

Implementation Completion Report: ASA – “International Energy Efficiency Financing Facility (iEEFF) (P149925)”

I. Background

The concept on designing “International Energy Efficiency Financing Facility” (iEEFF)¹ was approved by the World Bank in May 2015 as part of the WBG’s “Low Carbon Livable Cities Initiatives” with the overarching goal of “assisting client countries to identify and design more effective policies and programs for promoting low carbon city development”.

Specifically, the proposed iEEFF (the Project) would be “a single-purpose facility” to finance the conversion of traditional urban street lighting technologies to more efficient LEDs. iEEFF would support the aggregation and financing of street lighting investments from multiple cities to issue large-scale, liquid, investment-grade bonds, thus enabling access to the lowest cost source of funding in domestic and international financial markets. The objective of the facility is to provide financing for participating cities/entities on terms as good or better than they could achieve on their own and enable them to access financing at scale for energy-efficiency installations and retrofits in the lighting, building, heating/cooling and transport sectors. Using savings from the avoided energy cost, retrofits can be paid for, and cities’ debt to iEEFF will be repaid with little or no additional use of cities’ limited budgetary resources, and cities can expect electricity costs for facilities to drop by 50% or more.

The basic modality of iEEFF was originally designed as follows. A detailed description is included in Annex I.

- iEEFF would be set up as a single A rating facility to issue bonds, targeting international capital market. The proceeds of the bonds will be used to make loans to a “portfolio of cities/borrowers that have credit rating ranging from A to BBB-”;
- The single A rating would be achieved through (i) the “average” of investment grade rating of a group of selected participating cities (e.g. city of Toronto with rating of double A mixed with Lima with rating of triple B); and (ii) some equity investment by investors in the Facility;
- iEEFF would be established at the instance of one or more shareholders of the World Bank as sponsors (but with no obligation to financially contribute to the proposed facility); the World Bank Treasury could serve as bond issuer and manage the financing of the facility.

The GEF in 2015 approved the **non-grant funding** of US\$1,200,000 to finance the development cost on the design of the facility. Once the facility becomes fully operational, **the project cost financed by GEF would be recovered from the facility after paying off all other costs associated with setting up the facility.**

II. Project Implementation

¹ Formally called Internationally Lighting Efficiency Facility (iEEFF)

1. Issues in the design of the original concept

The Bank team conducted consultations with financial and legal experts as well as interested cities (see Annex III) on the design of the facility. The feedback indicated challenges with the original design of the facility outlined in section I, which include:

- *Identifying a “portfolio” of eligible cities around the world as IEEFF borrowers.* An important basis for the original design was that the facility would be backed by a “pool” of cities with different investment grades to enable iEEFF to secure high investment grade rating with limited transaction cost. However, such assumption confronts the reality that many cities in the client countries (i) are not creditworthy or do not have any international rating; (ii) are not in a position to borrow even from the local market, let alone internationally. There is also a question on the business case of why cities – e.g. Toronto with double-A rating, would be willing to borrow more expensively through a single A facility if it could secure capital from the market leveraging its double A rating with lower cost of capital. Another problem with the design is that in order to maintain the single A rating of the facility, the composition of the “pool” must remain “stagnant”. For example, if a city in the pool drops out, the overall rating of the facility could be immediately affected -e.g. downgraded, as the rating of the facility relies on the carefully configured pool of cities. Identifying and maintaining the “portfolio” of the cities across different countries that meet the criteria for IEEFF proves extremely challenging if it is feasible at all.
- *Procedural and legal issues associated with the proposed facility.* The proposed IEEFF is in effect, a lending facility. Complex issues were raised such as capital requirements, operation of loan services and fiduciary and safeguard due diligence on the projects, and relationship with the WBG. The WB Treasury also expressed doubt on whether it would be in a position to service the facility for bond issuance if the IEEFF would be managed by a private company.
- *Potentially very high transaction costs.* The facility was designed to mobilize capital in the international market and the currency would be in USD or Euro. However, most borrowers use the local currency for financing their street lighting programs. Hedging currency risk would certainly pose additional risk and increase cost for the borrowers, which would defeat the original purpose of setting up the IEEFF

Based on the feedback, the team then adjusted the original design by working with individual countries through the street lighting portfolio organized by the local “aggregator” with the objective to issue local currency bonds at the local capital market. The approach was then tested in India.

