

# “CHALLENGES OF GOVERNMENT POWER COMPANIES TO GENERATING THE POWER ON THE BASIS OF DEMAND ACCOUNTABILITY BASED ON DEMAND”

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## **Abstract:**

Analyze the performance of Karnataka's power sector. Analyze the financial management practices of Karnataka Power Corporation Limited (KPCL) Identify the problems associated with the financing and investment management practices of Karnataka Power Corporation Limited. Examine the efficiency of asset-liability management practices and ascertain its financial impact on Karnataka Power Corporation Limited. Suggest ways and means of improving KPCL's financing and investment practices to enhance the overall efficiency and profitability of the organization and make comparative analysis with peer corporates.

The study proposes to test the following hypotheses: Professional leadership will render KPCL's financial management practices effective Political interference affects KPCL's financial management practices Inefficiency of the regulator, namely KERC, affects KPCL's financial management practices The study is descriptive in nature and has used the 'fact-finding' survey method. Primary data has been collected by administering Interview Schedules to the respondents. Industrial consumers of power in and around Bangalore city and KPCL personnel drawn from all functional areas of KPCL constitute the sampling universe. Interview Schedules were administered to 100 industrial consumers and 100 personnel of KPCL. Probability sampling in the form of simple random sampling was applied because every industrial consumer and every staffer of KPCL stood an equal and independent chance of being selected. "Nothing moves without power and power does not move without finance<sup>1</sup>".

## **Power Industries Overviews :**

Hence corporate finance plays a vital role in the power sector. Electricity is today a basic human need. It is the critical infrastructure facility the economic activities are fully dependent upon. The challenge of implementing power sector restructuring is compounded in most developing countries by unfavourable initial conditions. Due to majority holding by the state-owned-public utilities, privatisation has been an essential part of electricity restructuring in most developing countries. Hence reforms in industrialised nations took place in the context of ably functioning electricity systems and providing reliable power to all on a financially and commercially viable basis. However, the electricity sector has become both more complex and deeply controversial across the globe.

Therefore to remove such hurdles, the Electricity Act 2003 which proposed sweeping changes in transmission and distribution and privatisation of the electricity generation sector was enacted and this Act has opened up a plethora of opportunities for investors in India. It is encouraging competition through various policies and government decisions. The economic growth of Karnataka calls for a parallel growth of the power industry which in turn calls for a matching rate of investment in electric

<sup>1</sup>Source: <http://www.scribd.com/doc/50530593/kpcl>

power industry. The reform process has been highly politicised and in some cases grossly inconsiderate of the ground realities of operating electric

## 1.2 India's Power Scenario

About 65.34 percent of the electricity consumed in India is generated by thermal power plants, 21.53 percent by hydroelectric power plants, 2.70 percent by nuclear power plants and 10.42 percent by renewable energy sources<sup>2</sup>. More than 50 percent of India's commercial energy demand is met through the country's vast coal reserves. Due to the fast-paced growth of India's economy, the country's energy demand has grown at an average rate of 3.6 percent per annum over the past 30 years. In August 2011, the installed power generation capacity of India stood at 181.558 GW and per capita energy consumption stood at 704 kWh in 2008-09. The country has also invested heavily in recent years in renewable energy utilisation, especially wind energy. In 2010, India's installed wind generated electric capacity was 14,550 MW. Additionally, India has committed massive amount of funds for the construction of various nuclear reactors which would generate at least 30,000 MW. In July 2009, India unveiled a USD 19 billion plan to produce 20,000 MW of solar power by 2022.

### Thermal Power Plants

A thermal power station is a power plant in which the prime mover is steam driven. Water is heated; it turns into steam and spins a steam turbine which drives an electrical generator. After it passes through the turbine, the steam is condensed in a condenser and recycled to where it was heated; this is known as a Rankine cycle. The greatest variation in the design of thermal power stations is due to the different fuel sources. Some prefer to use the term energy centre because such facilities convert forms of heat energy into electricity. Some thermal power plants also deliver heat energy for industrial purposes as well as delivering electrical power. A large part of human CO<sub>2</sub> emissions comes from fossil-fuelled thermal power plants; efforts to reduce these outputs are various and widespread<sup>3</sup>.

