

No.K-16011/76/2016-AMRUT-II
Government of India
M/o Urban Development

Nirman Bhawan, New Delhi
Dated 14th December, 2016

To
The Principal Secretary/Secretary,
Urban Development Dept./Public Health Engineer Dept.
All States/UTs.

Subject:- Model Agreement between EESL and State Govt. for preparation of IGEA report for Energy Efficiency in Public Water Works and Sewerage Systems

Ref:- D.O. Letter of Secretary (UD) addressed to all Chief Secretaries dated 26.9.2016

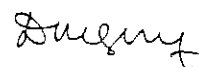
Sir/Madam,

Energy Audit in all Mission cities is one of the reforms under AMRUT in order to improve service delivery and improve efficiency in Mission cities.

2. Ministry of Urban Development has entered into an Memorandum of Understanding (MoU) with Energy Efficiency Services Limited (EESL) on 28.9.2016 to facilitate States to implement energy efficiency Projects. In order to further support this effort, a model agreement with EESL for preparation of Investment Grade Energy Audit (IGEA) Report has been prepared. A copy of the Model Agreement between EESL and State Govt. for preparation of IGEA is enclosed. It is requested to expedite the implementation of energy efficiency projects and make full use of the arrangement between MoUD & EESL. A copy of the Model Agreement is uploaded on the AMRUT Website www.amrut.gov.in.

3. States/UTs are requested to enter into an Agreement with EESL using the above draft MOU for preparation of IGEA Report for envisaging the energy saving potential and replacement of existing old inefficient pump sets in water and sewerage plants in all Mission cities.

Yours faithfully,



(M.S.P. Dara)

Under Secretary to the Govt. of India

Tel:011-23062472

Encl: As above.

Copy to:

1. Managing Director, EESL, 4th floor, IWA Building A-13, Sector-1, NOIDA-201301.
2. Sr. Technical Director(NIC), MoUD, Nirman Bhawan with a request to upload on the website of www.amrut.gov.in

(To be executed on stamp paper of Rs. XXX)

Model Agreement between EESL and State Government for Preparation of Investment Grade Energy Audit (IGEA) Report for Energy Efficiency in Public Water Works and/ or Sewerage Systems

This Agreement (the "Agreement") is made and executed on the _____ day of _____, YYYY, at _____, in the State of _____.

BY AND AMONGST:

The Governor of the State of _____ acting through the _____, Public Health Engineering Department/ Department of Urban Development [or equivalent departments(s)], Government of _____ having its principal office at _____ (hereinafter referred to as "State Government", which expression shall unless repugnant to the context thereof, include its successors and assigns), of the **FIRST PARTY**;

AND

Energy Efficiency Services Limited, a company incorporated under the provisions of the Companies Act, 1956 as a JV of PSUs of the Ministry of Power, Government of India, with its registered office at 4th Floor, Sewa Bhawan, R. K. Puram, Sector- 1, New Delhi - 110066 and corporate office at 4th Floor, IWAI Building, A-13, Sector-1, Noida - 201301, Uttar Pradesh (hereinafter referred to as "**EESL**", which expression shall, unless repugnant to the context or meaning thereof, include its successors, permitted assigns and substitutes) of the **SECOND PARTY**.

Hereinafter, State Government and EESL are individually referred to as a Party and collectively referred to as the Parties.