2. Adjusted design for EESL in India

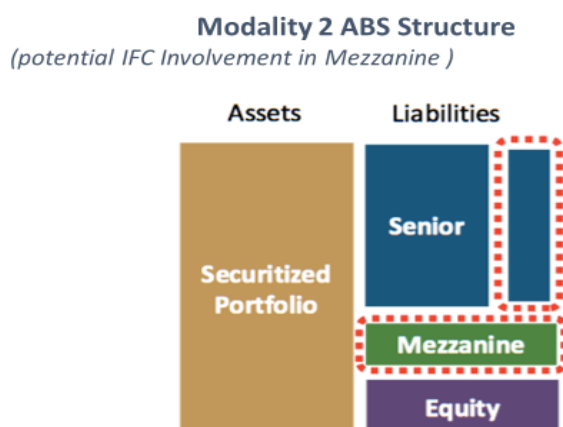
India’s Energy Efficiency Services Ltd (EESL), set up by the Ministry of Power, is the largest energy efficiency player in the Indian market and has an ambitious LED street lighting programs

with local municipal governments. The proposed modality of bundling EESL's LED light programs with municipal governments could help EESL expand street lighting program by tapping into capital markets to mobilize sustainable and low cost financing. In this modality, the EESL would issue investment grade local currency green asset-backed security (ABS) bonds, with credit enhancement, if necessary. The repayment of the bonds would be backed by a designated revenue stream generated from the contracts with municipal governments. A detailed description of the design is included in Annex I to the note.

In the engagement with EESL in 2016, the team carried out consultations with prospective investors, including a workshop on "Green Asset Backed Securities (ABS) for Energy Efficiency" (see Annex IV). A knowledge product on the modality of aggregating small energy efficiency loans in the US market was produced to facilitate the understanding of innovative financial products (the paper will be posted on the upcoming GPSC web)

IFC Involvement

In the design of the ABS bonds for EESL, the team had also engaged with IFC on structuring ABS, with the option that IFC would invest in the mezzanine tranche (see the structure below). The modality would work as follows: the portfolio (i.e. street lighting programs organized through EESL) would be financed by three segments: equity investment, mezzanine tranche, and bond issuance to investors; in the event of default, the sequence of liability would be in the order of equity investors, mezzanine and bond holders. The IFC's involvement through the mezzanine tranche would in effect provide de facto guarantee to the bond holders. The structuring could reduce the cost, for example, for credit enhancement.



While the discussion with EESL on the proposed modality is still ongoing, it also becomes clear that it may take much longer time for the EESL to move with ABS issuance than originally anticipated – in summer of 2017 due to the following reasons:

- **EESL debt:** EESL is in the process of borrowing from IBRD (US\$300million) and ADB (US\$200million) as well as existing loans from KFW and local commercial banks. It has also issued its own corporate bonds. Its debt-equity ratio may not be sustainable if EESL,

in addition, would also pursue the issuance of a ABS (without a large equity injection from EESL's parent company).

- **The potentially high cost of ABS:** EESL has recently successfully issued corporate bonds. Compared with corporate bonds, ABS has the advantage of ring-fencing liabilities but is potentially costlier with a higher transaction cost at least for the first issuance. The current bond market conditions in India do not make a strong business case for a new type of financial product such as ABS. Nevertheless, EESL agreed that in the long term ABS would be a viable modality to pursue as it provides more flexibility and isolates the bond liability from the company's overall balance sheet.
- **The perceived credit risk of the participating cities in India under ABS is significant** (although there are ways to mitigate the perceived risks). The overall rating of the proposed ABS green bonds will be largely determined by the assessment of the credit risk of the participating cities. The higher the perceived risk of the "pool" of cities, the more stringent requirement for credit enhancement would be needed, which in turn increases the cost of the capital.

In view of the foregoing consideration, the work with EESL on ABS can be folded into the broader Bank-wide engagement with EESL which includes "developing innovative financing solutions, and building on EESL's track record and strong balance sheet to leverage access to commercial financing for EE projects and the broader ESCO industry" (PCN - India Energy Efficiency Scale-up Program P162849)

III. Consultation with GEF and Proposed Action

As mentioned in section I, the US\$1,200,000 approved by GEF for covering development cost was non-grant based. The GEF expected that the proposed IEEFF would pay back the full development cost of US\$1,200,000 once IEEFF becomes fully operational.

