

INDIA

Manual for the Development of Municipal Energy Efficiency Projects

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INDIA

Manual for the Development of Municipal Energy Efficiency Projects

2008

FOREWORD

India's urban system is the second largest in the World with an urban population surging to 28% of the total population in recent years. According to the "Report on Seventh Electric Power Survey", Public Water Works in India consumes more than 12000 MUs and Public Lighting consumes 5000 MUs of electricity. Energy audits in India have determined that energy costs account for 40% to 60% of the operating expense of supplying water. By becoming energy efficient, each Urban Local Body (ULB) can reap energy savings of 25% to 40% at a minimum. This translates to at least 4000 MUs of energy savings that can avoid the need for an additional capacity of 600 MW.

ULBs in India can realize tremendous benefits by adopting and executing Municipal Energy Efficiency Programs. This Manual meets the need for knowledge on initiating and implementing Municipal Energy Efficiency Projects, providing guidelines and templates for municipalities to use in navigating the project development process.

To facilitate market transformation and replication of Municipal Energy Efficiency Projects on a large scale in India, IFC, a member of the World Bank Group, the Bureau of Energy Efficiency, and Alliance to Save Energy have jointly developed this Manual for use by all stakeholders, including Municipalities, Energy Service Companies (ESCOs), Energy Equipment Suppliers, and Financial Institutions. The Bureau of Energy Efficiency has endorsed this Manual as a standard reference document for ULBs and other stakeholders to implement Municipal Energy Efficiency Programs in water supply systems, sewerage systems, street lighting and municipal buildings.



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The content of the Manual was developed jointly by IFC, the Alliance to Save Energy and the Bureau of Energy Efficiency. Members of the international program at the Alliance to Save Energy, including Judith Barry, Alexander Filippov, Roopa Kamesh, Pradeep Kumar (India), Sudha Setty (India), Lakshman Bogahapitiya (India) and Therese Näsman (India) contributed to the preparation of this manual. John MacLean, IFC Consultant, reviewed the Manual and provided constructive feedback.

A significant part of the information for the Manual was prepared by members of DSCL energy services, New Delhi: Dr. Datta Roy, R. Rajmohan, Nisha Menon, and P.V. Anthony Gerald. Valuable contributions to the Manual were made by Shashi Shekar I.A.S (Tamil Nadu Urban Development Fund, Chennai), Ashish Kundra I.A.S. (Delhi Jal Board, Delhi), D.T.V. Raghu Rama Swamy (Infrastructure Development Corporation, Bangalore), Kirti Devi (INDO-US financial institutions reform and expansion project, New Delhi), and energy management cell personnel of Delhi Jal Board, Delhi.

More than 65 peer reviewers representing Indian municipalities, energy service companies, equipment manufacturers, financing institutions and individual experts provided their valuable comments to the Manual. All these comments were addressed and incorporated in the text.

The template documents presented in this Manual are based on model documents previously developed and approved for energy efficiency projects in India by the Bureau for Energy Efficiency, Delhi, and Delhi Jal Board, Delhi, with additional elements suggested by DSCL energy services.

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LIST OF ACRONYMS

CDM	Clean Development Mechanism
CER	Certified Emission Reductions
DSCR	Debt Service Coverage Ratio
EE	Energy Efficiency
EOI	Expression of Interest
ECRM	Energy Cost Reduction Measure
ESCO	Energy Service Company
ERPA	Energy Reduction Purchase Agreement
FIs	Financial Institutions
GC	General Conditions
HVAC	Heating, Ventilation and Air Conditioning
IGA	Investment Grade Audit
IPMVP	International Performance Measurement & Verification Protocol
IRR	Internal Rate of Return
M&V	Monitoring & Verification
MLD	Million Liters /Day
NPV	Net Present Value
PC	Performance Contract
PDD	Project Development Document
PIN	Project Idea Note
QCBS	Quality & Cost based Selection
RFP	Request for Proposal
TRA	Trust and Retention Account

1 INTRODUCTION

Municipalities are spending large amounts of their revenue on purchasing energy for providing local public services such as street lighting and water supply. Through cost-effective actions, energy and monetary savings of at least 25 percent can be achieved in water systems alone. Municipal energy efficiency saves scarce commodities and stretches tight budgets, giving citizens improved access to electricity, water, heat and air conditioning. Energy efficiency in municipal water supply systems can save water and energy while reducing costs and improve service at the same time. For those bearing the financial responsibility for local public services, efficiency in the provision of energy and water is one of the few cost-effective options available for meeting growing demands for vital services such as electricity, water and wastewater treatment. The budgets for these services often lack funds to invest in improvements, and public entities are looking for ways to finance energy efficiency projects. Among many possible options, performance contracting offers a mechanism for municipalities and public utilities to finance efficiency improvement projects without upfront investment.

Performance contracting became popular because the goods and services associated with the project are paid from the savings accrued from it, which allows municipalities to finance the improvements. Performance contracts are inherently flexible and can be structured to best fit the needs of the involved parties. Performance contracts often involve an Energy Service Company (ESCO) but sometimes the services can be provided by engineering firms, such as water engineering companies in case of efficiency project involving water supply. However, ESCO participation in the project is beneficial because such companies have managerial, technical and turn-key project implementation skills that often are lacking at the municipalities, combined with the ability to structure project financing. Based on the municipalities' needs, the ESCOs can finance EE implementation and collect their dues from shared or guaranteed savings accruing from the EE project.

1.1 PURPOSE OF THE MANUAL

Although the financial, environmental and social benefits of municipal energy and water efficiency are readily demonstrated and increasingly understood, many of the players who need to make such projects a reality are not familiar with the process for doing so. This manual serves as a practical tool for anyone interested in being a part in the development, financing and/or implementation of a municipal energy efficiency project using a performance contract. Therefore the primary audience for this manual consists of municipalities, ESCOs and other types of efficiency service providers, and financial institutions. Municipalities and utilities are generally not well versed in project development and finance; ESCOs are often not familiar with how to adapt their trade from the industrial to the municipal sector; and financial institutions view as high risk all processes and projects that are not part of their usual portfolio, which is often a variation of asset-based financing, with the assets used as collateral.

The manual is intended for public sector decision makers and lay audiences who want to survey the project design process in the whole without the technical details, as well as for those who need a detailed reference to guide them through the project development process. It provides a step by step methodology for developing and packaging a municipal efficiency project for performance contracting. Section A consists of a set of guidelines that walk through the details of the project development process, while Section B provides examples of procurement and contracting documents that can be used as templates in the preparation of documents needed to identify an efficiency service provider and secure financing. Although the information contained in the manual can be readily adapted around the world, it was written for the Indian context. A text box below outlines the general process for contracting with ESCOs. The following chapters discuss the details of this process.

1.2 STRUCTURE OF THE MANUAL

1.2.1 Section A

There are nine guidelines in Section A:

Guidelines on self-assessment by Municipalities before opting for EE projects:
The Municipality should undertake self-assessment exercise to weigh different options before commissioning energy efficiency projects.

Guidelines on energy service company:
This chapter provides an outlook on the energy service company and the energy performance contracts, which are different from supply of products and services contracts.

Guidelines on procurement procedures and documents:
This chapter addresses the typical approaches to procurement during the performance contracting process.

Guidelines on investment grade energy audit:
This chapter details the methodology for carrying out an IGA.

Guidelines on technical scopes of work for municipal energy efficiency investment grade audits:
Includes the technical scope of work and financial analysis needed to identify the financial returns associated with the efficiency measures. It also defines mechanisms for arriving at an agreed upon baseline against which to measure the savings.

Guidelines on financing a project:
This chapter outlines the financing options available for the project.

Guidelines on packaging a project for financing:
This chapter lays out the procedure for approaching a financial institution, and outlines the procedures for securing carbon financing as an additional source of revenue for the project.

Guidelines on performance contracting:
These guidelines contain information on different types of performance contracts and their content.

Guidelines on performance measurement and verification:
This chapter discusses performance measurement and verification (M&V) options defined in the International Performance Measurement and Verification Protocol (IPMVP).

1.2.2 Section B

Section B consists of five templates that can be altered to create project development documents:

Request for Expressions of Interest:
In India the EOI should be sent to registered energy auditors accredited with the Bureau of Energy Efficiency, Petroleum Conservation Research Association and others.

Request for Proposal:
This template includes five common sections contained in an RFP: cover letter of invitation, information to consultants, standard forms for the technical proposal, standard forms for the financial proposal, and terms of reference for IGA methodology (defining the process to be followed while carrying out an IGA). Sample evaluation criteria are also included.

Model IGA contract
A model investment grade audit contract template containing the standard provisions typically used.

Model Energy Performance Contract
A model performance contract template containing the main provisions typically used when ESCO is the borrower.

Model Turnkey Contract
A model turnkey contract template where the Municipality is the borrower and ESCO provides technical assistance to the project on a fixed fee basis.

Box 1: Steps for Developing a Municipal Energy Efficiency Project

1) **Self assessment to choose the best fit option for undertaking Energy Efficiency (EE) program** to identify the reasons for undertaking energy efficiency projects. Once it has been established that EE project is a priority, the Municipality should select the most suited type of contract and financing option for moving forward with EE project.

2) **Collect energy usage data by carrying out a preliminary (walk-through) audit.** The Municipality should gather basic energy usage and other relevant data, such as mentioned in section B (in the information sheet to be provided by the Municipality) and internally assess the low cost and no cost options that can be implement using its own operation and maintenance (O&M) funds. The Municipality can then do a self assessment, and, based on the results, go to step 3.

3) **Develop and issue a request for Expressions of Interest (EOI)** for conducting an investment grade energy audit and implementing an efficiency project in the target sector(s), such as water, wastewater, street lighting and municipal buildings. The EOI contains a brief description of the scope of work and basic information on the municipal installations to be audited, and requests information on the technical and financial capabilities of service firms including their personnel, audit instrumentation, and relevant experience.

4) **Issue a Request for Proposal (RFP)** to all viable firms who submitted EOIs. The RFP describes the facility's energy use, equipment, operating schedule, maintenance problems, and equipment replacement or renovation plans, as well as the utility bill history for the past three years. It is recommended that a site visit be organized for interested ESCOs to tour the facility and interview facility staff before submitting their responses to the RFP.

5) **Evaluate the proposals** according to the terms of the RFP.

6) **Finalize ESCO selection** based on its expertise and relevant experience, making sure to match the skills of the ESCO with the needs of the Municipality.

7) **Award the Investment Grade Audit (IGA) contract**, which is an agreement with the ESCO to develop a project concept, and perform the IGA. The IGA report forms the basis for the energy performance contract between the Municipality and ESCO, identifying all feasible short- medium- and long-term energy saving measures and their payback periods, and providing the baseline data to be used during monitoring and verification.

8) **Package the documentation for third party financing,** if necessary. The party taking on the financing (be it the Municipality or ESCO) puts together a package of information on the project, including the IGA report, for review by financial institutions. The financially relevant information contained in the IGA report is critical at this stage for convincing a financial institution to provide a loan.

9) **Enter into the performance contract**. The contract sets the terms and conditions, by which the ESCO implements the energy efficiency measures, including the responsibilities of the ESCO and Municipality, the compensation schedule for the ESCO, financing conditions, maintenance, personnel training, monitoring and verification procedures, risks and a risk mitigation plan, and the definition of the baseline and possible adjustments to it. There are two distinct types of performance contract: *shared savings,* where the financial risk lies with the ESCO and the savings are shared between the ESCO and Municipality for a negotiated period of time; and *guaranteed savings,* where the ESCO guarantees loan repayment and a certain amount of excess savings.

10) **Monitoring and Verification (M&V)** of results is performed according to the procedures in the performance contract. M&V determines the actual savings over the period of the contract and ensures that all parties are getting full value from the energy performance contract, including compensation for the ESCO. It includes approval of equipment installation based on the contract specifications, and involves regular communication between the ESCO and Municipality to monitor successful implementation of the energy saving measures. Often, M&V can be performed by an independent third-party expert(s).

2 SECTION A. GUIDELINES

2.1 GUIDELINES FOR SELF-ASSESSMENT BY MUNICIPALITIES BEFORE OPTING FOR ENERGY EFFICIENCY PROJECTS

Before undertaking energy efficiency (EE) project, a Municipality should do a self-assessment in order to evaluate the importance of the project. This assessment includes the reasons and goals for the project, a feasibility study, analysis of the project financing and contractor selection options. Thereafter an EE project plan needs to be prepared. The commitment of the municipality and a well-defined EE project plan can highly impact the success of the EE project. The process is outlined in **Figure 1**.

The Municipality should assess its motivation for EE projects based on the following criteria:

1. Reasons for undertaking EE project

The municipality should identify the reasons for prioritizing energy efficiency projects over other projects based on decisive factors such as rising energy prices, increase in population, increased energy consumption, increased greenhouse gas (GHG) emissions and increased demand for water supply that affect effective municipal administration.

2. Goals of the EE project

The second step in self-assessment is to list the goals that the municipality would like to achieve by undertaking energy efficiency projects. The goals could include energy bill reduction by optimizing energy use, improving delivery of services, reducing GHG emission according to Energy Conservation Act 2001, undertaking rehabilitation of existing systems and so on. *For example: the cost savings positively contributes to municipal finances, and installation of new energy efficient equipment improves delivery of services.*

3. Feasibility study of EE project

The feasibility study is done to verify the viability of the project, that is, decide if it should be implemented or not. It should include analysis of the market, the economic situation, technical issues, financial efficiency, sensitivity analysis and a risk analysis.

The market analysis is an evaluation of the demand to estimate the project size and the capacity needed. The economic analysis expresses the cost effectiveness of the project and should include all revenue and costs for the lifetime of the project, and account for time value of money. In the technical analysis, the technical assessment of the current situation and a proposal for changes should be incorporated. An evaluation of the accessibility to technology and its suitability for the identified problems needs to be made. The financial analysis has to identify which type of financial sources that should be used: internal or external. Thereafter the cost of capital such as interest rates and bank charges needs to be assessed. Finally a sensitivity analysis examines how a change in initial assumptions affects the project such as change in fuel prices or increased wages.

Risk is a part of every project, therefore risk analysis helps identify the potential problems and estimate expenses to minimize the risks. There are some risks that can significantly affect the economic results of a project and these should be considered. Market fluctuations, such as demand or energy prices, dispersion of the economic assumptions initially made, technical problems and legislative changes are issues that can occur and need to be addressed.

The feasibility study should discuss the aforementioned parameters in detail. Based on its results the Municipality can decide if it is ready for energy efficiency project implementation.

4. EE project contract and financing

The Municipality should decide on the type of contract and financial options based on the needs and procurement regulations of the Municipality. The Municipality should evaluate the alternative types of contract based on some pre-set criteria. Thereafter, when the financial options are considered, the Municipality should evaluate its finances, creditworthiness for procuring private financing, previous experience with private financing, weighing up the option of the contractor financing and so on. Based on this analysis, a decision should be made whether the project should be financed by borrowing from private institutions or using self financing, or by energy service type financing using, shared savings or guaranteed savings mechanisms.

2.2 GUIDELINE ON ENERGY SERVICE COMPANY (ESCO)

ESCO is a company with technical expertise that enters into a performance contract with the Municipality to implement energy efficiency measures that optimize energy usage and reduce energy expenditure in a technically and commercially viable manner. ESCO contracts differ from typical service or supply of equipment contract that the municipality is familiar and accustomed to. Around the world, ESCO contracts are considered as viable business model for financing and implementing energy efficiency projects.

The Municipality can enter into an Energy Performance Contract (EPC) to initiate investment grade energy audit and implementation of commercially feasible energy efficiency measures that offer attractive returns in the form of reduced operating costs due to optimized energy usage and reduced energy expenditure and improved delivery of services. The project can be financed by the Municipality or the ESCO. The contract may have rewards and penalties built into it in the form of explicit or implicit guarantees.

The duration of the contract with ESCO affects the risk perception. The longer the duration, the higher is the risk and uncertainty in the contract. It is the same scenario when the ESCO is in-charge of sourcing products for a longer period during the contract.

The Municipality may engage the service of an ESCO in a single step or a two step process. In the single step process the ESCO does the IGA and effect energy savings by implementing recommended measures. In the two steps process the municipality first contracts with an ESCO to do an IGA and based on the audit report prioritize measures by calculating the time, capital investment and payback period and proceed with implementation.

The Municipality should be aware that the benefits of the EE project will accrue only after the successful implementation, verification and validation of savings. The municipality and ESCO may have to monitor the progress of the project and be prepared to undertake any necessary mid-course correction to ensure that the project is successfully implemented. The Municipality should also be aware that the ESCO's main strength is not only its ability to organize financing, but also its technical expertise and key personnel. The change of personnel may affect the quality of the project.

Based on the requirements of the Municipality, source of EE project funding and the agreement reached with the ESCO, the former can contract with the latter in one of the three different types of payment mechanisms: a) fixed fee; b) shared savings; c) guaranteed savings.

GUIDELINES FOR SELF-ASSESSMENT BY MUNICIPALITIES BEFORE UNDERTAKING ENERGY EFFICIENCY PROJECTS

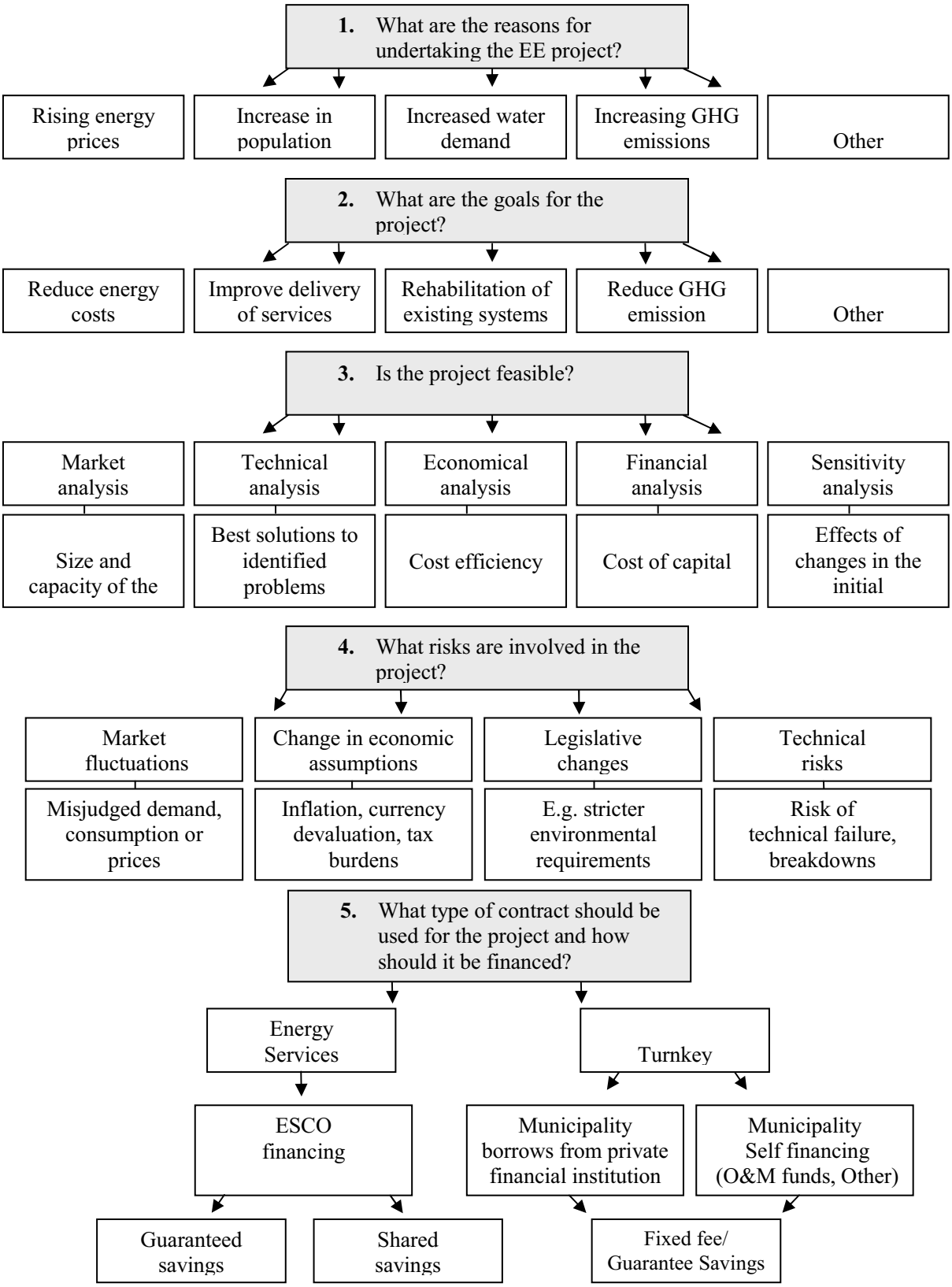

Figure 1. Self-assessment guideline

The World Bank GEF Energy Efficiency Portfolio Review and Practioners' Handbook illustrates different types of ESCO Business Models as listed in **Box 2**. It contains an overview of the different types of models that can be used. This manual will only present the models for fixed fee, shared savings and guaranteed savings since as the most relevant for current conditions in India.

Box 2. Examples of different ESCO business models

(The list ranges from the full-service/high risk contracts to low service/risk)

Full-Service ESCO: The ESCO designs, finances and implements the project, verifies energy savings and shares an agreed percentage of the actual energy savings over a fixed period with the customer. This is also referred to as the 'Shared Savings' approach in the U.S.

End-Use Outsourcing: The ESCO takes over operation and maintenance of the equipment and sells the output (e.g., steam, heating/cooling, lighting) to the customer at an agreed price. Costs for all equipment upgrades, repairs, etc. are borne by the ESCO, but ownership typically remains with the customer. This model is also sometimes referred to as Chauffage or Contract Energy Management.

ESCO with Third Party Financing: The ESCO designs and implements the project but does not finance it, although it may arrange for or facilitate financing. The ESCO guarantees that the energy savings will be sufficient to cover debt service payments. This is also referred to as Guaranteed Savings in the U.S.

ESCO Variable Term Contract: This is similar to the full-service ESCO, except that the contract term can vary based on actual savings. If actual savings are less than expected, the contract can be extended to allow the ESCO to recover its agreed payment. A variation is the 'First Out' model, where the ESCO takes all the energy savings benefits until it has received its agreed payment.

Equipment Supplier Credit: The equipment supplier designs and commissions the project, verifying that the performance/energy savings matches expectations. Payment can either be made on a lump-sum basis after commissioning or over time (typically from the estimated energy savings). Ownership of the equipment is transferred to the customer immediately.

Equipment Leasing: Similar to supplier credit, the supplier receives fixed payments from the estimated energy savings. However, in this case the supplier owns the equipment until all the lease payments, and any transfer payments, are completed.

Technical Consultant (with Performance-based Payments): The ESCO conducts an audit and assists with project implementation. The ESCO and customer agree on a performance-based fee, which can include penalties for lower energy savings and bonuses for higher savings.

Technical Consultant (with Fixed Payments): The ESCO conducts an audit, designs the project and either assists the customer to implement the project or simply advises the customer for a fixed, lump-sum fee.

2.3 GUIDELINES ON PROCURING SERVICES AND EQUIPMENT FOR MUNICIPAL EFFICIENCY PROJECTS

Historically municipalities in India have followed the process of selecting an equipment supplier or service provider based on the lowest financial quote received in the bid. More often than not, though, this approach does not serve the best financial interests of municipalities in the long run. Having said this, each state may have its own unique procurement processes since procurement rules apply differently at the Central level, state level and to the central public sector units / enterprises. The General Financial Rules lay out the broad guidelines for public procurement of goods / services at the Central Government level. Therefore, the municipalities should ensure that they adapt the procurement method described in this chapter to comply with their legal standards and transparent procurement process. The procurement method combined with the self-assessment questions will provide a better alignment of goods and services received with the needs and budgets of the municipality. Municipalities are encouraged to learn and adopt procurement policies from peers who have successfully implemented EE projects.

The procurement process will be much more robust if the municipality establishes an energy and water management cell entrusted with the responsibility for procuring energy and water efficient equipment, selecting service providers to implement efficiency projects, and stipulating the energy efficiency parameters and technical capabilities required to carry out efficiency projects. The staff for the cell, not all of which need to be dedicated full time to it, should consist of a cross section from various municipal departments such as engineering, project design, finance, and maintenance. Based on the initial data gathered on energy usage and once the municipality have decided on the project financing mechanism, it should prepare and put out the EOI and RFP accordingly. If the municipality is funding the project by procuring private financing, the municipality could contract with an ESCO on a turnkey basis for carrying out an IGA and implementing EE measures. If the municipality is keen on utilizing the ESCO mechanism to finance the EE project, then the municipality should start out by procuring the services of an ESCO to do an IGA, reach an agreement on the end-user payment mechanism, and draft the contract agreements accordingly.

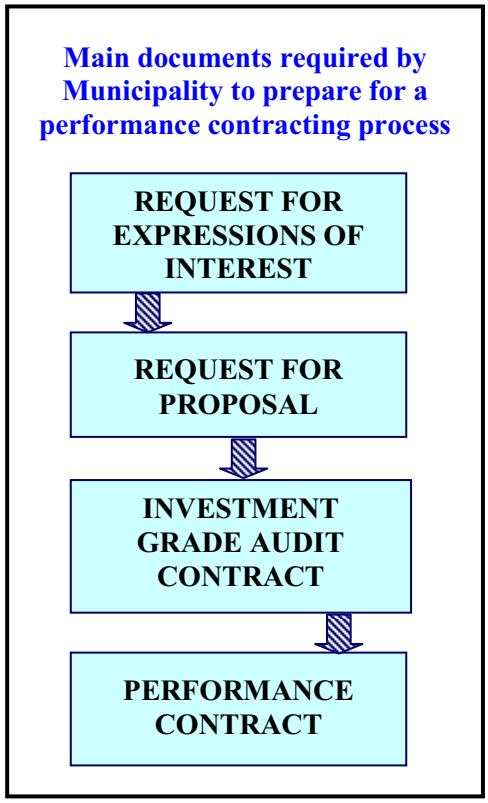

Figure 2. Main documents required

In evaluating bids, more weight should be given to the technical and financial capabilities and past experience than the size of the financial quote. Municipalities should also focus on sustainable investments that will pay for themselves, which is best done in a two-step evaluation process to allow the final selection to be based on total costs over the life of the project. It is suggested the Municipalities consider adopting two bid process wherein the technical bids should be evaluated based on specified energy efficiency criteria listed in the template in order to generate a short list of firms, and then the least cost financial bid option for the selected technology are evaluated. If technical changes are desired based on the technical evaluation, the municipality can ask the firms on the short list to submit revised financial bid.

Equipment should be selected based on the least cost option over the working life of the equipment available to the municipality, after the technical evaluation. In order to perform such analysis, the municipality needs to estimate all costs associated with the project, including fuel costs, operations and maintenance and any financing costs, based on Net Present Value (NPV). The NPV expresses the estimated stream of costs over a set length of time *in current dollars*, for example by discounting equipment with different lifetimes for inflation. The equipment with the lowest net present value is the least cost option to the municipality, at the same time providing the required efficiency.

The main documents that the municipality will have to prepare during the performance contracting process are the following (see **Figure 2**):

- Request for Expressions of Interest
- Request for Proposal
- Investment Grade Audit Contract
- Energy Performance Contract

Section B contains model templates of these that can be easily adjusted to the needs of specific projects and municipalities. While requesting bids for procurement of energy or water efficient equipment, the municipality should specify the necessary efficiency parameters of the equipment.

2.4 GUIDELINES TO THE STEPS INVOLVED IN AN INVESTMENT GRADE ENERGY AUDIT FOR MUNICIPAL EFFICIENCY PROJECTS

An investment grade audit is the first step in the official path to improved energy efficiency. This chapter presents information on all steps involved in preparing and implementing investment grade audits of municipal energy and water systems. The technical details of conducting investment grade audits are given in the following section, and summarized in **Figure 3**.

As the name implies, an investment grade energy audit is the process of conducting an energy audit to identify efficiency opportunities, and translating the technical findings into financial terms to present it as a bankable project capable of securing a loan. The IGA report contains comprehensive information related to energy use by the municipality and provides clarity on the baseline and verifiability of savings once the project is implemented. The methodology below is suggested for ESCO conducting an IGA after the contract award. The term *ESCO* is used in this document to indicate the audit conductor even though this firm or individual is not necessarily an energy service company. The word *Municipality* is used to indicate the client even though the client might be, for example, a water utility rather than the local government entity.

2.4.1 Discussions with key facility personnel

The first step of an IGA is an initial discussion, or a “kick-off” meeting, during which the Municipality and the energy service company exchange information to help prepare the ESCO for its preliminary site survey. The key personnel of the municipality such as the municipal commissioner, municipal engineers, and pump operators can participate in this discussion. During the kick-off meeting, the municipality and ESCO clarify project expectations, establish communication protocols, and develop a schedule for municipalities and ESCO tasks listed in IGA. The municipality uses the kick-off meeting to ensure that the ESCO has a clear understanding of the municipality’s priorities and general parameters for the project.

2.4.2 Site visits

Next the ESCO should visit all facilities involved in the project (potentially encompassing the entire municipality) to ascertain the availability of data and system complexity, formulate a data collection strategy, and address other issues. This process will assist the consultant in identifying the proper personnel at different facilities to coordinate the audit. Submitting a report to the municipality after the site visits will ensure that the municipal participants are informed and better able to assist as needed.

2.4.3 Preliminary data collection

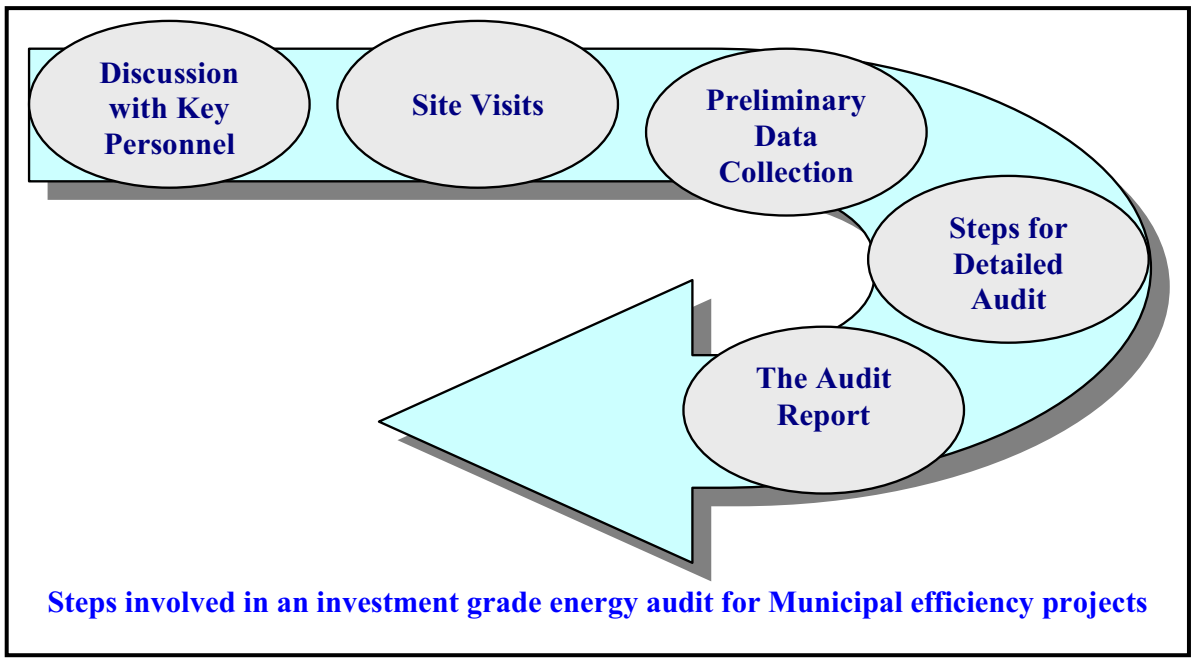

Figure 3. Investment grade audit

The ESCO will map the existing facilities targeted by the audit such as water pumping stations, the water distribution system, electrical distribution system, street lighting systems, and municipal buildings, to better understand the facilities. The municipality can expedite the process by providing all available system and process maps. The mapping will help the ESCO identify potential projects. Aside from the use of maps for the audit itself, the municipality will benefit from the information in those cases where process layouts were not available.

The ESCO then designs "data format sheets" for recording monthly energy consumption and operating data for the last three years. Historical data is generally accepted as the previous three years of energy bills for a given facility. Analysis of the data helps the ESCO to identify systems for detailed measurement and monitoring. There is also a preliminary walk-through audit of the facilities to identify those areas where detailed measurements have to be taken during the full audit.

2.4.4 Steps for conducting the detailed audit

A detailed audit includes data collection, measurements of the systems, analysis of the historical and measured data, and detailed energy savings calculations for suggested projects. The ESCO not only analyzes the performance of individual equipment, but evaluates the complete system such as valves, pumps, the pressure drop in pipelines, and the electrical distribution system, in order to obtain a comprehensive efficiency solution that captures all energy efficiency opportunities, not just the more obvious ones.

2.4.4.1 Steering committee

The municipality should establish a steering committee to assist in monitoring the work of the ESCO/consultant and render guidance for the entire project work. The team leader from the ESCO can then meet with the committee on a weekly or biweekly basis to review progress to facilitate the completion of the project in a timely manner and eliminate discrepancies at later stages. The steering committee may consist of, but not be limited to, the following personnel:

- Representative from the state development (nodal) agency
- Municipal chief engineer
- Representative from the municipal design department
- Representative from the municipal planning department
- Finance specialist
- Other concerned senior personnel from the municipality

2.4.4.2 List proposed efficiency measures

The detailed energy audit carried out at the various facilities will help identify energy efficiency measures. The measures that have the best technical and economic potential will be further developed into saving projects that should be listed in the report.

2.4.4.3 Develop a set of potential efficiency projects

The ESCO develops a set of potential efficiency projects for consideration, in consultation with the steering committee. An investment grade evaluation conducted on each that includes the following:

- Description of the baseline situation (e.g., losses from a water supply system)
- Project design, including basic engineering
- Technical constraint analysis
- Project financials
- Baseline calculation
- Options for monitoring and verification
- Assessment of potential technical and financial risk and a risk mitigation plan

The baseline of energy use (and water as appropriate) is calculated from all relevant information, such as operating conditions, measurements of various system equipment, log book trends, historical data, and any previous test reports on the existing operating conditions. The project financials (cost benefit and financial analysis) are calculated by the ESCO using the detailed cost estimates obtained for all equipment and the projected saving rates. This allows the potential projects to be classified according to their cost-effectiveness. Cash flow considerations should also be taken into account since this will determine the amount that needs to be financed by a commercial bank or other local/international financial institutions. From the financial analysis, the ESCO develops an action plan by prioritizing the projects based on so called “ABC-analysis” where activities are classified according to specific performance criteria, both technical and financial. “A” corresponds to priority projects; “B” corresponds to less important projects; and "C" classifies relatively unimportant ones.

2.4.4.4 Monitoring and verification

Monitoring and verification involves the measurement of parameters in accordance with standard engineering protocols, codes & practices, at a predefined periodicity and term. M&V on efficiency projects are to be conducted in accordance with the norms of the international performance measurement and verification protocol, and considering operating conditions specific to the country. Various M&V plans consistent with IPMVP should be analyzed to select

the best option for tracking savings. Since savings are calculated relative to the baseline, the choice of M&V protocol needs to be consistent with the calculation of the baseline. As needed, different M&V protocols may be chosen for different individual projects. Section 2.9 provides details on preparing the M&V plan.

2.4.5 The Audit Report

The audit report is not only the foundation for the performance contract, but is the key document used by financial institutions to assess the financial viability of the project. The minimum content of the report should be as follows:

Executive summary
Provides brief description of the systems and facilities covered overview of the existing conditions, measures evaluated analysis methodology, results and a summary table presenting the cost and savings estimates for each recommended measure. It also includes a summary of the recommended measures and costs as well as the financial indicators of the project.

Background
Extensive background about the municipality and project should be provided.

Facility description
Details of the existing facilities targeted, such as water treatment, supply and distribution systems, street lighting and electrical distribution systems, sewage treatment and handling systems and municipal buildings including municipal hospitals.