1. BACKGROUND

- 1.1. Ministry of Urban Development, Government of India (hereinafter referred to as "**MoUD**") and EESL has entered into a Memorandum of Understanding (hereinafter referred to as "**MoU**") on 28th September 2016 at New Delhi.
- 1.2. Energy Audit and optimizing energy consumption are mandatory reforms under Atal Mission for Rejuvenation and Urban Transformation (hereinafter referred to as "**AMRUT**"). Accordingly, the objective of the MoU is to provide an overarching framework in order to felicitate engagement between State Governments and Municipal Corporation / Urban Local Body (ULB) / Special Purpose Vehicle (SPV) / Parastatal agency / State Water Supplies Department (SWSD) (hereinafter referred to as "**ULB**" which expression shall, unless repugnant to the context or meaning thereof, include its successors, permitted assigns and substitutes) with Energy Efficiency Services Limited (EESL) in the area of Energy Efficiency Projects in the Indian Cities.
- 1.3. It is also desired that using the mandate and core competency of this Public Sector Enterprise of Ministry of Power, Govt. of India namely EESL, the efforts in this area regarding preparation and implementation of Projects in the area of Energy Efficiency are fast tracked.
- 1.4. *General Information regarding the State – Area, Population, Nos. of Cities & Towns, Nos. of ULBs, Energy Statistics, Public Water Works & Sewerage System statistics, etc.*
- 1.5. State Government and EESL have agreed to enter into this Agreement for Preparation of Investment Grade Energy Audit (IGEA) Report (as defined in Clause 2.2) for determining potential of implementation of Energy Efficiency Projects in the Public Water Works and/ or Sewerage Systems, subject to and on the terms and conditions set forth hereinafter.
- 1.6. An IGEA Report is the first step in the path to improved energy efficiency. An IGEA Report 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 IGEA Report contains information related to energy use by the ULB and provides clarity on the baseline and verifiability of savings once the Project is implemented.
- 1.7. It is clarified that the intention of the Parties is to enter into this Agreement is to implement the findings of the IGEA Report on mutually agreed consent. EESL shall enter into a separate Tri-partite Agreement (hereinafter referred to as "**Tri-partite Agreement**") based upon the model Tri-partite Agreement approved by MoUD) with the State Government and the respective ULB for Implementation of the Energy Efficiency measures proposed in the IGEA Report.

- 1.8. NOW THEREFORE, in consideration of the foregoing and the respective covenants and agreements set forth in this Agreement, the sufficiency and adequacy of which is hereby acknowledged, and intending to be legally bound hereby, the Parties agree as follows:

2. AGREEMENT DATE AND TERM OF THE AGREEMENT

- 2.1. This Agreement shall come into force and effect on the date of execution of this Agreement by both the Parties (hereinafter referred to as "**Agreement Date**").
- 2.2. The work shall be known as the "Energy Efficiency Program in Public Water Works and/ or Sewerage System in the Cities of _____" (hereinafter referred to as "**IGEA Report**"). IGEA Report shall be prepared for each separate City. Each separate MC / ULB / SPV / Parastatal agency shall be treated as a separate ULB.
- 2.3. **Project Area**
- 2.3.1. The extent of the Project Area shall be the Municipal Boundaries of the ULB listed in Schedule 'B'.
- 2.3.2. Both the Parties agree to jointly work for the ULB(ies) in a phased manner, preferably in an order as below:
- 2.3.2.1. Cities selected under Smart Cities Mission
- 2.3.2.2. Cities as potential Cities under Smart Cities Mission
- 2.3.2.3. Cities under AMRUT
- 2.3.2.4. All other Cities
- 2.3.3. The City shall be deemed to be an "**Identified City**" on the day (hereinafter referred to as "**Effective Date**") the State Government provides / felicitates:
- 2.3.3.1. nomination of nodal officer from the ULB
- 2.3.3.2. Holding kick off meeting with the nodal officer and providing EESL with the inventory details of the pump sets
- 2.3.4. In case the total nos. of pump sets in an Identified City is more than 150 (one hundred and fifty), the IGEA Report (as defined in Clause 2.2) shall be split in multiple IGEA Reports.
- 2.4. **Scope**
- The Parties agree that the following key activities shall be scope of the Project and the Parties shall work together to complete the activities through mutual co-operation and support:

- 2.4.1. arriving at the number of pump sets, as the case may be, based on data/ information provided by ULB, to enable preparation of the IGEA Report.
- 2.4.2. hiring of Energy Auditing agency on tendering basis (hereinafter referred to as "**Identified Agency**") to prepare Investment Grade Energy Audit Report for the Public Water Works and Sewerage System of the Identified City.
- 2.4.3. submission of IGEA Report for approval and undertake implementation of findings of the IGEA Report by entering in a Tri-partite Agreement between the Parties and the ULB.
- 2.4.4. periodic monitoring and reporting on the progress of the IGEA Report, issues in carrying out Energy Audit and support/ felicitation to be extended by the State Government to improve the effectiveness of the IGEA Report.
- 2.4.5. The baseline, such as operating hours, power consumption, operating head, operating flow, voltage, frequency, power factor, current, etc. shall be fixed at the time of preparation of IGEA Report.
- 2.4.6. A Job Card shall be prepared for each audited pump set which shall be duly signed by both EESL or its Identified Agency and the ULB.
- 2.4.7. The baseline shall remain fixed for calculation of energy savings at the time of implementation of the findings of the IGEA Report. The approved IGEA Report shall become part of the Tri-partite Agreement.