Given the changing nature of the IEEFF, the team consulted with GEF Sec on the options to convert the non-grant based funding to grant in order to support cities' capacity on creditworthiness. However, the GEF Sec, after its internal discussions, confirmed that its management would not be in a position to convert the funding to grant due to its internal ear-marking system for different kinds of funding.

Proposed action:

The team concluded that the non-grant funding is not suitable for carrying out the activities that are currently being pursued by the team. The Project currently has a balance of US\$850,000. In

consultation with the Bank's GEF coordination unit, it is proposed that the balance of the funding would be then returned to the GEF and the project will be closed by June 15, 2017.²

IV. Lessons learned

Despite the challenges of moving the Project forward, the process and effort put into the design of an innovative financing facility offer interesting lessons:

- Challenges of “pool” financing for cities. Pool financing could be a useful approach to balancing risks and helping cities reach the capital market. However, the practical challenges of organizing a manageable and good asset quality of a “pool” must not be underestimated.

For example, the original design of IEEFF that establishes a “pool” of cities with different investment rating across the various countries proved to be unrealistic, underestimating the complexity of the participation by cities and the management of the “pool”.

Even within one country through a credible “aggregator” of the pool, such as EESL in India, where it has been engaging more than 300 local governments, identifying a group of reasonably creditworthy municipal governments to participate in the ABS transaction has proven to be challenging.

- Progressively improving cities' creditworthiness is essential and must be set as a long term objective in order to mobilize financing from the capital market. Supporting specific bond transactions has a better chance to succeed if it is coupled with systematic technical assistance for enhancing municipal governments' creditworthiness. For this purpose, the Global Platform for Sustainable Cities (GPSC) is currently working with the Public – Private Infrastructure Advisory Facility (PPIAF) to provide technical assistance to cities to enhance municipal financing and bond issuance.
- Cross GP collaboration and working with IFC is important. The project is managed by GSURR. However, the team had worked extensively with GP Energy and Treasury as well as the WB's risk control team. The collaboration had greatly enhanced the design that requires both technical and financial expertise. Also, the IFC's involvement – both its investment unit and Treasury, opened the door to the possibility of piloting a new financial product for India bond market, which would leverage private capital for supporting EE programs. Despite the Project closure, the IFC together with IBRD will continue exploring ABS options for EESL.

In conclusion, although the Project is closed, which is in part due to unavailability of GEF funding, the financial modality that IEEFF helped establish will continue to be explored and piloted in the near future.

² The Project is one of the tracks under the programmatic approach to “low carbon cities”, which will be also closed on June 15, 2017.

Annex I

Design of International Energy Efficiency Financing Facility (iEEFF)

The International Energy Efficiency Financing Facility (iEEFF) is a single-purpose facility financing urban energy efficiency investments. iEEFF will commence operations focused on conversion of traditional urban street lighting technologies (e.g., mercury vapor and sodium vapor lamps) to more efficient LEDs. Based on this experience, it is anticipated that iEEFF will broaden its portfolio to include other urban energy efficiency investments that have energy savings sufficient to offset the cost of financing via high-grade, liquid fixed-income markets (e.g., investments in the building, district heating/cooling, water utilities, and transport sectors).

Aggregating financing of energy efficiency investments of multiple cities will enable iEEFF to issue large-scale, liquid, investment-grade bonds thus accessing what is typically the lowest-cost source of funding in domestic and international financial markets.

The facility will provide financing for participating cities or other entities on terms as good or better than they could achieve on their own and enable them to access financing at scale for energy-efficiency installations and retrofits.

Key to the appeal of these investments is that they can be paid for, and the debt to iEEFF repaid, using savings from the avoided energy cost, i.e., with little or no additional use of cities' current budget resources. And at the end of a short payback period, cities can expect electric bills to drop, often by 50% or more in the case of public street lighting.

The remainder of this Interim Project Description provides more details regarding the operation of iEEFF in the urban street lighting sector. Operations in other sectors would involve similar considerations.

Eligible Cities, Projects and Borrowers

Eligible cities

Cities in both developing and developed countries meeting threshold standards in three areas:

- Scale - Cities interested in lighting installation or retrofit programs of USD [10] million or more (unless participating through a government agency or project aggregator – see below).
- Financial capacity – Cities with municipal finances strong enough such that a borrowing from iEEFF, when included in its diversified portfolio of loans to other eligible cities, can support an investment-grade credit rating for iEEFF.
- Implementation capacity - Cities with the capacity to organize and execute a municipal street lighting LED conversion program and capture the energy savings.

iEEFF also could finance national or subnational agencies engaged in aggregating lighting retrofits.

