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Energy Efficiency Standards & Labeling Institutional Structure

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ENERGY EFFICIENCY STANDARDS & LABELING INSTITUTIONAL STRUCTURE BANGLADESH

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Executive Summary

A series of steps need to be taken in order to improve the energy efficiency of household appliances in Bangladesh through an appliance standards and labeling (S&L) program. A **Planning Phase** needs to be established during which decisions will be made regarding which appliances should be addressed in what order, which labeling approach should be selected, which standard-setting approach should be selected, whether the labels will be voluntary or mandatory, whether the standards will be voluntary or mandatory, and how the standards and labels will be implemented in a phased and coordinated manner.

Decisions also need to be made regarding matters during an **Implementation Phase** – exactly how will the right labels get on all the right appliances, how will fraud be prevented, how will appliances be inspected for compliance with the standards, what sort of public awareness campaign will be conducted, what sort of financing or financial incentives will be provided to help people pay for the more expensive appliances, and where will the financial resources come from to support all of the above? Finally, decisions will need to be made regarding what kind of ongoing **Monitoring and Independent Evaluation Phase** of the program will be undertaken.

The above program elements cannot be undertaken on a haphazard or ad hoc basis. One of the first necessary steps will involve the designation of an institution to steer the program through the design, implementation, and evaluation phases, and coordinate a range of stakeholders – government ministries, electric utilities, private businesses and trade associations, and NGOs – with a range of interests and views. The institution must be designated with sufficient authority to allow it to overcome institutional barriers and resolve differing views among the stakeholders; and it must operate with sufficient transparency so that stakeholders will respect its process and decisions even if they do not always agree with them. Finally, the institution will need legal authority to enforce the standards and labeling rules and to pursue penalties for violations. This authority could also be vested in a companion institution, but it is a necessary function for the successful operation of the S&L program.

Bangladesh already has a National Appliance S&L Steering Committee, which was established in 2002, and consists of a range of stakeholders, including electric utilities, business associations, the Bangladesh Standards and Testing Institution (BSTI) under the Ministry of Industries, and the Power Cell of the Ministry of Energy and Mineral Resources. The Steering Committee is providing direction for the country's appliance S&L effort, but as a part-time advisory body, its members do not have the time or capability to design and manage a full-scale appliance S&L program.

There is thus a need for the establishment of a new institution to manage and coordinate an S&L program. There are a number of possible institutional structures that could be adopted for the program. We recommend the establishment of an Appliance Efficiency Unit within the Ministry of Power, Energy, and Mineral Resources (MEMR). The Unit would be established within a newly established Energy Management, Conservation, and Renewable

Energy Division, which would address a range of other clean energy matters in addition to efficient appliances. Such a structure would allow the S&L program to be coordinated with the design, implementation, promotion, and financing of other energy-efficiency activities. The Appliance Efficiency Unit would receive direction from the S&L Steering Committee, and would report back to the Steering Committee on a regular basis, and also would work closely with BSTI and other Steering Committee member organizations on the design, implementation, and evaluation of the S&L program.

Section 1 Background

An energy-efficient appliance standards and labeling program can play a major role in easing Bangladesh's electric power problems. The country's electricity supply has not been able to meet demand and several regions are experiencing regular load shedding. The residential sector accounts for 41 percent of Bangladesh electricity consumption. Household appliances such as lamps, fans, rice cookers, refrigerators, and televisions add 500 to 600 MWs to evening peak. Refrigerators play significant roles in demand during off-peak hours. With new power generation facilities and associated transmission and distribution facilities representing major capital investments, energy efficiency has become increasingly attractive for energy, economic, and environmental reasons.

The establishment of a national program for energy-efficient appliance standards and labels in Bangladesh would be one component in a set of initiatives undertaken in Bangladesh to improve energy efficiency and develop renewable energy sources. Bangladesh has lagged behind other countries in the South Asia region in these efforts and has begun taking legislative and institutional steps, including the establishment of the appliance standards & labeling (S&L) program, to rectify the situation.

