CHAPTER IX

SUMMARY AND CONCLUSION
The availability of adequate infrastructure facilities is vital for acceleration of economic development of a country. Infrastructure investment has a high potential pay-off in terms of economic growth. It provides a critical support to the growth of economy. Infrastructure projects can contribute to poverty reduction at the macro and micro levels in many ways. At macro level, they contribute to resource savings as energy efficiency results in savings of foreign exchange. In micro level the competitiveness of industry depends upon the status of infrastructure in a State. Adequate quantity and reliability of infrastructure are key factors in the ability of countries to compete in international trade, even in traditional commodities. Further the right type of infrastructure also induces investors to make investment. As a result of this there is an increase in the tax revenues due to additional employment and production.

Projects that promote efficiency in energy supply may also lower the price of energy, making it more affordable. Backward linkages of energy development such as with sectors like iron and steel manufacturing transport etc. will also induce economic growth. Further, adequate and quality infrastructure influence marginal productivity of capital through reduced cost of production and structural impacts on demand and supply. Lower cost of production, in turn has an impact on the level of output, income and profitability. The structural impact of infrastructure on demand and supply contributes to diversification and modernisation of economy by facilitating alternative and better modes of production. Further the availability of infrastructure decides the ranking of location on potential for investment and industrialisation. Infrastructure is also important for ensuring that growth is consistent with poverty reduction.

Lack of infrastructure slows down economic development. The poor performance in infrastructure management has triggered a total change in
approach in managing infrastructure sector. Thus, it is recommended to manage the infrastructure like a business and not in a bureaucratic style. So government will have a changed role in this, i.e., as a regulator instead of provider of infrastructure.

The objective of the study was to analyse the process of reform in infrastructure sector in the world as well as in India and to make an analysis of different sources of financing infrastructure particularly in the context of new challenges in this sector. Further we focused our study on the power sector of India by making an analysis of risk and rate of return in power sector projects. Since Orissa is pioneer in implementing reform we have undertaken a study on the process of reform and the challenges in power sector reform in Orissa. Electricity tariff is most important as far as the power sector is concerned. But the tariff contains heavy dose of subsidy from government and cross-subsidy from industrial and commercial consumers. So we have made a study into the subsidy and cross-subsidy existing in the tariff structure in power sector of Orissa. Finally in order to measure the effectiveness of the reform, we have made a survey into the impact of reform in power sector of Orissa.

The study is dependent on both primary and secondary data. The secondary sources of data are Government of India's report and publications, World Bank reports and publications, CMIE reports, report of Grid Corporation of Orissa [GRIDCO], Economic Survey of Orissa, Orissa Electricity Regulatory Commission's order, various reports of private distribution companies of Orissa and some important journals and publications of Indian Institute of Management, Ahamadabad, Institute of Public Enterprise, Hyderabad and number of issues of The Economic Times and other newspapers.
Primary data have been collected by making a survey into the impact of electricity reform in Orissa on different type of consumers. Three years have passed in the mean time since Orissa has privatised its power distribution business. So we have undertaken a survey to find how people of Orissa have received the reform.

The responses collected from different consumers have been edited and tabulated. Ratios and percentages have been widely used for comparison purpose. The accumulated frequencies of the opinion of consumers have been treated with the chi-square statistics and the resulting chi-squares have been tested for significance at the .05 level.

9.1. Major Findings:

➢ Government owns and manages infrastructure sector in most of the countries in the world. But there is a large-scale failure in providing infrastructure services efficiently. It is found that the infrastructure sector can no more be managed efficiently by the government with the present work culture.

➢ The governments in most of the developing countries are no more in a position to supply the much-needed investment in infrastructure sector due to the fact that governments are facing severe financial crunch.

➢ The improvement in technology has made it possible to unbundle the infrastructure sector into small units. As a result of which the big investment in infrastructure sector, which was necessarily there some years back, can be easily avoided by fragmenting investment into small units.
> Infrastructure financing demands a unique approach due to the peculiarities present in this sector. The substantial sunk costs, long implementation and gestation period, irregular cash flows, high leverage ratio and long payback period make the infrastructure projects to be treated differently.

