination of multi-agency Government working groups to discuss and agree on the sector reform's priority objectives and measures, (ii) organization by the Government of a sector-wide stakeholder awareness campaign and consultations (iii) continued interactions and open communications on energy sector reforms, and (iv) permanent contact between the Bank team and other donors active in the energy sector in Morocco. In the Bulgaria District Heating Project, the implementation was effective because the PIU staff were drawn from the existing companies, bringing necessary technical and financial skills. As a result, the PIU members maintained their other work functions, which meant that they were well-integrated in various day-to-day operations, easing project planning and implementation, and project investments could be carried out as part of the companies' regular investment programs.

Several recent DPL operations that were completed or are under preparation include heavy (full or partial) emphasis on energy efficiency (e.g., Mexico, Poland, Vietnam, Tonga, etc). Along these lines, one particular lesson learnt in DPLs is the importance of ensuring that the client prioritizes achievement of reform objectives over the implementation of a set of measures with a realistic timetable, and along with strengthening of the accountability framework for reforms implementation, monitoring and impact evaluation. It has been observed that in many operations, such as the Morocco Energy Sector DPL, the original ambitious timetable for the programmatic DPL could not be adhered to, in part due to the

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<sup>16</sup> Although some of these same complexities, barriers and transaction costs may also apply to other similar small dispersed technologies such as solar photovoltaics. In general, the implementation of EE options could be as complex as off-grid solar photovoltaics for instance, but it could be more complex than even the large renewable energy options such as concentrating solar power.

complexities of the program. This raises the question whether a programmatic (rather than single-tranche) DPL, and the adherence to a timeline for the individual components it implies, is the right instrument for this kind of broad policy reform in complex energy sectors. The Mexico Framework for Green Growth DPL and Mexico Low Carbon DPL in 2010 and other energy efficiency focused DPLs recently approved, such as the Poland Energy Efficiency DPL, follow the single tranche modality. It is also seen that aligning the DPL- and governmental 'calendars' generally minimizes the risk of a new government revisiting part of the prior actions, as did in fact occur in many projects. A complex energy DPL might better be started somewhat earlier in a government's term. This may mitigate problems arising from the changes in political preferences, key staff, or even institutional structures that a new government may bring, replacing it with the important continuous engagement throughout implementation with the very same government that had initially agreed on the measures contained in the DPL.

### Annex 3 – List of Energy Projects for which the PCNs were evaluated for EE Opportunities

Region	Country	Project Name
East Asia and the Pacific	Cambodia	Cambodia Rural Electrification Project
East Asia and the Pacific	China	Energy Efficiency Fin III
East Asia and the Pacific	China	GEF Green Truck Demonstration
East Asia and the Pacific	China	Guangxi Yujiang Laokou Navigation and Hydropower Project
East Asia and the Pacific	Indonesia	Chiller Energy Project
East Asia and the Pacific	Indonesia	IF Fourth Infrastructure DPL (IDPL4)
East Asia and the Pacific	Mongolia	Mongolia Development Policy Credit 2
East Asia and the Pacific	Mongolia	Ulaanbaatar Clean Air Project
East Asia and the Pacific	Pacific Islands	Energizing the Pacific Island Countries
East Asia and the Pacific	Thailand	Advanced Clean Energy Investment CTF
East Asia and the Pacific	Thailand	TH BMA Urban Transformation Project
East Asia and the Pacific	Timor l'Este	Gas Seep Harvesting Add Fin
East Asia and the Pacific	Tonga	Energy Dev Policy Operation
East Asia and the Pacific	Vietnam	Second Transmission and Distribution Project Additional Financing
East Asia and the Pacific	Vietnam	SEIER additional Financing
Europe and Central Asia	Armenia	Armenia DPO2
Europe and Central Asia	Armenia	Electricity Supply Reliability and EGY
Europe and Central Asia	Armenia	Electricity Supply Reliability and EGY GEF
Europe and Central Asia	Kosovo	LPTAP Add. Fin. 2
Europe and Central Asia	Kyrgyz Republic	Emergency Recovery Operation
Europe and Central Asia	Montenegro	Hot-Spots Cleanup Project
Europe and Central Asia	Poland	Energy Efficiency DPL
Europe and Central Asia	Poland	Green Investment Scheme
Europe and Central Asia	Serbia	PFDPL 3
Europe and Central Asia	Ukraine	UCF GIS/AAU Trade
Europe and Central Asia	Uzbekistan	Talimarjan Transmission Project
Latin America and the Caribbean	Brazil	BR Plantar Green PIG Iron Project
Latin America and the Caribbean	Mexico	MEDEC Low Carbon DPL
Middle East and North Africa	Egypt	EG Power IV
Middle East and North Africa	Morocco	Ouarzazate CSP
Middle East and North Africa	Tunisia	Energy Efficiency and Biomass Project
Middle East and North Africa	West Bank and Gaza	GZ: PRDP Support III
Middle East and North Africa	Yemen	Fiscal Adjustment and PSD DPG
South Asia	Afghanistan	Afghanistan SDNRP II
South Asia	Afghanistan	Rural Solar Electrification
South Asia	India	Luhri Hydro Electric Project
South Asia	Pakistan	Natural Gas Efficiency Project
South Asia	Pakistan	Pakistan PRSC (new Series)
South Asia	Pakistan	Power Efficiency
South Asia	South Asia Region	Northeast Regional Energy
Sub-Saharan Africa	Africa Region	Reg. & Dom. Power Market Add. Fin.