Bangladesh's National Energy Policy of 1996 already supports the establishment of actions to achieve energy-efficient appliance standards and labels. In 2002, USAID's South Asia Regional Initiative for Energy (SARI) initiated a program of support for the establishment of an appliance S&L program. The design and implementation of the program will necessitate the establishment of an implementing institution with full-time staff. This paper lays out a suggested institutional structure for the program. There is no perfect institutional structure for undertaking standards and labeling, so variations to the recommended structure may be viable.

Section 2 Status of Appliance Standards and Labeling

Some of the S&L institutional structure is already in place. The National Appliance Standards & Labeling Steering Committee, consisting of major stakeholders, was established in 2002 and is chaired by the Power Division within the Ministry of Energy and Mineral Resources (MEMR). The purpose of the Steering Committee is to provide guidance to the Government of Bangladesh on how to proceed with the establishment of an energy-efficiency standards and labeling program.

A concept paper was prepared outlining the potential for, and benefits of, energy-efficiency improvements through an appliance S&L program.

The Bangladesh Standards and Testing Institution (BSTI), under the Ministry of Industries, is just starting to become involved in energy efficiency. It has the responsibility for testing products and establishing safety and performance standards. BSTI is already is a member of the Steering Committee, and will play a major role in any energy-efficiency testing and standard-setting activities that MEMR and the Steering Committee decide should move forward.

Based on the recommendations of BSTI, the Ministry of Law is responsible for the adoption of standards for domestic products. The Ministry of Commerce, which oversees domestic and international trade, is responsible for the adoption of standards on imported products. Because most lamps, refrigerators, air-conditioners and other appliances in Bangladesh are imported, the involvement of the Ministry of Commerce in the S&L Program, including membership on the Steering Committee, will be key. It will also be key with regard to compliance issues. That is, if the S&L Program adopts prohibitions on the import and sale of inefficient products, support will be needed from the Ministry of Commerce for enforcement actions.

Section 3 Institutions Currently Involved in Energy Efficiency

Bangladesh has some experience with energy-efficiency institutions. The Energy Audit Cell, previously known as the Energy Monitoring and Conservation Center, was established in the early 1990s within the MEMR's Power Division and works on improving energy efficiency in the industrial sector. With funding from the World Bank, the Audit Cell conducted energy audits of industrial facilities and recommended energy efficiency improvements. By its own admission, the Audit Cell has had limited effectiveness. According to its staff, most of its audit recommendations, particularly those involving capital investment, have never been carried out and, though still residing within the Power Division, it has been reduced in stature.

Bangladesh's electric utilities promote energy efficiency on a limited basis, particularly in times of electricity shortages. They are expected to play a major role during the implementation of the S&L Program in terms of promoting energy-efficient appliances to their customers and possibly providing financing or financial incentives to customers to help them pay for the more energy-efficient appliances. Some of the utilities are members of the Steering Committee.

Some private appliance suppliers promote the energy-efficiency of their products. Both Energypac and Philips, assemblers and distributors of high-end compact fluorescent lamps, do this. Both companies also offer performance guarantees on their products and promote the guarantees as part of their marketing.

Establishing and implementing an appliance S&L program is typically a long process. To varying degrees, countries have experienced a range of barriers and problems. They are only "potential" barriers, so it is possible that Bangladesh will not encounter all of them. The main barriers Bangladesh is most likely to encounter include the following:

Lack of awareness – Consumers frequently are unaware of how much they can save through the purchase of energy-efficient appliances or are unaware of which products are the most energy-efficient. There is evidence that in Bangladesh there is some negative attitude toward what are supposedly energy-efficient products. People have bought inexpensive compact fluorescent lamps (CFL) because they thought the CFLs would save them money. But the inexpensive CFLS quickly burn out, thereby creating an impression all CFLs are no good.

Consumer disincentives -- The main disincentives for consumers to invest in labeled energy-efficient products are that electricity prices are too low or the consumers are involved in the theft or nonpayment of electricity. If consumers are not paying for electricity or are paying a very low price, they have no incentive to improve the efficiency of their electricity use by purchasing labeled appliances.