> The global experience in implementing infrastructure projects reveals a different picture than that of India. There is excessive cost and time overrun when the projects are implemented with the help of governments funding. Whereas there is a remarkable difference when the projects are implemented by multinational financing agencies.

> In order to bring professionalism in management, some new arrangements have been developed in infrastructure projects. The options are public ownership and public operation, public ownership with private operation, private ownership and private operation and community ownership and user provisions.

> Power is a critical infrastructure and is a vital input in the progress of a country and the Planning Commission of India has laid right emphasis on power sector. Following this, the outlays on power sector in the successive five-year plans have continuously increased.

> The State Electricity Boards have contributed substantially to the development of power sector in India. But the SEBs are no more generating surplus. On the other hand almost all SEBs have reported continuous loss year after year, which has questioned their very existence.
The various factors contributing to the causes of loss are irrational tariff structure, growing T&D loss, lack of professional management and lack of funds for further investment. The tariff structure is such that it does not recover the cost of power leading to huge losses year after year. It is increasingly realised that the SEBs cannot continue to function with same work culture.

A number of states in India has started reform in their State electricity Boards. There is a wave of reform in power sector in almost all states in India. Some of them have shown satisfactory result and some are facing teething problems that need to be tackled.

Orissa is the first state in India to implement reform in the power sector. The OSEB, which was started in year 1962, had been facing grave problems particularly after eighties. It was sustaining almost on the subsidy from the state government. The major causes of loss were inefficient management, rampant corruption and high T&D loss.

The tariff structure was irrational. It was not cost based. The industrial and commercial consumers had to pay much more than the domestic and agricultural consumers. This resulted in withdrawal of industrial consumers from OSEB in order to setup their own captive power plants.

GOI announced power sector reform in 1991. The Electricity Supply Act was amended to allow private sector participation. The Orissa Electricity Reform Act, which came into effect on April 1996, envisaged the unbundling of the vertically integrated Orissa State Electricity Board into separate corporate entities for generation, transmission and distribution of energy, the phased privatisation of these entities and the creation of the Orissa Electricity Regulatory Commission to regulate the entire sector.
GRIDCO divided its distribution functions into four geographical zones, Western zone, Northeastern zone, South zone and Central Zone. GRIDCO then incorporated these zones into four wholly owned subsidiaries as WESCO, NESCO, SOUTHCO and CESCO.

Orissa Electricity Regulatory Commission (OERC) was constituted in the year 1996. The OERC is responsible for the issue or revoke of licenses for transmission and distribution and approve/ modify/ reject tariff revision proposals through a consultative process.

The biggest mistake, which was acknowledged by the World Bank, was underestimation of transmission and distribution loss as 39.5%. The investments, revenue realisation and planning were based upon this assumption. But the actual scenario was quite different from the assumption. The actual transmission and distribution loss was surprisingly more than 50%.

Subsidy is a payment by a government agency to producers of goods intended to make prices lower than they otherwise would be. The payment will also in general, have the effect of raising the income of the recipients above the level it would otherwise have reached and increasing the real income of buyers of subsidised products. This is a worldwide phenomenon.

The governments of almost all states in India heavily subsidise the respective electricity boards. This is due to the fact that the State Electricity Boards (SEBs) were working as an extension of a government department rather than on the basis of commercial principles. The average electricity tariff determined by the state governments does not
recover the cost of power leading to heavy losses by the SEBs, which ultimately was borne by the State Governments.

- The consultant to reform had strongly suggested that if there is an element of subsidy in the tariff structure or when cost of electricity is not covered by tariff due to intervention of government, this amount has to be compensated by the government to the power distribution companies. Though government in principle had agreed for this but in reality GOO abruptly stopped sanction of subsidy amount after reform putting the Distcos in an unviable financial situation which has ultimately made the reform process a soft target by the critics.

- There is a strong feeling that subsides should be curtailed in every sphere and it should be made transparent, i.e., who is the ultimate beneficiary of the subsidy. Subsidy should not conceal the area of weakness.