Sub-Saharan Africa	Benin	PRSC 7
Sub-Saharan Africa	Burundi	Energy Efficiency Lighting Project
Sub-Saharan Africa	Cameroon	Mining Sector TA
Sub-Saharan Africa	Cape Verde	DPL PRSC VI
Sub-Saharan Africa	Central African Republic	CAR EMGRG III DPO IV
Sub-Saharan Africa	Congo, Dem. Rep.	DRC PS Dec Competiveness Add. Fin. II
Sub-Saharan Africa	Cote d'Ivoire	CI AZITO Phase 3
Sub-Saharan Africa	Ethiopia	Electricity Access (Rural) Expansion III
Sub-Saharan Africa	Guinea	DPL 1
Sub-Saharan Africa	Kenya	Partial Risk Guarantees for IPPs
Sub-Saharan Africa	Liberia	Liberia Electricity System Enhancement
Sub-Saharan Africa	Liberia	LRRRSP3 Budget Support
Sub-Saharan Africa	Malawi	Mining Technical Assistance Project
Sub-Saharan Africa	Malawi	PRSC 4
Sub-Saharan Africa	Mali	Poverty Reduction Support Credit 4
Sub-Saharan Africa	Nigeria	NG PRG for IPP at Obite OML 58
Sub-Saharan Africa	Nigeria	NG Rural Access and RE Development
Sub-Saharan Africa	Nigeria	Sustain Management of Mineral Resources
Sub-Saharan Africa	South Africa	ESKOM Renewables Support Project
Sub-Saharan Africa	Togo	Third Economic Recovery and Governance Grant
Sub-Saharan Africa	Uganda	Electricity Sector Development Project
Sub-Saharan Africa	Zambia	Add. Fin. for Zambia IAES

#### Annex 4 – Evaluation of PCNs of Energy Sector Projects in the World Bank (January-September 2010) for EE Screening

Project ID and Name	Percent Reported as EE <sup>17</sup>	Project Description	Identified scope for additional EE incorporation OR Reasons for not having considered these options
<b>P101618 PF PFDPL 3 – Serbia</b>	0%	The proposed Third Programmatic Private and Financial Development Policy Loan (PFDPL3) is the third in a series of three programmatic DPLs designed to support a multi-year program of assistance to the Republic of Serbia to remove obstacles to private sector led-growth. The IBRD Policy-based Guarantee equivalent to US\$400 million in Euros will be used to either enhance a Eurobond issuance or international loan syndication. The PFDPL series supports the following three pillars of the Government of Serbia (GoS) program: (i) Enhancing business environment, (ii) Strengthening financial discipline and (iii) Building a stable and more efficient financial sector. As far as energy reforms supported by the PFDPL series are concerned, the DPL assumes the introduction of EU quality standards on petroleum products will have a significant positive impact on air pollution. Moreover, investments in new and modern coal-fueled power plants replacing old capacity will contribute to further reduction of pollutant emissions. And finally, the introduction of higher energy tariffs will likely lead to improved energy efficiency and consequential reduction of energy consumption per unit.	Although not reported as an EE project, the project has an EE component. No additional scope for EE identified by TTL.
<b>P102843 Luhri Hydro Electric Project - India</b>	0%	The project has two components – a 775MW hydropower project, and capacity building at the firm implementing the project, with a view of developing further hydropower resources in the Himalayan region.	No scope for EE was identified. The project is solely a renewable energy project, and the implementing agency does not have a role to play in EE.

<sup>17</sup> This column refers to the percent of the project that was classified with the “LA – District Heating and Energy Efficiency” OPCS sector code at the time of evaluation.

<b>Project ID and Name</b>	<b>Percent Reported as EE<sup>17</sup></b>	<b>Project Description</b>	<b>Identified scope for additional EE incorporation OR Reasons for not having considered these options</b>
<b>P112898 Power Efficiency (Supply and Demand) - Pakistan</b>	0%	The project seeks to improve the efficiency of the supply of electricity, on both the generation and transmission and distribution segments.	Although not reported (even partially) as an EE project, the project is already an EE intervention. No further scope identified.

Project ID and Name	Percent Reported as EE <sup>17</sup>	Project Description	Identified scope for additional EE incorporation OR Reasons for not having considered these options
<b>P114782 3A-Reg&amp;Dom.Power Mkt Add. Fin. (FY11) - Africa</b>	0%	<p>The projects amounts to US\$ 425 million of additional financing required for the Domestic and Regional Power Markets Development Project (PMEDE), which forms part of a three-phase Southern African Power Market Program on which the Bank and the Southern Africa Development Community (SADC) reached an understanding as the basis for development of the integrated Southern Africa Power Pool (SAPP) 1. The project is among the first major efforts by the Bank at promoting regional integration of power systems, based on the rehabilitation of clean, renewable hydropower plants and support of regional interconnections and electricity trade. The PMEDE Project's objectives are to improve the operational efficiency in DRC electricity sector and expand generation, transmission and distribution capacity in order to better serve domestic power demand and to support regional power market integration, through clean, renewable hydropower at the Inga site. The Project consists of five main components: (i) Generation - rehabilitation of Inga 1 and Inga 2 hydropower stations; (ii) Transmission - construction of a new 400 kV transmission line from Inga to Kinshasa; (iii) Distribution- rehabilitation, reinforcement and expansion of the power distribution system in Kinshasa; (iv) Capacity building - strengthening of SNEL's operational capabilities including activities regarding the governance within the utility specifically and in the sector generally; and (v) Project Implementation - provision of consulting services for engineering, management and supervision of implementation, procurement and financial management services.</p>	<p>Although not reported (even partially) as an EE project, the project already has an EE component. No additional scope for EE identified.</p>