High purchase cost and lack of financing or financial incentives – All appliance labeling programs encounter a financial obstacle. Because energy-efficient products are often more expensive, many consumers need some financial assistance or incentives to help pay the extra amount. Even when consumers know that an energy-efficient appliance will save them money over time, they often will buy the inefficient model anyway because it costs less up-front. This will be a potentially greater problem in Bangladesh compared to other countries because term loans from financial institutions used to finance appliance purchases, are generally unavailable in the country.

Opposition or resistance from some of the manufacturers, assemblers, importers, distributors, and retailers of inefficient products -- Mandatory labels and standards can have an inherent adversarial aspect because they force manufacturers to take action that they might not otherwise take. Minimum energy-efficiency standards, for example, compel the appliance and equipment industry to design, manufacture, and market more efficient products than they might otherwise.

Indifference or lack of interest from the electric utilities – The experience of other countries is that utilities are often skeptical of S&L programs at first, and do not see themselves in any role other than supplying electricity. They should be interested in such programs because energy-efficiency improvements free up wasted electricity that can be supplied to other users. But it is often the case that utilities simply are not motivated to help people buy less of the product they are selling.

Poor coordination or disagreements among participating institutions – It is common that different ministries or other stakeholder institutions have different views of what should happen and who should do it. For example, the ministry in charge of regulating imports may think the energy-efficiency standards set by the standard-setting agency are too strict and are unfairly limiting imports; or one agency may disagree with another about which appliance should be the first to undergo testing and standard-setting.

In addition to the above common barriers, it is possible that Bangladesh may encounter some of the following barriers that some other countries have experienced:

Delays in completing appliance testing -- The time it takes to establish a testing protocol and complete the testing of all models of a given appliance is often underestimated. This is particularly the case for more complex appliances like refrigerators and air-conditioners. Add to that the need for the training of testing staff to ensure they have the capability to properly carry out the tests. Yet testing is the first step in the sequence of adopting and implementing an S&L program. Until there is reliable testing of energy performance, it will not be possible to start a labeling program or even to assess the benefit/cost implications of a national minimum energy-efficiency standards program.

Opposition from retail appliance stores – In some stores, the sales staff, which are paid on a commission basis, may believe that the labels on more expensive products hurt their volume sales of cheap inefficient models, thereby bringing down total sales and the amount of commissions they receive. The sales staff thus remove the labels before the models reach the showroom floor.

Fraud – There are a large range of fraudulent practices that can hamper the effectiveness of an S&L program. Inefficient products can get labeled as being energy-efficient. Counterfeit labels can be produced to place on inefficient products. It can be difficult to enforce against these activities, as these "fake" products often enter the country through a porous border.

These potential barriers are not insurmountable. But the response to them should be coordinated by an institutional structure that represents multiple stakeholders and that has the authority to identify and take steps to overcome the barriers.

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Section 5 Recommendation on Institutional Structure

The National Appliance Standards and Labeling Steering Committee is not intended to serve as the implementing agency for standards and labels. Its members serve on a voluntary and part-time basis, have other responsibilities, and have little time to focus on standards and labeling outside of steering committee meetings. In order to implement the steering committee's guidance, and in order to provide the committee with sound information on which to base its guidance, it will be necessary to establish a new standards and labeling body with full time staffing.

There are a number of possible institutional structures for addressing labeling and standards, and for addressing appliance efficiency more broadly. In some countries, such as the Czech Republic and Russia, autonomous non-governmental energy centers have been established to address a range of energy-efficiency matters, including appliance efficiency. In others, such as Pakistan, a government-established cell has the responsibility. Nepal considered (and later rejected) locating an energy-efficiency cell within a private trade association. All of these approaches have their pros and cons. In general, non-governmental energy centers have credibility and political independence but often lack the authority to implement programs, while government units have the authority to implement but often lack the political independence and credibility in the public eye. A cell located within a trade association would more readily achieve cooperation from private firms but would tend not to reflect the views and concerns of other stakeholders.

This is an oversimplification, of course, because responsibility for the implementation of an appliance labeling and standards program must be shared among a number of stakeholder institutions. In Bangladesh, these should include many of the stakeholders represented on the steering committee – in particular, MEMR's Power Division, BSTI, and for implementation purposes, the country's electric utilities – as well as trade associations, NGOs, other national government ministries, and provincial and local governments.

