

ANDHRA PRADESH ELECTRICITY REGULATORY COMMISSION
4th Floor, Singareni Bhavan, Red Hills, Hyderabad 500 004

O.P.Nos.4 of 2015, 5 of 2015, 6 of 2015 & 7 of 2015
Date: 06-06-2015

Present
Sri Justice G. Bhavani Prasad, Chairman
Dr. P. Raghu, Member
Sri P. Rama Mohan, Member

Between:

Southern Power Distribution Company of
Andhra Pradesh Limited
Rep. by its Chief General Manager Operation
19-13-65/A, Vidyut Nilayam
Srinivasapuram, Tirupati - 517 501, Chittoor District ... Petitioner
(Petitioner in O.P.No.4 of 2015)
A N D
-NIL- ... Respondent
(Respondent in O.P.No.4 of 2015)

Between:

Southern Power Distribution Company of
Andhra Pradesh Limited
Rep. by its Chief General Manager Operation
19-13-65/A, Vidyut Nilayam
Srinivasapuram, Tirupati - 517 501, Chittoor District ... Petitioner
(Petitioner in O.P.No.5 of 2015)
A N D
-NIL- ... Respondent
(Respondent in O.P.No.5 of 2015)

Between:

Eastern Power Distribution Company of
Andhra Pradesh Limited, rep. by its
Chief General Manager RA, PP & Projects-III
Corporate Office: P & T Colony
Seethammadhara, Visakhapatnam ... Petitioner
(Petitioner in O.P.No.6 of 2015)
A N D
-NIL- ... Respondent
(Respondent in O.P.No.6 of 2015)

Between:

Eastern Power Distribution Company of
Andhra Pradesh Limited, rep. by its
Chief General Manager RA, PP & Projects-III
Corporate Office: P & T Colony
Seethammadhara, Visakhapatnam ... Petitioner
(Petitioner in O.P.No.7 of 2015)
A N D
-NIL- ... Respondent
(Respondent in O.P.No.7 of 2015)

The petitions have come up for hearing finally on 30-05-2015 in the presence of Sri Saurabh Kumar, Managing Director of Energy Efficiency Services Limited, Sri H.Y. Dora, Chairman & Managing Director of the petitioner in O.P.Nos.4 and 5 of 2015, Sri R. Muthyala Raju, Chairman & Managing Director of the petitioner in O.P.Nos.6 and 7 of 2015, Sri K. Ranganadham, Advisor to the State Government in Energy Department, Sri A. Chandra Sekhar Reddy, Chief Executive Officer of the State Energy Conservation Mission and other officers and Sri P. Shiva Rao, learned Standing Counsel for the petitioner. After carefully considering the material available on record and after hearing the arguments of all the persons present, the Commission passed the following:

COMMON ORDER

The Original Petitions 4 to 7 of 2015 are petitions for allowing the respective distribution companies to implement the Demand Side Management based Efficient Lighting Programme (DELP) with the financial support of M/s. Energy Efficiency Services Limited (EESL), New Delhi, approve the capital investment made in the respective projects and DELP-SOP prices per unit of energy saved for recovery of the investment and to make monthly pay outs to the investor, approve the normative parameters for working out the DELP-SOP price, allow the distribution company to recover the annual payout through the Aggregate Revenue Requirement for the respective periods, approve the respective energy saving agreements and pass necessary orders as deemed fit.

2. Southern Power Distribution Company of Andhra Pradesh Limited and the Eastern Power Distribution Company of Andhra Pradesh Limited in their respective petitions stated that the Energy Service Company/Energy Efficiency Services Limited submitted a Standards Offer Programme (SOP) for implementation of DSM based Efficient Lighting Programme (DELP) in household sector in the State of Andhra Pradesh. The capital investment required will be made by the investor with the distribution company making payment on a periodic basis (monthly) based on the accrued energy efficiency resource benefits. The investor guarantees the performance of the project for the entire project period and it is proposed to distribute 2 energy efficient LED bulbs to each household covering domestic

service connections in the area of licence of both the distribution companies in a phased manner and the LED bulbs will be exchanged with a good condition GLS lamp at a subsidized price of Rs.10/- per LED lamp. The total quantity of LED bulbs will be distributed within a fixed timeframe and a third party monitoring agency like BEE will make the annual verification through randomly selected samples of households. Any faulty LED bulbs will be replaced by the Energy Efficiency Services Limited free of cost throughout the period of the project irrespective of the type of fault. Photo biological safety standards specified by the Bureau of Indian Standards (BIS) will be ensured to be complied with in respect of the LED lights and a joint sample testing programme may also be carried out in the laboratory of Centre for Green Energy Technology to ensure safety compliance and samples will also be tested before distribution to confirm the technical specifications of NABL accredited laboratories. Accrued benefits from the implementation of the programme to household sector, distribution utility, cross subsidising category and the society are detailed in the petitions. Hence the petitions.

