CHAPTER – 3

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3.1. INTRODUCTION:

Andhra Pradesh is among the many states faced with the problem of rapid industrialization amidst power shortage. A number of studies have been made to examine the power scenario in various states of India and also in other counters. In order to identify the issues for the present study an attempt was made to review the existing literature on power sector economics.

3.2. REVIEW OF LITERATURE FROM DIFFERENT AUTHORS:

M. P. Parameswaran (1990) examined the performance of Kerala State Electricity Board (KSEB), and found that till 1983, when the state became energy deficient, Kerala exported electricity to other states. For two decades from 1962 the guiding philosophy of the Kerala State Electricity Board has been ‘abundant hydro-power/export of energy/profit’. This deterred the board from thinking about thermal power. Even today the state depends on the hydro-system for its electricity needs. However, realistic hydro-energy estimates fall far short of the projected electricity demand.

Anthone D. Sa, K.V. Narasimha Murthy, Amulya K. N. Reddy (1995) emphasized that the Indian power sector was opened to private participation in 1991 to hasten the increase in generating capacity and to improve the system efficiency as well. However although several plants were under construction till early 1999, generation commenced at private plants totally to the tune of than 2,000 MW. In contrast some state undertaking completed their projects even earlier than scheduled.
They also explained the process of inviting private participation in power sector and the problems experienced which seem to have affected the restructuring of the power sector including the formation of central and state electricity regulation commission. However some important problems have not been addressed. In addition to the generation capacity without corresponding improvement of the transmission and distribution facilities is likely to further undermine system efficiency. They also explained that investment in infrastructure has been a responsibility of state governments because intrinsically long gestation periods coupled with the relatively low rates of return from serving all categories of consumers had rendered such projects commercially unviable. Whether or not private participation can take on such undertaking remained to be seen, according to them.

**Partha Pratim (1996)** wrote on power sector in India Issues and challenges. They examined the various facilities and placed them in perspective physical and financial achievements in the power sector highlights which are presently engaging attention of policy makers in this sector.

**Pradip Baijal (1996)** mentions that several countries, both in the west and in the east, developed and underdeveloped, have introduced reforms in the power sector. In all cases, restructuring revolved around the economic and institutional organization of the sector and the advantages of introducing competition to raise the overall efficiency in the power sector including India. The reforms already initiated, at the federal level, have been the enactment of laws which enable setting up of regulatory commissions and state at the levels providing for separation of generation and transmission and distribution activities. The suggest recognize central and state transmission, utilities as government companies allow setting up of private transmission lines within the overall supervision of operation of the government transmission utility and provide for regulation of transmission by the central and state regulators.

**Amulya K. N. Reddy, and Sumithra (1997)** analyzed Karnataka power sector’s present situation and looked at the trend of electricity demand and supply, Karnataka
Electricity Board’s financial problems, the important policy and technical milestones in the development of Karnataka power sector and the winners and losers from the pattern of development of power sector and also chart the way forward. They expressed the view that Karnataka power sector uses they the irrigation pump sets package to hide many of its technical and commercial shortcomings, in particular its transmission and distribution losses. They also justified the invitation to private power with all associated benefits including in the case of foreign private power. According to the authors, what are required are not only realistic and small measures on the institutional demand and supply sides for the immediate and near term but also a vision of a sustainable future.

Douglas Woode and Devendra Kodwani (1997) examined the lessons that can be learned from the British privatization programme for India’s reforms since the reform of the energy sector is considered key economic objective in India. They felt that there is a necessity of strong political will to design the restructuring programme. They suggested that separating generation from bulk transmission and leaving the task of distribution to regional companies makes accountability for performance of these activities more transparent. They suggested the breaking up of those state electricity boards which were then serving large geographical areas. They also opined that a national grid company is essential to carry bulk power across the states. They also expressed the idea of restructuring and reviving of state electricity boards to make them attractive enough for the investors. They believed that private ownership, competition and constructive regulation create an incentive structure which will result in more consumer satisfaction in the long run. They also suggested the development of autonomous regulatory regimes on the lines of UK system.