Project ID and Name	Percent Reported as EE <sup>17</sup>	Project Description	Identified scope for additional EE incorporation OR Reasons for not having considered these options
<b>P114875</b> <b>"Second Transmission and Distribution Project - Additional Financing" - Vietnam</b>	0%	According to the TTL this is an additional financing operation to scale up the same type of activities that were included in an operation approved in 2005 and does not include new types of activities. However, while evaluating the concept memorandum, it became clear that scale-up activities will also include a smart grid component involving automation of substation information and control systems to facilitate connection of dispersed renewable plants to the grid and to improve system efficiency that had previously not been included as the smart grid concept was only recently included in the AF. This smart grid component is proposed for financing under the CTF. The Bank will finance a consultant, to prepare a prioritized smart grid investment plan and to conduct feasibility studies from which high priority and quick to implement activities could be selected for inclusion under the additional financing. Based on the progress of this work the task team will assess whether it is feasible to have this subcomponent included under the project given the three-year limit for additional financing.	The smart grid component was only recently included and qualifies under the World Bank definition of EE- no further EE opportunities were identified. Preparation funds for the smart grid component are available under the ongoing project and technical support for preparation and implementation can be easily secured according to the TTL.
<b>P115426</b> <b>Energy Efficiency DPL Poland</b>	0%	The objective of the project is to enhance energy security by promoting low emission investments and operations: integrate principles of climate change considerations in key sectoral policies and programs; and improve the effectiveness and efficiency of the institutional framework for implementation of these policies and programs	Although not reported (even partially) as an EE project, this DPL is fully focused on EE. No additional scope for EE was identified.
<b>P115767</b> <b>Northeast Regional Energy - South Asia</b>	0%	No documentation was available in Business Warehouse at the time of this evaluation.	TTL did not respond to multiple requests for documents.

Project ID and Name	Percent Reported as EE <sup>17</sup>	Project Description	Identified scope for additional EE incorporation OR Reasons for not having considered these options
<b>P116451 Armenia DPO 2 - Armenia</b>	0%	<p>There are a few energy-related measures included in the DPO as a means to strengthening competitiveness for post-crisis recovery and growth over the medium term, centering on improving the quality of utility regulation and competition policy, specifically in the mining sector. Regarding Energy Efficiency the PD mentions the adoption of a time bound EE action plan as a specific task under DPO-2. The EE action plan would include specific efficiency targets and designate a responsible entity with adequate resources. The latter again would largely be in charge for implementing priority actions identified in the EE action under DPO-3. The PD does however not further elaborate on the plan.</p> <p>According to the TTL the Ministry of Energy and Natural Resources is responsible for development of EE action plan. An international individual consultant will support the Ministry with development of EE action plan. The selection of the individual international consultant is underway. Overall EE policy responsibility is with the Ministry of Energy and Natural Resources, whereas the existing Renewable Resources and Energy Efficiency Fund (which was established by the Government and has a Board of Trustees chaired by the Minister of Energy) will be responsible for implementation of the energy efficiency policies. The Ministry has already started working on the development of the action plan, which a yet to be hired international consultant will help to shape up and finalize. The EE action plan will contain recommendations on required legal and regulatory changes to ensure achievement of the specified EE targets. The Electricity Supply Reliability and Energy Efficiency Project (which is under preparation) will have an energy efficiency investment component and a related US\$ 2 million GEF grant. The World Bank will help to create an enabling environment for energy efficiency (by helping to remove the legal, regulatory, information and other barriers as well as assist with capacity building) so to achieve the targets that will be specified in the EE action plan. The investments</p>	<p>Although not reported (even partially) as an EE project, this operation already includes EE components. No additional need for more EE was identified by TTL.</p>

Project ID and Name	Percent Reported as EE <sup>17</sup>	Project Description	Identified scope for additional EE incorporation OR Reasons for not having considered these options
<b>P116680 Electricity Supply Reliability &amp; EGY GEF - Armenia</b>	100%	This project is jointly financed by IDA and GEF and has two components: a transmission component, and an energy efficiency component. The transmission component will replace the existing connection between the grid and the Hrizdan thermal power plant. The energy efficiency sub-component will improve EE in public buildings such as schools and hospitals, and remove legal, regulatory and technical barriers to EE measures being adopted elsewhere in the economy.	The Project already contains EE component. No additional EE options are needed. TTL indicated interest in drawing on institutional knowledge learned in previous EE interventions such as flexible financing options.
<b>P116748 Electricity Supply Reliability &amp; EGY - Armenia</b>	30%		
<b>P117225 Burundi Energy Efficiency Project</b>	100%	The proposed GEF energy efficiency project will be developed as a partially blended operation with the ongoing IDA financed MSWEIP (US\$50 million) that is currently been implemented. GEF financed activities will scale up the scope and effectiveness of the utility - REGIDESO's demand side management program, that represents Burundi's first consistent and coordinated energy efficiency program since the end of the country's long term conflict. GEF resources will be targeted to scale up the distribution and promotion of compact fluorescent lights and other energy efficient technologies and appliances, support the implementation of energy efficiency measures identified from a utility energy audit and the promotion of energy efficiency investments to large consumers, and introduce standards, labels and guidelines for energy efficient appliances. Continuous advisory support and technical assistance will be provided to increase technical, managerial and organizational capacities for energy efficient technologies and practices. GEF resources are also allocated to ensure proper project management, monitoring and evaluation.	The project already includes EE component. No additional scope for EE.

Project ID and Name	Percent Reported as EE <sup>17</sup>	Project Description	Identified scope for additional EE incorporation OR Reasons for not having considered these options
<b>P117279 LR RRSP 3 Budget Support - Liberia</b>	0%	According to the TTL this is a pure Administration and Mining project, no-energy related components.	--
<b>P117333 Green Investment Scheme – Poland</b>	60%	The Poland GIS project is a Carbon Finance project. Poland has established its Green Investment Scheme and the Carbon Fund Unit on behalf of CF participants intends to buy a portion of the Assigned Amount Units through this scheme. There are two Poland GIS priority programs that we are initially targeting - Energy Efficiency in Public Buildings program, and Energy Efficiency in District Heating program. The main objective of the proposed project is to provide support for investments that would reduce GHG emissions by improving energy efficiency in Poland. The priority sectors include: (i) Upgrading electricity grid for connecting renewable wind energy sources; (ii) Energy efficiency in district heating and co-generation; (iii) Biomass-fired power plants; (iv) Energy management in public buildings; and (iv) Agricultural biogas plants. It is planned that World Bank involvement will be limited to the Energy Efficiency in District Heating and Co-Generation activities and the Energy Management in Public Buildings program.	This project is already focused on EE. No additional EE opportunity incorporation is needed.
<b>P117407 EG Power IV – Egypt</b>	0%	No documentation was available in business warehouse.	TTL did not respond to multiple requests for information.
<b>P117421 Mongolia Development Policy Credit 2 – Mongolia</b>	0%	The project is a mineral mining project and has no energy component.	TTL indicated there may be an opportunity to include EE in the next DPC, due in the next FY.

