

## ESMAP PROJECT CONCEPT NOTE

May 12, 2006

**PROJECT TITLE:** Building Up on Energy Efficiency Institutional Best Practices

**REGION:** Global

**ESMAP STRATEGIC AREAS:** Energy Security, Energy Efficiency

### PROJECT CONTEXT:

Efficient production, delivery and use of energy will enhance energy security, support economic growth and poverty reduction and help countries, in the near term, to shift to a low-carbon energy path. The International Energy Agency has estimated that improvements in the efficiency of energy end use in middle-income and developing countries could account for over 60% of the reductions in global greenhouse gas emissions over the next 20 years. Most developing countries have high untapped potential for energy efficiency improvements across various sectors as these countries face barriers to energy efficiency market transformation.

Different markets use different types of institutional frameworks to address barriers to energy efficiency development. Dedicated energy efficiency institutions – either in the government or in the private sector domain or somewhere in between - can help move energy efficiency markets at an accelerated pace in order for countries to achieve widespread scale up of energy efficiency investments. The focus of such successful institutions is on creating an enabling business environment by linking technical capacity development to financial markets.

The World Bank Group (WBG) has been active in promoting energy efficiency since the early 1990s. At the Bonn International Conference for Renewable Energies in June 2004, the WBG renewed its commitment to energy efficiency. As a follow up of the Gleneagles (July 2005) summit, the WBG is involved in the development of an investment framework to scale-up clean energy investments, which would include a key emphasis on promoting energy efficiency investments on both the supply and demand side. The development of an Energy Efficiency Toolkit (EEToolkit) has also been initiated. The EEToolkit will provide a suite of tools to assist WBG staff and country counterparts to help prepare projects and programs that is expected to lead to scaling up the energy efficiency investments across various sectors. The results from this proposed activity on “**Building Up on Energy Efficiency Institutional Best Practices**” would also be used as one of the building blocks for the preparation of the Institutional Module of the proposed EEToolkit.

### PROJECT RATIONALE:

Although energy efficiency programs and projects potentially offer high returns, past experience of the WBG and other bilateral and multilateral organizations have demonstrated that the achievement of intended energy efficiency outcomes is not easy. Energy efficiency market transformation, particularly on the demand-side, faces several technical, financial, economic, and institutional barriers, in most middle-income countries with high untapped potential for energy efficiency improvements across sectors. The following institutional barriers are there in most developing countries:

- Missing or incomplete markets, in particular markets for risk or for “contingent claims”;
- Political and economic uncertainty;
- Weak contracting institutions (or legal systems) resulting in insecure contracts with low certainty of equitable enforcement;

- Policy distortions and/or changes in relative prices of energy.

Some of these barriers to implementation of demand-side energy efficiency investments prevail even in situations where appropriate legislative and regulatory frameworks have been established.

Experience from many industrialized countries with successful track record in their energy efficiency sectors shows a commonality in terms of a robust, multi-dimensional institutional framework that exists in those countries. These energy efficiency institutions range from government agencies to parastatals to non-governmental autonomous bodies to private sector entities. In case of government bodies, these have been set up, as required appropriately, at both federal and state levels. Through their multiple roles, which range from simple advocacy to complex regulatory roles, these dedicated energy efficiency institutions help facilitate the energy efficiency markets to capture their fullest potential. More specifically, these institutions conduct one or many of the following functions: applied research, help build awareness, disseminate information to stakeholders, provide training and resources, implement programs, manage energy efficiency funds, prepare and implement regulation, and/or conduct evaluation. The developed countries which have had higher levels of success in capturing the energy efficiency potential (such as, Japan, Germany, Korea, etc.) and many developing countries (like Mexico, India, Thailand, etc.) have set up dedicated energy efficiency institutions. While in some cases these institutions were established almost as a necessary pre-requisite for their energy efficiency development roadmap with heavy regulatory functions, in other cases, the role has been light-handed involving only softer dimensions such as research support, information dissemination, etc.

Addressing institutional barriers is one of the keys to the effective delivery of energy efficiency technologies and services. The countries which have achieved higher levels of energy efficiency improvements may follow different institutional models but such institutions almost always play an effective role in providing an enabling environment to increase private sector participation and effectiveness of public-private partnerships. The experience shows that these institutions have to be designed appropriately with clearly defined organizational structures, and rules, roles and responsibilities. These experiences provide valuable models for developing countries which are in the process of establishing energy efficiency institutions. Clearly the development of institutional solutions must fit local institutional environments in order to be effective. For success, local institutional environments must be well understood and solutions usually need to be customized for those environments.

Several developing and middle-income countries have recently set up institutions (such as the Bureau of Energy Efficiency [BEE] in India in 2001) while many others are currently in the process of doing so (such as the sustainable energy development agency being proposed currently in Sri Lanka and the National Energy Efficiency Agency in South Africa).

#### **PROJECT OBJECTIVES:**

Dedicated energy efficiency institutions will contribute to fostering energy efficiency market development. Laying out the critical elements of the institutional regime in a developing country aiming to reduce energy intensities is of utmost importance. Establishing an appropriate institutional structure could go a long way in contributing to widespread commercialization of demand-side energy efficiency investments which could ultimately lead to reduction in energy intensities and greenhouse gas (GHG) emissions. This proposed ESMAP activity will draw upon the experience in this area to address the issue of institutional barriers in energy efficiency markets in developing countries.