Energy scenario
Energy consumption details of all facilities included in the audit and their energy sources.

Inventories
Inventories of all relevant systems, including pumping, lighting, water treatment, supply and distribution systems.

Baseline parameters and adjustments
Methodology followed in establishing the baseline parameters and the criteria to be followed in adjusting it. Provide all the baseline parameters and the calculation procedure in an annex.

Data collection
List the various types of data collected and their sources. Include the data in the annex.

System mapping
Describe the methodology followed for system mapping and include the maps in the annex.

List of potential projects
A list of all identified measures with estimates of the savings and payback periods on investments, and a summary of the steering committee meeting decision selecting those projects chosen for further development.

Review of current operation & maintenance practices
Provide detailed description of current operation and maintenance (O&M) practices within the Municipal facility. This will include discussion with operators, engineers and other staff, observing the day to day O&M and reviewing the log sheet during the field study. The consultant has to identify areas for improvement and suggest the strategy and methodology for implementing it.

Details of the approved projects

Each of the approved projects should be discussed in the report along with the following information:

- EXISTING SITUATION: Describe the existing situation, including operational practices, associated with the planned efficiency improvements, including a graphical presentation.
- PROPOSAL: Provide a background of the opportunity for improvements and discuss the proposed retrofits and modifications necessary for achieving the savings and the cost-benefit analysis associated with them. Provide a list of possible vendors for the equipment and the detailed energy saving calculations in the annex.
- BASELINE PARAMETERS: Establish the baseline parameters for each project and any adjustments that might be required over the course of the project, for example due to a change in demand.
- M&V PLAN*:* Develop an M&V plan for the project.
- RISKS AND THEIR MITIGATION: Discuss the possible risks in implementing the project and suggest mitigation plans.

Training of municipal staffs

Based on discussions with engineers and other relevant staff the report should include a proposal for short- and-long term training that the ESCO will conduct for facility personnel. Training will typically cover mapping, methods for identifying the opportunities for energy efficiency, and implementation of efficiency measures.

2.5 GUIDELINES ON THE TECHNICAL SCOPES OF WORK FOR MUNICIPAL ENERGY EFFICIENCY INVESTMENT GRADE AUDITS

The investment grade audit documents current technical conditions, recommends energy saving projects, and presents the technical descriptions of the potential energy efficiency measures along with an assessment of the expected energy, water and cost savings. This chapter provides guidance on how to perform a detailed IGA. It is applicable both for electric and water utilities, and can be adjusted in each individual case. At a minimum, the technical scope of work performed on an IGA includes the following:

- An energy performance evaluation and system optimization study of all facilities in the municipality targeted for improvements.
- Efficiency tests on the major energy consuming equipment, recommendations for replacing and retrofitting those that are inefficient, and calculations of projected benefits.
- Suggestions for improvements to operating and maintenance practices.
- Financial details on the investment required, including materials and potential service providers, expected savings, and payback period.
- A list of the energy efficiency measures prioritized according to the highest rate of return on investment and organized into short, medium and long term categories (Payback periods for long term measures should be three years or less.)
- A review of any existing metering and billing system and suggestions for a new or improved one.
- A risk analysis, technical & financial, including the mechanisms that need to be put in place to manage and control risks.
- A suggested M&V plan.

2.5.1 Detailed audit of individual systems to create list of potential projects

The major energy loads in a municipality are typically the water pumping systems, street lighting, sewage treatment and handling, and electricity distribution. Municipal buildings such as offices, hospitals, schools also contribute to the high municipal energy bills. Therefore, the following systems are those most commonly addressed by a municipal efficiency audit (**Figure 4**):

- street lighting
- water pumping
- sewage pumping
- electrical distribution
- municipal buildings

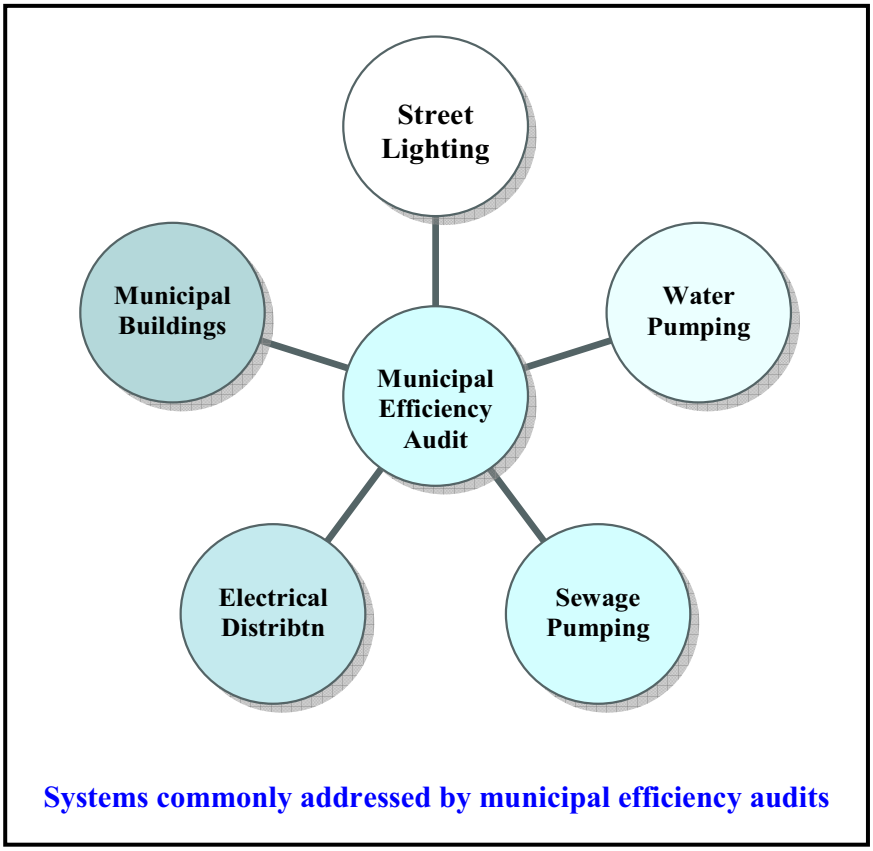

Figure 4. Systems addressed by efficiency audits

2.5.1.1 System mapping

In all cases, visit the systems and sketch the area map of each. If the network diagrams for these systems are available from the municipality, revalidate them.

2.5.1.1.1 Water supply and distribution, sewage treatment and handling

If the network diagrams are not available from the municipality, map the system in the following manner, including the distribution networks, pump design details, and suction discharge pipe lines:

- ✓ Layout the systems including the intake arrangements, clarifiers, and filters, indicating their sizes, capacities, connected loads, etc.
- ✓ Layout the pumping stations including the location of the pumps, their design details, suction and discharge pipe sizes, and routing
- ✓ Sketch the water distribution system indicating pipe lines, pipe line sizes, branching points, approximate lengths, bends, and valves up to the overhead tank or to the main end user points, in case of direct pumping
- ✓ Identify the points where pressure measurements and flow measurements are to be done

2.5.1.1.2 Street lighting and electrical distribution system

Mapping consists of electrical distribution single line diagram of the distribution networks and the lighting details. If the diagram is not available from the municipality, map the system as follows:

- ✓ Layout the transformers indicating their sizes, capacities, connected loads, etc.
- ✓ Sketch the distribution system indicating the type of lamps, approximate distance between two poles, type of poles, conductor material and size
- ✓ Identify the points where electrical parameters measurements and power measurements are to be done
- ✓ Prepare data sheets to capture operational details of the lighting systems

2.5.1.1.3 Floor mapping in municipal buildings

If the floor map of the building is not available, map the energy consuming system as follows:

- ✓ Sketch the floor in terms of rooms and corridors along with the electrical fittings such as lights, fans, air conditioning units, fan coil units, air handling units, computer systems, hot water systems, etc indicating the details of the fittings
- ✓ Lay out the pumping station indicating the location of the pumps including their design details, suction and discharge pipe sizes and routing
- ✓ Sketch of the chiller system indicating the design details of the chillers, chilled water pumps, pipe lines, pipe line sizes, branching points, approximate lengths, bends, valves, etc up to the main end user points
- ✓ Identify the points where thermal (pressure and flow) and electrical measurements are to be performed
- ✓ Layout the cooling tower system including pumps, fans, cooling water distribution network, etc.
- ✓ Map other systems like the boiler and hot water generators if present

2.5.1.2 Data collection

Below are suggested lists of data to be collected during the IGA of specific systems. However, the actual data collection lists should be customized depending on the scope of each particular audit.

2.5.1.2.1 Water supply and distribution, sewage treatment and handling

Data to be collected can include but not limited to the following:

- ✓ Water sources of the municipality
- ✓ If the source is outside the municipality:
  - Number and locations of the main water sources
  - Distance between the main source and the municipality storage facility
- ✓ Number and locations of pumping stations in the municipality
- ✓ For all the pumps at the source, pumping stations throughout the system, and sewage treatment and handling facilities:
  - Pump design details
  - Operation hours of the individual pumps on a daily basis for the past 12 months

- Quantity pumped, if available
- Operational details including flow, head, power and power parameters

✓ Quantity pumped from each of the stations on a daily basis for the past 36 months

✓ Electricity bills of the individual pumping stations for the past 36 months

✓ Maintenance expenses of the individual pumping stations for the past 12 months

✓ Number of overhead tanks connected with each of the pumping stations or the number of domestic, public and commercial connections in each of the pumping stations

✓ Water distribution system and sewage collection system single line diagram, if available

✓ Sizes of the pipe lines in the distribution system, including for the source water and sewage systems, if any

✓ Population of the municipality on an annual basis for the past 3 years. If not available, collect the census details of the previous census and derive the population

✓ Ground water levels at various seasons of the year for the past 3 years, if the pumping is through bore wells

✓ Reservoir levels for the different seasons

✓ Sewage storage levels for the different seasons for the past few years

2.5.1.2.2 Street lighting and electrical distribution system

Data collection should include but not limited to the following:

✓ Number and locations of sub-stations in the municipality

✓ Design details of all transformers in the sub stations

✓ Operational hours of the individual transformers on a daily basis for the past 12 months

✓ Details of power supplied for street lighting systems from each of the stations on a daily basis for the past 12 months

✓ Electricity bills of the individual street lighting circuits for the past 12 months

✓ Number and type of lights changed over the past 3 years

✓ Number and locations of the street lighting transformers in the municipality

✓ Number of feeders and conductor sizes in each of the transformers

✓ Number and type of lights and fixtures in each of the feeder

✓ Length of each feeder

✓ Monthly electricity consumption for street lighting systems for the past six years

2.5.1.2.3 Floor mapping in municipal buildings

Data collection should include but not limited to the following:

✓ Monthly electricity consumption details for the building for three years, including demand, power factor, etc.

✓ Inventory details of all utilities including the transformers, water pumping, water storage system, HVAC details, lighting systems, and diesel generators

2.5.1.3 Preparatory work for measurements

2.5.1.3.1 Water supply and distribution, sewage treatment and handling

- ✓ Prepare data sheets for recording pressure measurement. Sampling points should be at certain strategic points that will not be a hindrance to the public. The purpose of this sampling is to help:
  - evaluate pump performance
  - evaluate the performance of an entire pumping system
  - establish the pressure profile along the pipelines
  - establish the application of booster pumps at certain strategic locations
  - measure flow in the major branch lines
- ✓ Prepare data sheets to capture operational details of the pumps in more detail than that in the log book

2.5.1.3.2 Street lighting and electrical distribution system

- ✓ Identify the locations for measurements of the electrical parameters in the street lighting circuit
- ✓ Prepare data sheets to capture operational details of the system

2.5.1.3.3 Floor mapping in municipal buildings

- ✓ Prepare data sheets for recording pressure measurement to help in evaluate the performance of the energy consuming equipment
- ✓ Prepare data sheets to capture operational details of the equipment in the buildings in more detail than that in the log book

2.5.1.4 Measurements

2.5.1.4.1 Water supply and distribution, sewage treatment and handling

Measurements must be done for all the pumps individually as well as for the whole operating system to establish the performance of both. The following is the minimum that must be measured:

- ✓ Flow and head measurements of individual pumps at various intervals. If the pumps are running continuously during daytime and evening hours measure at three hour intervals. If the pumps are running at pre-specified times, at least four readings are to be taken at different time intervals.
- ✓ Flow and head measurements of the entire system as described above
- ✓ Power measurement using the power analyzer for those pumps for which the flow measurements are made simultaneously
- ✓ Electrical parameters of all the pumps
- ✓ Power parameters of the pumping station continuously for 24 hours
- ✓ Pressure recordings at the pumping station every half hour for 24 hours
- ✓ Other measurements as needed to characterize the system

2.5.1.4.2 Street lighting and electrical distribution system

- ✓ Voltage profile of the lighting system at the sub-station level and at the lighting transformer side simultaneously for 24 hours
- ✓ The municipality must provide the samples of all bulbs or lamps used for lighting, or catalog rating parameters of the bulbs or lamps
- ✓ Measurement of existing lux level, height of the pole and CRI
- ✓ Other measurements as needed to characterize the system

2.5.1.4.3 Floor mapping in municipal buildings

- ✓ Continuous recording of the electrical parameters for a period of 24 hours
- ✓ Flow and head measurement of individual pumps in the buildings
- ✓ Power measurement using the power analyzer for those particular pumps for which the flow measurements are made simultaneously
- ✓ Electrical parameters of all the major electrical equipments
- ✓ Other measurements as needed to characterize the system

2.5.1.5 Data analysis

Conduct the following analysis to calculate the baseline of the entire project as well as for individual projects making up the whole:

- Historical data analysis to establish the power consumption trends
- Analyze design parameters and actual operational parameters with a view to identify problems
- Analyze pressure and voltage profiles with a view to identify losses
- Analyze distribution network with a view to identify system resistance and whether pipes and cables are the correct size
- Evaluate the performance of the individual pumps, or combination of pumps in case of parallel operation, and the pumping system as whole, including transformers, lighting and the HVAC system

2.5.1.6 Choosing projects from list of potential projects

Based on the analysis, the ESCO make a list of projects with good potential for saving energy (and water if applicable) that includes the following information:

- Configuration of the existing system
- Configuration of the proposed system
- Estimate of the energy savings and other benefits
- Estimate of the investment and its payback period
- Retrofit requirements
- Comments from facility personnel based on discussions the ESCA has had with them

The potential projects are then discussed at the steering committee appointed by the municipality, which selects a set of projects to develop fully. It is suggested that the ESCO and steering committee meet weekly or biweekly thereafter to help the committee monitor progress.

2.5.2 Finalizing a set of approved projects

To more fully develop the short list of projects approved by the steering committee, conduct a more robust data collection and analysis to ensure the technical viability of each project, and if this analysis is favorable proceed to design the concept and configuration, including the life of the project and technical constraints. Once the ESCO develops the short list of projects more fully, they are discussed in detail with the steering committee, with their suggestions for modification incorporated appropriately. The finalized projects are discussed at length in the audit report. Three key aspects of the detailed audit at this stage are the financial analysis, risk assessment, and baseline calculations, discussed in more detail below.

2.5.2.1 Detailed financial analysis

Calculate the financial aspects of each individual project as well as that of the entire project, determining the costs on a net present value basis, marginal cost for each unit of savings at the time the audit is performed, the simple payback period from the savings, and return on investment. The financial analysis includes:

- Anticipated adjustments to the baseline to reflect changing conditions at the facilities compared to the historic baseline. Factor in any anticipated deterioration in annual savings through the life of the project due to the age of the equipment.
- Costs for engineering, design, materials and operations, including:
    - Contractor and vendor estimates
    - Contingency costs
    - Construction management fees
    - Commissioning costs
    - Taxes & duties
    - Initial training costs
    - Annual service fees including M&V, maintenance, and ongoing training
- If the project will be financed by a commercial bank, a cash flow analysis that includes an internal rate of return, debt service coverage ratio, and cash accruals

Another useful financial analysis tool is a Sensitivity Analysis, where key variables in the cash flow are tested to determine how sensitive the project's NPV, payback period, and IRR are to changes in costs such as electricity, labor and fuel. It is useful because it can highlight variables that pose a significant risk to the project if they have a high probability of occurring.

2.5.2.2 Risk assessment and mitigation plan

The scope for the risk assessment and risk mitigation plan includes but is not limited to the following:

- Design and construction risks:
    - Baseline establishment
    - Technical efficacy
    - Completion risk
    - Delay in construction
    - Conformance to standards and government approvals
- Performance risk:
    - Equipment performance
    - Longevity of energy savings
    - Accuracy of savings estimates
    - M&V risk

  - Operational changes
  - Capacity of facility (i.e., non-ESCO) personnel
- Financial, economic and regulatory risk
  - Cost overrun – initial and operating
  - Interest rate risk
  - Foreign exchange risk
  - Regulatory – changes in laws relating to tax concessions etc
  - Financing
  - Financial disaster of any of the project holder
  - Credit risk
- Market risk: energy price risk due for example to changes in tariffs
- Environmental risk: insurance coverage in case of an environmental hazard or accident
- Legal risk: new (or newly enforced) environmental standards
- Force Majeure: natural disaster during the design and construction

A Risk Matrix can be used for this task that lists the following variables in a table:

- Classification or type of risk
- Reason for the risk
- Risk mitigation measure adopted
- Consequences for the lender
- Consequences for the investor.

2.5.2.3 Baseline calculations and adjustments

Baseline parameters for the entire municipality, or the sum of those systems in it which are being targeted, are established based on the previous three years of municipal energy bills (calculated as an average on a monthly basis). While establishing this, care should be taken to identify any major loads that are introduced or deleted during the period under consideration. Usually, three years is the standard because municipal energy bills are directly correlated with seasonal variations and operating practices. The baseline can be determined by comparing the three-year monthly average with that of the immediate past 12 months and taking the higher of the two. Establishment of the final baseline and M&V protocol must be in agreement with all the parties to the contract and its implementers, and become one of the contract clauses.

2.5.2.3.1 Energy baseline parameters for individual systems

The energy baseline has to include the following parameters, wherever applicable, to avoid ambiguity during M&V:

- ✓ Historical monthly averages (over the past 36 or 12 months, whichever is higher) for:
  - Hours of operation of pumps in each pumping station (hours per day)
  - Power consumption of pumping stations
  - Specific power consumption of each pumping stations (in kWh per million liters per day, MLD, of water pumped)
  - Pumping station system efficiency developed from historical data and the measurements pertaining to pumps during the audit
  - Specific maintenance expenses (per MLD of water pumped)

- Levels for ground water, reservoirs and storage at each pumping station
- Power failure electricity board (hours per month)
- Inventory of different types of lamps to be replaced
- Street light power consumption
- Street light operation (hours per day)
- Power consumption in municipal buildings (kWh per square meter and kWh per working day)
- Number of working days of the municipal buildings

✓ Individual pump performance

✓ Average illumination levels in each streets of the municipality (in lux)

Typical baseline parameters and their measurement periods are summarized in **Table 1** below. In all cases data is collected from a mixture of spot measurements, energy bills, log books, and other historical data. The project host (municipality) and ESCO will agree upon the measurement criteria and the duration of measurement.

2.5.2.3.2 Baseline adjustments

Adjustments to the baseline are made when post-implementation conditions in energy use change relative to the original baseline conditions documented in the M&V plan. It is important to have a method of tracking and reporting changes to the baseline conditions. Many factors affect the performance of the equipment and system over time and thereby the achievement of savings over the course of the project. Parameters that are predictable and measurable can be used for routine adjustments. Such adjustments reduce the variability in reported savings and provide a greater degree of certainty in reported savings. At times unpredictable changes to the parameters, such as unexpected changes in use, may require non-routine adjustments to the baseline in the future. Therefore the M&V plan must take into account predictable changes to the baseline, such as growth in the number of household water connections, the ability of changes to be measured, and the likely impact of changes. The most common factors are summarized in **Table 2** below. The ESCO and the project host must agree on how such changes will be factored into baseline adjustments over the course of the project.

Table 1. Baseline parameters to be measured

	Parameters to be measured	Measurement period
Water pumping & water distribution systems	• Water flow (m^3/hr) from each pumping station • Pump discharge pressure (kg/cm^2) • Header discharge pressure (kg/cm^2) • Pressure at various points in distribution system (kg/cm^2) • Ground water level (m) (in the case of bore wells and submersible pumps) • Reservoir levels (m) • Motor kWh, kVAh, pf, frequency and speed. • Power consumption (kW) of individual pumps in the system • Operating hours per day of each pump • Monthly electricity bills for the pumping station (if available) • Cost of water	Flow, pressure & power measurements of individual pumps at various intervals. Measurements to be done at 3 hours interval, if the pumps are running continuously during daytime and evening hours. If the pumps are running at pre specified timings, at least 4 readings are to be taken at different time intervals. Ground water level, reservoir levels and electricity bills are read monthly.
Sewage treatment & handling systems	• Flow (cum/hr) from each pumping station • Pump discharge pressure (kg/cm2) • Header discharge pressure (kg/cm2) • Pressure at various points in the distribution system (kg/cm2) • Reservoir levels (m) • Motor kWh, kVAh, pf, frequency and speed. • Power consumption (kW) of individual pumps in the system • Operating hours (hrs) of each pump per day • Monthly electricity bills for the pumping station (if available)	Flow, pressure and power measurements of individual pumps at various intervals. Measurements to be done at 3 hour intervals if the pumps are running continuously. If the pumps are running at pre-specified times, at least four readings are to be taken at different time intervals. Reservoir levels and electricity bills read monthly.
Street lighting	• Power consumption parameters (kW, kVA, pf) in the lighting circuits/feeders • Operating hours (hrs) of the lighting system	Power measurements of individual lighting circuits and feeders at various intervals. Measured during hours of operation for a few days.
Electrical distribution systems	• Measurement of kWh, kVA, pf at source end and supply end simultaneously • Monthly electricity bills for the electrical distribution system (if available)	Power measurements of individual feeder at various intervals. Measured continually for few days.

Table 2. Parameters likely to change requiring adjustments to baseline

Parameter	Unit	How addressed
Change in the usage pattern	kWh	The expected changes in usage pattern needs to be established in the performance contract
Seasonal changes in the reservoir levels or ground water levels	m	Monthly variations need to be obtained
Seasonal and daily changes in ambient weather conditions	^{o}C	Hourly and daily ambient dry bulb and wet bulb temperatures to be obtained
Power quality	kWh	Continuous measurement of power parameters for 24 hours over 5 to 10 days to establish the power quality variations.
Capacity addition – future demand changes	m^3/hr, kWh	Any addition or deletion of the loads should be recorded by the municipality and shared with ESCO
Equipment use by operators in accordance with specifications	-	Establish a system of communication and measurability to ensure proper operation.
Equipment deterioration	-	Has to be taken into account (book value depreciation as per standard accounting practice)
Equipment life	years	Provisions are to be made in the budgets for replacements on completion of service life during the service period

2.5.2.4 Calculating savings

In addition to agreeing upon the baseline and allowable adjustments, both municipalities and the ESCOs must agree on how to calculate the energy and cost savings resulting from the project. Once the work has been done to determine the baseline and adjustments, the energy savings is calculation as:

Energy Saved = Baseline – Current ± Adjustments

Where:

- ENERGY SAVED is the energy saved over a period of time from project start to a set point in time
- BASELINE is the baseline energy consumption (kWh)
- CURRENT is the current energy consumption (determined by metering or the utility energy bill)
- ADJUSTMENTS are any adjustments, positive or negative, that need to be made to the baseline to bring energy use at the current point in time to the same set of conditions as the baseline set.

In order to calculate cost savings from the energy savings, the parties must agree on how to handle energy price fluctuations because the resulting amount should be a function only of the efficiency measures, not fluctuating energy costs. One method is to agree on a set price, either one defined upfront in the performance contract, or a formula or definition for calculating one

(e.g. the average monthly energy cost over the time period being examined). These are details that need to be negotiated in the performance contract (discussed in section 2.8).

2.6 GUIDELINES ON FINANCING A MUNICIPAL ENERGY EFFICIENCY PROJECT

The Municipal energy efficiency project implementation can be financed in three ways

- The Municipality uses its internal funds such as O&M budget and capital budget
- The Municipality borrows from financial institutions
- The ESCO brings the finance and implements agreed upon energy saving measures

This guideline will discuss the following two models in detail:

1. Municipality procuring finance from a financial institution to contract with an ESCO or Energy Audit firm to implement energy efficiency project on a turnkey basis
2. ESCO financing the Energy Efficiency Project implementation under an Energy Performance Contract in either shared or guaranteed savings payment model

2.6.1 Municipality borrowing from financial institution to finance energy efficiency project

The Municipality has an option to borrow funds from a financial institution such as International Finance Corporation (IFC) or other public or private financial institutions for undertaking energy efficiency projects. The cost of capital is generally cheaper for a Municipality than for an ESCO. Many financial institutions are keen on financing energy efficiency projects since they consider them to be commercially viable and attractive.

Once the Municipality has borrowed the capital, it can contract with an ESCO or an energy audit and engineering firm to implement the project on a turnkey basis. The ESCO or the energy audit consultant conducts the IGA and is in charge of overseeing the implementation of the energy savings/efficiency measures.

The municipality enters into a turnkey contract on fixed fee basis with the ESCO or energy audit firm. The ESCO or energy audit firm provides consultancy services for a fixed fee. The municipality and ESCO can agree on payment of fixed fees in monthly installments or in lump-sum after completion of each task.

In the fixed fee contract the ESCO bears less risk compared to a savings based fee payment because their fee does not depend directly on the amount of the achieved savings. Nevertheless, in the fixed fee turnkey project, the ESCO bears a number of risks associated with the procurement, installation, commissioning and performance of the equipment, and often this is one of the decision making factors for the municipalities that don't want to carry these risks. The ESCO conducts the audit and designs the project, as well as arranges for equipment procurement and supervises installation. The payment could be either in installments based on deliverables or a lump sum upon the completion of the project. The fixed fee installments can be paid to the ESCO after each task such as: study phase, contracting phase, implementation phase and post project phase. The fees might differ depending on the complexity of the phase. If it is a lump sum payment, it can be paid at the end of the project.

The main advantage of the fixed fee turnkey contract is that the municipality 'owns' the project and accrues all the benefits and the ESCO guarantees a certain amount of savings. The disadvantage of the fixed fee turnkey project is that the ESCO may not agree to guarantee any savings. In this case, the municipality bears the entire financial risk. ESCO bears technical and

implementation risks because it must ensure commissioning of the project on time and in accordance with the specifications. Nevertheless, ESCO receives its fee regardless of the actual savings. The financing institutions in India tend to be more comfortable with lending to a municipality than an ESCO because of various credits guarantee options available to Indian municipalities.

Outside financing of municipal energy efficiency projects often requires a repayment mechanism that mitigates the risk of non-payment. There are several models available that help ensure that the loan and all other payments related to the project are re-paid. Other than having the government be an equity partner, two common methods are well suited to turnkey contracting:

1) Establish a separate account into which the municipality deposits savings from the project, or
2) Set-up a Trust and Retention Account (TRA) in which the municipality deposits revenue from electricity bills and taxes (and/or water bills if water efficiency is part of the project) into an escrow account in accordance with the payment schedule of the loan. Another safeguard option called a reserve fund, which provides additional security to the bank in case of default or any shortfall in the TRA account. The definition of default has to be agreed by all parties. In addition to the municipality making deposits into the TRA account, it also diverts some funds into the reserve account. An escrow agent then makes payments according to the order of preference outlined in the performance contract, usually as follows:
    - Payment of the interest and principal
    - Transfer to the reserve fund
    - Payment to ESCO/consultant
    - Payment to municipality

Figure 5 illustrates the payment mechanism using municipal TRA under performance contract. This mechanism was developed by iDeCK for the Watergy project implemented by the Alliance to Save Energy in Karnataka. This mechanism has been tested in multiple street lighting projects in India implemented by ESCOs for electric utilities and municipalities. A sample model contract between Municipality and ESCO wherein the Municipality borrows funds and signs with an ESCO on Turnkey basis with fixed payment is in Section B 3.5.

2.6.2 ESCO financing under an energy performance contract

When the ESCO arranges for the financing, one of the major barriers to implementation is removed because the municipality does not need to make the financial investment. The municipality does not bear the technical risk. The municipality only needs to make payments to the ESCO over a period of time on realized savings.

The municipality enters into an Energy Performance Contract (EPC) with the ESCO to procure energy and financial services. The energy expenditure savings are used to repay the investment made by the ESCO. The ESCO bears the risk and takes on the responsibility of delivering the results. The municipality enjoys the benefits of the EE project. The EPC are usually based on guaranteed or shared savings. The EPC and payment methodology is discussed in detail in the guideline on performance contract. **Table 3** summarizes the disadvantages and advantages of municipality borrowing versus ESCO borrowing as listed in the background paper on 'Developing and structuring finance for EE projects'.

2.6.3 Contract Risk/Responsibility Matrix

A Contract Risk / Responsibility Risk Matrix widely used in the Federal Energy Management Program (FEMP) given below when used by all parties ensure that they understand the ownership and level of responsibility for these critical issues. This is clearly spelt out in the various contract documents developed during the alternatively financed project development - to the mutual agreement of both parties. The recommended method of development is to have the contractor (ESCO or utility company) initially propose the approach for each issue and the municipality to determine if that proposal is acceptable. A mutually agreeable compromise position should be developed and clearly documented. Various aspects of contracts risks and responsibilities are summarized in **Table 4**.

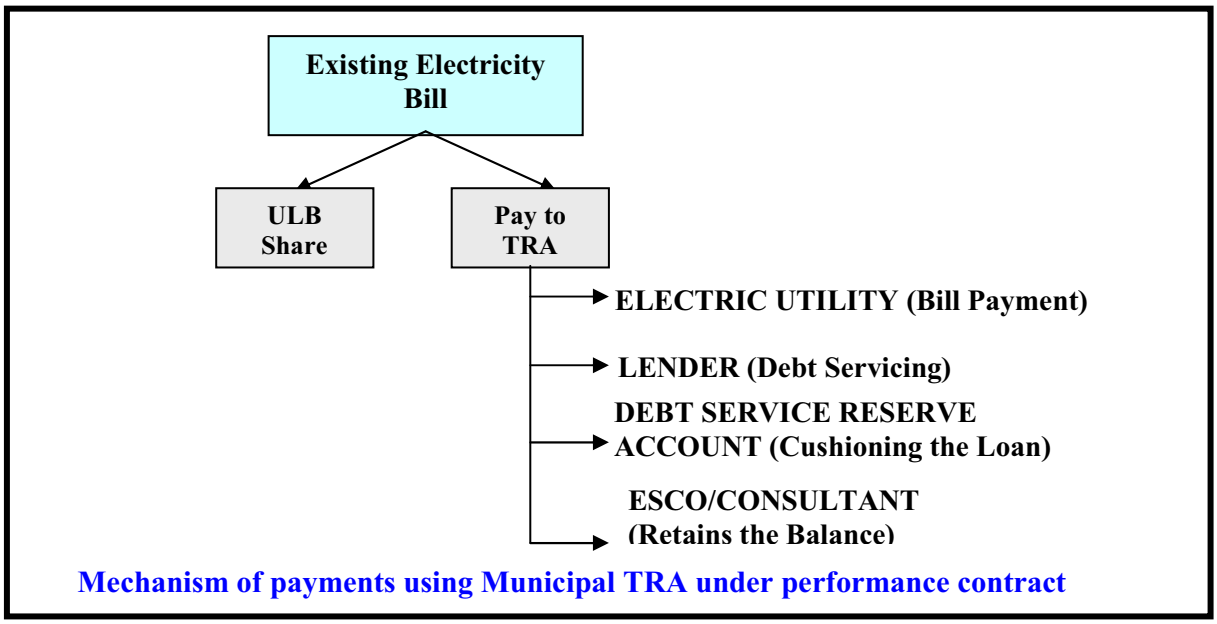

Figure 5. Payment mechanism for TRA performance contract

2.7 GUIDELINES ON PACKAGING PROJECTS FOR FINANCING

The goal of this chapter is to facilitate third party financing for energy efficiency projects. Although these guidelines are generally applicable they have been written with the Indian municipal sector in mind. They address general issues related to energy efficiency project financing and describe documents typically required by lenders. A discussion of the process for obtaining additional revenue from the projects resulting carbon reductions is also given.

2.7.1 Financial Institutions

Energy efficiency projects can be financed through various mechanisms and by various institutions including:

- Multilateral and national development banks
- Cooperative and commercial banks
- Microfinance financial Institutions
- Specialized financial institutions and NGOs
- Equity investors

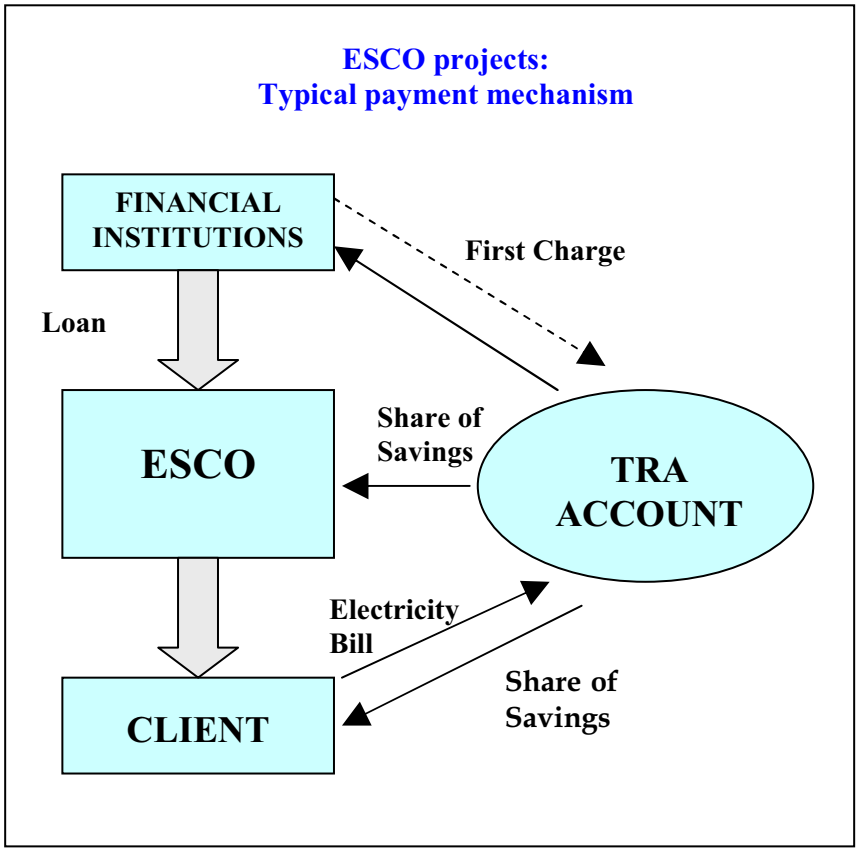

Figure 6. Typical payment mechanism for ESCO projects

The partial list of financial institutions (FI) that provide financing for energy efficiency projects in India includes: the Asian Development Bank (ADB), European Investment Bank, Global Environmental Facility, International Finance Corporation (IFC), ICICI Bank, Infrastructure Development Finance Corporation (IDFC), India Renewable Energy Enterprise Development Fund (IREED), Karnataka Urban Infrastructure Development and Finance Corporation (KUIDFC), KFW, World Bank, YES Bank, State Bank of India and others.

A loan applicant should become familiar with different FIs because some target different types of projects or clients, and many have different types of lending depending on the needs and qualifications of the applicant. For example, the International Finance Corporation operates on a commercial basis, investing exclusively in for-profit projects and charging market rates for its products and services.