Project ID and Name	Percent Reported as EE <sup>17</sup>	Project Description	Identified scope for additional EE incorporation OR Reasons for not having considered these options
<b>P117535 Pakistan PRSC (new Series) - Pakistan</b>	0%	The PRSC is the second in the series and seeks to develop an automatic, depoliticized electricity tariff management process by increasing tariffs to cost recovery levels. This will encourage conservation of energy automatically.	The prior actions for the first PRSC have not been completed and are being carried over. However, as appraisal negotiation for this PRSC has finished, it is not likely that additional EE measures could be incorporated at this stage. There may be an opportunity to introduce additional EE measures in the third PRSC, due in April 2012.
<b>P118531 Fourth Infrastructure DPL (IDPL4) - Indonesia</b>	0%	The infrastructure DPL (IDPL) program intends to (i) increase the quantity and efficiency of government spending on infrastructure with reduced and better targeted Public Sector Obligation (PSO), and expenditure planning and budgeting; (ii) improve sub-national infrastructure services through increased sub-national government spending and improved incentives; (iii) increase private investment in infrastructure through the establishment of a fiscally sound, credible and transparent PPP framework spurred by appropriate risk mitigating measures; and (iv) enhance governance for infrastructure through improved land acquisition, environmental protection, better procurement and improved audit processes. All policy areas in the IDPL program contribute to the CPS's objective "to increase the level and efficiency of public and private investment in infrastructure."	Due to the tailoring of the DPL series to public and private infrastructure investment and the late stage in the actual series (4 <sup>th</sup> loan out of a series of four DPLs) there is no additional scope for EE measures identifiable by the TTL.
<b>P118593 GZ: PRDP Support III - West Bank and Gaza</b>	0%	The PRDP DPG III will specifically support efforts to strengthen the fiscal position and increase government transparency and accountability.	This is a very specifically targeted operation. No additional need identified.

Project ID and Name	Percent Reported as EE <sup>17</sup>	Project Description	Identified scope for additional EE incorporation OR Reasons for not having considered these options
<b>P118925 Afghanistan SDNRP II - Afghanistan</b>	0%	The original project seeks to finance a security services contract to enable implementation of key project activities pertaining to the establishment of a mining cadastre and training of staff of the Afghanistan Geological Survey for mapping the country's mineral resources. The additional financing project paper is provided to assist task teams in identifying, appraising, processing, and supervising additional financing projects.	Both the original project and the additional financing focus on the mining sector; no energy related interventions.
<b>P118935 Cambodia Rural Electrification Project - Cambodia</b>	0%	The proposed project development objectives are to (i) increase access of grid-supplied electricity to rural villages and households; and (ii) strengthen EDC's capacity in rural electrification. The project will complement the existing Bank-supported energy portfolio addressing the high costs of electricity and low access rate in Cambodia. Achievements will be measured by: (a) the number of households and villages with new connections by EDC due to the project support; (b) number of EDC's provincial offices using Financial Accounting and Utility Management Information System (FAUMIS); and (c) number of EDC staff trained in rural electrification planning. Rural electrification consists of MV and LV network extension and in-house wiring.	No additional EE opportunity identified.
<b>P119236 Rural Access &amp; RE Development Nigeria</b>	0%	The proposed \$300 million project would comprise three sub-components: (a) independent mini-grid development for remote areas with concentrated load, with supplies to rural and peri-urban households; (b) standalone renewable energy systems for remote areas with scattered small loads; and (c) technical assistance and capacity-building of Federal, State and Local government, community associations and NGOs in operating the assets on sound technical and commercial basis.	The Project was focused on renewable energy. No additional EE opportunity identified.

Project ID and Name	Percent Reported as EE <sup>17</sup>	Project Description	Identified scope for additional EE incorporation OR Reasons for not having considered these options
<b>P119654 GEF Green Truck Demonstration - China</b>	0%	<p>The objective of the project is to demonstrate the local and global benefits of the application of energy efficiency technologies in the road freight transport sector in Guangdong Province. The project is consist of four major components:</p> <ol style="list-style-type: none"> <li>1) Truck technologies;</li> <li>2) Freight logistics management;</li> <li>3) Institutional development and capacity building; and</li> <li>4) Project management.</li> </ol> <p>Key outcome indicators include: (a) improvement in fuel economy; (b) reduction in operating cost of truck fleets; (c) total amount of CO2 emissions reduction; and (d) identification of critical regulatory barriers in developing and deploying energy efficiency technologies in the road transport sector in Guangdong province.</p>	Although not reported (even partially) as an EE project, the Project already included EE. No additional opportunity identified.
<b>P119737 Electricity Sector Dev Project - Uganda</b>	0%	The project will finance the replacement and refurbishment of a number of failing transmission lines, and construction of new lines, which may lead to future trade with Tanzania and Rwanda.	Although not reported (even partially) as an EE project, by definition, the project already includes EE. There is no scope for additional EE measures in the proposed project, as the implementing agency does not have a role to play in EE.
<b>P119893 Electricity Access (Rural) Expansion III - Ethiopia</b>	0%	Project still under development; no PCN was available in the Business Warehouse during the evaluation period.	Project still under development; no PCN was available during evaluation period.

