GOVERNMENT OF INDIA
MINISTRY OF RAILWAYS
(RAILWAY BOARD)

No. 2015/Elect(G)/150/7 New Delhi, dt: 12.09.17

General Managers
All Indian Railways
Production Units
Chief Administrative Officer (R), DMW

Sub: **Implementation of Energy Efficiency Projects in Railway stations and Buildings –finalization of Model Energy Performance Agreement-reg.**
Ref: **Bd.'s letter no. 2015/Elect(G)/150/7 dt. 03.03.17.**

In connection with Board's letter under reference, it has now been decided by Board that Railways should enter into agreement with EESL, as per the Model Energy Performance Agreement circulated through Board's letter referred above, for implementation of energy efficiency project at **all balance railway stations** and **service buildings** under ESCO model (copy enclosed).

2. As per the Agreement, EESL would first undertake energy audits of station complex to develop techno-commercially feasible energy efficiency measures (EEMs). Subsequent to the energy audits, EESL would provide technical and/or financial support for building the project through the ESCO model, wherein the upfront capital cost shall be borne by EESL and the resultant savings from projects will be used to repay for EESL investments on **deemed saving basis**. The agreement will be for five years & payment will be released as per the terms & conditions of the agreement from the non traction electricity bill head of Railways. The agreements shall be finalized wherein modalities of implementation, sharing of energy savings between Railways and EESL, scope of services, etc., shall be worked out subsequent to results of the energy audits.

3. The modalities of implementation, scope of services and project specific parameters like connected load, electricity tariff etc. will have to be finalized and mutually agreed upon between the Railways and EESL in the Final Agreement. The assets required to be replaced may be finalized with concurrence of **FA&CAO** and approval of **General Manager**.

4. Close monitoring of works and the saving shall be carried out by zonal railways and progress/feedback in this regard should be sent to Board's office on monthly basis. Possibility of gainful utilization of released Railway Assets may be explored by railways. Further, proper accountal of the released material be ensured by Zonal Railways, besides effective monitoring of savings.

5. EESL PMC fees shall be capped at a maximum of **9.25%** of the equipment related cost under the project.

6. This issues with the approval of **Board (MTR, FC & CRB)**.

DA: As above.

12/9/17

(Punit Agrawal)
Director Elect. Engg. (PS)
Railway Board

No.2015/Elect(G)/150/7 New Delhi, dt: 12.09.17

Copy to:

i) FA&CAO, all **Zonal Railways**.
ii) **Deputy Comptroller and Auditor General of India/Railways**, Room No. 224, Rail Bhawan, New Delhi.

For Financial Commissioner/Railways

Copy to:

i) Chief Electrical Engineers, all **Zonal Railways**, **PUs**.
ii) EDEM/**RDSO**, Lucknow.
iii) Director General/**National Academy of Indian Railways**, Vadodara.
iv) Directors, **IRICEN**/Pune, **IREEN**/Nasik, **IRISET**/Secunderabad, **IRIMEE**/Jamalpur, **IRITM**/Lucknow.
v) Managing Director/**Energy Efficiency Services Ltd. (EESL)**, 4th & 5th Floor, IWAI Building, A-13, Sector 1, Noida, UP- 201301.

12/9/17

(Punit Agrawal)
Director Elect. Engg. (PS)
Railway Board

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Draft Energy Performance Agreement

Between

Central Public Works Department

And

Energy Efficiency Services Ltd. (EESL)

(A JV Company of PSU's of Ministry of Power)

For

"Implementation of Energy Efficiency Measures at Sena Bhawan building of CPWD on deemed energy savings based ESCO model with 100% financing by EESL"



उत्तर प्रदेश UTTAR PRADESH

AGREEMENT

CS 084005

THIS AGREEMENT is made and executed on the ..... day of ....., 2015.

BETWEEN,

Central Public Works Department (hereinafter referred to as "CPWD") with its office at Nirman Bhawan, New Delhi 110011, represented by _____

AND

Energy Efficiency Services Limited (Hereafter referred to as '**EESL**') a company in the public sector under the administrative control of Ministry of Power, Government of India incorporated under the provisions of the Companies Act, 1956 and having its registered office at 4th Floor Sewa Bhawan, R.K. Puram, New Delhi (hereinafter referred to as the "EESL") represented by Managing Director, EESL: -

CPWD and EESL have agreed to enter into this Agreement for the execution of the "Implementation of Energy Efficiency Measures at Sena Bhawan Building owned by CPWD in New Delhi on 100% financing provision by EESL with deemed energy cost savings to be shared in the ratio as mentioned in attachment – 3 (Payment Schedule, column,H) between EESL and CPWD respectively for respective buildings subject to and on the terms & conditions set forth hereinafter for a period of 05 years.

Executive Engineer (E)
ECD-II, C.P.W.D.
Delhi

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SECTION 1. Energy Management Plan

The walk through energy audits of the said buildings have been completed and mutually vetted by CPWD and EESL, with EESL having accepted implementation of energy efficiency measures at the said buildings on deemed ESCO model. In this model, EESL will arrange the capital investment for project implementation upfront and get repaid over a period of 5 years through equal annuity repayments apportioned in quarterly instalments as contained in this agreement for respective building project. CPWD shall pay to EESL the said annuity amounts and provide payment security mechanism by way of declaration/ undertaking regarding security of annuity repayment to EESL from the plan/non-plan funds of CPWD from MoUD. The summary of the measures mutually agreed upon for ESCO implementation by EESL is indicated at **Attachment – 1A** of this agreement. The Bill of Quantity (BOQ) as agreed for project is listed at **Attachment 4.**

SECTION 2. Baseline Parameters

CPWD and EESL have agreed to the following baseline parameters with regard to individual building under the project wherein the ESCO project is to be implemented based on the usage and capacity factors:

(a) Wattages of the present electrical installations as indicated in **Attachment – 1.**

(b) Usage of electrical installations indicated in **Attachment – 1.**

(c) Energy Efficiency Measures to be implemented by EESL as indicated in **Attachment 1A.**

This baseline has been mutually agreed upon as the basis for the project savings that shall accrue in post project implementation scenario and shall form the basis of repayment by CPWD to EESL without dispute, subject to PMV as per section 10.

