Chapter - 1

INTRODUCTION AND RESEARCH DESIGN

1.1 INTRODUCTION :

Energy is widely accepted today as an important ingredient for socio-economic development and a key input for poverty alleviation. The per capita energy consumption is a very good indicator of overall development of any region. Greater consumption of energy is a manifestation of higher regional development in terms of GDP and GNP (Lekhi, 2000). Electricity is the most convenient and easy form of energy, which constitutes a critical input for achieving rural development and mass employment. That is why, electricity is very often referred to as, the barometer of economic development. It has the immense potentiality to meet the growing need of agriculture as well as the industry of any State. For inclusive development, both the industry and agriculture must grow side by side. Poor and developing States will remain underdeveloped, unless and until they undertake necessary transitory steps from traditional to modern and efficient energy systems. The growth of our economy and the standard of living of our people are ultimately determined by the quantum of electricity consumed.

The economy of Assam continues to be predominantly agrarian. As per 2001 Census Report (Economic Survey, Assam 2008-09) the dependence of rural labour force on agriculture and allied activities was nearly 53%. However, the production of total foodgrains is quite insufficient to boost the economy of Assam. The overall
socio-economic development of Assam is determined to a great extent by the growth of her rural economy. Unfortunately, the agricultural sector which is the dominant economic activity of Assam is at present characterized by poor irrigation facilities and old farming mechanism, which is also responsible for low productivity of our principal crops. Electrification has its own role for the overall increase of our agricultural output by making possible irrigation through energisation of pump sets coupled with associated modern technologies. Moreover, the agro-based industries of Assam also depends considerably upon sufficient power generation. Electrification can also accelerate the development of micro enterprises such as spice, grain milling, agro horticulture processing etc. in Assam. (Sen, 2006). Thus, electricity is an essential ingredient of economic development and is widely required for industrial as well as domestic uses. Today, no state can aspire to be modern and advanced without the easy availability of quality electric power for all. It is the most crucial infrastructure for growth and development. It can bring tangible and intangible benefits to our society. Electrification has the immense potentiality to fulfil the increasing needs of agriculture, industry and households. The pace of growth and development of the economy depends very much upon it.

In India as in all developing countries, power generation and distribution was a government monopoly. Since the middle of the Eighties, many developing countries started opening up the generation and distribution of electricity to the private sector basically due to lack of financial resources. Moreover, the World Bank and other international financial institutions which were approached for funds forced the Governments of developing countries to bring in private producers into the power sector in order to introduce competition. Since the Narasimha Rao Government announced its new economic policy, the country witnessed a series of most acrimonious debates on various aspects of the power sector. The quantum of return on equity, the counter guarantees to be given by the Government and the project (2)
selection process — all have been the subjects of debate. This has resulted in delay in signing of Power Purchase Agreements (PPAs), guarantees and counter-guarantees by the Central Government, environmental clearances, matching transmission networks and legally enforceable contracts. The utter incompetency of the top bureaucracy in the Power Sector and the unnecessary interference by NGOs have delayed the implementation of new power policy. It is in this background that Government of India like other developing countries introduced the new power policy in India in 1992. (Datt and Sundharam, 2006).

Power development in India after the independence has been very significant. The total installed generating capacity from all sources was only 2,300 MW in 1950 increases to 1,53,694.09 MW in October, 2009 (Indian Journal of Power and River Valley Development, POWER – 2009, Annual Review). Despite this tremendous increase, India has been facing chronic power shortage since 1950–51. The energy shortage in India was as high as 11.1% during 2008–09. In order to reduce the demand – supply deficit of power, the Government of India has adopted the following three measures. Firstly, the Government has been trying to improve the productivity of the existing investments in the power sector. Secondly, the Government is trying to facilitate the restructuring and reform in the State Electricity Boards (SEBs) and lastly, the Government is encouraging private investments in the future developmental programmes in the power sector.

The Government of India under the aegis of Ministry of Power has launched an ambitious scheme called the Accelerated Power Development and Reform Programme (APDRP) in 2000 to reform the distribution segment of the power sector. The major objectives are to achieve reduction of T and D losses, improve reliability and quality of power, increase net power availability, raising consumer satisfaction besides improving revenue realization for SEBs. Under the scheme, the Ministry of Power, Government of India is providing special assistance to
various States for developing a large number of Circles as 'Centres of Excellence.' The funding mechanism is 100% funding by Ministry of Power, Government of India with 90% as grant and 10% as loan basis (Eapen, 2005).

The critical problem area in the power sector is the poor performance of the SEBs. The Government of India is encouraging State Governments to sign Memorandum of Understanding (MoU) with it in order to address the issues affecting each SEB and to undertake reform and restructuring in a time bound manner. So far 20 State Governments have signed the MoU while some other States are also in the process of doing so. With the policy of encouraging private sector participation in generation, transmission and distribution and the objective of distancing the regulatory responsibilities from the Government to the Regulatory Commissions, the Government of India introduced the Electricity Bill, 2001 in August 2001. The Electricity Bill, 2001 replaced three Laws, namely, the Indian Electricity Act, 1910, the Electricity (Supply) Act, 1948 and the Electricity Regulatory Commissions Act, 1998. The Bill has progressive features and endeavours to strike the right balance under the present realities of the power sector in India. It gives the States enough flexibility to develop their power sector in the manner they consider appropriate for them. The Electricity Bill, 2001 has been finalized after extensive discussions and consultations with the states and all other stake holders and experts. Under this Act, the Ministry of Power, Government of India has prepared a National Electricity Policy (NEP) in consultation with the various state Governments and formation of the State Electricity Regulatory Commission (SERC) is a mandatory requirement. Already 19 States including Assam have constituted the SERC. The Government of India under the reform process is also encouraging private investments both Indian and foreign into the power generation business through the concept of Independent Power Producers (IPPs). Under the scheme, the Government of India is also offering a number of incentives to the private sector (The Electricity Act, 2003,
In this connection, it may be mentioned that the new Power Policy of the Government of India was never intended to supplant the power sector but to marginally support the power sector. However, the power sector Reforms in India till now may be regarded as relatively slow. It is mainly due to the opposition from the various trade unions in the power sector, the political parties, the poor and tardy manner in which it has been implemented by the Government in power and the top generalist bureaucrats. Expanding the supply of electricity to meet the growing demand of ever increasing urbanised Indian economy without incurring unacceptable costs, is a major challenge today.