Eligible projects

Municipal street lighting projects that:

- Reduce electricity consumption for municipal street lighting;
- Achieve reductions sufficiently large in relation to the cost of the eligible program that the value of the energy saved offsets the cost of a financing based conventional, investment-grade debt obligations of similar duration; and
- Meet technical requirements adequate to qualify for long-term performance warranty.

Eligible borrowers

Governments, their agencies and instrumentalities, or private sector contractors, including:

- City governments as direct obligors;
- Governments of nations or provinces in which cities undertaking energy efficiency projects are located;
- Public utilities, where these may be the owners and/or operators of street lighting infrastructure;
- Specialized public sector agencies or instrumentalities at the municipal, provincial or national level; these may include specialized energy- or energy-efficiency agencies, project “aggregators” or investment vehicles; and,
- Private sector contractors or others engaged in implementing cities’ street lighting projects, subject to appropriate legal and financial arrangements to support the obligation to iEEFF.

Sponsorship, Organization and Capital Structure

- Sponsorship and voting shareholding - iEEFF will be established at the instance of one or more shareholders of the World Bank.
- Form and venue of organization - iEEFF will be organized in a form and under the laws of a jurisdiction that is well-accepted by institutional investors due to the robustness of its legal and regulatory arrangements with respect to finance and markets.
- Financial and operational management - iEEFF will outsource management of its finances and operations to The World Bank Group. In addition, The World Bank Group will provide technical assistance on project implementation upon request.
- Equity investment – If needed, iEEFF will receive equity investments from other investors in an amount sufficient to support a credit rating of single-A or better for each bond issue - estimated at 5-10% of the total assets of the facility.
- Debt - iEEFF will issue bonds to fund its lending to eligible borrowers. Borrowings will supplement equity investments and comprise the largest component of the capital structure, enabling iEEFF to maintain an amount of liquid reserves adequate to meet current expenses as well as other required disbursements. Debt issuance may be against the credit of the facility or against specific loans receivable in its portfolio.
- Credit ratings - iEEFF will obtain credit ratings for its bonds from at least two of the three major ratings agencies (Moody’s, S&P and Fitch), aiming to qualify for single-A or equivalent rating for its medium- and long-term bonds.

iEEFF Lighting-sector Products and Services

iEEFF's will make loans to eligible borrowers to provide financing for cities' LED lighting retrofits and other city energy efficiency investments. Loan terms could vary but would be broadly consistent in maturity and amortization with the energy cost savings associated with the retrofit. Loans could be at fixed or floating interest rates at the option of the borrower. Pricing would be consistent with or slightly better than borrowers could achieve borrowing directly in the market. iEEFF's goal is to make available loans in USD and other major currencies for which there exists a reasonably liquid currency swap and foreign exchange markets.

Credit enhancements

IEEFF can facilitate third party credit enhancements to assist cities that may require it to achieve credit eligibility.

Performance warranty

iEEFF will engage through competitive tender a qualified provider of warranty coverage for the technical performance of eligible projects; preliminary indications are that engaging such a designated provider likely would reduce the cost of warranty coverage to participating cities.

Technical assistance

iEEFF can make technical assistance available upon request to participating cities and project participants, covering the design and implementation of LED retrofit projects.

iEEFF Finances

Overview

The facility is designed to make loans available as cities develop their energy-efficiency projects, issuing bonds in the debt capital markets at intervals as necessary to make disbursements and maintain liquid reserves. iEEFF will be structured in the form of a SPV, and the first bond issuance will focus on municipal street lighting modernization projects. IEEFF will solicit input as it further develops its portfolio (e.g., retrofits in the lighting, building, heating/cooling and transport sectors).

As a preliminary test of the iEEFF value proposition, the World Bank is carrying out modeling of the financial dynamics of the facility. The analysis has been informed by, and is consistent with, current standards applied by major rating agencies and the current regulatory framework with respect to bank capitalization. While the analysis assumes no application of third-party credit enhancement, it does include structural elements that would be consistent with achieving an investment grade rating.