SECTION 3. Project Implementation Schedule

EESL, on signing of this agreement, will implement all the energy efficiency measures as per the schedule given as **Attachment – 2.** The commencement date of implementation will be deemed effective when 97% of all equipments in respective building has been installed by EESL. However, the process of confirmation of the completion stage shall not be delayed beyond reasonable considerations by CPWD.

Executive Engineer (E)
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SECTION 4. Equipment Warranties

EESL covenants and agrees that all equipments to be installed as part of this Agreement shall be new, in good and proper working condition and protected by appropriate written warranties covering all parts and equipment performance. EESL further agrees to deliver to CPWD for inspection and approval, all such written warranties of the equipment installed. The cost of any risk of damage or damage to the equipment and its performance, including damage to property and equipment of buildings under the project or their associated premises, due to EESL's failure to exercise its warranty rights shall be borne solely by EESL. All warranties shall be transferable and extended to CPWD post expiry of the Agreement which shall however be at the cost of CPWD only. The warranties shall specify that only new, and not reconditioned parts, may be used and installed when repair is necessitated by malfunction.

SECTION 5. Period of Agreement

The term of this Agreement shall be **FIVE (05) years** beginning with the Commencement Date. The commencement date shall be deemed at the date when 97% of all types of inventory at each of the building has been successfully implemented.

SECTION 6. Performance by EESL

6.1 EESL shall perform all tasks under this Agreement, including construction and installation of the equipments as per BOQ (**Attachment 4**) in such a manner so as not to harm the structural integrity of the buildings' premises and/or operating systems as per the construction schedule specified in **Attachment – 2**

6.2 EESL shall repair and restore to its original condition any area of damage caused by EESL's performance under this Agreement. CPWD reserves the right to review the work performed by EESL and to direct EESL to take certain corrective action if, in the opinion of CPWD, the structural integrity of the Premises or its operating system is or may be harmed. All costs associated with such corrective action to the damage caused by EESL's performance or non-performance of the work shall be borne by EESL.

6.3 EESL shall remain responsible for the professional and technical accuracy of all services performed, including ensuring no compromise in existing illumination/cooling levels, whether by EESL or its subcontractors or others on its behalf, such as an experienced

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Project Management Consultant (PMC), throughout the term of this Agreement 9%

6.4 EESL shall share with CPWD copies of various letter of awards (LoAs) as proof of final procurement costs and bill of any extra material/items as maybe required such as drain pipe/copper pipe for split AC, etc. and firm up the final share of energy savings appropriately for respective building. However, it is pertinent to mention that some items in response to BOQ mentioned at ATTACHMENT 4 (BOQ) could possibly change due to reasons beyond control, in which case, project parameters related to savings, investment and repayment to EESL worked out suitably upon conclusion of tendering process and award of bids to parties.

6.5 The total project cost implication based on prevailing market rates and similar projects done by EESL at other Ministry buildings is estimated to be Rs. 76810745, inclusive of EESL's PMC fees. EESL PMC fees shall be capped at a maximum of 8% 9.25% of the equipment related costs under the project (supply/installation/AMC, etc.), which may vary a bit due to reasons such as change in final BOQ during implementation, change in rating/capacity of some equipments due to reasons beyond control or due to extra items not envisaged at this stage (such as extra drain pipe/copper pipe/copper stand, etc. for split AC). EESL's PMC fees shall be utilized to meet the various obligations by EESL under this agreement for the contract period of 5 years. The details are contained at Attachment 1A of this agreement. EESL shall arrange buyback of the old inventory through competitive bidding.

SECTION 7. Obligation of EESL

7.1 EESL shall follow the construction schedule agreed to and as referred to in Section 3 of this agreement.

7.2 EESL will provide equipment warranties as set forth in Section 4 of this agreement.

7.3 EESL will ensure performance of its obligations as per Section 6 of this agreement and as listed in this section

7.4 **MAJOR COMPLAINT RESOLUTION:**

All major complaints related to the project equipments installed by EESL under this project shall be resolved in the least possible time as specified below from the time of intimation of the same either in written letter or mail.

- Major Complaint pertaining to Light (i.e. replacement of fixtures, etc.) – upto 24 Hrs

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Sr. Manager (Technical)
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(A Joint Venture Company of PSUs of Ministry of Power, Govt. of India)
Floor, NAI Building, A-13, Sector-1, Noida-201301

- Major Complaint pertaining to ACs (i.e. replacement of compressor / AC, etc.) – upto 72 Hrs

Note 1:

- The above timeline shall apply after due intimation of any equipment failure to EESL in writing on working day.

Note 2:

- In case the problem is reported near the fag end of the day and on a day preceding public holiday / weekly-off day, CPWD shall coordinate for the rectification of faulty equipment in partnership with EESL as regards, issuance of gate pass, availability of room for undertaking repairs/replacements, etc. For matters related to delay in resolution due to inaccessibility of site or delay of gate/material pass, resolution period for complaints shall be extended after mutual discussions.

