Chapter II

Governance of Power Sector: Policies and Institutions

2.1: Introduction

Governance denotes the pluralism of actors in the decision-making and decision-implementation process for the achievement of the stipulated objectives. The term ‘government’ is different from that of the ‘governance’ in the sense that while the former is a formal structure consisting of legislature, executive, and judiciary being run in accordance with the rules of the constitution of the nation concerned, the latter is a process in which along with the formal structure government, the other actors like business organizations and civil society institutions participate in the decision making and decision implementation process for the achievement of the set objectives. Governance can be understood from the perspective of policy and institution. The making of certain policy and the implementation of these policies by certain institutions constitutes the core of governance. This part of governance is the process part. However, the outcome part of governance depends on the desirability of the actors/stakeholders/institutions being in the process.

Traditionally, the concept was being understood as the activities of the government. Now the meaning of the concept has undergone change. The emergence of the concept ‘governance’ is the result of the increasing demand of the citizens on the government to provide basic minimum requirements of life like health, education, sanitation, infrastructure services etc. which governments found difficulties to fulfill due to the factors like lack of funds, complexities of the activities to be performed, lack of time and expertise on the part of the governments in performing the activities which are becoming more and more technical and complex in nature due to technological innovation and the need for more and more professionalism for the performance of the activities on the one hand and the rise of the hitherto neglected sections of society due to socio-political mobilization, spread of education and socio-economic development leading to the empowerment of these sections of society to demand greater share in the decision making process by forming institutions and associations on the other. It is also felt that the involvement of all the stakeholders in the decision-making and decision implementation process will yield good results. The
government is increasingly seeking the participation of market and civil society institutions in producing and delivering goods and services to the people. The public private partnership, privatizations, contracting out, corporatisation and debureaucratisation etc. are the major moves in the present day management of the country’s economy. These changes are being initiated by reforms. These factors have led to the emergence of the concept of governance. Thus, governance implies participation of different stakeholders both formal and informal. Again for the effective participation of the stakeholders, there is a need for transparency and for proper implementation of the decisions taken there is a need for the accountability on the part of the stakeholders.

Thus, theoretically, the concepts like participation, transparency and accountability are inherent in governance process. The governance of the power is a major issue. The nature of policies to be framed and nature of institutions to be constituted determine the quality of governance in the sector. In this chapter, an analysis of the existing policies and institutions governing the power sector is made. The framework for such analysis adopted in this study is whether or not the existing policies and institutions in power sector is effective in ensuring quality service to the consumers and commercial viability of the supply side.

2.2: Policies Governing Power Sector
The first legislation on electricity was passed in 1877, which provided “for the protection of person and property, from injury and risks, attendant to the supply and use of electricity for lighting and other purposes.” This act was repealed and replaced by the Indian Electricity Act, 1903. “It was clearly recognised to be a somewhat tentative measure”, that would be amended with experience. The new Indian Electricity Act, 1910, “to amend the law retaining to the supply and use of electrical energy”, left “the granting of all licences in the hands of the local government, laying down some rules regarding safety”. It was a comprehensive piece of legislation to “regulate the generation, supply and use of electricity and dealt with licensing, regulation and safety”, giving considerable authority to the provincial governments. In 1948, the Electricity (Supply) Act, 1948, on the broad lines of the Electricity (Supply) Act, 1926, in force in the United Kingdom, was
 passed “to facilitate the establishment of regional coordination in the development of electricity transcending the geographical limits of local bodies”. It provided “for the rationalisation of the production and supply of electricity, and generally for taking measures conducive to the electrical development of the Provinces of India”. It enabled the creation of state electricity boards for promoting the coordinated development of generation, supply and distribution in the Provinces and in other areas of the country. Subsequent amendments introduced significant additions and changes.

The Central Electricity Authority (CEA) was created to develop a national power policy and coordinate electricity planning over the country. The Industrial Policy Resolution of 1956 reserved generation and distribution of electricity almost exclusively for the states, letting existing private licensees, however, to continue. This led to the gradual domination of the electricity sector by government enterprises. Initially the state governments were apparently reluctant to create SEBs because they would conflict with existing departments of government. However, by the late 1950s all state governments had established SEBs. By an office order in 1964 (inserted into the Act in 1991 by an amendment), Regional Electricity Boards (REB) consisting of part-time members were constituted in 1964 to promote regional coordination and operation of power supply. These REBs had as Members, the Chairmen of the SEBs, while Members of SEBs ran the technical committees. The administrative head of the REB was an officer on deputation from the CEA and was therefore also subservient to it. Joint sector projects between states and also the central government.

Thus, power sector of India was governed by the Electricity Supply Act, 1948 which created The State Electricity Boards (SEBs) to perform the functions of generation, transmission and distribution of electricity as well as tariff setting. The Act also created The Central Electricity Authority (CEA) to monitor the matters relating to the power sector. Later, The Electricity Regulatory Commission Act, 1998 came into existence creating regulatory commissions mainly for setting tariff as well as to protect the interest of the consumers (www.pryaspune.org/energy/engpub.htm, Rao 2004). The Industrial Policy Resolution 1956 reserved for generation, transmission and distribution of electricity almost exclusively for the government and article 246 of the Constitution made electricity a concurrent subject thereby allowing both central as
well as the states to make law on it (Rao et.al. 1998:18). With this legal framework, the power sector was brought completely within the jurisdiction of the state.

As per Article 1(1) of the Constitution, India is a Union of States. In a federal system of governance there is distribution of powers between the Centre and States. Articles from 245 to 255 of the Constitution deal with the distribution of legislative powers as follows: - Schedule VII of the Constitution of India contains three lists. The Union Parliament has power to make laws on the subject matters contained in List I (Union List). The State legislatures have power to make laws on the subject matters contained in List II (State List). Both the Parliament and the State legislatures have power to make laws on the matters contained in List III (Concurrent List). The subject ‘Electricity’ is the entry No. 38 of the List III. Both the Parliament and the State legislatures have been empowered to make laws on the subject of Electricity (Constitution of India). However, the Constitution has given supremacy to the Central Legislation if there are conflicts or inconsistencies between the Central Act and the State Legislation.

As it is mentioned earlier issues like efficiency, equity, service delivery and regulation are some of the important aspects before researchers, policy makers and administrators for the obvious reason of their being important inputs for socio-economic development of a nation. The performance of India’s power sector deteriorated in terms of reducing T&D loss, increasing billing & collection of revenue, increasing accessibility in India in 1980s. The energy deficit increased and the gap between demand and supply widened. India’s per capita consumption is presently much lower than many developed countries. The investment crisis was felt as the public sector found it difficult to allocate adequate funds for power generation and upgrade power transmission and distribution network. Against this background, many reforms have taken place, which have set new policies and new institutions to govern the power sector of India. The Electricity Act 2003 has been passed. The state governments have also passed electricity reform acts in their respective states. The consumers as important stakeholders have been given representation in the decision making process in the sector. The private entities have been encouraged to invest in the sector. In this way instead of state, the market and civil society organisations have been encouraged to play a definite role
in the sector. Following figure shows the institutional set up before the reforms in the Indian power sector.

**Figure 2.1: Institutional set up before Reforms in Power sector**

Source: Ruet 2003
Thus, the issues like policymaking, planning, allocation of revenue, reporting, loan for power development, advisory work and control were within the public domain. The following figure shows the institutional arrangements after reforms in India.