Ninth Five Year Plan (1997-2002) suggests that ‘the most important cause of the problems being faced in the power sector is the arbitrary and non-remunerative tariff structure. Though the tariff is fixed and realized by SEBs, the State Governments have constantly interfered in tariff setting subsidizing SEBs for the losses arising out of state government desire to provide power at concessional rates to certain sections especially agriculture. Therefore, power supply to agriculture and domestic consumers is heavily
subsided. SEBs through cross subsidization of tariff from commercial and industrial consumers are able to covers only a part of this subsidy. The SEBs in the process, have been incurring heavy losses. If the SEBs were to continue on the same lines, their internal resource generation during the next ten years will be negative, being of the order of Rs. (-) 77000 crores. This raises serious doubts about the ability of the states to contribute their share to capacity addition during the Ninth Plan and thereafter. This highlights the importance of initiating power sector reforms at the earliest and the need for tariff rationalization.

**Madhav Godbole (1998)** has explained that only the privatization of distribution coupled with the setting up of effective regulatory bodies would provide a long term and lasting solution to the power sector imbroglio. Otherwise this dance of one step forward one step sideways and one step backwards will continue to create an illusion of forward movement. The views that the many unresolved problems faced by private power projects can be traced to the liberalization process having started at the wrong end namely power generating. He opined that it should commence with the restructuring of the state electricity boards. He felt that as in other areas of reform, here too we failed to address the most difficult issues in the hope that some day the difficulties will disappear.

**Anthone D'Sa, K. V. N. Murthy and Amulya K. N. Reddy (1999)** said that state undertakings have completed their projects of generation earlier than scheduled periods whereas private sector performance on this count is not much impressive. They felt that additions to generation capacities without corresponding improvements in the transmission and distribution systems may decrease the system efficiency. They also find that there are no efforts on the part of the government to reduce the commercial losses. They suggest that there should be greater transparency in decision making, greater public participation and greater spread of information on the issues of power sector liberalization.

**Arun Ghosh (1999)** felt that the argument about competition enhancing efficiency does not apply to the electricity industry. Its advocacy has been motivated. He
also felt that the policy of separating generation, transmission and distribution of power is not justified and there are strong technical reasons for keeping generation, transmission and distribution under one authority. He opined that the need of the hour is not bifurcation of the board in Andhra Pradesh, but a minor adjustment of tariff rates for agriculture and domestic consumers. He felt that the private sector is interested in acquiring existing low valued assets of state electricity board with a view to make large capital gains. In any case, the private sector would look for profitability rates comparable to what it can earn elsewhere which would be entirely inappropriate for infrastructural facilities. He felt that the new approach is disastrous for the entire range of rural consumers. According to him properly targeting of input subsidy of electricity is good for economy.

Sebastian Morris (2000) expressed that true reform and restructuring of any state electricity board in India would have to address the issue of an enormous leakage of revenue from the system. This would call for privatization of distribution, and change in the institutional mechanism, for the administration of the subsidy. Rather than the detailed regulatory mechanisms, which are being pushed by the central government and the regulators, light and price-cap type regulation would suit India better. A model plan for change is put forward for the Gujarat State Electricity Board, which is quite general and could easily apply to other SEBs. A complete separation of distribution from generation is neither necessary nor desirable, existing IPP contracts would have to be extinguished and methods to carry out the same are suggested. The danger of mounting regulatory risk, either shutting out private power production, or resulting in massive tariff increases is real.

T. L. Sankar, Usha Ramachandra (2000) wrote on electricity tariffs regulators. They examined that the Orissa Electricity Regulatory Commission. Taking the word regulator strictly they consider development of the power sector beyond its scope. They explained the principles of retail tariff fixation and critically examined the performance of the Orissa Electricity Regulatory Commission.
S. L. Rao (2000) wrote on electricity reform and regulation. He explained that independent regulations are new in India. Public opinion has to recognize its value. It will do so when it sees results in terms of improved quality, availability and in due course, reduced tariffs. Ultimately the independence of regulators can only be guaranteed by strong public opinion. While legislation will help, it is important that financial and human resources for regulatory commissions are kept out of the scope of government approval.

India Infrastructure Report (2000) makes it clear that at the root of chronic inability of SEBs to raise required investment is the uneconomic pricing of electricity. Absence of cost based economic principles in consumer category wise tariff design, uneconomic level of cross subsidies, reliance on historical rather than marginal costs and inability to cover the costs incurred are the main weaknesses in the tariff policy.