- **PENALTY CLAUSE:** In case of failure by EESL to resolve complaints intimated by CPWD in written through mail/letter within the specified time limits as mentioned above as informed The penalty shall be deducted from the payment due to EESL as mentioned below:
    - **Penalty Amount – Rs 20 per hour per point**

  However, this is applicable for the complaints registered with EESL in writing on working day

- CPWD shall incur no cost during the contract period for Equipment service and repairs except for reasons attributable to the negligence or wilful misconduct of any staff/labor/agent of CPWD at the premises of buildings covered under this agreement and EESL can so demonstrate such causal connection, EESL may charge CPWD for the actual cost of the additional maintenance or repair insofar as such cost is not covered by any warranty or insurance proceeds. EESL will only be liable for the proper functioning and repair thereof as maybe required for only the items implemented by EESL for the contract period of 05 years and does not cover issues related to supply, wiring/cable faults, voltage surges/transients, etc. which shall be on account of CPWD only.

7.5 **MINOR COMPLAINT RESOLUTION**

- In order to handle the local minor complaints related to LED lights and ACs, the following is mutually agreed

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- In order to curtail overhead costs related to handling of equipment complaints that are of minor nature, CPWD shall use existing manpower at respective site for attending to local minor complaints and resolution of same shall be done as per below time-lines: -
  - Minor Complaint pertaining to Lights – 2 Hrs
  - Minor Complaint pertaining to ACs – 4 Hrs
- CPWD shall deploy atleast 1 technician for attending to local LED light complaints and atleast 1 technician for attending to local AC complaints for each building where the project is envisaged
- The said technicians shall be maintain a daily register for noting date/time of complaints and nature of complaint – as in if minor or major and ensure speedy resolution in case of minor compliant and co-ordinate with EESL/equipment vendor for closure of major complaint.
- EESL will provide all necessary technical and operational information with regard to the new equipments to CPWD officials.
- EESL shall train the notified technical staff of CPWD in respective building to handle local minor complaints pertaining to LED and ACs and ensure same is done timely as also to handle new equipments.
- In order to expedite minor LED complaints' resolution, EESL shall deploy 3% or 10 numbers whichever is lower of each type of LED light/luminaire at respective site as buffer stock which shall be used.
- The buffer stock shall be replenished on monthly basis. In case of shortfall of buffer stock noticed at the end of the month, if the non-maintenance of the required minimum buffer stock carries on for beyond 15 days, a notional penalty at the rate of Rs. 100 per day shall be charged by CPWD from the payments due in each quarter to EESL from the date when replenishment was supposed to be done till the actual date of replenishment.

7.6 EESL shall be liable to deliver and meet its obligations as stated in this agreement on its own or by engaging appropriate technical consultant, if required. It is also mutually agreed that EESL may deploy additional staff at its own cost at any/all of the respective

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project sites at any time during the course of the project, in case there are any issues related to smooth running of the project and/or handling of complaints, etc. The below mentioned reasons shall not qualify as reasons for failure on behalf of EESL

- Any voltage transient, surges or short-circuits that may damage EESL equipment
- Any intentional misuse such as using AC being used beyond reasonable and normal usage conditions not specified under usage manual
- Theft or breakage due to reasons attributable to CPWD

SECTION 8. Obligation of CPWD

8.1 CPWD shall provide sufficient rent free space within the respective building premises for the storage, installation and operation of the new equipment and shall take reasonable steps to protect such Equipment from harm, theft and misuse. CPWD shall provide access to each of the building premises for EESL and/or vendors/equipment installers/PMC to perform any function related to this Agreement during regular business hours, or such other reasonable hours as may be requested by EESL and acceptable to CPWD/building administration. CPWD shall also provide as and when required one room with seating arrangement and table having electricity connection for purpose of seating of EESL team within each building premises free of rent/charge through-out the contract period.

8.2 CPWD shall use its best efforts to deploy appropriate technical staff at respective building sites for purpose of attending to local minor complaints for LED lights and ACs as per section 7.5 of this agreement. For major faults, CPWD technical staff at respective site shall notify EESL in writing through mail or letter immediately upon coming across the knowledge and occurrence of: (i) any major complaint or malfunction in the operation of the Equipment or any pre-existing energy related equipment that might materially impact upon the energy savings, (ii) any interruption or alteration to the energy supply to the Premises, or (iii) any alteration or modification in any energy-related equipment or its operation.

8.3 CPWD shall provide payment security mechanism by way of declaration/undertaking from Ministry of Finance/Urban Development to the effect that in case CPWD makes a default in repayment of EESL's dues in time, then the repayment amount will be deducted

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from the planned fund of CPWD and diverted to EESL.

8.4 CPWD shall not move, remove, modify, alter, or change in any way the Equipments or any part thereof undertaken by EESL under this agreement without the prior written approval of EESL within project premises during the course of the contract. CPWD agrees to maintain the equipments installed and the concerned Premises in good condition and to protect and preserve all portions thereof which may in any way affect the operation or maintenance of the Equipment.

8.5 CPWD officials shall use their best efforts to assist EESL/vendors/PMC in obtaining all necessary permits and approvals for installation of the equipments if required. The equipment and the operation of the equipment by EESL shall at all times conform to all federal, state and local code requirements. EESL shall furnish copies of each permit or license which is required to perform the work before EESL commences the portion of the work requiring such permit or license.