3. The statistical details of the programme covered by each of the petitions are as follows:

(A) O.P.No.4 of 2015

1.	Petitioner	:	Southern Power Distribution Company of Andhra Pradesh Limited
2.	Licensee area covered	:	Guntur and Anantapur Districts
3.	Number of households	:	15,41,000
4.	Number of LED lamps to be distributed	:	30,82,000
5.	Deemed energy supplied through the scheme per annum	:	191.63 million Kwahr
6.	Cost of LED bulb	:	Rs.204/-

7.	Distribution, Storage, Transportation, Insurance of LEDs and Crushing of ICLs	:	Rs.10/-
8.	Total cost of LED bulbs	:	Rs.62,87,28,000/-
9.	Public Awareness Cost	:	Rs.6,00,00,000/-
10.	Interest on 80% of capital cost treated as debt	:	12.50% per annum
11.	Return on equity on 20% of capital cost treated as equity	:	15.50% per annum
12.	Annual Maintenance charges 2.5% per annum	:	Rs.1,57,18,200/-

4. An Energy Savings Agreement was entered into on 20-11-2014 after the Commission accorded permission by a letter dated 30-09-2014. The replacement of 60 watts incandescent bulbs by 7 watt LED bulbs is assumed to save energy on an estimated use for 3.5 hours of each bulb for 300 days in a year and after the total payout to the investor of Rs.107.59 crores, the net savings to the distribution company was assessed at Rs.453.91 crores in the project period of 5 years. Taxes have to be reimbursed on actual basis and similar is the reimbursement of public awareness cost.

5. In the original letter from the petitioner dated 20-09-2014 seeking approval for the same, the estimated cost of LED bulb was Rs.425/-, transportation etc., was Rs.25/- and annual maintenance charges was Rs.3,47,77,000/-. The net savings to the distribution company was only Rs.350.09 crores while the total payout to the investor was Rs.211.42 crores. Revised cost estimates were again submitted with a letter dated 26-09-2014 and this Commission accorded its approval as requested by a letter dated 30-09-2014 while it also permitted the expenditure to be incorporated for arriving at the Aggregate Revenue Requirement. A half-yearly performance report was also required to be submitted to the Commission.

6. This Commission subsequently by a letter dated 10-12-2014 brought to the notice of the petitioner that the in-principle approval has to be followed by filing a regular petition by the Licensee and the Commission pointed out certain aspects brought out during discussions with the Energy Efficiency Services Limited on 04-12-2014 including the high public awareness cost of Rs.6,00,00,000/-, which can be restricted by advertisement in the local area through local editions and a very high annual maintenance cost and subsequently the present petition has been filed.

(B) O.P.No.5 of 2015

1.	Petitioner	:	Southern Power Distribution Company of Andhra Pradesh Limited
2.	Licensee area covered	:	Krishna, Prakasam, SPSR Nellore, Chittoor, Kadapa and Kurnool
3.	Number of households	:	38,19,000
4.	Number of LED lamps to be distributed	:	76,38,000
5.	Deemed energy supplied through the scheme per annum	:	474.92 million Kw/hr
6.	Cost of LED bulb	:	Rs.149/-
7.	Distribution, Storage, Transportation, Insurance of LEDs and Crushing of ICLs	:	Rs.10/-
8.	Total cost of LED bulbs	:	Rs.113,80,14,633/-
9.	Public Awareness Cost	:	Rs.15,00,00,000/-
10.	Interest on 80% of capital cost treated as debt	:	12.50% per annum
11.	Return on equity on 20% of capital cost treated as equity	:	15.50% per annum
12.	Annual Maintenance charges 2.5% per annum	:	Rs.2,84,50,366/-

7. A draft Energy Savings Agreement has been filed along with the petition with a project period of 3 years. After the total payout of Rs.169,55,98,815/-, the net savings to the petitioner are expected to be Rs.42.28 crores per annum. Taxes have to be reimbursed on actual basis and similar is the reimbursement of public awareness cost. Accordingly, this petition has been filed.

(C) O.P.No.6 of 2015

1.	Petitioner	:	Eastern Power Distribution Company of Andhra Pradesh Limited
2.	Licensee area covered	:	West Godavari and Srikakulam
3.	Number of households	:	12,93,000
4.	Number of LED lamps to be distributed	:	25,86,000
5.	Deemed energy supplied through the scheme per annum	:	158.20 million Kw/hr
6.	Cost of LED bulb	:	Rs.149/-
7.	Distribution, Storage, Transportation, Insurance of LEDs and Crushing of ICLs	:	Rs.10/-
8.	Total cost of LED bulbs	:	Rs.38,52,97,963/-
9.	Public Awareness Cost	:	Rs.5,00,00,000/-
10.	Interest on 80% of capital cost treated as debt	:	12.50% per annum
11.	Return on equity on 20% of capital cost treated as equity	:	15.50% per annum
12.	Annual Maintenance charges 2.5% per annum	:	Rs.96,32,449/-