Table 3. Advantages and disadvantages of Municipality as a borrower versus ESCO as borrower in EE finance models

Issue	Municipality as Borrower	ESCO as Borrower
Distribution of end-user credit risk	ESCO does not assume end-user credit risk; FI assumes end-user credit risk	ESCO is exposed to end-user credit risk; ESCO must develop or arrange credit analysis capacities
End-user payment structure	End-user payments to FI on financing typically fixed, not subject to offset based on project performance; end-user must get savings guarantees from ESCO	Variety of structures; end-user payments can be based on "savings"; savings-based payments create significantly more risk for FI financing the ESCO
FI exposure to project performance risk	FI not exposed to project performance risk, reducing their due diligence burden and providing an easier entry point to this market	FI exposed via ESCO to all risks that ESCO assumes, including project performance risks; ESCOs ability to make debt payments relies on project performance
End-user balanc sheet treatment	On-balance sheet; financing counts as debt of end-user; for end-users which face limits on their borrowing capacity, this could be a barrier	May be "off-balance sheet" with end-user payments treated as an operating expense; preserves end-user's borrowing capacity for other core purposes
ESCO equity requirements	Lower and therefore may reduce barriers to entry for new ESCOs; project financing on end-user balance sheet; up to 100% debt may be possible	Much higher; requires ESCO equity of 10-30%+ of project cost
FI due diligence burden	Lower; FI takes end-user credit risk only.	Higher; FI exposed to *both* end-user credit risk and project performance risk.
Finance aggregation	FI does series of smaller loans, but perhaps under a finance facility agreement with ESCO; aggregation still possible.	ESCO aggregates demand for project debt finance for FI; increased loan sizes make financing more attractive to FI
Cost of debt	May be lower, all else equal, due to FI lower, more traditional, risk exposure.	May be higher, all else equal, due to higher FI risk exposure

Table 4. Contract risk and responsibility matrix

Responsibility/Description	Contractor Proposed Approach	Agency Assessment
Financial		
Interest rates: Neither the contractor nor the agency has significant control over prevailing interest rates. During all phases of project development, interest rates will change with market conditions. Higher interest rates will increase project cost, financing/project term, or both. The timing of the contract signing may impact the available interest rate and project cost. **Clarify when the interest rate is locked in.**		
Energy prices: Neither the contractor nor the agency has control over actual future energy prices. For calculating savings, the value of the saved energy may either be constant, change at a fixed inflation rate, or float with market conditions. If the value changes with the market, falling energy prices place the contractor at risk of failing to meet cost savings guarantees. If energy prices rise, there is a small risk to the agency that energy saving goals might not be met even if the financial goals are. If the value of saved energy is fixed (either constant or escalated), the agency risks making payments in excess of actual energy cost savings. **Clarify how future energy costs will be treated in the contract.**		
Construction costs: The contractor is responsible for determining construction costs and defining a budget. In a fixed-price design/build contract, the agency assumes little responsibility for cost overruns. However, if construction estimates are significantly greater than originally assumed, the contractor may find that the project or measure is no longer viable and drop it. In any design/build contract, the agency loses some design control. **Clarify design standards and the design approval process (including changes) and how costs will be reviewed.**		
M & V costs: The agency assumes the financial responsibility for M & V costs directly or through the contractor. If the agency wishes to reduce M & V cost, it may do so by accepting less rigorous M & V activities with more uncertainty in the savings estimates. **Clarify what performance is being assured (equipment performance, operational factors, energy cost savings), the level of assurance, and that the M & V plan is detailed enough to satisfactorily verify both.**		
Delays: Both the contractor and the agency can cause delays. Failure to implement a viable project in a timely manner costs the agency in the form of lost savings, and can add cost to the project. **Clarify the schedule and how delays will be handled.**		
Major changes in facility: The agency (or Congress) controls major changes in facility use, including closure. **Clarify responsibilities in the event of a premature facility closure, loss of funding, or other major change.**		

Responsibility/Description	Contractor Proposed Approach	Agency Assessment
Operational		
Operating hours: The Agency generally has control over the operating hours. Increases and decreases in operating hours can show up as increases or decreases in "savings" depending on the M & V method (e.g. operating hours times, improved efficiency of equipment vs. whole building, utility analysis). **Clarify if operating hours are to be measured or stipulated and what the impact will be if they change.** If the equipment operating hours are stipulated, the baseline should be carefully documented and agreed to by both parties.		
Load: Equipment loads can, and probably will, change over time. The agency generally has control over hours of operation, conditioned floor area, and intensity of use (e.g. changes in occupancy or level of automation). Changes in load can show up as increases or decreases in "savings" depending on the M & V method. **Clarify if equipment loads are to be measured or stipulated and what the impact will be if they change.** If the equipment loads are stipulated, the baseline should be carefully documented and agreed to by both parties.		
Weather: A number of energy efficiency measures are affected by weather. Neither the contractor nor the agency has control over the weather. Changes in weather can increase or decrease "savings" depending on the M & V method (e.g. equipment run hours times efficiency improvement vs. whole building utility analysis), If weather is "normalized" actual savings could be less than payments for a given year, but will "average out" over the long run. **Clearly specify how weather changes will affect the baseline and ongoing performance verification.**		
User participation: Many energy conservation measures require user participation to generate savings (e.g. temperature control settings). The savings can be variable and the contractor may be unwilling to invest in these measures. **Clarify what degree of user participation is needed and utilize monitoring and training to mitigate risk.** If performance is stipulated, document and review assumptions carefully and consider M & V to confirm the capacity to save (e.g. confirm that the controls continue to function as specified in the contract).		
Performance		
Equipment performance: Generally the contractor has control over the selection of equipment and is responsible for its proper installation and performance at startup. Generally the contractor has responsibility to demonstrate that the new improvements meet expected performance levels including standards of service and efficiency. **Clarify who is responsible for initial and long-term performance, who is responsible for performance verification, how it will be verified, and what will be done if performance does not meet contractual expectations.**		
Operations: Responsibility for equipment operations is negotiable, and it can impact performance. **Clarify responsibility for operations, the implication of equipment control, and how proper operations will be assured.**		
Maintenance & Repair: Responsibility for maintenance and repair is negotiable, however proper maintenance and repair is often critical to performance. **Clarify how long-term maintenance and repair will be assured, Clarify who is**		

Responsibility/Description	Contractor Proposed Approach	Agency Assessment
responsible for equipment and component overhaul, or repair, required to maintain operational performance throughout the contract term. If maintenance is performed in-house consider some form of oversight.		
Equipment Replacement: Responsibility for replacement of contractor-installed equipment is negotiable. However it is often tied to project performance. **Clarify who is responsible for replacement of failed components or equipment throughout the term of the contract**. Specifically address potential impacts on performance due to equipment failure. Life of equipment is critical to project performance during the contract term. Specify equipment life expected for all installed equipment and specify warranties proposed for the installed measures.		

Additional financing for energy efficient projects may be available through institutions that buy the carbon credits that can result these projects. An illustrative list of carbon buyers includes: Agri-energy, Climate Investment Partnerships, PricewaterhouseCoopers (PwC), IFC, and the World Bank; along with governments that must comply with the Kyoto Protocol such as Sweden, Austria, Spain, the Netherlands (IFC-Netherlands Carbon Facility), Japan (the Japanese Carbon Fund), and Germany (the KFW Carbon Fund).

2.7.2 Documentation package for financing

A loan applicant must develop a project presentation package for potential FIs. Different FIs might require different documents or formats for such a package so it is best to contact a prospective FI to find out what its application requires. Regardless of the loan application format, a standard package includes the documentation listed below. The "applicant" refers to whatever entity is applying for the financing, be it the municipality or ESCO.

1) *Letters*

- Letter of intent from the applicant to the FI
- Letter of approval for the project from the municipality

2) *Financial Information on the Applicant*

- Tax return of the applicant for the last three years
- Applicant's audited financial statements for past three years (if available)
- Applicant's articles of incorporation and corporate resolution in case of a private company
- Financial Analysis Report that includes a cash flow analysis, internal rate of return (IRR), depreciation, payback period, tax summary sheet, and various ratios that indicate the financial health of the applicant:
  - current assets/current liabilities
  - long-term debt ratio (total long-term debt/total long-term debt + shareholders equity)
  - debt to equity ratio [total liabilities/(total liabilities + shareholder debt)]
  - debt coverage ratio (the ability to service debt, defined as annual cash flow before interest and taxes divided by the interest and principal payment x [1/(1-tax rate)]
  - total debt ratio (annual cash flow before interest and taxes divided by average total liabilities)

- Information relating to creditworthiness such as assets for collateral and any credit guarantees

3) Project Financials

- Project pro forma, a report on the viability of the project that gives a revenue and expense projection showing anticipated costs and income over the duration of the project
- Cost-benefit analysis for the project
- Project Financing Structure Document or Resource Mobilization Report (optional; a schematic version of project financing showing loan and payment flows)

4) Project Documents and Proposal

- A summary of the audit results
- Performance contract
- Project proposal describing the objective, scope and management team, and providing the following financial basics on the project: project cost, loan amount, payment mechanism, procurement guidelines, project execution, and loan allocation
- Social and economic analysis detailing the economic and social benefits of the project
- Any supporting documentation, such as a savings verification review report reviewed by an independent engineer, assignments agreements, acceptance notices, and references from suppliers and customers.

2.7.3 Recommendations for successful project financing

- Keep the presentation to investors simple and have all required documentation ready, including support documents that verify the financial analysis
- Make the timeline achievable
- Choose responsible project partners
- Ensure that the monitoring and verification (M&V) protocol is clearly defined
- Do not agree to contract terms that are not enforceable
- Ensure that supply contracts are in place with fixed prices
- Ensure that all agreements and legal documents are in place
- Always be aware of what the risks are and allocate them when feasible to the appropriate parties. Lowering these risks will make the project more viable for FIs' financing.
- Consider probability of default by the parties and its impact on the financial statement
- Ensure that an operation and maintenance plan is in place along with a plan to ensure that facility personnel are properly trained to implement it
- Utilize known technologies in early projects
- Plan for cost over-runs by establishing a contingency fund
- Include performance and investment guarantee provision in the contract

2.7.4 Supplemental revenue from reduced carbon emissions[1]

Industrialized countries through the Kyoto Protocol's Clean Development Mechanism (CDM) can implement sustainable and environmentally friendly technologies in developing countries (and transition countries not included in Annex B to the Kyoto Protocol), to help meet their emission reduction obligations in a cost-effective manner. The industrialized countries investing in these projects will receive credits against their Kyoto targets based on the Certified Emission Reductions (CERs) derived from each project. CDM is also beneficial to developing countries by promoting the transfer of clean technology, foreign direct investment, localized environmental improvement and an income stream from the sale of tradable CERs. Engaging in CDM projects can prove to be extremely advantageous for a country like India that has great potential to develop and implement projects based on the sale of CERs. Financing obtained through CDM mechanism can create additional revenue for an energy efficiency project and make a project more attractive for third party financing.

2.7.4.1 Potential Pitfalls: Transaction Costs and Additionality

Some words of caution must be injected into any consideration to seek carbon financing from energy efficiency projects. The first step is always to use the information from the energy audit or performance contract to make a rough estimate of the number of metric ton likely to be avoided as a result of the project. For energy saving projects in India where the national fuel mix is carbon-intensive, a conversion factor of about 0.85 ton of carbon equivalent per MWh saved is a good approximation. It is not uncommon for the amount of avoided carbon emissions from efficiency projects to be so small relative to the costs of preparing the transaction that it is not a cost-effective effort. The revenue that the credits will earn should be meaningfully greater than the expenses needed to generate that revenue. These transaction costs include labor and expenses not only to demonstrate the existence and magnitude of the credits, but to have them independently verified periodically over the entire life of the project. Although the transaction can be structured so that a municipality does not pay any of these costs up front, high transaction costs relative to the amount of carbon avoided will either raise the price for a ton of carbon beyond the amount that carbon buyers are willing to pay, or cause the carbon sale to be a net loss or disappointingly low.

A simple equation shows the relationships between the different factors, allowing the financial viability of a carbon sale to be estimated. For example, the net revenue generated from the sale of carbon is given by:

$$\textbf{Net Revenue} = P_{net} \bullet C = P_{gross} \bullet C - E$$

where:

- C is tones of carbon over the life of the project (where the life of the project is one of the negotiated terms in the carbon contract, often five to seven years)
- P_{net} is the net price per ton of carbon
- P_{gross} is the gross price paid per ton of carbon
- E is expenses (total transaction cost)

Therefore the net revenue from a carbon project can be estimated by multiplying the amount of carbon (known with a reasonable amount of certainty) by a common figure being offered in

[1] Detailed information about carbon financing, including terminology and calculation methodology, can be found in the UNDP Clean Development Mechanism: User's Guide at www.undp.org/energy/docs/cdmuserguide

today's market for a ton of carbon, and subtracting an estimate of the transaction costs (obtained from a qualified source such as a carbon broker). The figure for transaction costs will likely be the most uncertain but the equation will still provide a rough estimate of the net proceeds possible from the sale of carbon. This simple exercise should be completed before deciding whether to make carbon finance a part of the project.

Another critical factor to be considered in carbon financing is the concept in the Kyoto Protocol known as additionality. The CDM rules on additionality say that a project will not be accepted unless the carbon reductions resulting from it are additional to what would have happened in the absence of carbon credits. Although this subjective clause has generated much confusion, additionality is usually viewed in terms of financial viability. On the face of it, then, energy efficiency projects do not meet the additionality criterion because efficiency is inherently cost-effective. However the protocol recognizes that other barriers to efficiency projects exist in developing countries, so efficiency projects can be acceptable for CDM if the case is made that factors other than rate of return pose a barrier to the project, and that carbon credits contributed to the decision to proceed with the project. It stands to reason, therefore, that this case can only be made if evidence can be presented that carbon credits were a factor at the earliest stages of project design. It should also be noted, however, that carbon buyers have different motives for wanting carbon credits (for example to demonstrate good corporate citizenship), so carbon transactions need not involve the CDM bureaucracy if the buyer does not require official CDM-registered credits. All buyers, however, will want to see due diligence in the quantification and verification of the emissions reductions they purchase.

2.7.4.2 Carbon finance project cycle

There is no one specific model to adopt to initiate a CDM project in India. The model and data required need to be adapted based on local context and the existing variables including stakeholders and levels of investment required. In order to generate CERs under the CDM rules the projects have to undergo a process commonly known as the "CDM project cycle". It entails the following steps:

2.7.4.3 Project idea note

A project officially enters the carbon finance cycle with the submission of a simple document called the Project Idea Note (PIN). It is essential that the PIN is submitted as early as possible in the project development process. The PIN provides an estimate of the quantity of carbon the project will reduce and introduces the buyer to the project and project sponsor (the entity responsible for the energy efficiency project, such as a municipality, water utility or industry). It is recommended that the project sponsor enters into agreement with a project developer, a company skilled in preparation of CDM projects. The project sponsor should give its permission to the project developer to submit a PIN on its behalf and prepare the carbon finance documents. Then the project sponsor provides very brief information for the PIN on its financials and any financing to be used for the project. If the PIN is accepted, the buyer informs the country's Designated National Authority (DNA) of the project, which then signs a letter of endorsement that it approves of the project. The project developer will be paid for its services out of the carbon revenue.

2.7.4.4 Carbon Finance Document

The project developer prepares a Carbon Finance Document (CFD) to give the buyer further details needed to assess whether to allow the project to proceed through the process. The additional details generally cover financial information relating to the project and project sponsor (mostly relevant only for private firms), the method to be used to calculate the baseline, and environmental and social benefits or risks. Once the CFD is accepted, the Buyer gives the DNA a letter of intent to buy the emissions reductions, and the DNA signs a letter of approval that the

project assists the host country in achieving sustainable development (for purposes of Article 12 of the Kyoto Protocol).

2.7.4.5 Project Design Document

The project developer prepares the Project Design Document (PDD), the final decision-making document. This is the most time-intensive part of the process, involving extensive analysis to provide technical project details, the baseline study, and a monitoring and verification plan by which emissions reductions will be periodically measured and calculated over the duration of the project. At this point, the DNA and project sponsor are informed of "all important issues that might affect their position in negotiating" the host country agreement and Emissions Reduction Purchase Agreement (ERPA), respectively.

2.7.4.6 Emissions Reduction Purchase Agreement

After the PDD is independently validated, the buyer and project sponsor sign an ERP, a legal document assigning ownership and value to the carbon reductions, and the duration over which the project will yield emissions reductions.

2.7.4.7 Verification and Certification

After the project is implemented, the buyer pays for emissions reductions each time an independent verifier contracted by the buyer verifies and certifies the reductions (at intervals stated in the ERPA). The verification and certification is done in accordance with the monitoring plan "and other acceptable guidelines". Baseline methodology for water pumping efficiency improvements is available from http://cdm.unfccc.int/methodologies/approved (Approved baseline methodology AM0020).

2.8 GUIDELINES ON PERFORMANCE CONTRACTS

Once the energy audit has been conducted and the target efficiency projects finalized, the municipality can start negotiating the project implementation contract with the ESCO. Performance contracts are different from traditional contracts with energy engineering and consulting companies because the firm contracted (be it an ESCO or other type of firm) is compensated based on actual energy savings resulting from the project implementation, instead of a fixed contract price.

2.8.1 Types of performance contracts

There are two main types of performance contracts: ***shared savings*** where the financial risk lies with the ESCO and the savings are shared between the ESCO and municipality for a negotiated period of time; and ***guaranteed savings*** where the financial risk lies with the municipality but the ESCO guarantees a certain percentage of savings. There can also be numerous variations and combinations of these two main types. The essence of a performance contract, common to all types, is that the contract is written so that the investment costs are paid from the savings.

2.8.1.1 Guaranteed Savings

- The Municipality takes on the third party financing from a lender, putting the loan on its balance sheet
- The ESCO guarantees that savings will be sufficient to cover the investment cost, and if they are not the ESCO pays the difference between the realized savings and project payments
- Excess savings can be shared between the municipality and ESCO

In this scenario the client takes on no risk even though they finance the project because the guarantee covers the financing cost, a known and quantifiable amount. However, guarantees add

more risk onto the ESCO and more risk always trickles through as added cost to the project in the form of a higher percentage of the savings being taken by the ESCO. When a contract includes some form of guarantee, a contractor normally takes out insurance against that guarantee. Such insurance is generally expensive since insurance companies cannot adequately quantify these types of risks unless the contract is for a simple type of project with a long track record, like changing light bulbs, where there are few unknowns in the equation. The cost of the insurance policy is added, with associated mark-ups, to the cost of the contract. In summary, guarantees made by the ESCO may cause them to negotiate a higher, often significantly higher, percentage of the savings to ensure an adequate profit margin to cover all the risk they assume.

There are of course circumstances where a municipality is willing to sacrifice some of the savings accrued from the project in order to have a guarantee that brings a high degree of certainty. In India the guaranteed savings type of performance contract is more widespread than the shared savings type due to the lower risk for the municipality. Many ESCOs in India are still small and new with inadequate credit histories and financial track records.

2.8.1.2 Shared Savings

- The ESCO takes on the risk of third party financing from a lender, putting the loan on the ESCO's balance sheet
- The savings are shared between the municipality and ESCO with the contract stipulating that the municipality will receive a certain percentage of the savings, but it does not guarantee the magnitude of those savings

In this scenario, the ESCO is still carrying the cost of the project but without the additional cost of the guarantee. In financing EE projects, the cost of the capital for the ESCO is higher than the cost of capital to the Municipality. Therefore the client (municipality) is not carrying any risk, but then it is also not assured of any savings, although in practice such an outcome is unlikely. The likely outcome from a shared savings performance contract, should circumstances allow for this type of contract, is that the municipality may accrue significantly greater financial rewards from the project than if a guaranteed savings contract had been used.

2.8.2 Components of performance contracts

The performance contract document determines the terms of project operation over the entire contract period. It defines in detail the relationships, roles and responsibilities of each party, and clearly explains the mechanism of project performance and any savings guarantee. The performance contract is a long term agreement between the municipality and ESCO. Therefore it has to be flexible enough to accommodate both the current and future needs of the facility for the duration of the contract term. The performance contract should contain the basic legal provisions and protections to which each party will conform, as well as specify governing laws and pertinent regulatory requirements (e.g. insurance and code compliance), liabilities, conditions of default and remedies, and indemnification provisions. It can be customized to accommodate additional terms and conditions as necessary. The main components that need to be included in the contract comprise the following:

2.8.2.1 Scope of work

All details of the scope of work for the ESCO/consultant should be clearly defined. The scope of work typically includes the description of services to be delivered relating to engineering, design, construction services, operations and maintenance, and training. It will also include procurement, installation, financing, evaluation and monitoring of all energy saving measures included in the contract.

2.8.2.2 Roles and responsibilities of parties

The municipality plays a key role in realizing the savings from the performance contract. Therefore the contract has to define the actions that municipal facilities need to take in order to achieve savings. This can include, for example, the requirements to operate the equipment installed by under the contract according to specified standards or to maintain certain parameters of the system operation. The contract can specify the information that the municipality has to provide to the ESCO during the contract term, such as drawings, specifications, energy usage data, and other operating data.

The ESCO is responsible for implementing all items as described in the scope of work, as well as helping to obtain licenses and approvals and coordinating engineering and construction services done as part of the project.

2.8.2.3 Term of agreement

The contract must specify the term of agreement and the conditions under which it can be terminated. Such conditions can include, for example, failure to perform according to schedule or failure to reach financial closure on the financing for the project.

2.8.2.4 Payment terms

The contract must clearly specify price of the contract, the methods of payment to all parties to the contract, as well as billing procedures. A brief description of likely shared savings and guaranteed savings payment terms are below:

2.8.2.4.1 Shared savings payment calculation

The Municipality and ESCO can agree upon benefit sharing on the basis of simple payback period of the identified measures agreed for implementation. In this scenario the ESCO may or may not guarantee the savings but agree to share on a certain agreed percentage over a fixed time period. At the end of the contract the municipality gets the benefit of ongoing savings. The ESCO is likely to bare the cost of the project with or without the cost of guarantee. A typical thumb rule for calculating terms of payment based on simple payback period is listed in **Table 5**.

Table 5. Shared savings payments

Energy Conservation / Efficiency Measures	Time Period for Implementation and Commissioning
Simple payback period up to 3 months	1 Month
Simple payback period from 3 to 6 months	3 Months
Simple payback period from 6 – 12 months	6 Months

2.8.2.4.2 Guaranteed savings

Under this payment term, the ESCO guarantees an amount of savings over a guarantee period by designing and implementing the project with guaranteed savings.

The ESCO enters into a savings agreement for each of the Energy Cost Reduction Measures (ECRM). The ESCO in this arrangement will ensure certain amount of savings for each ECRM. Based on the agreement between the municipality and the ESCO, if the verified savings are more than the minimum savings guaranteed, the ESCO may be paid higher using the same agreed upon proportion as in the payment clause. In the event the actual savings fall short of the guaranteed savings of individual ECRMs, the ESCO will not get any share for that that particular ECRM.

2.8.2.5 Ownership of equipment

The contract must specify who owns the new equipment during the contract term. Based on the type of the contract, the installed equipment can have different ownership during the period of the project:

- In case of the guaranteed savings type of contract, the equipment typically belongs to the client (municipality) during the project period and after it. No transfer of the ownership is required in this case.
- In case of the shared savings type of contract the equipment is usually owned by ESCO during the project period, with ownership transferred to municipality after contract expiration. The terms of the ownership transfer should be clearly defined in the Performance Contract based on existing legal and accounting practices.

2.8.2.6 Standards of service and comfort

The contract has to specify the levels of lighting, temperature, humidity, and air ventilation acceptable to the municipality. These requirements must apply to equipment specification and operating parameters during the contract term. The standards of service and comfort prevent ESCO from operating the equipment at lower levels of lighting and cooling or heating in order to generate greater energy savings.

2.8.2.7 Efficiency projects

The contract has to specify all efficiency projects to be implemented by the ESCO. Usually, they include the projects identified during the energy audit. The contract has to specify the project plan, including the method for calculating the baseline. As explained in Section 2.4 above, the baseline may be modified to ensure the proper accounting of saving in situations where the municipal facility undergoes significant changes during the contract term (for example, an expansion of operations).

2.8.2.8 Risk, indemnification and insurance

The contract contains provisions to protect municipality and its employees from any damages or liability caused by the ESCO's performance during the contract term. Also, the cost of which is generally covered by the ESCO. Risk management includes a hazardous waste disposal plan, if applicable.

In cases where the contract includes savings guarantees, the contract specifies the period and amount of for each guarantee. Guarantees can take various forms but generally cover at least the loan payments to cover the construction costs. A guarantee clause can also include a provision for reimbursement to the municipality in case of deficit savings.

2.8.2.9 Project committee

The contract must clearly specify the names and designations of the people who will monitor and supervise the project implementation. This group of people will be referred to as project committee members. The suggested members of the project committee may include the following:

- Municipal commissioner
- Municipal chief engineer
- Elected local council representative
- Representative from nodal agency (if any)
- Electrical inspector

2.8.3 Model performance contract

A model energy performance contract is presented in Section B 3.4 of the manual, which can be used as a template for preparing contracts for specific projects. It is based on the model contract

prepared by the central public works department of the government of India and approved by the Bureau of Energy Efficiency of India (BEE).

2.9 GUIDELINES ON DEVELOPING PERFORMANCE MONITORING AND VERIFICATION PLANS

Performance contracts are negotiated based on savings estimates. Actual savings must be determined through Monitoring and Verification (M&V) after implementation. M&V involves the measurement of parameters in accordance to standard engineering protocols, codes and practices at pre-defined intervals and during the agreed term. Internationally accepted M&V standards have been established by the International Performance Measurement and Verification Protocol (http://www.evo-world.org). The collection of data during an audit must be done in a manner that facilitates M&V in accordance with these standards.

It is suggested that an independent expert or service company, not affiliated with any of the contract parties, performs M&V in order to ensure unbiased verification of the achieved savings.

IPMVP defines four broad M&V options, described below, from which the ESCO selects the best option for each individual energy saving project. The final selection is agreed upon by the ESCO and municipality. It is also possible to combine methods. For example, verification of the savings in isolation and later with the whole facility ensures the precision of the savings calculation.

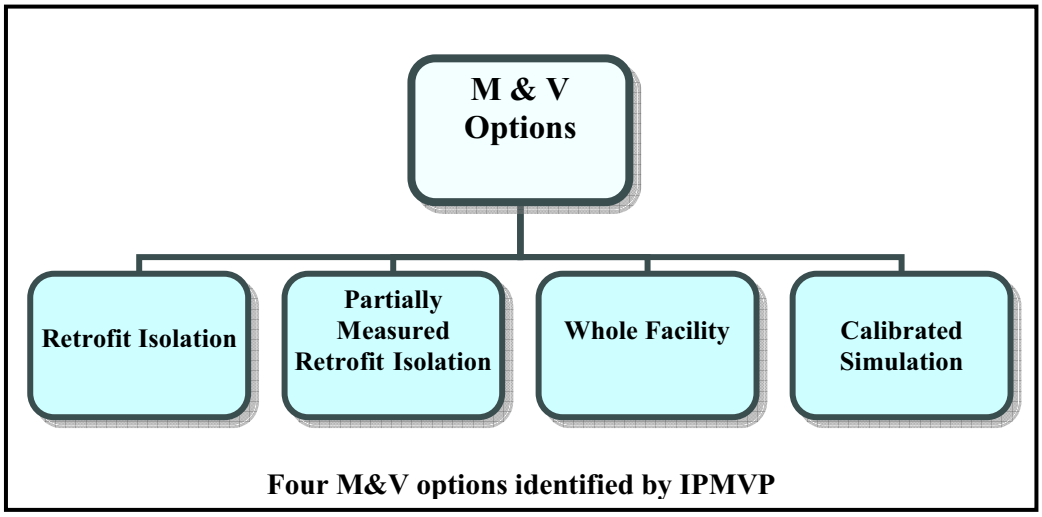

Figure 7. M&V options

2.9.1 Retrofit isolation

Savings are determined by field measurement of the energy use of the systems to which efficiency measures were applied separate from the energy use of the rest of the facility. The savings are determined by engineering calculations using short term or continuous measurements taken throughout the post-implementation period.

2.9.2 Partially measured retrofit isolation

This option differs from the regular retrofit isolation method in that savings are determined by field measurements on only some of the energy use parameters of the system(s) to which energy saving measures were applied, rather than on all measures. Partial measurement may be used if the total impact of doing only certain measurements does not introduce significant error into the resulting savings calculation. Careful review of project design and installation will ensure that

those measures that are monitored fairly represent the probable actual total savings. Measures omitted from M&V must be shown in the M&V plans along with an analysis of the significance of the error their omission may introduce. The savings are determined by engineering calculations using short term or continuous measurements taken throughout the post-implementation period.

2.9.3 Whole facility

Savings are determined by measuring energy use at the whole facility level. Short term or continuous measurements are taken throughout the post-implementation period. The data for the savings calculations are obtained from the analysis of the whole utility energy meter or sub-meter using whatever technique is appropriate, from simple comparison to regression analysis.

2.9.4 Calibrated simulation

In certain situations, savings may be determined from simulations of the energy use, either of the whole facility or components of it. Simulation routines must be demonstrated to adequately model actual energy performance measured in the facility. The savings are determined by energy use simulation, calibrated with hourly or monthly utility billing data and/or end-use metering.

3 SECTION B. TEMPLATES

3.1 TEMPLATE: EXPRESSION OF INTEREST (EOI) DOCUMENT

LOGO

Municipality / ULB Name

REQUEST FOR EXPRESSION OF INTEREST (EOI)

TO PERFORM

INVESTMENT GRADE ENERGY AUDIT AND IMPLEMENTATION IN MUNICIPAL ENERGY EFFICIENCY PROJECTS

To be submitted to

Contact Person Name

Municipality Name & Address

Last date of Submission:

1.1 Preamble

As part of energy efficiency improvement program, MUNICIPALITY is seeking "Expressions of Interest (EOI)" from "Energy Service Companies" (ESCO)/ Consultants to conduct Investment Grade Audit study and implementation for Water & Waste water pumping systems, street lighting and municipal buildings ***(whichever is applicable).***

This document covers the specific information to be provided by the interested parties on the qualifying requirement to perform such services.

1.2 Background

Please provide information on the background of the Municipal or Water utility in one paragraph
Please provide Basic System Details: average annual energy consumption, population etc.

1.3 Brief scope of work of ESCO/Consultant contract includes the following:

- To conduct the Investment Grade Energy Audit (IGA) and implementation for existing energy systems in the MUNICIPALITY such as:
  a) Water Pumping, treatment and distribution systems
  b) Sewage treatment and handling systems
  c) Street Lighting – (if applicable)
  d) Governments buildings – (if applicable)
- To identify, design and implement Energy Saving Projects (ESPs) in the above systems and to prepare an Investment Grade Audit Report (Report)
- To propose detailed projections of energy and cost savings to be obtained at the facility(s) as a result of the installation/implementation of the recommended ESPs and prioritize strategy (immediate & long-term actions) for improving energy & water savings and efficiency enhancement.
- To establish energy consumption baseline:
  - ✓ Present input/output
  - ✓ Boundary of limits
  - ✓ Parameters variations
  - ✓ Models for adjustments and impacts
  - ✓ Specific energy figures (new/old)
- To conduct financial and technical risk analysis
- To develop project Measurement & Verification plan

1.4 Submission of EOI and Eligibility Criteria

The engagement of ESCO/Consultant will be based on the **Quality-and-Cost-Based Selection** (QCBS) method of appointment with payment linked to performance. Interested firm(s) should submit the information requested in ***Annex 1.***

1.5 Future Process

Based on an evaluation of the EOI received, the interested parties evaluated as "qualified" will be short-listed to participate in the subsequent selection process. Thus, following the evaluation of EOIs, the MUNICIPALITY intends to issue a "Request for Proposal" inviting proposals to be submitted for the "services" in accordance with the RFP. Details regarding the evaluation methodology are provided in ***Annex 2.***

Enquiries

All enquiries in relation to this "Expression of Interest" must be directed to:

Name and Contact details

ANNEX 1

INFORMATION SHEET

Applicant's details

Company name . . . .
Address . . . . . .

Name of company's representative . . . .
Position . . . .
Address for communication . . . . . .
Phone . . . . . .
Facsimile . . . .
Email . . . .

Year of establishment of firm . . . .
Year of commencement of Energy Auditing /ESCO activities . . . . . .

Experience and capabilities

1. General

a) Structure and organization of the firm and infrastructure available, accreditation with Bureau for Energy Efficiency (BEE), list and number of portable measuring instruments supported by calibration certificates;

b) Information regarding technical experts/personnel available at the firm including BEE Certified Energy Auditors with copies of the BEE certificates.

2. Technical Capability

a) Number of detailed (comprehensive) energy audit studies completed by ESCO/Consultant in the past five years. Please give sector details and attach a list of clients. Also attach a copy of one detailed energy audit report (preferably for water/wastewater) for a project listed under 'A' above, including method used to compute energy baselines.

b) List of similar assignments completed or undertaken (including Industrial Water Pumping Installation) so far including name of client, location, contracted demand of the facility, contract value, duration of services, description of services provided, etc. (with appropriate supporting testimonials and references for each assignment listed).

c) Details of available energy metering instruments and other audit equipment such as electrical, light, water flow measuring instruments, etc.

3. Available Staff

a) List key personnel in your firm that you are intending to use on any potential projects. Information should include:
   - Experience in energy management and energy efficiency services,
   - Education,
   - BEE certified energy auditor(s) /manager(s)

4. Financial Capability

a) Financial capability – 3 years balance sheet and Profit & Loss Account of the firm

b) Any other relevant information deemed necessary to enable assessment of the firm's capability.

5. Certification

- Number of years with this firm, and

I certify that I am authorized to represent the ESCO/Consultant named below and that all statements contained in this EOI are true and correct.

Dated at _____this _____day of _____20__.
Name of ESCO/Consultant: _____
By: _____
Title/Position: _____

ANNEX 2

EVALUATION SCORING SHEET

PROJECT NAME:									
FORM 1: EVALUATION SHEET FOR SHORTLISTING OF CONSULTANTS BASED ON EOI									
Evaluation Criteria	**Weight**	**Firm-1**		**Firm-2**		**Firm 3**		**Firm-4**	
		Rating	**Score**	**Rating**	**Score**	**Rating**	**Score**	**Rating**	**Score**
Accreditation/Certification by BEE and/or PCRA	**10**								
No. of Certified Energy Auditors with the firm	**10**								
Performance contracting experience	**10**								
Measuring instruments available	**10**								
Annual turnover during the past 3 years	**10**								
Similar assignments experience	**25**								
Experience in energy auditing	**25**								
Total	**100**								
Score	**Weight X Rating/100**								
Minimum qualifying score	**75**								

FORM 2: RATINGS[2]	
Temporary accreditation by BEE	Accredited-100% Non-Accredited-0%
No. of Certified Energy Auditors with the firm	More than 5-100%[3] 5 Auditors-90% 4 Auditors-80% 3 Auditors-70% 2 Auditors-60% 1 Auditor-50%; No Auditors-0%
Performance contracts	3 & More than 3 projects-100% 2 projects- 80% 1 project- 60%
Measuring Instruments available	2 sets and above-100% 1 Set-80%
Annual Turnover during the past 3 years	More than 100 Lacs-100% 80-100 Lacs- 90% 70-80 Lacs-80% 60-70 Lacs-70% 50-60 Lacs-60% 40-50 Lacs-50% 30-40 Lacs-40% 20-30 Lacs-30% Less than 20 Lacs-20%
Similar assignments conducted	5 Jobs and above-100% 4 Jobs-90% 3 Jobs-80% 2 Jobs-70% 1 Job-60%
Experience in energy auditing (Contract value over Rs. 8 Lacs)	More than 8 Jobs-100% 6-8 Jobs-80% 4-6 Jobs-60%; Less than 4 Jobs-0%

[2] FORM 2 should not be published with EOI, it is intended for internal use by municipality only.

[3] The rating numbers are given as a reference. They should be customized to specific project needs.

3.2 TEMPLATE: REQUEST FOR PROPOSAL (RFP)

LOGO

Municipality / ULB Name

REQUEST FOR PROPOSALS

CONDUCTING INVESTMENT GRADE ENERGY AUDIT AND IMPLEMENTATION IN MUNICIPAL ENERGY EFFICIENCY PROJECTS

To be submitted to

Contact Person Name

Municipality Name & Address

Last date of Submission:

1. Letter of Invitation

Ref.: _____ Date. _____

MUNICIPALITY ADDRESS AND COMMUNICATION DETAILS

Subject: Letter of Invitation for Submission of Proposals for the Technical Consulting Services to Conduct and Implement Investment Grade Energy Audit in Municipalities/ Municipal Corporations of [STATE]

Request for Technical and Financial Proposal

[STATE] Urban Department is engaged in the development and financing of urban infrastructure projects in [STATE]. MUNICIPALITY is the nodal agency for implementation of the Energy Saving Projects (ESPs), financed by/sponsored by "SPONSOR".