2.2: Figure Institutional Arrangements After Reforms

Source: Ruet 2003

After reforms the institutional set up got changed with the unbundling of the vertically integrated power industry. The SEBs were unbundled and the activities like generation, transmission and distribution were taken up by different utilities (figure 2.2). The regulatory commissions were created to control, monitor and to set standards of service delivery and to give tariff orders. A description is given below as what institutions are there presently to govern the sector.
2.3 Central Electricity Authority (CEA)

CEA is a statutory body constituted by the Central Government under the erstwhile Electricity (Supply) Act, 1948 and continued under the Electricity Act, 2003 (which has since repealed inter alia the E (S) Act, 1948). The Authority has the responsibility of formulating the National Electricity Plan in accordance with the National Electricity Policy, once in five years. CEA remains the main technical advisor of the Government, the Regulatory Commissions. It is also required to specify *interalia* the technical standards and safety requirements for construction, operation and maintenance of electrical standards and electrical lines (http://cea.nic.in/).

2.4 Central Electricity Regulatory Commission (CERC)

CERC is a statutory body constituted under the provision of the erstwhile Electricity Regulatory Commissions Act, 1998 and continued under Electricity Act, 2003 (which has since repealed *interalia* the ERC Act, 1998). The main functions of the CERC are to regulate the tariff of generating companies owned or controlled by the Central Government, to regulate the tariff of generating companies other than those owned or controlled by the Central Government, if such generating companies enter into or otherwise have a composite scheme for generation and sale of electricity in more than one State, to regulate the inter-State transmission of energy including tariff of the transmission utilities, to grant licences for inter-State transmission and trading and to advise the Central Government in formulation of National Electricity Policy and Tariff Policy (http://www.cercind.org/).

2.5 State Electricity Regulatory Commission (SERC)

The concept of SERC as a statutory body responsible for determination of tariff and grant of licence at intra-State level was envisaged in the erstwhile Regulatory Commissions Act, 1998 and has been continued in the Electricity Act, 2003 (which has since repealed *interalia* the ERC Act, 1998). Main responsibilities of the SERC are to determine the tariff for generation, supply, transmission and wheeling of electricity, wholesale, bulk or retail sale within the State; to issue licences for intra-
State transmission, distribution and trading; to promote co-generation and generation of electricity from renewal sources of energy etc.

### 2.6 Central Transmission Utility (CTU)

CTU as a statutory body was conceived in section 27 A of the erstwhile Indian Electricity Act, 1910 and has been retained in the Electricity Act, 2003 (which has since repealed *inter-alia* the Indian Electricity Act, 1910). The functions of the CTU are to undertake transmission of energy through inter-State transmission system and discharge all functions of planning and coordination relating to inter-State transmission system with State Transmission Utilities, Central Government, State Governments, generating companies etc. Power Grid Corporation of India Limited will be the Central Transmission Utility.

### 2.7 State Transmission Utility (STU)

STU as a statutory body was conceived in section 27 B of the erstwhile Indian Electricity Act, 1910 and has been retained in the Electricity Act, 2003 (which has since repealed *inter-alia* the Indian Electricity Act, 1910). The functions of the State Transmission Utility are to undertake transmission of energy through intra-state transmission system and discharge all functions of planning and coordination relating to intra-State transmission system with Central Transmission Utility, State Governments, generating companies etc.

### 2.8 Appellate Tribunal for Electricity (ATE)

Appellate Tribunal for Electricity is a statutory body constituted for the purpose of hearing cases against the orders of the Regulatory Commissions and the Adjudicating officer. Appellate Tribunal for Electricity (ATE) is a new entity created by the E-Act. Sections 110-125 cover the ATE. Appeals on decisions of any RC can be filed with the ATE. ATE will have a Chairperson and 3 members. There would be at least one judicial and one technical member. The chairperson shall be (or has been) a judge of the Supreme Court or chief justice of a High Court. Members shall be (or has been)
judge of High Court, or secretary at the central government in economics/infrastructure sector or an experienced person in power/regulation/economics/commerce/law/management. The chairperson of ATE shall be appointed by the central government in consultation with the Chief Justice of the Supreme Court. Members shall be appointed by the Central government on the recommendation of the same selection committee formed for CERC (section 78). The term of the members on ATE would be three years, and members would be eligible for reappointment once. The members would retire at the age of sixty-five and the chairperson at seventy. ATE shall be deemed to be a civil court. The benches of ATE will ordinarily sit in Delhi and other places as decided. The chairperson of the ATE would constitute benches with two or more members. All benches will have at least one judicial and one technical member. The original E Act 2003 section 121 said: ‘The Chairperson of ATE shall exercise general power of superintendence and control over the appropriate commission’. There was criticism about this clause since it reduces the independence of State RCs. This section was not enacted in June 2003 and was subsequently amended in December 2003 to say that ATE may issue orders, instructions or directions to RCs for performance of their statutory functions. This waters down the power of ATE over RCs, to some extent.

2.9 National Load Despatch Centre (NLDC)

The Electricity Act, 2003 has provided for constitution of the National Load Despatch Centre for optimum scheduling and despatch of electricity among the Regional Load Despatch Centres. The constitution and functions of NLDC are yet to be prescribed by the Central Government.

2.10 Regional Load Despatch Centres (RLDC)

Section 25 of the Electricity Act, 2003 requires the Central Government to make regional demarcation of the country for the efficient, economical and integrated transmission and supply of electricity and in particular to facilitate voluntarily inter-connection and co-ordination of facilities for the inter-State, Regional and inter-regional generation and transmission of electricity. To ensure integrated and power
system in each such region, the Regional Load Despatch Centre ((RLDC) has been envisaged as an apex body. The RLDC is responsible inter-alia for despatch of electricity within the regions, monitoring grid operations etc. The directions given by the RLDC for ensuring grid stability etc. are required to comply with by the licensees, generating company, generating stations, sub-stations and any other persons connected with the operation of the power system.

2.11 State Load Despatch Centres (SLDC)

Corresponding to the RLDC which operates at the regional level, the SLDCs have been envisaged at the State level with the responsibility of ensuring integrated operations of the power system in State.

2.12 Grievances Redressal Forum and Ombudsman

The Electricity Act, 2003 requires every distribution licensee to establish a forum for Redressal of Grievances of consumers. Ombudsman is a statutory authority to be appointed or designated by the State Commission to hear and settle the non-redressal of grievances at the level of Grievance Redressal Forum.

2.13 Coordination Forum

The Electricity Act, 2003 envisages constitution of Coordination Forum both at the Central and State level consisting of Chairperson and Members of the Regulatory Commissions and other stakeholders like generating companies and licensees. The Coordination Forum is meant to ensure smooth and coordinated development of the power system in the country or the State, as the case may be.

2.14 Forum of Regulators

Forum of regulators has been envisaged as statutory body under the Electricity Act, 2003. The forum is to consist of the Chairperson of the Central Commission and Chairpersons of State Commissions.
2.15 District Level Committees

The Electricity Act, 2003 provides for constitution of District level Committees for coordination and review of the extension of electrification in each district; for review of the quality of power supply and consumer’s satisfaction; and for promotion of quality, efficiency and its conservation.

2.16 Institutional Arrangements in Orissa

The reforms initiated in Orissa are designed to address these questions in the sector. The reforms include unbundling of the vertically integrated Orissa State Electricity Board (OSEB), constitution of the Orissa Electricity Regulatory Commission (OERC), privatization of distribution of electricity services by four Distribution Companies (DISTCOs) etc. In other words, in Orissa there has been a change at the policy and institution level. The following figure shows the institutional arrangements in Orissa Power Sector.

**Figure 2.3: Restructuring of Orissa Power Sector**
Orissa State Electricity Board (OSEB) was an institution representing the state. On account of the financial crisis of the Board and the resultant declining investment in generation and transmission of power in the sector on the one hand and the poor quality of the service in terms of power cut and low voltage etc on the other, these reforms were initiated in the Orissa power sector.