2.5. **IGEA Report Schedule**

- 2.5.1. Within 1 month of the Effective Date, EESL will initiate the process of inviting tenders for hiring of agency to prepare IGEA Report.
- 2.5.2. The IGEA Report shall be prepared and submitted to the ULB within 4 months of the Effective Date. However, in case of delays due to conditions not in the control of EESL, EESL will notify the State Government regarding the same and provide the extended timelines for submission of IGEA Report.
- 2.5.3. Within 15 days from the date of submission of IGEA Report to ULB by EESL, the State Government shall ensure that the ULB submits the IGEA Report to State Level Technical Committee (hereinafter referred to as "**SLTC**") formed under the AMRUT Mission guidelines, for approval.
- 2.5.4. Within 30 days from the date of submission of IGEA Report from ULB to SLTC, the SLTC shall approve the IGEA Report.

3. DUTIES, RESPONSIBILITIES AND OBLIGATIONS OF THE PARTIES

3.1. State Government obligations

State Government shall be responsible:

- 3.1.1. To identify Cities and provide inventory details to EESL;
- 3.1.2. To direct the concerned departments/ agencies to disseminate the requisite information and data and provide consents, permits, clearances, etc.;
- 3.1.3. To appoint and notify to EESL, the nodal person(s) for the Project at State Government level and ULB level who shall render full support to EESL for Project implementation during the Term;
- 3.1.4. To coordinate by directing the concerned ULB:
 - 3.1.4.1. To receive, examine and accept the IGEA Report and prepare and submit proposal to SLTC for approval;
 - 3.1.4.2. To render complete cooperation in preparation of IGEA Report, and provide all required data / documents / information / single line diagrams / area maps / curves & charts / operation and repair & maintenance costs, etc. to EESL to identify the Project area in order to develop a roll-out plan;
 - 3.1.4.3. To nominate staff for witnessing / inspecting the Energy Audit and verify the Energy Audit job cards for preparation of baseline;
 - 3.1.4.4. To coordinate for operation and maintenance and promptly attend to any break down during the Energy Audit;
 - 3.1.4.5. To provide all stoppages required for connection and disconnection required during energy audit and provide proper isolation of the pump sets and permit to work to EESL;
 - 3.1.4.6. To arrange for tapping's / points in pipelines for measurement of head / pressure and filing / cleaning of outer of the pipelines for measurement of flow through the ultrasonic flow meter;
 - 3.1.4.7. To provide support to EESL and their designated pump manufacturers, interested bidders, agencies, Identified Agency; etc. to conduct survey and energy audit during the preparation of IGEA Report;

3.2. EESL's Obligations

EESL shall be responsible for planning, financing, conducting energy audit, monitoring and supervising the Project as per the terms and conditions agreed under this Agreement:

- 3.2.1. To conduct Energy Audit;
- 3.2.2. To prepare and submit IGEA Report as per Schedule A;
- 3.2.3. To assist State Government and/ or ULB in preparation of the proposal to be submitted to SLTC;
- 3.2.4. To appoint and notify to State Government and/ or ULB, the name and communication addresses of the nodal officer for the Project at State Government and/ or ULB level, who shall coordinate with State Government and/ or ULB during the Term;
- 3.2.5. To follow all rules, directions, regulations, etc. of the State Government.