8. The petitioner originally addressed a letter on 27-11-2014 for approval of the scheme and at a meeting held between the Director and the Joint Director of

the Engineering Wing on one hand and the Deputy Manager (Finance) of the Energy Efficiency Services Limited on the other on 04-12-2014 at the office of the Commission to negotiate to achieve maximum possible benefit to the distribution company and the consumers, which benefit was also intended to be ensured to be available in respect of the subject matter of O.P.No.4 of 2015, the Commission noted the very high projection of the public awareness cost and the annual maintenance cost and the tentativeness of the quantum of energy savings. During the meeting, the Energy Efficiency Services Limited agreed to limit the expenditure on public awareness cost to a maximum of Rs.2 to 3 crores and the annual maintenance charges to Rs.1 crore per annum as against Rs.17.37 crores for 5 years. It did not agree to treat the capital cost of 20% treated as equity also as debt. A revised proposal was submitted by the petitioner with letter dated 22-12-2014 limiting the annual maintenance charges to 2.5% per annum and a total of Rs.4.82 crores for 5 years, reducing the projected cost of LED bulb to Rs.149/- from Rs.204/- and estimating the public awareness cost at Rs.5 crores. The Commission passed an Order on 27-12-2014 otherwise approving the revised proposal except to the extent of limiting public awareness cost to Rs.3 crores by limiting the advertisements to the local editions only. The provisional approval was subject to the final orders on the petition and in the meanwhile the petitioner was directed to submit the quarterly performance report. Subsequently, the petitioner by letter dated 04-04-2015 sought for approval for procurement and distribution of an additional 2 lakhs LED bulbs in Srikakulam District to cover all the domestic existing services in addition to the numbers specified in the Energy Savings Agreement entered into in pursuance of the provisional permission of the Commission. After the total payout of Rs.65.93 crores to the investor, net savings to the petitioner for a period of 5 years was estimated at Rs.259.25 crores. While taxes have to be reimbursed, the total capital cost of the project was estimated at Rs.38.53 crores.

(D) O.P.No.7 of 2015

1.	Petitioner	:	Eastern Power Distribution Company of Andhra Pradesh Limited
2.	Licensee area covered	:	Vizianagaram, Visakhapatnam and East Godavari

3.	Number of households	:	26,67,000
4.	Number of LED lamps to be distributed	:	53,34,000
5.	Deemed energy supplied through the scheme per annum	:	326.30 million Kwhr
6.	Cost of LED bulb	:	Rs.100/-
7.	Distribution, Storage, Transportation, Insurance of LEDs and Crushing of ICLs	:	Rs.10/-
8.	Total cost of LED bulbs	:	Rs.53,34,00,000/-
9.	Public Awareness Cost	:	Rs.6,00,00,000/-
10.	Interest on 80% of capital cost treated as debt	:	12.50% per annum
11.	Return on equity on 20% of capital cost treated as equity	:	15.50% per annum
12.	Annual Maintenance charges 2.5% per annum	:	Rs.1,33,35,000/-

9. A draft Energy Savings Agreement has been filed along with the petition with a project period of 3 years. After the total payout of Rs.80.63 crores per annum, the net savings to the petitioner were estimated at Rs.313.82 crores for the project period. Taxes have to be reimbursed on actual basis and similar is the reimbursement of public awareness cost. Accordingly, this petition has been filed.

10. The Commission placed copies of the 4 petitions on its website and invited responses/objections/suggestions/views of all the interested persons/consumers/stake holders on the petitions. The Commission also invited the members of its State Advisory Committee to similarly forward their suggestions/objections/views.

11. Southern Power Distribution Company of Andhra Pradesh Limited submitted an analysis on the savings for the months of February and March, 2015 in respect of Guntur and Anantapur Districts (O.P.No.4 of 2015) stating that a total of 29,82,740

LED bulbs were distributed to 14,91,370 households between 08-01-2015 and 06-03-2015. On the average, a reduction of 22.73 units in Guntur District and 7.35 units in Anantapur District per month per service was stated to have been observed in March, 2015. The net savings per annum was calculated on that basis at Rs.89.21 crores and for 5 years at Rs.446.07 crores. After giving credit to the total payment to be made to the investor at Rs.113.59 crores, net savings to the distribution company for 5 years were estimated at Rs.332.48 crores.

12. The distribution company also stated that only 36 LED bulbs failed out of the total quantity distributed upto 30-04-2015 and an analysis of the savings is also done through a third party by the investor.

13. The Energy Efficiency Services Limited first submitted its comments with a letter dated 12-05-2015 stating that the scheme was successfully implemented in Guntur, Anantapur and Srikakulam Districts and is under implementation in West Godavari District. A total of 43,23,036 LED bulbs were distributed to 21,61,635 consumers. Procuring the LED bulbs through an open, transparent, competitive bidding process by a joint team of the investor and the distribution company as per the directions of the Government of Andhra Pradesh, the benefit of the lower cost of the bulb was passed on to the distribution companies. The State Energy Conservation Mission was requested to undertake a third party assessment of the energy savings based on methodology approved by BEE. ICLs were destroyed to prevent their going back to the system and the implementation of the plan in the entire State is to be completed by March, 2016. The investor also referred to the order of this Commission on Retail Supply Tariff for 2015-16 understanding the same as putting a cap of 50% on the payments to it and the investor requested for full payment and approval of the programme for the remaining districts. The Energy Efficiency Services Limited enclosed copies of successful completion reports of the project for Guntur, Anantapur and Srikakulam Districts and its own assessment of the scheme achieving significant energy savings, cost benefit to the distribution company, direct benefit to the consumers and safe destruction of incandescent bulbs. Copy of the survey questionnaire was annexed to the report.