1.2. CONCEPTUAL FRAMEWORK:

For every organization, a formal structure or a set-up is necessary upon which the whole organization is built. The existence of a structure is a must for every enterprise – large or small. In simple words, a structure may be defined as the pattern in which various parts or components of an organization are interrelated or interconnected. Structure establishes the relationships among various positions or posts or individuals of an organization. In other words, structure is the relationship among various functions or activities of an organization in an established manner. The structure may be well-planned, ill-planned or even unplanned. To have a structure is not a choice of the organiser. The choice is only of the form and pattern of the organization. A planned organization structure may prove to be very useful while meeting the requirements of an organization or facing challenges before an enterprise. Otherwise, the structure will merely become a make-shift arrangement where the management is rendered to be highly ineffective. Structure affects every one in the organization. A good structure facilitates management and the operations of the enterprise. It encourages stability and growth. It helps the organization in achieving
the common goals.

Every organization has some definite goals or objectives and the structure is
designed in such a manner as to serve as an instrument to help in the accomplishment
of these objectives. The degree in which, an organization will be able to achieve its
goals is determined to a great extent by its structure. The structure is developed to
give a concrete shape to some tentative ideas or thoughts of the organisers at the
initial stage. At the very beginning, the structure may be a very simple one but it
becomes complex afterwards as the organization expands. The term ‘structure’ is
highly abstract and illusive. However, its existence is real and affects everyone in
the organisation. Sound organisation structure offers a number of benefits\(^1\) to an
enterprise.

\(^1\) It helps in the maintenance of good communication between the management
and the employees.

- It helps in bringing effective delegation and decentralization in the
organisation.

- It stimulates independent, creative thinking and initiative on the part of the
employees.

- It brings adequate and effective control in the organisation.

- It helps effective training and executive development in the organisation.

- It makes possible optimum use of human efforts in the organisation
through specialisation. Because of the detailed job specifications, right persons
are placed in the right position at the right time on the basis of the knowledge, skill
and experience.

- It brings coordination in the activities of various individuals, departments
and groups in the organisation. This is possible as there exists structural relationship
in the organisation, etc.

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However, with the passage of time, the existing structure of an undertaking may become ineffective and poor. Poor and ineffective structure only brings poor results. When duties and responsibilities are not well defined, the managers get a chance to delay the matters unnecessarily and delegation of authority does not become effective. As a consequence, the organisation incurs high costs and the return on investment continuously diminishes. This may also cause overload of work resulting from inadequate delegation or improper or incomplete job specification. Other disadvantages of poor organisation structure are delay in action, wrong actions, failure to act, lack of quality effort, wastage of effort, overlapping of duties, inadequate or excessive supervision, disproportionate skills, misunderstanding of relationships etc. In order to avoid all such ill consequences, sometimes restructuring of undertakings may become highly essential. Restructuring may even sail out an enterprise from its possible extinction.

Restructuring is a very common term and it is being used in different contexts now-a-days. At the macro level or at the global level or even at the country level, the economic restructuring means the reform process being adopted to make structural adjustments in the economy of a country, such as reduction or phasing out of subsidies, dismantling of price control, reduction of quantitative restrictions etc. National Governments of various countries in the world have implemented structural adjustment programmes to stabilize and reorient their economies in order to face the challenges of development. At the micro level, restructuring has the following connotations, viz ;

1. Corporate or Business Level Restructuring.
3. Organisational Restructuring.

In case of Corporate or Business Level Restructuring, changes or adjustments
are adopted in the composition of a firm’s set of business in order to make the firm a more profitable or successful enterprise. When a firm adopts corporate or business restructuring, it uses combination strategies. It may lead the firm to acquire some business on the one hand and to divest some others on the other hand. Broadly speaking, such restructuring may take the form of simple association, federation or consolidation. Business restructuring may bring economies of large-scale business to the organisation with greater stability and continuity of life. Under Financial Restructuring, changes are accommodated in raising of funds, equity pattern, equity holdings, debt servicing schedule, transferability of interests and the like. However, financial restructuring is mainly concerned with the raising of capital, taxation liability and cost of formation. Though financial factors are important and influence the decision of financial restructuring but non-financial considerations are also important. The factors like ease in formation, level of ownership control, Government regulations etc. are also taken into account while selecting a particular structure. On the other hand, Organisational Restructuring, as the name suggests means bringing changes or innovations in the structure of the organisation. Organisational restructuring may involve reduction in the existing number of employees or downsizing, re-designing of positions, altering reporting relationships, transferring or reassigning the employees to jobs in other units, offering Voluntary Retirement Scheme (VRS) and so on. However, the enterprise should be very careful while going for downsizing plan as it may lead to the following adverse affects in the organisation (Gupta and Joshi, 2008):

- Downsizing may create a feeling of insecurity among the workers working in the existing enterprise. The employees may suffer from a very low morale.
- Downsizing may erode the skill base of the organisation as a result of competent employees leaving the organisation.
- A feeling of job insecurity will adversely affect the performance level of the
employees in the organisation. As a result, the implementation of performance improvement practices may become highly difficult.