4. FINANCIAL RESPONSIBILITIES

- 4.1. EESL shall manage and finance the preparation of the IGEA Report and shall be at no upfront cost to the State Government or the ULB.
- 4.2. Energy Audit is one of the key reforms under the AMRUT Mission Guidelines, in order to make STPs and WTPs more energy efficient. Under this agreement, IGEA Report shall be prepared by EESL which is a pre-requisite to identify energy efficiency potential and financial viability for the implementation of the Projects.
- 4.3. In cases where the IGEA Report is financially viable and the State/ULB takes it forward for implementation and signs the tri-partite agreement with EESL, Category A (as in Clause 4.4) shall be applicable.
- 4.4. Category A
 - 4.4.1. In case the Report is approved by SLTC, the implementation will be done by EESL and no separate payments for preparing the Report shall be claimed by EESL or payable by the State Government.
 - 4.4.2. EESL will however capitalize the cost of preparation of IGEA Report in the Project Cost for implementation.
- 4.5. In cases where the IGEA Report signifies that the existing pump sets in the State/ULB are already energy efficient and/or are not financially viable to be replaced, it shall signify that the Public Water Works & Sewerage System of the ULB is already Energy Efficient and does not require any replacement of pump sets in the near future.
- 4.6. However, in a condition as in Clause 4.5, EESL will claim the cost of preparation of IGEA Report from the State Government and State Government will pay the cost of preparation of IGEA Report to EESL, in the exceptional circumstances only (as mentioned in Clause 4.7) where the Report is approved by SLTC.

4.7. Category B

- 4.7.1. non-signing of Tri-partite Agreement between the Parties and ULB within 30 days from the date of approval of IGEA Report by SLTC.
- 4.7.2. the Project is not financially viable (as per the IGEA Report) to be implemented i.e. the repayment period is more than 7 years.
- 4.7.3. the Project is not financially viable after bidding process (as per the tendered costs for hiring of agency(ies) responsible for implementation of the project, after signing of the Tri-partite Agreement) to be implemented i.e. the repayment period is more than 7 years.
- 4.8. The cost of preparation of IGEA Report shall be derived by actual tendered cost and 15% EESL service charges over the actual tendered cost of preparation of the IGEA Report. The service charge of EESL will be applicable on the cost incurred by EESL on preparation of IGEA Report excluding taxes for which credit is available to EESL.
- 4.9. All applicable taxes / duties / levies / cess shall be extra and on actual basis. Any change in law on account of the introduction of new taxes/ duties/ levies/ cess or change in the rates of existing taxes/ duties/ levies/ cess shall be to the account of and payable by State Government.
- 4.10. State Government shall make payments to EESL due towards the cost of preparation of IGEA Report from the State Administrative & Office Expenses (A&OE) in cases falling under Clause 4.7 Category B for only AMRUT Cities. For Cities other than AMRUT Mission Cities, State Government shall bear the cost of preparation of IGEA Report on its own.
- 4.11. EESL shall be responsible for all compliance related to the payment of any taxes payable by it under this Agreement.
- 4.12. The Parties agree that the number of pump sets to be studied as part of the Project may vary during the Term of the Agreement, due to addition and/ or deletion of pump sets by ULB and/ or Electricity Distribution Company. The number of pump sets may also vary due to oversight or actual ground count against the number of pump sets identified in Clause 2.4.1.
- 4.13. In case there is an increase in number of pump sets by more than 10% of the number of pump sets arrived at Clause 2.4.1, the cost of preparation of IGEA Report shall be increased proportionately. However, if there is any decrease in number of pump sets as against the number of pump sets arrived at Clause 2.4.1, the cost of preparation of IGEA Report shall not be affected.

5. COVENANTS, REPRESENTATIONS AND WARRANTIES

- 5.1. Parties are duly organized and validly existing under the laws of India, and has full power and authority to execute and perform its obligations under this Agreement and to carry out the transactions contemplated hereby;
- 5.2. This Agreement constitutes its legal, valid and binding obligation, enforceable against it in accordance with the terms hereof, and its obligations under this Agreement shall be legally valid, binding and enforceable obligations against it in accordance with the terms hereof;

6. INDEMNITIES

- 6.1. Each Party shall indemnify and keep indemnified the other Party from and against all consequences and liabilities arising out of or in any way connected with the indemnifying Party's negligence, fault, nuisance, breach of this agreement and failure to perform its obligations under this agreement, except to the extent that the same is attributable to a negligent or willful act or omission of the Party seeking to be indemnified.
- 6.2. In case of any dispute, controversy, litigation, public agitation etc. connected with the agreement or arising out of any matter connected with or incidental to the agreement or for any other reason, one party shall indemnify and keep indemnified and hold the other party and its Directors, employees, authorized representatives, agents harmless from and against all costs, claims, damages, proceedings, liability, including fees paid to legal counsels etc. in this behalf.