14. The Energy Efficiency Services Limited further submitted notes on the responses to these petitions and stated that 40 lakh ICLs were destroyed so far and certificates of destruction have already been furnished. In the remaining 9 districts also, a reasonable presumption is that a similar quantity of incandescent bulbs are existing and working. New ICLs are not accepted and separate programmes for replacement of conventional tube lights with LED tube lights will be prepared. The energy savings were found to be actually higher than originally estimated and the programme helps in better management of the load in view of the projected development of the State. Cost of LED bulbs has come down from procurement to procurement. The investor also enclosed the statistical data and dash boards in respect of its schemes.

15. Sri B. Muralidhara Babu, a B.Tech., MBA from Tirupati submitted detailed objections stating that the cost of LED bulbs was escalated above the market rates, lakhs of LED bulbs were sold to consumers by on line marketing agencies removing any need to take up the scheme, expectations on the returns are speculative and inflated, the distribution companies have no proper share in profits, while they lose due to savings of the consumers and no action can be taken against the investor for not replacing the bulbs. He suggested to wait for some more time to observe the results of Guntur and Anantapur Districts. He doubted the genuineness of the high cost and the investment while criticizing the project based on pure assumptions. He opined that there was unrealistic boosting of the savings and profit figures and desired that all the Government Departments should first purchase the LED bulbs and use them and the Discoms themselves can purchase the bulbs and sell to the consumers. He gave detailed suggestions to protect the interests of the distribution companies and the consumers while pointing out the manner in which any fraud can be checked and the programme can be more accountable.

16. Sri Madhuganti Sridhar Reddy of Hyderabad in his submissions desired to know whether the assumptions on which the project is based were ever verified. He suggested that the LED bulbs should be sold without any profit, recovering the cost through monthly bills in instalments. He also suggested that by abolishing the value added tax and other taxes on the LED bulbs and their components, the price

of the LED bulb can be brought down and for obtaining any new service, a minimum percentage of use of LED bulbs should be prescribed to increase the usage of LED bulbs and to reduce the purchase of incandescent bulbs, they should be subject to higher tax.

17. Sri M. Thimma Reddy, Convenor, People's Monitoring Group on Electricity Regulation in his comments stated that CFLs (20 W) and tube lights (40 W) reached even rural areas and incandescent bulbs are not in much use. There will be spurious replacement with people purchasing and surrendering new ICL bulbs. Hence, tube lights and CFL bulbs also may be covered by the programme and as the incandescent bulbs are used by households with less than 100 units consumption per month, the actual savings will be much less. While individual consumers will be benefitted, the distribution companies or State Government may not be benefitted. LED bulbs may be provided at competitive rates to other domestic consumers not provided subsidized power and at subsidized rates to subsidized consumers. The calculation of savings is contradictory and price of the LED bulbs was different. If LED bulbs are made available for lower cost and people are made aware, there is no need to meet additional cost. Intervention should be economical and not burden to the stake holders unnecessarily.

18. Andhra Pradesh State Electricity Employees' Union - 327 through its Secretary General, Sri R. Sai Baba, who is also a member of the State Advisory Committee of this Commission opined the project to be beneficial to the domestic consumers and also the department. Saved energy can be sold to cross subsidizing consumers and the cross subsidy can be progressively reduced. It was suggested to go in for 9 watts LED bulbs for better consumer acceptance and use in the main rooms instead of bath rooms and verandas. He even offered specific acceptance to go forward with the transparent project.

19. Andhra Pradesh Electricity Employees' Union - 1104 through its General Secretary, Sri V.S.R.K. Ganapathi, who is also a member of the State Advisory Committee of this Commission stated that as any benefit of the programme goes to the State Government, the State Government has to reimburse the loss to the Discoms. The advertisement cost is very high and the advertising agency has no

skills. Each LED distribution kiosk must have 4 members and in municipal towns, some consumers were hospitalized due to sunstroke etc., as big queues even for ladies could not be handled. Investor or the Nodal Officer (NRDECAP) failed in intimating about the programme to the distribution company and the consumers and the distribution company were never contacted. The programme is designed on assumptions and there was no decrease in consumption. In many villages due to practical problems, the LED bulbs were not installed in high consumption areas and the cost of the bulb varies from district to district. There is no hurry for the programme without any technical and practical study and the Discoms have the manpower to take up the project by themselves without the additional burden paid to the investor. The implementation of the programme with private or joint venture organizations is not safe or beneficial to the distribution company.