The four DISTCOs like Central Electricity Supply Company of Orissa Limited (CESCO), Western Electricity Supply Company of Orissa Limited (WESCO), Northern Electricity Supply Company of Orissa Limited (NESCO) and Southern Electricity Company of Orissa Limited (SOUTHCO) are the market institutions. The OERC is an independent body constituted to enforce rules and regulations by DISTCOs and to set standards of service quality and to set tariff keeping in view the interest of the consumers as well as that of the utilities. There are micro-level institutions like village electricity committee, district level committee and consumer organizations etc. representing the civil society organizations. The users of the service have been given certain powers to look after the matters involving the service and grievance redressal with the formation of the village electricity committees. Some NGOs, institutes and companies have been given certain areas under franchise to collect revenue on the basis of commission.

Thus, in Orissa the government, regulatory commission, distribution companies, consumer bodies and users groups are the actors/stakeholders engage in the governance of the power sector at different phases of decision making and decision implementation and to understand the theoretical as well as the empirical implications of governance in the sector. These are discussed in detail in the pages that follow.

2.17 Distribution Companies (DISTCOs)

The reforms in the Orissa power sector has provided for the participation of business organizations in the power sector in Orissa. The four distribution companies taking the charge of providing the electricity service to the consumers are CESCO, NESCO, WESCO, and SOUTHCO.
2.17.1 The Central Electric Supply Company of Orissa Limited (CESCO)

CESCO was incorporated on 19.11.1997 under the companies Act, 1956 as a Public Limited Company. Though the Company received the certificate for commencement of business on 30.12.1997, it started functioning separately with effect from 26-11-1998, under the license of GRIDCO, after notification by the Govt. of Orissa in the official gazette. CESCO received the Distribution and retail supply license from Orissa Electricity Regulatory Commission (OERC) to distribute and make retail supply of electricity in the Central Zone consisting of undivided Cuttack, Puri and Dhenkanal district with effect from 01-04-1999 and started functioning under own license from 01-04-1999. The Company continued to be a wholly owned subsidiary of Grid Corporation of Orissa Ltd. (GRIDCO) till 31-08-1999. As a measure of Power Sector reform in Orissa, 51% of the shares of the Company was disinvested on 01-09-1999 and accordingly the Company ceased to become a Goverment company with effect from 01-09-1999. The authorised and paid up capital of the company is Rs. 72.72 crores.

In exercise of power under Section 22 of the Electricity Act 2003, the OERC has formulated a scheme for operation and management of CESCO’s utility on 8.9.06. As per the scheme, the name of CESCO’s Utility has been changed to Central Electricity Supply Utility of Orissa (in short CESU). The OERC vide its notification dated 16.9.06 has vested all the assets, rights, liabilities and the power of administration and general superintendence including control of finance and manpower of CESCO's utility with CESU.

2.17.2: The North Eastern Electricity Supply Company of Orissa (NESCO)

NESCO was incorporated as a company as per provisions of companies act 1956 on November 19, 1997 to carry out the distribution & retail supply of Electricity energy in North Eastern regions of Orissa. It is a joint venture between erst while Grid Corporation of Orissa now OPTCL & Reliance Energy Ltd., Reliance Energy Ltd. acquisition 51% stake in NESCO & took control of the management effective from
Jan 18th 2003. NESCO caters to a population of approximately 80,40,875 spread over 28000 square kms with a turn over of Rs 590.23 Crores (provisional) and serves a consumer base of about 4,98,970 consumers. With a vision to fulfill the expectation of Govt. of Orissa as a sequel to the Orissa Electricity Reform Act 1995 (Orissa act 2 of 1996) as amended by the Orissa Electricity Reform (Amendment) -1998, with an objective of uninterrupted electricity supply to the consumers at an affordable price with its Corporate Office at Balasore. NESCO encompasses an area of five districts viz., Balasore, Jajpur, Mayurbhanj, Keonjhar & Bhadrak of Orissa. The distribution operations of NESCO are organised under 4 Circles, 14 Divisions, 41 Sub-divisions and 141 Sections.

2.17.3: Western Electricity Supply Company of Orissa Limited (WESCO)
WESCO was incorporated as a Public Limited Company on November 19, 1997 to carry out the distribution and retail supply business of electricity in the entire western region of Orissa. The Company secured the Certificate of Commencement of business on 30.12.1997 and started functioning as a wholly owned subsidiary of Grid Corporation of Orissa Limited (GRIDCO), a Govt of Orissa power utility, from November 26, 1998 under latter’s Distribution and Retail Supply License. Subsequently, the Company obtained its own license for Retail Supply from Orissa Electricity Regulatory Commission (OERC) with effect from April 1, 1999. After privatisation of Distribution business under power sector reform process, WESCO became a subsidiary of BSES Ltd; the premier Mumbai based Power Utility with acquisition of 51% share. The authorised and paid up capital of the Company is 48.65 crores. The licensed area of operation of the Company is 48,000 sq. km and covers nine revenue districts of Western Orissa namely, Sundargarh, Jharsuguda, Sambalpur, Deogarh, Bargarh, Sonepur, Bolangir, Nuapada and Kalahandi. Since April 1st 2003 the company is an associate company of BSES Ltd.

2.17.4: The Southern Electricity Supply Company of Orissa Limited (SOUTHCO)

The Southern Electricity Supply Company Of Orissa Limited (SOUTHCO) was incorporated on 19-11-1997 under the Companies Act, 1956 as a Public Limited
Company. The Company started functioning with effect from 26-11-1998, under the
distribution and retail supply license of GRIDCO, after notification in the official
gazette by the Government of Orissa. SOUTHCO received the Distribution and Retail
Supply license from Orissa Electricity Regulatory Commission (OERC) for
distribution and retail supply of electricity in the Southern Orissa, consisting of
districts of Ganjam, Gajapati, Rayagada, Koraput, Phulabani, Kandhamal,
Nawrangpur, Malkangiri, and Puri (some parts) with effect from 01-04-1999. By
virtue of Power Sector reform in Orissa, SOUTHCO became a subsidiary of BSES
Limited, Mumbai on 1st April, 1999 by acquisition of 51% of the shareholding of the
Company by BSES Limited. The Company has authorised and paid up capital of
Rs.37.66 crore. At present, SOUTHCO operates in the geographical area covering
47,000 sq. km. and provides electricity to about four lakh consumers in its licensed
area.

2.18 Generation Companies of Orissa

2.18.1 Orissa Hydro Power Corporation Ltd. (OHPC)

Consequent to the reform in power sector in Orissa under the Reform Act, 1995,
OHPC was incorporated on 21st April 1995 under the companies Act 1956. Its
objectives are to construct/renovate/modernize/uprate and operate Hydro Electric
Power stations in the state of Orissa or elsewhere. The Hydro Power Projects under
operation and construction were transferred by the State Government to OHPC on
01.04.1996. In Ten years of its functioning, it could complete the Upper Indiravati H.
E. Project (600 MW), and the RM&U of four units of Burla Power House by up rating
the capacity by 40 MW and R&M of Unit-1 of Chiplima Power House. The present
installed capacity of Hydro Power stations under OHPC is 1912 MW including 30%
share in Machhkund Hydro Electric Project, a joint project of Andhra Pradesh and
Orissa Government. It has been planned to complete the Balimela Extension Project 7
th & 8 th Units (2X75 MW) and Potteru Small Hydro Electric Project (2X3 MW)
during the financial year 2006-07. Efficient management by competent personnel has
resulted in higher availability of machines and, consequently, optimum generation of
power. OHPC provides the cheapest and peak power to the State Grid and maintains
the Grid discipline of the eastern region.
2.18.2 Orissa Power Generation Corporation Limited (OPGC)

Orissa Power Generation Corporation Limited (OPGC) was incorporated on November 14, 1984 under the Companies Act, 1956 to manage the thermal generation in Orissa. It set up Units 1&2 at Ib Valley with an installed capacity of 420 MW. Initially the Government of Orissa (GoO) owned the entire share capital of the company. In January 1999 GoO has divested 49% of its stake in favour of a private investor namely, AES Corporation, USA.