5.1 Recommendation #1: Establish A New Institution

A new institutional structure should be established, as illustrated in the Proposed Institutional Structure (Figure 5-1) below. One stakeholder institution should serve as the home base for a new appliance S&L body. Given the strong interest of the Power Division in pursuing appliance efficiency and energy efficiency generally, and given that it has authority under current law to implement appliance labeling and standards, ***We recommend that an Appliance Efficiency Unit be established under the Power Division of MEMR.*** It should have overall responsibility for the design, development, implementation, and monitoring of an appliance labeling program and for advising BSTI on which appliances should undergo a energy-efficiency standard-setting process. When fully operational, it should have three sections: a program design section, a program implementation section, and a program monitoring and evaluation section.

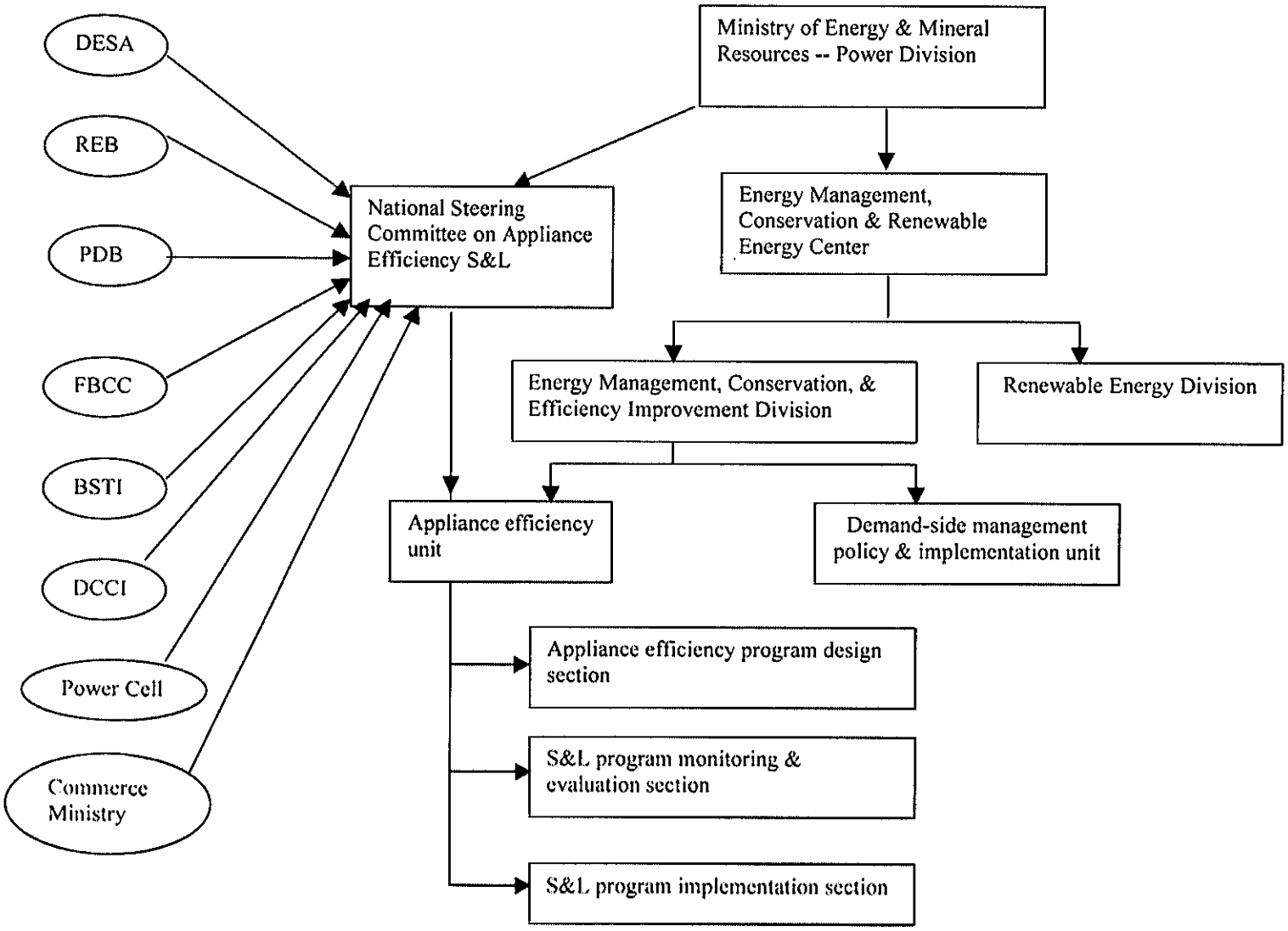

Figure 5.1 Proposed Institutional Structure

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As illustrated in the chart, the Appliance Efficiency Unit could eventually be one unit a larger Energy Management, Conservation, & Renewable Energy Center, which could address such matters as utility demand-side management, industrial energy efficiency, transport sector energy efficiency, and renewable energy sources. Appliance standards and labeling is an excellent place to start an energy-efficiency strategy, but ideally it would be one component of a larger strategy to improve energy efficiency in all sectors of the Bangladesh economy.

The chart shows that the stakeholders' formal point of entry into the S&L program is through the Steering Committee. However, this does not preclude the Appliance Efficiency Unit from interacting directly with the members of the Steering Committee or other stakeholders as it conducts its business. In fact, additional stakeholder involvement is specifically recommended (See Recommendation #3 below).

5.2 Recommendation #2: Find Temporary Home for Appliance Efficiency Function

The process for establishing a new governmental organization requires approval by the Ministry of Establishment followed by the Ministry of Finance. Because this process often takes a year or longer, the Appliance Efficiency Unit's function should be established on a temporary basis as a special project of the Power Division of the Ministry of Energy and Mineral Resources. Staff could be recruited from the Audit Cell, which has expressed interest in involvement in appliance standards and labeling, and have linkage to the director of the Power Cell. The Power Division should designate a temporary director and initiate a process for the formal establishment of the Appliance Efficiency Unit and the broader Energy Management, Conservation, & Renewable Energy Center.