The analysis concludes that:

- iEEFF can reach a single-A credit rating with a modest amount of equity investment
- Even with the modest proposed equity investment, iEEFF can finance a diverse array of municipal borrowers on competitive terms.

These conclusions do not take into account bond-market “scale economies” (i.e., the value the market attaches to liquidity and replicability) or the franchise value associated with official-sector sponsorship and the World Bank’s involvement as financial manager. These have proven highly valuable in other contexts. Furthermore, the analysis does not value the fact that iEEFF financing de facto would be covered by the avoided cost associated with LED retrofit investment, and thus would not increase cities’ net liabilities.

Bond issuance

Successive bullet-maturity issues of USDeq 250 million or more; medium-term goal is for iEEFF instruments to be included in major bond-market indices.

Underwriting, distribution & secondary mkt

Industry standard for large bond issues.

Investors

Institutional and retail investors globally.

Summary Development and Implementation Agenda

Overview

The Global Environment Facility (GEF), having engaged The World Bank as implementing agency, is undertaking development of iEEFF in collaboration with several sovereign sponsors. The “soft launch” of the facility will take place at COP-21 in Paris, at which time the facility will have enlisted participation commitments from sponsors, investors and borrowers. This work will be facilitated through the ‘Consultative Group’, described below. The first bond issuance from iEEFF is targeted by the end of 2016.

City participation commitments

In preparation for the soft launch in late 2015, the World Bank, in its capacity as iEEFF administrator, will solicit from potential participating cities binding applications for iEEFF financing conditioned on iEEFF’s offering specified terms. On the basis of these commitments, the iEEFF development team will determine whether and on what terms to proceed with an initial iEEFF bond issue.

Consultative Group

The World Bank will form – with the advice and consent of the iEEFF sponsor/s – a Consultative Group comprised of representatives of the principal categories of iEEFF stakeholders: sponsors, potential equity investors, eligible borrowers (cities and other entities), and bond investors. The Consultative Group will guide and inform iEEFF’s portfolio development and strategic engagement. The first meeting of the Consultative Group expected to take place in October 2015.

Annex II

GREEN ASSET-BACKED SECURITIES FOR ENERGY EFFICIENCY IN INDIA

Background

The energy efficiency market in India has grown significantly in the last few years, and shows significant potential to grow further to an estimated US\$11 billion, particularly in light of high energy prices and the country's ambitious targets. Access to capital markets for energy efficiency projects can provide an alternative source of finance, freeing lending headroom for banks, improving data availability to help stakeholders understand the market better, and creating energy efficiency bonds as a new asset class.

Energy Efficiency Services Ltd. (EESL)

Energy Efficiency Services Ltd. (EESL) is the largest energy efficiency player in the Indian market. Set up by the Ministry of Power as a joint venture among 4 large public sector companies – National Thermal Power Corporation (NTPC), Rural Electrification Corporation (REC), Power Finance Corporation (PFC) and Power Grid Corporation (PGC), EESL's mandate is to implement energy efficiency products and services, including schemes and programs of the central and state governments.

At present, many of EESL's projects are financed through short-term (1 year) loans for shorter duration projects. For projects with longer tenor, concessional credit lines from multilateral agencies are utilized – EESL has received concessional finance from several multilateral agencies such as KfW, AFD and ADB. EESL is exploring options to finance its expansion plans through the capital market to create viable business models in the long-term.

The World Bank Group is exploring the potential for a green asset-backed securities structure with EESL. In particular, it is examining EESL's lighting portfolio, which has relatively strong projects with a track record of one year. As of March 2016, EESL had already invested INR30 billion (US\$448 million) in under the Domestic Efficient Lighting Program (DELP) and Street Light National Program (SNLP). Under the Street Light National Program, EESL's target is to install 35 million street lights by 2018-19 by replacing conventional street lights with smart LED street lights. A Centralized Control and Monitoring System (CCMS) measures consumption, monitoring faults and remote operations. The program has had a fault rate of less than 2%.