2.19: Transmission Company of Orissa

2.19.1: Grid Corporation of Orissa Limited (GRIDCO)

Grid Corporation of Orissa Limited (GRIDCO) was incorporated on 20th April 1995 under the Companies Act, 1956 as a wholly owned Government of Orissa Undertaking. The Company obtained the Certificate of Commencement of Business on 6th July 1995. GRIDCO carried on the business of transmission and bulk supply of electricity and other related activities under an exclusive license issued by Orissa Electricity Regulatory Commission. Consequent upon enactment of Electricity Act, 2003, the transmission related activities of the Company were transferred and vested with Orissa Power Transmission Corporation Limited, a wholly owned undertaking of the State Government through Orissa Electricity Reforms (Transfer of Transmission and Related Activities) Scheme, 2005 with effect from 09.06.2005.

After separation, GRIDCO is presently engaged in business of bulk purchase and bulk sale of power to the four Distribution Companies inside the State and trading of surplus power through traders to promote exchange of power with neighboring States in the country. The registered office of the Company is situated at Janpath, Bhubaneswar. The Chairman-cum-Managing Director who is assisted by whole-time Directors under overall supervision of the Board of Directors is managing the day-to-day affairs of the Company. A team of dedicated and experienced professionals in various fields in turn assists them.
2.20: Ministry of Power, Government of Orissa

In the pre-reform period, the state performed the functions of policy making, generation, transmission and distribution of electricity. Orissa State Electricity Board (OSEB) represented the state of Orissa in performing the whole activities of electricity in the state. In post-reform period, though distribution companies were formed and privatized, the state retained the role of policy making and looked after the issue of rural electrification. Thus, the Government of Orissa is a stakeholder in the power sector of the state. Orissa Electricity Regulatory Commission (OERC) has been created by an act of the Orissa Legislative Assembly and the former is accountable to the Legislature. Thus, the perception that reforms have eroded the role of the state in the sector and have promoted the dominant role to market is not correct. The role of the state, of course, has undergone change. Instead of rowing, it has taken the charge of steering.

2.21: Power Franchisee or Micro Privatisation Initiatives

Again, these companies are giving some areas to certain NGOs and other institutions for collection of revenue from the consumers and for the training of the consumers in matters relating to safe and economical use of electricity, helping the consumers to pay the bills in time and in constituting the village committees for checking theft etc. In return, these small enterprisers or NGOs get some percentage of revenue collected from the consumers. The Orissa Entreprisers Ltd., Xavier Institute of Management, an organization called SENA has been given certain areas under franchise for all these activities. Third important thing is that in order to assimilate the users in the service delivery process in the power sector, all the distribution companies have taken commendable steps in the formation of the Village Electricity Committees for the following purposes by the DISTCOs for the collection of bills. The NGOs or companies have their own personnel who regularly visit the villages, try to solve the problems of the consumers in the matters of billing, collection, metering problems etc. and most importantly, in persuading the consumers for the constitution of village committees for the checking of theft and for creating awareness among the villagers.
to economically use the electricity, regarding the value of the timely payment of the bills etc.

2.22: Village Electricity Committee (VEC)

The constitution of Village Electricity Committees in the governance of the power sector of Orissa at the micro level is an important initiative. If the users of electricity decide to constitute an electricity committee, they have to pass a resolution in that regard and hand over the document to the Junior Engineer (J.E) Electrical, of the electricity section office under which the village is situated. The J.E. then registers the constitution of the Electricity Committee and gives a recognition letter to the committee. Thereafter, the committee is constituted with a president, one secretary and some members including the local lineman. The committee performs the following functions.

- Helping the utility officials recording meter reading and distributing bills to the consumers in the village.
- Helping the officials in collecting bill payments from the consumers on a specified date and place called 'bill collection center' in the village. The electricity line will be disconnected if the consumer defaults, and after the payment of the bill by the defaultee, the connection will be restored. This has to be done with the knowledge and presence of the village committee.
- Giving clearance for new electricity connection to any person in the village if he/she requires so. If the committee opposes giving new connection, the matter will be taken to the higher officials.
- Helping setting right the wrong billing of the consumers by taking the matter to the assistant manager (commerce) of the utility. If the matter is not resolved at this level, then the committee will appeal to the higher authorities.
- Getting repaired the electric wire, pole, sub-station, transformer etc. in the village, by approaching the concerned authority.
- Preventing unnecessary use of electricity, illegal connection, unauthorized reconnection of the line wire and hooking etc. of the
village and the committee and keeping in touch with the officials in these matters.

- Educating the villagers about the importance of electricity for the overall development of the village in the spheres of education, health and livelihood and to convincing the villagers regarding their role and responsibility in ensuring proper maintenance of the electricity in the village. Creating consciousness among villagers on energy conservation, on billing process, their rights as consumers, duties and make them raise their voice against power pilferage.

The role of the village electricity committee in service delivery is mentioned in chapter five.

2.23: District Level Advisory -cum-Coordination Committee

District level committees have been constituted in every district of Orissa in order to deal with the affairs pertaining to electricity in the district. Collector is the Chairman of the Committee and MP of the district or their nominees, Members of the Legislative Assembly of the district, superintendent of police, Executive Engineer, rural water and Sanitation Executive Engineer, Public Health Department Executive, Officer of NAC/Municipal bodies, Project Officer, District rural development agency, Representative of Orissa Lift Irrigation Corporation, M.D. nominee of the distribution company and below the rank of superintendent engineer are the members of the Committee. The Committee looks into the issues like rural electrification, energisation of LT points, grant of new connections, replacement or up gradation of transformers, rectification of low voltage problems, collection of arrears in electricity duty of government, installation of meters, conducting consumer/load census, taking action in respect of meter tampering, taking action in respect of theft of conductors, regularizing unauthorized connections, law and order problems faced by the distribution companies, creating awareness in the society, any other socially relevant programme concerning the department of energy. The Committee meets once in every month and promptly submits the proceedings, duly approved by the collector to the Energy Department of Government.
2.24: State Advisory Committee (SAC)

This is an important statutory body consisting of thirty representatives from different categories of consumers. This body came into existence with the passage of the OERC (State Advisory Committee) Regulations 2004. The committee sits once in every three months. This committee generally gives its opinions/suggestions in matters of tariff setting, service quality and grievance redressal to the state electricity regulatory commission. The committee keeps its points before the commission for consideration in the decision making by the commission. The members are chosen from amongst those who expertise in the subjects of consumer studies and consumer activities and academicians working on issues of power sector.

2.25: Orissa Electricity Regulatory Commission

Independent regulation of the power sector is considered as an important requirement as the regulation by the government involved lot of politicisation of the sector. The Orissa Electricity Regulation Act 1998 created an independent body for the regulation of the Orissa power sector. The commission looks into the matters like issuance and enforcement of licenses, determination of tariff and charges, monitoring of financial viability of operators, setting service standards and enforcement of compliance of the rules and regulations issued by it or enshrined in the Act, arbitration of disputes between licensees and consumers and submission of information and advice to the Government in the electricity matters, handling of consumer grievances and protection interests of the consumers and promotion of competition in all sectors of electricity industry. The function and role of the commission is mentioned in the third chapter of the thesis.