20. Sri Suresh Rayudu Chitturi, Chairman, CII, Andhra Pradesh (Confederation of Indian Industry) in his suggestions specified 11 Energy Efficient Luminaire Specification Guide Lines to be observed.

21. Sri S. Sri Murali, a member of the State Advisory Committee of this Commission in his comments stated that there is a discrepancy and inconsistency in the cost of LED bulbs in each petition and more responsibility should be given to the Bureau of Energy Efficiency as the third party agency. The results of the periodic checks should be in public domain to bring in more transparency and efficiency. An online monitoring system can be brought in place for transparent replacement of only the faulty LED bulbs. A major benefit of the implementation of the scheme will be progressive reduction of tariff rates for the cross subsidizing category as mandated by the Electricity Act, 2003. Overall cross subsidy rates should be reduced to encourage third party sales and promotion of open access. Payment disbursement should be only after LED bulbs are installed in a district, after due third party verification. The public awareness cost also should be reimbursed only after due verification. The total out lay was not correctly calculated and as per the correct calculation, the total out lay comes to Rs.105.81 crores in O.P.No.4 of 2015, Rs.166.43 crores in O.P.No.5 of 2015, Rs.64.87 crores in O.P.No.6 of 2015 and Rs.78.01 crores in O.P.No.7 of 2015 and the total difference is Rs.8.59 crores excess. The calculations have to be hence verified.

22. During the hearing on 23-05-2015, representatives of the petitioners and the Energy Efficiency Services Limited, learned Standing Counsel for the petitioners, Sri M. Thimma Reddy, Convenor, People's Monitoring Group on Electricity Regulation and Sri Madhuganti Sridhar Reddy were present and they were heard. The representative of the Energy Efficiency Services Limited and the petitioners were directed to report to the Commission on the next date of hearing, ways and means for attempting to reduce (i) Annual maintenance charges (ii) Rate of interest (iii) Public awareness cost (iv) Distribution, Storage, Transportation, Insurance and Crushing expenses (v) Cost of the bulbs (vi) Margin of pay out to the Energy Efficiency Services Limited and (vii) Possibility of treating the entire capital cost as debt instead of treating 20% of the same as equity imposing additional burden of 3% on the distribution companies. Distribution companies were also directed to submit their respective performance reports within 15 days.

23. While the responses of Energy Efficiency Services Limited were already extracted earlier, the views of Southern Power Distribution Company of Andhra Pradesh Limited in this regard desired the distribution, storage, transportation, insurance and crushing expenses to be reduced to Rs.5/- per bulb instead of Rs.10/- in the absence of any data and the very large quantity of bulbs involved in the programme. The distribution companies also desired to have the annual maintenance cost also reduced from 2.5% per annum on total project cost and the cost of analysis of energy saved can be reimbursed on actual basis while cost of storage and maintenance of service centers can be met with the present infrastructure of the distribution company. It was further stated that there is no need for giving any further advertisements regarding the advantage of using LED bulbs of which the public are sufficiently aware of now. It will be sufficient to give advertisement/press notes in the local newspapers and the toll free number of the call center can be printed on either side of the bulb/bulb cover. It is also desired that floating rate of interest should be applied as per Reserve Bank of India guidelines and the interest paid and the interest as per the market shall be reconciled for one year for adjustment in future payments. If the entire project is treated as debt, the distribution company and the consumer will be benefitted and the investor is continuously floating tenders for implementation of the programme for large quantities of procurement creating huge competition. The rates of LED

bulbs are coming down faster as seen from Rs.350/- for Pondicherry Discom and Rs.204/- for Southern Power Distribution Company of Andhra Pradesh Limited and Rs.149/- for Eastern Power Distribution Company of Andhra Pradesh Limited and Rs.100/- for the remaining 9 districts in the State. So, procurement can be done in large quantities and not in a phased manner.

24. During the hearing on 30-05-2015, Sri Saurabh Kumar, Managing Director of M/s. Energy Efficiency Services Limited, Sri H.Y. Dora, Chairman & Managing Director of Southern Power Distribution Company of Andhra Pradesh Limited, Sri Revu Muthyala Raju, Chairman & Managing Director of Eastern Power Distribution Company of Andhra Pradesh Limited, Sri K. Ranganadham, Advisor to Government of Andhra Pradesh, Energy Department, Sri. A. Chandra Sekhar Reddy, Chief Executive Officer of State Energy Conservation Mission and Sri P. Shiva Rao, learned Standing Counsel for the petitioner were present. The Managing Director, EESL has conveyed the views of EESL with the in principle approval of his Board of Directors for a reasonable reduction of the different components of the total project cost. He stated that the maintenance charges can be subject to a cap of 2% while the actual maintenance charges alone will be recovered from the distribution companies, Rate of Interest on 80% of the project cost treated as debt can be subject to a cap of 10%, Return on Equity on 20% of the project cost treated as equity can be subject to a cap of 14%, while distribution, storage, transportation, insurance, crushing expenses can be subject to a cap of Rs.8/- per bulb. Regarding the Public Awareness cost, Sri Saurabh Kumar emphasized the need for minimum expenses for spreading maximum awareness among the public in the respective areas of execution of the programme and desired that at least a sum of Rs.1 crore per district may be provided for that purpose. He stated that the margin of pay out to M/s. Energy Efficiency Services Limited only includes the amounts that will be paid under all the heads and no extra amount will be paid except the taxes and also stated that there is no possibility of treating the entire capital cost as debt instead of 20% as equity, as the equity amount alone sustains M/s. Energy Efficiency Services Limited. Sri H.Y. Dora and Sri R. Mutyala Raju, Chairmen and Managing Directors of both the distribution companies submitted that the Annual Maintenance Cost in view of the past experience, such maintenance being practically nil, can be further reduced to a minimum of 1.5%