Prayas Energy Group (2000) states that, for several reasons, development of power sector in Maharastra till then was are much different from many other reforming states, Unions, financial impacts as well as strong public opinion against the Enron Project forced MSEB/GOM to look for ways of avoiding this liability. Only legal and techno-economic innovations as well as strong political will would succeed in relieving people of Maharashtra (and of other states too) from the unwarranted and high cost Enron Power. The Enron experience has also resulted in rethinking about other IPPs in the states though a couple of attempts were made by the GOM in the previous two to three years. The privatization and unbundling have remained on paper. This was due to several factors such as the large and unbearable burden of Enron PPA, strong opposition by unions and some public groups and relatively better financial situation of MSEB. The regulatory process in the state is also much different when compared to other states due to strong public intervention. The MERC had to handle several important cases such as amendments to PPA, subsidy by Govt, tariff revision and merit order dispatch. The regulatory process in the state has resulted in the substantial improvement in the transparency and public participation, but at the same time, several further actions are needed to ensure that the process becomes sustainable and effective in protecting and promoting public interest in the long term. One of the major fallouts of the Enron
Controversy has been lack of concerted efforts to improve the performances of MSEB. The measures have started yielding some results in term of reduction in errors and better estimation of theft and identification of high theft areas. The success of these efforts depended on co-operation of MSEB workers and engineers and strong public pressure to ensure the top management of MSEB is given free hand to deal sternly with erring staff and consumers alike and is made accountable for performance of MSEB.

M. Thimma Reddy (2000) expressed opinion that at present for all ills of the power sector, the same set of reforms is imposed on several other states. In other words a uniform system in being imposed on all states. There is no attempt to examine specific experiences of different states and tailor the changes needed according to the requirements of the particular state. The problems faced by the electricity establishment in Andhra Pradesh are not the same as that of Orissa. And yet one can see that not only the electricity reforms act passed in AP is a carbon copy of the Orissa Act, even the regulations formulated by the APERC are only a copy of the OERC.

In AP no other alternatives are explored to solve the problem facing APSEB. Even the recommendations made by Hiten Bhaya Committee were brushed aside to impose the World Bank recommendations. While taking up these reforms stake holders were not consulted. Until the recent tariff hike, public was not aware of the changes taking place in the power sector. There is neither participation nor transparency let alone accountability in the whole exercise.

The ongoing changes in the power sector demand two things: one is to comprehend process and its implications and another is to enable citizens to interact with the Regulatory Commission and participate in its proceedings effectively as this exercise is new to the people in their state.

Sudha Mahalingam (2000) expressed the view that the choice of Orissa for a pioneering electricity reform experiment seemed logical as state with low literacy rate low income levels and more importantly negligible consumption by agricultural sector
(less than) and hence lacking in a constituency which would effectively resist a drastic overhaul. Nevertheless for the World Bank, which wrote the reform script, the choice of Orissa came about more by accident than design. Around the mid-90’s the Bank-funded upper Indravati project in the state ran into rehabilitation problems. Unwilling to give up such a sizeable account the Bank hit upon the idea of converting the upper Indravati loan into a reform loan. It set aside 350 million US dollars to be disbursed to the Orissa electricity sector in phased manner linked to specific milestones in restructuring.

**Dr. Surindar Kumar (2000)** has explained that the process of power sector reform was initiated in India in the early 1990's. Haryana was the second state after Orissa to undertake power sector reforms under the overall supervision of the World Bank. The Haryana Electricity Reforms Act 1997 came into force with effect from 14 August 1998. Consequently a number of structural changes were undertaken. He examined the experience of electricity sector reform process in the context of Haryana State.

**Abey George (2000)** expressed the views that several factors namely high levels of transmission and distribution losses, increasing domestic consumption by a few, subsidized supply electricity to the industrial and the tourism sector, decreasing capacity of reservoirs, the unreliability of Monsoons etc., have led to a very vulnerable electricity generation system in Kerala. The KSEB’s answers to this very complex issue were rather simple viz., in the form of fossil fuel based electricity generation system. Three of these are already operational and another five are in the pipeline including both public and private sector undertakings.

The state has therefore been looking for options to meet the demand for power from non-hydro sources such as coal, diesel etc. The statistics indicate the growing shift towards non-hydro options. However, the search for non-hydro options is not going to be very smooth, on the following grounds. The coal bearing regions being situated far from the state, it may be not economically viable to operate coal-based systems. It is not easy to find locations for coal based thousand MW power stations anywhere near the sensitive
coastline or with in the densely populated midlands. However the state has decided to go in for non-hydro option. By 2002 AD, as much as 50% of the states electricity needs would be met from non-hydro sources.