2.26: Grievance Redressal Forum (GRF)

Another institution, which has been constituted in Orissa to deal with the problems of the consumers and to redress their grievances, is the Grievance Redressal Forum. Every existing Licensee has established Grievance Redressal Forums (GRFs)
consisting of two members excluding co-opting members to be appointed by the concerned distribution company. A serving officer of the Licensee or a retired person possessing a degree in electrical engineering and having at least 20 years of experience in the distribution of electricity and having served not below the rank of Superintending Engineer and a serving officer of the Licensee or a retired person possessing a degree in finance or accountancy or law and having at least 5 years of experience in the electricity sector and having served as an officer in an electricity utility will be appointed in the forum. The Members of the Forum shall be appointed for a period of three years. The senior most member shall act as the President of the Forum. One member from Advisory Committee constituted under Section 87 or from the members of the District Committee constituted.

A complainant aggrieved by any action or lack of action by the engineer under the OERC Distribution (Condition of Supply) Code, 2004, may file a complaint before the Forum for the redressal of his grievances after the expiry of 15 days from the time limit fixed by the licensees in their Complaint Handling Procedure. The said complaint shall be in writing and the Forum may not insist any format for such filing. After receiving the complaint, the Forum may seek additional information and details, as required, from the complainant.

2.27: Office of Ombudsman

The Orissa Electricity Commission has constituted an office of Ombudsmen through Amendment (GRF & Ombudsman) Regulation 2005 to perform the functions like receiving and considering all representations filed by the complainants for non-redressal of the grievance by GRF. The Ombudsman may pass such interim orders, as may be considered appropriate, pending the decision and settlement of the representation. The Ombudsman shall, in the first instance, act as a conciliator and mediator in matters, which are the subject matter of the representation filed. Any consumer aggrieved by the non-redressal of the grievance by the Forum, may make a representation to the Ombudsman within thirty days from the date of the decision of the Forum or within thirty days from the date of the expiry of the period within which the Forum was required to take decision and communicate the same to the Complainant. Provided that the Ombudsman may entertain consumer representations,
after expiry of the said period of thirty days if the Ombudsman is satisfied that there was sufficient cause for not filing it within that period. It shall decide the representation, after providing the Complainant and the Licensee an opportunity of being heard. The Ombudsman may require the Licensee or any of the officials, representatives or agents of the Licensee including the Forum to furnish documents, books, information, data and details as may be required to decide the representation. The Licensee and others mentioned above shall duly comply with such requirements of the Ombudsman. It shall decide the representation generally within two months from the date of the receipt of the representation of the consumer. In the event the representation is not decided within two months, the Ombudsman shall record the reasons thereof including the cost to be paid by the Licensee if the inability to decide within the time is attributable to the Licensee. In case the delay is for reasons attributable to the consumer, the Ombudsman may reject the representation of the consumer. The Distribution Licensee shall duly comply with and implement the decision of the Ombudsman on the representation of the consumer. The Ombudsman may adopt a procedure ensuring transparency and due compliance of the principles of natural justice and due process of law and shall dispose of a complaint fairly and equitably.

2.28: Special Police and Squad in Orissa Power sector

In order to help the utility companies to recover revenue pending with the defiant consumers and to check theft of electricity and related materials like wire etc. the government of Orissa has formed special electricity police and the distribution companies have formed special squads to detect and punish the unauthorized users of electricity. The Kannungo Committee Report, 2001 has revealed that the failure on the part of the government of Orissa to provide the proper law and order situation is one of the reasons for the failure of the reforms in Orissa and there are similar complaints against the government of Orissa. Therefore, in order to facilitate the reform process in the distribution, the steps like special police force to accompany the utility officials in revenue collection and special squad regularize the unauthorized users is a kind of partnerships of state and market to implement the reforms in the sector.
2.29: Bijuli Adalat

The Bijuli Adalat shall comprise of two members; a person with legal or judicial standing should be presiding member and one retired electrical engineer conversant with working of distribution companies/erstwhile OSEB shall be the technical member. The superintending Engineer (or equivalent) in charge of distribution circle shall be the convener of the Adalat. While seeking redressal of grievances, if the consumer is not satisfied with response of the higher officer responsible for the particular type of complaint as mentioned in the above paragraphs, he may file a petition with Bijuli Adalat in the office of the Superintending Engineer (or Equivalent) in Performa. The petition should be filed in duplicate at least 15 days before the date of Bijuli Adalat in the prescribed Performa together with a self addressed envelope with necessary postage for issue of notice to him under certificate of posting for appearance before the Adalat. (Advance notice regarding holding Bijuli Adalat on a fixed date, including the scope of the Adalat shall be published by the Superintending Engineer (or equivalent) in different news papers for information of general public). Bijuli Adalat, its establishment and function is guided by a detailed procedure of DISTCOs, which is separately approved by OERC.

2.30: Analysing the Policy Impacts on Power Sector

The policy, which has been followed in the power sector during pre-reform period, supported role of government or the dominance of the public sector. Government played the role of the owner, policy maker and provider of the service. The Electricity Supply industry in India was governed by two enactments: the Indian Electricity Act 1910, the Electricity (Supply) Act 1948 which provided for the dominance of the government. The 1910 Act gave the basic framework for the industry. It envisaged growth through private licensees and provided for licensees to supply a specified area. The 1948 Act mandated the creation of State Electricity Boards (SEBs) with the responsibility of managing electricity supply in the State. However, after reforms the sector became largely private sector oriented. The Electricity Act 2003 (E-Act 2003) provided for private sector role in the production, generation and distribution of electricity and redefining the government’s role in policy making and conferring
regulatory functions to the newly constituted regulatory commissions through the instrumentality of Electricity Regulatory Commissions Act 1998. The 1998 Electricity Act created the Central Regulatory Commission and gave the legal framework for creating State Regulatory Commissions. Some of the important acts are mentioned and critically analysed in sections that follow.

The Electricity Act 2003 (E-Act 2003) is a 100 odd page document with 185 sections covered in 18 parts. Electricity Act 2003 (E-Act) replaces these laws and is said to harmonise the provisions of these through a new comprehensive legislation meeting the reform related issues like trading, competition etc.

The main features of the E-Act are:

1. Generation delicensed: Thermal generation does not need clearance from CEA. Only large or inter-state Hydel projects need this.

2. Setting up of captive generation does not need permission. Captive generation can be set up by a group or society to meet their needs. The captive plants can be located off-site (far from the consumption point).

3. Transmission utility at the central level will continue to hold responsibility of co-ordinating and planning of the transmission network. These utilities or the State governments would look after load dispatch (scheduling of plants, maintenance etc).

4. Private companies can build transmission lines for captive use or for common use

5. Open Access: Any generating station will get access to the transmission system at a fee, subject to capacity availability. They will have to pay a fee to the transmission utility (called wheeling charge) and charges for load dispatch centre. Bulk consumers including DISTCOs can take advantage of open access by purchasing the wheeled power. Large consumers will have to pay a surcharge to cover cross subsidy, except in case of the captive generating stations.

The State Regulatory Commission may permit open access in distribution in phases and can levy a surcharge on users buying power
through open access. This will be utilised to cover cross subsidy in that area.

6. Distribution licensees are free to undertake generation and generation companies are free to undertake distribution license. The commission can allow multiple licenses in the area of a distribution licensee.

7. For rural and remote areas, stand alone systems for generation and distribution are allowed. Distribution managed through Panchayats, User associations, Co-operatives or Franchises would also be permitted without needing license (in state government notified areas).