It is proposed to conduct investment grade energy studies in the following municipalities/ municipal corporations. **<<Insert List of Municipalities and Municipal Corporations>>**

MUNICIPALITY has short listed and sent this request for proposal to the following energy management firms including your firm: **<<Insert List of short listed firms >>**

This shortlist has been finalized based on the Expression of Interest received in response to a newspaper advertisement issued by MUNICIPALITY in this regard.

Technical and financial offers are invited from the short listed firms, for selection based on Quality-and-Cost-Based Selection (QCBS) procedures described in the document.

This Request for Technical and Financial Proposal (RFP) includes the following documents:

Section 1 - Letter of Invitation
Section 2 - Information to Consultants and Data Sheet
Section 3 - Technical Proposal - Standard Forms
Section 4 - Financial Proposal - Standard Forms
Section 5 - Terms of Reference

Please inform us, within 10 days of receipt of this letter:

- That you received the letter of invitation; and
- Whether you will submit a proposal alone, or in association as a Joint Venture accepting joint and several liabilities, or as subcontractor.

Sincerely
Project Officer

Enclosure:
Copy To: **<<Insert List of concerned people >>**

2. Information to Consultants and Data Sheet

2.1. Introduction

2.1.1. The [MUNICIPALITY NAME] named in the Data Sheet will select a firm among those listed in the Letter of Invitation, in accordance with the method of selection indicated in the data sheet and detailed in the edition of the Guidelines indicated in the data sheet.

2.1.2. The consultants are invited to submit a Technical Proposal and a Financial Proposal, as specified in the data sheet (the Proposal) for consulting services required for the Assignment named in the data sheet. The Proposal will be the basis for contract negotiations and ultimately for a signed contract with the selected firm.

2.1.3. The Assignment shall be implemented in accordance with the phasing indicated in the data sheet. When the Assignment includes several phases, the performance of the consultant under each phase must be to the MUNICIPALITY's satisfaction before work begins on the next phase.

2.1.4. The ESCO/Consultant has to implement the entire final agreed Energy Saving Projects in the second phase of the project. The second phase of the project will commence after the submission of final IGA by ESCO/Consultant. All the terms and conditions, negotiations and relevant discussion will be held after the acceptance of the final IGA report by the MUNICIPALITY.

Phase 1
In this phase, the ESCO is selected to complete the energy audits and to identify the EEMs that will be included in the investment package. The cost of the energy audit will be a consideration in the contract agreement. If our organization does not choose to go forward with a performance contracting arrangement with the ESCO, our organization will be obligated to pay for the cost of the audits but will not be committed to continue the project with the ESCO. The audits become the property of our organization.

Phase II
This phase includes the long term performance contract arrangement with the ESCO and completion of the engineering, procurement and construction phases, including performance testing. The ESCO conducts the monitoring and validates the energy savings from the installed projects. The final Metering/Monitoring Plan should identify any outside resource support to be provided by our organization. Hard and soft costs for this phase should be included with the assumption that they will be paid for from energy savings.

2.1.5. The Consultants must familiarize themselves with local conditions and take them into account in preparing their Proposals. To obtain first-hand information on the Assignment and on the local conditions, consultants are encouraged to pay a visit to

the MUNICIPALITY before submitting a Proposal, and to attend a pre-proposal conference if one is specified in the data sheet. Attending the pre-proposal conference is optional. The Consultant's representative should contact the officials named in the data sheet to arrange for their visit or to obtain additional information on the pre-proposal conference. Consultants should ensure that these officials are advised of the visit in adequate time to allow them to make appropriate arrangements.

2.1.6. The MUNICIPALITY will provide the inputs specified in the data sheet, assist the firm in obtaining licenses and permits needed to carry out the services, and make available relevant project data and reports.

2.1.7. Please note that (i) the costs of preparing the proposal and of negotiating the contract, including a visit to the MUNICIPALITY and visit to project location(s), are not reimbursable as a direct cost of the Assignment; and (ii) the MUNICIPALITY is not bound to accept any of the Proposals submitted.

2.1.8. Consultants shall provide professional, objective, and impartial advice and at all times hold the MUNICIPALITY's interests paramount, without any consideration for future work, and strictly avoid conflicts with other assignments or their own corporate interests. Consultants shall not be hired for any assignment that would be in conflict with their prior or current obligations to other MUNICIPALITIES, or that may place them in a position of not being able to carry out the assignment in the best interest of the MUNICIPALITY.

2.1.8.1. Without limitation on the generality of this rule, consultants shall not be hired under the circumstances set forth below:

a) A firm that has been engaged by the MUNICIPALITY to provide goods or works for a project, and any of their affiliates, shall be disqualified from providing consulting services for the same project. Conversely, firms hired to provide consulting services for the preparation or implementation of a project, and any of their affiliates, shall be disqualified from subsequently providing goods or works or services related to the initial assignment (other than a continuation of the firm's earlier consulting services) for the same project.

b) Consultants or any of their affiliates shall not be hired for any assignment which, by its nature, may be in conflict with another assignment of the consultants.

2.1.8.2. As pointed out in § 2.1.8.1. (a) above, consultants may be hired for downstream work, when continuity is essential, in which case this possibility shall be indicated in the data sheet and the factors used for the selection of the consultant should take the likelihood of continuation into account. It will be the exclusive decision of the MUNICIPALITY whether or not to have the downstream assignment carried out, and if it is carried out, which consultant will be hired for the purpose.

2.1.8.3. Any previous or ongoing participation in relation to the assignment by the firm, its key professional staff, or its affiliates or associates under a contract with the MUNICIPALITY may result in rejection of the proposal. Consultants should clarify

their situation in that respect with the MUNICIPALITY before preparing the proposal.

2.1.9. Consultants shall observe the highest standard of ethics during the selection and execution of such contracts. In pursuance of this policy, the MUNICIPALITY:

a) defines, for the purposes of this provision, the terms set forth below as follows:

(i) "corrupt practice" means the offering, giving, receiving, or soliciting of anything of value to influence the action of a public official in the selection process or in contract execution; and

(ii) "fraudulent practice" means a misrepresentation of facts in order to influence a selection process or the execution of a contract to the detriment of the Borrower, and includes collusive practices among consultants (prior to or after submission of proposals) designed to establish prices at artificial, noncompetitive levels and to deprive the Borrower of the benefits of free and open competition.

b) will reject a proposal for award if it determines that the firm recommended for award has engaged in corrupt or fraudulent activities in competing for the contract in question;

c) will declare a firm ineligible, either indefinitely or for a stated period of time, to be awarded a contract if it at any time determines that the firm has engaged in corrupt or fraudulent practices in competing for, or in executing, a MUNICIPALITY financed contract; and

d) will have the right to require that, in contract financed by the MUNICIPALITY, a provision be included requiring consultants to permit the MUNICIPALITY to inspect their accounts and records relating to the performance of the contract and to have them audited by auditors appointed by the MUNICIPALITY.

2.1.10. Consultants shall not be under a declaration of ineligibility for corrupt and fraudulent practices issued by the MUNICIPALITY in accordance with the above §2.1.9. (d).

2.1.11. Consultants shall furnish information as described in the financial proposal submission form (Section 4A) on commissions and gratuities, if any, paid or to be paid to agents relating to this proposal, and to contract execution if the firm is awarded the contract.

2.1.12. Consultants shall be aware of the provisions on fraud and corruption stated in the standard contract under the clauses indicated in the data sheet.

2.2. Clarification and Amendment of RFP Documents

2.2.1 Consultants may request a clarification of any of the RFP documents up to the number of days indicated in the data sheet before the Proposal submission date. Any request for clarification must be sent in writing by paper mail, cable, telex, facsimile,

or electronic mail to the MUNICIPALITY's address indicated in the data sheet. The MUNICIPALITY will respond by cable, telex, facsimile, or electronic mail to such requests and will send copies of the response (including an explanation of the query but without identifying the source of inquiry) to all invited consultants who intend to submit proposals. Verbal information/clarification given by any representative of MUNICIPALITY shall not be binding on the MUNICIPALITY.

2.2.2 At any time before the submission of Proposals, the MUNICIPALITY may, for any reason, whether at its own initiative or in response to a clarification requested by an invited firm, modify the RFP documents by amendment. Any amendment shall be issued in writing through addenda. Addenda shall be sent by mail, cable, telex, facsimile, or electronic mail to all invited consultants and will be binding on them. The MUNICIPALITY may at its discretion extend the deadline for the submission of Proposals.

2.3. Preparation of Proposal

Consultants are requested to submit a Proposal (§ 2.1.2.) written in the language(s) specified in the Data Sheet.

2.3.1 Technical Proposal

2.3.1.1. In preparing the Technical Proposal, consultants are expected to examine the documents comprising this RFP in detail. Failure to provide the requested information may result in rejection of a Proposal.

2.3.1.2. While preparing the Technical Proposal, consultants must give particular attention to the following:

a) If a consultant considers that it does not have all the expertise for the Assignment, it may obtain a full range of expertise by associating with individual consultant(s) and/or other consultants or entities in a joint venture or subcontract, as appropriate. Consultants may associate with the other consultants invited for this Assignment only with approval of the MUNICIPALITY as indicated in the Data Sheet. Consultants must obtain the approval of the MUNICIPALITY to enter into a joint venture with consultants not invited for this assignment. The consultants are encouraged to seek participation of local consultants by entering into a joint venture with, or subcontracting part of the Assignment to local consultants. The consultant entering into subcontracting agreement must provide all its details (technical and financial) similar to those provided by ESCO.

b) For assignments on a staff-time basis, the estimated number of key professional staff-months is given in the data sheet. The proposal shall, however, be based on the number of key professional staff-months estimated by the firm.

c) It is desirable that the majority of the key professional staff proposed be permanent employees of the firm or has an extended and stable working relation with it.

d) Proposed key professional staff must at a minimum have the experience indicated in the data sheet, preferably working under conditions similar to those prevailing in the country of the assignment.

e) Alternative key professional staff shall not be proposed, and only one curriculum vita (CV) may be submitted for each position.

f) Reports to be issued by the consultants as part of this assignment must be in the language(s) specified in the Data Sheet. It is desirable that the firm's personnel have a working knowledge of the MUNICIPALITY's regional language.

2.3.1.3. The Technical Proposal should provide the following information using the attached Standard Forms (Section 3):

a) A brief description of the firm's organization and an outline of recent experience on assignments (3.2. Form 3B) of a similar nature. For each assignment (number of assignments shall not exceed 10), the outline should indicate, inter alia, the profiles and names of the staff provided, duration of the assignment, contract amount, and firm's involvement.

b) Any comments or suggestions on the Terms of Reference and on the data, a list of services, and facilities to be provided by the MUNICIPALITY (3.3. Form 3C).

c) Outline of IGA Methodology to be followed is provided in this document. However, if the consultants have any comments, they may be provided in 3.4. Form 3D. (This will not be considered for evaluation).

d) The list of the proposed staff by specialty, the tasks that would be assigned to each team member, and their time (3.5. Form 3E).

e) Curriculum Vitae no more than one month old signed by the proposed key professional staff and the authorized representative submitting the proposal (3.6. Form 3F). Key information should include number of years working for the firm, and degree of responsibility held in various assignments during the last ten (10) years.

f) Estimates of the total staff effort (professional and support staff; staff time) to be provided to carry out the assignment, supported by bar chart diagrams showing the time proposed for each key professional staff team member. (3.5 Form 3E and 3.6. Form 3F).

g) A detailed description of the proposed methodology, staffing, and monitoring of training, if the data sheet specifies training as a major component of the assignment (not exceeding 10 pages).

h) Any additional information requested in the Data Sheet.

2.3.1.4. The Technical Proposal shall not include any financial information.

2.3.2. Financial Proposal

2.3.2.1. In preparing the Financial Proposal, consultants are expected to take into account the requirements and conditions of the RFP documents. The Financial Proposal should follow Standard Forms. It lists all costs associated with the Assignment, including (a) remuneration for staff (in the field and at home office), and (b) reimbursable such as subsistence (per diem), transportation, services and equipment (vehicles, office equipment, furniture, and supplies), office rent, insurance, printing of documents, use of portable equipment; if it is a major component of the assignment. If appropriate, these costs should be broken down by activity.

2.3.2.2. The Financial Proposal should clearly estimate, as a separate amount, the applicable taxes, duties, fees, levies, and other charges imposed under the applicable law, for the consultants, the subcontractors, and their personnel; unless the Data Sheet specifies otherwise.

2.3.2.3. Consultants may express the price of their services in the national currency only.

2.3.2.4. Commissions and gratuities, if any, paid or to be paid by consultants and related to the Assignment will be listed in the Financial Proposal submission form (4.1. Form 4A).

2.3.2.5. The data sheet indicates how long the proposals must remain valid after the submission date. During this period, the consultant is expected to keep available the key professional staff proposed for the assignment. The MUNICIPALITY will make its best effort to complete negotiations within this period. If the MUNICIPALITY wishes to extend the validity period of the proposals, the consultants who do not agree have the right not to extend the validity of their proposals.

2.4. Submission, Receipt, and Opening of Proposals

2.4.1. The original Proposal (Technical Proposal and if required Financial Proposal; see §2.1.2.) shall be prepared in indelible ink. It shall contain no inter-lineation or overwriting, except as necessary to correct errors made by the firm itself. Any such corrections must be initialed by the person or persons who sign(s) the Proposals.

2.4.2. An authorized representative of the firm initials all pages of the Proposal. The representative's authorization is confirmed by a written power of attorney accompanying the Proposal.

2.4.3. For each Proposal, the consultants shall prepare the number of copies indicated in the data sheet. Each Technical Proposal and Financial Proposal should be marked "Original" or "Copy" as appropriate. If there are any discrepancies between the original and the copies of the Proposal, the original governs.

2.4.4. The original and all copies of the Technical Proposal shall be placed in a sealed envelope clearly marked "Technical Proposal," and the original and all copies of the Financial Proposal in a sealed envelope clearly marked "Financial Proposal" and warning: "Do Not Open with the Technical Proposal". Both envelopes shall be placed into an outer envelope and sealed. This outer envelope shall bear the submission address and other information indicated in the data sheet and clearly marked, "DO NOT OPEN, EXCEPT IN PRESENCE OF THE EVALUATION COMMITTEE."

2.4.5. The completed Technical and Financial Proposal must be delivered at the submission address on or before the time and date stated in the data sheet. Any Proposal received after the closing time for submission of proposals shall be returned unopened.

2.4.6. After the deadline for submission of proposals the Technical Proposal shall be opened immediately by the evaluation committee. The Financial Proposal shall

remain sealed and deposited with a respectable public auditor or independent authority until all submitted proposals are opened publicly.

2.5. Proposal Evaluation

2.5.1. General

2.5.1.1. From the time the bids are opened to the time the contract is awarded, if any consultant wishes to contact the MUNICIPALITY on any matter related to its proposal, it should do so in writing at the address indicated in the data sheet. Any effort by the firm to influence the MUNICIPALITY in the MUNICIPALITY's proposal evaluation, proposal comparison or contract award decisions may result in the rejection of the consultant's proposal.

2.5.1.2. Evaluators of Technical Proposals shall have no access to the Financial Proposals until the technical evaluation, including any Bank reviews and issuance of a "no objection" letter, is concluded.

2.5.2. Evaluation of Technical Proposals

2.5.2.1. The evaluation committee appointed by the MUNICIPALITY as a whole, and each of its members individually evaluates the proposals on the basis of their responsiveness to the Terms of Reference, applying the evaluation criteria, sub-criteria (typically not more than three per criteria) and point system specified in the Data Sheet (See §2.10). Each responsive proposal will be given a technical score (St). A proposal shall be rejected at this stage if it does not respond to important aspects of the Terms of Reference or if it fails to achieve the minimum technical score indicated in the data sheet.

2.5.3. Public Opening and Evaluation of Financial Proposals; Ranking

2.5.3.1. After the evaluation of quality is completed, the MUNICIPALITY shall notify those consultants whose proposals did not meet the minimum qualifying mark or were considered non-responsive to the RFP and Terms of Reference, indicating that their Financial Proposals will be returned unopened after completing the selection process. The MUNICIPALITY shall simultaneously notify the consultants that have secured the minimum qualifying mark, indicating the date and time set for opening the Financial Proposals. The opening date shall not be sooner than two weeks after the notification date. The notification may be sent by registered letter, cable, telex, facsimile, or electronic mail.

2.5.3.2. The Financial Proposals shall be opened publicly in the presence of the consultants' representatives who choose to attend. The name of the consultant, the quality scores, and the proposed prices shall be read aloud and recorded when the Financial Proposals are opened. The MUNICIPALITY shall prepare minutes of the public opening.

2.5.3.3. The evaluation committee will determine whether the Financial Proposals are complete, (i.e., whether they have priced all items of the corresponding Technical

Proposals. If not, the MUNICIPALITY will price them and add their price to the initial price), correct any computational errors. The evaluation shall exclude those taxes, duties, fees, levies, and other charges imposed under the applicable law (and to be paid under the contract unless the consultant is exempted), and estimated as per § 2.3.2.2.

2.5.3.4. The lowest Financial Proposal (Fm) will be given a financial score (Sf) of 100 points. The financial scores (Sf) of the other Financial Proposals will be computed as indicated in the data sheet. Proposals will be ranked according to their combined technical (St) and financial (Sf) scores using the weights (T = the weight given to the Technical Proposal; P = the weight given to the Financial Proposal; T + P = 1) indicated in the data sheet: $S = St \times T\% + Sf \times P\%$. The firm achieving the highest combined technical and financial score will be invited for negotiations.

2.6. Negotiations

2.6.1. Negotiations will be held at the address indicated in the data sheet. The aim is to reach agreement on all points and sign a contract.

2.6.2. Negotiations will include a discussion of the Technical Proposal, the proposed methodology (work plan), staffing and any suggestions made by the firm to improve the Terms of Reference. The MUNICIPALITY and firm will then work out final Terms of Reference, staffing, and bar charts indicating activities, staff, periods in the field and in the home office, staff-months, logistics, and reporting. The agreed work plan and final Terms of Reference will then be incorporated in the "Description of Services" and form part of the contract. Special attention will be paid to getting the most the firm can offer within the available budget and to clearly defining the inputs required from the MUNICIPALITY to ensure satisfactory implementation of the Assignment.

2.6.3. The financial negotiations will include a clarification (if any) of the firm's tax liability, and the manner in which it will be reflected in the contract; and will reflect the agreed technical modifications in the cost of the services. Unless there are exceptional reasons, the financial negotiations will involve neither the remuneration rates for staff (no breakdown of fees) nor other proposed unit rates.

2.6.4 Having selected the firm on the basis of, among other things, an evaluation of proposed key professional staff; the MUNICIPALITY expects to negotiate a contract on the basis of the experts named in the Proposal. Before contract negotiations, the MUNICIPALITY will require assurances that the experts will be actually available. The MUNICIPALITY will not consider substitutions during contract negotiations unless both parties agree that undue delay in the selection process makes such substitution unavoidable or that such changes are critical to meet the objectives of the assignment. If this is not the case and if it is established that key staff was offered in the proposal without confirming their availability, the firm may be disqualified.

2.6.5. The negotiations will conclude with a review of the draft form of the contract. To complete negotiations the MUNICIPALITY and the firm will initial the agreed

contract. If negotiations fail, the MUNICIPALITY will invite the firm whose proposal received the second highest score to negotiate a contract.

2.7. Award of Contract

2.7.1. The contract will be awarded following negotiations. After negotiations are completed, the MUNICIPALITY will promptly notify other consultants on the shortlist that they were unsuccessful and return the Financial Proposals of those consultants who did not pass the technical evaluation (§2.5.2.1.)

2.7.2. The firm is expected to commence the Assignment on the date and at the location specified in the data sheet.

2.8. Confidentiality

2.8.1. Information relating to evaluation of proposals and recommendations concerning awards shall not be disclosed to the consultants who submitted the proposals or to other persons not officially concerned with the process, until the winning firm has been notified that it has been awarded the contract.

2.9. Cancellation of RFP

2.9.1 The MUNICIPALITY reserves the right to cancel any RFP before the contract is awarded. Any and all proposals may be rejected in whole or in part when it is in the best interest of the MUNICIPALITY.

2.10. Data Sheet: Investment Grade Energy Audit and Implementation in Municipalities/ Municipal Corporations in State

Reference Clauses in Section 2		
2.1.1.	Name of the MUNICIPALITY	MUNICIPALITY
	Method of Selection	Quality-and Cost-Based Selection (QCBS)
2.1.2.	Type of Proposal Required	Technical and Financial
	Name of Assignment	Technical Services for Investment Grade Energy Studies in Municipalities/ Municipal Corporations in STATE
	Objectives/ Description	Provided in Section "5."
2.1.3.	The Assignment is phased:	Yes/No Phase 1- IGA Study Phase 2- Implementation of agreed ESPs
2.1.4. and 2.1.5.	A pre-proposal conference will be held:	Yes/No

		Date: _____ Time _____hrs Venue: _____
	The name(s), address(es), and telephone/numbers of the MUNICIPALITY's Official(s) are:	Name:_____ Tel:_____ Name:_____ Tel:_____
2.1.6.	The MUNICIPALITY will provide the following inputs:	• Minimum details of the municipality to be studied • Name and contact details of the contacts at the Municipality who will be authorized to co-ordinate. • Area map of the municipality. • List of steering committee members.
2.1.7.	The MUNICIPALITY envisages the need for continuity for downstream work:	Yes/No
2.1.8.2.	The clauses on fraud and corruption in the contract	Sub-Clause 2.9.1 and 3.6 of G.C.C.
2.2.1.	Clarifications may be requested up to	One day prior to pre-proposal conference, if any conference is proposed. Or else up to one week before the submission date of this proposal.
	The address for requesting clarifications:	_____ _____
2.3.	Proposals should be submitted in the following language(s):	English
2.3.	• Short listed firm/entity may associate with other short listed firm:	Yes/No
	• The estimated number of key professional staff days required for the assignment:	____ Days
	• The positions specified:	i. Team Leader ii. Project Manager iii. Electrical & Mechanical Engineers

	• The minimum required experience of proposed key professional staff:	*Team Leader:* Electrical/ Mechanical/ Chemical engineer with a minimum 10 Years and should be a certified energy auditor by BEE. *Project Manager:* Degree in Electrical/Mechanical/Chemical engineering with 5 Years experience in energy auditing for certified energy auditors and 8 years experience for others. *Electrical Engineer:* The electrical engineer may from electrical/ mechanical/ chemical discipline, if he/she is a certified energy auditor. He should have a minimum of 3 years experience in energy auditing. If he/she is not a certified energy auditor, then he/she should have a Degree in Electrical engineering and a minimum of 5 Years experience in energy auditing. *Mechanical Engineer:* The mechanical engineer may be from electrical/ mechanical/ chemical discipline, if he/she is a certified energy auditor. He/she should have a minimum of 3 years experience in energy auditing. If he/she is not a certified energy auditor, then he/she should have a degree in mechanical/ chemical engineering and a minimum of 5 years experience in energy auditing.. For measurements and data collection and for other field works sufficient number of field staffs could be engaged.
	f) Reports, which are part of the assignment, must be written in the following language	English
2.3.2.2.	Taxes	Consultants are requested to consult tax consultants for details.
2.3.2.3.	Currency	The Consultants to state local costs in Indian Rupees
2.3.2.5.	Validity	Proposals must remain valid 90 days after the submission date i.e. until: _____
2.4.3.	No of Copies of Technical and Financial Proposal	Consultants must submit original and 4 additional [Total Five Four *IN WORDS*] copies of each technical proposal. Consultants must submit an original and 1 additional [Total Two *IN WORDS*] copy of each financial proposal.

2.4.4. and 2.5.1.1.	Proposal Submission Address	_____ _____ _____
	The information on the outer envelope should also include:	"Technical/ Financial Proposals for the assignment of Providing Technical Services for investment grade energy studies in municipalities/ municipal corporations in STATE". Also write on the top of the envelope in Bold Letters "To be Opened Only by Evaluation Committee".
2.4.5.	Proposals must be submitted no later than the following date and time:	Date:_____ Time:_____
2.5.2.1.	The number of points to be given under each of the evaluation criteria:	See ***Evaluation Criteria*** below

Evaluation Criteria **(Adjust the weight factors (max points) accordingly to the specific situation)**	**Max Point**
Specific experience of the consultants firm related to the Assignment • Experience in similar assignment to investment grade energy studies in municipalities/ municipal corporations • Experience in other relevant assignments (energy audits)	10
Qualifications and competence of the key staff for the Assignment (use the criteria in the table below) • Team leader • Project Manager • Electrical Engineer • Mechanical Engineer	60
Performance contracting experience: a. Stated capability to carry out a performance contract Mechanical Electrical b. Staff experience in implementing a performance contract	10
Experience in validation & PMV	
Ability to provide guarantees for energy savings and for performance of installed systems	15
Annual turnover and financial parameters and experience in financing providing third party	5
Total	100

2.11 The Breakdown of points for evaluation of the key staff qualifications and competence can be as follows:

Criteria[4]	**Max Point (Use the Rating table below)**
General qualifications • Education / Specialization • Experience in energy audit/certified energy auditor • Experience in municipal sector • Experience in validation & PMV	30[5] 6 8 8 8
Adequacy for the project • Experience in similar assignment. Ability to a. Identify energy saving measures and design solutions b. Procure and install energy efficiency equipment c. Manage the overall project d. Monitor energy savings from energy efficiency projects e. Provide ongoing support, service and training f. Carry out detailed feasibility study of sites g. Including access to availability of energy monitoring equipment • Experience in other relevant but not exactly similar to assignment under bid	65 35 30
Experience in region and language	5
Total	100
Criteria	Ratings
Education /specialization • Doctorate, Post graduate with BEE energy auditor certificate • Post graduate • Graduates	 100% 80% 60%
Total Experience • > 20 years • 17 to 20 years • 15-17 years	 100% 90% 80%

[4] CRITERIA table is not intended for publishing with RFP, and is for internal use by municipality only.

[5] The rating numbers are given as a reference. They should be customized to specific project needs.

Experience in municipal sector • > 3 projects • 3 projects • 2 projects • 1 projects	 100% 90% 80% 60%
Experience in validation & PMV • > 3 projects • 3 projects • 2 projects • 1 projects	 100% 90% 80% 60%
Experience in similar assignment • > 3 projects • 3 projects • 2 projects • 1 projects	 100% 90% 80% 60%
Experience in other relevant but not exactly similar to assignment under bid • > 10 projects • 5-10 projects • <5 projects	 100% 90% 80%

2.5.2.1.	The minimum technical score required to pass is	75 points
2.5.3.4.	The formula for determining the financial scores:	[Sf = 100 x Fm/F, in which Sf is the financial score, Fm is the lowest price, and F the price of the proposal under consideration]
	The weights given to the technical and Financial Proposals are:	Technical = 0.80, and Financial = 0.20
2.6.1.	The address for negotiations is	_____ _____ _____
2.7.2.	The assignment is expected to commence on	_____

2.11. Data to be provided by the Municipality to the Consultants

Data/Information required to be provided by the municipality
Name of the municipality
Contact person, address and contact details including mobile number
Location (State & District)
Approximate distance in KM from the state capital
Grade/Class of the municipality
Population as per recent census (Mention the year)
Area of the municipality in sq. km
Area map of the municipality is available- Yes/No
If available, whether it is to scale or not to scale
Water treatment, pumping and distribution system
Water source
If the source water is managed by other agencies, who pays for the electricity.
If the municipality does not pay for the electricity, audit of the water source area and the piping system up to municipal storage are included in the study- Yes/No
If included in the study, distance of the water source and storage at the municipality in KM.
Connected load of the pumping systems at source concerned to this municipality
Total load of the water pumping systems in the municipality
Water consumption of the municipality in MLD
Electricity consumption for water pumping systems at Source-Monthly average in kWh
Electricity consumption for water pumping systems at the municipality- Monthly average in kWh
Inventory Details
Number of Transformers for the purpose of water pumping systems in the capacity range of
Less than 25 kVA
26 kVA to 50 kVA
51 kVA to 100 kVA
101 kVA to 200 kVA
More than 201 kVA
Number of water sources in the Municipality, if the sources are within the municipality
If water source is from outside, number of primary water storage systems in the municipality
Number of overhead tanks in the municipality
Please inform whether the following information are available - Yes/No
Individual capacity of all the water storage tanks
Number of water feeder lines from each storage tank
Number and capacity of overhead storage tanks
Number of connections-domestic - in each water feeder lines
Number of connections-commercial- in each water feeder lines
Number of public water connections in each water feeder lines

Pipe line sizes of main line and lines from the overhead tank
Length and size of each water feeder line from the overhead tank/from the pumping stations
Design details and characteristic curves of the pumps connected in the water pumping systems
Water distribution system line diagram
Street Lighting and Electrical distribution system
Number of sub-stations in the municipality
Total number of HT feeders from the sub-stations
Electricity consumption for street lighting systems- Monthly average in kWh
Inventory Details
Number of Transformers for the purpose of street lighting in the capacity range of
Less than 25 kVA
26 kVA to 50 kVA
51 kVA to 100 kVA
101 kVA to 200 kVA
More than 201 kVA
Please inform whether the following information are available - Yes/No
Connected load of the individual transformers for street lighting, water pumping, municipal buildings, sewage treatment and handling systems separately
Number of feeders in individual transformers for the purpose of street lighting, water pumping, sewage treatment & handling and municipal buildings
Number of light posts in each of the feeders
Type and wattage details of the lights in the individual light posts.
Length, conductor size and conductor material of each feeder from the individual transformers
Electrical single line diagram
Sewage water treatment and handling system
Number of sewage water treatment plants in the municipality
Connected load of the pumping systems involved in the collection of sewage water in kW
Connected load at the sewage treatment plant in kW
Capacity of the sewage treatment plants-Total
Inventory Details
Number of Transformers for the purpose of sewage water treatment and handling systems in the capacity range of
Less than 25 kVA
26 kVA to 50 kVA
51 kVA to 100 kVA
101 kVA to 200 kVA
More than 201 kVA
Number of pumps and agitators in the sewage water treatment and handling systems in the capacity range of
Less than 30 kW
31 kW to 50 kW
51 to 100 kW

Above 100 kW
Please inform whether the following information are available - Yes/No
Individual capacity of all sewage water treatment plants
Number of sewage water streams joining into the treatment plant
Design details and characteristic curves of the pumps connected in the water distribution systems
Municipal building details (Only for those which are selected for the project)
Number of Buildings
Electricity consumption in the municipality owned buildings including hospitals
Inventory Details
Number of Transformers for the purpose of municipal buildings in the capacity range of
Less than 25 kVA
26 kVA to 50 kVA
51 kVA to 100 kVA
101 kVA to 200 kVA
More than 201 kVA
Number of the buildings occupied by the municipality with floor area in the range of
Less than 300 sq. m
301 sq. m to 600 sq. m
More than 601 sq. m
Number of light posts in each of the feeders
Type and wattage details of the lights in the individual light posts.
Length, conductor size and conductor material of each feeder from the individual transformers
Electrical single line diagram

3. Technical Proposal Formats

3.1. Form 3A: Technical Proposal Submission Form

[*Location, Date*]

FROM: (Name of Firm)
_____
_____
_____

TO: (MUNICIPALITY)
_____
_____
_____

Subject: Consulting Service to Conduct and Implement Investment Grade Energy Audit in selected Municipalities/ Municipal Corporations of [STATE] - Technical Proposal.

We, the undersigned, offer to provide the consulting services for the above in accordance with your Request for Proposal dated [*Date*], and our Proposal. We are hereby submitting our Proposal, which includes this Technical Proposal, and a Financial Proposal sealed in separate envelopes.

If negotiations are held during the period of validity of the Proposal, i.e., before [*Date*] we shall negotiate on the basis of the proposed staff. Our Proposal is binding upon us and subject to the modifications resulting from contract negotiations.

We understand you are not bound to accept any Proposal you receive.

Yours sincerely,

Authorized Signature:
Name and Title of Signatory:
Name of Firm:

3.2. Form 3B: Firm's References

Relevant Services Carried Out in the Last Five Years that Best Illustrate Qualifications

Using the format below, provide information on each reference assignment for which your firm, either individually as a corporate entity or as one of the major companies within an association, was legally contracted. The total number of references provided shall not exceed 10 (Ten)

<table>
<tr><td colspan="3">Firm's Name:</td></tr>
<tr><td colspan="2">Assignment Name:</td><td>Country:</td></tr>
<tr><td colspan="2">Location within Country:</td><td>Key professional staff provided by your firm (profiles):</td></tr>
<tr><td colspan="2">Name of MUNICIPALITY:</td><td>No. of staff:</td></tr>
<tr><td colspan="2">Address:</td><td>No. of staff-months; duration of assignment:</td></tr>
<tr><td>Start Date (Month/Year):</td><td>Completion Date (Month/Year):</td><td>Approximate value of services (in INR):</td></tr>
<tr><td colspan="2">Name of Associated Consultants, if any:</td><td>No. of months of key professional staff, provided by associated consultants:</td></tr>
<tr><td colspan="3">Name of Senior Staff (Project Director/Coordinator, Team Leader) involved and functions performed:</td></tr>
<tr><td colspan="3">Narrative Description of Project:</td></tr>
<tr><td colspan="3">Description of Actual Services Provided by Your Staff:</td></tr>
</table>

3.3. Form 3C: Comments and Suggestions on the Terms of Reference, Data, Services and Facilities to be provided by the Municipality

On the Terms of Reference:

1.

2.

3.

4.

5.

On the data, services, and facilities to be provided by the MUNICIPALITY

1.

2.

3.

4.

5.

Consulting Firm's Name: _____

3.4. Form 3D: Description of the Methodology and Work Plan to Perform the Assignment

The Municipality has to design this form in accordance with the needs of the particular project. Refer to the guidelines on the steps involved in investment grade audit for Municipal energy efficiency projects (Section 2.4); and guideline on technical scopes of work for Municipal energy efficiency (Section 2.5) for the details that can be included in this form.

3.5. Form 3E: Team Composition & Task Assignments

Technical/ Managerial Staff

Sl. No.	Name	Position Assigned	Tasks Assigned
1.		Team Leader	
2.		Project Manager	
3.		Electrical Engineer	
4.		Mechanical Engineer	

Support Staff

Sl. No.	Name	Position Assigned	Tasks Assigned
1.			
2.			
3.			
4.			
..			
..			

3.6. Form 3F: Format of CV of Proposed Professional Staff

Proposed Position: _____

Name of Firm: _____

Name of Staff: _____

Profession: _____

Years with Firm/Entity: _____

Membership in Professional Societies: _____

_____

Detailed Tasks Assigned: _____

_____

Key Qualifications:

[*Give an outline of staff member's experience and training most pertinent to tasks on assignment. Describe degree of responsibility held by staff member on relevant previous assignments and give dates and locations. Use about half a page.*]

_____

Education:

[*Summarize college/university and other specialized education of staff member, giving names of schools, dates attended, and degrees obtained. Use about one quarter of a page.*]

_____

Employment Record:

[*Starting with present position, list in reverse order every employment held. List all positions held by staff member since graduation, giving dates, names of employing organizations, titles of positions held, and locations of assignments. For experience in last ten years, also give types of activities performed and MUNICIPALITY references, where appropriate. Use about two pages.*]

_____

Languages:

[*For each language indicate proficiency: excellent, good, fair, or poor; in speaking, reading, and writing]*

_____

Certification:

I, the undersigned, certify that to the best of my knowledge and belief, these data correctly describe my qualifications, my experience, and me.

_____Date: _____

[Signature of staff member and authorized representative of the Firm] *Day/Month/Year*

Full name of staff member:_____

Full name of authorized representative: _____

3.7. Form 3G: Time Schedule for Professional Personnel

				Months				
No.	**Name**	**Position**	**Reports Due/Activities**	**1**	**2**	**3**	**4**	**Number of Months**
1.								
2.								
3.								
4.								