**Rama Chandra (2000)** has expressed the view that geographical, social, economic and cultural factors of region have a bearing on its power consumption pattern. The case of Kerala with regard to reform in the power sector reflects the positive as well as negative characteristic of a society with a rural production base a carbonized cultural. The lesson to be learned is that any reform would be welcomed only if it is preceded by open discussion and debate among the public. Any thing imposed from above will be opposed even if some of its implications might be beneficial to the public. KSEB appears to be resorting to this new process of reform slowly but steadily enlisting consumers’ support for it. People will cooperate if they are convinced that they will be benefited not just by promise, the credibility of an institution, be it SEB or SERVC should be established beyond doubt, if people are to accept a reform package. What is true of Kerala is this respect can be true of other states as well.

**Jenina Joy Chavez- Malauna (2000)** expressed view that the power industry is the most scrutinized industry in the world today. Sweeping reforms are being pushed in many countries even as California one of the earliest states to adopt similar reforms comes under attack for its supposed failure to protect consumers and ensure stable power supply. Reforms of the power industry have increasingly been used as the basis for the release of funds by multilateral development banks and international financial institutions.

In the Philippines, power reform bill awaits finalization by the bicameral conference committee. The bill has been in deliberation for the five years, while a wide segment of civil society has been involved in drafting the bill. Their key concerns have been kept aside or inadequately addressed. Beyond doubt this was due to the successful and powerful lobby of business with vested interests in the passage of a version of the bill.
The strategy paper on infrastructure of the Government of Andhra Pradesh (2001) reflected the view that vision 2020 sets challenging targets for economic growth. To achieve these targets, Andhra Pradesh needs a new and comprehensive growth agenda. To attract private investment the state will start need to create the conditions that will allow private investor to successfully participate in its development. This involves building infrastructure and reforming regulation to create a conductive environment of business. Hence an infrastructure policy should be framed. The infrastructure policy should be addressed to different sectors. Among them the sectors of power generation, transmission and hydropower projects are also included.

The strategy paper on power of the Government of Andhra Pradesh (2001) presented various aspects of power sector in Andhra Pradesh. The paper consists of a detailed presentation of year wise revenues, expenses, operating surpluses and subsidies of electricity board and Andhra Pradesh Transco. The paper also focused on consumption, tariff of power and on energy balances. This paper discusses various issues like generation, private sector participation in generation projects, promotion of non conventional energy transmission and distribution in the state. The paper also discussed power sector reforms and emphasized that the ultimate goal of the reform process is to ensure that power will be supplied under the most efficient conditions in terms of cost and quality to support the economic development of the state and so that the power sector ceases to be a burden on the state’s budget and eventually becomes a net generator of resources. The paper also focused attention on the results of reform programme and said that Vision 2020 document of the government envisages the supply of world class quality power at competitive prices, reduction of energy losses to 10 percent and total elimination of commercial losses by 2020. The objective is to reach a per capita consumption level of over 2000 KWH by 2020.

K. P. Kannan., N. Viyamohan Pillai (2001) wrote on plight of power sector in India. They explained the significant aspects of inefficiency costs involved in SEBs functioning. They examine physical performances and financial performance. The physical performance focuses on such aspects as technical efficiency, transmission and
distribution losses. There is possible underestimation of institutional and organizational inefficiency. The financial performances focusing on performance of SEBs are examined.

**K. Dubash and S.C. Rajan (2001)** felt that three steps including de-metering of agricultural consumption and giving subsidies, signing independent power producers contract with major fiscal implications and implementing Orissa model on the national scale made the power sector policy in India to be locked into adverse arrangement. They criticized those international donor agencies that are largely unaccountable to the Indian Public, playing crucial role in shaping the future of the power sector. They explained the process of power reforms in India by dividing the entire period into four overlapping but distinct periods. They are pre 1991, and 1991 independent power producer policy and its aftermath; the World Bank led restructuring policy that began to be implemented around 1993 in Orissa and the period shortly after 1998. In total they provide an analysis of the social and political context in which power sector reforms have taken place in India.

