CHAPTER VI
SUGGESTIONS, SUMMARY
AND CONCLUSIONS
Chapter- VI

6: Suggestions, Summary and Conclusions:

The power sector reforms and the thermal utilities performances have been studied in depth in the foregoing chapters. Based on the findings of the previous chapter suggestions and summary are explained and concluded as under.

6.1: Suggestions, Summary:

Indian power installation that started in 1897 (VK Sharma 2004) on the footsteps of British system and have less installed power capacities. After independence the sector have concentrated on this infrastructure development, by installing major portion of thermal power stations due to availability of abundant of coal as fuel of resources to generate power to the country.

The growth of this sector which is an essential daily service to all citizens start deteriorated in terms of loss making, leading to financial sickness and loss accumulation of state boards. At this juncture in 1991 Power sector reforms have been evolved after a long deliberated thoughts in different countries over the years. Performances of the power sector that derive major power from thermal generations have been studied in this context of reforms with suggestions and conclusions as below:
6.1.1: Overall Power Generations:

Accelerated growth are achieved since 1897, from 0.130 KW capacity that has grown to 124287 MW in 2006 March. Pre reforms acceleration of growth are marginal. Post reforms are at good pace. But as per future predictions of 16th EPS report we have a target in the year 2012 for a capacity of 212000 MW to sustain supply and demand of power. Beyond this period, the growth potential need past paced and fast growth. In the next 5 years, growth required at 17600 MW/year. Which is equal to 14.19 % growth at the existing capacity levels. An over all power development in all areas such as hydel, renewables, captive and nuclear sources need to be tapped in stead of relying on thermal power only to balance and use other resources available in India.

6.1.2: Thermal Generations (Coal base) and capacity addition:

The present capacity of thermal power generation is 81% of total generations. This is possible due to abundant availability of coal to be 247.85 billion tones of proven reserves in India (Ministry of Coal 2004) and the reserves further available for next 250 years. But exploitation of coal, getting quality coal at required quantum require planning. Last 2 years coal shortages have reduced generations. The coal supply with the ministry of coal to be doubled in 3 to 4 years to meet power demands. Thus capacity of
thermal generation depending on quality of coal production, quantum of coal production and its extraction and mining need plan to make head way in thermal generations. For the year 2102 future projection on coal based power plants are planned at 30,000 MW. In terms of ash content of Indian coal, import of coal for mixing with Indian coal to get good heat rate is suggested. Dependence on gas for power generation is limited, in India and in world market, for the availability of gas in the world market and its higher prices. Power generation on gas need a thorough availability plan or gas import, which is an un-reliable solution. Hence Indian coal industry should play planned role in the future thermal power plants with its extraction plans in hand.

6.1.3: Plant Load Factors:

Power plants efficiencies are based on the higher plant load factors. As the private and central utilities exploited this performance factor, SEB’s also should go for a matching PLF % to attain good efficiencies. The national average for 2005-06 in PLF 73.71 % should be a near minimum standard to run plants for an efficient generation parameter for running power plants.

6.1.4: Standard setting in other performance factors:

Other major efficiency parameter such as Auxiliary power consumptions, Preventive maintenance, Forced outages, operating availability (%), Specific
coal consumption, Partial Loss Percentage (Due to equipment & System loss, Reserve shut down), Secondary Fuel Oil Consumptions and their efficient operational method needs to be standardized.

All thermal plants irrespective of sectors, adopt a standard work practices, equipment selections, operation and maintenance practices. All personnel need exposure, training and working norms to achieve these performance standards. So that power generation in thermal plants across all sectors should achieve standard results with standard financial achievements.

6.1.5: Renovation and Modernization (R&M):

This is a performance and life improvement method. As a means of this augmenting capacity, economically improving performance, PLF and more generation are achieved. The renovation and modernization system should made mandatory of plant age for all sectors with a fully financial support from government financial agencies. Defaulting plants should be de-barred from operations.

6.1.6: Financial Performances of Thermal power utilities:

As the healthiness and development of the power sector and thermal generation has a bearing on loss and profits, plants should be made to run with profit, evolving all financial improvement methods. This include technical and commercial loss reduction of power, pricing of power, operational practices for
efficient methods, choice of power sales, customers satisfaction, and improved workings on financial aspects as a standardized system for the industry, irrespective of state, central and private sectors.