<b>Project ID and Name</b>	<b>Percent Reported as EE<sup>17</sup></b>	<b>Project Description</b>	<b>Identified scope for additional EE incorporation OR Reasons for not having considered these options</b>
<b>P119939 Talimarjan Transmission Project - Uzbekistan</b>	0%	The project development objective is “to improve the electricity supply reliability in South-Western Uzbekistan and to enhance the region’s potential for industrial and commercial development”. The government is focusing on energy efficiency for both the supply chain and the demand side. On the demand side, the Cabinet of Ministers has issued regulations for the power intensive industries to reduce energy consumption by 20% by 2020. On the supply side, the government is progressively adding more energy efficient Combined Cycle Gas Turbines (CCGT) to replace the existing single cycle gas based power generation projects.	Although not reported (even partially) as an EE project, by definition, this project is already focused on EE. No additional opportunity identified.
<b>P120207 PRG for IPP at Obite OML 58 - Nigeria</b>	0%	Project still under development; no PCN was available during evaluation period.	Project still under development; no PCN was available during evaluation period.
<b>P120248 AZITO Phase 3 – Cote d’Ivoire</b>	0%	Project still under development; no PCN was available during evaluation period.	Project still under development; no PCN was available during evaluation period.

Project ID and Name	Percent Reported as EE <sup>17</sup>	Project Description	Identified scope for additional EE incorporation OR Reasons for not having considered these options
<b>P120534 EMGRG III DPO IV (FY11) - CAR</b>	0%	The Third Economic Management and Governance Reform Grant (EMGRG III) support the implementation of the government's poverty reduction strategy as set out in the PRSP. It provides fiscal space through the Crisis Response Window (CRW) to complement the government's efforts to protect its public expenditure program in priority sectors, including education, health, agriculture, social welfare and infrastructure, and limit the poverty impact of the global economic crisis. The EMGRG III reform program aims to improve transparency and efficiency in the management of public resources and promote private sector development through: (i) improved public finance management; (ii) a more enabling environment to stimulate economic activity and improve governance in the forestry, mining, and petroleum sectors; and (iii) a reduction in the cost of doing business.	Tangential energy connection; the project has no opportunity to incorporate EE in to project design.

Project ID and Name	Percent Reported as EE <sup>17</sup>	Project Description	Identified scope for additional EE incorporation OR Reasons for not having considered these options
<b>P120589 Natural Gas Efficiency Project Pakistan</b>	0%	<p>The proposed objectives of the project are to: i) Increase the medium- and longer-term production of domestic natural gas by enhancing government policy, regulatory framework and incentive structure for domestic gas production and; ii) Increase the availability and affordability of electricity by improving access to natural gas fuel for power generation through gas sector efficiency enhancements. Fulfillment of these objectives aims to reduce the cost of Pakistan's energy supply, positively impact energy security, and shift consumption to a more environmentally benign fuel than its alternative.</p> <p>The project is looking to improve the energy efficiency of the natural gas sector by reducing residential consumers' gas consumption through pilot projects to replace old gas appliances (space heating and/or hot water) that have low efficiency (less than 30 percent) with modern, efficient appliances (efficiency 80 percent +). The project also expects to replace old pipeline systems, metering and control systems to reduce the amount of Unaccounted-for Gas. However, according to the TTL this project will be only be related to the selected counterparts (two gas companies). Since a large portion of the electricity generation portfolio in Pakistan is accounted for by natural gas, EE applications in the power sector (consumer and industry) can also be explored under the scope of the project.</p>	<p>Although not reported (even partially) as an EE project, this is an EE project for the natural gas sector. The team was in the preliminary stages of project development (according to the PCN) and sought guidance for the formulation of an energy efficiency and conservation component of the project (beyond reducing Unaccounted-for Gas losses).</p> <p>TTL open to EE ideas for the project.</p>

Project ID and Name	Percent Reported as EE <sup>17</sup>	Project Description	Identified scope for additional EE incorporation OR Reasons for not having considered these options
<b>P120637 Plantar Green PIG Iron Project - Brazil</b>	0%	The development objective of the Plantar Green Pig Iron Project is to generate high-quality Greenhouse Gas (GHG) emission reductions in the three stages of renewable charcoal production – as an alternative to coal coke. The specific transaction subject of this CFAM is the purchase of additional Certified Emission Reductions, demonstrating a financial model that could be replicated in the Brazilian market.	Although not reported (even partially) as an EE project, this project has EE elements. No additional EE opportunity identified.
<b>P120660 Liberia Electricity System Enhancement</b>	0%	The project will be composed of two components: (i) support to enhance delivery of distribution services, including for low-income households; and (ii) enhancing temporary power generation. The project will be financed from US\$5 million of IDA resources and US\$10 million of GPOBA resources Under the first component expansion and enhancement of the distribution networks of LEC in Monrovia will be financed. Financing would be provided for equipment including transformers, power lines, equipment for household connections, etc. The IDA financing is earmarked for financing of distribution network expansion, including financing towards substations and distribution lines. Under the second component, 10 MW of power rental plant. The 10 MW rental power plant will be installed on Bushrod Island, and is expected to be operational by December 2010.	Follow up was made to discuss potential opportunities for EE.

Project ID and Name	Percent Reported as EE <sup>17</sup>	Project Description	Identified scope for additional EE incorporation OR Reasons for not having considered these options
<b>P120764 BMA Urban Transformation Project - Thailand</b>	0%	<p>The proposed CTF funded project's development objective is to reduce GHG emissions through increased use of more energy efficient public transportation, and deployment of energy saving measures in Bangkok Metropolitan Administration (BMA) -managed facilities. Achievement of the PDO will be evidenced by: (i) total tCO<sub>2</sub>e avoided based on modal shift to Bus Rapid Transit (BRT) system; (ii) percentage reduction in energy consumption by the BMA; and (iii) adoption of urban transport and energy efficiency policies and programs with respect to Bangkok's climate change agenda.</p> <p>The proposed project consists of the following components: Bus Rapid Transit Network Modal Shift to BRT System; Promotion of Low Emission Bus Technologies; Improving Building Energy Efficiency; Capacity Development</p>	Although not reported (even partially) as an EE project, this is an EE project for transport and building sectors. No additional EE scope was identified.
<b>P120765 Advanced Clean Energy Investment CTF - Thailand</b>	5%	<p>The key project development objectives are to increase the amount of power generation based on renewable energy in Thailand, improve energy efficiency in street lighting on public highways, and thereby help reduce greenhouse gas emission. Result indicators: (i) the installed capacity of renewable energy (MW); (ii) energy savings (kWh) and peak load (MW) reduction; and (iii) GHG emission reduction (tons CO<sub>2</sub>). The project consists of two RE components and one EE component.</p>	A large-scale EE component is already included in the project, but only 5% reported for EE. No additional EE opportunity was identified.