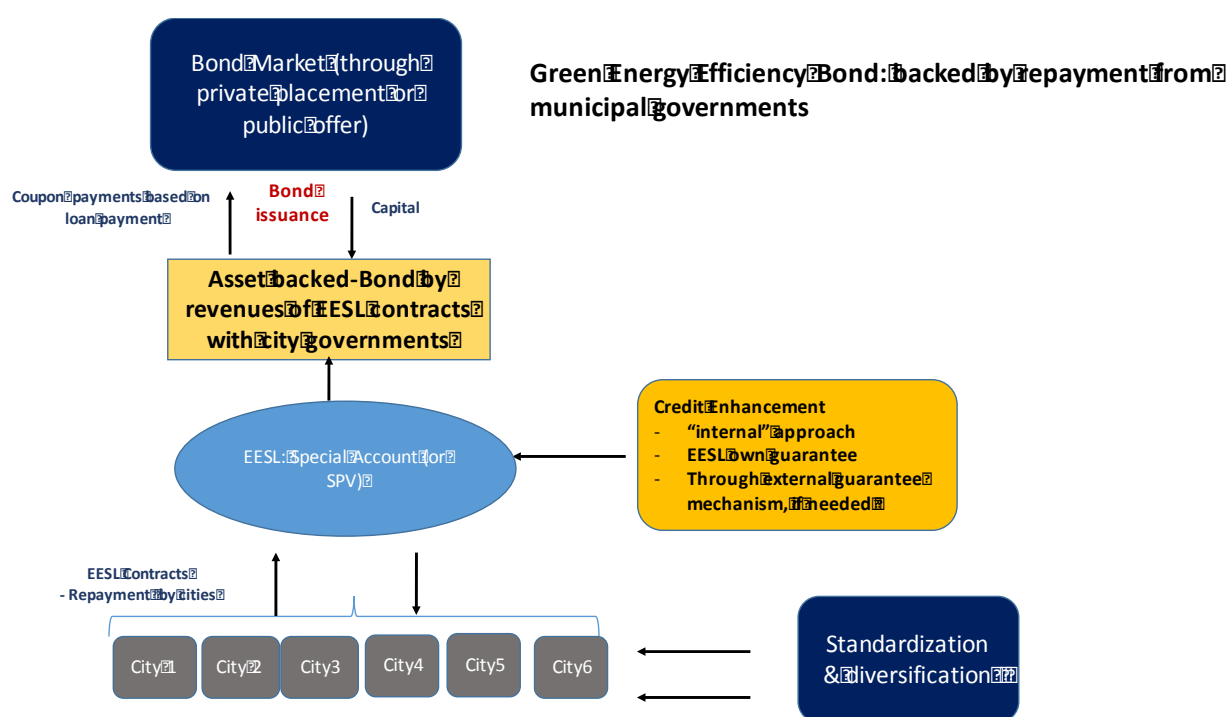
Green asset-backed securities (ABS)

The objective of creating green ABS is to tap long-term funds from patient capital such as insurance funds or sovereign funds.

Bond Issuance: The bonds will be issued by the EESL (bullet bonds with a tenor of 7 years or 10 years). The bonds would be issued whenever the pool reaches scale (e.g. there may be 3 issuances each year). The size of each bond issuance is expected to be between US\$150-300 million, with the possibility of increasing issue size with time.

Bond Structure: The bond will be issued based on a portfolio of lighting projects with municipalities that have a good track record. The portfolio will be selected based on well-defined eligibility criteria and maintained in a special account. Structural improvements and credit enhancement will be provided to strengthen the portfolio, and asset-backed/ revenue bonds will be issued by EESL based on its contracts with city governments.

Figure 1: Proposed Bond Structure



Portfolio: Projects under the Street Light National Program are under consideration. The typical project size is about 30,000 street poles, at a cost of INR300 million (US\$4.5 million). EESL uses an innovative financial model that requires no grant or subsidy mechanism. The entire investment for the installation of street lights is made by EESL with no capital cost to Urban Local Bodies (ULBs), and guaranteed energy savings of 50%. EESL provides project maintenance for a period of 7 years as part of the project, and payments to EESL are made by the ULB using savings in energy and maintenance cost.

Payment Security: No explicit state guarantee is offered. However, indirect means are available. State governments have begun to allocate specific budgets or levy a street lighting cess in consumer electricity bills, which creates a pool of funds that can be allocated by the state government to the concerned ULB, and is to be spent within the fiscal year on street lighting

improvements. For example, Rajasthan, where over 50% of the lighting portfolio (186 projects) is based, levies an urban cess. However, EESL has no explicit lien on this corpus. Municipalities voluntarily approach EESL to deploy projects, and use this budget for repayment. To date, no payment defaults have occurred under the program.