6.1.7: Reforms as a guiding Principle:

The power sector’s total accumulated loss over the years crossed more than 2,00,000 crores (MOP-2004). Reforms has opened up channels of power generation weakness in the sector, transmission facility development and loss patterns, distribution losses including commercial losses reduction needs, tariff rationalization, consumer requirements of uninterrupted power supply, quality supply and at reasonable price or tariff, power pilferage and theft patterns and its methods of detection, preventing such illegal tapings, metering of power, collection of bills, circle wise profits and energy accounting.

Reforms also indicated the need for unbundling of SEB’s to have a better working system, control and commercial achievements in the generation, transmission, distribution and tariff systems. Privatization and competition in power sector and its advantages are the fruits of reforms.

National power policy, Electricity ACT 2003, Regulatory Commissions role all of them give a clarity in their sphere. The pre and post reform analyses give count by count strength and weaknesses in the sector. The power sector reforms has come as a savior of the nation’s important economic activity that is connected with all citizens. In view of this power sector reforms become a
guiding factor for the sector and for thermal generation that is the main stay for
generations and healthy condition of utilities in India.

6.2: Conclusions:

Results of the study summarized above would lead to the following
Conclusions:

1. The main stay thermal power utilities in India during power sector
reforms have a good growth in capacity addition to more than
1,24,287 MW upto 31.03.2006 marking good growth acceleration.

2. Generations of these sector in overall and in particular on thermal
generation have a good growth during reforms, attaining 617 billion
units and 500 billion units in 2005-06 respectively to cater national
need.

3. Plant performances of thermal area such as plant load factors and
other operational efficiencies have improved a lot to set standards in
future with a national average PLF of 73.71 %.

4. Need for financial performance and overall financial achievements in
central and private sector are achieved with a bench marking high
profits. State utilities losses start reducing

5. In the state sector losses have been considerably reduced. However,
still further reduction in losses are expected to follow in the years to
come, to set the financial achievements and rate of returns attaining a -12.3 % in 2005-06.

6. Commercial loss pattern start reducing over the years, with reduction in power theft and commercial losses that will help thermal sector very much in their developments.

7. Tariff rationalization leading to power pricing system are established by regulators in states and in centre which will take care of all stake holders such as, generators, loss reduction, consumers for a healthy financial condition for improvement in the power sector.

8. Correct climate of competitive and privatized channel opened up for improving generation and distribution of power sector that start created a beginning.

9. Though the reforms made beginnings in the above areas, it is still in the developmental stages only. Thus much more results and acceleration are bound to come only in the future if it continues in the future with more seriousness pushed by central government.

10. State and central financial assistance to reforming the sector have made a head way assistance. This will have budgetary support in future.

11. Eco-friendly approach and attempts are made in environment and pollution front. This should be made mandatory to all thermal power plants.
6.3: Policy Implications:

1. Power Sector Reforms have not been fully effective, throughout Indian states. They are in the developing stages only, and in certain states like Tamil Nadu they have not yet been implemented with true spirit. State and central government should make a headway in this.

2. State Electricity Boards are not yet fully implementing unbundling process to impose more effectiveness and efficiency.

3. Tariff of power through regulators should have more influence to rationalize it.

4. Power theft, commercial losses, loss reductions by SEB's have not been seriously addressed and accounted for by authorities for profit making of the power sector as a whole, this area need much thrust.

5. National backbone, thermal power generation and its fuel resource, such as coal, lignite, gas production need a special attention and investment to augment future projections of power and energy.

6. Strategy should be evolved for compelled installation of more Eco-Friendly thermal or other power plants, adhering to international norms.

The experience is that the power sector undergoes transformation for economic improvement since 1991, for consumer satisfaction and basic citizen's need. This is a national priority taken care in the form of power sector reforms. Improvement in various performances and financial
status of the utilities have just started. In the back drop of current economic reforms, policy makers have made a frantic efforts to contain damage in the sector. The process of continued implementation in line with national power policy will hold key to future development and success in the economy of the 100 billion populations of the nation. The development and acceleration are bound to increase with time as we pursue further reforms process in the sector in a serious manner for the entire benefit of the national economy.