**Anjula Gurtoo and Rahul Pandey (2001)** examined the past problems of power sector and initial phase of reforms. They said the Uttar Pradesh State Electricity Board’s poor financial condition and growing power shortages necessitated the radical reforms in the state power sector. They said that the reforms model being implemented is based on incomplete diagnosis of the Board’s past problems. High cost of power purchase, arbitrary depreciation norms, misrepresentation of agricultural consumption and over reporting of impact of subsidy, were as important reasons as were poor maintenance, poor productivity, high transmission and distribution losses, poor billing efficiency and high subsidy to agriculture, in affecting the financial performance of the Board. They opined that besides lack of recognition of the former set of causes, the reforms process is ridden with other major pitfalls like shortage-prone gaps in the proposed model and adhoc handling of its implementation. It appeared to them that the proposed reforms model appears to have been conceived out of desperation to escape from financial burden imposed by past mistakes, rather than out of a conscious reorientation of past policies, structures and systems in keeping with international changes in technological and competitive environment.
B. Jones and Tenenbaum (2002) suggested that we should not rely on replicating the experiences of other countries by blindly imitating them. They also said that the model of reforms in the power sector recommended by the World Bank too needs to be examined critically in the Indian context. They expressed the view that a number of doubts were raised about the practicability, feasibility or even advisability of privatization of power distribution on all India basis stating the instance of privatization of distribution in Orissa. He also opined that guarantees by state governments; counter-guarantees by the Centre and escrow accounts will not create or sustain investor confidence which is key to power sector reforms. They stressed that state governments have to play critical role in these reforms and also felt that some financial steps including securitization of dues of state electricity boards to central PSUs or writing off loans given by the state government to state electricity boards or converting them into equity are not real solutions to the actual problems.

Madhav Godbole (2002) felt that rationalization of tariffs is the most important requirement for viability of power sector. He opined that an important step taken in this direction is enactment of legislation for the setting up of the electricity regulatory commissions (ERCs at the centre and in the states). But the experience of the functioning of the ERCs so far is far from satisfactory. He pointed out that it was time the ERCs made full use of the penal powers available under the concerned legislation since viability and future of the power sector depends on them.

Yasushi Suzuki (2002) attempted to throw light on indigenous structure as well as foreign aid policy towards India’s electricity power development. He concluded that Japan’s official development assistance should be carefully monitored taking into consideration the input output relationships in the unique rent seeking process in India which is characterized by the political power among the dominant proprietary classes that prevents politically weak tax payers, who ought to criticize and oppose this inefficient structure, from organizing the political powers against the classes.
**Joel Ruet (2002)** wrote that improvement in the Plant Load factor (PLF) and reduction in the non technical losses at least worth present tariffs can increase 17 percent energy level. These will enable us not to go in for unpopular measures such as tariff increase. He also expressed the view that these actions are not done because of the reasons that state electricity boards are operated based on self enforcing political executive instruction, absence of focus on costs and budgets in actual decision making, absence of properly designed information system.

**Severin Borenstein (2002)** felt that restructuring of electricity markets is a more difficult task than that of airlines, trucking natural gas and oil due to unusual combination of extremely inelastic supply and extremely inelastic demand. He says that real time retail pricing and long term contracting can help to control the soaring whole sale prices and to solve some problems to create a stable, well functioning electricity market. He suggested that the difficulties which are the outcomes from the experiments of California, New York, Pennsylvania, England and Norway should not be interpreted as a failure of restructuring but also a part of learning process towards an electric power industry that is still likely to serve customers better than the approaches of the past.

**K. Parikh and S. Parikh (2002)** discussed the state of the power sector and experiences of power sector reforms in India. They also suggested some means to enable state electricity boards to control expenditures.

**Academic Foundations (2002)** covers blue print for power sector development in India, Vision 2020, power for all, distribution policy committee report of Ministry of Power, Government of India and the reports of expert group on settlement of state electricity boards dues and report of the expert group on restructuring of state electricity boards both headed by Montek S. Ahluwalia and Electricity Bill 2001. The blueprint document brings out problems as well as strategies and initiatives to resolve them for accelerated development of power sector. Distribution policy committee report stressed the importance of distribution reforms for making the electricity sector self sustaining.
M. R. Srinivasan (2002) recommends that state electricity boards should be reformed into bankable, commercially and professionally run corporate enterprises, free from political and bureaucratic interference. He further opined that it is a better solution than to create conditions conducive for the private sector to take on the task of further expansion of capacity he stressed that the objective of power for all can be achieved with the help of funds provided from within and from outside India.