8. Power Trading is being recognised as an activity that can be taken up after authorisation of Regulatory Commissions (RCs). The RCs would issue licence and fix ceilings on trading margins. Distribution licensees and state governments do not require license to carry out trading.

9. After open access is allowed, consumer can enter into direct commercial relationship with a generating company or trader. In such a case, the price of power will not be regulated, but the transmission charges (called wheeling charges) and surcharge would be.

10. State governments can un-bundle SEBs and create companies. At the minimum the transmission activity needs to be separated from SEB. All states should have Regulatory Commissions.

11. An Appellate tribunal will be created at the Centre for disposal of appeals against decisions of CERC and SERCs.

12. Strict provisions to deal with power theft.

13. Tariff: Tariff would be along commercial principles to encourage competition and efficiency. Multi year tariff formulation is suggested with gradual elimination of subsidises. Metering to be 100% in a few years time. Time of the day tariff to be introduced in a phased manner.

14. Central government would bring out National Electricity Policy, Tariff Policy, National policy on standalone systems for rural areas and a National policy on electrification & local distribution in rural areas. CEA shall prepare National Electricity Plan.
2.30.1: Implications of Electricity Act 2003

1. Entry of more players (mostly private, some public) into generation, transmission, trading and distribution.
2. Increase of captive generation, especially group captives, set up by group of industries to meet their power needs. Many bulk consumers would quit state owned distribution utilities.
3. Many contracts between generators and bulk consumers (private and public – e.g. NTPC & Railways, private generation company & large industry etc), which would be finalised and operated without public scrutiny.
4. Tariff will change slowly to reflect the cost to serve and cross subsidy will get reduced and finally disappear. The state government may give subsidy in advance if it wants to lower the tariff for some consumers.
5. Increased role of Central government in policy formulation
7. Power sector becomes more complex with entry of many more actors and contracts. Group captive, private distribution companies, transmission licensees and power traders are some new actors. With open access, TOD tariff, many supplier-trader-consumer contracts and many dispersed systems, planning, regulating and operation of the system becomes more complex.
8. Financial deterioration of many state owned utilities – as they will increasingly serve only small and rural consumers.

2.30.2: Increasing role of Central Government

Power has been, and continues to be in the concurrent list of the constitution. Central and State governments have specified roles in policy making and operating the sector. Countrywide planning, funding, fuel issues, crucial manufacturing, bulk generation, research and inter-state transmission have been handled by the Central government. States managed the planning and operation of the state power grids. With the poor performance of the State utilities, the role of the Central government in the sector has been slowly increasing. E-Act is a culmination of this change. Another reason for
increased role of the central government has been, the need for a uniform policy across the country to ensure level playing field essential to facilitate competition.

2.30.3: **Electricity: From a development input to a commodity**

For many years after independence, electricity was looked upon as a major development input. With this view, governments gave emphasis to rural electrification and energising agricultural pump sets. Along with this, the policy of cross subsidy, where the industry and commercial consumers subsidise the electricity to the small domestic and agricultural consumers was consciously followed. ERC Act suggests time bound plan to remove cross subsidy but this was not taking place as desired. The E-Act allows large industry to quit the grid and converts cross-subsidy removal policy into economic imperative. It also encourages numerous agencies to take up rural electrification.

2.30.4: **Reducing role of CEA and Centralised planning**

Subsequent to the E-Act, the role of CEA has substantially reduced. From a small body of 7 members (6 permanent and 1 part-time), it has been expanded to have ‘not more than 14 members’. Of which, 8 would be full-time members and rest part-time. Any member can be removed by the Central government, without giving reasons. The responsibility of Techo-Economic Clearance (TEC) for generation projects have been removed from the CEA, except for hydroelectric stations. TEC by the CEA was one tool to ensure technological and economic rationality of generation investments in the country, which will now be replaced by forces of competition and market.

As per the provisions of the E-Act, CEA will advise the government (central, state or RCs) on national electricity policy, standards of performance and other technical matters. It would promote research in the sector and publish periodic reports. Every licensee, generating company and even captive plant are expected to provide the required information to the CEA for preparing regular reports. This can be a powerful tool to partially mitigate the information asymmetry present between different stakeholders in the sector.
2.30.5: Dismantling of SEBs

During the transition period, the SEB would be deemed as a transmission utility and can be subsequently unbundled. Deadline for SEB’s to unbundle was June 2004, as per the E-Act. This was extended to June 2005 and subsequently for 6 more months. As of June 2005, 13 SEBs have been unbundled. For coordinated operation of the sector, Central government is to constitute a coordination forum consisting of CERC members, Chairperson, CEA, and representatives of generating and transmission licensees engaged in interstate operation. Central Government will also constitute a forum of regulators consisting of Chairperson – CERC and Chairpersons of State Regulatory Commissions. Similar forums are to be formed at State and District levels.


1. There remains considerable uncertainty about the economic, social and environmental impact of the Electricity Act 2003. For example, implementation of open access, modalities for determining an open access surcharge, and definitional issues pertaining to cross subsidy surcharges are critical issues that require far greater analysis and review prior to implementation.

2. Rural electrification remains a critical issue but is under-emphasized in the Act. If rural electrification is to shift beyond a target-setting exercise to realization, questions of financing, institutional development and governance will need to be resolved within a clear policy framework that is subjected to rigorous public discussion and review.

3. Despite the clearly stated aim of the Electricity Act encouraging competition, new capacity continues to be developed on the basis of MOUs. The result may be sub-optimal investment that will act as a drag on the sector for decades to come.

4. Given the Act’s emphasis on institutional reform of SEBs, this is an opportune moment to undertake a detailed analysis of the privatisation processes that have been undertaken so far, and also the scope for institutional reform of SEBs under public ownership.
5. Effective regulation is an important pillar of the Act and critical to the future of the electricity sector. It is of concern that many state electricity regulatory commissions do not seem to acknowledge, let alone put to full and wise use, the full extent of their regulatory authority. Further they seem to be content with addressing immediate issues and have failed to take a comprehensive long-term approach to the sector. Capacity of the regulatory bodies and selection process are other critical issues that need attention.

Besides the Electricity Act, 2003 there are other policies and plans governing the power sector. Important of those policies are mentioned and critically analysed to examine how effectively these policies have addressed the pressing issues in the sector.

2.31: The National Electricity Policy 2005

The government of India has announced the National Electricity Policy in February 2005. This policy aims at the following targets:
- Access to electricity to be made available for all households in next five years;
- Supply of reliable and quality power of specified standards in an efficient manner and at reasonable rates and demands to be fully met by 2012;
- Per capita availability of electricity to be increased to over 1,000 units by 2012;
- For dalits and people below the poverty line, a minimum lifeline consumption of one unit per household per day as a merit good by year 2012;
- Financial turnaround and commercial viability of electricity sector.

The ‘Power for All by 2012’ programme launched by the MoP in 2003 envisages the addition of 1,00,000 MW of generation capacity by 2012, electrification of all villages by 2007 and providing access to electricity for all households by 2012. However the new policy sets a new time limit of the “next five years” to provide access to electricity for all households, which takes the deadline to March 2010.


2.31.1.1: Generation Capacity Addition Plans
The policy aims to ensure availability of 1,000 units of per capita electricity by the year 2012 for which new capacity addition of more than 1,00,000 MW is planned by 2012. The following Table illustrates Plan wise capacity addition targets and achievements.