- Cross-subsidy is a complex phenomenon as a class of consumers subsidise for another class of consumers. The industrial and commercial consumers pay at a higher rate than their cost of supply where as the domestic consumers pay less than the cost of supply.

- The tariff structure of all SEBs is irrational. There is presence of heavy cross-subsidy. The reform process strongly advocates for making the tariff structure more rational, i.e., by phasing out cross-subsidy completely.

- The cross-subsidy has resulted in reducing the industrial consumers, as they prefer to setup their own captive power plants. This is because the cost of power (When drawn from OSEB/Gridco and ultimately from Distcos) with a heavy dose of negative cross-subsidy becomes much more than the cost of generation in captive power plants.
The risk profile of a power distribution company is different from IPP. Along with the business risk, which is usual for any business endeavor, the power distribution company has to undertake a regulatory risk. The risk of a power distribution company is business risk, regulatory risk that includes tariff risk, consumer-mix risk, cost of power risk and T&D loss risk.

The consumer-mix is one important risk area of a distribution company. When the ratio of industrial consumers is more than the domestic consumers then the PDC takes less amount of risk. The cost of power is another important area of the risk of a power distribution company. A distribution company does not have control over the cost of power.

The survey shows that the interruption in supply of power is present both in rural and urban Orissa. Again we find here that the rural consumers are the worst sufferers. The power supply is erratic, and the power cut is unscheduled. The reform is yet to show any desired result here.

The urban consumers feel that there is improvement in the quality of power as far as the power interruption is concerned. But the situation in rural area is almost the same as it was prior to the reform.

The sample survey shows that the consumers feel there is excessive rise in the price of electricity after the reform. The consumers are of view that the rise in the tariff is much more than the general price level. It is further noticed that the consumers are not at all prepared to pay more even if the quality of power becomes better. It is further found that the rural as well as urban consumers have the same opinion on this issue.
The sample survey reveals that both urban and rural domestic consumer feel the reform to be in a positive direction. Further they are of opinion that the reform is either very good, good or fair. This shows that the reform is well accepted amongst the consumers.

9.2 Recommendations

On the basis of the findings, the following recommendations are made in order to make reform process a success.

- Mobilising funds to expand and improve services require carefully designed financing strategies. Foreign and domestic sources of finance are required to be tapped, but there are limits to the capacity of any economy to obtain funds from abroad, especially debt finance. A well-thought and long run strategy need to be developed for availing much needed resources.

- An alternative to GOI guarantee for loan, is an escrow account agreement between lenders, project company and trustee bank. In this arrangement, the inflows from the concerned project are pooled into a separate bank account by trustees and all debt servicing obligations are fulfilled before releasing the fund for further utilisation. The use of escrow account is to allow the lender to control the proper use of project company's cash flow. This method of escrow agreement is highly recommended particularly under an uncertain business environment.

- Equity investment in long gestation infrastructure projects should have tax relief in order to attract capital in the construction and pre-operative phases. Also dividend payable on equity investments in infrastructure should be made cumulative on the equity investment for a period until the project goes on stream upto a reasonable level.
In order to mobilise additional resources, it is required to develop a healthy Indian capital and financial market to tap the vast savings potential of the Indian household sector and transfer it to infrastructure through efficient financial intermediaries.

To make the power sector truly efficient and competitive in the changing scenario, steps are to be taken to impart greater thrust to research and development, training of the human resources in the power sector and adoption of progressive management practices and tools, (including IT). Personnel are also to be educated about their changed roles in the power reform scenario. Emphasis on commercialisation has to be inculcated among the people.

Tariff need to be cost based. If there is an element of subsidy to a vulnerable section of consumers, that subsidy has to be quantified and made clear in all transactions. Government should pay the subsidy money as agreed at the time of power sector reform.

Electricity business is a complex and evolving business and should be carried out in a regulatory regime, which should be independent, autonomous and transparent in all its dealings and should have sufficient expertise to understand the complexities involved. The regulatory authorities should have the legal powers to set tariffs, prescribe and enforce performance standards, improve efficiencies and reduce losses. They will also have to perform the difficult task of balancing the interests of the utilities, consumers, employees and the common man.