7. CONFIDENTIALITY

The Parties acknowledge that confidentiality of the information, which may be transferred between the Parties from time to time, is essential to this agreement and agree not to disclose the same to any third party. However, each Party shall be free to disclose such information as is:

- Part of the public domain at the time of disclosure, or;
- Required to be disclosed in accordance with the Applicable Law;
- To their professional advisors;
- To their officers, employees, agents or representatives, who need to have access to such information for the proper performance of their activities;

The obligation of the parties under clause shall continue to be there for 2 (two) years even after expiring / termination of this MOU, for the works / jobs undertaken during the currency of this agreement, and still spilling over (the currency period of agreement).

8. TERMINATION by State Government

8.1. EESL Event of Default

State government may terminate the Agreement; where EESL has failed to remedy the following events within a period of 90 days of issuance of a notice by State Government and/ or ULB requiring EESL to remedy such event.

- 8.1.1. EESL abandons or repudiates this Agreement or otherwise takes any action, or evidences or conveys an intention not to be bound by the Agreement. However, it is expressly agreed that, any stoppage of work of due nonpayment of rightful dues of the EESL by the State Government will not be and event act of abandonment or event of default under this Agreement;
- 8.1.2. EESL is adjudged bankrupt or insolvent, or if a trustee or receiver is appointed for EESL or for the whole or material part of its assets that has a material bearing on its ability to carry out the IGEA Report preparation;
- 8.1.3. EESL has been, or is in the process of being liquidated, dissolved, wound-up, amalgamated or reconstituted in a manner that in the reasonable opinion of the State Government would adversely affect EESL's ability to carry out the IGEA Report preparation;
- 8.1.4. A resolution for winding up of EESL is passed, or any petition for winding up of EESL is admitted by a court of competent jurisdiction and a provisional liquidator or receiver is appointed and such order has not been set aside within 90 (Ninety) days of the date thereof or EESL is ordered to be wound up by a court of competent jurisdiction;
- 8.1.5. Any representation made by EESL under this Agreement being false or misleading and cure within the cure period under this Agreement.

8.2. Termination by EESL

EESL may terminate this Agreement if State Government fails to remedy the following default events within a period of 90 days of issuance of a notice by EESL requiring State Government to remedy such event:

- 8.2.1. Failure of State Government to pay the Eligible Payment in accordance with Clause 4 or any other payment due from State Government under this Agreement and more than 90 Days have elapsed since such payments became due;
- 8.2.2. The breach by State Government or its authorized representative of its obligations under this Agreement which has an adverse effect on the performance of EESL's obligations under this Agreement;
- 8.2.3. Any representation made or warranty given by the State Government under this Agreement is found to be false or misleading.

8.3. Termination and Consequence thereof for Event of Default

8.3.1. Either Party may terminate the Agreement based on the happening of event of defaults as per the procedures provided. Further, upon termination of this Agreement by EESL or State Government, EESL shall be entitled to receive the Eligible Payments for the work done till that day. If at the date of termination of this Agreement, only part of the part of the work is completed, EESL will be entitled to receive the Eligible Payments for the part work.

8.3.2. EESL shall, in addition to any other right enabling it to terminate this Agreement or a Particular IGEA Report under this Agreement, have the right to terminate this Agreement or a Particular IGEA Report under this Agreement at any time by giving a 30 days written notice to State Government, if EESL is of the opinion that the IGEA Report is not financially or technically viable. In such event EESL shall be entitled to receive the Eligible Payments for the work completed till that date.

9. GOVERNING LAW AND DISPUTE RESOLUTION

9.1. If any dispute or difference of any kind whatsoever arises between the parties in connection with or arising out of or relating to or under this MOU, the parties shall promptly and in good faith negotiate with a view to its amicable resolution and settlement.

9.2. If an amicable resolution is not reached with 30 (thirty) days or within in such longer period as may be mutually agreed by the Parties, either Party may refer the Dispute to arbitration of Sole Arbitrator appointed by the Ministry of Urban Development, Govt. of India and dispute resolution shall be as under the provisions of Arbitration & Conciliation Act, 1996 and its subsequent amendments.

9.3. The venue of such arbitration shall be New Delhi and the language of arbitration proceedings shall be English.

10. MISCELLANEOUS

10.1. Amendment

No change to this Agreement shall be valid or binding unless it is set forth in writing and duly executed by the authorized representatives of the Parties hereto.