**Table 2.1: Installed Capacity, Target and Addition of Generation**

<table>
<thead>
<tr>
<th>Year/ Five-Year Plan</th>
<th>Installed Capacity at the Beginning of the Year/Plan (MW)</th>
<th>Target for Capacity Addition (MW)</th>
<th>Actual Capacity Added (MW)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1947</td>
<td>1,362</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>First Plan (1951-56)</td>
<td>1,713</td>
<td>NA</td>
<td>1,173</td>
</tr>
<tr>
<td>Second Plan (1956-61)</td>
<td>2,886</td>
<td>NA</td>
<td>1,767</td>
</tr>
<tr>
<td>Third Plan (1961-66)</td>
<td>4,653</td>
<td>NA</td>
<td>4,374</td>
</tr>
<tr>
<td>Fourth Plan (1969-74)</td>
<td>12,957</td>
<td>NA</td>
<td>3,707</td>
</tr>
<tr>
<td>Fifth Plan (1974-79)</td>
<td>16,664</td>
<td>NA</td>
<td>10,016</td>
</tr>
<tr>
<td>Sixth Plan (1980-85)</td>
<td>28,448</td>
<td>NA</td>
<td>14,137</td>
</tr>
<tr>
<td>Seventh Plan (1985-90)</td>
<td>42,585</td>
<td>22,245</td>
<td>21,051</td>
</tr>
<tr>
<td>Eighth Plan (1992-97)</td>
<td>69,065</td>
<td>40,000 (revised to 30,538)</td>
<td>16,730</td>
</tr>
<tr>
<td>Tenth Plan (2002-2007)</td>
<td>1,05,046</td>
<td>41,110 (revised to 39,920 in 2004)</td>
<td>27,000 (anticipated)</td>
</tr>
<tr>
<td>Eleventh Plan (2007-2012)</td>
<td>NA</td>
<td>60,896</td>
<td></td>
</tr>
</tbody>
</table>

Source: Planning Commission, 2004

From the table it is clear that the average achievement during the previous five-year plans was far below the target and it took five decades for independent India to build 1,00,000 MW. Although the capacity addition during the first three years of the Tenth
Plan has been only 8,450 MW (up to December 2004), the revised target is still maintained at 39,920 MW. According to the Central Electricity Authority (CEA) about 35 projects totaling 12,183 MW are likely to slip from the Tenth Plan, which puts the most optimistic achievement in the Tenth Plan at 27,000 MW. In spite of these hard realities, the Ministry of Power (MoP) has set a target of 60,896 MW capacity additions in the Eleventh Plan.

The draft National Electricity Plan formulated by CEA is silent on the transmission plan and the generation projects targeted for the Eleventh Plan in this draft do not match with the “Perspective Transmission Plan 2011-12” issued by the CEA in 1997. This proposed Electricity Plan estimates the energy consumption in 2011-12 at 975 billion units which is far below the policy target of 1,000 units per capita availability for an estimated population of over 1,200 million by then.

2.31.2: Fuel Availability for Power Generation

The new policy admits that coal would continue to remain the primary fuel for electricity production, but fails to list measures to be taken to ensure adequate supply of coal or alternative fuels to meet the growing demand for electricity. Tables 2, 3 and 4 show details of estimated electricity demand, fuel requirements, expected production and availability of coal for power generation as estimated in the draft National Electricity Plan.

<table>
<thead>
<tr>
<th>Year</th>
<th>Energy Production/Requirements (Billion KWh)</th>
<th>Installed Capacity (MW)</th>
<th>Hydro</th>
<th>Thermal (including Wind)</th>
<th>Nuclear</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>2002</td>
<td>517</td>
<td>26,269</td>
<td>76,057</td>
<td>2,720</td>
<td>1,05,046</td>
<td></td>
</tr>
<tr>
<td>2004</td>
<td>565</td>
<td>29,507</td>
<td>80,457</td>
<td>2,720</td>
<td>1,12,684</td>
<td></td>
</tr>
<tr>
<td>2007</td>
<td>719</td>
<td>37,184</td>
<td>1,02,542</td>
<td>5,240</td>
<td>1,44,966</td>
<td></td>
</tr>
<tr>
<td>2012</td>
<td>975</td>
<td>59,604</td>
<td>1,36,078</td>
<td>10,180</td>
<td>2,05,862</td>
<td></td>
</tr>
</tbody>
</table>

Source: Planning Commission, 2004
Table 2.3: Fuel Requirement to Meet Projected Electricity Demand

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Domestic coal (million tones)</td>
<td>259</td>
<td>323</td>
<td>419</td>
</tr>
<tr>
<td>Imported coal (million tones)</td>
<td>9.5</td>
<td>0.8</td>
<td>4.1</td>
</tr>
<tr>
<td>Lignite (million tones)</td>
<td>23.31</td>
<td>24.58</td>
<td>28.8</td>
</tr>
<tr>
<td>Gas (billion cubic metres)</td>
<td>9.5</td>
<td>15.52</td>
<td>16.36</td>
</tr>
<tr>
<td>LNG (billion cubic metres)</td>
<td></td>
<td>6.05</td>
<td>8.5</td>
</tr>
<tr>
<td>Liquid Fuels (million tones)</td>
<td></td>
<td>1.38</td>
<td>1.38</td>
</tr>
</tbody>
</table>

Source: Planning Commission, 2004

Dependence of the power sector on coal can be measured from the fact that 447 out of the 565 billion units of electricity generated in 2003-04 came from thermal plants running on coal. Out of 352 million tones (mt) of domestic coal produced, 265 mt was consumed for electricity generation.

Table 2.4: Coal Production and Future Estimates

<table>
<thead>
<tr>
<th>Year</th>
<th>Coal Production (Excluding Lignite) (Million Tonnes)</th>
<th>Requirement Coal for Electricity Generation (Million Tonners)</th>
<th>Consumed/Likely Availability for Electricity Generation (Million Tonnes)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1991-92</td>
<td>230</td>
<td></td>
<td>126</td>
</tr>
<tr>
<td>1996-97</td>
<td>285</td>
<td></td>
<td>199</td>
</tr>
<tr>
<td>2001-02</td>
<td>328</td>
<td></td>
<td>261</td>
</tr>
<tr>
<td>2003-04</td>
<td>352</td>
<td></td>
<td>265</td>
</tr>
<tr>
<td>2006-07</td>
<td>405</td>
<td>317</td>
<td>na</td>
</tr>
<tr>
<td>2011-12</td>
<td>525</td>
<td>419</td>
<td>369</td>
</tr>
</tbody>
</table>

Source: Planning Commission, 2004
The table 4 illustrates the historic growth in the coal production. The capacity additions during the Eighth and Ninth Plans were 55 million tonnes (mt) and 43 mt. The targets for the Tenth and Eleventh Plans are 77 mt and 120 mt, respectively. These targets look too tall for the Indian coal industry to cope with and any slippages will severely affect the power production targets. Even if coal production capacity reaches 525 mt by 2011-12, the power sector is likely to be allotted only 369 mt (as the total coal demand in the country by then is estimated at 620 mt) leaving a shortfall of 50 mt under the base case scenario (and up to 100 mt in the desirable scenario of high GDP growth). This situation calls for integrated planning of new power projects in coordination with augmentation plans for coal production, import of coal or alternative fuels, development of port facilities/LNG terminals, storage facilities for fuels, logistics of fuel transportation by rail/road/pipelines and development of power transmission corridors. The resource allocation and project implementation responsibilities should be determined to ensure coordinated development of the integrated system. The financial closure of new power projects depends on reliable and firm fuel supply agreements and the new policy has not indicated any concrete step in this direction.