8.6 CPWD and EESL shall coordinate the activities of EESL's equipment installers with those of the respective buildings' administration staff, its employees, and agents in a manner that will not affect the regular business of the buildings under the project. CPWD shall also provide ease of access to site for purpose of equipment installation and complaint handling thereof throughout the contract period by facilitating availability of premises for installation/resolution, entry to premises on authorized EESL vendor, gate/material pass, etc. during working hours and also during holidays, if required.

8.7 CPWD shall provide timely to EESL and its vendors/PMC, all records relating to energy usage and energy-related maintenance as requested by EESL along-with other information that may be necessary for project implementation and maintenance.

8.8 Old items to be removed shall be handed-over to CPWD staff at respective building who shall be responsible for taking stock of the same. EESL and/or its PMC or vendor will not be obligated to ensure safety on the same other than placing them in pre-defined room/location within the building after displacement from the end usage points.

8.9 CPWD shall ensure that the old items dismantled are not used in the same premises till the contract period.

8.10 For LED lights and ACs that fail and are repaired by EESL/vendors, the failed equipment inventory shall be handed over by CPWD to EESL/vendor.

Section 9: Determination of Energy Savings

9.1 The energy savings will be done using deemed savings approach based on the details as per **Attachment 1** and **Attachment 1A** referred to in section 2. The energy savings will be determined based on the following:

Wattage of existing items (W1)	Wattage of new items (W2)^	Annual usage (hrs) (H)	Annual Energy savings in kVAh ((W1/PF1)-(W2/PF2))*H/1000	Tariff (Rs/KVAh) (T)	Total Annual cost savings ES*T = CS	Ratio as mentioned in attachment 3 of CS to be paid as EESL share quarterly (3 x CS/12)#

^ The existing equipment wattage W1 has been measured and indicated in attachment 3. The new equipment wattage W2 as indicated at attachment 3 shall be assessed as per random spot measurements using the Option A of the International Project Measurement and Verification Protocol (IPMVP) as specified in Section 10

 # - The final payment shall be adjusted for penalties, if any, due to delay by EESL to resolve major complaints as specified in section 7.4

PF1 and PF 2 are the load end power factors which are factored here-in to convert the kWh savings into kVAh as the billing is on kVAh. For the agreement purpose the following PFs are mutually agreed upon as per sample power measurements done by EESL.

HEAD	Before Project (Old items)	After Project (New items)
All indoor lights	0.9	0.9
All window/split ACs (1.5/2 TR)	0.9	0.9
All outdoor lights	0.9	0.9

For purpose of calculations of energy savings from AC retrofits, a load factor of 75% has been considered in post and pre project period to account for the un-loading and possible diversity of use for the ACs installed at the respective sites. This shall remain firm in post and pre implementation scenario.

9.2 The EESL share payable every calendar quarter as indicated in **Attachment 3.**

9.3 During the period of Agreement, any increase in the total cost savings due to either increased energy savings and/or tariff increase will be entirely credited to CPWD's share of energy cost savings. EESL will not have any right on the same accept the quantum stated in the agreement. For the purpose of this agreement, the tariff rate considered per kVAh of energy savings for different buildings is as per Attachment 1A.

Section 10: Project Measurement and Verification (PMV)

10.1 EESL and CPWD agree to carry out joint project measurement and verification annually at

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the respective building under the over-sight of Bureau of Energy Efficiency as per the set standards of Type A method of International Project measurement and verification protocol (IPMVP Option A: retrofit isolation) which specifies annual operating usage for each type of equipment. The designated annual operating usage has already been agreed upon by EESL and CPWD.

10.2 In the said PMV Option, EESL and CPWD agree to do sample power consumption testing of up to 5% or 10 numbers, whichever is less, of different capacity of each type of equipment inventory using a power analyzer wherein power consumption of each of different type of lights/ACs, etc. shall be measured upon completion of the project and the resultant energy savings identified shall be assumed as firm and final for the entire project period based on which EESL repayment done by CPWD. The first PMV shall be done within the first 3 months of the implementation of various equipments at each of the buildings and subsequent PMV shall be done after 12 months from the first PMV. For AC, the PMV shall be done by keeping setting thermostat position at temperature of 24-25 Degree Celsius as per ASHRAE guidelines. Every year, the sample population for PMV measurement, shall be selected afresh and randomly by EESL and CPWD.

10.3 The sample power consumption readings of each type/rating of the respective equipment tested shall be averaged out to arrive at new equipment wattage (W2 as specified in the table at section 9.1 and detailed at ATTACHMENT 3). In case the measured power consumption for each equipment type as measured (W2) is less than the respective values specified by EESL in the table at ATTACHMENT 3, EESL shall be paid as per ATTACHMENT 3. However, in case the measured W2 is more than the respective wattages of the new equipments as specified by EESL in the table at ATTACHMENT 3 by more than 5%, the actual wattages shall be used to make the repayments to EESL. The 5% band is considered to account for system related dynamics such as voltage or frequency fluctuations, possible effect of harmonics, temperature/occupancy/usage variation.

10.4 In the event of substantive changes in Baseline Parameters as defined in Section 2, a Committee chaired by authorized representative on behalf of Zonal Chief Engineer CPWD, MD EESL and authorized person on behalf of Director General/Secretary – Bureau of Energy Efficiency (BEE) will decide on the M&V plan and manner of resetting the baseline.

10.5 In order to account for natural aging process of equipments, yearly tolerance of upto 1.5%

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per year is allowed in the wattage consumption for the various project items during the subsequent project years. For LED lights, annual lumen depreciation shall be in accordance and allowed as per applicable LM80 standards for the lights installed.