Signature:_____
(Authorized Representative)

Full Name:_____

Title:_____

3.8. Form 3H: Activity (Work) Schedule

A. Field Investigation and Study Items:					
		Month Program (Bar Chart format) ***[1st, 2nd, etc. are months from the start of assignment]***			
No.	Item of Activity (Work)	1st	2nd	3rd	4th
	_____				
	_____				
	_____				
	_____				
	_____				

B. Completion and Submission of Reports		
Reports:		**Schedule : (Date from Contract)**
1.		
2.		
3.	Draft Final Report and presentation at MUNICIPALITY	
4.	Final Report	

4. Financial Proposal Formats

4.1. Form 4A: Financial Proposal Submission Form

[*Location, Date*]

FROM: (Name of Firm)	**TO: (Name and Address of Client)**
_____	_____
_____	_____
_____	_____

Subject: **Consulting Services to Conduct and Implement Investment Grade Energy Audit in Selected Municipalities/ Municipal Corporations of [STATE] - Technical Proposal. – Financial Proposal.**

We, the undersigned, offer to provide the consulting services for the above in accordance with your Request for Proposal dated [*Date*], and our Proposal (Technical and Financial Proposals). Our attached Financial Proposal is for the sum of [*Amount in words and figures*]. This amount is exclusive of the local taxes, which we have estimated at [*Amount(s) in words and figures*].

Our financial proposal shall be binding upon us subject to the modifications resulting from contract negotiations, up to expiration of the validity period of the Proposal, i.e., [*Date*].

We confirm that, in competing for (and, if the award is made to us, in executing) the above contract, we will strictly observe the laws against fraud and corruption in force in India namely "Prevention of Corruption Act 1988".

Commissions and gratuities, if any, paid or to be paid by us to agents relating to this Proposal and contract execution, if we are awarded the contract, are listed below:

Name and Address of Agents	Amount and Currency	Purpose of Commission or Gratuity
_____	_____	_____
_____	_____	_____

We understand you are not bound to accept any Proposal you receive.

Yours sincerely,

Authorized Signature:
Name and Title of Signatory:
Name of the Firm:

4.2. Form 4B: Summary of Costs

No.	Activity	Costs			Amounts	
		Remuneration	Reimbursable	Taxes	In Figures	In Words
1						
2						
3						
5						
6						
7						
8						
9						
10						

Total Amount of Financial Proposal:
(In Figures)
(In Words)

Note: The cost of Consultancy is the one given in the Summary as above and payment is to be made as agreed during negotiation. The breakdown of the cost as given in Forms 4C and 4D is to facilitate negotiations, which will be done as per details in Information to Consultant.

4.3. Form 4C: Breakdown of Remuneration

No	Activity	Name	Input*	Remuneration@	Amount
1		Name 1			
		Name 2			
		Name 3			
	Subtotal				Subtotal
2		Name 1			
		Name 2			
		Name 3			
	Subtotal				Subtotal
3		Name 1			
		Name 2			
		Name 3			
	Subtotal				Subtotal
	Grand Total				

* in Staff months or days as appropriate
@ Rs/. Man month or Rs/ person-day as appropriate excluding applicable taxes

4.4. Form 4d: Breakdown of Reimbursable

No.	Activity	Description	Unit	#s	Unit Price in Rs	Amount in Rs
1		Return Flight/ Train Between ____ & ____	Trip			
		Miscellaneous Travel Expenses	Trip			
		Subsistence Allowance	Day			
		Other Direct Costs[1]				
		Local Transportation				
		Drafting and reproduction of reports				
		Equipment & Software				
		Communication costs				
	Subtotal					Subtotal
2						
	Subtotal					Subtotal
3						
	Subtotal					Subtotal
	Grand Total					

[1] includes communication, photocopying, office rent, assistance for data entry etc.

Local transportation costs are not to be included, if local transportation is being made available by MUNICIPALITY. Similarly, in the Project site office rent/ accommodation/ clerical assistance costs are not to be included if being made available by MUNICIPALITY.

5. Terms of Reference: IGA Methodology, Process, Scope, Baselines, PMV Protocols, Metering Facility and Data for the Municipality

The Municipality has to design this section in accordance with the needs of the particular project. Refer to the guidelines on the steps involved in investment grade audit for municipal energy efficiency projects (section 2.4); and guidelines on technical scopes of work for municipal energy efficiency (Section 2.5) for the details that can be included in this Section.

3.3 TEMPLATE: CONTRACT FOR INVESTMENT GRADE AUDIT (IGA)

LOGO

Municipality / ULB Name

CONTRACT FOR CONSULTING SERVICES TO CONDUCT INVESTMENT GRADE ENERGY AUDIT IN MUNICIPALITY

To be submitted to

Contact Person Name

Municipality Name & Address

Last date of Submission:

I FORM OF CONTRACT

Lump Sum Remuneration

This CONTRACT (hereinafter called the "Contract") is made the _____ day of the month of _____, 20_____, between, on the one hand, M/s. MUNICIPALITY and having its registered office at _____, herein after called the "Municipality", (which expression shall, unless excluded by or repugnant to subject or context thereof, include its successors or assigns), and on the other hand, M/s. ……..**,** a company registered under Companies act 1956, having its registered office at …….., hereinafter called the "Consultants[6]", (which expression shall, unless excluded by or repugnant to subject or context thereof, include its successors and assigns.

WHEREAS

(a) the Municipality has requested the Consultants to provide certain consulting services as defined in the General Conditions of Contract attached to this Contract (hereinafter called the "Services");
(b) the Consultants, having represented to the Municipality that they have the required professional skills, and personnel and technical resources, have agreed to provide the Services on the terms and conditions set forth in this Contract; and

NOW THEREFORE the parties hereto hereby agree as follows:

1. The following documents attached hereto shall be deemed to form an integral part of this Contract:

(a) The General Conditions of Contract (hereinafter called "GC");
(b) The Special Conditions of Contract (hereinafter called "SC");
(c) The following Appendices:

Appendix A:	Description of the Services:	_____
Appendix B:	Reporting Requirements:	_____
Appendix C:	Key Personnel	_____
Appendix D:	Services and Facilities Provided by Municipality	_____
Appendix E:	Breakdown of Contract Price	_____

2. The mutual rights and obligations of the Municipality and the Consultants shall be as set forth in the Contract; in particular:

---

[6] *If the Consultants consist of more than one entity, the above should be partially amended to read as follows:*
"...(hereinafter called the "Municipality") and, on the other hand, a joint venture consisting of the following entities, each of which will be jointly and severally liable to the Municipality for all the Consultants' obligations under this Contract, namely, _____ and _____ (hereinafter called the "Consultants.")"].

(a) The Consultants shall carry out the Services in accordance with the provisions of the Contract; and

(b) The Municipality shall make payments to the Consultants in accordance with the provisions of the Contract.

IN WITNESS WHEREOF, the Parties hereto have caused this Contract to be signed in their respective names as of the day and year first above written.

FOR AND ON BEHALF OF
[Name of the Municipality]

By
(Authorized Representative)

FOR AND ON BEHALF OF
[Name of the Consultant(s)]

By
(Authorized Representative)

FOR AND ON BEHALF OF EACH OF THE MEMBERS OF THE CONSULTANTS
[Name of the Member]

By
(Authorized Representative)

[Name of the Member]

By
(Authorized Representative)

II GENERAL CONDITIONS OF CONTRACT

1. General Provisions

1.1. Definitions

Unless the context otherwise requires, the following terms whenever used in this Contract have the following meanings:

(a) "Applicable Law" means the laws and any other instruments having the force of law in the India [or in such other country as may be specified in the Special Conditions of Contract (SC)], as they may be issued and in force from time to time;

(b) "Contract" means the Contract signed by the Parties, to which these General Conditions of Contract are attached, together with all the documents listed in Clause 1 of such signed Contract;

(c) "Effective Date" means the date on which this Contract comes into force and effect pursuant to Clause GC 0;

(d) "GC" means these General Conditions of Contract;

(e) "Government" means the State Government of _____;

(f) "Local currency" means the currency of India;

(g) "Member", in case the Consultants consist of a joint venture of more than one entity, means any of these entities, and "Members" means all of these entities; “Member in Charge” means the entity specified in the SC to act on their behalf in exercising all the Consultants rights and obligations towards the Municipality under this Contract;

(h) "Party" means the Municipality or the Consultants, as the case may be, and Parties means both of them;

(i) "Personnel" means persons hired by the Consultants or by any Sub-consultant as employees and assigned to the performance of the Services or any part thereof; and ‘key personnel’ means the personnel referred to in Clause GC 0

(j) "SC" means the Special Conditions of Contract by which these General Conditions of Contract may be amended or supplemented;

(k) "Services" means the work to be performed by the Consultants pursuant to this Contract, as described in Appendix A hereto;

(l) "Sub consultant" means any entity to which the Consultants subcontract any part of the Services in accordance with the provisions of Clause GC 0;

1.2. Relation between the Parties

Nothing contained herein shall be construed as establishing a relation of master and servant or of principal and agent as between the Municipality and the Consultants. The Consultants, subject to this Contract, have complete charge of Personnel and Sub-consultants, if any, performing the Services and shall be fully responsible for the Services performed by them or on their behalf hereunder.

1.3. Law Governing Contract

This Contract, its meaning and interpretation, and the relation between the Parties shall be governed by the Applicable Law.

1.4. Language

This Contract has been executed in the language specified in the SC, which shall be the binding and controlling language for all matters relating to the meaning or interpretation of this Contract.

1.5. Headings

The headings shall not limit, alter or affect the meaning of this Contract.

1.6. Notices

1.6.1 Any notice, request or consent required or permitted to be given or made pursuant to this Contract shall be in writing. Any such notice, request or consent shall be deemed to have been given or made when delivered in person to an authorized representative of the Party to whom the communication is addressed, or when sent by registered mail, telex, telegram or facsimile to such Party at the address specified in the SC.

1.6.2 Notice will be deemed to be effective as specified in the SC.

1.6.3 A Party may change its address for notice hereunder by giving the other Party notice of such change pursuant to the provisions listed in the SC with respect to Clause GC 0.

1.7. Location

The Services shall be performed at such locations as are specified in Appendix A hereto and, where the location of a particular task is not so specified, at such locations, as the Municipality may approve.

1.8. Authority of Member in Charge

In case the Consultants consist of a joint venture of more than one entity, the Members hereby authorize the entity specified in the SC to act on their behalf in exercising the entire Consultants' rights and obligations towards the Municipality under this Contract, including without limitation the receiving of instructions and payments from the Municipality.

1.9. Authorized Representatives

Any action required or permitted to be taken, and any document required or permitted to be executed, under this Contract by the Municipality or the Consultants may be taken or executed by the officials specified in the SC.

1.10. Taxes and Duties

Unless otherwise specified in the SC, the Consultants, Sub-consultants and Personnel shall pay such taxes, duties, fees and other impositions as may be levied under the Applicable Law, the amount of which is deemed to have been included in the Contract Price.

2. Commencement, Completion, Modification and Termination of Contract

2.1. Effectiveness of Contract

This Contract shall come into force and effect on the date (the "Effective Date") of the Municipality's notice to the Consultants instructing the Consultants to begin carrying out the Services. This notice shall confirm that the effectiveness conditions, if any, listed in the SC have been met.

2.2. Termination of Contract for Failure to Become Effective

If this Contract has not become effective within such time period after the date of the Contract signed by the Parties as shall be specified in the SC, either Party may, by not less than four (4) weeks' written notice to the other Party, declare this Contract to be null and void, and in the event of such a declaration by either Party, neither Party shall have any claim against the other Party with respect here to.

2.2.1 If ESCO fails to perform as per the terms and condition of the contract, or if ESCO decides to discontinue the project due to any other reason, then the project will terminate based on the termination clause. The continuation of the project will be subject to nature of the contract;

2.2.2 If the project has third party financing, the Bank or FIs will take a lead role in re-tendering of the project or inviting the second closest bidder for renegotiation in consultation with the Municipality

2.2.3 If the project is self financed by Municipality, the continuation of the project will be decided by Municipal project committee and they may proceed with the project either by re-tendering of the project or inviting the second closest bidder for renegotiation on the project.

2.3. Commencement of Services

The Consultants shall begin carrying out the Services at the end of such time period after the Effective Date as shall be specified in the SC.

2.4. Expiration of Contract

Unless terminated earlier pursuant to Clause GC 0 hereof, this Contract shall expire when services have been completed and all payments have been made at the end of such time period after the Effective Date as shall be specified in the SC.

2.5. Entire Agreement

This Contract contains all covenants, stipulations and provisions agreed by the Parties. No agent or representative of either Party has authority to make, and the Parties shall not be bound by or be liable for, any statement, representation, promise or agreement not set forth herein.

2.6. Modification

Modification of the terms and conditions of this Contract, including any modification of the scope of the Services, may only be made by written agreement between the Parties. Pursuant to Clause GC 0 hereof, however, each Party shall give due consideration to any proposals for modification made by the other Party.

2.7. Force Majeure

2.7.1 Definition

(a) For the purposes of this Contract, "Force Majeure" means an event which is beyond the reasonable control of a Party, and which makes a Party's performance of its obligations hereunder impossible or so impractical as reasonably to be considered impossible in the circumstances, and includes, but is not limited to, war, riots, civil disorder, earthquake, fire, explosion, storm, flood or other adverse weather conditions, strikes, lockouts or other industrial action (except where such strikes, lockouts or other industrial action are within the power of the Party invoking Force Majeure to prevent), confiscation or any other action by government agencies.

(b) Force Majeure shall not include (i) any event which is caused by the negligence or intentional action of a Party or such Party's Sub-consultants or agents or employees, nor (ii) any event which a diligent Party could reasonably have been expected to both (A) take into account at the time of the conclusion of this Contract and (B) avoid or overcome in the carrying out of its obligations hereunder.

(c) Force Majeure shall not include insufficiency of funds or failure to make any payment required hereunder.

2.7.2 No Breach of Contract

The failure of a Party to fulfill any of its obligations hereunder shall not be considered to be a breach of, or default under, this Contract insofar as such inability arises from an event of Force Majeure, provided that the Party affected by such an event (a) has taken all reasonable precautions, due care and reasonable alternative measures, all with the objective of carrying out the terms and conditions of this Contract, and (b) has informed the other Party as soon as possible about the occurrence of such an event.

2.7.3 Measures to be Taken

(a) A Party affected by an event of Force Majeure shall take all reasonable measures to remove such Party's inability to fulfill its obligations hereunder with a minimum of delay.

(b) A Party affected by an event of Force Majeure shall notify the other Party of such event as soon as possible, and in any event not later than fourteen (14) days following the occurrence of such event, providing evidence of the nature and cause of such event, and shall similarly give notice of the restoration of normal conditions as soon as possible.

(c) The Parties shall take all reasonable measures to minimize the consequences of any event of Force Majeure.

2.7.4 Extension of Time

Any period within which a Party shall, pursuant to this Contract, complete any action or task, shall be extended for a period equal to the time during which such Party was unable to perform such action as a result of Force Majeure.

2.7.5 Payments

During the period of their inability to perform the Services as a result of an event of Force Majeure, the Consultants shall be entitled to be reimbursed for additional costs reasonably and necessarily incurred by them during such period for the purposes of the Services and in reactivating the Services after the end of such period.

2.7.5 Consultation

Not later than thirty (30) days after the Consultants, as the result of an event of Force Majeure, have become unable to perform a material portion of the Services, the Parties shall consult with each other with a view to agreeing on appropriate measures to be taken in the circumstances.

2.8. Suspension

The Municipality may, by written notice of suspension to the Consultants, suspend all payments to the Consultants hereunder if the Consultants fail to perform any of their obligations under this Contract, including the carrying out of the Services, provided that such notice of suspension (i) shall specify the nature of the failure, and (ii) shall request the Consultants to remedy such failure within a period not exceeding thirty (30) days after receipt by the Consultants of such notice of suspension.

2.9. Termination

2.9.1 By the Municipality

The Municipality may, by not less than thirty (30) days' written notice of termination to the Consultants (except in the event listed in paragraph (f) below, for which there shall be a written notice of not less than sixty (60) days), such notice to be given after the occurrence of any of the events specified in paragraphs (a) through (g) of this Clause GC 0, terminate this Contract:

(a) if the Consultants fail to remedy a failure in the performance of their obligations hereunder, as specified in a notice of suspension pursuant to Clause GC 0 hereinabove, within thirty (30) days of receipt of such notice of suspension or within such further period as the Municipality may have subsequently approved in writing;

(b) if the Consultants become (or, if the Consultants consist of more than one entity, if any of their Members becomes) insolvent or bankrupt or enter into any agreements with their creditors for relief of debt or take advantage of any law for the benefit of debtors or go into liquidation or receivership whether compulsory or voluntary;

(c) if the Consultants fail to comply with any final decision reached as a result of arbitration proceedings pursuant to Clause GC 0 hereof;

(d) if the Consultants submit to the Municipality a statement which has a material effect on the rights, obligations or interests of the Municipality and which the Consultants know to be false;

(e) if, as the result of Force Majeure, the Consultants are unable to perform a material portion of the Services for a period of not less than sixty (60) days; or

(f) if the Municipality, in its sole discretion and for any reason whatsoever, decides to terminate this Contract.

(g) if the consultant, in the judgment of the Municipality has engaged in corrupt or fraudulent practices in competing for or in executing the Contract.

For the purpose of this clause:

"corrupt practice" means the offering, giving, receiving or soliciting of anything of value to influence the action of a public official in the selection process or in contract execution.

"fraudulent practice" means a misrepresentation of facts in order to influence a selection process or the execution of a contract to the detriment of the Municipality, and includes collusive practice among consultants (prior to or after submission of proposals) designed to establish prices at artificial non-competitive levels and to deprive the Municipality of the benefits of free and open competition.

2.9.2 By the Consultants

The Consultants may, by not less than thirty (30) days' written notice to the Municipality, such notice to be given after the occurrence of any of the events specified in paragraphs (a) through (d) of this Clause GC 0, terminate this Contract:

(a) if the Municipality fails to pay any money due to the Consultants pursuant to this Contract and not subject to dispute pursuant to Clause 0 hereof within forty-five (45) days after receiving written notice from the Consultants that such payment is overdue;

(b) if the Municipality is in material breach of its obligations pursuant to this Contract and has not remedied the same within forty-five (45) days (or such longer period as the Consultants may have subsequently approved in writing) following the receipt by the Municipality of the Consultants' notice specifying such breach;

(c) if, as the result of Force Majeure, the Consultants are unable to perform a material portion of the Services for a period of not less than sixty (60) days; or

(d) if the Municipality fails to comply with any final decision reached as a result of arbitration pursuant to Clause GC 0 hereof.

2.9.3 Cessation of Rights and Obligations

Upon termination of this Contract pursuant to Clauses GC 0 or GC 0 hereof, or upon expiration of this Contract pursuant to Clause GC 0 hereof, all rights and obligations of the Parties hereunder shall cease, except:

(a) such rights and obligations as may have accrued on the date of termination or expiration;

(b) the obligation of confidentiality set forth in Clause GC 0 hereof;

(c) the Consultants' obligation to permit inspection, copying and auditing of their accounts and records set forth in Clause GC 0(ii) hereof; and

(d) any right which a Party may have under the Applicable Law.

2.9.4 Cessation of Services

Upon termination of this Contract by notice of either Party to the other pursuant to Clauses GC 0 or GC 0 hereof, the Consultants shall, immediately upon dispatch or receipt of such notice, take all necessary steps to bring the Services to a close in a prompt and orderly manner and shall make every reasonable effort to keep expenditures for this purpose to a minimum. With respect to documents prepared by the Consultants and equipment and materials furnished by the Municipality, the Consultants shall proceed as provided, respectively, by Clause GC 0 hereof.

2.9.5 Payment upon Termination

Upon termination of this Contract pursuant to Clauses GC 0 or GC 0 hereof, the Municipality shall make the following payments to the Consultants (after offsetting against these payments any amount that may be due from the Consultant to the Municipality):

(a) remuneration pursuant to Clause GC 0 hereof for Services satisfactorily performed prior to the effective date of termination;

(b) reimbursable expenditures pursuant to Clause GC 0 hereof for expenditures actually incurred prior to the effective date of termination; and

(c) except in the case of termination pursuant to paragraphs (a) through (d) of Clause GC 0 hereof, reimbursement of any reasonable cost incident to the prompt and orderly termination of the Contract including the cost of the return travel of the Consultants' personnel and their eligible dependents.

2.9.6 Disputes about Events of Termination

If either Party disputes whether an event specified in paragraphs (a) through (e) of Clause GC 0 or in Clause GC 0 hereof has occurred, such Party may, within forty-five (45) days after receipt of notice of termination from the other Party, refer the matter to arbitration pursuant to Clause GC 0 hereof, and this Contract shall not be terminated on account of such event except in accordance with the terms of any resulting arbitral award.

3 Obligations of the Consultants

3.1 General

3.1.1 Standard of Performance

The Consultants shall perform the Services and carry out their obligations hereunder with all due diligence, efficiency and economy, in accordance with generally accepted professional techniques and practices, and shall observe sound management practices, and employ appropriate advanced technology and safe and effective equipment, machinery, materials and methods. The Consultants shall always act, in respect of any matter relating to this Contract or to the Services, as faithful advisers to the Municipality, and shall at all times support and safeguard the Municipality's legitimate interests in any dealings with Sub-consultants or Third Parties.

3.1.2 Law Governing Services

The Consultants shall perform the Services in accordance with the Applicable Law and shall take all practicable steps to ensure that any Sub-consultants, as well as the Personnel of the Consultants and any Sub-consultants, comply with the Applicable Law. The Municipality shall advise the Consultants in writing of relevant local customs and the Consultants shall, after such notifications, respect such customs.

3.2 Conflict of Interests

3.2.1 Consultants Not to Benefit from Commissions, Discounts

The remuneration of the Consultants pursuant to Clause GC 0 hereof shall constitute the Consultants' sole remuneration in connection with this Contract or the Services and, subject to Clause GC 0 hereof, the Consultants shall not accept for their own benefit any trade commission, discount or similar payment in connection with activities pursuant to this Contract or to the Services or in the discharge of their obligations hereunder, and the Consultants shall use their best efforts to ensure that any Sub-consultants, as well as the Personnel and agents of either of them, similarly shall not receive any such additional remuneration.

3.2.2 Procurement Rules of Funding Agencies

If the Consultants, as part of the Services, have the responsibility of advising the Municipality on the procurement of goods, works or services, the Consultants shall comply with any applicable procurement guidelines of the Municipality, and other funding agencies and shall at all times exercise such responsibility in the best interest of the Municipality. Any discounts or commissions obtained by the Consultants in the exercise of such procurement responsibility shall be for the account of the Municipality.

3.2.3 Consultants and Affiliates not to engage in Certain Activities

The Consultants agree that, during the term of this Contract and after its termination, the Consultants and any entity affiliated with the Consultants, as well as any Sub-consultant and any entity affiliated with such Sub-consultant, shall be disqualified from providing goods, works or services (other than the Services and any continuation thereof) for any project resulting from or closely related to the Services.

3.2.4 Prohibition of Conflicting Activities

The Consultants shall not engage, and shall cause their Personnel as well as their Sub-consultants and their Personnel not to engage, either directly or indirectly, in any of the following activities:

(a) during the term of this Contract, any business or professional activities in the Government's State which would conflict with the activities assigned to them under this Contract; and

(b) after the termination of this Contract, such other activities as may be specified in the SC.

3.3 Confidentiality

The Consultants, their Sub-consultants and the Personnel of either of them shall not, either during the term or within two (2) years after the expiration of this Contract, disclose any proprietary or confidential information relating to the Project, the Services, this Contract or the Municipality's business or operations without the prior written consent of the Municipality.

3.4 Liability of the Consultants

Subject to additional provisions, if any, set forth in the SC, the Consultants' liability under this Contract shall be as provided by the Applicable Law.

3.5 Insurance to be Taken Out by the Consultants

The Consultants (i) shall take out and maintain, and shall cause any Sub-consultants to take out and maintain, at their (or the Sub-consultants', as the case may be) own cost but on terms and conditions approved by the Municipality, insurance against the risks, and for the coverage's, as shall be specified in the SC, and (ii) at the Municipality's request, shall provide evidence to the Municipality showing that such insurance has been taken out and maintained and that the current premiums therefore have been paid.

3.6 Accounting, Inspection and Auditing

The Consultants (i) shall keep accurate and systematic accounts and records in respect of the Services, hereunder, in accordance with internationally accepted accounting principles and in such form and detail as will clearly identify all relevant time charges and cost, and the bases thereof (including such bases as may be specifically referred to in the SC); (ii) shall permit the Municipality or its designated representative periodically, and up to one year from the expiration or termination of this Contract, to inspect the same and make copies thereof as well as to have them audited by auditors appointed by the Municipality.

3.7 Consultants' Actions Requiring Municipality's Prior Approval

The Consultants shall obtain the Municipality's prior approval in writing before taking any of the following actions:

(a) appointing such members of the Personnel as are listed in Appendix C ("Consultants' Sub-consultants' Key Personnel") merely by title but not by name;

(b) entering into a subcontract for the performance of any part of the Services, it being understood (i) that the selection of the Sub-consultant and the terms and conditions of the subcontract shall have been approved in writing by the Municipality prior to the execution of the subcontract, and (ii) that the Consultants shall remain fully liable for the performance of the Services by the Sub-consultant and its Personnel pursuant to this Contract; and

(c) any other action that may be specified in the SC.

3.8 Reporting Obligations

The Consultants shall submit to the Municipality the reports and documents specified in Appendix B hereto, in the form, in the numbers and within the time periods set forth in the said Appendix.

3.9 Documents Prepared by the Consultants to Be the Property of the Municipality

All plans, drawings, specifications, designs, reports, other documents and software prepared by the Consultants for the Municipality under this Contract shall become and remain the property of the Municipality, and the Consultants shall, not later than upon termination or expiration of this Contract, deliver all such documents to the Municipality, together with a detailed inventory thereof. The Consultants may retain a copy of such documents and software. Restrictions about the future use of these documents and software, if any, shall be specified in the SC.

4 Consultants' Personnel and Sub-consultants

4.1 General

The Consultants shall employ and provide such qualified and experienced Personnel and Sub-consultants as are required to carry out the Services.

4.2 Description of Personnel

(a) The titles, agreed job descriptions, minimum qualification and estimated periods of engagement in the carrying out of the Services of each of the Consultants' Key

Personnel are described in Appendix C. If any of the Key Personnel has already been approved by the Municipality's his/her name is listed as well.

(b) If required to comply with the provisions of Clause GCC 0 hereof, adjustments with respect to the estimated periods of engagement of Key Personnel set forth in Appendix C may be made by the Consultants by written notice to the Municipality, provided (i) that such adjustments shall not alter the originally estimated period of engagement of any individual by more than 10% or one week, whichever is larger, and (ii) that the aggregate of such adjustments shall not cause payments under this Contract to exceed the ceilings set forth in Clause GC 0 (b) of this Contract. Any other such adjustments shall only be made with the Municipality's written approval.

(c) If additional work is required beyond the scope of the Services specified in Appendix A, the estimated periods of engagement of Key Personnel set forth in Appendix C may be increased by agreement in writing between the Municipality and the Consultants, provided that any such increase shall not, except as otherwise agreed, cause payments under this Contract to exceed the ceilings set forth in Clause GC 0 (b) of this Contract.

4.3 Approval of Personnel

The Key Personnel and Sub-consultants listed by title as well as by name in Appendix C are hereby approved by the Municipality.

4.4 Removal and/or Replacement of Personnel

(a) Except as the Municipality may otherwise agree, no changes shall be made in the Key Personnel. If, for any reason beyond the reasonable control of the Consultants, it becomes necessary to replace any of the Personnel, the Consultants shall forthwith provide as a replacement a person of equivalent or better qualifications.

(b) If the Municipality (i) finds that any of the Personnel has committed serious misconduct or has been charged with having committed a criminal action, or (ii) has reasonable cause to be dissatisfied with the performance of any of the Personnel, then the Consultants shall, at the Municipality's written request specifying the grounds therefore, forthwith provide as a replacement a person with qualifications and experience acceptable to the Municipality.

The Consultants shall have no claim for additional costs arising out of or incidental to any removal and/or replacement of Personnel.

4.5 Resident Project Manager

If required by the SC, the Consultants shall ensure that at all times during the Consultants' performance of the Services in the Government's State a resident project manager, acceptable to the Municipality, shall take charge of the performance of such Services.

5 Obligations of the Municipality

5.1 Assistance and Exemptions

Unless otherwise specified in the SC, the Municipality shall use its best efforts to ensure that the Government shall:

(a) provide the Consultants, Sub consultants and Personnel with work permits and such other documents as shall be necessary to enable the Consultants, Sub consultants or Personnel to perform the Services;

(b) assist for the Personnel and, if appropriate, their eligible dependents to be provided promptly with all necessary entry and exit visas, residence permits, exchange permits and any other documents required for their stay in Government's country;

(c) facilitate prompt clearance through customs of any property required for the Services and of the personal effects of the Personnel and their eligible dependents;

(d) issue to officials, agents and representatives of the Government all such instructions as may be necessary or appropriate for the prompt and effective implementation of the Services;

(e) assist the Consultants and the Personnel and any Sub consultants employed by the Consultants for the Services from any requirement to register or obtain any permit to practice their profession or to establish themselves either individually or as a corporate entity according to the Applicable Law;

(f) grant to the Consultants, any Sub consultant and the Personnel of either of them the privilege, pursuant to the Applicable Law, of bringing into Government's country reasonable amounts of foreign currency for the purposes of the Services or for the personal use of the Personnel and their dependents and of withdrawing any such amounts as may be earned therein by the Personnel in the execution of the Services; and

(g) provide to the Consultants, Sub consultants and Personnel any such other assistance as may be specified in the SC.

5.2 Change in the Applicable Law

If, after the date of this Contract, there is any change in the Applicable Law with respect to taxes and duties which increases or decreases the cost or reimbursable expenses incurred by the Consultants in performing the Services, then the remuneration and reimbursable expenses otherwise payable to the Consultants under this Contract shall be increased or decreased accordingly by agreement between the Parties hereto, and corresponding adjustments shall be made to the ceiling amounts specified in Clause GC 0(b).

5.3 Services, Facilities and Property of the Municipality

The Municipality shall make available to the Consultants the Services and Facilities listed under Appendix D.

5.4 Payment

In consideration of the Services performed by the Consultants under this Contract, the Municipality shall make to the Consultants such payments and in such manner as is provided by Clause GC 0 of this Contract.

6 Payments to the Consultants

6.1 Lump Sum Remuneration

The Consultant's total remuneration shall not exceed the Contract Price and shall be a fixed lump sum including all staff costs, Sub consultants' costs, printing, communications, travel, accommodation, and the like, and all other costs incurred by the Consultant in carrying out the Services described in Appendix A. Except as provided in Clause 0, the Contract Price may only be increased above the amounts stated in clause 0 if the Parties have agreed to additional payments in accordance with Clause 0.

6.2 Price

The price payable in local currency is set forth in the SC.

6.3 Payment for Additional Services

For the purpose of determining the remuneration due for additional services as may be agreed under Clause 0, a breakdown of the lump sum price is provided in Appendix E.

6.4 Terms and Conditions of Payment

Payments will be made to the account of the Consultants and according to the payment schedule stated in the SC. Unless otherwise stated in the SC, the first payment shall be made against the provision by the Consultants of a bank guarantee for the same amount, and shall be valid for the period stated in the SC. Any other payment shall be made after the conditions listed in the SC for such payment have been met, and the Consultants have submitted an invoice to the Municipality specifying the amount due.

7 Fairness and Good Faith

7.1 Good Faith

The Parties undertake to act in good faith with respect to each other's rights under this Contract and to adopt all reasonable measures to ensure the realization of the objectives of this Contract.

7.2 Operation of the Contract

The Parties recognize that it is impractical in this Contract to provide for every contingency which may arise during the life of the Contract, and the Parties hereby agree that it is their intention that this Contract shall operate fairly as between them, and without detriment to the interest of either of them, and that, if during the term of this Contract either Party believes that this Contract is operating unfairly, the Parties will use their best efforts to agree on such action as may be necessary to remove

the cause or causes of such unfairness, but no failure to agree on any action pursuant to this Clause shall give rise to a dispute subject to arbitration in accordance with Clause GC 0 hereof.

8. Settlement of Disputes

8.1 Amicable Settlement

The Parties shall use their best efforts to settle amicably all disputes arising out of or in connection with this Contract or the interpretation thereof.

8.2 Dispute Settlement

Any dispute between the Parties as to matters arising pursuant to this Contract which cannot be settled amicably within thirty (30) days after receipt by one Party of the other Party's request for such amicable settlement may be submitted by either Party for settlement in accordance with the provisions specified in the SC.