Today, most of the old organisations are facing problems while managing their enterprises because of changing business environment. Almost all the elements of business environment viz. social, cultural, economical, technological as well as political are continuously changing. As a result, the objectives, scope and even the nature of business enterprises have undergone a tremendous change. With the technological developments, automation and computerisation of the organisations are taking place rapidly thereby making traditional jobs and skills obsolete. In the competitive world of today, organisation with old technology and thinking will not be able to survive for long. Moreover, rising of multinational corporations is posing new challenges before the existing old undertakings. In near future, organisations will be required not only to make use of advanced technology but also to take into consideration the psychological needs of the employees. In the traditional bureaucratic model, very little importance is given to the psycho-social needs of the workforce. Further, the organisation structure or model has to be redesigned according to 'democratic humanistic' approach. The redesigned organisation structures should concentrate on performance related compensation, goal oriented performance appraisal, development oriented training system, management by objectives, team building participative management and such other professional techniques. Changing work environment will require increased emphasis on individuals. Not only the organisation needs restructuring, but individual job has to be redesigned in order to provide challenge to the job. The organisation needs to develop a work culture conducive to its growth consisting of rigorous timings, strict discipline, precise division of labour, impersonal styles of supervision, self motivation, effective control and so on. Factors which are primely responsible for bringing organisational restructuring may include the following:
Restructuring strategies are adopted by the firms either to deal with the internal problems they are facing or to create a more profitable enterprise. Looking at the contemporary Indian context, it is found that most of the companies are in the threshold of a tremendous change. Broadly speaking, the older companies or enterprises are adopting restructuring as a strategic choice for their survival or revival. In this respect, it may be mentioned here that in order to rescue Assam State Transport Corporation (ASTC) from collapsing, the Government of Assam took the path of restructuring the organisation in 2001 (Agarwala, 2008). Accordingly, the Self Employment Scheme of ASTC, 2001 was implemented in the State. Under the new organisational set-up, private bus owners are allowed to operate their buses on the ASTC routes under the banner of ASTC after fulfilment of certain specified terms and conditions. After restructuring, ASTC management undertook a number of revival plans and schemes, which gave visible results. It is now found that a substantial number of private buses are operating under the banner of ASTC.
It is indeed a commendable performance on the part of the Department of Transport, Government of Assam as well as ASTC management, when a loss-making public undertaking is being converted into a successful service organisation after undergoing suitable changes in organisational and operational set-up. The splendid success of the entire restructuring plan has resulted in converting ASTC solvent to some extent. However, the newer companies set up in the 1990s and in the new millennium may not find much necessity to go for restructuring. But this does not mean that these companies can afford to be complacent for a long time. In the changing world, organisations are to face newer challenges and hence restructuring, redesigning would become an ongoing process.

1.3 GENESIS OF THE PROBLEM:

Power shortage in our State has a crippling effect on economic activity in all the core sectors, notably, agriculture, industry and other related spheres. The shortage of power supply has lowered industrial and agricultural production and tardy progress in this vital sector has inevitably slowed down the economic growth in Assam. In order to remove the inefficiencies in the operation of ASEB, the Government of Assam has initiated the reform process along with the support of the Ministry of Power, Government of India and the Asian Development Bank (ADB). The Government of Assam has taken up the Assam Power Sector Development Programme since December, 2003. As a part of the reform process, an amount of US $ 250 million has been sanctioned by the Asian Development Bank (ADB) as a loan to the ASEB, consisting of US $ 150 million as policy loan and US $ 100 million as project loan. In pursuance of the Indian Electricity Act, 2003 and as a part of Assam Power Sector Development Programme, the Government of Assam has initiated the process of unbundling of the ASEB into five (5) Government Companies.
These five companies\(^2\) have been incorporated under the Companies Act, 1956.

The Upper Assam Electricity Distribution Company Ltd. mainly covers Dibrugarh, Tinsukia, Sivasagar, Lakhimpur and Jorhat districts. The Central Assam Electricity Distribution Company Ltd. mainly covers Karbi Anglong, North Cachar, Cachar, Nagaon and Sonitpur districts. Similarly, the Lower Assam Electricity Distribution Company Ltd. includes Kokrajhar, Bongaigaon, Mangaldoi, Barpeta and the undivided Kamrup districts. The Ministry of Power, Government of India has also provided assistance to the Government of Assam for developing a large number of circles as, 'Centers of Excellence' under the Accelerated Power Development and Reform Programme (APDRP). In the first phase Guwahati, Dibrugarh and Jorhat Electrical Circle II have been identified under APDRP. Subsequently, in the second phase, nine other Circles, viz; Cachar, Bongaigaon, Guwahati-1, Nagaon, Sivasagar, Tezpur, Mangaldoi, Kokrajhar and Rangia have been approved under APDRP scheme at a total cost of Rs. 408.54 Crores. The schemes are to be implemented by ASEB. National Productivity Council, under the Ministry of Industry, Government of India has been appointed as Adviser-cum-Consultant by the Ministry of Power for the three identified circles while M/S, PGCIL (M/s Power Grid Corporation of India Ltd.) has been retained as the Supervisory Consultant for the entire works (ASEB, 2004-05).

The Assam Electricity Regulatory Commission (AERC) (set-up on 28th February, 2001) has already started functioning under the Central Electricity Regulatory

\(^2\) These five companies are:

1. The Assam Power Generation Corporation Ltd.
2. The Assam Electricity Grid Corporation Ltd.
3. The Upper Assam Electricity Distribution Company Ltd.
4. The Central Assam Electricity Distribution Company Ltd.
5. The Lower Assam Electricity Distribution Company Ltd.

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Commission (CERC). Transfer of men, materials, equipments and assets have already been completed. The State is expected to receive quality power and efficient services from the new entities in the power sector under the reform process in near future.

More than eight (2003–2011) years have already passed since the reform process started in the power sector in Assam. It is felt that a study on the impact of power sector reforms and restructuring is the need of the hour to judge the effectiveness of the ongoing reform programmes in Assam. It is expected that the study would give a direction to the reform process of the Assam’s power sector.

1.4 REVIEW OF LITERATURE:

Electricity plays a key role in the economic development of any country. It is an essential input for the production of almost all goods and services besides being an important fuel source consumed by all households. Considering the importance of power in our all-round development, it has been a central research theme for social scientists for a long time. Emphasizing the significance of electrification Lenin said, “Communism is Soviet Power plus the electrification of the whole country” (Bose, 1993).