Section 11: Payment Schedule

11.1 Upon successful completion of the project as per the construction schedule indicated in section 3, CPWD will commence payment of EESL share of savings as determined in section 9 and indicated in **Attachment 3** after adjusting penalty amounts if any.

11.2 EESL will raise the quarterly invoice within 15 days of beginning of the 1st month of every project quarter for the contract period of 5 years (total 20 invoices)

11.3 CPWD shall make payments within 30 days of the receipt of the invoice.

SECTION 12: Ownership

12.1. Ownership of Existing Equipment. Ownership of equipments presently existing at the Premises at the time of execution of this Agreement shall remain the property of CPWD. CPWD's administration department shall be responsible for custody of same and designate the location and storage for any equipment and materials that are replaced.

12.2. Ownership of New Equipment. The new equipments under this project shall be property of EESL till the end of the Agreement period. On the conclusion of the Agreement, EESL shall transfer ownership rights to the CPWD without any cost to CPWD., along-with warranties as maybe available, if any. Additional warranties will be an account of CPWD.

SECTION 13: Insurance and Indemnification

13.1. At all times during the term of this Agreement, EESL shall maintain in full force and effect, at its expense: (1) Workmen's Compensation Insurance sufficient to cover all of the employees of (EESL) working to fulfil this Agreement, and (2) Casualty and Liability Insurance on the Equipment and Liability Insurance for its employees and the possession, operation, and service of the Equipment.

13.2. EESL shall be responsible for (i) any damage to the Equipment or other property on the Premises and (ii) any personal injury where such damage or injury occurs as a result of

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EESL's performance under this Agreement but not liable for any consequential damages.

SECTION 14: Events of Default

14.1. Default by CPWD Each of the following events or conditions shall constitute an "Event of Default" by CPWD:

(i) any failure by CPWD to pay EESL any sum due for a service and maintenance period of more than ***60*** days after written notification by EESL

(ii) any other material failure by CPWD to perform or comply with the terms and conditions of this Agreement, including breach of any covenant contained herein, provided that such failure continues for ***30*** days after notice to CPWD demanding that such failures to perform be cured.

14.2. Events of Default by EESL. Each of the following events or conditions shall constitute an "Event of Default" by EESL:

(i) Failure of EESL to properly design, install, maintain, repair or adjust the Equipment except that such failure, if corrected or cured within 30 days after written notice by CPWD to EESL.

(ii) Any representation or warranty furnished by EESL in this Agreement is false or misleading in any material respect when made;

(iii) Failure to furnish and install the Equipment and make it ready for use within the time specified by this Agreement, including reasonable delays thereof as per consensual agreements.

(iv) Any failure by EESL to perform or comply with the terms and conditions of this Agreement, including breach of any covenant contained herein except that such failure, if corrected or cured within ***15*** days after written notice by the CPWD to EESL.

SECTION 15: Arbitration

15.1 In the event of default by CPWD and/or EESL, or for resolution of any related dispute, an arbitration panel shall be set-up. This panel shall consist of authorized representative from DG CPWD, MD EESL and DG/Secretary – BEE as 3rd member of the arbitration panel. The decision taken by the majority of the arbitration panel shall be firm and binding on both the parties.

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SECTION 16: Assignment

16.1 EESL acknowledges that CPWD is induced to enter into this Agreement by, among other things, the professional qualifications of EESL. EESL agrees that neither this Agreement nor any right or obligations hereunder may be assigned in whole or in part to another firm, without the prior written approval of the CPWD.

16.2 EESL may, with prior written approval of CPWD, for which consent shall not be unreasonably withheld, delegate its duties and performance under this Agreement, and/or utilize contractors, provided that any assignee(s), delegate(s), or contractor(s) shall fully comply with the terms of this Agreement. Notwithstanding the provisions of this paragraph, EESL shall remain jointly and severally liable with its assignees(s) to the CPWD for all of its obligations under this Agreement to be performed at CPWD.

SECTION 17: Representation and Warranties

Each party warrants and represents to the other that:

(i) it has all requisite power, authority, licenses, permits, and franchises, corporate or otherwise, to execute and deliver this Agreement and perform its obligations hereunder;

(ii) its execution, delivery, and performance of this Agreement have been duly authorized by, or are in accordance with, its organic instruments, and this Agreement has been duly executed and delivered for it by the signatories so authorized, and it constitutes its legal, valid, and binding obligation;

(iii) its execution, delivery, and performance of this Agreement will not breach or violate, 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 or affected; or

(iv) it has not received any notice, nor to the best of its knowledge is there pending or threatened any notice, of any violation of any applicable laws, ordinances, regulations, rules, decrees, awards, permits or orders which would materially and adversely affect its ability to perform hereunder.

(v) EESL hereby warrants, represents and promises that before commencing performance of this Agreement it is permitted to do business in the State of New Delhi and has secured the requisite finances either through its own equity or debt required for the said project.

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SECTION 18: Compliance with Law and Standard Practices

EESL shall perform its obligations hereunder in compliance with any and all applicable federal, state, and local laws, rules, and regulations, in accordance with sound engineering and safety practices, and in compliance with any and all reasonable rules of statutory local rules relative to the Premises.

SECTION 19: Independent capacity of the contractor

The parties hereto agree that EESL, and any agents and employees of EESL, in the performance of this agreement, shall act in an independent capacity and not as officers, employees, or agents of CPWD.