and there is no need for public awareness cost as the distribution companies have now decided that they will themselves take up the task of public awareness through their own network of personnel spread in all the villages and areas where the scheme is being implemented. Sri Saurabh Kumar reiterated that minimum public awareness cost for publicity through mobile vans etc., cannot be dispensed with and after discussions, it has been agreed that there will be a cap of 1.5% on the Annual Maintenance Charges subject to reimbursement of actual expenditure alone and there will be permission for expenditure of Rs.10 lakhs per district towards Public Awareness Cost subject to actual expenditure and both parties are not at difference regarding the cost of the bulb. Sri Saurabh Kumar expressed his readiness to have supplies made at the cost at which the bulb will be procured at the immediately following bidding to the extent of the purchase orders given by the distribution companies now and at the cost at which such bulb will be procured in the subsequent bidding in September/October for the remaining quantity of bulbs which the distribution companies will seek to be supplied with detailed plans to complete the project by 31-03-2016. Though both sides have no difference on this aspect, Sri K. Ranganatham, Advisor to Government of AP, Energy Department has brought to notice, information received by the Government about the need to supply 9 Watts LED bulbs instead of 7 watts LED bulbs in view of the growing public demand for supply of such higher wattage bulbs and desired the scope to be left in the execution of the present scheme for supply of such higher wattage bulbs. If such supply of such higher wattage bulbs can be procured at the same or lesser cost for which the present permissions are to be given by the Commission, such adjustment probably can be made part of the present permissions but if there is any difference in the financial implication of supply of such higher wattage bulbs, the distribution companies have to approach this Commission again for appropriate clearances and permissions to the extent of such escalation. Sri A. Chandra Sekhar Reddy, Chief Executive Officer, Energy Conservation Mission has assured that the energy conservation mission will oversee the execution of the project in all the districts of Andhra Pradesh with maximum financial efficiency and maximum benefit to the consumers and Discoms. Both parties have also agreed that the aspects on which they have agreed now concerning the 9 districts where the project is yet to be launched may have relevance to the provisional permissions

already granted in respect of the remaining 4 districts only to the extent applicable. Sri Saurabh Kumar, Managing Director of M/s. Energy Efficiency Services Limited has been fair enough to suggest that the rate of interest with a cap of 10% may be made applicable to the said 4 districts also. It has been made clear to M/s. Energy Efficiency Services Limited that additional supplies requested by the distribution companies beyond the quantities covered by the original permissions in respect of those 4 districts shall have to be made at the cost prevailing under the relevant biddings in force at the time of supply.

25. A.P. Electricity Reform Act, 1998 has among its objects, an efficient, economic and competitive development and management of the electricity industry and one of the functions of the A.P. Electricity Regulatory Commission under Section 11 is to promote efficiency, economy and safety in the use of the electricity in the State. Even the Electricity Act, 2003 has similar objects including promotion of efficient and environmentally benign policies. The Central Electricity Regulatory Commission or a State Commission have a duty to advise the appropriate Governments on promotion of competitive efficiency and economy in any activities of the electricity industry. Advising Central Government on optimal utilization of resources is one of the functions and duties of the Central Electricity Authority. The Energy Conservation Act, 2001 is a specific statutory measure to provide for efficient use of energy and its conservation by adopting energy efficient measures for reducing the energy consumption. The Bureau of Energy Efficiency established under the Act is intended, among other things, to promote use of energy efficient processes, equipment, devices and systems under Section 13 of the Act, apart from promoting energy efficiency projects. The National and State policies and plans are also designed to achieve similar objectives and this mandate and background have to be kept in view in positively appreciating the present proposals. The Demand Side Management Based Efficient Lighting Programme for implementation in all the 13 districts of the State of Andhra Pradesh through distribution of 2 LED bulbs of 7 watts to each domestic consumer is intended to achieve substantial energy savings in the license area of both the distribution companies. Andhra Pradesh State Electricity Employees' Union - 327 projected the advantages of the programme and welcomed it. However, A.P. Electricity Employees' Union-1104 expressed its doubts on the viability of the

