

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

O.P.No.16 of 2015
Date: 05-06-2015

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

Between:

Eastern Power Distribution Company of
Andhra Pradesh Limited, rep. by its
Chief General Manager Commercial Quality
Control & Assurance
Corporate Office: P & T Colony
Seethammadhara, Visakhapatnam

... Petitioner
(Petitioner in O.P.No.16 of 2015)

A N D

-NIL-

... Respondent
(Respondent in O.P.No.16 of 2015)

The petition has come up for hearing finally on 30-05-2015 in the presence of Sri Saurabh Kumar, Managing Director of Energy Efficiency Services Limited, Sri R. Muthyala Raju, Chairman & Managing Director of the petitioner, 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:

ORDER

A petition to allow the Eastern Power Distribution Company of Andhra Pradesh Limited (APEPDCL) to implement the Agricultural Demand Side Management project with the financial support of Energy Efficiency Services Limited (EESL), New Delhi, approve the capital investment for the project and the energy savings for recovery of the investment through monthly payout to the investor in accordance with the energy savings, allow the annual payout to be made to the investor through Annual Revenue Requirement of the year, approve the draft energy savings agreement and to pass all other necessary orders as deemed fit.

2. The petitioner made the proposal for implementation of the project in Rajanagaram Mandal of East Godavari District. The detailed project report submitted by the investor proposed that the distribution company with the technical and financial support of the energy service company will replace 2,496 inefficient agricultural pump sets with energy efficient pump sets in Rajanagaram Mandal with the initial capital investment being financed by the Energy Efficiency Services Limited for purchase of the new pump sets, dismantling of the old pump sets, installation and testing of the new pump sets and repair after replacement and maintenance of the installed pump sets during the entire project period of 5 years. The energy savings will be shared in the ratio of 85:15 for 5 years and the distribution company will make payment on a periodic basis, based on the accrued energy efficiency resource benefits on a periodic basis (monthly). The investor will replace the faulty pump sets for any technical repairs (and not for theft) free of cost for that period of 5 years. The energy savings are estimated at 21.317 million units per annum, reducing the power procurement cost by Rs.40.45 crores over 5 years. The project will give accrued benefits to the distribution utility, cross subsidized category and the society as detailed in the petition and the tentative project cost is Rs.1,734.70 lakhs for the cost of the pump sets, Rs.98.16 lakhs towards cost of dismantling the existing pump sets and installing the new pump sets and Rs.167.72 lakhs towards project management consultancy, making a total of Rs.2,000.58 lakhs. Out of the project cost, 80% is treated as capital cost/debt with interest at 12.50% per annum and 20% is treated as equity with 13.69% per annum as return on equity. The annual maintenance charges are estimated at Rs.76,23,346/-. Hence the petition.

3. Copy of the Energy Performance Agreement between the parties dated 05-03-2015 contained the details of the agreement for energy performance. Scope was left for a change in the number of pump sets.

4. As there was no named respondent and as the matter involved general public interest, a public notice was given through the website of the Commission on 07-05-2015 inviting views/suggestions/objections of all the stakeholders.

5. In response, Sri S. Surya Prakasa Rao in his communication dated 12-05-2015 while complimenting the scheme as progressive, suggested that payment should be made on measurable evidence and not on notional savings. He also suggested that the defect of absence of any benefit to the agricultural consumer may be removed by

offering part of the 85% savings to such consumer by way of reduction of customer charges or otherwise to secure the active involvement and cooperation of such consumer. Agricultural consumer may also be assured of continued supply free of cost or on a concessional tariff for one more decade and 10% of the savings may be accounted as non-tariff income to be given credit to in the monthly bills of cross subsidizing consumers. High capacity pump sets of 20 HP and above may be attempted in the first instance. As a former Director of a distribution utility, he also referred to a similar scheme of the year 2000 in Nalgonda District and desired feed back to be obtained on the same.

6. Sri S. Surya Prakasa Rao sent another communication dated 19-05-2015 making suggestions on the Energy Performance Agreement. He suggested designating the effective date for commencement of 5 years and the ownership of the energy efficient pump sets to be vested in consumers with necessary documents. Among other things, he suggested that the Commission may waive the normal procedure under GTCS for updating the connected load on the date of replacement and also gave suggestions about the manner of computation of energy savings and payment to the investor. He felt that the Return on Equity may be sacrificed with the consent of the Government of India. He desired any undue enrichment of the investor to be avoided while assuring a reasonable Return on Equity after meeting all the expenses. He suggested that in the event of any loss to the distribution company, the State Government may grant subsidy to make good the loss and that the investor and any association or farmers also be made parties to the petition.