SECTION 20: Severability

In the event that any clause or provision of this Agreement or any part thereof shall be declared invalid, void, or unenforceable by any court having jurisdiction, such invalidity shall not affect the validity or enforceability of the remaining portions of this Agreement unless the result would be manifestly inequitable or unconscionable.

SECTION 21: Complete Agreement

This Agreement, when executed, together with all Attachments attached hereto or to be attached hereto, as provided for by this Agreement shall constitute the entire Agreement between both parties and this Agreement may not be amended, modified or shared with 3rd party except by a written Agreement signed by the parties hereto.

SECTION 22: Applicable law

This Agreement and the construction and enforceability thereof shall be interpreted under the laws applicable in the National Capital Territory, Delhi.

Manager (Technical)
एनर्जी एफिशिएंसी सर्विसेज लिमिटेड
ENERGY EFFICIENCY SERVICES LIMITED

Executive Engineer (E)
ECD-II, C.P.W.D.
Sena Bhawan, New Delhi

IN WITNESS WHEREOF, and intending to be legally bound, the parties hereto subscribe their names to this Agreement by their duly authorized officers on the date first above written.

Executed for CPWD

For & On behalf of President of India

Witness

8/2/2013

1.

Name: RAJ PAL CHOPRA

Designation: Ex. Engg,
ECD-II, CPWD
SENA BHAWAN.
N. Delhi

Executed for CPWD

By Authorized Representative

Executive Engineer (E)
ECD-II, C.P.W.D.
Sena Bhawan, New Delhi

Executed for EESL

For & On behalf of EESL

Atlas Pandey
Engg (Tech)

2.

Name: Ajay Raj

Designation: Senior Manager

Executed for EESL

By Authorized Representative

Ajay Raj
Sr. Manager (Technical)
एनर्जी एफिशिएंसी सर्विसेज लिमिटेड
ENERGY EFFICIENCY SERVICES LIMITED

04/14

Attachment – 1

For the purpose of ESCO project at various CPWD owned buildings in Delhi, the annual energy usage baselines of Sena Bhawan building as determined mutually during the walk through audits and sample measurements thereof are listed here-under: -

S. No.	Item name	Wattage, W	Number	Annual use days	Daily use in hours	Annual Energy consumption in KVAh
Sena Bhawan						
1	T 12 Tube Light Single Fitting	44	350	275	9	42350
2	T 8 Tube Light Single Fitting	40	2014	275	9	221540
3	T 8 Tube Light Double Fitting	80	3156	275	9	694320
4	T 5 Tube Light Single Fitting	32	1353	275	9	119064
5	T 5 Tube Light Double Fitting	64	8502	275	9	1496352
6	Big Cut out Down Lighter	13	260	275	9	9295
7	Medium Size Down Lighter 18W	20	610	275	9	33550
8	Small Down Lighter	20	300	275	9	16500
9	Twin CFL Down Lighter	20	420	275	9	23100
10	Panel Lights (2x36 w CFL)	80	3800	275	9	836000
11	Panel Lights (4x14 w T5)	64	9150	275	9	1610400
12	Outdoor Light 400w	425	46	365	11	87215
13	Outdoor Light 150w	165	12	365	11	8833
14	Garden light/pole light/ground light 70 watt	77	105	365	11	36068
15	1.5 TR Window AC	2170	59	175	9	168039
16	1.5 TR Split AC	2230	8	175	9	23415
17	T 2x20w (2 ft) FTL (CW)	44	300	275	9	36300
18	2x11w CFL (CW)	26	150	275	9	10725
19	2x18w CFL (CW)	40	150	275	9	16500
20	2 TR Split AC	2230	82	175	9	240004
21	Garden Light 18w	20	37	365	11	3301
						5732871

Additionally the following aspects are also mentioned here-under as part of the baseline for the purpose of this agreement:-

- As per Sample audit done on window and split ACs by EESL under supervisions from BEE, the load factor for window/split AC is 0.75 and same has been considered in pre and post project scenarios.
- Power Factor has been factored in to necessitate kWh to KVAh conversion as per section 9.1 of the payment schedule
- Equipment inventories have been mutually agreed upon as per walk through audits and shall be suitably corrected at the time of final implementation in case of any change
- Running hours per day and usage days per year for each category of light/AC has been frozen based on detailed discussions with the respective building users.

Executive Engineer (E)
FCD-II, C.P.W.D.
Sena Bhawan, New Delhi

ENERGY EFFICIENCY SERVICES LIMITED

Attachment – 1A

Summary of Energy savings for various buildings considered for implementation of Energy conservation measures as part of this agreement are listed here-under

S. No	Building Name	Annual KVAh Savings	Tariff rate	Annual cost savings
1	Sena Bhawan	2659158	8.4	22336929

NOTE: In case there is variation in prices after finalization of bids and/or change in final BOQ after project completion – either due to change in quantity or due to reasons beyond control at tendering stage, the estimated investment shall be reworked and accordingly the total repayment to EESL will be adjusted appropriately by changing the annuity amount payable to EESL after mutual consent between parties.

The Per Unit Tariff considered for the various buildings (as mentioned in the Column D of the above table) have been calculated on following basis:-

- The tariff is arrived at factoring in the energy charges, taxes and surcharges applicable, capitalized annual equipment failure cost savings & AMC cost savings and excludes demand charges, PPAC charges and any other variable charges.
  - As per available data, the existing equipments at the building warrant regular replacement due to failure. Since EESL will be obligated for replacement of failed items and annual maintenance of ACs, etc. equipment failure and annual AMC costs savings have been capitalized at the rate of Rs. 0.3 per KVAh and included in the overall project tariff which is fixed for the 5 year contract period.
- The investment estimated in the agreement, that shall be firmed up after bidding process and project completion, has been estimated afresh without factoring in cost for O&M team as CPWD shall undertake the O&M of the project through buffer stock to be provisioned by EESL as detailed at section 7 of the agreement.
- Accordingly the Tariff is fixed (including utility tariff cost per kVAh and capitalized O&M cost at notional tariff of Rs. 0.3 as EESL shall be liable for 5 year O&M support), and it is reflected in the attachment 1A.