The crucial problem area in the power sector is the poor performance of the State Electricity Boards (SEBs), which generate and distribute power, set power tariffs and collect revenues from the users. Each SEB operates as a State monopoly combining functions relating to generation, transmission and distribution of electricity. A serious weakness over the last five decades is the sub-optimal capacity utilization of their thermal generation units and high transmission and distribution (T and D) losses. At present, the Electricity Organisations in India are financially not on sound footing and need to be strengthened by all means. The book ‘Administration and Management of Electricity in India’ written by M. M. Goel, Chief Engineer, Haryana

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State Electricity Board (1987) has a detailed discussion on administration and management of power sector in India. Serious efforts have been devoted to study the Electricity (Supply) Act, 1948 which provides the basis for creation of State Electricity Boards in India. Other Acts/Rules viz; Indian Electricity Act, 1910, Indian Electricity Rules, 1956 (framed under Section 37 of 1910 Act) and the Indian Telegraph Act, 1885, Electricity Legislation in India have been thoroughly discussed in the book. The author covered the different aspects of Power Industry in India in detail. Besides him, the works of A. R. Starr (1956), H. V. Dayal (1976), R. K. Pachauri (1980), Cyril De Souza (1982) and B. L. Paliwal (1985) are worth mentioning.

Sarmila Bose in her book; 'Money, Energy and Welfare' (1993) examined the rural electrification in India in the context of technological transformation of rural economies in the developing countries. The author has demonstrated the conceptual weakness of the traditional paradigm of the rural energy sector and replaces it with a new conceptual framework based on the use and non-use of money. This is followed by an examination of rural electrification policy at three levels: first, at the level of state, next, at the level of household and finally, at the level of the individual. It is noted that, "The potential impact of rural electrification on an underdeveloped, largely agrarian economy is widely acknowledged to be nothing short of revolutionary. However, the transformation has not always materialized. There is considerable evidence that in actual practice, a deep gulf often exists between the potential and the realized, in terms of the actual electrification of households and consequently the socio-economic benefits that are expected to flow from it." The book also investigates whether rural women have been benefited from household electrification as claimed by policy rhetoric in India and other countries. Significant recommendations have been offered for each level for improved performance. The book is of special interest to scholars and specialists in the energy sector and rural development and to the general readers interested in public policy.
In the book 'India 2020 – A Vision for the New Millennium' (1998) former President of India, A. P. J. Abdul Kalam along with Y. S. Rajan have explained the importance of electrification and also advocated 'quality electric power for all.' In this book, a comparison has been made regarding our performance in the power sector in India with that of China and favoured positive reforms in this sector. It is mentioned that, "Let us look at China: in the 1950s India and China had roughly the same installed power capacity. Now, China has about three times more installed capacity than India. Further, China has been consistently adding a capacity of about 15,000 MW a year for several years now whereas our capacity is growing at a rate of 2500 M.W. per year." The authors mentioned that lack of funds is not the only factor responsible for slow growth of power generation in India. Our attitude has to be changed and the real willingness for attainment of success has to be developed. In this book, sincere efforts have been made to ignite our young Indian minds for transforming our 'developing India' into a 'developed India.'

Rajib Kumar Maheshwari and Ashish Maheshwari (2003) in the book 'Infrastructure Project Finance - An Indian Perspective' examined the progress made in the power sector in our country in the post-reform period. The book has a comprehensive analysis of power sector financing. Examining the slow pace of reform in India, it is suggested that "At the same time efficiency and performance level which are very slow at present will have to be substantially improved, manpower rationalized, losses cut down and costs reduced so that in the long run the tariffs come down and become comparable to international levels. All this calls for concerted action at the levels and requires major reforms in the state power sector which have now become inevitable. In fact, the future growth in the power sector now mainly depends upon the success of state power sector reforms." Besides power sector, two other important sectors of infrastructure viz.; telecom and transport have also been analyzed in detail in the book. Sincere attempts have been made to critically
evaluate the various sources of financing infrastructure development in our country.

Y. Chandra Sekhar in his book, 'Indian Power Sector Reforms – Lessons and Experiences' (2004) tried to provide the readers with an overview of the Indian power sector reforms and its future course of action. The book consists of two parts. In the first section, efforts have been made to draw important lessons that the Policy Makers have to learn from the earlier reforms and identify the loopholes of the first generation reforms initiatives. As the similar reform measures have been undertaken in the developed and other developing nations, the book attempts to draw parallel with other countries and highlight the important issues that the Indian power sector should take into consideration before taking up further reforms. The second section deals specifically with the reform experiences in Andhra Pradesh, Orissa and Maharashtra. The papers in this section concentrate on the various issues pertaining to power sector reforms in details in these three States and offer insights into the achievements and shortfalls of our reform initiatives. Thus, the book attempts to highlight the key aspects of the decade of reforms, changes in electricity regulation and the likely future course of action that can help the Indian power industry to achieve the objective of energy sustainability.

In the book ‘Power Sector Reforms – Indian Experience’ Leena Mary Eapen (2005) has provided a comprehensive account of Indian power sector and its reforms. The book highlights the reform initiatives undertaken by the power sector in India, its impact and the necessary steps needed to make the sector more efficient. The book consists of three sections. Section-I gives the history of Indian power sector, its development after independence, factors that triggered the reforms in 1990s and the impact of those reforms. Section-II mainly focusses on implementation aspects. It discusses the status of the power sector with special reference to energy deficit, power generation, alternative sources of power generation etc. It also highlights the role of governments, private players, their achievements
and the need for adopting new measures, future plans etc. In Section-III, some suggestions have been offered for a better and effective implementation of power sector reforms in India. The author emphasises the need for imparting training to the employees by equipping them with advanced tools to detect power theft, hence reducing the revenue loss of the SEBs. Thus, the book is highly relevant to power sector managers, management teachers, students and infact, any one interested in understanding the intricacies of the Indian power sector reforms.