7. Sri M. Thimma Reddy, Convener, Peoples' Monitoring Group on Electricity Regulation submitted his suggestions during the hearing on 23-05-2015 and while welcoming the initiative in conducting this pilot project, he suggested that the detailed Project Report should be made available and that the actual accrued savings alone should be shared. He felt that that the best case value should be based on sample measures at different times of the day and different seasons of the year with counter checking with feeder meter readings. Energy consumption should be based on feeder meter readings and DT meter readings. He also suggested that the different aspects specified by him need to be clarified and maintenance of quality of power is important for the success of the programme.

8. Sri N. Sree Kumar, Member, Prayas (Energy Group) in his comments on the programme welcoming these initiatives, hoped the comments to help improve the implementation. He stated that many projects on agricultural pump sets replacement were carried out in other States after the 2009 Solapur project and desired to know whether the lessons from these projects were incorporated and whether the owners of the pump sets with average pump capacity of 19 HP are farmers (as the average pump capacity in Andhra Pradesh and Telangana is only 6 HP). Apart from the required data for assessing the efficiency benefit, the manufacturers have to guarantee the provision of protection mechanisms to ensure that the pump will not fail even when there is wide fluctuation in voltage or frequent power failures. Cost of improving quality of supply by the distribution company should also be included in the project cost and feeder metering data or DT metering readings should be used to measure the base case and post replacement energy. For high capacity pump sets as in Andhra Pradesh, feeder based solar projects is a better option than the current projects of installing solar pump sets, which topic of course is not directly related to the petition.

9. A.P. Electricity Employees Union through its General Secretary Sri V.S.R.K. Ganapathi, who is also a member of the State Advisory Committee of this Commission, submitted that the State Government has to reimburse the cost of the units consumed by the farmers and hence, there is no necessity for the distribution company to enter into an agreement with the investor or bear the cost of the project or make payment to the investor. There is no additional benefit to the distribution company or the Government of Andhra Pradesh in view of the total payment to be made including interest and maintenance charges. The ownership and rights of the farmers over the pump sets are being transferred to the investor and the uneducated and innocent farmers cannot easily approach the investor for replacement of the quality pump sets. The cost benefit analysis was not scientific and the farmers may not be convinced to replace their existing pump sets.

10. In reply to the comments made by the 3 experts and Andhra Pradesh Electricity Employees Union, the Energy Efficiency Services Limited in their reply explained that Rajanagaram Mandal may not be a clear representative of the rating of pump sets in the entire licensee area of the petitioner. But the experience gained by implementation of the pilot project about the social acceptability of the scheme by farmers and confidence building of the distributors by demonstrated energy savings

will help in scaling up the efforts in the other areas of the State. It was explained that the project cost is calculated by taking market survey for replacement cost of pump sets, cost of the control panels and the past experience in implementation of similar successful projects in other parts of the country. The calculation of the operating hours at 6 for 300 days per annum is very conservative as against the minimum supply of electricity for 7 hours for 365 days according to the Annual Revenue Requirement of the distribution company. While it is thus 1800 hours against 2555 hours per annum, measurement of the power consumption can be done for all the pump sets before and after replacement to measure the actual energy savings. While farmers do not allow consumption readings at DT meters, new connections, mixed load of rural and agriculture and unregistered consumers etc., will be hurdles for accurate power consumption measurement and computation of energy savings at feeder level meters. 5 star or 4 star rated pump sets or ISI marked pump sets will be installed as per availability and Energy Efficiency Services Limited will supply the pump sets and control panels/switch boards while the minimal cost for accessories like cable and bends will be borne by the farmers. The company will be responsible for the installation, commissioning, repair and maintenance of the pump sets and control panels for 5 years from the date of replacement and the minimum average repair and maintenance time is 5 days. A Grievance Redressal mechanism will be available in respect of any default in repair/replacement within 5 days while quality of power is the responsibility of the distributor and even after rewinding, star rated motors will continue to be efficient if good rewinding practices are followed and the replacement of the motors is estimated to be completed within one year.

11. During the hearing on 23-05-2015, the representatives of the distribution company and investor and Sri M. Thimma Reddy were present and no other stake holders were present. After hearing those present, Sri A. Srinivasa Rao representing the investor and the officers of the distribution company were requested to study the possibility of any reduction in the capital cost of the project.

12. During the hearing on 30-05-2015, Sri Saurabh Kumar, Managing Director of Energy Efficiency Services Limited, Sri R. Muthyala Raju, Chairman & Managing Director of the petitioner, 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 were heard about the prayers in the petition, suggestions received from the stake holders and the possibility of reduction in the capital cost of the project.