The main objective of this project will be to identify, assess and develop suitable and practical institutional models for middle-income and other developing countries to effectively promote

investments in demand-side energy efficiency measures and equipment which would help reduce energy intensities and have environmental benefits. The underlying emphasis will be to determine institutional frameworks that could enable end-users, utilities and energy service providers, private sector, financial sector, and market intermediaries like energy service companies (ESCOs) to play an effective role in scaling up energy efficiency investments. The project will identify and examine the selected best practices in the energy efficiency institutional paradigm to develop and recommend institutional approaches for the energy efficiency market development path in selected middle-income and emerging economies.

In a broader context, the proposed activity will help promote energy efficiency in various sectors and across several regions. The results of this activity will also be used as inputs to one of the building blocks of the Institutional Module of the proposed EEToolkit. Finally, they would contribute to the work being led by the WBG for the preparation of the implementation plan under the investment framework for scaling-up clean energy investments.

#### **EXPECTED OUTCOME:**

- Increased awareness and knowledge dissemination about the institutional barriers and solutions to energy efficiency market development in selected countries;
- Availability of models that will contribute to more effective institutionalization of energy efficiency into the mainstream energy sectors and sub-sectors in selected developing countries;
- Recommendations for interventions related to energy efficiency institutional development in specific countries; and
- At a broader level, increased investments contributing to reduced energy intensity and GHG emissions.

#### **ACTIVITIES:**

An analytical assessment of institutions across wide range of industrialized, developing and emerging economies will be conducted to identify the specific best practices that could potentially be adapted to, and institutionalized in, developing countries that are in the process of or will be establishing similar energy efficiency institutions. An indicative list of different institutional practices having a variety of diverse structures and roles are provided in Annex – I. This list will be expanded as the project evolves.

The project implementation will be divided into three major tasks/deliverables:

- **Task 1: Assessment of energy efficiency institutional models and preparation of draft compendium of energy efficiency institutional best practices (June-August 2006):** This task will identify and categorize different institutional structures on the basis of various elements, such as ownership, role and responsibilities and the country characteristics/environment they have been operating in. Factors that led to the need (“why”) for setting up institutions, and once they were set up, the reasons (“what”) led to their successes or failures in respective regulatory, political, legal and energy sector frameworks, and their approaches (“how” they did it), in terms of scaling up energy efficiency investments and reducing national or sector-level energy intensities, will be systematically analyzed for these alternative institutional models.
- **Task 2: Organizing an international collaborative workshop on energy efficiency institutional best practices (September 2006):** A 2-day workshop will be organized in September 2006 (tentative) with participants from selected developing countries (interested in or in the process of establishing energy efficiency institutions) to review the preliminary assessment (from Task 1), and discuss the practical viability of different models for their

respective countries and in the context of their own political, legal, and regulatory environments. Expert speakers and resource persons will also be drawn from countries which have had successful experience with dedicated energy efficiency institutions. Feedback from the active contributions of the developing country participants at this workshop will be used to refine the draft compendium (from Task 1) and developing final recommendations.

- **Task 3: Finalization of the compendium of energy efficiency institutional best practices and next steps (November-December 2006):** This task will focus on finalization of the draft compendium which will describe and analyze the alternative institutional frameworks which have been successful in promoting and implementing energy efficiency, ranging broadly from multi-dimensional institutions to sector-specific institutions, from government to private sector organization, and in terms of the role, responsibilities and organizational structure. It will further illustrate these models in the context of their relevance to developing countries which are in the process of or planning to set up institutions.

#### **IMPLEMENTATION ARRANGEMENTS, PARTNERS AND STAKEHOLDERS:**

The main implementation partners will be drawn from countries which have had active, dedicated institutions that have played a role in successes in their respective energy efficiency sectors. It is expected that one of these institutions would assist in organizing/hosting the workshop. In addition, energy efficiency counterparts from the selected developing countries will be closely consulted with while assessing the needs and opportunities before and during the workshop, and in preparing the final version of the compendium. Additional collaboration opportunities may also be sought with other relevant regional institutions involved in this sector (such as NEDO (Japan), ASEAN Center for Energy (ASE) and UNESCAP - Energy program).

#### **IMPLEMENTATION PERIOD:**

June – December 2006

#### **PROJECT TEAM:**

- Ashok Sarkar, Senior Energy Specialist, EWDES - TTL;
- Tae Yong Jung, Senior Energy Economist, EWDES; and
- Consultants

**Annex – 1: Energy Efficiency Institutions (Illustrative List only)**

|           |  |
|-----------|--|
| China:    | Energy Research Institute, Beijing Energy Efficiency Center              |
| India:    | Bureau of Energy Efficiency, PCRA, State Energy Development Agencies     |
| Japan:    | Energy Conservation Center of Japan, NEDO                                |
| Korea:    | Korea Energy Management Corporation (KEMCO)                              |
| Mexico:   | Mexican National Commission for Energy Savings (CONAE)                   |
| Romania:  | Romanian Energy Conservation Agency                                      |
| Thailand: | Department of Alternative Energy Development and Efficiency (DEDE), EGAT |
| USA:      | Federal Energy Management Program, State Energy Agencies                 |