The Institution of Engineers (India), Andhra Pradesh State Centre organized an all India seminar on 'Power Distribution Sector – Managerial Issues, Challenges and Solutions' on 28th and 29th August, 2005 at Hyderabad. Distribution is the most critical segment of the power sector. The real challenge of reforms in the power sector lies in efficient management of the distribution sector. Reform of power distribution is today widely accepted as a fundamental requirement for improving customer service, operational and commercial performance and financial viability of the power sector in India. During the seminar, various experts shared their experiences and success stories in the distribution sector in the post reform scenario. Technical as well as managerial problems faced in the actual field were deliberated in the two day seminar. Distinguished experts have suggested various means and methodologies for the unbundled distribution companies to operate in a professional environment and achieve the desired goals of reforms within the specified time. People, process and technological issues were thoroughly discussed in the seminar. The Seminar was timely and the inputs and recommendations made, if properly implemented would go a long way in bringing the required improvements in the power sector in India.

In the book 'Power Sector in India : Issues and Challenges' (2006), D. Himachalam tried to examine the performance of Andhra Pradesh State Electricity Board (APSEB) in the post-reform period. After much deliberation, the APSEB
was restructured in February, 1999 with specific modalities and framework to improve the performance of the power sector in Andhra Pradesh. Under the reform process, the APSEB was bifurcated into two autonomous corporations, namely, the Andhra Pradesh Generation Corporation (APGENCO) and the Andhra Pradesh Transmission Corporation (APTRANSCO). The author made sincere attempts to collect and incorporate relevant facts and figures concerning the functioning of APTRANSCO and APGENCO. He tried to analyse the various problems faced by the consumers as well as the power sector in Andhra Pradesh. Various issues relating to the availability of power, timings of power supply, power cuts, problems of lines, transformers, sub-stations, attitude of the line personnel, loss of crops due to frequent power cuts etc. are well discussed in the book from the view point of the consumer. On the other hand, the various problems relating to outdated transformers, power lines, sub-stations, transmission and distribution issues, unauthorized uses of power, un-metered power consumption, political interference, threats from political leaders to the personnel etc. are also covered in the book from the view point of the electricity department. After a thorough study, the author observed that all the major problems faced by the power sector in Andhra Pradesh still persist and only marginal gains are noticed in certain fields. He also mentioned that, "It is much too early to expect the corporations to produce impressive results in a short time, since the problems they face and the tasks before them are Himalayan in proportion. It would certainly take some more time before the reforms of the power sector make themselves felt." At the end, the author has also offered viable suggestions to remedy the pressing problems of the power sector in Andhra Pradesh and to tone up its performance.

potential of Small Hydropower Programme (SHP) in our country. It is mentioned that the small hydropower stations throughout the world are contributing more than 34,000 MW of electricity today. Moreover, small hydropower plants that are under construction or planned can contribute another 23,000 MW of electricity. The expected growth rate of small hydropower until 2020 AD is 1000 to 2000 MW per year and the development of small hydropower around the world is also on the rise. The author in his article discussed the different modes of power production viz.; nuclear, thermal power plants, hydropower, wind power, small hydro and solar energy. But the author preferred small hydro power projects in India due to its relative advantages over other sources. Some of the advantages of SHPs mentioned in the article include less initial investments, minimum gestation period, involvement of simple technology etc. Moreover, no investment for transmission lines would be needed as the power would be consumed locally. The Government of India has built up a database of SHP sites based on the information received from the various States.

However, ever-increasing consumption of power in the world is bound to pollute the environment. Energy - environment interaction are inseparable phenomena. The ecological imbalances are the result of externalities, involved during the formulation of energy systems and action plans. Mumtaz Hussain, Environmental Consultant, Pakistan in his article 'Energy–Environment Nexus' published in the 'Indian Journal of Power and River Valley Development' (2006) critically examined the impact of ever-increasing consumption of electrical energy on the environment. He emphasized that the Energy Policy of a country must encompass the environmental degradation aspects at the local, regional and national levels. According to the author, the environmental degradation occurs during the entire life cycle of an energy plant. The environment of the proposed site is affected as soon as the area is acquired for energy generation. The impacts occur by virtue of plant location, pre-
construction phase, construction phase, commissioning phase and operation phases. The paper mainly aims at highlighting the salient environmental impacts of different forms of energy. The author in the article also discussed different mitigation measures in order to minimize the negative impacts on environment in certain cases.

B. R. Gupta in his book 'Generation of Electrical Energy' (2009) included a variety of topics regarding the generation of electricity in India. Electric energy generation is an old subject but it is now rejuvenated with important developments under the reform process. The book covers conventional topics like load curves, steam generation, hydro generation, parallel operation as well as new topics like new sources of energy generation, hydrothermal coordination, static reserve reliability evaluation etc. No country in the world is endowed with ample water resources or abundant coal reserves. According to the author, the chronic power shortage in India can only be met from an effective integration of all types of power resources. However, he opined that, the planning, design and operation of the combined system having many thermal and hydro stations situated at different places and interconnected by long transmission lines would be a complex task. Recently, environmental aspects of power plants is gaining more and more importance. The author suggested that, it is possible to build new power plants with little detrimental environmental effects, if sufficient thought, planning and study are given to the potential problems before the project is finally designed and constructed. According to the author, engineers and others responsible for power development projects must recognise the potential environmental risks of the programme. Through mutual co-operation, engineers and environmentalists may find a solution which is best from the point of engineering as well as ecology. The information on hydro and nuclear plants in India, year wise hydro, thermal and nuclear installed capacity in India and comparison of different types of plants are also incorporated in the book.
So far as North Eastern Region (NER) is concerned, little work has been done in this newly emerging field. Ghanashyam Nath (1987) in his research 'Study of Assam State Electricity Board' an unpublished Ph. D. thesis, Gauhati University made a critical analysis of ASEB in the pre-reform period. In his thesis, Prof. Nath has discussed the early organizational structure of ASEB. Availability of various natural resources in Assam for power generation and their utilization in the State is very well discussed in the thesis. Different critical and controversial areas of power sector at the state as well as national level like choice of technology, material management, operation and maintenance, production – mix, capacity utilization, potentiality and exploitation, pricing policies, staffing pattern etc. are very well discussed in the thesis. There exists a number of problems in electricity industry in India, which affect the smooth functioning of SEBs. The author examined the problems of ASEB and identified organizational and other deficiencies in its policies and operations. He also offered important suggestions and measures to overcome these problems in order to make the Board more efficient and economically viable. P. C. Kakati (1999) in his research 'Rural Electrification in Assam Since 1980: A Study of Progress, Prospect and Handicaps' an unpublished Ph. D. thesis, Gauhati University discussed thoroughly the rural electrification in Assam, before the reform process began in the power sector in the State. The study covers a period of about one and a half decade since 1980. He has critically examined the significance of rural electrification in Assam as a means of all inclusive social change. The rural electrification and agricultural development, rural electrification and structural social changes are correlated. Though the study is a micro level approach, it has thrown enough light on the growth and development of agro-based and different small and cottage industries in Assam. Apart from agriculture and small and cottage industries, he has examined the impact of rural electrification on the entire infrastructural pattern of our rural economy like health and hygiene,
education, communication systems, Government policies and planning etc. The problems faced by ASEB in implementing rural electrification programmes are thoroughly discussed in the thesis. He has offered valuable suggestions for the solution of various rural electrification problems covering financial, managerial and social aspects. The study is proved to be very useful for the ASEB itself in policy making and its implementation for better performance. Thus, both the scholars have contributed a lot covering different aspects of the Assam State Electricity Board in the pre-reform period.