10.2. Counterparts

This Agreement may be executed in two counterparts, both of which shall constitute one and the same agreement.

10.3. Waiver

No exercise, or failure to exercise, or delay in exercising any right, power or remedy vested in any Party under or pursuant hereto shall constitute a waiver by that Party of that or any other right power or remedy and a waiver shall only be deemed duly given if done unambiguously and in writing.

11. NOTICES

Notices, demands or other communication required to be given under this Agreement shall be in writing and delivered personally or sent by prepaid registered post with recorded delivery, addressed to the intended recipient at its address set forth below, or to such other address as either Party may from time to time duly notify to the other:

If to State Government:

Kind attention: Principal Secretary
Address: Public Health Engineering Department / Department
of Urban Development to Government of

Ph. No.: +91 _____
Fax No.: +91 _____
Email: _____

If to EESL:

Kind attention: Managing Director
Address: Energy Efficiency Services Ltd.
4th Floor, IWAI Building
A-13, Sector - 1, Noida - 201301 (UP)
Ph. No.: +91 (120) 4908000
Fax No.: +91 (120) 4908049
Email: skumar@eesl.co.in

A notice shall be deemed to have been received, if sent by fax on the working day next following a successful transmission as evidenced by the telefax confirmation sheet of the sender or, if delivered or sent by registered mail with return receipt, to have been delivered and received on the date of such delivery.

SCHEDULE 'A'

SCOPE OF IGEA REPORT

1. **Discussions with Key Facility Personnel**

The first step is a set of initial discussions between EESL and/or the Identified Agency and key personnel such as Commissioner, Chief Officer, Electrical/Mechanical Engineer, and pump operators to explain the objectives of the project, the benefits of energy efficiency, and the approach that will be used in the Energy Audit. The purpose of these meetings will be to ensure that the key personnel thoroughly understand and support the process, and that relevant ULB staff have an adequate understanding of the process since they will be providing EESL and/or the Identified Agency with data and specifications about the ULB essential to the Audit.

2. **Site Visits**

Next, EESL and/or the Identified Agency shall visit all facilities involved in the Project (potentially encompassing the Municipal boundaries of the ULB to ascertain the availability of data and system complexity; formulate a data collection strategy, and other issues. Site visits will ensure that the ULB participants are informed and better able to assist as needed.

3. **Preliminary Data Collection & System Mapping**

3.1. EESL and/or the Identified Agency will map the existing facilities targeted by the audit – such as water & sewerage treatment plants, pumping stations – to better understand the facilities of the ULB.

3.2. The ULB shall provide all available system, bills and process maps. The mapping will help EESL and/or the Identified Agency identify potential Energy Efficiency Measures (EEMs).

3.3. EESL and/or the Identified Agency shall prepare the data format sheets and for recording monthly energy consumption and operating data for the past three years (wherever available with the ULB).

3.4. Historical Data is generally accepted as the previous three years of energy bills for a given facility. Analysis of the data shall help EESL and/or the Identified Agency to identify systems for detailed measurements.

3.5. There is also a preliminary walk through audit of the facilities to identify those areas where detailed measurements have to be taken during the energy audit.

3.6. Locations where tapping for pressure measurement and cleaning of pipes for flow measurement are identified and intimated to the ULB for needful.

4. **Steps for conducting the Energy Audit**

A detailed audit includes data collection, measurement of the systems, analysis of historical and measured data, and detailed energy savings calculations.

5. **List Possible Efficiency Projects**

The detailed energy audit carried out at the various facilities will identify energy efficiency measures. The measures that have the best technically economic potential will be further developed into saving project that will be listed in the IGEA Report.