5.3 Recommendation #3: Increase Stakeholder Involvement

The Steering Committee should be expanded to include other important stakeholders such as the additional government ministries (e.g. Ministry of Industries, Ministry of Science & Technology, Ministry of Finance, Planning Commission), consumer organizations, universities such as the Bangladesh University of Engineering & Technology, provincial and local governments, and additional representatives of the various appliances as well as the various portions of the supply chain, e.g. manufacturers, assemblers, importers, distributors, and retailers.

It will also be worthwhile to establish appliance-specific industry task forces within the Steering Committee, such as a Refrigerator Task Force, consisting of refrigerator importers, retailers, and others with an interest in standards and labels for refrigerators. The task forces should focus on the specific technical and institutional issues associated with their particular appliances, garner support from other members of their industry, and help move the S&L program forward for their appliances. The task forces should operate

at the pleasure of, and report to, the Steering Committee, with staff support provided by the Appliance Efficiency Unit.

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The Appliance Efficiency Unit would play both a coordinating and implementing role in the S&L Program. Although BSTI will conduct the testing and standard-setting activities, the Appliance Efficiency Unit would be the focal point for coordinating all energy-efficiency standards and labeling activities, from recommending which appliances should undergo a testing and standard-setting, process to researching how other countries have approached appliance efficiency standard-setting to and development of supportive legislative and regulatory recommendations. It also should provide staff support to the Steering Committee and serve as liaison to other energy organizations such as the Energy Committee of the Dhaka Chamber of Commerce and Industry (DCCI). It should also be the focal point for South Asia regional appliance S&L harmonization efforts.

The adoption of appliance efficiency standards and the labeling of appliances is the first phase of what needs to be a larger effort to foster sales of more energy-efficient appliances. In the second phase of the program, as the labeling of appliances begins, the Appliance Efficiency Unit would be responsible for coordinating and implementing public awareness campaigns and financing initiatives that will be necessary to increase the penetration of the labeled energy-efficient appliances in the Bangladesh market.