SPECIAL CONDITIONS OF CONTRACT

Number of GC Clause	Amendments of, and Supplements to, Clauses in the General Conditions of Contract
1.1 (g)	Add at the end in Para 1.1(g) "State Government of _____.'."
1.4	The language is: English
1.6.1	The addresses are: Municipality: Attention: Cable address: Telex: Facsimile: Consultants: Attention: Cable address: Telex: Facsimile:
1.6.2	Notice will be deemed to be effective as follows: a) in the case of personal delivery or registered mail, on delivery; b) in the case of telexes, 24 hours following confirmed transmission; c) in the case of telegrams, 24 hours following confirmed transmission; and d) in the case of facsimiles, 24 hours following confirmed transmission
1.8	The Member in Charge is:
1.9	The Authorized Representatives are: For the Municipality: _____ _____ For the Consultants: _____
1.10	The consultants, Sub-consultants and the Personnel shall pay the taxes, duties, fees, levies and other impositions levied under the existing, amended or enacted laws during life of this contract and the Municipality shall perform such duties in regard to the deduction of such tax as may be lawfully imposed. However, the Consultancy Services tax payable in India for providing this Consultancy Services shall be paid / reimbursed by the Municipality separately.
2.1	The date on which this Contract shall come into effect is:
2.2	The date for commencement of Services is date of the signing of agreement.
2.3	The total period for the assignment shall be _____ from the date of signing of contract.
3.2.1	Furthermore, if the Consultants, as part of the Services, have the responsibility of advising the Municipality on the procurement of goods, works or services, the

<table>
<tr><td></td><td>Consultants shall comply with any applicable procurement guidelines of the Municipality, as the case may be, and other funding agencies and shall at all times exercise such responsibility in the best interest of the Municipality. Any discounts or commissions obtained by the Consultants in the exercise of such procurement responsibility shall be for the account of the Municipality.</td></tr>
<tr><td>3.2.4 (b)</td><td>For a period of two years after the expiration of this Contract, the Consultants shall not engage, and shall cause their Personnel as well as their Sub-consultants and their Personnel not to engage, in the activity of a purchaser (directly or indirectly) of the assets on which they advised the Municipality under this Contract nor in the activity of an adviser (directly or indirectly) of potential purchasers of such assets. The Consultants also agree that their affiliates shall be disqualified for the same period of time from engaging in the said activities.</td></tr>
<tr><td>3.5</td><td>The risks and the coverage’s shall be as follows:
(a) Third Pfst loss of or damage to (i) equipment purchased in whole or in part with funds provided under this Contract, (ii) the Consultants' property used in the performance of the Services, and (iii) any documents prepared by the Consultants in the performance of the Services</td></tr>
<tr><td>3.6</td><td>The Consultants shall not use these documents for purposes unrelated to this Contract without the prior written approval of the Municipality.</td></tr>
<tr><td>6.2</td><td>The amount payable for phase 1(IGA study) of the projects in Indian Rupees is: _____</td></tr>
<tr><td>6.1</td><td>(1) It is understood (i) that the remuneration rates shall cover (A) such salaries and allowances as the Consultants shall have agreed to pay to the Personnel as well as factors for social charges and overhead, and (B) the cost of backstopping by home office staff not included in the Personnel listed in Appendix C, and (C) the Consultants’ fee, (ii) that bonuses or other means of profit-sharing shall not be allowed as an element of overhead, and (iii) that any rates specified for persons not yet appointed shall be provisional and shall be subject to revision, with the written approval of the Municipality, once the applicable salaries and allowances are known.
(2) Remuneration for periods of less than one month shall be calculated on an hourly basis for actual time spent in the Consultants’ home office and directly attributable to the Services (one hour being equivalent to 1/240th of a month) and on a calendar-day basis for time spent away from home office (one day being equivalent to 1/30th of a month).</td></tr>
<tr><td>6.4</td><td>Payments shall be made according to the following schedule :
a) Remuneration
<table>
<tr><th>Stage</th><th>Payment</th></tr>
<tr><td>Advance Mobilization of team(If applicable)</td><td>%</td></tr>
<tr><td>Submission of draft report</td><td>%</td></tr>
<tr><td>Submission of Final report</td><td>%</td></tr>
<tr><td>Acceptance of Final report</td><td>%</td></tr>
</table>
b) Out of Pocket Expenses: On monthly submission of the invoices to MUNICIPALITY with supporting documents (like original bills duly signed by</td></tr>
</table>

	the authorized signatory). The out of pocket expenses can also be released to beneficiaries by MUNICIPALITY based on advice received from the consultant c) Payment shall be made within 45 days of receipt of the invoice and the relevant documents specified in Clause 6.4, and within 60 days in the case of the final payment.
8.2	8.2 (i) Any dispute, controversy, or claim arising out of or relating to this contract, or the breach, termination or invalidity thereof shall be settled by arbitration in accordance with following provisions: 8.2 (ii) Each dispute submitted by a Party to arbitration shall be heard by a sole arbitrator or an arbitration panel composed of three arbitrators, in accordance with the following provisions: (a) Where the Parties agree that the dispute concerns a technical matter, they may agree to appoint a sole arbitrator or, failing agreement on the identity of such sole arbitrator within thirty (30) days after receipt by the other Party of the proposal of a name for such an appointment by the Party who initiated the proceedings, either Party may apply to the President, Institution of Engineers India, New Delhi, for a list of not fewer than five nominees and, on receipt of such list, the Parties shall alternately strike names there from, and the last remaining nominee on the list shall be the sole arbitrator for the matter in dispute. If the last remaining nominee has not been determined in this manner within sixty (60) days of the date of the list, the President, Institution of Engineers India, New Delhi, shall appoint, upon the request of either Party and from such list or otherwise, a sole arbitrator for the matter in dispute. (b) Where the Parties do not agree that the dispute concerns a technical matter, the Municipality and the Consultants shall each appoint one arbitrator, and these two arbitrators shall jointly appoint a third arbitrator, who shall chair the arbitration panel. If the arbitrators named by the Parties do not succeed in appointing a third arbitrator within thirty (30) days after the latter of the two arbitrators named by the Parties has been appointed, the third arbitrator shall, at the request of either Party, be appointed by Secretary, the Indian Council of Arbitration, New Delhi. (c) If, in a dispute subject to Clause 8.2 (ii) (b), one Party fails to appoint its arbitrator within thirty (30) days after the other Party has appointed its arbitrator, the Party which has named an arbitrator may apply to the Secretary, Indian Council of Arbitration, New Delhi, to appoint a sole arbitrator for the matter in dispute, and the arbitrator appointed pursuant to such application shall be the sole arbitrator for that dispute. 8.2.2 Rules of Procedure Arbitration proceedings shall be conducted in accordance with procedure of the Arbitration & Conciliation Act 1996, of India unless the Consultant is a foreign national/firm, where arbitration proceedings shall be conducted in

	accordance with the rules of procedure for arbitration of the United Nations Commission on International Trade Law (UNCITRAL) as in force on the date of this Contract. 8.2.3 Substitute Arbitrators If for any reason an arbitrator is unable to perform his function, a substitute shall be appointed in the same manner as the original arbitrator. 8.2.4 Qualifications of Arbitrators The sole arbitrator or the third arbitrator appointed pursuant to paragraphs (a) through (c) of Clause 8.2 (ii) hereof shall be an internationally recognized legal or technical expert with extensive experience in relation to the matter in dispute. 8.2.5 Miscellaneous In any arbitration proceeding hereunder: (a) proceedings shall, unless otherwise agreed by the Parties, be held in _____. (b) the English language shall be the official language for all purposes; and *[Note: English language may be changed to any other language, with the agreement of both the parties.]* (c) the decision of the sole arbitrator or of a majority of the arbitrators (or of the third arbitrator if there is no such majority) shall be final and binding and shall be enforceable in any court of competent jurisdiction, and the Parties hereby waive any objections to or claims of immunity in respect of such enforcement.

APPENDICES FOR CONTRACT

Appendix A: Description of the Services

[Give detailed descriptions of the Services to be provided; dates for completion of various tasks, place of performance for different tasks; specific tasks to be approved by Municipality, etc.]

Appendix B: Reporting Requirements

[List format, frequency, contents of reports and number of copies; persons to receive them; dates of submission, etc. If no reports are to be submitted, state here "Not applicable".]

Appendix C: Key Personnel and Sub consultants

- *Titles [and names, if already available], detailed job descriptions and minimum qualifications. Experience of Personnel to be assigned to work in India, and staff-months for each.*
- *Key local Personnel.*
- *Key foreign Personnel to be assigned to work outside India.*
- *List of approved Sub consultants [if already available];*

Appendix D: Services and Facilities Provided by Municipality

To be listed by the Municipality

Appendix E: Breakdown of Contract Price in Local Currency

List hereunder cost estimate in local currency:

- *Monthly rates for local Personnel (Key Personnel and other Personnel)*
- *Reimbursable expenditures*

3.4 TEMPLATE: ENERGY PERFORMANCE CONTRACT

LOGO

Municipality / ULB Name

MODEL ENERGY PERFORMANCE CONTRACT FOR IMPLEMENTATION IN MUNICIPAL ENERGY EFFICIENCY PROJECTS

To be submitted to

Contact Person Name

Municipality Name & Address

Last date of Submission:

PERFORMANCE CONTRACT FOR ENERGY EFFICIENCY SERVICES

This CONTRACT (hereinafter called the "Contract") is made the ___ day of the month of _____, 20__, between, on the one hand, M/s. [Municipality] and having its registered office at [Legal Address], herein after referred to as the "**Municipal Facility**", (which expression shall, unless excluded by or repugnant to subject or context thereof, include its successors or assigns), and on the other hand, M/s. _____, a company registered under Companies act 1956, having its registered office at _____, hereinafter called the "**Contractor**", (which expression shall, unless excluded by or repugnant to subject or context thereof, include its successors and assigns,

WITNESSETH THAT:

WHEREAS, the Municipality owns or leases the **Municipal Facility**;

WHEREAS, **Contractor** provides all services and equipments which would be required to reduce energy consumption in facilities;

WHEREAS, **Contractor** has submitted a written proposal in response to the **Municipal Facility's** request and has been selected by the **Municipal Facility** as the most qualified **Bidder** for the work herein described;

NOW THEREFORE, in consideration of the mutual promises hereinafter set forth, the parties agree as follows:

1. Definition

Key terms used within this contract are defined as follows:

Contracting Officer – An officer who has been dully authorized in this behalf as per the requirements of Article 299(1) of the Constitution of India.

Effective Date – The effective date of this Contract shall be the date on which both the parties sign this contract.

Energy Baseline - The energy baseline is a calculation or measure of each type of energy consumed in existing facilities, prior to the installation of energy saving measures, and presented in specific energy consumption units. For purposes of this contract, specific electrical energy consumption determined by kVAh/ML or kWh/ML at station level shall be measured at base frequency (and also at various operating frequencies, if desired) based on the monthly Utility bill for the preceding calendar year. The Energy Baseline shall be accurately defined, as mutually discussed, finalized and agreed amongst the **Contractor** and **Municipal Facility** during the post bid 'Technical Meeting' organized by **Municipal Facility**.

Energy Saving Measure (ESM) - An ESM is the installation of new equipment, modification or alteration of existing **Municipal Facility's** equipment/facilities, or revised operations and maintenance procedures, to reduce energy costs, by improving efficiency of use.

Energy Savings - Energy savings is a reduction of energy consumption or electrical demand resulting from the **Contractor's** energy saving measures taking into considerations quality of power supply. Energy savings shall be determined by comparing the energy baseline with the energy consumed (or demand) after **Contractor** has implemented energy saving measures.

Substantial Completion – The contract is said to have achieved substantial completion as and when **Contractor** installed ESMs are achieving energy savings equal to or greater than the guaranteed energy savings.

Substantial Completion Date - The date on which the **Contractor** warrants by written notice that the ESMs are substantially complete and are achieving savings equal to or greater than the Guaranteed Savings.

Termination Value - The amount the **Municipal Facility's** may pay to **Contractor** after the first anniversary of Substantial Completion Date to terminate this agreement for convenience. This amount shall be the total price shown in Article 5.2c, less any payments already made.

2. Contract Documents

2.1. Documents Included

The following documents, and any amendments or addenda thereto, comprise this Contract and are fully a part of this Contract as though attached hereto or set forth at length herein:

(1) Request for Proposal No. __, including the Technical and Financial offer, General Provisions, and specifications contained therein, and performance contract for energy efficiency services
(2) General Terms and Conditions for Goods and Services dated __ (attached as **Annex 1**);

(3) Special Terms and conditions of contract (attached as **Annex 2)**
(4) The Energy Study Report to be executed by **Contractor** and the **Municipal Facility's** (attached as **Annex 3**).
(5) Energy Study Report Acceptance Form (attached as **Annex 4**).

2.2. Entire Agreement

This Contract is the entire agreement between the parties, and no alterations, changes or additions thereto shall be made, except in writing approved by the parties.

3. Contractor's Services

3.1. Energy Study and baseline determination

a) Investment grade energy study has already been conducted in respect of the **Municipal Facility** under bid. The **Contractor** shall perform any further study required for verification/identification of additional savings measure and base line determination at its sole expense. This study can identify additional feasible energy conservation, load management, and renewable resource options with benefits exceeding costs over the contract term. The energy study shall also address the following options specifically identified by the **Municipal Facility**: _____.

The study shall document existing conditions, including facility's physical conditions; hours of use or occupancy; area of conditioned space; inventory of energy consuming equipment or systems; inventory of water consuming equipment or systems; water pressure and energy consuming equipment operating conditions or loads ***[additional conditions]***. The Energy Study Report shall document Energy Baseline, ESMs proposed and methods to measure and verify Energy Savings.

Contractor shall furnish a written report of its findings including all of the information listed in the format attached as Annex 3 within 30 days of effective date of this contract.

b) Within **thirty** days of the effective date of this Contract, the **Contractor** shall submit the study report to the **Municipal Facility** for review and acceptance prior to installation of any ESMs. **Municipal Facility's** acceptance of the Energy Study Report establishes mutual agreement of the equipment **Contractor** will install energy baseline, and other terms of the Contract. The final version of the Energy Study Report shall be attached as **Annex 3** once it has been reviewed, approved, and accepted on behalf of the **Municipal Facility** by the Contracting Officer. Agreement on the content and form of the Energy Study Report will be evidenced by executing the attached Energy Study Report acceptance form **(Annex 4),** whereupon the Energy Study Report will be incorporated as Annex 3 and shall be a part of this Contract as though fully set forth herein.

3.2. Equipment Design and Construction

a) Within fifteen (15) days of **Municipal Facility** acceptance of the Energy Study Report, **Contractor** shall commence designing and obtaining ESMs. **Contractor** shall prepare and submit ESMs installation plans to the **Municipal Facility** for review and approval prior to beginning of ESMs installation. The **Contractor** will obtain certification of compliance of ESMs installation plans to applicable building codes and specifications. Such certification shall be at the **Contractor's** sole expense.

b) The **Contractor** shall be responsible for quality control during the installation of all ESMs. **Contractor** shall inspect and test all work performed to ensure compliance with Contract requirements. **Contractor** shall maintain records of inspections and tests, including any conducted by or for a utility or other regulatory agencies. The quality control checks exercised by the **Contractor** shall be test checked by the **Municipal Facility**.

c) **Contractor** shall complete ESMs installation by the date specified in **Contractor**'s Energy Study Report.

3.3. Notice of Completion

The **Contractor** shall notify to the **Municipal Facility** in writing when the ESMs are installed and substantially complete by submitting a Notice of Substantial Completion and a written request for inspection. The request shall identify the total construction cost (including change orders), location, and description of ESMs, planned testing of ESMs to verify performance, and recommended dates for inspection. Both **Municipal Facility** and **Contractor** representatives will simultaneously inspect ESMs to facilitate mutual agreement on satisfactory Contract performance. The **Municipal Facility** shall provide written notification to **Contractor** of the scheduled date and time for **Municipal Facility** inspection within ten (10) days of receipt of inspection request. Following satisfactory inspection, the **Municipal Facility** shall issue a Certificate of Substantial Completion.

3.4. Maintenance and Repair of ESMs

Contractor, at its sole expense, shall be responsible for maintenance and repair of all ESMs installed unless **Municipal Facility's** responsibility is expressly identified in the Energy Study Report and approved by the **Municipal Facility**. Maintenance includes all work and costs associated with periodic inspections, tests, calibrations, and adjustments required to sustain and/or restore energy system operational status to as-designed performance and performance requirements of this contract. Repair includes all labor, material, consumables and equipment required to replace, rebuild, or restore to as-designed performance systems and equipment that have failed.

3.5. Operation and Maintenance Manuals and Training

a) **Contractor** shall furnish operation and maintenance manuals and recommended spare parts lists for operations and maintenance of the **Contractor**-installed ESMs and modified **Municipal Facility's** equipment.

b) Within **thirty** days of the installation completion, **Contractor** shall train **Municipal Facility's** personnel as required to operate, maintain, and repair ESM equipment and systems in the event of emergencies.

c) The **Contractor** shall without prejudice train **Municipal Facility's** personnel or a designee to operate, maintain, and repair ESM equipment **ninety** days prior to the end of the Contract term.

4. Responsibilities of the Municipal Facility

4.1. Reviews and Approvals

The **Municipal Facility** shall review and reply to **Contractor** submitted materials (that is, Energy Study Report, ESM installation plans) within 45 days of receipt by the **Municipal Facility** unless a different period is explicitly stated elsewhere in this Contract. If the materials are approved, the **Municipal Facility** shall so indicate in writing. If the materials are not approved, the **Municipal Facility** shall so indicate by written notice listing shortfalls to the materials for undertaking correction by the **Contractor**.

4.2. Equipment Locations and Access

a) The **Municipal Facility** shall furnish rent-free closed space at its sole responsibility for storage of **contractor's** material during construction and maintenance thereafter until the tenure of this contract.

b) The **Municipal Facility** shall furnish mutually satisfactory rent-free space for the installation of the **Contractor** Equipment.

c) The **Municipal Facility** shall grant the **Contractor** access to its premises at such reasonable times as are requested by **Contractor** and acceptable to the **Municipal Facility**, as needed to enable the **Contractor** to carry out its obligations under the Contract. The **Municipal Facility** shall not unreasonably withhold approvals for **Contractor's** access to the premises.

4.3. Operations and Maintenance of Equipment

The **Municipal Facility** shall provide all necessary operation, maintenance, and repairs to the **Municipal Facility's** pre-existing equipment at its own cost provided the **Contractor** has identified its specific requirements for such procedures and provided training for **Municipal Facility's** personnel as required in General Provisions 8.3 and 11.

5. Compensation

5.1. Energy Study Fee

Investment grade energy study has already been conducted in respect of the **Municipal Facility** under bid. The **Contractor** shall perform any further study required for verification/identification of additional savings measure and baseline determination at its sole expense. If the **Municipal Facility** elects not to proceed after accepting the **Contractor's** Energy Study Report, or if the **Municipal Facility** and the **Contractor** cannot agree on the contents or manner of incorporation of the Energy Study within ninety (90) days after submission of the Energy Study Report, then this contract shall terminate and the **Municipal Facility** shall not be liable to pay any fee to the **Contractor**.

5.2. Payments

a) Payment to the **Contractor** shall begin on the first calendar month after the substantial completion date.

b) The **Municipal Facility** shall pay to **Contractor** as specified in the Payment Schedule in the Energy Study Report after the Substantial Completion Date. Such payment shall continue for a period not to exceed five (5) years from the Substantial Completion Date noted in the Notice to Proceed.

c) If the **Contractor** fails to achieve the Guaranteed Annual kWh and Cost savings specified in the Energy Study Report then the **Municipal Facility** may, at its option, (1) recover the shortfall by deductions from the **Contractor's** future invoice(s), and/or (2) demand in writing

payment of the shortfall, in whole or in part, from the **Contractor**. Such payment shall be due to the **Municipal Facility** within forty-five (45) days of its demand received by the **Contractor**.

6. Terms and Termination

6.1. Agreement Subject to Appropriation

The continuation of this Contract is contingent upon the appropriation of funds to fulfill the requirements of the Contract by the applicable funding authority. If that authority fails to appropriate sufficient funds to provide for the continuation of the Contract, the Contract shall terminate on the last day of the fiscal year for which allocations were made.

6.2. Termination for Convenience

Any time after the first anniversary of Substantial Completion, the **Municipal Facility** may exercise an option to terminate this contract by giving **ninety** days notice and paying the Termination Value as mentioned in Table 12.4 of Energy Study Report.

6.3. Contract Term

This Contract shall be in full force and effect from the date of the Notice to Proceed with Construction through _____ (_____) unless earlier terminated under Article 5.1 (Energy Study Fee), Article 5.2c (Payments), Article 6.1a. (Agreement Subject to Appropriation), Article 6.2. (Termination for Convenience) or for default (Para 17 of **Annex 1**). On completion of five-year contract period, the **Municipal Facility** might avail at its sole options an additional two-year contract for maintenance of energy savings at the same terms and conditions of payments without any enhancements.

IN WITNESS WHEREOF, the parties have executed this Contract the day and year first above written.

For and on behalf of the [Name of Municipality] [Name and address)	**In presence of (witness)**
By_____	1. ……
Its _____	2. ……

Contractor :_____	**In presence of (witness)**
By_____	1. ……
Its_____	2. ……

On this _____day of _____, 200____.

ANNEX 1

GENERAL TERMS & CONDITIONS FOR GOODS AND SERVICES_____

Table of Contents **Topic**

General Provisions

GENERAL PROVISIONS

1. Ownership of Contractor-Installed Equipment

1.1 All Equipment and systems installed by the **Contractor** is and remains the property of the **Contractor** during the contract term.

1.2 At the expiration of the contract term, all right, title, and interest in and to all improvements and equipment constructed or installed on the premises and additions, shall vest in the **Municipal Facility** at no additional cost, free and clear of all and any liens and encumbrances created or caused by **the Contractor**. **Contractor** shall surrender possession of said premises and the improvements and equipment to the **Municipal Facility** in good repair and condition, reasonable wear and tear accepted.

1.3 If the contract is terminated for convenience or for default, all right, title, and interest in and to all improvements, additions, or equipment of all ESMs installed by the **Contractor** to which the **Municipal Facility** determines to take possession shall vest in the **Municipal Facility**. For those ESMs for which the **Municipal Facility** takes possession and thereby obtains title, the **Municipal Facility** shall compensate the **Contractor** in accordance with General Provision 18 in case of default or Article 6.2 in case of termination for convenience.

2. Protection of Lien Holder's Interest

2.1 The **Municipal Facility** recognizes that project financing associated with **Contractor** performance on the contract may be accomplished using third party financing, and as such, may be secured by a security interest in this contract and the **contractor's** equipment or facilities referred to herein. To protect any lien holder's interest, the **Contractor** may be required to assign to its lenders, some or all of its rights under this contract only with prior written approval of the **Municipal Facility**.

2.2 The **Municipal Facility** will consider:

2.2.1 Requests by lenders or lien holders for copies of any cure or show-cause notice issued to **Contractor**;

2.2.2 Requests by lenders or lien holders for extension of response time to cure or show cause notices;

3. Subcontracting

The **Contractor** shall not at any time subcontract, convey, transfer, or assign its obligations or services to be performed under this Contract, either in whole or in part, without the prior written consent of the Contracting Officer. However, sub-contract for completion of construction or repair and maintenance shall be permitted for execution of the contract without in anyway reducing the obligation of the **Contractor** in discharge of the overall performance of the contract.

4. Responsibility for Contractor-Installed Equipment

All Equipment and systems installed by the **Contractor** is and remains the property of the **Contractor** during the contract term. The **Contractor** may modify, replace, or change the systems and equipment during the Contract from that originally approved. However, any proposed modification, replacement, or change should require notification and coordination with and approval of the Contracting Officer. Any such modification, replacement, or change of systems or equipment shall be performed by the **Contractor** at no cost to the **Municipal Facility** and shall not interfere with **Municipal Facility** operations. The contracting officer shall give permission for such modifications in an expeditious manner so that **Contractor** can discharge its obligations for achieving committed energy savings.

5. Equipment Location and Access

5.1 The **Municipal Facility** shall provide mutually satisfactory rent-free space for the installation and operation of the Contractor-furnished equipment and shall protect such equipment in the same careful manner that the Municipal Facility protects its own property.

5.2 The **Municipal Facility** shall provide access to the premises for Contractor and its subcontractors during regular business hours, or such other hours as may be requested by Contractor and acceptable to the Municipal Facility, to install, adjust, inspect, maintain, and repair the equipment.

6. Installation of ESMs

6.1 **ESM Installation Plans** - The Contractor shall prepare and submit installation plans and specifications (the "Installation Plans") to the Municipal Facility for review and approval before starting ESM installation.

6.2 **Notice to Proceed** - A written notice from Municipal Facility contracting officer shall be issued, advising the Contractor of the date on which installation of ESMs shall proceed.

6.3 **Work Schedule and Existing Operations** - The Contractor shall prepare a work schedule chart and the same shall be approved by the Municipal Facility within ten days. The Contractor shall thereafter work according to the schedule. In case of any significant departure due to circumstances beyond the control of either party, amendment in the schedule shall be mutually agreed.

6.4 **Materials and Workmanship** - Unless otherwise specifically provided for in the Installation Plans, all equipment, materials and articles incorporated in the work covered by this contract are to be new and of the best grade of its respective kind for the purpose.

6.5 **Superintendence** - The Contractor shall provide a competent superintendent who shall have a graduate engineering degree as minimum qualifications, satisfactory to the Municipal Facility, on the work site at all times during progress of the work with authority to act for the Contractor.

6.6 **Inspection of Work**

6.6.1. A contracting officer, designated by the Municipal Facility, will make daily observation of the work at the site. The Contractor shall direct all inquiries, technical or administrative, to said officer during construction.

6.6.2. All materials and workmanship shall be subject to inspection at any and all times during the period of installation. The Municipal Facility has the right to reject defective material and workmanship. Rejected material shall be promptly removed from the job site and satisfactorily replaced by the Contractor at his own cost. Rejected workmanship shall be satisfactorily corrected by the Contractor at his own cost

6.7. **Protection of Property and Buildings** - The Contractor shall take all necessary precautions during the progress of the work to protect the buildings as well as adjoining property, roadways, walkways, trees, lawns, landscape, and buildings from damage and injury and shall promptly repair any such damage to the satisfaction of the Municipal Facility, at the Contractors own cost. The Contractor shall specify the storage space requirements in the tender and shall be responsible for secured storage space for use by the Contractor during construction period. On completion of the construction the Contractor shall be responsible for prevention of any pilferage/theft of equipments installed for the ESM projects during maintenance period and up to the time these are properly handed over to the Municipal Facility.

6.8. **Quality Control** - The Contractor shall be responsible for quality control during installation of ESMs. The Contractor shall inspect and test all work performed during ESMs installation to insure compliance with contract performance requirements. The Contractor shall maintain records of inspections and tests, including inspections and tests conducted by or for utility or other regulatory agencies. The quality control checks exercised by the Contractor shall be test checked by the Municipal Facility.

6.9. **Utilities**

6.9.1. **Water and Electricity** - The Contractor will be allowed to use water and electricity for construction purposes without charge.

6.9.2 **Interruption of Electrical Service** - The Contractor will schedule interruption of electrical service so as to minimize such interruption to Municipal Facility operations. Interruptions shall be permitted only on Saturday, Sundays and holidays. The Contractor shall notify the Municipal Facility, in writing, at least fifteen (15) days in advance of any proposed interruption and shall obtain the approval of the Municipal Facility prior to the interruption. Scheduled interruptions of electrical service shall not exceed twelve (12) hours.

6.9.3 **Sanitary Facilities** - If existing sanitary facilities of the Municipal Facility are close to the contract work area, the Contractor is permitted to use same and shall maintain a sanitary condition at all times. The Contractor shall make his own arrangements for living accommodation for all his workmen and staff during installation as well as the maintenance period.

6.10 **Changed or Unusual Conditions** - If an unexpected condition at the work site is encountered, the Municipal Facility may, in its discretion, issue a Modification and modify

the scope of existing contract with the Contractor, including such equitable adjustment as may be agreed upon between the parties.

6.11 **Theft of Energy -** Any such occurrence shall be brought under the notice of Project Committee without any delay by the Contractor or Municipal facility. The magnitude and nature of the energy theft will be assessed by both the parties and corrective measures shall be taken accordingly along with proper documentation. The Contractor shall not be solely responsible for loss of energy on account of theft in the project area.

6.12 **Manufacturers' Warranties** - The Contractor shall use its best efforts to keep in effect all manufacturers' or other third party warranties relating to the Contractor-installed equipment and ensure that any benefits due to such warranties are passed on to the Municipal Facility at the time the Municipal Facility becomes the owner of the equipment.

7. Operation of ESMs

If new operations work is required for **Contractor**-installed ESMs, the **Contractor** may request the **Municipal Facility** in its ESM description to perform such operations work on **Contractor**-installed equipment. The **Municipal Facility** reserves the right not to accept such work on installed ESMs.

8. Maintenance of ESMs

8.1. Except as provided below, during the tenure of contract, the Contractor shall be responsible for maintenance of all ESMs installed. Installed ESMs shall include all Contractor-installed equipment and those portions of Municipal Facility equipment that have been modified or replaced to achieve proposed ESM performance.

8.2. During the tenure of the contract, the Contractor may discover new opportunity for further savings. The Contractor shall make submission to the Municipal Facility on discovery of such opportunities and Municipal Facility may in its own discretion permit undertaking such new ESM as part of the extension of this contract under the same financial and other contractual terms.

8.3. If the performance of Contractor ESMs is dependent on certain Municipal Facility -owned facilities, systems, or equipment the Contractor may indicate specific requirements for Municipal Facility maintenance practices in the Energy Study Report. Such required maintenance practices will be performed by the Municipal Facility provided that they are described in full in the Energy Study Report attached as Annex 3 and the Contractor has provided any training needed to enable Municipal Facility's personnel to perform maintenance practices to Contractor's satisfaction. Contractor shall provide any such training at Contractor's sole expense.

8.4. The Contractor has to notify the Municipal Facility of any additional operation and maintenance costs arising from the use of new equipment.

9. Damage to or Failure of Equipment

When Contractor-owned equipment fails or is damaged or destroyed, the Contractor shall be responsible for repairs. The Municipal Facility will repair failed Contractor-owned equipment or reimburse the Contractor for such repairs, if the failure resulted from negligence or improper operation by Municipal Facility personnel. When Municipal Facility -owned equipment fails or is damaged or destroyed, the Municipal Facility will be responsible for repairs within a reasonable time period. The Contractor shall provide repairs, at no expense to the Municipal Facility, if the Municipal Facility -owned equipment failure is a result of actions on the part of the Contractor, including, but not limited to the use of any materials, equipment or workmanship which is inferior, defective, or not in accordance with the terms of this contract. The Contractor shall make repairs within a reasonable period of time, or the Municipal Facility may repair or have the repairs made and charge the Contractor for such repair costs. If any such property cannot be satisfactorily repaired or restored, the Contractor shall replace it. If the Contractor elects to take over repair responsibilities of Municipal Facility -owned equipment as part of an ESM, the ESM shall include a listing of the types of repairs that will be the Contractor's responsibility. The Contractor would undertake all repair and maintenance work within a reasonable time period on the basis of self-assessment or on receipt of notice from the Municipal Facility owners.

10. Contractor Maintenance and Repair Response Time

In the event of normal repairs, the minimum response time for the Contractor to attend to such repairs is 24 hours from the time of intimation to the Contractor. In the event that Contractor fails to respond as required above or in the event of an emergency, the Municipal Facility may perform such repairs to Contractor-owned equipment. The Contractor shall hold the Municipal Facility harmless in such cases where the Contractor fails to respond and in emergencies. The Municipal Facility may, at its option, (1) recover such costs of repairs by deductions from the Contractor's future invoice(s), and/or (2) demand in writing payment of cost of repair, from the Contractor. Such payment shall be due to the Municipal Facility within forty-five (45) days of its demand received by the Contractor.

11. Training for Municipal Facility Personnel for Operation and Maintenance of Installed ESMs.

11.1 Thirty days prior to the installation completion, the Contractor shall train Municipal Facility's personnel as required to operate, maintain, and repair ESM equipment and systems in the event of emergencies.

11.2 The Contractor shall train Municipal Facility's personnel to operate, maintain, and repair ESM equipment 90 days prior to the end of the contract term or within 90 days after notice by the Municipal Facility in the event of early termination.

11.3 The training program described in 11.1 and 11.2 shall provide instruction on operation, troubleshooting, maintenance, and repair of ESMs. Training shall include both classroom and a practical instruction. Course materials shall include Contractor-supplied operation and maintenance plans and manufacturer-supplied manuals. The program shall be conducted at the facilities where the ESMs are located.

12. Municipal Facility's Projects

There shall be no restriction on Municipal Facility projects of any kind including those that may provide energy conservation equipment, the removal of existing energy consuming equipment, or the addition of new energy consuming equipment for Municipal Facility mission needs.

13. Standards of Service and Comfort

The following **Municipal Facility** performance requirements must be maintained throughout the Contract term

13.1 In conditioned areas, space temperatures should be maintained at ___ +/-1°C dry bulb, and ___ +/- 10% relative humidity shall be maintained during periods scheduled for occupancy.

13.2 During unoccupied periods, the cooling system may be turned off. However, the system must be so designed that before any high temperatures or humidity conditions that could damage equipment in the spaces can occur, the cooling system will restart and control the temperature or humidity as required. In any case, temperatures must be restored to the +/- 1°C range by the start of the next occupied period.

13.3 Outside air cannot be reduced below the quantities found in ASHRAE standard 62-89, "Ventilation for Acceptable Indoor Air Quality." Minimum lighting levels shall be in accordance with applicable IS standards for each space (as of the time of ESM installation). If light levels at such IS standards are a reduction of more than 20% from existing levels, **Contractor** shall so indicate in the Energy Study Report for review and approval by the **Municipal Facility**.

13.4 In case the baseline levels are significantly below the standards, the present energy consumption shall be indexed so as to compensate for the additional equipments required to achieve the improved level and savings calculation shall be accordingly made.

14. Material Changes and Baseline Modifications

14.1 The Energy Baseline may change if the Municipal Facility undergoes changes in operating hours, occupancy, energy consuming equipment, or structure. Any change in operating hours, occupancy, energy consuming equipment, or structure that may reasonably be expected to change the energy consumption of the Municipal Facility by more than ten percent (10%) of the total energy savings proposed by Contractor shall be considered a material change.

14.2 The Municipal Facility shall notify the Contractor of any change in the Municipal Facility's equipment or operating conditions that can reasonably be expected to constitute a material change within thirty (30) days of the time that the change becomes known to the Municipal Facility. If the notice is not timely made, the modifications shall be retroactive to the time the change commenced. In the event of a material change the Energy Baseline shall be modified by mutual consent of the Municipal Facility and the Contractor. Each party shall bear its own costs in this modification.

15. Insurance

15.1 **Contractor** shall maintain insurance acceptable to the Municipal Facility in full force and effect throughout the term of this contract. The policy or policies of insurance maintained by the Contractor shall provide Combined Single Limit Coverage (bodily injury and property damage) in the amount of Rs ____ per occurrence,

15.1.1 Insurance shall be in force the first day of the term of this contract.

15.1.2 **Contractor** agrees to deposit with the Municipal Facility, on or before the effective date of this contract, a certificate of insurance as evidence that such insurance provisions of this contract have been complied with and to keep such insurance in effect and the certificates thereof on deposit with the Municipal Facility during the entire term of this contract.

15.1.3 **Contractor** shall maintain insurance coverage against the risk of loss, damage by fire or otherwise, or theft of Contractor-owned and installed equipment until title to the equipment passes to the Municipal Facility upon expiration of the contract.

16. Force Majeure

" If at any time, during the continuance of this contract, the performance of whole or in part of any obligations under this contract shall be prevented or delayed by reason of war, hostilities, acts of public enemy, civil commotion, sabotage, fires, floods, explosions, epidemics, quarantine restrictions, strikes, lockouts or act of God (herein after referred to events) lying beyond the reasonable control of and unanticipated or unforeseeable by and not brought about at the instance of, the party claiming to be affected by such event provided, notice of the happening of such event is given by either party shall by reason of such event, be neither entitled to terminate this contract nor shall either party have any claim for damages against the other in respect of such non performance or delay in performance and deliveries under the contract shall be resumed as soon as practicable after such event has come to an end or ceased to exist, and the decision of contracting officer as to whether the deliveries have been so resumed or not, shall be final and conclusive.

17. Events of Default

Each of the following events or conditions shall constitute a default by the **Contractor:**

17.1. The Contractor fails to produce the guaranteed energy savings in any consecutive twelve-month period during the term of the Contract and fails to pay the Municipal Facility the guarantee payment as set forth in the Energy Study Report;

17.2. The standards of service and comfort set forth in the Contract are not provided due to failure of the Contractor to properly design, install, maintain, repair, or adjust the Contractor-furnished equipment, or failure to provide other services as described in the Proposal or Energy Study Report, providing that such failure continues for fifteen (15) days after notice to the Contractor requesting that such failure to perform be remedied, or if a remedy cannot be effected in such fifteen (15) days, without a good faith effort by the Contractor to perform in that period and diligent subsequent performance;

17.3. Any intentionally false or misleading material representation or warranty furnished by the

Contractor in connection with the proposal, the Energy Study Report or this Contract;

17.4. Any material failure by the Contractor to comply with the terms and conditions of this Contract, including breach of any covenant contained herein, providing that such failure continues for fifteen (15) days after notice to the Contractor requesting that such failure to perform be remedied, or if a remedy cannot be effected in such fifteen (15) days, without a good faith effort by the Contractor to perform in that period and diligent subsequent performance.

If the Contractor has involved their parent company into the bidding process in order to strengthen its financial and technical capabilities and in the case where Contractor fails to perform during the contract period, then the recourse of the Contractor obligations if already mentioned in the signed contract will also apply to the parent company

18. Remedies upon Default

Upon occurrence of a default by the Contractor, the Municipal Facility may, without an election of remedies:

18.1. Exercise all remedies available at law or at equity including bringing action for recovery of amounts due to the Municipal Facility for damages and/or specific performance;

18.2. Exercise its option to terminate the Contract by paying seventy percent (70%) of the termination value to the Contractor, without the otherwise required 90 day notice;

18.3. Without recourse to legal process, terminate this Contract by delivery of a notice declaring termination, whereupon the Contractor shall remove the Contractor-furnished equipment and reconnect and restore the Municipal Facility's original equipment, if available, or other Municipal Facility-furnished equipment, to the conditions, which existed prior to the inception of this Contract, normal wear and tear accepted.

19. Representations and Warranties

Each party warrants and represents to the other that:

19.1 It has all requisite power, authority, licenses, permits, and franchises, corporate or otherwise, necessary to execute and deliver this Contract and to perform its obligations;

19.2 Its execution, delivery, and performance of this Contract has been duly authorized by, and is in accordance with, its organic instruments, and this Contract has been duly executed and delivered for it by the signatories and constitutes its legal valid and binding obligation;

19.3 Its execution, delivery, and performance of this Contract will not result in a breach or violation of or constitute a default under any agreement, lease, or instrument to which it is a party or by which it or its properties may be bound to be affected; and

19.4 It has received no notice, nor to the best of its knowledge is there pending or threatened any notice, decree, award, permit, or order that would materially adversely affect its ability to perform hereunder.

20. Choice of Law

This Contract shall be interpreted, construed, and enforced in all respects in accordance with the laws of India and subject to the General Provision 26, any litigation arising there from shall be brought and resolved by the courts of competent jurisdictions located in New Delhi.