**RESEARCH GAP:**

From the above review, it is clear that ample of academic exercises have been done by different scholars in different corners of the World in the power sector. However, study on the effectiveness of power sector reforms and restructuring during the recent years are limited and it is more so in the NE Region specifically in Assam. As the power sector reform has been on since 2003, it is about eight years that Assam has been experiencing a new environment. No significant study addressing the issues of power sector reforms and restructuring has been noticed so far in Assam. It is thus very necessary to review the situation of power reform and restructuring to give a future direction and policy imperatives. Hence, the present study will meet the gap of contemporary literature in the power sector in Assam.

**1.5 OBJECTIVES:**

Objectives of the study are:

a) To study the overall power scenario in India with special reference to the State of Assam.

b) To examine the rationale of restructuring of power sector in Assam.
c) To study the organisational restructuring of Assam State Electricity Board (ASEB).
d) To examine the operational efficiency of restructured power entities in the State.
e) To evaluate the financial implication of power sector restructuring in Assam.
f) To assess the quality of power supply in the State during the pre and post reform period and the level of consumer satisfaction.

1.6 RESEARCH QUESTIONS:
The study will try to find out the answers of the following questions:

(i) What is the nature of organisational restructuring of power sector that has taken place after the reform process started in Assam (post 2003) ?

(ii) Whether the generation of power in Assam increased and the distribution efficiency (reduction of transmission and commercial losses) improved during the post reform period in the State ?

(iii) What is the level of achievement of progress in the power sector in Assam under the various developmental scheme in the initial post reform period ?

(vi) What is the financial implication of power sector restructuring in Assam ?

(v) Has the outreach and quality of power supply increased significantly after the reform process ?

1.7. METHODOLOGY:
The present study is based on the analytical type of research design. In order to address the above research questions, the following methodology has been applied:

1.7.1 Performance Analysis:
Performance analysis of erstwhile ASEB and its successor five (5) companies were conducted to understand the organisational restructuring of power sector in
Assam. Here, an attempt has been made to examine the comparative operational performance of power sector in the pre and post-reform period. While doing so the detailed profile of power infrastructure in the State has been taken into consideration. Data collected from secondary sources are compiled, classified and produced with descriptive statistics. The qualitative and quantitative parameters used for the analysis are:

a) Organisational and management pattern
b) Operational implementation
c) Installed capacity and generation of power
d) Power supply position
e) Consumption of power
f) Per capita availability of electricity
g) Rural electrification status
h) Reduction of aggregate transmission and commercial (AT and C) losses
i) Financial implications, etc.

1.7.2 Field Survey:

In order to assess the quality of power supply in the State during the initial post-reform period (post 2003), a primary survey was conducted among the household consumers of the three study districts of Assam. During the field survey, personal interviews were conducted with the consumers to know their response about the power quality of their households.

Selection of Districts:

Jorhat, Nagaon and Kamrup (Metropolitan) districts have been selected for field survey. The basis of selection of these three districts was to represent each of the three distribution companies i.e. Upper Assam Electricity Distribution Company Ltd. (UAECL), Central Assam Electricity Distribution Company Ltd. (CAEDCL)
and the Lower Assam Electricity Distribution Company Ltd. (LAEDCL). From UAEDCL, Jorhat district, from CAEDCL, Nagaon district and from LAEDCL, Kamrup (Metropolitan) district have been selected for the study.

**Selection of Household Consumers:**

In order to examine the qualitative differences of power supply in urban and rural areas, respondents (household consumers) were drawn from both the urban as well as rural areas. The sample size was framed as follows (Table-1.1):

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>District</th>
<th>Urban Households</th>
<th>Rural Households</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Jorhat</td>
<td>160</td>
<td>120</td>
</tr>
<tr>
<td>2</td>
<td>Nagaon</td>
<td>200</td>
<td>240</td>
</tr>
<tr>
<td>3</td>
<td>Kamrup (M)</td>
<td>480</td>
<td>60</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>840</strong></td>
<td><strong>420</strong></td>
<td></td>
</tr>
</tbody>
</table>

Thus, a total of 840 household consumers were selected from 42 important locations covering 21 Municipal Wards of the three district headquarters and a total of 420 household consumers were selected from various rural locations of these three districts covering 21 villages under 7 blocks.