programme based on assumptions only. But it has to be noted that the actual viability of any programme can be assessed on actual performance only after its implementation in full or in part and till then it can be only on assumptions. That the assumptions of the distribution companies and the energy service company are not divorced from actual performance is clear from the completion reports of the Energy Efficiency Services Limited and the performance report of Southern Power Distribution Company of Andhra Pradesh Limited in relation to two districts referred to in detail earlier. The difference in price of the LED bulbs in each of the petitions is also found fault with by this union and other objectors, but it is a matter of record that the cost of the LED bulbs is getting progressively reduced from Rs.350/- for Pondicherry State to Rs.100/- in O.P.No.7 of 2015 for obvious reasons like the increase in quantities of bulbs being distributed and the competition the ever expanding programme has created among manufacturers of bulbs etc. The other objections of the A.P. Electricity Employees' Union (1104) about the deficiencies in creating public awareness like high cost, lack of skills and deficiency of the nodal agency etc., cannot out weigh the positive advantages of the programme. The claim that the actual consumption of energy was not reduced runs counter to the reports of the investor and the distribution companies. While the suggestions on behalf of Confederation of Indian Industry are to ensure compliance with the Energy Efficient Luminaire Specification Guide Lines, which can be asked to be kept in view, the suggestions of Sri S. Sri Murali about the discrepancies in the total outlay calculations may be kept in view while any inconsistency in the cost of LED bulbs was already explained to be logical. Involving the BEE in evaluation should also be considered, while enforcement of the warrantee of the bulbs can be cross checked with the performance reports of the distribution companies, which have to be submitted to this Commission. While undoubtedly these conservation measures will help reduce progressively the cross subsidy surcharge, Sri M. Thimma Reddy in his considered suggestions suggested expansion of the programme to tube lights and CFL bulbs also and the suggestions were basically not in denial of the need to promote energy services and energy efficiency, but only to caution to ensure the intervention to be economical and beneficial. The information furnished by the investor and the distribution companies contradicts the claim of incandescent bulbs being limitedly used or out

of use and the numbers being received back and destroyed do not suggest the claim to be unreal. Sri M. Sridhar Reddy in his comments was anxious about proper verification being made about all the issues involved and his suggestions about giving incentives for manufacture of LED bulbs, imposing additional taxes on manufacturing incandescent bulbs and prescribing use of minimum percentage of LED bulbs while connecting new services deserve the attention of the distribution companies and the investor to move the appropriate Governments for necessary action. Sri B. Muralidhara Babu advised to wait for the results of the implemented project in Guntur and Anantapur and such results are placed before the Commission by Southern Power Distribution Company of Andhra Pradesh Limited. The objections find their answers in his suggestions themselves and if such precautions are taken, the scheme is clearly worth attempting. It is true that an element of guess, estimate and speculation appears involved in the proposals, but if one stops all attempts at innovation and improvement for betterment due to such hypothetical apprehensions, the negative consequences will be more disastrous to the system due to stagnation than the positive savings due to over caution.

26. The certificates of destruction and the information furnished by the Energy Efficiency Services Limited may probablise that phasing out incandescent bulbs from the system is being achieved in substantial numbers and the completion reports from the said investor about execution of the scheme in Pondicherry and here indicate that distribution of 43.23 lakhs LED bulbs to 21.61 lakhs consumers will, in the natural course of human events, have a huge impact, motivating all the domestic consumers to shift to more efficient energy saving LED bulbs away from conventional lighting, both due to the quality and life of the product and the money savings in energy bills. While there is no reason to suspect the competitive bidding process through which these LED bulbs are procured by the public utilities under the State supervision, the periodic evaluation of implementation by the BEE and the State Energy Conservation Mission apart from a third party assessment will act as a safeguard against any manipulation.

27. Without further replicating the positive and negative aspects involved, it is thus clear on the whole that the implementation of the scheme as requested will

confer substantial benefit to the consumers and improve the capacity of the distribution companies to serve the ever growing demand for power due to not only continuous growth in population but also rapid development in industrial, commercial, social and other sectors. The apprehensions or disadvantages expressed by the objectors, though not open to rejection outright, are overwhelmed by the possibility of considerable energy conservation and savings.

28. Still keeping these views/suggestions/objections in view, this Commission, as part of its regulatory jurisdiction and in performance of its duty to the consumers explored every ways and means to reduce the project cost in every possible manner and that has resulted in significant advantage to the distribution companies and obviously through them to the consumers.

29. The mutual agreement arrived at on various aspects on 30-05-2015 have already been extracted and in addition, it has to be further noted the permission now to be given should be restricted to a maximum cost of the LED bulbs at Rs.100/- as projected in O.P.No.7 of 2015, in O.P.No.5 of 2015 also, as the scheme under both the petitions will be executed simultaneously after the present permission in the respective areas and the cost of the bulb cannot be permitted to be estimated at Rs.149/- as shown in O.P.No.5 of 2015. Otherwise, all the 4 requests have to be conceded on the lines already indicated above.