<sup>2</sup> Source: [http://en.wikipedia.org/wiki/Electricity\\_sector\\_in\\_India](http://en.wikipedia.org/wiki/Electricity_sector_in_India)

<sup>3</sup> Source: [http://en.wikipedia.org/wiki/Electricity\\_sector\\_in\\_India](http://en.wikipedia.org/wiki/Electricity_sector_in_India)

## Hydro-Electric Generation Plants

Hydropower plants harness energy inherent in flowing water and use simple mechanics to convert that energy into electricity. Hydropower plants are actually based on a rather simple concept -- water flowing through a dam turns a turbine, which turns a generator.

### 1.3 History of Power Generation and Supply in Karnataka

#### Early Phase

The erstwhile Mysore State had the enviable and glorious position of establishing the first major hydro-electric generating station at Shivasamudram as early as 1902 for commercial operation<sup>4</sup>. Such projects at that time were still in their infancy, even in the advanced countries. The longest transmission line, at the highest voltage in the world, was constructed to meet the power needs of mining operations at Kolar Gold Fields.

The generating capacity of the Shivasamudram Power House was gradually increased to 42 MW in stages. To meet the increasing demand for power, the *Shimsha Generating Station*, with an installed capacity of 17.2 MW, was commissioned in the year 1938. Power demand was ever on the increase, for industries and rural electrification, and additions to generating capacity became imperative. The first stage of 48 MW and the second stage of 72 MW of the Mahatma Gandhi Hydro-Electric Station were commissioned during 1948 and 1952, respectively.

Subsequently, the Bhadra Project, with an installed capacity of 33.2 MW, and the Tungabhadra Left Bank Power House, with an installed capacity of 27 MW at Munirabad, were commissioned during 1964 and 1965, respectively.

<sup>4</sup> Source: <http://www.karnatakapower.com/>

The state of Karnataka, with availability of cheap electric power, and other infrastructure facilities, was conducive for increased tempo of industrial activity. It became necessary therefore, to augment power generating capacity by harnessing the entire potential of the Sharavathi Valley. The first unit of 89.1 MW was commissioned in 1964 and completed in 1977.

The demand for power saw a phenomenal increase in the mid-sixties and onwards with the setting up of many public sector and private industries in the state. As power generation in the state was entirely dependent on monsoon and subject to its vagaries, the state government set up a coal-based power plant at Raichur. The present installed capacity of the power plant at Raichur is 1260 MW.

To augment the energy resources of the state, the Kalinadi Project with an installed capacity of 810MW at Nagjhari Power House and 100 MW at Supa Dam Power House, with an energy potential of 4,112 mkWh were set up.

### **Karnataka Electricity Board (KEB)**

The transmission and distribution system in the state was under the control of the government of Karnataka (formerly the princely State of Mysore) till the year 1957. In the year 1957, the Karnataka Electricity Board (KEB) was formed and the private distribution companies were amalgamated with the Karnataka Electricity Board.

Till the year 1986, KEB was a profit-making organisation. However, in the subsequent years, like other State Electricity Boards in the country, KEB also started incurring losses, mainly due to the increase in agricultural consumption and due to the implementation of the socio-political policies of the government; the performance of the power sector was thus affected.

To improve the performance of the power sector in tune with the reforms initiated by government of India, the government of Karnataka came out with a general policy proposing fundamental and radical reforms in the power sector. Accordingly, a bill, called the *Karnataka Electricity Reforms Act* was passed

by the Karnataka Legislature. The reform bill mandated major restructuring of the Karnataka Electricity Board and its corporatisation. As part of corporatisation, the Karnataka Electricity Board ceased to exist and the Karnataka Power Transmission Corporation Limited came into being to look after transmission and distribution in the state and along with the VVNL (Visweshwaraiah Vidyuth Nigama Limited) to look after the generating stations under the control of the erstwhile Karnataka Electricity Board, on August 1, 1999. The following paragraphs furnish an overview of KPCL.

### **KPCL – An Overview**

For over three decades, the Karnataka Power Corporation has been a prime mover and catalyst behind key power sector reforms in the state - measures that have led to steady growth witnessed in both industrial and economic areas. Right from the year of inception, in 1970, KPCL set its sights on “growth from within”, meeting growing industry needs and reaching out to touch the lives of the common man, in more ways than one. KPCL today has an installed capacity of 5975.91 MW of hydro-electric, thermal, solar and wind energy, with 9500 MW in the pipeline. The 1720 MW Raichur Thermal Power Station located in Raichur district is accredited with ISO 14001-2004 certification for its environment protection measures. From an industry vantage point, KPCL declares that it has raised the bar on the quality of deliverables and is constantly working at lowering the cost per megawatt - a commendable cost-value equation that has become a benchmark on the national grid. KPCL affirms that its stock-in-trade is industry-proven. It boasts of a well-established infrastructure and modern, progressive management concepts and a commitment to excel, helping it meet the challenges of the rising energy demand in Karnataka. The leverage point of KPCL initiatives are its resource management strengths – right across planning, financing and project engineering. KPCL also has a high rating in terms of project completion and commissioning within the implementation calendar.