Tenth Five Year Plan (2002-2007) highlighted that the power sector has been suffering from serious problems, which were identified as early as ten-year ago. However, no corrective action was taken and the result is that the power sector faces an imminent crisis in almost all states. No state electricity board (SEB) was recovering the full cost of power supplied, with the result that they made continuous losses on their total operations.

S. L. Rao (2003) expressed the views that the Electricity Bill, 2001 was intended to enable a major restructuring of the electricity system in India. It would have been better if the government had amended the existing three Acts relating to electricity three years ago and introduced essential changes. The bill needs to be passed speedily. This is despite its many shortcomings which can be addressed through later amendments after the bill is passed.

The cost of supply model may become an important tool for tariff fixation and identification of subsidy/cross subsidy. Section 61(d) of the Electricity Act 2003 says that the consumers should pay for the use of electricity in a reasonable manner based on average cost of supply. Section 61(g) of the Electricity Act 2003, shows that the tariff progressively reflects the cost of supply of electricity and also reduces and eliminates cross subsidies within the period to be specified by the appropriate commissions. Section 62(3) dictates that the commission shall not show any undue preference to any consumer of electricity but may differentiate according to the consumers load factor, power factor, voltage, total consumption of electricity during any specified period or the time at which
the supply is required or geographical position of an area, the nature of supply and the purpose for which the supply is required.

Madhav Godbole (2003) opined that when the bill which was in due course enacted as the Electricity Act 2003, was under consideration of the standing committee of parliament, a number of issues, which deserved closer examination had been highlighted. Several of their issues remain unattended. The Act, which is a half way house, also raises a number of new issues which are likely to become serious problems in the coming years.

V. Ranganathan (2004) has expressed that the Electricity Act 2003 opens the door to immense possibilities in unleashing competition and trading, but at the same time opens a new area of policy risk, which it is supposed to mitigate. The Act has an enabling framework to introduce competition in generation privatization in distribution, but the homework in terms of addressing transition issue has been left undone.

Madhav Godbole (2004) has expressed that several state governments, including Maharashtra have announced free power for farmers. In this rush towards competitive populism, the past experience of states that adopted the suicidal policy of giving free power for agriculture appears to have been lost sight completely. Moreover, considering that subsidies for agricultural consumption largely benefit big farmers and other well-to-do people, the subsidization of these sections by common taxpayers militates against all cannons of the welfare state.

Sudhir Kumar Kathivar (2005) has expressed that a study of a primarily agricultural electricity distribution subdivision in South Rajasthan reveals that distribution losses are not only very high, but that they are mostly commercial in nature, illegal hooking in both the domestic and agriculture categories is rampant and forms a large proportion of unaccounted energy. The reasons for this can be traced back to factors linked to the performance of the utility and the wider socio-political environment. It will not be possible to bring about improvements in the current set-up through primarily
technological measure. Instead reform packages must adopt a framework for intervention that encompassed technical commercial, social and institutional aspects of the problem.

R. Raji Kumar (2005) say that during the past 14 years the ministry of power has produced several policy documents and issued numerous amendments but it has failed to make any significant improvements in the power sector. The new policy is another example that the ministry is not yet ready to learn from its own mistakes.

Sumir Lal (2005) has presented that case study of the power sector in India. The weakness of the Indian power reforms programme has been that while it has focused on sorting out distortions in the relationship between the owner government and power utilities through the unbundling and regulation model, it has failed to carry credible assurances that this will improve the equation between the reformed utilities and their consumers.

Jaskiran Kaur Mathum, Dhiraj Mathur (2005) expressed that are commercially unviable and is responsible for the financial mess state electricity boards are in. They also examined rural electrification from a socio developmental perspective and argued that the direct and indirect benefits of rural electrification in reducing the burden on women, its positive impact on health, education and farm income, justifies the expenses of network expansion for universal access. They also advocated network uses of electricity as this would enhance these benefits, have a beneficial effect on the environment, increase the viability of rural electrification and result in savings on household (total) energy expenditure.

3.3. CONCLUSION:

After reviewing a number of books, journals and periodicals, it has been noticed that a systematic study based on secondary data is not available for Andhra Pradesh. Hence the present study is undertaken primarily to bridge the gap between data availability and academic writing. Thus, it is expected that this thesis will add to the
exciting literature on electric power sector in general and Andhra Pradesh electric power in particular.