21. Laws to Be Observed

The Contractor at all times shall observe and comply with all Central, State, and local laws or ordinances, rules, and regulations which in any manner affect those engaged or employed in the work, the materials used in the work, and the conduct of the work. The Contractor shall also comply with all such orders and decrees of bodies or tribunals having any jurisdiction or authority over the work. Any reference to such laws, ordinances, rules, and regulations shall include any amendments thereto.

22. Notices

All notices to be given by either party to the other shall be in writing and must be either delivered personally or by overnight courier service or mailed by registered or certified mail, return receipt requested, addressed as follows:

To the **Contracting Officer, Municipal Facility**: _____

To the **Contractor**: _____

23. No Waiver

None of the provisions of this Contract shall be considered waived by either party, except when such waiver is given in writing. The failure of any party, at any time or times, to enforce any right or obligation, with respect to any matter arising in connection with this Contract, shall not constitute a waiver as to future enforcement of that right or obligation of this Contract.

24. Supplemental Agreement

A Supplemental Agreement executed by the **Contractor** and the Contracting Officer may modify this contract.

25. Indemnification

25.1. That the **Contractor** shall have sole control of the defense of any action on such claim and all negotiations for its settlement or compromise.

25.2. **The Contractor** shall be responsible for damages or injury caused by the Contractor's agents and employees in the course of their employment to the extent that the Contractor's liability for such damage or injury has been determined by a court or tribunal or otherwise agreed to by the Contractor, and the Contractor shall pay for such damages and injury to the extent permitted by existing law.

26. Transfer, Sale or Merger of Contractor

Any transfer, sale or merger of the selected **Contractor** firm that may affect the contract directly and indirectly shall not be allowed without prior approval of Municipality.

27. Disputes

All disputes arising under or related to this contract shall be resolved in accordance with this clause.

a. A claim by the **Contractor** shall be made, in writing, and submitted to the Contracting Officer for a written decision.

b. The Contracting Officer shall make a finding of fact and render a decision within 60 days of the request, provided all the necessary investigations can be made. The findings and decision shall be written and shall be mailed or otherwise furnished to the **Contractor**.

c. In case the parties fail to settle amicably the disputes within 60 (sixty) days, the same may be referred to arbitration of a Sole Arbitrator to be mutually agreed between the parties, failing which the Secretary, Department of Legal Affairs, would appoint the Sole Arbitrator. The arbitration proceedings will be conducted in accordance with Arbitration and Conciliation Act, 1996.

ANNEX 2

SPECIAL TERMS AND CONDITIONS OF CONTRACT

1. Other Conditions which are not covered under the General Conditions as given at Annex 1

(i) The firm shall inspect the inventory of all systems at all the locations and take appropriate measures by providing new equipments / modifications / reconditioning of the equipment including painting etc. The attached Investment Grade Energy Audit Report is indicative only and is to provide salient information regarding the **Municipal Facility** under bid. However, the **Municipal Facility** does not bind itself to the contents and the suggested measures in full & final. The exact course of action and the ESMs to be executed will be decided after the successful **Contractor** does the Energy Study again as has been stipulated in Clause 3.1 (b) of the General Condition.

(ii) The dismantling/removal of the existing equipments/system are covered under the scope of work and nothing extra shall be paid on that account.

(iii) The dismantled material shall be the property of the **Municipal Facility**.

(iv) Since the **Municipal Facility** under Bid is a high security zone, hence the firm shall have to follow the security restrictions and the necessary verifications of the employees and persons required for the execution of the work, shall be the responsibility of the firm. The **Municipal Facility** will provide the necessary assistance in completion of the formalities. No claim on account of idle labor etc. shall be entertained.

(v) No information obtained by the **Contractor** in course of execution/maintenance of any work in_____, should be reproduced in any manner or format without obtaining prior permission from the_____.

(vi) The firm shall provide necessary stickers/stamps on the systems covered under performance contract for easy identification and verification.

(vii) The firm shall be responsible for providing necessary measuring instruments methods for providing detailed readings documentation for the purpose of verification of energy savings achieved due to implementation of ESMs.

(viii) Recoveries/Deductions on account of 'Work Contract Tax' (@4% for Financial year 20__-20__) and 'Income Tax i/c Surcharge' at applicable rates shall be done from all the payments made to the firm.

(ix) Any damage done to the Building and/or to equipments/systems of the **Municipal Facility** will have to be made good by the **Contractor** at his own cost, and shall be responsible for bringing the original finish as much as possible. In case the **Contractor** fails to make good the damages so made, even after the written communication for this effect has been made by the contracting officer, the **Municipal Facility** reserves the right to get the damages repaired by means of other

agency/departmental^ and any expenditure incurred towards that account becomes recoverable from the future invoices of the **Contractor**.

2. Completion Period

The firm shall carry out study for Electrical System and Submit detailed Energy Study Report with proposed Energy Efficiency Measures (As per the format in Annex 3) within Thirty days of the date of award of the work. The firm shall also give the Project Scheduling Plans (Bar Charts) for each ESM proposed to be implemented. The **Municipal Facility** expects that the firm shall be able to execute all the ESMs within a period of 9 Months after accord of approvals given by the **Municipal Facility**. Therefore, the expected completion time is 12 Months for installation/implementation of the ESMs. The Contract will be for 5 yrs pay back period, after the substantial completion dates of the ESMs.

3. Compensation for Delay in the Implementation of the ESMs

The successful **Contractor** shall be required to submit an ESM Installation schedule (As per the Energy Study Form attached as Annex 3) specifying the time scheduling of various milestones to be achieved in the course of execution of the ESM. The **Municipal Facility** expects that the **Contractor** shall adhere to the specified time schedule and shall complete the job as early as possible. In case the **Contractor** fails to maintain the desired pace of work and fails to show the required progress of work, he is liable to pay a compensation of RS. ___(Rupees ____) Per week for the period by which the substantial completion date is extended with respect to the schedule of completion submitted and agreed by the **Municipal Facility**. The total amount of Compensation payable by the **Contractor** on account of delay shall not be more than Rs. ___ (Rupees __ Lacs Only)

The amount of compensation may be adjusted or set-off against future invoices of the **Contractor**. The decision of the Superintending Engineer in writing in respect to the amount of compensation to be paid shall be final & binding upon the **Contractor**.

4. Extension or Time

If the work is delayed by:

A. Force Majeure, or

B. Abnormally bad whether

C. Serious loss or damage by fire, or

D. Civil commotion, local commotion of workmen, strike or lockout, affecting any of the trades employed on the work, or

E. Delay on the part of other **Contractor** or tradesman engaged by Contracting officer in executing work not forming part of the contract, or

F. Non availability of stores, which are the responsibility of the **Municipal Facility** to supply, or

G. Non availability or break down of tools and plants to be supplied or supplied by the **Municipal Facility**, or

H. Any other cause, which, in the absolute discretion of the Contracting officer is beyond the **Contractor's** control

Then upon the happening of any such event causing delay, the **Contractor** shall immediately give notice in writing to the contracting officer and may request for the extension of time on that account. The **Contractor** may also, if predictable, indicate the period for which extension is desired.

The **Municipal Facility** may give a fair and reasonable extension of time for completion of the work, and the decision of Superintending Engineer in this regard shall be final and binding upon the **Contractor**.

5. Approval of Personnel

The Key Personnel and Sub-consultants listed by title as well as by name in Appendix C are hereby approved by the Municipality.

5.1. Removal and/or Replacement of Personnel

(a) Except per agreement with the Municipality, no changes shall be made to the Key Personnel. If, for any reason beyond the reasonable control of the Consultants, it becomes necessary to replace any of the Personnel, the Consultants shall forthwith provide as a replacement a person of equivalent or higher qualification.

(b) If the Municipality (i) finds that any of the Personnel has committed serious misconduct or has been charged with having committed a criminal action, or (ii) has reasonable cause to be dissatisfied with the performance of any of the Personnel, then the Consultants shall, at the Municipality's written request specifying the grounds therefore, forthwith provide as a replacement a person with qualifications and experience acceptable to the Municipality.

The Consultants shall have no claim for additional costs arising out of or incidental to any removal and / or replacement of Personnel.

6. Requirement of Performance and Payment Bonds

I. Performance Guarantee

The successful Proposer (or **Contractor**) shall be required to submit a performance guarantee for Rs._____Lacs (Rupees …….Only) in the form of Municipal Securities or Fixed Deposit Receipts (FDR) or Guarantee Bonds of any Scheduled Bank or the State Bank of India (In the Specified Format) in favor of **[Municipality Name, Location]**. This Performance Guarantee will have to be deposited before the Award of the Work. In case a Fixed Deposit Receipt of any bank is furnished by the **Contractor** to the **Municipal Facility** as part of the Performance Guarantee and the bank is unable to make payment against the said FDR, the loss caused thereby shall fall on the **Contractor** and the **Contractor** shall forthwith on demand, furnish additional security to the Municipal to make good the deficit.

The performance guarantee shall be initially valid up to the Stipulated date of Completion for all ESMs plus 60 days beyond that. In case the time for completion of work gets enlarged, the **Contractor** shall get the validity of the performance Guarantee extended to cover such enlarged time for completion of the work. After recording of the substantial completion date for all the ESMs, by the competent Authority, the performance guarantee shall be returned to the **Contractor**, without any interest.

The performance Guarantee is required for the full and faithful performance of this contract. In case the **Contractor** fails to perform his obligations under this contract, or fails to maintain the progress of the work, or does not complete the work as required under this contract the said **Municipal Facility** reserves the right to forfeit the Performance Guarantee in full and the same shall be absolutely at the disposal of the President of India.

II. Payment Guarantee

The successful Proposer (or **Contractor**) shall be required to submit a Payment Guarantee for Rs. _____Lacs (Rupees _____ Only) in the form of Government Securities or Fixed Deposit Receipts or Guarantee Bonds of any Scheduled Bank or the State Bank of India (In the Specified Format) in favor of **[Municipality Name, Location]**. This Payment Guarantee will have to be deposited before the Award of the Work. In case a Fixed Deposit Receipt of any bank is furnished by the **Contractor** to the **Municipal Facility** as part of the Payment Guarantee and the bank is unable to make payment against the said FDR, the loss caused thereby shall fall on the **Contractor** and the **Contractor** shall forthwith on demand, furnish additional security to the Municipal to make good the deficit.

The Payment Guarantee shall be initially valid up to the Stipulated date of Completion for all ESMs plus 5 years (i.e. Payback period) beyond that. In case the time for completion of work gets enlarged, the **Contractor** shall get the validity of the performance Guarantee extended to cover such enlarged time for completion of the work. The Payment Guarantee shall be returned to the **Contractor**, without any interest, after the term of the contract including payback period expires.

The Payment Guarantee is required for the prompt payment to all others for all labor and materials furnished in the execution of the work and to protect the **Municipal Facility**'s interests in case of events of the non-payments to the labor employed by the **Contractor** on the execution of the work

and to the suppliers from whom the **Contractor** has procured the material. In case the **Contractor** fails to make timely payments to the labor and/or suppliers as required under this contract, the **Municipal Facility** may, without prejudice to any other rights and remedies available under the said contract and in the applicable laws, reserves the right to make the payments from the said payment guarantee under intimation to the **Contractor**. It is the duty of the **Contractor** to make all the payments in prompt and expeditious manner.

ANNEX 3

FORM OF ENERGY STUDY REPORT

The **Contractor** shall perform a detailed study of the **Municipal Facility** and document its findings in a report including, at a minimum, all of the following information:

1. Cover

The cover page should provide the following information:

- The words "Energy study for (the **Municipal Facility**'s name)"
- Name(s) and address(es) of the building(s) analyzed in the study
- Name of the firm producing study
- Date

2. Table of Contents

Must be complete with page numbers and descriptive title for each section, table, exhibit, attachment, etc. Tables, charts, attachments, and exhibits should be listed separately by number, title and page number.

3. Page Numbers and Revisions

Each page should be numbered and dated. Should revisions be requested, a listing of original pages and replacement pages should be provided. Each revised page should indicate at bottom right corner "Revised--date."

4. Executive Summary

A short (one or two page) narrative summary of the project, including discussion of the project's energy savings and financing should be included in the Executive Summary.

a) The following tables must be included:
   1) A summary of ESM 8 measures for the project (Table 6.1)
   2) A summary of the project cost (Table 6.4 & 6.5)
   3) Maintenance services provided by equipment covered, scope, and frequency (Table 6.0)
   4) A cost savings calculation (Table 6.2)
   5) A payment schedule (Table 6.3)

b) Savings guarantee. The following statement shall be included:

"The **Contractor** guarantees that in each year of the Term following Substantial Completion, the State will realize energy savings of at least _____kWh. At current rates, these energy savings have a value of _____Rupees (Rs._____)."

5. Existing Conditions

Document the existing conditions of the **Municipal Facility**, including the following information itemized for each building in the **Municipal Facility**:

a) Facility physical condition;
b) Hours of use or occupancy;
c) Area of conditioned space;
d) Area of unconditioned space;
e) Inventory of energy consuming equipment or systems;
f) Inventory of water consuming equipment or systems;
g) Energy consuming equipment operating conditions and loads;
h) Water consuming equipment operating conditions and loads;
i) Standards of service and comfort observed (e.g. light levels, ventilation, and temperatures); and
j) Current practices that unnecessarily increase energy use or impact baseline.
k) The factors affecting specific energy consumption within and beyond the control of **Municipal Facility**
l) Recommendation of metering improvements options

[ADD ANY ADDITIONAL APPLICABLE CONDITIONS]

6. Energy Efficiency Measures (ESMs)

Provide a narrative description of each proposed cost effective energy saving measure (ESM) to be installed including:

a) The proposed upgrade, replacement, operational change, or maintenance requirement
b) The interface between the proposed ESM and remaining State equipment
c) The impact on remaining State equipment (changes in load, run time, etc.)
d) Any impact on standards of service and comfort;
e) Complete Table 6.1 for all measures
f) Describe ESMs analyzed but disqualified under cost effectiveness criteria
g) An indication of any altered or new operating or maintenance requirements that will apply due to implementation of the improvements, and an estimate of the cost of any upgrading or maintenance work that the **Contractor** recommends be undertaken prior to/or during the implementation of the modifications/improvements to maximize their effects
h) An M&V plan, which is acceptable to all for monitoring, verifying and guaranteeing savings from the implementation of the ESMs, including identification of monitoring equipment, availability, confidence interval, data collection procedure etc.

General Information

- ESMs should be presented in the order that interactions are considered;
- Energy Management System (EMS) savings must not be calculated as a percentage of total energy use. Each process controlled by the EMS should be analyzed separately, and savings associated with that process improvement calculated;
- Maintenance measures should be analyzed for savings in the same manner as other ESMs;
- An ESM summary sheet must be provided for each measure

7. Energy Savings Proposed

Provide a detailed energy analysis for each ESM proposed, documenting the estimated annual energy savings. Document assumptions on current and proposed equipment operating conditions and energy savings calculations.

Computer Models

When computer modeling is used, the model and each set of results must be properly documented. Minimum documentation required is:

- Name of the program
- Description of the calculations the program performs
- Table showing the model's calculation of the building's energy consumption for each month of the base year, and actual consumption for those months

8. Municipal Facility Support Required

For each ESM proposed, identify any utility interruptions needed and any other **Municipal Facility** support that may be required during installation.

9. ESM Installation Schedule

For each ESM provide a proposed implementation schedule. Include the following milestones:

a) Design completed;
b) Permits;
c) Submittals (plans and specifications);
d) Equipment/Material acquisition;
e) Mobilization;
f) Installation;
g) Clean up;
h) Startup/Testing;
i) Final inspection and Notice of Substantial Completion;
j) Post installation submittals; and
k) Training.

10. Hazardous Waste Disposal Plan

Provide a descriptive hazardous waste disposal plan for the project.

11. Energy Baseline and Savings Measurement

The **Contractor** shall establish and document on a site-specific basis:

a) An Energy Baseline, including data, methodology, and variables used to compute it.
b) The method it will use to measure energy savings and energy cost savings for each energy type after proposed ESMs have been installed.
c) The method it will use to verify installed ESM compliance with requirements of General Provision Number 13 (Standards of Service and Comfort).
d) The method of determining energy savings and compliance with Standards of Service and Comfort annually throughout the contract term.
e) If a computer program or programs will be used to establish the baseline, modify the baseline, or measure savings, furnish the name of the program, the name, address, and phone number of the program developer or supplier, and descriptive literature. The State may require **Contractor** to furnish a properly licensed copy of the program(s) to the State for its use in administering the contract, at no cost to the State.

12. Description of Maintenance Services and Training

Provide a complete description of the maintenance services and training.

13. Pricing and Project Financing

The Contractor shall complete Table 6.4 and 6.5. This includes a payment schedule with termination value for each year of the contract.

14. Calculations

a) All calculations must be complete and easy to follow. Spreadsheet formats must include a description of the assumptions and calculations.
b) Units must be indicated and only so many significant digits as the accuracy of the calculation warrants included.
c) Weather data source should be described.
d) Calculation details and supporting documentation shall be placed in an Annex.

Table No. 6-0: Maintenance Services

[**Contractor**-installed; existing **Municipal Facility** (PI. Specify)]

Building/Facility (if appropriate):_____

MM No.	EQUIPMENT	SCOPE	FREQUENCY	PARTY RESPONSIBLE (Contractor/ Municipal Facility)

Table 6-1: Energy Efficiency Measure Summary

Company Name: _____

Building or Municipal Facility Name: _____

(Aggregates data from summary sheets)

ESM No.	Energy Saving Measure (ESM)	Electricity Savings (kWh/yr)	Peak Demand Reduction (kW)	Fuel Savings (include units)	Energy Cost Savings (Rs./yr)	Estimated Measure Cost (Rs.) from Table 6.2	Estimated Life of Measure (years)	Refer to Page(s)

Summary Sheet for ESM: to be used for Table 6-1

Summary Sheet for ESM Number _____

Building/Facility: _____

Name of ESM: _____

1. DESCRIPTION (include quantities, types, sizes, locations, etc.

a. Existing Conditions: _____
_____
_____
_____

b. Proposed Conditions with ESM: _____
_____
_____
_____

2. NET FIRST YEAR ENERGY SAVINGS

Fuel Type (electric, gas, oil)	**Fuel Units (kWh,Therms, kW, gallons)**	**First Year Fuel Savings (kWh, Therms, kW, gallons)**	**Unit Cost for the Fuel**	**Cost Savings**
TOTALS				

3. COST ESTIMATE SUMMARY OF MEASURE
Materials Rs. _____
Labor _____
Contingency _____
Other (Specify) _____
Total Rs. _____

4. Expected useful life: _____years.

5. The measure interacts with ESM or MM No(s) _____

6. The measure impacts ESM or MM No(s) _____

7. Impact on standards of service and comfort.

Table 6 -2: Calculation of Cost Savings

Year	Annual Energy Cost Savings {A}	Maintenance Cost Savings {B}	Other Cost Savings {C}	Gross Savings {D}={A}+{B}+{C}	Total Payments (from Table 12-4) {E}	Net Savings {F}={D}-{E}
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
TOTAL						

Notes: Include utility rebates in "Other Cost Savings" if they will be included as part of the project. More over, these are subject to change after the **Contractor** conducts the Energy Study within 30 days of the award letter.

Table 6 - 3: Payment Schedule and Termination Value

Payment Summary

Year	Contract Payments {A}	Maintenance Services Fee {B}	Operations Monitoring Fee {C}	Other (Specify) {D}	Total Payments {E}={A}+{B}+{C}
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
TOTAL					

Notes: Operations Monitoring Fee equals 1.5% of Gross Annual Energy Cost Savings. Maintenance service fee is for other than **Contractor**-installed equipment.

Payment Schedule and Termination Value

Year	Termination Value	Total Payments From Above	Payment Number		Payment Number		Payment Number		Payment Number	
			Date	Amount	Date	Amount	Date	Amount	Date	Amount
1										
2										
3										
4										
5										
6										
7										
8										
9										
10										
TOTAL										

Table 6-4: Project Financial Analysis

Year	Pre ESM Expenditure on Energy i/c Energy Bill + Maint. Cost + Others Etc	Post ESM Expenditure on Energy i/c Energy BiU + Maint. Cost + Others etc	Gross Savings in the Cost of Energy Consumption	Share of Government Facility in Rs. (In %)	Share of Contractor in Rs. (In %)	NPV During Contract Period	NPV During Entire Life Term of the ESM
1	2	3	4	5	6	7	8
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							

NOTES:

1. For the purpose of payment, annual dues to **Contractor** calculated as above immediately post PMV, would be determined and signed by both the parties. Payment to **Contractor** would be released prorata monthly, on the basis of invoice raised for the same by the **Contractor**.
2. The payment shall be treated as lease rental for use of the ESMs leased by the **Contractor** to the **Municipal Facility** till such time the ownership gets transferred to the **Municipal Facility**.
3. For the purpose of determination of savings on annual basis, any variation in the present energy consumption up to 10 % shall be ignored and **Contractor** would continue to get paid as per the rate determined post ESM performance verification as stated in the table above.
4. The cost of salaries to **Municipal Facility** maintenance personnel shall not be included as the cost of maintenance.

Table 6-5: Calculation of Maximum Project Cost

Cost of Installed ESM i/c Installation	_____
Cost of Design Services	_____
Cost of Maintenance Services,	_____
General **Contractor** Overhead and Profit	_____
Commissioning and Initial Training	_____
Interest during Construction	_____
Miscellaneous Fees and Permits	_____
Others (Specify)	_____
Total Project Cost (Maximum)	**_____**

Note: All figures shall be in Indian Rupees only. If required, the Proposer may attach a separate sheet for explanation and calculation of various figures taken in the table.

ANNEX 4

ENERGY STUDY REPORT ACCEPTANCE FORM

The undersigned hereby agree on the content and form of the Energy Study Report and such Report shall be a part of this Contract as though full set forth herein.

IN WITNESS WHEREOF, the parties have executed this Form, the _____day of _____, 20___.

Municipal Facility

By

_____

Its

_____

Contractor

By

_____

Its

_____

3.5 TEMPLATE: ENERGY PERFORMANCE CONTRACT FIXED FEE

A sample contract below can be used as a template in a situation when Municipality is Brower and ESCO is providing technical assistance to the project on fixed fee basis.

LOGO

Municipality / MUINICIPAL FACILITY Name

ENERGY PERFORMANCE CONTRACT (EPC)
FOR IMPLEMENTATION IN MUNICIPAL
WATER SUPPLY ENERGY EFFICIENCY PROJECTS

(To be printed on a non judicial stamp paper)

PERFORMANCE CONTRACT FOR ENERGY EFFICIENCY SERVICES

This CONTRACT (hereinafter called the "Contract") is made on the ___ day of the month of _____, 20__, between, M/s. ----- **[Monitoring Body]** and having its registered office at [Legal Address], herein after referred to as the "----", (which expression shall, unless excluded by or repugnant to subject or context thereof, include its successors or assigns), and M/s. **[Municipality]** and having its registered office at [Legal Address], herein after referred to as the "**Municipal Facility**", (which expression shall, unless excluded by or repugnant to subject or context thereof, include its successors or assigns), and, M/s. _____, a company registered under Companies act 1956, having its registered office at _____, hereinafter called the "**Contractor**", (which expression shall, unless excluded by or repugnant to subject or context thereof, include its successors and assigns,

WITNESSETH THAT:

WHEREAS, ----- will act as a supervisor and monitor the entire project.

WHEREAS, the Municipality owns the Water Pumping Facility and will provide equipments and manpower for the implementation of energy saving measures suggested in the energy audit reports under the guidance and supervision of the **Contractor**.

WHEREAS, the **Contractor** provides all technical assistance services for certain improvements based on final energy audit reports known as Energy Saving Measures ESM which would result in energy and/or operating cost reductions and may also result in production efficiencies ('Savings') that would be required to reach a goal of 'rational use of energy' at the said water pumping facility;

WHEREAS, the **Contractor** has submitted a written proposal in response to the **Municipal Facility's** request and has been selected by the **Municipal Facility** as the most qualified **Bidder** for the work herein described;

WHEREAS, the **Contractor** has undergone the process of review, re-verification and re-validation of the data and ESM identified/listed in the Energy Study Report (Section 4) for the water pumping facility at the '----------" and having agreed to be part of the proposed energy efficiency program to develop savings at **Municipal Facility** as per the terms and conditions of this 'Contract'.

NOW THEREFORE, in consideration of the mutual agreement hereinafter set forth, the parties agree as follows:

1. Definition

Key terms used within this contract are defined as follows:

Contracting Officer – An officer who has been dully authorized in this behalf as per the requirements of Article 299(1) of the Constitution of India.

Effective Date – The effective date of this Contract shall be the date on which both the parties sign this contract.

Energy Baseline - The energy baseline is a calculation or measure of each type of energy consumed in existing facilities, prior to the installation of energy saving measures, and presented in specific energy consumption units. For purposes of this contract, specific electrical energy consumption determined by kWh/ML or kVAh/ML at *station level* shall be measured at base frequency (and also at various operating frequencies, if desired) based on the monthly Utility bill for the preceding calendar year. The Energy Baseline shall be accurately defined, as mutually discussed, finalized and agreed amongst the **Contractor**, **Municipal Facility** ,----- and M&V Third Party during the post bid 'Technical Meeting' organized by **Municipal Facility**.

Energy Saving Measure (ESM) - An ESM is the installation of new equipment, modification or alteration of existing **Municipal Facility's** equipment/facilities, or revised operations and maintenance procedures, to reduce energy costs, by improving efficiency of use.

Energy Savings - Energy savings is a reduction of energy consumption or electrical demand resulting from the **Contractor's** energy saving measures taking into considerations quality of power supply. Energy savings shall be determined by comparing the energy baseline with the energy consumed (or demand) *after implementation* of energy saving measures.

Substantial Completion Date - The date on which the **Contractor** warrants by written notice that the ESMs installation are substantially complete and are achieving savings equal to or greater than the Guaranteed Savings.

Termination Value - The amount the **Municipal Facility's** may pay to **Contractor** after the first year of Substantial Completion Date to terminate this agreement for convenience. This amount shall be the total price shown in Article 5.2c, less any payments already made.

Third Party for M&V: "Third Party" means any person, real or juridical, or entity other than the Parties to the Contract. In this case, the **Municipal Facility's** /**-----** has named **"------"** and **------** as the third party for the M&V of the 'savings' made under this Contract.

Project Committee: Project Committee refer to members from following departments but not limited to ;

- Municipal Commissioner or -------
- Municipal Chief Engineer or -------
- Elected Local Council representative
- CMA representative

2. Contract Documents

2.1. Documents Included

The following documents, and any amendments or addenda thereto, comprise this Contract and are fully a part of this Contract as though attached hereto or set forth at length herein:

1	Section 1	Letter of notice to the Proposer
2	Section 2	Request for Proposal No.____
		Technical Proposal Response
		Financial Proposal Response
3	Section 3	Form for 'Performance Contract' for 'Energy Efficiency Services'
	Annexure 3A	General Terms and Conditions for Goods and Services
	Annexure 3B	Performance and Payment Guarantee
4	Section 4	Preliminary Energy Study Report conducted by ---- and Investment Grade Energy Audit **by Contractor**
	Annexure 4A	Energy Study Report Acceptance Form

2.2. Entire Agreement

This Contract is the entire agreement between the parties, and no alterations, changes or additions thereto shall be made, except in writing approved by the parties.

3. Contractor's Services

3.1 .Investment Grade Audit (IGA) Study and Baseline Establishment

A. The Preliminary Energy audit study has already been conducted in respect of the **Municipal Facility** under bid. The **Contractor** will perform Investment Grade Audit study and work out on total cost, guarantee savings (higher than the indicative savings mentioned in the preliminary energy audit report), energy saving recommendations, baseline establishment, O&M and M&V protocol.

B. The study shall document existing conditions, including facility's physical conditions; hours of operations; inventory of energy consuming equipment or systems; inventory of water equipment or systems; water pressure and energy consuming equipment operating conditions or loads ***[additional conditions]***. The Energy Study Report shall document Energy Baseline, ESMs proposed and methods to measure and verify Energy Savings. ***Contractor*** *shall furnish a written report of its findings including all of the information listed in the format attached as Annex 3 within 30 days of effective date of this contract.*

C. Within **thirty** days of the effective date of this Contract, the **Contractor** shall submit the study report to the **Municipal Facility** for review and acceptance prior to installation of any ESMs. **Municipal Facility's** acceptance of the Energy Study Report establishes mutual agreement on ESMs, energy baseline, M&V protocol Payment Schedule and other terms of

the Contract. The final version of the Energy Study Report shall be attached as Annex once it has been reviewed, approved, and accepted on behalf of the **Municipal Facility** by the Contracting Officer. Agreement on the content and form of the Energy Study Report will be evidenced by executing the attached Energy Study Report acceptance form whereupon the Energy Study Report will be incorporated as Annex and shall be a part of this Contract as though fully set forth herein.

3.2. Equipment Design and Construction

A. Within fifteen (15) days of **Municipal Facility** acceptance of the final energy audit Report, **Contractor** shall prepare and submit ESMs installation plans to the **Project Committee** for review and approval prior to beginning of ESMs installation.

B. The **Contractor** shall be responsible for quality control inspection during the installation of all ESMs. **Contractor** shall maintain records of inspections and tests, including any conducted by or for a utility or other regulatory agencies. The quality control checks exercised by the **Contractor** shall be test checked by the **Municipal Facility**.

C. The **Contractor** shall complete supervision of ESMs as per the schedule of specified in **Contractor**'s Energy Study Report.

3.3. Notice of Completion

The **Municipal Facility** shall notify to the **Contractor** in writing when the ESMs are installed and substantially complete by submitting a Notice of Substantial Completion and a written request for inspection. The request shall identify the, location, description of ESMs, planned testing of ESMs to verify performance, and recommended dates for inspection. Upon receipt of the request from **Contractor** the Municipal project committee will inspect ESMs installations. Both **Municipal Facility** representative and **Contractor** representatives will simultaneously inspect ESMs to facilitate mutual agreement on satisfactory Contract performance. The **Municipal Facility** shall provide written notification to **Contractor** of the scheduled date and time for **Municipal Facility** inspection within ten (10) days of receipt of inspection request. Following satisfactory inspection, the **Municipal Facility** shall issue a Certificate of Substantial Completion.

3.4. Operations and Maintenance of Equipments and ESMs

The Municipal Facility shall be responsible for maintenance and repair of all ESMs installed under the supervision of **Contractor** as per the O&M Protocol. Maintenance includes all work and costs associated with periodic inspections, tests, and adjustments required to sustain and/or restore energy system operational status to as-designed performance and performance requirements of this contract. Repair includes all labor, material, consumables and equipment required to replace, rebuild, or restore to as-designed performance systems and equipment that have failed.

3.5. Operation and Maintenance Protocol and Manuals

A. The **Contractor** shall develop protocol for operation and maintenance of the ESM installed.
B. The **Contractor** shall test the above O & M protocol for 30 days in the field before implementation in the pumping station by municipal.
C. The Municipal staff shall be responsible for the implementation of the O&M as defined in the protocol with the help of the **Contractor**.
D. **The Contractor** shall furnish operation and maintenance manuals and recommended spare parts lists for operations and maintenance of the installed ESMs and modified **Municipal Facility's** equipment after the audit report submitted and approved by the municipal.
E. The **Contactor** shall train the municipal personnel as required to operate, maintain, and repair ESM equipment and systems
F. The **Municipal Facility** shall inform the **Contractor** 30 days in advance for any required changes in the operation/change in the load factor due to festival or other reason for adjusting baseline in order to recalculate the savings.

4. Responsibilities of the Municipal Facility

4.1. Reviews and Approvals

The **Municipal Facility** shall review and reply to **Contractor** submitted materials (that is, Energy Study Report, ESM installation plans) within 15 days of receipt by the **Municipal Facility** unless a different period is explicitly stated elsewhere in this Contract. If the materials are approved, the **Municipal Facility** shall so indicate in writing. If the materials are not approved, the **Municipal Facility** shall so indicate by written notice listing shortfalls to the materials for correction by the **Contractor**.

4.2. Equipment Locations and Access

The **Municipal Facility** shall grant the **Contractor** access to its premises at such reasonable times as requested by **Contractor** and acceptable to the **Municipal Facility**, as needed to enable the **Contractor** to carry out his obligations under the Contract. The **Municipal Facility** shall not unreasonably withhold approvals for **Contractor's** access to the premises.

4.3. Procurement of Equipment

The municipality shall undertake all the necessary procurement procedure for the equipment purchases and the **Contractor** will be involved in the whole process as a technical resource to guide the municipality.

5. Compensation

5.1. Cost of Investment Grade Audit (IGA) Study - Post Bid

The Preliminary Energy audit study has already been conducted in respect of the **Municipal Facility** under bid. The **Contractor** will perform Investment Grade Audit study (As per the IGA guidelines provided with RFP documents) and work out on total investments; guarantee savings, energy saving recommendations, baseline establishment and Operation and Maintenance protocol etc. The cost of conducting IGA shall be the part of total project cost of the tender and treated as post bid audit cost for the contract. The same shall be indicated separately in the tender documents.

5.2. Savings Guarantee and Payments

A. The **Contractor** guarantees either equal or more Saving (Energy and Cost) as mentioned in the tender documents and schedule, the **Municipal Facility** will attain at the above energy savings in accordance with the energy savings converted to energy cost savings presented in column 4 of Table 6.4 of the Energy Study Report (Section 4).

B. The **Contractor** shall derive the saving component (wherever possible)/ system wise and Payment to the **Contractor** shall be due from the completion of the first quarter (i.e. three calendar months) from the 'Substantial Completion Date' based on saving guaranteed by the **Contractor**. The release of payment will be subjected to Municipal/----- acceptance of the M&V report submitted by the third party.

C. The **Municipal Facility** shall pay the **Contractor** as specified in the Payment Schedule. The Payment will be linked to the performance of the ESMs and his commitment to guaranteed savings. Such payment shall continue for a period not to exceed three (3) years from the Substantial Completion Date noted in the Notice to Proceed.

D. Within thirty (30) days of the start of each quarter period subsequent to the date of Substantial Completion, the Contracting Officer of the **Municipal Facility** and the Third Party responsible for M&V, will assess the 'total quarterly achieved energy and cost savings' as compared to the 'Guaranteed annual energy and cost savings', calculated on the basis of improved specific energy consumptive figures. In case of any shortfall, the entire shortfall in energy savings shall be converted to shortfall in energy cost savings and the **Municipal Facility** would provide 2 weeks time to **Contractor** for rectification failing which, may, at its option, (1) recover the entire shortfall by deductions from the **Contractor**'s future dues / invoice(s), and/or (2) demand in writing, payment of the shortfall in whole or in part, from the **Contractor**. Such payment shall be due to the **Municipal Facility** within thirty (30) days of its demand received by the **Contractor**. But in case the shortfall is continuous for the whole quarter from the minimum level of guaranteed saving as agreed by the **Contractor** the municipal may renegotiate or terminate the contract by giving 15 days notice to **Contractor**.

E. Any Deductions on account of 'Income Tax i/c Surcharge' and other Government taxes and levies as applicable shall be deducted from all the payments made to the **Contractor**.

6. Monitoring and Verification

A. _____will act as third party consultant(s) for periodical Monitoring & Verification of the energy & cost savings stated under this Contract. The frequency for the M&V shall be at the end of the every month starting from the date of the contract for the first three months of the contract period. Based on the initial M&V results of the of the first two projects the final M&V plan and schedule will be established and will be treated as standard M&V for all other projects.

B. The M&V protocol developed and agreed as part of the performance contract would include the verification process including monitoring and reporting methodology by the 3rd party.

C. The final frequency of the verification will be based on the first three month results or on dispute basis (in case of any dispute).

D. These energy savings shall be Monitored and Verified by the third party, in accordance with the M&V plan presented in the final report by **Contractor** and as agreed upon by the Municipality, ----- and Third Party. The energy savings will be determined and signed by all three parties. The third party shall submit a report as per the schedule attached to this agreement verifying the Savings mentioned by the **Contractor**.

E. The report shall be submitted by the third party to all the stake holders of this contract within 15 days of the completion of the verification.