30. The Energy Efficiency Services Limited in their submissions dated 12-05-2015 requested to remove cap of 50% payment for these programmes as imposed in the Retail Supply Tariff Order for FY 2015-16. However, in the said Tariff Order, it has been stated that 50% estimated payment towards this project is approved as expenditure for this financial year for the purpose of calculating the Aggregate Revenue Requirement. But, it was left open to the licensee to complete the payment as estimated by them, which cost will be reimbursed through the next Aggregate Revenue Requirement with carrying cost. So, it is clear that the licensees are free to make the payments in full in this Financial Year itself, which will be a matter of agreement and understanding between the two parties to the agreement. As a cap of 50% is specified with reference to some other purpose, the same needs no specific orders herein.

31. Therefore, all the 4 petitions are allowed without costs subject to the conditions specified hereunder,--

- (1) In O.P.No.5 of 2015, the programme to be launched should be on the basis of estimating the maximum permissible cost of a LED bulb at Rs.100/- only.
- (2) Reimbursement of the annual maintenance charges will be subject to a maximum of 1.5% per annum subject to reimbursement of the actual expenditure alone. But in O.P.Nos.4 of 2015 and 6 of 2015 in case the Energy Efficiency Services Limited incurs any expenditure towards annual maintenance charges beyond 1.5%, it can approach this Commission for reimbursement of such additional expenses upto a maximum of 2.5% per annum.
- (3) The interest for debt servicing on 80% of the capital cost treated as debt will be subject to a maximum of 10% per annum, while the distribution companies will be charged only with the actual rate of interest charged from Energy Efficiency Services Limited by its financing institutions in respect of each of the programmes.
- (4) The return on equity/equity IRR (post tax) on 20% of the capital cost treated as equity shall be subject to a maximum of 14%.
- (5) Distribution, Storage, Transportation and Insurance of LED bulbs and crushing of incandescent bulbs shall be subject to a maximum of Rs.8/- per bulb.
- (6) In respect of O.Ps.5 and 7 of 2015, the public awareness cost to be incurred by the Energy Efficiency Services Limited shall be subject to a maximum of Rs.10 lakhs per district. In respect of O.P.No.4 of 2015, the public awareness cost shall not exceed Rs.3.275 crores, while in respect of O.P.No.6 of 2015, the public awareness cost shall not exceed Rs.3 crores as already specified in the provisional permissions for the two schemes granted earlier, but reimbursement will be confined to actual expenditure alone in all the cases.
- (7) The supplies of LED bulbs by the Energy Efficiency Services Limited here after including any additional quantities required by the distribution companies in addition to the quantities originally specified under the

schemes covered by O.Ps.4 and 6 of 2015 shall be at the cost at which the bulb will be procured at the immediately following bidding to the extent of the purchase orders given by the distribution companies now and at the cost at which such bulb will be procured in the subsequent bidding in September/October, 2015 for the remaining quantity of bulbs, which the distribution companies will seek to be supplied by them and both the petitioners and Energy Efficiency Services Limited shall have detailed plans to complete the projects at the latest by 31-03-2016.

- (8) If the petitioners and the Energy Efficiency Services Limited agree and decide to supply 9 watts LED bulbs instead of 7 watts LED bulbs in respect of any of the 4 schemes in part or in full, the same can be undertaken only if such higher wattage bulb of 9 watts can be procured at the same or lesser cost for which the present permissions are being given by this Commission, while all other components of the project cost shall remain unchanged. In case, there is any difference in financial implications in the supply of such higher wattage bulbs, the distribution company shall approach this Commission again for appropriate clearance and directions to the extent of such escalation.
- (9) It is open to the Energy Efficiency Services Limited to extend any further financial benefits/concessions to the petitioners as they may find feasible beyond the conditions imposed herein.
- (10) Both the Energy Efficiency Services Limited and the petitioners shall keep in view during the implementation of the project the suggestions made by different persons interested in the power sector concerning the possibility of making this project more efficient, economic and accountable.
- (11) The petitioners shall submit a half-yearly performance report on the implementation and working of the project, more particularly about the actual energy savings and cost benefit analysis. The copies of the suggestions received from stakeholders, who sent their considered suggestions to this Commission be forwarded to the Energy Efficiency Services Limited and the petitioners along with the copies of this order

and the copies of this order shall also be sent to the stakeholders, who made their considered suggestions.

- (12) The Commission also records with appreciation the inputs provided by the stakeholders, who sent their suggestions for appropriate consideration of the issues involved.
- (13) If any unavoidable actual expenditure under any head constituting the project cost exceeds the quantum of amounts permitted herein, it is open to the Energy Efficiency Services Limited or the petitioners to approach this Commission for revising/reviewing the permissions to that extent, which requests will be considered on merits.

This order is corrected and signed on this 6th day of June, 2015.

Sd/-
P. Rama Mohan
Member

Sd/-
Dr. P. Raghu
Member

Sd/-
Justice G. Bhavani Prasad
Chairman