2.31.3: T and D Losses

The electricity policy calls for a time bound programme to be drawn up by the SERCs for segregation of technical and commercial losses through energy audits. This is a very important step towards reduction of T&D losses. A large number of states have been reporting losses of over 40 per cent in the recent years, which is unsustainable. The policy urges the state governments to prepare a five-year plan with annual milestones to bring down these losses to best international practices by 2012. Average transmission and distribution losses in utilities in the developed world are indicated in table 2.5.
Table 2.5: T & D Losses in Developed Countries (in %)

<table>
<thead>
<tr>
<th>Type of Loss</th>
<th>Average Losses in Modern Utilities in Developing Countries</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technical losses in high voltage transmission system</td>
<td>2-3</td>
</tr>
<tr>
<td>Technical losses in the distribution system</td>
<td>2 - 4</td>
</tr>
<tr>
<td></td>
<td>4 - 6</td>
</tr>
<tr>
<td>Commercial losses (unbilled consumed energy owing to pilferage, unauthorized connections, non-metered connections, faulty meters, meter reading error, billing error etc.)</td>
<td>Below 2</td>
</tr>
</tbody>
</table>

Increases in commercial losses, normally on account of unauthorised connections, drive the technical losses exponentially, as the distribution system is not equipped to handle that extra load. Indian power sector should aim at bringing the total T & D losses down to 10 per cent from the current levels of 32.53 per cent.

2.31.4: Rural Electrification

The new policy prescribes following goals for rural electrification: (a) Creation of Rural Electrification Distribution Backbone (REDB) with at least one 33/11 kV (or 66/11 kV) substation in every block connected to state transmission system; (b) At least one distribution transformer in every village settlement; (c) Decentralised distributed generation facilities together with local distribution network, wherever extension of the grid is not feasible; (d) Particular attention for household electrification of dalit bastis, tribal areas and other weaker sections. Until 2003, the village electrification programmes were monitored by the definition “a village is classified as electrified if electricity is being used with in its revenue area for any purpose what so ever”.

Accordingly 5,12,153 out of the total 5,87,556 villages in India were declared electrified as on March 2002 representing 87 per cent of the total; but more than 60 per cent of the rural households had no access to electricity. This definition of village electrification was rightly modified in the new rural electrification policies which
stipulate that a village is considered electrified only if at least 10 per cent of the households are electrified, one distribution transformer exists in the village, public places like schools, hospitals, etc, are electrified and *dalit bastis* sections have access to power. Based on this new definition, 1,12,401 villages remained unelectrified as of March 2004. Since the remaining villages to be electrified are relatively more difficult than those already meeting the criteria, it demands more time and higher cost to accomplish the task; and on an average 20,000 villages need to be electrified every year to achieve this target in next five years. This rate of progress was achieved only during the Sixth and Seventh Plans (1,20,533 and 1,00,506 villages were electrified, respectively) – but then a single connection could qualify a village to be counted as electrified!

After the definition of village electrification was amended, only 2,626 villages in 2002-03 and 4,589 villages in 2003-04 could be electrified. The “Power for All by 2012” programme still maintains that all villages will be electrified by end of the Tenth Plan which is difficult to believe. Despite several plans and programmes for rural electrification that overlap each other, at the programme delivery levels the implementing agencies are the very same overburdened SEBs. In 2003, MoP launched a new scheme called “Accelerated electrification of 1,00,000 villages and 10 million households” that integrated the previous schemes of AREP (Accelerated Rural Electrification Programme), Kutir Jyothi and the rural electrification component of the PMGY (Pradhan Mantri Gramodaya Yojana). In March 2005 this programme was repackaged and launched as the ‘Rajiv Gandhi Grameen Vidyutikaran Yojana’, which envisages subsidies up to 90 per cent for electrification/augmentation of distribution infrastructure of villages and 100 per cent subsidy for electrification of “below poverty line households” provided the state governments agree to deploy franchisees for management of rural distribution networks financed under this scheme. From the limited details available, this appears to be a better-designed programme with targeting properties and is aimed at subsidising access to electricity rather than its consumption.

Successful rural electrification programmes in many countries including that of US were spearheaded by the agricultural departments (Rejkumar 2005). India also can follow those examples for rural electrification by planning and implementing projects in coordination with agricultural departments, which could help make the electrification programmes more sustainable. In the information age we live in today,
electricity being the main driving force, the rural poor will not be able to cross the digital divide without access to electricity.

2.31.5: Open Access and Competition in the Market Place

The policy lays emphasis on bringing standby captive generation capacity in the country (approximately 20,000 MW in 2003) into the grid by creating an enabling regulatory framework through open access guaranteed by the Electricity Act. The new policy urges the SERCs to establish transmission charges by June 2005 to ensure non-discriminatory open access in transmission to promote competition amongst the generating companies. It makes us believe that when the open access regime is implemented, generating companies will be able to sell to different distribution licensees across the country, which will lead to availability of cheaper power. However, open access and power trading in its present form in India will only strengthen the muscles of a few middle men (in both the public and private sectors) who have not made any investment in the industry, rather than providing cheaper power to the end-user.

Appropriate legal and regulatory frameworks to enable transparent trading of power backed by technological upgradation of load dispatch centres need to be put in place urgently. The policy has set a time limit of June 2006 for modernization of the load dispatch centres in all states, which will be difficult for most SEBs to implement unless this responsibility is shared by some central government agencies.

2.31.6: Recovery of Cost of Services and Targeted Subsidies

The National Electricity Policy emphasizes the importance of ensuring recovery of ‘cost of service’ from consumers to make the power sector sustainable and in the same breath assures a minimum level of support to make electricity affordable to consumers of the very poor category.

The policy envisages subsidizing consumption up to 50 per cent for consumers below the poverty line, who consume less than 30 units per month, through cross subsidies. Since the up-front investments required to reach rural customers is very high and the ensuing revenue flows are small, some form of subsidies may be required to assist
rural households in obtaining access to electricity. The basic principle in designing a subsidy programme is to ensure that subsidies are transparent, targeted and temporary which will improve access to electricity for the poor while not seriously distorting the energy markets. In many countries, subsidies have failed to meet this objective of providing services to those who are not connected and making it affordable to the poorest.

A World Bank study suggests, “in general, demand side subsidies work better than fuel or supply side subsidies because they have better targeting properties and provide stronger incentives for expanding coverage and sustaining services”. The ongoing reform and restructuring of SEBs is not addressing the concerns of those not yet connected to the grid, who are relatively poorer than those connected (World Bank 2004).

It is necessary to note that since last decade, the ministry of power has produced several policy documents and issued numerous amendments; but it has failed to make any significant improvements in the power sector. The new policy is another example that the ministry is not yet ready to learn from its own mistakes. The policy thus contains some ambitious targets. The policy never prescribes the ways and means to achieve this. This policy has expressed an urgency to resolve the problems that plague the power sector, but has not been able to prescribe any practical measure to correct them. Instead, the new policy has set very ambitious goals, which are impossible to achieve in the intended time frame. Though much has been written about “what went wrong” with power sector reforms in India, it is necessary to note that during the past 14 years the Ministry of Power (MoP) has produced several policy documents and issued numerous amendments; but these have failed to make any significant improvements in the power sector.

Thus, the journey from government management of the power sector to the governance of the power sector involving the market and civil society institutions has brought many changes in the structure of the sector. The institutions in the pre-reform period were basically state institutions like Power Ministry and OSEB. However, after reforms in the sector, the institutions that were created came from market (DISTCOs, Franchise) and civil society (VECs, Consumer Organisations, SACs etc.). The need of the sector could not be fulfilled by the state. Massive theft of electricity was a big problem for the OSEB. The constitution of VEC as an institutional arrangement was
felt. In order to give representation to the consumers in the decision making process the State Advisory Committees have been constituted. At the district level, the District Advisory Committees have been constituted. In fourth chapter a detailed discussion on the impacts of the institutions on the efficiency and in the fifth chapter the discussion on the role of institutions in delivery of the service has been made.