Relationship with municipalities: As a company with a majority stake (over 90%) by public sector entities, EESL has significant potential for outreach to municipal bodies. Municipal bodies or ULBs for projects are chosen on the basis of enthusiasm shown during road-shows, acceptance of deemed savings MRV, local champion support, and degree of payment security. In several cases, they have voluntarily reached out to EESL for utilizing the urban cess collected by the state government.

Eligibility criteria for project selection: The eligibility criteria for project selection to create a suitable portfolio include:

- Underlying credit strength with high default tolerance (to date, there has been no portfolio default)
- Pool size and diversity to minimize portfolio risk (small projects are expected to reduce risk and increase default tolerance)
- Debt structure and legal covenants for fund flows under loan repayment structure (including debt structure, nature of investments, and level of state support)
- Governance and management arrangements

Credit Rating and Coupon Rate: The coupon rate for the bond will depend on bond rating, which in turn depends on structuring and credit enhancement. EESL's corporate rating is AA. At present, EESL has engaged with over 300 municipal governments, and the number is growing. Based on discussions with rating agencies and the key criteria identified for portfolio structuring, the World Bank is helping EESL carry out credit screening to select municipal programs into the pool to balance 'diversification and standardization.' The quality of the pool is absolutely critical in determining the bond rating.

Credit enhancement: A number of options to improve the structure and rating of the bond are under consideration. An escrow account will be created, and the bond issue may be over-collateralized (e.g. by raising money on 80% of the underlying portfolio) to provide security to investors. Other structural improvements to diversify and mitigate risks will also be considered.

It is anticipated that credit enhancement would be required for the portfolio to reach a credit rating of AA or higher, which is the minimum rating under Indian regulations for pension and insurance funds to be able to invest in the bond. The following options are being explored, including:

- **Credit enhancement with EESL's own balance sheet:** While the bonds are structured as ABS, it may be possible to provide payment guarantee using EESL's balance sheet or alternate revenue streams.

- **Partial Risk Sharing Guarantee (PRSF):** SIDBI currently offers partial risk cover under the Partial Risk Sharing Guarantee supported by IBRD. Its objective is to achieve energy savings by catalyzing the market for energy efficiency projects to be implemented through ESCOs. The PRSF comprises of a risk-sharing fund corpus of US\$35 million with SIDBI as a financial intermediary and technical assistance provided jointly with EESL. The guarantee provides a cover of 15-20% to projects in 4 target sectors, including municipal energy efficiency projects such as street lighting.
- **Support from IFC:** The option of a guarantee or subscription by IFC is also being explored.

Role of the World Bank:

The World Bank will provide advisory and technical assistance to EESL, and a platform to engage with potential investors. Conversations with potential investors have been initiated. The Bank will also support EESL in working with an investment advisor to appropriately structure the bond and meet all requirements to be eligible for investment by large pension and insurance funds, banks and multilaterals. The objective is to build capacity within EESL and create a benchmark for raising funds from capital markets for energy efficiency projects, offering guidance and course corrections wherever necessary to build credibility and investor confidence.

Annex III

List of cities/agencies consulted

Governments and Cities (not exhaustive):

- Denmark
- France
- Brazil
- United State
- Toronto
- Barcelona
- Lima
- Rio

Institutions:

- Moody's
- S&P
- Fund for Industrialization in Developing Countries, Danish Climate Fund Secretariat
- Citi Bank
- JP Morgan
- HSBC
- Yes Bank
- Axis Bank

Annex IV



Workshop

Green Bonds for Energy Efficiency in India

Green Asset Backed Securities (ABS) for Energy Efficiency

July 20, 2016

Mumbai

Rationale for Securitizing Energy Efficiency

The opportunity for investment in energy efficiency (EE) worldwide is expected to reach US\$5.8 trillion by 2030 (IRENA). Access to capital markets is considered key to unlock billions in EE investment, and enable a paradigm shift toward private investment in the industry.

Securitization-based energy finance models have seen success in the USA. Property Assessed Clean Energy (PACE) is on track to securitize over US\$1 billion in residential energy loans in 2016, backed by liens against the homes being improved. Federally subsidized tax credit bonds have also funded significant volumes of clean energy projects through capital markets: about US\$1 billion in Qualified Energy Conservation Bonds (QECBs) have been issued for energy projects (public and private), including numerous street lighting and Energy Service Company (ESCO) projects, with some projects utilizing energy service performance contracting (ESPC) where ESCOs provide energy saving guarantees.