Project ID and Name	Percent Reported as EE <sup>17</sup>	Project Description	Identified scope for additional EE incorporation OR Reasons for not having considered these options
<b>P120825 Mining Technical Assistance Project - Malawi</b>	0%	<p>The Project's Development Objective is to improve governance of the mining sector and its linkages to the local economy. The project will contribute to a governance level goal, stretching beyond the timeline of this project implementation, of ensuring sustainable development of mineral resources and the contribution of the mining sector to poverty alleviation through the generation of revenues and integration of the mining sector into broader economic development and planning. The indicators that the PDO is achieved are:</p> <ul style="list-style-type: none"> <li>(i) Mining sector growth with strong local economic linkages (measured by number of mineral development agreements entered into that include adequate contributions by mining projects to local economic development)</li> <li>(ii) An efficient and transparent framework for managing mineral rights and operations (measured by adoption and consistent application of mining cadastre system)</li> <li>(iii) Generation of mineral revenues and their transparent management (measured by collection and transparency of revenues from operations started prior and during the project using mechanisms adopted under the project)</li> <li>(iv) Robust environmental and social safeguards (measured by adoption of adequate sector specific environmental and social regulations and application of guidelines that will be developed under the project)</li> </ul>	Not an energy project.
<b>P121003 Chiller Energy Project - Indonesia</b>	50%	The project seeks to replicate the India and Philippine Chiller Efficiency programs that phased out energy-intensive coolers and chillers and replaced them with less energy intensive coolers. This particular project focuses on whole-building air conditioners and coolers.	This is already an EE project; no additional scope for EE.

Project ID and Name	Percent Reported as EE <sup>17</sup>	Project Description	Identified scope for additional EE incorporation OR Reasons for not having considered these options
<b>P121298 Afghanistan Rural Solar Electrification</b>	0%	The development objective of the project is to support the Government in advancing its goal of increasing electricity access in rural Afghanistan. Specifically, the proposed project will finance the provision of solar power products in selected provinces, and provide related technical assistance and capacity building for implementation support to enable the supply and delivery chains, and their efficient and effective functioning in support of project objectives.	This is a renewable energy project. The project is on hold during the time of evaluation.
<b>P121325 Add Fin for Zambia IAES - Zambia</b>	0%	The Additional Financing will be a credit of SDR 13.6 million of which SDR 6.8 million will be from the Crisis Response Window (CRW) resources. The total amount of the parent project is SDR 20.1 million. The CRW portion of the Additional Financing will be used to mitigate the imminent risks of failure at two key bulb supply points which could interrupt electricity supply to major parts of Lusaka and Livingstone. The balance of IDA resources will be used to provide electricity access to about 30,000 low-income households in peri-urban and rural areas.	Due to the additional financing character of the project, no scope for additional EE measures.
<b>P121364 Energy Efficiency and Biomass Project - Tunisia</b>	50%	The project is intended to support the GoT in its efforts to manage energy consumption and reduce carbon emissions, while developing biomass potential as an alternative to fossil fuels in Tunisia. The proposed project contributes to: (i) promotion of EE/cogeneration through facilitation to disbursement of existing WB EE/cogeneration credit line to commercial banks, and (ii) development of biomass potential with implementation of a pilot project and capacity building activities through technical assistance, direct investment funding and capacity building.	Since the project is tailored towards EE, no additional scope for EE was identified.

Project ID and Name	Percent Reported as EE <sup>17</sup>	Project Description	Identified scope for additional EE incorporation OR Reasons for not having considered these options
<b>P121579 Gas Seep Harvesting Add Fin Timor l'Este</b>	0%	The development objective of this project is demonstration of the technical and economic viability of harvesting gas seeps to produce <i>efficient</i> , reliable, and affordable power for isolated rural communities in south eastern part of Timor-Leste, while at the same time reducing GHG emissions. The project, two components: Component A: A demonstration project in Aliambata to demonstrate the technical feasibility and economic viability of gas seep for power generation in Timor-Leste. Component B: National gas seep survey study and gas sampling and testing program	Due to the additional financing character of the project there was no scope for new components. The project however includes EE. No additional EE opportunity identified.
<b>P121740 GIS/AAU Trade Ukraine</b>	0%	Ukraine Umbrella Carbon Facility Green Investment Scheme Assigned Amount Unit Trading	No additional EE opportunity identified.
<b>P121800 MEDEC Low-Carbon DPL Mexico</b>	20%	The project seeks to strengthen the environmental sustainability of development in Mexico by lowering the carbon footprint of development, and will thus support the Government of Mexico in continuing to pursue its proactive policies and programs aimed at addressing climate change through greenhouse gas (GHG) mitigation across a number of sectors. The four major areas of focus are: energy, transport, urban and LULUCF, and seeks to reduce the emissions of each of these sectors.	This project already included EE. No additional EE opportunity identified.