The Steering Committee will play an important role in the institutional structure, by providing guidance to the Appliance Efficiency Unit and providing political legitimacy and consensus as well. By representing the views of the major stakeholders in Bangladesh, it would help to minimize controversy and confrontation in the implementation of the S&L Program, particularly in matters relating to mandatory measures. Thus, there needs to be good communication between the Appliance Efficiency Unit and the Steering Committee, and the Appliance Efficiency Unit should keep the Steering Committee fully appraised of all ongoing S&L activities.

In the near-term, the Steering Committee and the Appliance Efficiency Unit need to be prepared to address the following main topics, which will be spelled out in greater detail in a forthcoming S&L Plan:

- Prioritization of appliances to undergo the S&L process (e.g. lamps & ballasts, followed by refrigerators and air-conditioners)

- Determination of what parts of the S&L program will be mandatory and which will be voluntary (e.g. mandatory labels and voluntary standards).

- Selection of a label type (e.g. informational, comparative, environmental, or endorsement).

- Determination of what legislation or regulations may be needed to support the S&L Program, including resolutions or proclamations by the national or provincial/local governments. For example, there may need to be clear regulatory authority to enforce

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the labeling scheme and to take action against products that may be falsely labeled. There may also be a need for legislation allowing a reduction in import duty on those products that meet a certain certified level of energy-efficiency (and performance).

The Steering Committee should consider holding public meetings to get input from a broad range of stakeholders in addition to these already represented on the Steering Committee.

Both the Appliance Efficiency Unit and the Steering Committee need to make every effort to keep the Steering Committee broadly representative of the major stakeholders and decision-makers in Bangladesh. To that end, a representative from the Ministry of Commerce should be added to Steering Committee. This is because BSTI can only adopt standards for domestic products (It is actually the Ministry of Law that adopts the standards based on the recommendation of BSTI). For the standards to apply to imported products, the Ministry of Commerce must approve. It appears that the Ministry of Law does not need to be a member of the Steering Committee, but it needs to be informed by the Appliance Efficiency Unit that an appliance standards and labeling program has been established and that energy-efficiency standards are forthcoming. Input from the Ministry of Law should be solicited and it should receive updates on the S&L program's progress.

The Steering Committee also need to maintain a linkage with DCCI's Energy Committee and perhaps other energy committees where they exist. Specifically, the Steering Committee, or at least one of the subcommittees, should include someone from the DCCI energy committee, and the Appliance Efficiency Unit should present updates to, and seek input from, the DCCI committee.

Section 7 Institutional Capacity of the Appliance Efficiency Unit

The Appliance Efficiency Unit needs to have the capability to oversee and steer a standards and labeling program through all the major stages:

- Program Design – selection of appliance types for participation in the S*L program, determination of labeling approach, determination of standard-setting approach, designing labels; coordination with BSTI on appliance testing and standard-setting;

- Program Implementation – issuing and arranging for application of labels; managing public awareness campaign; arranging for financing or financial incentives; monitoring implementation and compliance; conducting (or assisting with) enforcement actions (BSTI is under-staffed and not trained in the area of enforcing appliance efficiency);

- Evaluating the program's implementation and impacts; recommend and oversee program modifications and improvements.

Some of these activities will be undertaken by other institutions (e.g., BSTI will be responsible for appliance testing), but the Appliance Efficiency Unit will play a coordinating and managing role to ensure that all components of the program are moving forward.

The director of the Appliance Efficiency Unit would have a background in the energy sector and experience working with energy-oriented government agencies. He/she also needs to have an understanding of both the technical and policy matters involved in the testing, labeling, and standard-setting process. It would be useful if he/she also had experience working in the private sector, particularly in the manufacture, distribution, or marketing/sales of retail products within Bangladesh.

If the budget permits, the Appliance Efficiency Unit also could include three additional staff members under the director:

- A mechanical or electrical engineer to work on monitoring of labeled products' performance and support BSTI's development of energy-efficiency standards;

- A program manager with program design or management experience to work on developing and implementing the labeling program; and

- An attorney or policy analyst with a legal or legislative background to address legislative, regulatory, and legal matters – including compliance and enforcement issues -- and general S&L program development.

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