Securitizing energy efficiency loans regularly creates the necessary liquidity to attract additional investors to the asset class. Furthermore, banks have additional lending headroom since they no longer need to hold the loans on their books. Over time, securitization creates a wealth of historical performance data that facilitates risk assessment. With increased supply of investors and greater familiarity with the performance of the asset class, the cost of capital is expected to decrease.

The World Bank Group: green climate financing for energy efficiency in cities

The World Bank is exploring options for establishing an international platform that supports aggregation and financing of energy efficiency investments from multiple cities. The platform would initially support domestic local currency EE bond programs in countries such as in India, China, Brazil and other emerging economies, for which the platform acts as a forum to share practice and promote standardization in order to facilitate the creation of a new type of asset class – EE Green bonds. It is envisaged that over time an International Energy Efficiency Finance Facility (IEEFF) may emerge through this platform to mobilize financing from international capital markets to support actions by cities and other entities on energy efficiency and climate action.

India – Energy Efficiency Services Ltd (EESL)

EESL, which is the largest energy efficiency player in the Indian market, was set up by the Ministry of Power as a joint venture with National Thermal Power Corporation Ltd. (NTPC), Power Grid Corporation of India Ltd. (PGCIL), Power Finance Corporation (PFC) and Rural Electrification Corporation (REC) in December 2009. One of the objectives of the EESL is to develop a viable energy efficiency market. Since its establishment, EESL has implemented several large national programs under an innovative business model, including a strong and growing LED street lighting program.

The World Bank is working with the EESL to develop green asset backed securities (ABS) – a type of green bond in which a pool of green EE projects are bundled, issued and backed by revenue and energy savings generated by the underlying projects. The first of a series of the green ABS is intended to be the EESL's core program – LED street lighting with hundreds of municipal governments. The green ABS would be issued by EESL targeting India's domestic capital market. Credit enhancement to support securitization of the underlying projects is under consideration.

The Case for Energy Efficiency Green Bonds in India

July 20, 2016, Sofitel Hotel, Mumbai

The workshop objectives:

- (i) Sharing information and lessons from energy efficiency bonds gained in international and domestic markets; and
- (ii) Discussing the feasibility of the proposed green bond structure for energy efficiency in the Indian context

I. Capital Market for Energy Efficiency	
15:00	Opening remarks by: - Mr. Saurabh Kumar (Managing Director, EESL) - Dr. Ajay Mathur, Director General, The Energy and Resources Institute (TERI) - Mr. Jun Zhang, Country Manager for India, IFC and Mr. Abhas K. Jha, Manager, World Bank
15:30	The World Bank's initiative on supporting cities' action in energy efficiency - Ms. Xueman Wang, Team lead for design of the International Energy Efficiency Financing Facility, World Bank Green India initiative through energy efficiency - EESL EE Portfolio – Ms. Neelima Jain, National Programme Manager - UJALA, and Financing Agriculture Demand Side Management – Mr. Rajneesh Rana - EESL Financing Initiatives – Mr. S Gopal, General Manager on Finance - Comments by Mr. Simon J. Stolp, Lead Energy Specialist, Energy Team, World Bank Delhi Office <i>Moderator: Mr. Saurabh Kumar (Managing Director, EESL)</i>
16:00	Green Asset Backed Securities (ABS) for Energy Efficiency - Overview of global green bond market - o Mr. Michael Bennett, Head of Derivatives and Structured Finance, World Bank Treasury - ABS structure of Warehouse Energy Efficiency Loans in US - WHEEL - o Ms. Elizabeth Wolfe, US Energy Program Consortium
16:30	Discussion: India market for green ABS - o Proposed Green ABS structure - o Discussions: Risk mitigation and credit enhancement <i>Moderator: Mr. Andrew Cross, Deputy Treasurer, IFC, World Bank Group</i>
17:30	Session ends with Tea/Coffee break
II. Panel Discussion – The Case for Energy Efficiency Green bonds in India	
18:00	Panel Discussion: Moderated by Dr. Ajay Mathur, DG, TERI - Keynote speaker - Co-panelists - o Mr. Andrew Cross, Deputy Treasurer, IFC, World Bank Group - o Ambassador S. Mehta, Senior Advisor, EESL - Concluding Remarks - Mr. Saurabh Kumar, MD, EESL
19:15	Cocktails and Dinner