F. The **Contractor** shall be responsible for providing necessary measuring instruments and methods for providing detailed readings documentation for the purpose of verification of the Energy savings achieved on the result of implemented ESMs.

G. The M&V report by the third party shall be part of the payment structure to **Contractor** and also the termination clause.

7. Reporting

The **Contractor** agrees to submit all the necessary reports to both the **Municipal Facility** and ---- for discussion and agreement during the entire term of this contract.

8. Records and Documentations

The **Municipal Facility** and its assignee shall keep and maintain accurate and detailed records and documentation relating to the project and its associated Energy Saving for a period not less than seven years beyond the termination of this agreement and agrees to allow reasonable access to the other party to its records to verify the validity of expenses reimbursed under this agreement.

9. Financial audit

An independent auditor acceptable to all the parties shall be appointed to examine the statements of income and expenditure of the project and the supporting books and vouchers. The auditor shall take into account any relevant local statutory requirement concerning audits and ensure to provide management reports and other reports as per the generally accepted auditing standards available in the country. The audit fees and expenses shall be paid from project funds. The annual and final statements of income and expenditure shall be certified/reported upon by an auditor. Along with this, audited statement, fixed assets and stock should be attached.

10. Force Majeure

If at any time, during the continuance of this contract, the performance of whole or in part of any obligations under this contract shall be prevented or delayed by reason of war, hostilities, acts of public enemy, civil commotion, sabotage, fires, floods, explosions, epidemics, quarantine restrictions, strikes, lockouts or act of God (herein after referred to events) lying beyond the reasonable control of and unanticipated or unforeseeable by and not brought about at the instance of, the party claiming to be affected by such event provided, notice of the happening of such event is given by either party shall by reason of such event, be neither

entitled to terminate this contract nor shall either party have any claim for damages against the other in respect of such non performance or delay in performance and deliveries under the contract shall be resumed as soon as practicable after such event has come to an end or ceased to exist, and the decision of contracting officer as to whether the deliveries have been so resumed or not, shall be final and conclusive.

11. Insurance

The **Contractor** shall maintain insurance acceptable to the **Municipal Facility** in full force and effect throughout the term of this Agreement.

- The **Contractor** shall indemnify the **Municipal Facility** against all losses and claims in respect of:
  - death of or injury to any person or
  - loss of or damage to any property

  which may arise out of, or in consequence of the execution of this Contract and against all claims, proceedings, damages, costs, charges and expenses whatsoever in respect thereof. The **Contractor** shall without limiting his or the **Municipal Facility's** obligations and responsibilities, insure in the joint names of the **Contractor** and the **Municipal Facility**, against liabilities for death of or injury to any person or loss of or damage to any property arising out of the performance of this Contract.

- **Contractor** shall maintain insurance coverage for the works, together with the materials and equipment, to the full replacement cost, against the risk of loss, damage by fire or otherwise, or theft of **Contractor**-owned and installed equipment, until title to the equipment passes to the **Municipal Facility** upon expiration of the contract term.

- Insurance shall be in force the first day of the term of this contract. **Contractor** agrees to deposit with the **Municipal Facility**, on or before the Effective Date of this Contract, a certificate of insurance as evidence that such insurance provisions of this Contract have been complied with and to keep such insurance in effect and the certificates thereof on deposit with the **Municipal Facility** during the entire term of this contract.

The **Contractor** agrees to deposit with the **Municipal Facility**, on or before the effective date of this contract, a certificate of insurance as evidence that such insurance provisions of this contract have been complied with and to keep such insurance in effect and the certificates thereof on deposit with the **Municipal Facility** during the entire term of this contract.

12. Default

*12.1 Default by the **Contractor***

- The **Contractor** fails to produce the guaranteed energy savings (for the completed projects within allowable deviation of (-)10% in any consecutive three-month period during the term of the Contract and unable to rectify within one month of notice to the effect and thereafter fails to pay the **Municipal Facility** the guarantee payment as set forth in the Energy Study Report;

- The standards of service and comfort set forth in the Contract are not provided due to failure

of the **Contractor** to properly design, install, maintain, adjust the **Contractor**- supervised equipment, or failure to provide other services as described in the Proposal or Energy Study Report, providing that such failure continues for fifteen (15) days after notice to the **Contractor** requesting that such failure to perform be remedied, or if a remedy cannot be effected in such fifteen (15) days, without a good faith effort by the **Contractor** to perform in that period and diligent subsequent performance;

- Any intentionally false or misleading material representation or warranty furnished by the Contactor in connection with the proposal, the Final Energy Study Report or this Contract;

- Any material failure by the **Contractor** to comply with the terms and conditions of this Contract, including breach of any covenant contained herein, providing that such failure continues for fifteen (15) days after notice to the **Contractor** requesting that such failure to perform be remedied, or if a remedy cannot be effected in such fifteen (15) days, without a good faith effort by the **Contractor** to perform in that period and diligent subsequent performance.

Remedies;

Upon occurrence of a default by the **Contractor**, the **Municipal Facility** may, without an election of remedies:

- Exercise all remedies available at law or at equity including bringing action for recovery of amounts.
- Exercise its option to terminate the Contract by paying fifty percent (50%) of the termination value to the **Contractor** without the otherwise required 90 day notice;
- Without recourse to legal process, terminate this Contract by delivery of a notice declaring termination, normal wear and tear accepted.

*12.2 Default by the **Municipal Facility***

- The collapse of system of **Municipal Facility** which is required for the **Contractor** to perform and give the saving as per the term of the Contract or set forth in the Energy Study Report;
- The close of operation in any of the pumping station by the **Municipal Facility** which is required for the **Contractor** to perform and give the saving as per the term of the Contract or set forth in the Energy Study Report;
- The **Contractor** has notified **Municipal Facility** in writing of a failure by the **Municipal Facility** to pay **Contractor** its assignee any sums due when due or to authorize ----- to pay **Contractor**, its assignee
- Failure to inform about substantial changes in the usage profile as defined in the baseline adjustment provisions
- Any Changes by the **Municipal Facility**, the total project to be implemented is not as per the terms of the contract
- Any material failure by the **Municipal Facility** to comply with the terms and conditions of this Contract,

Remedies;

Upon occurrence of a default by the **Municipal Facility**, the **Contractor** may, with or without the waiver of any other remedies which exist in law bringing an action or actions from time to time for the specific performance and/or recovery of amount due including all unpaid amounts

and termination value and unpaid and/or for the actual damages incurred the an election of remedies.

13. Notices

All notices to be given by either party to the other shall be in writing and must be either delivered personally or by overnight courier service or mailed by registered or certified mail, return receipt requested, addressed as follows:

To the Contracting Officer, **Municipal Facility**: _____

To the **Contractor**: _____

14. Termination

1. If the **Municipal Facility** elects not to proceed after accepting the Contractor's Energy Study Report, then the contract shall terminate and **Municipal Facility** shall liable to pay the energy Audit Cost to the **Contractor** or if the **Contractor** elects not to proceed after carrying out the IGA study, then this contract shall terminate and the **Municipal Facility** shall not be liable to pay any fee to the **Contractor**.

2. By **Municipal Facility**

Both the Parties may terminate this Contract, by not less than thirty (30) days' written notice of termination to the **Contractor**, to be given after the occurrence of any of the events specified in paragraphs (a) through (g) of this Clause 17and sixty (60) days' in the case of the event referred to in (f):

(a) if the **Contractor** do not remedy a failure in the performance of their obligations under the Contract, within thirty (30) days of receipt after being notified or within such further period as the Client may have subsequently approved in writing;

(b) if the **Contractor** becomes insolvent or bankrupt

(c) if as a result of the clause no (d) 5.2. Savings Guarantee and Payments

(d) if, as the result of Force Majeure, the **Contractor** are unable to perform a material portion of the Services for a period of not less than sixty (60) days

(e) if the **Contractor**, in the judgment of the Client has engaged in corrupt or fraudulent practices in competing for or in executing the Contract.

For the purpose of this clause:

"corrupt practice" means the offering, giving, receiving or soliciting of anything of value to influence the action of a public official in the selection process or in contract execution.

"fraudulent practice" means a misrepresentation of facts in order to influence a selection process or the execution of a contract to the detriment of the **Municipal Facility**/-----, and includes collusive practice among consultants (prior to or after submission of proposals) designed to establish prices at artificial non-competitive levels and to deprive the **Municipal Facility** /----- of the benefits of free and open competition.

(f) if the Client, in its sole discretion and for any reason whatsoever, decides to terminate this Contract.

3. By the **Contractor**

The **Contractor** may terminate this Contract, by not less than thirty (30) days' written notice to the Client, such notice to be given after the occurrence of any of the events specified in paragraphs (a) and (b) of this Clause 17:

(a) if the Client fails to pay any monies due to the **Contractor** pursuant to this Contract and not subject to dispute pursuant to Clause 16 hereof within forty-five (45) days after receiving written notice from the **Contractor** that such payment is overdue; or

(b) if, as the result of Force Majeure, the Consultants are unable to perform a material portion of the Services for a period of not less than sixty (60) days.

4. Special Condition on Termination

Both the Party may terminate this Contract, by not less than thirty (30) days' written notice of termination to the **Contractor** to be given after the occurrence of any of the events specified in paragraphs (a) through (b) of this Clause 14. The contract may terminate if during the contract period

(a) Any of the pumping station is become part of the rehabilitation program of the Govt.

(b) Closing down of any the pumping station due to unforeseen reason

15. Termination for Convenience

Any time after the first year of substantial Completion, the **Municipal Facility** may exercise an option to terminate this contract by giving ninety days notice and paying the Termination Value.

16. Payment upon Termination

Upon termination of this Contract pursuant to Clauses 14, the **Municipal Facility**/----- shall make the following payments to the Consultants:

Consultancy fees pursuant to Clause payment for Services satisfactorily performed prior to the effective date of termination;

1. Investment Grade Audit Cost – as per Clause
2. Unpaid Bills – as per Clause
3. Termination Value – As per schedule

17. Disputes

All disputes arising under or related to this contract shall be resolved in accordance with this clause.

(a) A claim by the affected party shall be made, in writing, and submitted to the other party giving a description of the nature of the dispute for a written decision.

(b) The Contracting Officer shall make a finding of fact and render a decision within 30 days of the request, provided all the necessary investigations can be made. The findings and decision shall be written and shall be mailed or otherwise furnished to the affected party.

(c) If the dispute can not be settled amicably within the period specified then the same shall be referred to an Expert Committee represented by the expert from different fields for determination.

(d) The committee shall be formed by both parties at the time of the contract.

(e) The expert committee shall certify that they are not subject to any conflict of interest and is willing to serve as an expert on the terms set out.

The expert committee shall include the following individuals:-
1.
2.

(f) The committee based on the findings and facts render the decision within 45 days of the request.

(g) In case the parties fail to settle amicably the disputes within 60 (sixty) days, the same may be referred to arbitration of a Sole Arbitrator to be mutually agreed between the parties, failing which the Secretary, Department of Legal Affairs, would appoint the Sole Arbitrator. The arbitration proceedings will be conducted in accordance with Arbitration and Conciliation Act, 1996.

18. Indemnifies

The **Contractor**, and Municipality shall indemnify, defend and hold each other harmless from any and all claims, actions cost, expenses, damages and liabilities including the attorney's fees, arising out of connected with or resulting from sole negligence or willful misconduct of that party's employees or agents. However neither party shall indemnify the other against the claims, damages, expenses or liabilities resulting from alleged, claimed or concurrent negligence or misconduct of the other party.

The **Contractor** shall have sole control of the defense of any action on such claim and all negotiations for its settlement or compromise.

The **Contractor** shall be responsible for damages or injury caused by the **Contractor's** agents and employees in the course of their employment to the extent that the **Contractor**'s liability for such damage or injury has been determined by a court or tribunal or otherwise agreed to by the **Contractor**, and the **Contractor** shall pay for such damages and injury to the extent permitted by existing law.

19. Assignment

Any transfer, sale or merger of the selected firm that may affect the contract directly and indirectly will not be allowed.

20. Representations and Warranties

Each party warrants and represents to the other that:

(a) It has all requisite power, authority, licenses, permits, and franchises, corporate or otherwise, necessary to execute and deliver this Contract and to perform its obligations;

(b) Its execution, delivery, and performance of this Contract has been duly authorized by, and is in accordance with, its organic instruments, and this Contract has been duly executed and delivered for it by the signatories and constitutes its legal valid and binding obligation;

(c) Its execution, delivery, and performance of this Contract will not result in a breach or violation of or constitute a default under any agreement, lease, or instrument to which it is a party or by which it or its properties may be bound to be affected; and

(d) It has received no notice, nor to the best of its knowledge is there pending or threatened any notice, decree, award, permit, or order that would materially adversely affect its ability to perform hereunder.

21. Choice of Law

This Contract shall be interpreted, construed, and enforced in all respects in accordance with the laws of India and subject to the General Provision 26, any litigation arising there from shall be brought and resolved by the courts of competent jurisdictions located in ----

22. Laws to Be Observed

The **Contractor** at all times shall observe and comply with all Central, State, and local laws or ordinances, rules, and regulations which in any manner affect those engaged or employed in the work, the materials used in the work, and the conduct of the work. The **Contractor** shall also comply with all such orders and decrees of bodies or tribunals having any jurisdiction or authority over the work. Any reference to such laws, ordinances, rules, and regulations shall include any amendments thereto.

23. No Waiver

None of the provisions of this Contract shall be considered waived by either party, except when such waiver is given in writing. The failure of any party, at any time or times, to enforce any right or obligation, with respect to any matter arising in connection with this Contract, shall not constitute a waiver as to future enforcement of that right or obligation of this Contract.

24. Contract Term

This Contract shall be in full force and effect from the date of the Notice to Proceed with Construction through _____ (_____) unless earlier terminated under Article (Payments), (Termination for Convenience) or for default no 15. On completion of five-year contract period, the **Municipal Facility** might avail at its sole options an additional two-year contract for maintenance of energy savings at the same terms and conditions of payments without any enhancements.

25. Confidentiality

The Contractor acknowledges that all information supplied by **-----** and **Municipality** and not already in the public domain is and shall remain the property of the both the parties. The **Contractor**, their consultants/**Contractor** sub consultants/**Contractors**, the personnel of either of them and all other representative who become knowledgeable of this information from **Contractor** shall not ,disclose any proprietary or confidential information relating to the project, the services, this contract or the client's business or operations without the prior written consent of the client.

IN WITNESS WHEREOF, the parties have executed this Contract the day and year first above written.

For and on behalf of the [Name of Municipality] **[Name and address)**	**In presence of (witness)**
By_____	1. ……
Its _____	2. ……
For and on behalf of the [-----] **[Name and address)**	**In presence of (witness)**
By_____	1. ……
Its _____	2. ……
CONTRACTOR :_____	**In presence of (witness)**
By_____	1. ……
Its_____	2. ……

On this _____day of _____, 200____.

ANNEX 1

GENERAL TERMS & CONDITIONS FOR GOODS AND SERVICES DATED_____

Table of Contents **Topic**

General Provisions

GENERAL PROVISIONS

1. Ownership of Newly Installed Equipment

1.1. All energy efficient Equipment and systems newly installed remains the property of the **Municipal Facility.**

1.2. If the contract is terminated for convenience or for default, all right, title, and interest in and to all improvements, additions, or equipment of all ESMs installed by the **Municipality** will remain the property of the **Municipal Facility.**

2. Subcontracting

The **Contractor** shall not at any time subcontract, convey, transfer, or assign its obligations or services to be performed under this Contract, either in whole or in part, without the prior written consent of the Contracting Officer.

3. Project site access

The **Municipal Facility** shall provide access to the premises for **Contractor** and its sub-**Contractors** during regular business hours, or such other hours as may be requested by **Contractor** and acceptable to the **Municipal Facility**, to monitor, adjust, inspect, maintain, and repair the equipment.

4. Installation of Energy Saving Measures (ESMs)

4.1.1 **ESM Installation Supervision Plans** - The **Contractor** shall prepare and submit Supervision plans and specifications (the "Installation Plans") to the **Municipal Facility** for review and approval before starting ESM installation.

4.1.2 **Notice to Proceed** - A written notice from **Municipal Facility** contracting officer shall be issued, advising the **Contractor** of the date on which installation of ESMs shall proceed.

4.1.3 **Work and Monitoring Schedule** - The **Contractor** shall prepare a work schedule chart and the same shall be approved by the **Municipal Facility** within ten days. The **Contractor** shall thereafter work according to the schedule. In case of any significant departure due to circumstances beyond the control of either party, amendment in the schedule shall be mutually agreed.

4.1.4 **Superintendence** - The **Contractor** shall provides a competent superintendent who shall have a graduate engineering degree as minimum qualifications, satisfactory to the **Municipal Facility**, on the work site at all times during progress of the work with authority to act for the **Contractor**.

4.1.5 **Inspection of Work -** A contracting officer, designated by the **Municipal Facility**, will make daily observation of the work at the site. The **Contractor** shall direct all inquiries, technical or administrative, to said officer during the project.

5. Quality Control

The **Contractor** shall be responsible for quality control during installation of ESMs. The **Contractor** shall inspect and test all work performed during ESMs installation to insure compliance with contract performance requirements. The **Contractor** shall maintain records of inspections and tests, including inspections and tests conducted by or for utility or other regulatory agencies. The quality control checks exercised by the **Contractor** shall be test checked by the **Municipal Facility**.

6. Utilities

6. 1 **Water and Electricity** - The **Contractor** will be allowed to use water and electricity for construction purposes without charge.

6.2 **Interruption of Electrical Service & Water** - The **Contractor** will schedule interruption of electrical service and water so as to minimize such interruption to **Municipal Facility** operations. Interruptions shall be permitted only on Saturday, Sundays and holidays or on days and time mutually acceptable and which does not cause any substantial service interruptions. The **Contractor** shall notify the **Municipal Facility**, in writing, at least fifteen (15) days in advance of any proposed interruption and shall obtain the approval of the **Municipal Facility** prior to the interruption. Scheduled interruptions of electrical service shall not exceed twelve (12) hours.

6.3 **Sanitary Facilities** - If existing sanitary facilities of the **Municipal Facility** are close to the contract work area, the **Contractor** is permitted to use same and shall maintain a sanitary condition at all times. The **Contractor** shall make his own arrangements for living accommodation for all his workmen and staff during installation as well as the maintenance period. The necessary space for constructing temporary accommodation would be provided free of charges.

6.4 **Changed or Unusual Conditions** - If an unexpected condition at the work site is encountered, the **Municipal Facility** may, in its discretion, issue a Modification and modify the scope of existing contract with the **Contractor**, including such equitable adjustment as may be agreed upon between the parties.

6.5 **Manufacturers' Warranties** - The **Contractor** shall use its best efforts to keep in effect all manufacturers' or other third party warranties relating to the **ESM** equipment and ensure that any benefits due to such warranties are passed on to the **Municipal Facility** at the time the **Municipal Facility** .

7. Operation of ESMs

If new operations work is required for newly installed energy saving equipments, the **Contractor** may request the **Municipal Facility** in its ESM description to perform such operations. The **Municipal Facility** reserves the right not to accept such work on installed ESMs.

8. Maintenance of ESMs

8.1 The **Municipal Facility** shall undertake all necessary maintenance, and repairs of the newly installed equipments at its own cost as per the protocol and under the supervision of the **Contractor.**

8.2 During the tenure of the contract, the **Contractor** may discover new opportunity for further savings. The **Contractor** shall make submission to the **Municipal Facility** on discovery of such opportunities and **Municipal Facility** may in its own discretion permit undertaking such new ESM as part of the extension of this contract under the same financial and other contractual terms.

8.3 If the performance of ESMs is dependent on certain **Municipal Facility** -owned facilities, systems, or equipment the **Contractor** may indicate specific requirements for **Municipal Facility** maintenance practices in the Energy Study Report. Such required maintenance practices will be performed by the **Municipal Facility** provided that they are described in full in the Energy Study Report attached.

9. Maintenance and Repair Response Time

In the event of normal repairs, the minimum response time for the **Municipal Facility** to attend to such repairs is 24 hours from the time of intimation to the **Municipal Facility.** In the event of major repairs the response time for the **Municipal Facility** to attend to such repairs shall be discussed with **Contractor**s depending upon the nature of the fault and accordingly the future implication (if any) on energy and cost savings shall be discussed and will be recorded and brought under the notice of all parties.

10. Training for Municipal Facility Personnel for Operation and Maintenance of Installed ESMs.

10.1. The **Contractor** shall train **Municipal Facility**'s personnel as required to operate, maintain, and repair ESM equipment and systems in the event of emergencies. Training shall include both classroom and a practical instruction. Course materials shall include **Contractor** -supplied operation and maintenance plans and manufacturer-supplied manuals. The program shall be conducted at the facilities where the ESMs are located.

10.2 The training program shall provide instruction on operation, troubleshooting, maintenance, and repair of ESMs.

11. Municipal Facility's Projects

There shall be no restriction on **Municipal Facility** projects of any kind including those that may provide energy conservation equipment, the removal of existing energy consuming equipment, or the addition of new energy consuming equipment for **Municipal Facility** mission needs.

12. Material Changes and Baseline Modifications

12.1 The Energy Baseline may change if the **Municipal Facility** undergoes changes in operating hours, energy consuming equipment, or structure. Any change in operating hours, energy consuming equipment, operating conditions or structure that may reasonably be expected to change the energy consumption of the **Municipal Facility** by more than ten percent (10%) of the total energy savings proposed by **Contractor** shall be considered a material change. Refer more details on probable baseline modification and adjustments in annexure IGA methodology.

12.2 The **Municipal Facility** shall notify the **Contractor** of any change in the **Municipal Facility**'s equipment or operating conditions that can reasonably be expected to constitute a material change within thirty (30) days of the time that the change becomes known to the **Municipal Facility**. If the notice is not timely made, the modifications shall be retroactive to the time the change commenced. In the event of a material change the Energy Baseline shall be modified by mutual consent of the **Municipal Facility** and the **Contractor**. Each party shall bear its own costs in this modification.

ANNEX 2

SPECIAL TERMS AND CONDITIONS OF CONTRACT

(Other Conditions which are not covered under the General Conditions as given at Annex 1)

1. Completion Period

The **Contractor** shall carry out study (if required and agreed upon) for Electrical System and Submit detailed Energy Study Report with proposed Energy Efficiency Measures (As per the format in Annex 3) within 30 (thirty days) of the date of award of the work. The Consultant shall also give the Project Scheduling Plans (Bar Charts) for each ESM proposed to be implemented. The Contract will be for 3 yrs period, after the substantial completion dates of the ESMs.

2. Compensation for Delay in the Implementation Supervision of the ESMs

- The successful **Contractor** shall be required to work together with Municipality and submit an ESM Installation supervision schedule (As per the Energy Study Form attached as Annex 3) specifying the time scheduling of various milestones to be achieved in the course of execution of the ESM. The **Municipal Facility** expects that the **Contractor** shall adhere to the specified time schedule and shall complete the job as early as possible. In case the **Contractor** fails to maintain the desired pace of work and fails to show the required progress of work, he is liable to pay a compensation of RS. ___(Rupees ____) Per week for the period by which the substantial completion date is extended with respect to the schedule of completion submitted and agreed by the **Municipal Facility**. The total amount of Compensation payable by the **Contractor** on account of delay shall not be more than Rs. ___ (Rupees __ Lakhs Only).
- In case the project implementation gets delayed beyond-----days on account of failure on the part of Municipality in making the facility available for project implementation, the **Contractor** would be compensated --------.

The amount of compensation may be adjusted or set-off against future invoices of the **Contractor**. The decision of the Project Committee in writing in respect to the amount of compensation to be paid shall be final & binding upon the **Contractor**.

3. Extension or Time

In case the work is delayed by:

A. Force Majeure, or
B. Abnormally bad whether
C. Serious loss or damage by fire, or
D. Civil commotion, local commotion of workmen, strike or lockout, affecting any of the trades employed on the work, or
E. Non availability or break down of tools and plants to be supplied or supplied by the **Municipal Facility**, or

F. Any other cause, which, in the absolute discretion of the Contracting officer is beyond the **Contractor's** control

Then upon the happening of any such above mentioned event causing delay, the **Contractor** shall immediately give notice in writing to the contracting officer and may request for the extension of time on that account. The **Contractor** may also, if predictable, indicate the period for which extension is desired.

The **Municipal Facility** may give a fair and reasonable extension of time for completion of the work, and the decision of Superintending Engineer in this regard shall be final and binding upon the **Contractor**.

4.

No information obtained by the **Contractor** in course of execution/maintenance of any work in_____, should be reproduced in any manner or format without obtaining prior permission from the_____.

1. The **Contractor** shall provide necessary stickers/stamps on the systems covered under performance contract for easy identification and verification.

2. The **Contractor** shall be responsible for providing necessary measuring instruments methods for providing detailed readings documentation for the purpose of verification of Energy savings achieved due to implementation of ESMs.

3. Any damage done to the Building and/or to Equipments/systems of the **Municipal Facility** will have to be made good by the **Contractor** at his own cost, and shall be responsible for bringing the original finish as much as possible. In case the **Contractor** fails to make good the damages so made, even after the written communication for this effect has been made by the contracting officer, the **Municipal Facility** reserves the right to get the damages repaired by means of other agency/departmental^ and any expenditure incurred towards that account becomes recoverable from the future invoices of the **Contractor**.

ANNEX 3

FORM OF ENERGY STUDY REPORT

The **Contractor** shall perform a detailed study of the **Municipal Facility** and document its findings in a report including, at a minimum, all of the following information:

1. Cover

The cover page should provide the following information:

- The words "Energy study for (the **Municipal Facility**'s name)"
- Name(s) and address(es) of the station(s) analyzed in the study
- Name of the **Contractor** producing study
- Date

2. Table of Contents

Must be complete with page numbers and descriptive title for each section, table, exhibit, attachment, etc. Tables, charts, attachments, and exhibits should be listed separately by number, title and page number.

3. Page Numbers and Revisions

Each page should be numbered and dated. Should revisions be requested, a listing of original pages and replacement pages should be provided. Each revised page should indicate at bottom right corner "Revised--date."

4. Executive Summary

A short (one or two page) narrative summary of the project, including discussion of the project's energy savings and financing should be included in the Executive Summary.

a) The following tables must be included:

1) A summary of ESM measures for the project (Table 6-1);
2) A summary of the project cost (Table 6.4 & 6.5);
3) Maintenance services provided by equipment covered, scope, and frequency (Table 6 - 0);
4) A cost savings calculation (Table 6- 2); and
5) A payment schedule (Table 6- 3)

b) Savings guarantee. The following statement shall be included:

"The **Contractor** guarantees that in each year of the Term following Substantial Completion, the **Municipal Facility** will realize energy savings of at least _____kWh. At current rates, these energy savings have a value of _____Rupees (Rs._____)."

5. Existing Conditions

Document the existing conditions of the **Municipal Facility**, including the following information itemized in the **Municipal Facility**:

A. Facility physical condition
B. Hours of use
C. Inventory of energy consuming equipment or systems
D. Inventory of water consuming equipment or systems
E. Energy consuming equipment operating conditions and loads
F. Water consuming equipment operating conditions and loads
G. Baseline energy and water consumption (Jointly determined and signed during the study phase). Municipality would nominate a person with written authorization for signing the baseline documents
H. Current practices that unnecessarily increase energy use or impact baseline and the baseline adjustment algorithms and formulae
I. The factors affecting specific energy consumption within and beyond the control of **Municipal Facility**
J. Recommendation of metering improvements options

6. Energy Saving Measures (ESMs)

Provide a narrative description of each of the proposed cost effective energy saving measure (ESM) to be installed including:

A. The proposed upgrade, replacement, operational change, or maintenance requirement
B. The interface between the proposed ESM and remaining Municipal equipment
C. The impact on remaining State equipment (changes in load, run time, etc.)
D. Any impact on standards of service and comfort
E. Complete Table 6-1 for all measures
F. Describe ESMs analyzed but disqualified under cost effectiveness criteria
G. An indication of any altered or new operating or maintenance requirements that will apply due to implementation of the improvements, and an estimate of the cost of any upgrading or maintenance work that the **Contractor** recommends be undertaken prior to/or during the implementation of the modifications/improvements to maximize their effects
H. An M&V plan, which is acceptable to all for monitoring, verifying and guaranteeing savings from the implementation of the ESMs, including identification of monitoring equipment, availability, confidence interval, data collection procedure etc.

General Information

- ESMs should be presented in the order that they were discussed and considered
- Energy Management System (EMS) savings must not be calculated as a percentage of total energy use. Each process controlled by the EMS should be analyzed separately, and savings associated with that process improvement calculated
- Maintenance measures should be analyzed for savings in the same manner as other ESMs
- An ESM summary sheet must be provided for each measure.

7. Proposed Energy Savings

Provide a detailed energy analysis for each ESM proposed, documenting the estimated annual energy savings. Document assumptions on current and proposed equipment operating conditions and energy savings calculations.

8. Computer Models

When computer modeling is used, the model and each set of results must be properly documented. Minimum documentation required is:

- Name of the program
- Description of the calculations the program performs
- Table showing the model's calculation of the building's energy consumption for each month of the base year, and actual consumption for those months

9. Municipal Facility Support Required

For each ESM proposed, identify any utility interruptions needed and any other **Municipal Facility** support that may be required during installation.

10. ESM Installation Schedule

For each ESM provide a proposed implementation schedule. Include the following milestones:

A. Design completed
B. Permits
C. Submittals (plans and specifications)
D. Equipment/Material acquisition
E. Mobilization
F. Installation
G. Clean up
H. Startup/Testing
I. Final inspection and Notice of Substantial Completion
J. Post installation submittals
K. Training

11. Hazardous Waste Disposal Plan

Provide a descriptive hazardous waste disposal plan for the project.

12. Energy Baseline and Savings Measurement

The **Contractor** shall establish and document on a site-specific basis:

A. An Energy Baseline, including data, methodology, and variables used to compute it
B. The method it will use to measure energy savings and energy cost savings for each energy type after proposed ESMs have been installed
C. The method it will use to verify installed ESM compliance with requirements of General Provision Number 13 (Standards of Service and Comfort)
D. The method of determining energy savings and compliance with Standards of Service and Comfort annually throughout the contract term

E. If a computer program or programs will be used to establish the baseline, modify the baseline, or measure savings, furnish the name of the program, the name, address, and phone number of the program developer or supplier, and descriptive literature. The State may require **Contractor** to furnish a properly licensed copy of the program(s) to the State for its use in administering the contract, at no cost to the State.

13. Description of Maintenance Services and Training

Provide a complete description of the maintenance services. The **Contractor** will provide, including schedules. Describe any training being provided.

14. Pricing and Project Financing

The **Contractor** shall complete Table 6.4 and 6.5 This includes a payment schedule with termination value for each year of the contract.

15. Calculations

A. All calculations must be complete and easy to follow. Spreadsheet formats must include a description of the assumptions and calculations
B. Units must be indicated and only so many significant digits as the accuracy of the calculation warrants included
C. Weather data source should be described
D. Calculation details and supporting documentation shall be placed in an Annex

Table No. 6-0: Maintenance Services

[**EE Equipments** -installed; existing **Municipal Facility** (PI. Specify)]

Building/Facility (if appropriate):_____

ESM No.	EQUIPMENT	SCOPE	FREQUENCY	PARTY RESPONSIBLE (Contractor/ Municipal Facility)

Table 6.1: Energy Efficiency Measure Summary

Company Name: _____

Municipal Facility Name: _____

(Aggregates data from summary sheets)

ESM No.	Energy Efficiency Measure (ESM)	Electricity Savings (kWh/yr)	Peak Demand Reduction (kW)	Energy Cost Savings (Rs./yr)	Estimated Measure Cost (Rs.) from Table 6.2	Estimated Life of Measure (years)	Refer to Page(s)

Summary Sheet for ESM: to be used for Table 6.1

Summary Sheet for ESM Number _____

Facility: _____

Name of ESM: _____

1. DESCRIPTION (include quantities, types, sizes, locations, etc.

a. Existing Conditions: _____
_____
_____
_____

b. Proposed Conditions with ESM: _____
_____
_____
_____

2. NET FIRST YEAR ENERGY SAVINGS

Energy Source Type (electric, gas, oil)	**Fuel Units (kWh,Therms, kW, gallons)**	**First Year Fuel Savings (kWh, Therms, kW, gallons)**	**Unit Cost for the Fuel**	**Cost Savings**
TOTALS				

3. COST ESTIMATE SUMMARY OF MEASURE
Materials Rs._____
Labor _____
Contingency _____
Other (Specify) _____
Total Rs._____

4. Expected useful life: _____years.

5. The measure interacts with ESM or MM No(s) _____

6. The measure impacts ESM or MM No(s) _____

7. Impact on standards of service and comfort.

Table 6.2: Calculation of Cost Savings

Year	Annual Energy Cost Savings {A}	Maintenance Cost Savings {B}	Other Cost Savings {C}	Gross Savings {D}={A}+{B}+{C}	Total Payments (from Table 12-4) {E}	Net Savings {F}={D}-{E}
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
TOTAL						

Notes: Include utility rebates in "Other Cost Savings" if they are included as part of the project. More over, these are subject to change after the **Contractor** conducts the Energy Study within 30 days of the award letter.

Table 6.3: Payment Schedule and Termination Value**

Payment Summary

Location: Municipality name

Total no of Pumping Stations within Municipality: 5 (Will be treated as site 1 to site 5 with independent boundary of baseline for the purpose of performance verifications)

Year	Contract Payments {A}	Maintenance Services Fee {B}	Operations Monitoring Fee {C}	Other (Specify) {D}	Total Payments {E}={A}+{B}+{C}
Site 1					
Site 2					
Site 3					
Site 4					
Site 5					

Performance Linked Payments will be based on the third party Monitoring & Verification reports.

Payment Schedule and Termination Value

Year	Termination Value	Total Payments From Above	Payment Number		Payment Number		Payment Number		Payment Number	
			Date	Amount	Date	Amount	Date	Amount	Date	Amount
1										
2										
3										
4										
5										
6										
7										
8										
9										
10										
TOTAL										

** Will be further discussed later

Table 6.4: Project Financial Analysis

Year	Pre ESM Expenditure on Energy i/c Energy Bill + Maint. Cost + Others Etc	Post ESM Expenditure on Energy i/c Energy BiU + Maint. Cost + Others Etc	Gross Savings in the Cost of Energy Consumption	Share of Government Facility in Rs. (In %)	Share of Contractor in Rs. (In %)	NPV During Contract Period	NPV During Entire Life Term of The ESM
1	2	3	4	5	6	7	8
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							

NOTES:

1. For the purpose of payment, annual dues to **Contractor** should be calculated as above immediately post PMV, should be determined and signed by both the parties. Payment to **Contractor** would be released prorata quarterly, on the basis of invoice raised for the same by the **Contractor**.
2. The payment shall be treated as lease rental for use of the ESMs leased by the **Contractor** to the **Municipal Facility** till such time the ownership gets transferred to the **Municipal Facility**.
3. For the purpose of determination of savings on annual basis, any variation in the present energy consumption up to 10 % shall be ignored and **Contractor** would continue to get paid as per the rate determined post ESM performance verification as stated in the table above.
4. The cost of salaries to **Municipal Facility** maintenance personnel shall not be included as the cost of maintenance.

Table 6-5: Calculation of Maximum Project Cost

Cost of Installed ESM i/c Installation	_____
Cost of Design Services	_____
Cost of Maintenance Services,	_____
General **Contractor** Overhead and Profit	_____
Commissioning and Initial Training	_____
Interest during Construction	_____
Miscellaneous Fees and Permits	_____
Others (Specify)	_____
Total Project Cost (Maximum)	_____

Note: All figures shall be in Indian Rupees only. If required, the Proposer may attach a separate sheet for explanation and calculation of various figures taken in the table.

ANNEX 4

ENERGY STUDY REPORT ACCEPTANCE FORM

The undersigned hereby agree on the content and form of the Energy Study Report and such Report shall be a part of this Contract as though full set forth herein.

IN WITNESS WHEREOF, the parties have executed this Form, the _____day of _____, 20___.

Municipal Facility

By

_____

Its

_____

By

_____

Its

_____

Contractor

By

_____

Its

_____

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