Project ID and Name	Percent Reported as EE <sup>17</sup>	Project Description	Identified scope for additional EE incorporation OR Reasons for not having considered these options
<b>P121812</b> <b>DPL PRSC VI</b> <b>Cape Verde</b>	0%	<p>The proposed operation will cover five policy areas: (i) good governance; (ii) human capital enhancement; (iii) competitiveness; (iv) infrastructure; and, (v) social cohesion. The objective of this operation is to support the policy reforms and institutional development necessary to foster sustained economic growth. These reforms cover a range of policy areas, from enhancements in the efficiency of government operations, to improvements in the country's economic competitiveness and the easing of infrastructure constraints in key sectors.</p> <p>The objective of the energy section of the policy loan is to guarantee a reliable, efficient and increased supply of energy. These objectives are to be met by restoring financial viability of the electricity sector through the institutional reform of ELECTRA (public utility), increasing generation capacity including new investments in renewable energy and establishing a new regulatory framework for energy tariff adjustment.</p>	<p>Although not reported (even partially) as an EE project, there are indirect and direct EE elements in the project. No additional EE opportunity identified.</p>

Project ID and Name	Percent Reported as EE <sup>17</sup>	Project Description	Identified scope for additional EE incorporation OR Reasons for not having considered these options
<b>P121877 Energy Dev Policy Operation Tonga</b>	0%	<p>GoT and Development Partners with the coordination of the World Bank, embarked on a process to undertake a sector-wide review and develop an approach in order to improve the performance of the energy sector and to mitigate the risks. The resulting document entitled the “Tonga Energy Road Map 2010-2020: Ten year Road Map to reduce Tonga’s vulnerability to oil price shocks and achieve an increase in quality access to modern energy services in an environmentally sustainable manner” (TERM) addresses improvements in the petroleum supply chain and consideration of price hedging instruments, increased efficiency both in electric supply and use, development of grid-connected domestic renewable energy resources, improved access to quality electricity services in remote areas, reduced environmental impacts both locally and globally, enhanced energy security, and overall sector financial viability. The scope includes policy, legal, regulatory and institutional aspects of the sector as well as investment. As technologies, costs, demand for electricity and sources of financing change over time, it is envisioned that the TERM will be periodically updated to take these factors into account. The proposed budget support will allow the government the fiscal space to continue implementing key energy sector reforms that are fundamental to securing medium-term economic growth and stability.</p>	<p>Although not reported (even partially) as an EE project, there are EE measures reflected in Tonga Energy Road Map; no additional EE opportunity identified.</p>

Project ID and Name	Percent Reported as EE <sup>17</sup>	Project Description	Identified scope for additional EE incorporation OR Reasons for not having considered these options
<b>P122028</b> <b>Ouarzazate CSP</b> <b>Morocco</b>	0%	The proposed project aims at increasing the penetration of renewable energy in power generation in Morocco and reducing energy import dependency. The project will also contribute to the global and regional objectives of mitigating adverse impacts of climate change through acceleration of global deployment of CSP, meeting EU's renewable energy objectives and creating the Mediterranean regional electricity market. Result indicators: increased share of RE in total power generation, increased electricity production based on national resources and reduction of local pollutant and CO2 emissions through displacement of oil and coal. Global indicators: acceleration of global deployment of CSP (MW installed worldwide) and exports of CSP based electricity from MENA to EU. The project will support a PPP between MASEN and a competitively selected private partner (s) to develop 125-250 MW of CSP.	This is a renewable energy project. No additional EE opportunity identified
<b>P122131</b> <b>LPTAP Add Fin 2</b> <b>- Kosovo</b>	0%	Project will help prepare Kosovo develop a guarantee for a future thermal power plant, and carry out a greenhouse gas inventory on a sector-by-sector basis and help develop low carbon growth paths.	This project will help identify future EE opportunities for financing in Kosovo. But this was not reported (even partially) as an EE project.
<b>P122139</b> <b>Hot-Spots</b> <b>Cleanup Project</b> <b>Montenegro</b>	0%	Project still under development; no PCN was available during evaluation period.	Project still under development; no PCN was available during evaluation period. TTL indicated that no additional EE support was needed.
<b>P122153</b> <b>Mining</b> <b>Sector TA</b> <b>Cameroon</b>	0%	Project still under development; no PCN was available during evaluation period.	TTL followed up post-evaluation period to identify EE opportunities.
<b>P122320</b> <b>Ulaanbaatar</b> <b>Clean Air Project</b> <b>Mongolia</b>	0%	No documented information was available in the Business Warehouse.	TTL did not respond to multiple requests for information.

<b>Project ID and Name</b>	<b>Percent Reported as EE<sup>17</sup></b>	<b>Project Description</b>	<b>Identified scope for additional EE incorporation OR Reasons for not having considered these options</b>
<b>P122329 ESKOM Renewables Support Project RSA</b>	0%	The project is focused on Clean Technology Fund support for wind and concentrating solar power projects in South Africa.	The project is focused on renewable energy. No scope for EE was identified.
<b>P122414 Fiscal Adjustment &amp; PSD DPG – Yemen</b>	0%	The proposed operation is to mitigate the impact of the current fiscal crisis in Yemen and to support the Government's medium-term economic reform program, thereby helping the country improve fiscal sustainability and set the conditions for enhancing growth in the non-hydrocarbon part of the economy. The proposed program pillars are: (i) regaining fiscal sustainability, (ii) improving public financial management and governance; (iii) generating private sector growth and employment; and (iv) improving the efficiency and equity of the social protection system. The government seeks to reduce energy subsidies to prevent becoming a net-importer of petroleum products.	Although not reported (even partially) as an EE project, the reduction of energy subsidies through sector reform may lead to higher uptake of EE. No additional specific EE opportunity was identified.
<b>P122671 Partial Risk Guarantees for IPPs - Kenya</b>	0%	Project still under development; no PCN was available in the Business Warehouse during evaluation period.	TTL indicated no possibility or need for EE measures.
<b>P122803 PRSC 7 Benin</b>	0%	Project still under development; no PCN was available in the Business Warehouse during the evaluation period.	TTL indicated design of project did not leave scope for EE.
<b>P122807 DPL 1 - Guinea</b>	0%	Project is a mineral mining intervention and has no energy component.	No scope for EE identified.
<b>P122828 Sustain Management of Mineral Resources Nigeria</b>	0%	No documented information was available in the Business Warehouse during the evaluation.	TTL did not respond to multiple requests for information.