Karnataka Power Transmission Corporation Limited is mainly vested with the functions of transmission and distribution of power in the entire state of Karnataka. It operates under a license issued by Karnataka Electricity Regulatory Commission. KPTCL purchases power from Karnataka Power

Corporation Limited at the rate fixed by the state government from time to time. KPTCL also purchases power from central government-owned generating stations like the National Thermal Power Corporation (NTPC), the Neyveli Lignite Corporation and the Atomic Power Stations at Kalpakkam and Kaiga. The approximate share of power from these generating stations is around 16 percent. KPTCL serves nearly 146 lakh consumers of different categories spread all over the state covering an area of 1.92 lakh square kilometres. To transmit and distribute power in the state, it operates nearly 684 sub-stations, 28,000 km of transmission lines with voltages of 33 KV and above, nearly 1,30,000 km of 11 kV lines, 1,50,000 distribution transformers and 3,57,000 km of low tension lines. Additionally, one Rural Electric Co-operative Society is functioning in Hukkeri taluk, Belgaum district, which purchases bulk power from KPTCL and redistributes it to the consumers within the taluk. The annual turnover of the organisation was nearly INR 4000 crores during the year 2000-01.

### **KPTCL Zonal Sub-Divisions**

The government, through its order dated 15 February 2002, divided KPTCL and formed five distribution companies.

Consequent upon this, the function of distribution of power has been totally separated from KPTCL. KPTCL is now vested with the responsibility of transmitting power all over the state and construction and maintenance of stations and lines of 66 kV and above. KPTCL will purchase power from various power producers and sell it to the distribution companies.

The four newly-formed independent distribution companies, which were registered on April 30, 2002, are the Bangalore Electricity Supply Company Limited (BESCOM), the Mangalore Electricity Supply Company Limited (MESCOM), the Hubli Electricity Supply Company Limited (HESCOM) and the Gulbarga Electricity Supply Company Limited (GESCOM). They have started functioning with effect from June 1, 2002. The Chamundeshwari Electricity Supply Corporation (CESC) Limited became functional from 1 April 2005 for Mysore and surrounding regions. These companies are in charge of distribution of power within their jurisdiction.

## Mission and Aims

KPTCL enunciates that its mission is to ensure reliable quality power to its customers at competitive prices.

KPTCL is committed to achieving this mission through:

1. Encouraging best practices in transmission and distribution.
2. Ensuring the good maintenance of all its technical facilities.
3. Emphasizing the best standards in customer service.

Aiming to be the best electricity utility in the country, KPTCL pledges to optimize its human and technical resources for the benefit of all its customers.

Emphasising its motto it declares that “one unit saved is equal to two units generated.”

## Electricity Supply Commissions (ESCOMS)

In order to improve the performance of the power sector and to be on par with the reforms initiated by the government of India, the Karnataka Legislature passed the Karnataka Electricity Reforms Act (KERC)<sup>5</sup>. This Reforms Act mandated division of the KEB and its corporatisation. As part of corporatisation, the KEB ceased to be and the Karnataka Power Transmission Corporation Limited was constituted in 1999. This was further divided into four companies depending on geographical areas, as stated in the foregoing paragraphs:

- Bangalore Electricity Supply Company Limited (BESCOM)
- Hubli Electricity Supply Company Limited (HESCOM)
- Mangalore Electricity Supply Company Limited (MESCOM)
- Gulbarga Electricity Supply Company Limited (GESCOM)

<sup>5</sup> Source: www.kerc.org

These companies came into existence from 1st June, 2002. In the year 2005, the Chamundeshwari Electricity Supply Corporation Limited (CESC) was carved out of MESCOM and is managing distribution of electric power for the five districts around Mysore

## **BESCOM**

### **Mission and Vision**

The mission of Bangalore Electricity Supply Company Limited (BESCOM) is to *ensure complete customer satisfaction by providing its customers reliable power of good quality at competitive rates.*

BESCOM affirms that it is set to achieve this mission through:

- Best practices in the construction and maintenance of its distribution network
- High Standards in Customer Service
- Optimum usage of technical and human resources