13. Sri Saurabh Kumar on behalf of Energy Efficiency Services Limited agreed to put a cap on the project management consultancy cost at Rs.117.72 lakhs and did not seriously oppose the request of Sri R. Muthyala Raju for the petitioner to reasonably reduce the annual maintenance charges at least by Rs.16.23 lakhs. Both the parties expressed no objection for giving permission subject to such reduction in the project management consultancy charges and annual maintenance charges.

14. Incidentally, 4 other petitions in O.P.No.4 of 2015 to O.P.No.7 of 2015 on the file of this Commission for approval for implementation of Demand Side Management Based Efficient Lighting Programme were also heard on 30-05-2015 and in the course of finalizing the permissible project cost for those programmes, it was agreed on behalf of the Energy Efficiency Services Limited to reduce the rate of interest on 80% of the project cost treated as a debt from 12.50% to the actual interest charged from the Energy Efficiency Services Limited by its financing institutions in respect of each programme subject to an upper limit of 10% per annum, whereas the Return on Equity of 20% of the project cost treated as equity will be at 14% only. In this petition, Return on Equity/equity IRR (post tax) is calculated only at 13.69% per annum, which is less than 14% per annum agreed in the other petitions and may not require any interference. But the interest for debt servicing can be reduced to that agreed in the other petitions, which causes no loss to the Energy Efficiency Services Limited, which will always recover the actual interest paid by it to its financing institutions. A reduction of Rs.50 lakhs in the project management consultancy charges and a reduction of Rs.16.23 lakhs in the annual maintenance charges, agreed upon between the parties to the agreement, making the project management consultancy cost Rs.117.72 lakhs and the annual maintenance charges of Rs.60 lakhs, reasonably reduce the project cost to the obvious benefit of the distribution company and consequently of all the stake holders and consumers. With these modifications, the prayer in the petition appear to be ex-facie acceptable as even the 3 experts in the power sector, who made their suggestions for qualitative improvement of the project, welcomed the initiative taken to ground a progressive scheme. The response of the Energy Efficiency Services Limited to the suggestions made by the 3 experts shows that whatever

possible for better measurement of the energy savings, better execution of the project and better economic comfort of the distribution companies and the consumers will be done. Terms negotiated during the hearing reducing the project cost will hopefully avoid any undue enrichment of the investor, which also is in effect and substance owned by Government of India. While the meaningful, studied and valuable suggestions of the 3 experts and the Employees Union will have to be undoubtedly kept in mind by the distribution company and the investor to ensure better performance, it has to be remembered that the project for which approval is sought for is conceived to be a pilot project, so as to be a pre cursor for improving the efficiency of the agricultural pump sets throughout the State. While the experience from similar projects from other States will be of valuable guidance, permitting the petitioner and investor to execute this project appears eminently desirable for pursuing and achieving efficient functioning of the agricultural pump sets leading to considerable energy conservation for the benefit of the both the distributors and the consumers throughout the State in due course. While reply by the Energy Efficiency Services Limited to the various suggestions made may indicate that some of the suggestions may not be capable of being implemented due to available field conditions, the project is so conceived and designed so as to be of maximum possible utility and benefit. As it is an evolving process from the commencement of the implementation of the project till its conclusion, requiring efforts and commitment for improvement of performance at every level and stage, while permitting the project, the petitioner and the investor can be advised to keep in view the possibility of implementing the views/suggestions of the 3 experts and the Union in the execution of the project at the appropriate stages. The project therefore has to be given a green signal accordingly.

15. Hence, the petition is allowed subject to restricting the project management consultancy cost to a maximum of Rs.117.72 lakhs, the annual maintenance charges to a maximum of Rs.60 lakhs and the interest for debt servicing on 80% of the capital cost treated as debt to a maximum of 10% per annum, further subject to charging the petitioner only with the actual rate of interest being charged from the Energy Efficiency Services Limited by its financing institutions in respect of this programme. While it is open to the Energy Efficiency Services Limited to extend any further financial benefits/concessions to the petitioner as it may find feasible beyond the restrictions imposed herein, both the Energy Efficiency Services Limited and the

petitioner shall keep in view during the implementation of the project the suggestions made by the 3 experts and the Employees Union in the power sector concerning the possibility of making this project more efficient, economic and accountable.

16. The petitioner 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 the 3 experts and the Employees Union be forwarded to the Energy Efficiency Services Limited and the petitioner along with the copies of this order and the copies of this order shall also be sent to the 3 experts and the Union, who made their considered suggestions. This Commission also records with appreciation the in puts provided by the 3 experts and the Union for appropriate consideration of the issues involved. The petitioner shall bear its own costs in this petition.

This order is corrected and signed on this 5th day of June, 2015.

Sd/-
P. Rama Mohan
Member

Sd/-
Dr. P. Raghu
Member

Sd/-
Justice G. Bhavani Prasad
Chairman