While selecting the respondents from urban as well as rural areas, non-probability judgement sampling technique was used as because the population of the study area is very large. While selecting the respondents from urban areas around 20% of the municipal wards were selected first from each district headquarters. Then from each of the selected wards, two (2) important locations were randomly selected. Again from each location, 20 households were selected for personal interview. A total of 840 households from urban areas are thus interviewed. Similarly,
while selecting the respondents from rural areas around 20% of the blocks were selected first from each district. Then from each of the selected blocks, three (3) villages were randomly selected. First of all, a census of all the households of the selected villages were done in order to know the level of rural electrification. Then from the households having electricity connection, 20 households per village were selected for personal interview. A total of 420 households from rural areas were thus interviewed. Thus, altogether 1260 households from both urban and rural Assam were interviewed for the study. Details of sample respondents drawn from rural and urban Assam is shown in tables 1.2 to 1.5. As the population of the study area is very large, time and cost factors have been taken into consideration for selecting the districts. However, a sample size of 1260 households is thought to be reasonable to get a balanced response.

**Table-1.2**

**Overall Sample Design:**

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>District</th>
<th>No. of Municipal Wards Covered*</th>
<th>No. of City Centres/ Areas covered</th>
<th>No. of Blocks covered**</th>
<th>No. of Gaon Panchayats covered</th>
<th>No. of villages covered</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Jorhat</td>
<td>4 (19)</td>
<td>8</td>
<td>2 (8)</td>
<td>3</td>
<td>6</td>
</tr>
<tr>
<td>2</td>
<td>Nagaon</td>
<td>5 (26)</td>
<td>10</td>
<td>4 (18)</td>
<td>07</td>
<td>12</td>
</tr>
<tr>
<td>3</td>
<td>Kamrup (M)</td>
<td>12 (60)</td>
<td>24</td>
<td>1 (3)</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Total-</td>
<td>03</td>
<td>21</td>
<td>42</td>
<td>07</td>
<td>11</td>
<td>21</td>
</tr>
</tbody>
</table>

* Figure in parenthesis indicates total number of wards.
** Figure in parenthesis indicates total number of blocks.
### Table-1.3
**Sample Design : (Jorhat District)**

<table>
<thead>
<tr>
<th>District</th>
<th>No. of Households</th>
<th>Name of City Centres/ Areas covered</th>
<th>Name of Blocks covered</th>
<th>Name of the Gaon Panchayats (GP) covered</th>
<th>Name of Revenue Villages covered</th>
<th>Name of Villages covered</th>
<th>No. of Households</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jorhat Ward No 16</td>
<td>100</td>
<td>i) Udoynagar ii) Jail Road</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>20</td>
</tr>
</tbody>
</table>

**TOTAL** | 300 | 160 | 20 | 120 |
<table>
<thead>
<tr>
<th>District</th>
<th>No. of Households</th>
<th>Name of City Centres/ Areas covered</th>
<th>No. of Households</th>
<th>Name of Blocks covered</th>
<th>Name of the Gaon Panchayats (GP) covered</th>
<th>Name of Revenue Villages covered</th>
<th>Name of Villages covered</th>
<th>No. of Households</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nagaon</td>
<td>05</td>
<td>i) Shantipur</td>
<td>20</td>
<td>i) Khagarijan</td>
<td>1. Dipholu</td>
<td>1. Dipholu</td>
<td>i) Dewdhar</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ii) Teliapatty</td>
<td></td>
<td></td>
<td>2. Borbheti</td>
<td>2. Palasani</td>
<td>i) Hengulichuk</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3. Borbheti</td>
<td>i) Alipara</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>i) Garehagi</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>i) Uriagrant</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>i) Polosha</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>5. Rangalu</td>
<td>i) Uriagrant</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>i) Polosha</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>ii) Civil Hospital Area</td>
<td></td>
<td>7. Saidaria</td>
<td>i) Ashigar</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>i) Gunabari</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>ii) Nagaon Railway Station</td>
<td></td>
<td>7. Saidaria</td>
<td>i) Ashigar</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>i) Gunabari</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>i) Gunabari</td>
<td></td>
</tr>
<tr>
<td>TOTAL</td>
<td>05</td>
<td>10</td>
<td>200</td>
<td>04</td>
<td>07</td>
<td>10</td>
<td>12</td>
<td>240</td>
</tr>
</tbody>
</table>

(28)
Table 1.5

Sample Design: (Kamrup Metropolitan District)

<table>
<thead>
<tr>
<th>District</th>
<th>Urban Wards Covered</th>
<th>Municipal Wards Covered</th>
<th>Name of City Centres/ Areas covered</th>
<th>No of Households</th>
<th>Name of Blocks covered</th>
<th>Name of Revenue Villages covered</th>
<th>Name of Gaon Panchayats (GP) covered</th>
<th>No. of Households</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ward No 6</td>
<td>i) Maligaon Area</td>
<td>20</td>
<td>1. Dimoria</td>
<td>1 Sonapur</td>
<td>1. Sonapur</td>
<td>Pathar Gaon</td>
<td>Pathar Gaon</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td>ii) Adban Area</td>
<td>20</td>
<td></td>
<td>Pathar Gaon</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ward No 13</td>
<td>i) Bethkuchi</td>
<td>20</td>
<td></td>
<td>Pathar Gaon</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>ii) Pachim Boragaon</td>
<td>20</td>
<td></td>
<td>Pathar Gaon</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ward No 18</td>
<td>i) Shantipur Area</td>
<td>20</td>
<td></td>
<td>Pathar Gaon</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>ii) Bhutnath Area</td>
<td>20</td>
<td></td>
<td>Pathar Gaon</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ward No 22</td>
<td>i) Udalbakra</td>
<td>20</td>
<td></td>
<td>Pathar Gaon</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>ii) Latuma Area</td>
<td>20</td>
<td></td>
<td>Pathar Gaon</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ward No 25</td>
<td>i) Kachanbari Area</td>
<td>20</td>
<td></td>
<td>Pathar Gaon</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>ii) Birubari Area</td>
<td>20</td>
<td></td>
<td>Pathar Gaon</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ward No 28</td>
<td>i) Chitrakar Area</td>
<td>20</td>
<td></td>
<td>Pathar Gaon</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>ii) Tokobari Area</td>
<td>20</td>
<td></td>
<td>Pathar Gaon</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ward No 31</td>
<td>i) Panbazar Area</td>
<td>20</td>
<td></td>
<td>Pathar Gaon</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>ii) Paltanbazar Area</td>
<td>20</td>
<td></td>
<td>Pathar Gaon</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ward No 36</td>
<td>i) Gandhinagar Area</td>
<td>20</td>
<td></td>
<td>Pathar Gaon</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>ii) Ulubari Area</td>
<td>20</td>
<td></td>
<td>Pathar Gaon</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ward No 43</td>
<td>i) Bhangar Area</td>
<td>20</td>
<td></td>
<td>Pathar Gaon</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>ii) Ganesghuri Area</td>
<td>20</td>
<td></td>
<td>Pathar Gaon</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ward No 48</td>
<td>i) Baruanmadan Area</td>
<td>20</td>
<td></td>
<td>Pathar Gaon</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>ii) Nonmati Area</td>
<td>20</td>
<td></td>
<td>Pathar Gaon</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ward No 53</td>
<td>i) Hengrabar Area</td>
<td>20</td>
<td></td>
<td>Pathar Gaon</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>ii) Khanapara Area</td>
<td>20</td>
<td></td>
<td>Pathar Gaon</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ward No 59</td>
<td>i) Hatogon Area</td>
<td>20</td>
<td></td>
<td>Pathar Gaon</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>ii) Jatia Area</td>
<td>20</td>
<td></td>
<td>Pathar Gaon</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TOTAL</td>
<td>12</td>
<td>24</td>
<td>480</td>
<td>01</td>
<td>01</td>
<td>02</td>
<td>03</td>
<td>60</td>
</tr>
</tbody>
</table>