<b>Project ID and Name</b>	<b>Percent Reported as EE<sup>17</sup></b>	<b>Project Description</b>	<b>Identified scope for additional EE incorporation OR Reasons for not having considered these options</b>
<b>P122854 PRSC 4 Malawi</b>	0%	The Policy Matrix lists the rollout of a CFL - EE light bulbs program as one of the priority actions of the PRSC4.	Although not reported (even partially) as an EE project, this is a purely EE project. No additional scope for EE was identified.
<b>P123044 Emergency Recovery Operation Kyrgyz Rep</b>	0%	The development objectives of this project are (a) to strengthen the prospects for macroeconomic stability and the Government's fiscal resilience to meet the priority needs of its emergency recovery and reconstruction program and (b) to restore and ensure continuous provision of the basic energy (power/heat/gas) services with a focus on the Osh and Jalalabad regions so as to support economic output and provide adequate heating to population during the winter. The project includes two components :(i) financing the purchase of essential goods and commodities to support high priority expenditures needed for the emergency program, and (ii) investments to repair and rehabilitate damaged energy infrastructure/networks to restore and maintain energy (electricity and heating) services and essential purchases of fuel for thermal power plants and district heating systems	Although not reported (even partially) as an EE project, there are EE elements in this project. However, no additional EE opportunity identified.
<b>P123239 Energy Efficiency Fin III China</b>	90%	No documented information was available in the Business Warehouse.	The project is focused on EE, by design.

Project ID and Name	Percent Reported as EE <sup>17</sup>	Project Description	Identified scope for additional EE incorporation OR Reasons for not having considered these options
<b>P117270 Poverty Reduction Support Credit 4 - Mali</b>	0%	The project covers a relatively broad array of topics with the planned restructuring of the state owned electricity provider EDM and the reform of the tariff and subsidy framework the only ones relating to the broader energy practice. However both measures were dropped as prior action for PRSC-4, but revised and included as trigger for PRSC-5. It is further planned to create an asset holding company and an operating company for the electricity sector in 2011 and to keep a single commercialization company for billing and debt recovering. The reform of the tariff and subsidy framework aims to align tariffs with production costs, notably costs associated with oil imports, while protecting lower income consumers. Tariffs will be revised periodically, using a model formulated for that purpose.	Tariff adjustments are expected to result in higher uptake of EEE. No additional EE opportunity identified.
<b>P113596 “China: Guangxi Yujiang Laokou Navigation and Hydropower Project”</b>	0%	The Guangxi Laokou is a multi-purpose project with navigation, hydropower and flood protection objectives, rather than a pure energy project in normal sense. Navigation is the first priority of the project, which explains why this project is being handled by the transport team. The development objective of the proposed Project is to upgrade the navigation standard, increase flood control capacity, and generate clean and renewable energy by construction of the Laokou Navigation and Hydropower Complex and other waterway channel improvement works on the Yujiang River, in support of national waterway development plans and local economic development and flood protection plans.	This is a renewable energy project. No additional EE opportunity identified.

Project ID and Name	Percent Reported as EE <sup>17</sup>	Project Description	Identified scope for additional EE incorporation OR Reasons for not having considered these options
<b>P120540 - SEIER Additional Financing</b>		The objective of the project is to (i) enhance electricity system efficiency in Vietnam; (ii) provide electric power in selected rural areas of Vietnam; and (iii) sustain reform and institutional development of Vietnam's energy sector. In addition, it has a global objective to contribute to reduce greenhouse gas emissions by promoting the use of electricity production using renewable resources.	No additional EE opportunity identified.
<b>P117282 - Togo: Third Economic Recovery and Governance Grant</b>	10%	The main objective of the ERGG-3 is to support government-owned reforms to improve governance, transparency and efficiency in public financial management as well as advance structural reforms aimed at strengthening governance and transparency in the key sectors of the economy (phosphates, cotton and energy). The operation would provide financial support to promote the recovery of the economy after multiple external and domestic shocks and whose annual debt service to IDA will remain considerable until attainment of the HIPC completion point.	Togo has high dependence on imported electricity and serious power outages. This operation has been identified as a comprehensive approach through which structural deficiencies and management problems would be mitigated. With heavy emphasis on rational tariffs, it could be envisioned that there is potential for EE.
<b>P112551 - ENERGIZING THE PACIFIC ISLAND COUNTRIES</b>	0%	Support a strategic approach to development of the electricity sectors in Pacific Island Countries (PICs), including improved Development Partner coordination, with the goal that electricity supply supports the economic and social development agenda. The program will focus on sector framework, structure, institutional strengthening, least cost planning and investment to increase both on and off grid electricity supply and access. Key elements include (a) a consistent framework encompassing both urban and rural electrification strategies, (b) good coordination between rural electrification and rural development strategies, where the latter exist, and (c) consideration of renewable energy and energy efficiency options for both on and off-grid supply as an integral part of planning for supply and access expansion.	No additional EE opportunity identified.

Project ID and Name	Percent Reported as EE <sup>17</sup>	Project Description	Identified scope for additional EE incorporation OR Reasons for not having considered these options
<b>P120874 – DRC - PS Dev Competiveness Add Fin II (Congo, Democratic Republic)</b>		<p>Objective and scope of the project. The PSDCP’s development objective is to “support the Borrower’s policy of the promotion of private-sector led growth through: (a) improving the investment climate; (b) supporting parastatal reform in the telecommunications, energy, finance, transport, and mining sectors; and (c) improving mining competitiveness in the Katanga region of the Borrower. The activities financed under the PSDCP focus on two components: improving the investment climate (including financial intermediation); public enterprise reform (including divestiture; and, support to resolving the social cost of reforms).</p>	<p>Not an energy project.</p>