Executive Engineer (E)
ECD-II, C.P.W.D,
Sena Bhawan, New Delhi

Attachment - 2

Construction Schedule

It is estimated that the project installation shall be commissioned in a period of 25 weeks from the date of final agreement between CPWD and EESL.

- Within 30 days from the date of agreement, EESL shall solicit relevant bids with appropriate technical specifications as per the bill of quantity to be implemented and tentative work plan (as per attachment 1 above)

- All the new energy efficient equipments/items to be installed by EESL will be of minimum 5 Star labels, whenever such labeled equipments/items are available. In case where BEE star rating is not applicable for the new equipments/items to be installed, other national (BIS) or international standards applicable for such equipments/items will be considered considering their life cycle costs basis and procurements done.

- For the purpose of successful installation and commissioning to be deemed effective, the date when 95% of all equipment types are installed shall be deemed as effective date of successful installation and commissioning post which project will enter the first contract period (or PMV phase). EESL will ensure availability of at-least 98% of each inventory in workable condition at any given point in time through-out the contact period.

However, the following will be the basis of effective project completion: -

- Timely issuance of gate pass for material and manpower of 3rd party to be hired by EESL for project implementation.

- Availability of nodal officer from CPWD.

- Site level co-ordination between building maintenance team and implementing agencies for installation and commissioning of various items.

- EESL will not be obligated to rectify/change equipments that may fail due to poor wiring/supply issued but the same shall be done on additional cost to CPWD and neither for custody of old items to be displaced from end usage points.

- CPWD to ensure that no old equipments are re-used in the building throughout the contract period and further that any new addition to the building that impacts energy consumption shall be brought to the notice of EESL.

- For all equipment related complaints raised at fag end of the day or on a day preceding public holiday/weekly-off, CPWD to ensure co-ordination with regard to site availability, gate/material pass for entry, etc.

The estimated work schedule to be adhered to by EESL for the ESCO project is listed below:-

Executive Engineer (E)
ECD-II, C.P.W.D.
Sewa Sadan, New Delhi

ENERGY EFFICIENCY SERVICES LIMITED

ESTIMATED PROJECT SCHEDULE	Month 1					Month 2				Month 3				Month 4				Month 5				Month 6			
Project Milestone Envisaged	Zero Date	W 1	W 2	W 3	W 4	W 5	W 6	W 7	W 8	W 9	W 10	W 11	W 12	W 13	W 14	W 15	W 16	W 17	W 18	W 19	W 20	W 21	W 22	W 23	W 24
Signing off MoU between CPWD and EESL (ZERO DATE)*																									
Finalization of project implementation modalities																									
RFP and solicitation of bids by EESL																									
Bid management and award of bids																									
Material delivery																									
Installation of LED lights and ACs																									
Installation completion & EESL repayment																									

Executive Engineer (E)
ECD-II, C.P.W.D,
Sena Bhawan, New Delhi

Ajay Raj
Sr. Manager (Technical)
ENERGY EFFICIENCY SERVICES LIMITED
A Joint Venture Company of PSUs of Ministry of Power, Govt of India
EESL Bhawan, A-13, Sector – 1, Noida

Attachment – 3

Payment Schedule

S.NO	Building Name	Annual KVAh Savings	Tariff Rate	Annual Cost Savings	PMC Fees @9.25% 8%	Estimated total Investment exclusive of EESL PMC fees	Annual Payout to EESL	EESL Share	Total Quarterly repayment to EESL #
1	Sena Bhawan	2659158	8.4	22336929	5689685	71121060	21222788	95.01%	5305697

Executive Engineer (E)
ECD-II, C.P.W.D.
Sena Bhawan, New Delhi

Energy Efficiency Services Limited
A Joint Venture Company of PSUs of Ministry of Power, Govt. of India
A-13, Sector - 1, Noida

Detailed calculations are enclosed below:

S. No.	Item name	Wattage, W	Number	Annual use days	Daily use in hours	Annual Energy consumption in KVAh	New Appliance	New watt W	New Annual Energy KVAh	Annual Energy savings KVAh	Annual cost savings	Share of EESL in Annual cost savings
					1. SENA BHAWAN							
1	T 12 Tube Light Single Fitting	44	350	275	9	42350	1 x 18 W LED tube	20	19250	23100	194040	184361
2	T 8 Tube Light Single Fitting	40	2014	275	9	221540	1 x 18 W LED tube	20	110770	110770	930468	884057
3	T 8 Tube Light Double Fitting	80	3156	275	9	694320	2 x 18W LED tube	40	347160	347160	2916144	2770690
4	T 5 Tube Light Single Fitting	32	1353	275	9	119064	1 x 18 W LED tube	20	74415	44649	375052	356344
5	T 5 Tube Light Double Fitting	64	8502	275	9	1496352	2 x 18W LED tube	40	935220	561132	4713509	4478404
6	Big Cut out Down Lighter	13	260	275	9	9295	7W LED Downlighter	8	5720	3575	30030	28532
7	Medium Size Down Lighter 18W	20	610	275	9	33550	10 W LED Downlighter	11	18453	15098	126819	120493
8	Small Down Lighter	20	300	275	9	16500	10W LED Downlighter	11	9075	7425	62370	59259
9	Twin CFL Down Lighter	20	420	275	9	23100	10W LED Downlighter	11	12705	10395	87318	82963
10	Panel Lights (2x36 w CFL)	80	3800	275	9	836000	36W LED Panel	40	418000	418000	3511200	3336065
11	Panel Lights (4x14 w T5)	64	9150	275	9	1610400	25W LED Panel	28	704550	905850	7609140	7229604
12	Outdoor Light 400w	425	46	365	11	87215	180W LED Outdoor	200	41042	46173	387849	368504
13	Outdoor Light 150w	165	12	365	11	8833	70W LED Outdoor	77	4122	4711	39572	37598
14	Garden light/pole light/ground light 70 watt	77	105	365	11	36068	35W LED Outdoor	38	17800	18268	153453	145799
15	1.5 TR Window AC	2170	59	175	9	168089	BEE 5 Star AC	1650	127772	40268	338247	321376
16	1.5 TR Split AC	2230	8	175	9	23415	BEE 5 Star AC	1650	17325	6090	51156	48604