1.7.3 Research Tools:

An interview schedule consisting of 27 questions was used to collect the responses from selected household consumers. The interview schedule deals with the various quality aspect of power supply such as average availability of electricity in a day,
frequency of load shedding, timings of load shedding, breaking down of lines, monthly electricity bill, seasonal variations, awareness of power sector reforms, billing system, timings of billing, coverage/outreach, attending complaints, upgradation of existing areas, new area coverage, privatization of electricity services in Assam etc. (Questionnaire enclosed)

1.7.4 The Period of Study:

The study covers a period of nine years from 2000 till the end of 2008.

1.7.5 Data Analysis:

In order to attain the objectives of the study mainly descriptive analysis was done. To examine the trend of power scenario, organisational restructuring, level of implementation of various schemes, pre-reform and post-reform comparative analysis was done using secondary data mainly from Annual Reports of ASEB, Official publications etc. For examining the financial implications, financial ratios, namely, current ratios, liquid ratios, profitability ratios were computed and compared between pre and post-reform periods. Moreover, budgetary allocation and utilization efficiency of power sector both in the pre and post-reform periods were analysed. In order to assess the quality of power supply in the State, primary data collected from 1260 households covering three districts under study were analysed using descriptive statistics. The analysis was based on power supply, voltage quality, pricing, billing system, seasonal variations etc.

1.8. LIMITATIONS OF THE STUDY:

Any research endeavour can not be said to be free from all limitations. Despite best efforts, the study suffers from certain limitations:

This research work is being carried out primarily on the basis of information collected through field surveys. Certain biasness in responses of respondents are
unavoidable. The findings of the thesis are based on primary data collected from around 20% municipal wards and blocks of the three districts and hence they may not be generalised. Moreover, village respondents are illiterate and not much aware of power sector reforms and restructuring, which is going on in the State. The present research investigation could not embody the happenings and changes that have taken place in the power sector in Assam beyond its periodicity.

1.9. **CHAPTER ORGANISATION OF THE STUDY:**

The break up of the chapters are as follows:

Chapter 1 : Introduction and Research Design : The chapter deals with introduction (theoretical background) and research methodology part.

Chapter 2 : Restructuring of Power Sector – Indian Experience : The chapter deals with the initial restructuring of power sector in a number of States in our country.

Chapter 3 : Power Sector Restructuring in Assam : The chapter deals with the reforms and restructuring of power sector in our State.

Chapter 4 : Operational Progress : The chapter deals with the implementation of various developmental schemes in the initial post-reform period in Assam.

Chapter 5 : Financial Implications : The chapter deals with the financial performance of power sector both in the pre and post-reform period in Assam.

Chapter 6 : Effectiveness of Restructuring : Outreach and Quality Perspectives : The chapter deals with the effectiveness of power sector restructuring with special reference to outreach and quality.

Chapter 7 : Summary of Findings, Policy Recommendations and Conclusion : The chapter deals with research findings, policy recommendations and conclusion.

1.10. **RELEVANCE OF THE STUDY :**

Electricity is the vital force that reflects the strength and power of any State for
development and achievement. The optimum growth of an economy depends considerably upon the uninterrupted flow of electricity. But power shortage has become a chronic problem in Assam. Moreover, electrification and industrialization go together. Industries provide scope for employment – through which we can only solve the problem of mass unemployment and social unrest in Assam. Agriculture, industry and other core areas of our economy ultimately depend on the availability of quality power uninterruptedly throughout the year for their success and development. Usually, the correlation between consumption of electricity and the growth of economy is adopted as a measure of progress and development. Compared with several other States in India, Assam is lagging behind many in terms of production as well as per capita consumption of energy.

The basic objective of this study is to investigate the problems of management of power sector in Assam. The research will try to ascertain the level of generation capacity of ASEB during the pre and post reform period. It will reveal whether the restructuring process has resulted in the reduction of wastage, aggregate transmission and commercial (AT and C) losses etc. The implication of power sector restructuring in Assam on various parties like ASEB itself and consumers will be sincerely judged. The study will also concentrate on the level of consumer satisfaction achieved in the post-reform period.

Thus, the research will enable us to have a thorough knowledge regarding the functioning of ASEB and its five successor companies mainly in the post-reform period. The study has been undertaken in the interests of all the stakeholders in the electricity sector in our State i.e., consumers, shareholders, suppliers, infrastructure-builders and the Government of Assam. The study is also relevant considering the present initiative of the Ministry of Power, Government of India to make available electricity for all by 2012.
REFERENCES :