We recommend that the T&D loss, which has actually eaten into the vitals of OSEB, continue to threaten seriously the reform process. We
recommend that the overall distribution loss be reduced by five percent per annum.

➢ Hundred percent tamper free metering must be the target for all distribution companies. Metering must be done at all stages of transmission and distribution. Generating units while transmitting power must have their feeder meter. Then every transformer must be metered from which individual consumers will be allowed to connect with their respective meters.

➢ The rural electrification is not a remunerative proposition. So GOO must bear this expenditure, as a welfare measure. In addition to this, GOO must make adequate budgetary provision to pay the electricity bill of government departments and PSUs.

➢ The PDCs must focus at reduction of T&D loss so that it can bill more and can earn more revenue. This will help PDCs to purchase less power implying less cost.

➢ A PDC must have a sound capital structure by which it can earn a reasonable return for its activities. For this it is better for the company to have a capital structure with more equity.

➢ Withdrawing subsidy abruptly without allowing increase the tariff has put the PDCs in a very disadvantageous position. So subsidy to power sector by Government of Orissa must continue for sometime to graduate the tariff structure to make it cost based.
The cross-subsidisation in tariff structure is to be withdrawn completely in a phased manner. This will attract the industrial consumers and shall result in better viability of the PDCs.

The State Government’s role is much more important after restructuring of power sector in assisting the GRIDCO & DISTCO to check the pilferage and theft of power. The State Government has to play the key role in getting the results of the reform.

The interruption in supply of power is present both in rural and urban Orissa. The PDC here again has to show result by constant supply of power. The information about any power cut must be notified beforehand.

It is found that the defaulters in payment of electricity bill are more widespread in rural area. The urban consumers are more prompt in making clearing electricity dues fearing disconnection. There should be a drive by PDCs to streamline billing and collection process in rural area.

Handlings of grievances need to be more streamlined by PDCs. It also must take steps to reduce corruption, which was expected after privatisation.

The availability of quality infrastructure makes the difference between a developed and underdeveloped economy. The infrastructure determines the production activity and the quality of life in a country to a great extent. The governments all over the world played a vital role in creating various infrastructures. But it is found that towards the last part of twentieth century, the
public authority could not rise to the occasion. As a result of which there are failures in providing quality infrastructure at a competitive cost. Fortunately the innovation in technical and financial management has helped to go for unbundling and ultimately for reform in the infrastructure sector. There is a wave of privatisation in the infrastructure sector through out the world. Some of the countries like U.K and USA have gone for massive reform in infrastructure sector. India is also adopting the reform in this sector. But the government cannot remain as the silent observer just by unloading the infrastructure to private parties. The government has to play the most important role of a regulator – positively contributing towards promotion of right type of infrastructure at a competitive cost.

The reform has taken place massively in the power sector in India. Almost all states have started the reform process. Orissa is pioneer in implementing reform. It is the first State in India, which after corporating the OSEB, has handed over the power distribution business to private sector. The constancy in the purpose of GOO to make the reform a success, has started showing result. There is now reduction of T &D loss and metering is being taken on massively. Responsibility is being fixed for wrong action. But GOO has to commit itself in the form of providing all facilities, i.e., policing, helping the PDCs to reduce the T & D loss and has to continue providing subsidy to the PDCs till the electricity tariff becomes cost based.

9.3. Scope for further research:

Due to time and budgetary constraint we could not do justice to the following aspect of our work. So we recommend that further study may be made in the following areas.
We have covered only 450 consumers in our survey in order to measure the impact of electricity reform in Orissa. We suggest that further study may be made by taking more number of sample and covering other important cities and remote areas in Orissa.

The impact of reform on agricultural consumers with reference to its effect on the cost of agricultural product may be studied.

A separate study may be taken study the impact of reform on the labour turnover and how people working in the changed environment are reacting to reform as this shall have a long run impact on the success of reform.

The timing of this work may be little pre-matured. Another study may be made taking a longer time period to examine the success of the reform.

We have provided an equation at which a PDC undertakes minimum risk. A further study may be undertaken by making a sensitivity analysis of each component in the equation.