Executive Engineer (E)
ECD-II, C.P.W.D.
Sena Bhawan, New Delhi

16	1.5 TR Split AC	2230	8	175	9	23415	BEE 5 Star AC	1650	17325	6090	51156	48604
17	T 2x20w (2 ft) FTL (CW)	44	300	275	9	36300	2 x 10 W LED Tube	22	18150	18150	152460	144855
18	2x11w CFL (CW)	26	150	275	9	10725	10W LED	11	4538	6188	51975	49383
19	2x18w CFL (CW)	40	150	275	9	16500	18W LED	20	8250	8250	69300	65843
20	2 TR Split AC	2230	82	175	9	240004	BEE 5 Star rated ac	1650	177581	62423	524349	498195
21	Garden Light 18w	20	37	365	11	3301	10W LED	11	1816	1486	12479	11856
						5732871			3073713	2659158	22336929	21222788

TOTAL QUARTERLY REPAYMENT TO EESL IS AS PER CALENDAR QUARTER, FOR 20 YEARLY QUARTERS (Service Tax Extra)

NOTE:

- **In case there is any change in the bill of quantity as mentioned in the Attachment 4 due to reasons beyond control, the above parameters related to energy savings/investment/BOQ and EESL repayment shall be re-worked and intimated appropriately.**
- **In case there is variation in prices after finalization of bids and the estimated investment as stated above, the total repayment to EESL will be adjusted appropriately by changing the annuity amount payable to EESL and/or contract period after mutual consent between parties.**
- **Service tax is to be paid extra and over/above the amount mentioned above as per prevailing rates during the contract period.**

Executive Engineer (E)
ECD-II, C.P.W.D.
Sena Bhawan, New Delhi

अजय राय / Ajay Raj
वरिष्ठ प्रबंधक (तकनीकी) / Sr. Manager (Technical)
एनर्जी एफिशिएंसी सर्विसेज लिमिटेड
ENERGY EFFICIENCY SERVICES LTD.
(A Joint Venture Company of

ATTACHMENT 4 – BOQ

As discussed and finalized, the following is the bill of quantity. In case there is any change in the quantity, either due to change in the final quantity of items or change in capacity due to reasons beyond control at tendering stage, or need for replacing additional items not mentioned in BOQ given below, the same shall be handled separately after due consultations with CPWD and charged extra. In case of change in final BOQ, total project investment and repayment to EESL shall be revised suitably.

BOQ FINALIZED FOR ENERGY PROJECT AT Sena Bhawan			
FUNCTIONAL AREA	EXISTING	PROPOSED	PROJECT SIZE
TUBE LIGHTS			
INDOOR LIGHTS	T 12 Tube Light Single Fitting	1 x 18 W LED tube	350
	T 8 Tube Light Single Fitting	1 x 18 W LED tube	2014
	T 8 Tube Light Double Fitting	2 x 18W LED tube	3156
	T 5 Tube Light Single Fitting	1 x 18 W LED tube	1353
	T 5 Tube Light Double Fitting	2 x 18W LED tube	8502
INDOOR LIGHTS	Big Cut out Down Lighter	7W LED Downlighter	260
	Medium Size Down Lighter 18W	10 W LED Downlighter	610
	Small Down Lighter	10W LED Downlighter	300
	Twin CFL Down Lighter	10W LED Downlighter	420
	Panel Lights (2x36 w CFL)	36W LED Panel	3800
	Panel Lights (4x14 w T5)	25W LED Panel	9150
	T 2x20w (2 ft) FTL (CW)	2 x 10 W LED Tube	300
	2x11w CFL (CW)	10W LED	150
	2x18w CFL (CW)	18W LED	150
OUTDOOR LIGHTS			
OUTDOOR LIGHTS	Outdoor Light 400w	180W LED Outdoor	46
	Outdoor Light 150w	70W LED Outdoor	12
	Garden light/pole light/ground light 70 watt	35W LED Outdoor	105
	Garden Light 18w	10W LED	37
AIR CONDITIONER			
AIR CONDITIONER	1.5 TR window AC	BEE 5 Star rated ac	59
	1.5 tr split AC	BEE 5 Star rated ac	8
	2 TR Split AC	BEE 5 Star rated ac	82

Executive Engineer (E)
ECD-II, C.P.W.D.
Sena Bhawan, New Delhi

ESSEL EFFICIENCY SERVICES LIMITED