6. **Develop a Set of Potential Efficiency Projects**

EESL and/or the Identified Agency shall develop a set of potential efficiency projects for consideration. An investment grade evaluation conducted on each that includes the following:

- 6.1. Description of the baseline situation
- 6.2. Project Design
- 6.3. Technical Constraint Analysis
- 6.4. Project Financials
- 6.5. Baseline Calculation
- 6.6. Assessment of potential technical and financial risk and a risk mitigation plan

7. **Baseline**

- 7.1. The Baseline of energy use for water/sewage pumping is calculated from all relevant information, such as operating conditions, measurements of various system equipment, log book trends, historical data, information from pump operators and mechanics, and any previous test reports on the existing operating conditions.
- 7.2. While establishing this, care will be taken to identify any major loads that are introduced or deleted during the period under consideration. The baseline may be determined by comparing the three year monthly average with that of the immediate past 12 months and taking the higher of the two.
- 7.3. The energy baseline has to include the following parameters, wherever applicable, to avoid ambiguity during the M&V:
 - 7.3.1. Hours of operation of each pump in each pumping station (hours per day, days per annum)
 - 7.3.2. Power consumption of each pump in each pumping station

- 7.3.3. Specific Power Consumption of each pumping stations (in kWh per million liters per day, MLD of water pumped)
 - 7.3.4. Pumping station system efficiency developed from historical data and the measurements pertaining to pumps during the audit
 - 7.3.5. Specific maintenance expenses (per MLD of water pumped)
 - 7.3.6. Levels for ground water, reservoirs, and storage at each pumping station
 - 7.3.7. Power failure of electricity (hours per month)
 - 7.3.8. Individual pump performance
- 7.4. The Energy Baseline may undergo change if the machinery of the ULB undergoes changes between the Energy Audit and actual implementation. Such changes may be in operating hours, energy consuming equipment, operating parameters such as head and flow, overhaul of energy consuming equipment, etc. Any such change may reasonably be expected to change the energy consumption, requirement, energy saving potential, etc. and shall be considered as a material change.
- 7.5. In such a case, probable baseline modification and adjustments shall be proposed in the IGEA Report by using empirical formulas, which shall be considered at the time of actual implementation of the Project. Variables outside the Project boundary that can affect the baseline shall also be considered.
- 7.6. 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 set of conditions as the baseline set.

8. **Measurement & Verification (M&V)**

It involves the measurement of parameters in accordance to standard engineering protocols, codes & practices, at a predefined periodicity and term. Since the savings are calculated relative to the baseline, M&V needs to be consistent with the calculation of baseline. As needed, ULB shall nominate and appoint its staff to witness and verify the baseline measurement.

9. **Risk Responsibility Matrix**

Risks such as Financial, Operational, Technical, Performance, Social, etc. shall be indicated in the IGEA Report along with responsibility and risk mitigation measures.

10. **Project Financials**

The Project Financials (cost benefit and financial analysis) are calculated using the detailed cost estimates obtained for all equipment and projected savings rates. This allows the potential projects to be classified according to their cost-effectiveness. Cash flow considerations are also taken into account along with sensitivity analysis.

11. **IGEA Report**

The audit report is not only the foundation for the Tri-partite agreement, but is the key document used by institutions to assess the technical and financial viability of the Projects. The broad content of the IGEA Report should be as follows:

- 11.1. **Executive Summary:** Provides brief description of the facilities covered, 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.
- 11.2. **Background:** More extensive background about the ULB and the Project.
- 11.3. **Facility Description:** Details of the existing facilities targeted, such as water treatment & supply systems, sewage treatment and handling systems.
- 11.4. **Energy Scenario:** Energy consumption details of all facilities included in the audit and their energy sources.
- 11.5. **Baseline parameters and Adjustments:** Methodology followed in establishing the baseline parameters and criteria. Provide the baseline parameters and the calculation procedure in an annex.
- 11.6. **Data Collection:** List the various types of data collected and their sources. Include the data in the annex.
- 11.7. **System mapping:** Describe the methodology followed for system mapping and include the maps and process flow diagrams in the annex.
- 11.8. **List of Potential EEMs:** A list of all identified measures with estimates of the savings and payback periods on investments, and a summary of the selected EEMs chosen for further development.
- 11.9. **Reporting:** 3 copies of the IGEA Report with soft copies shall be submitted.

SCHEDULE 'B'
LIST OF ULB(IES)

State Government shall fill this Schedule

IN WITNESS WHEREOF, the Parties have entered into this Agreement on the day and year first above written.

For and on behalf of Energy Efficiency Services Ltd. Name _____ Designation _____	For and on behalf of Public Health Engineering Department/ Department of Urban Development Department, Government of _____ Name _____ Designation _____
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Witnesses:

1.

2.