

IPPAI
CAPTIVE POWER SERIES 2009
Towards 24 x 7 Power for India

Theme Paper
on
Overview of Policy and Regulatory Framework for
Captive Power in the Country



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1 BACKGROUND

Electricity is an essential input to the economy and an efficient and competitive power sector is vital to a country's development. Electricity is the fulcrum of economic development in any country. Commencing with a meagre installed capacity of around 1350 MW during the year of national independence in 1947, the Indian power sector has made substantial progress over the last six decades and the installed capacity at the end of Ninth Five Year Plan increased to 1,05,000 MW.

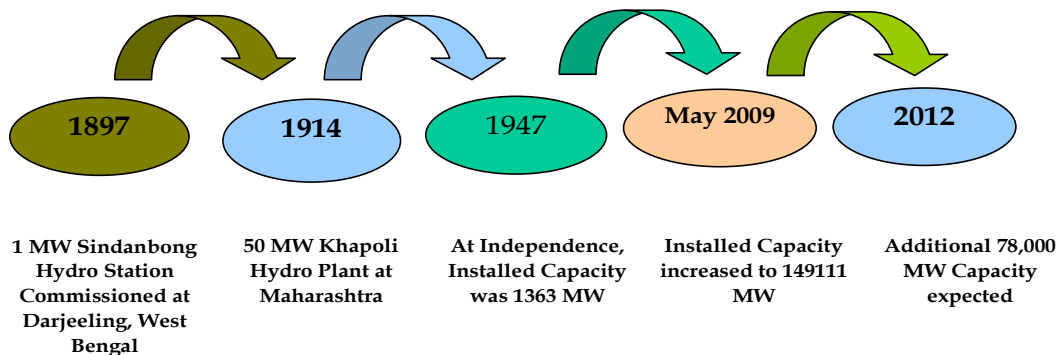
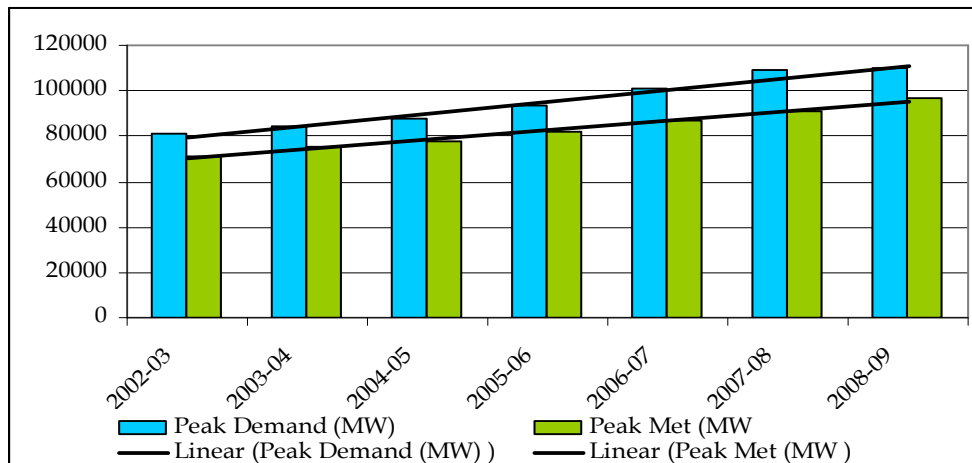


Figure 1 : Growth of Electricity Generation Capacity

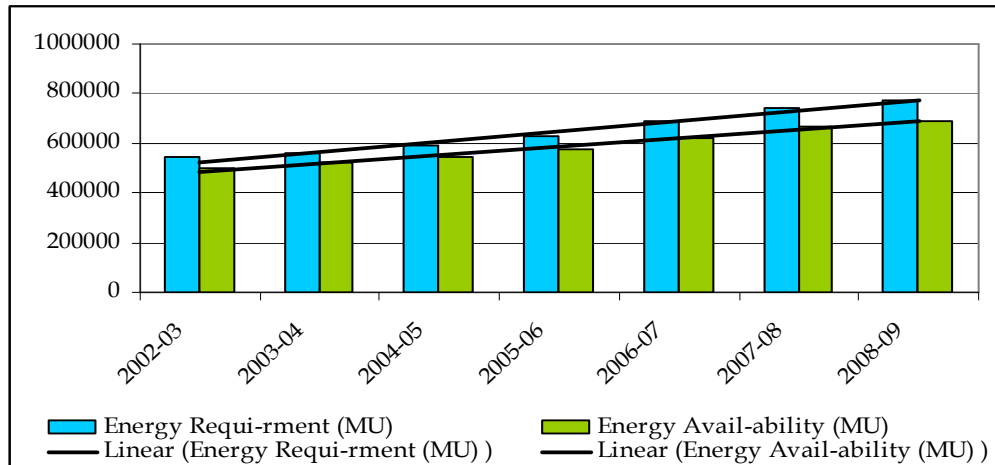
However, the installed generation capacity is inadequate to meet the increasing demand and currently the country is facing energy shortage of around 11% and peak shortage of about 12%. The demand supply position over the last seven years and energy shortfall during the last seven years is as follows:

Figure 2 : Peak Demand Supply Position



Source : CEA and ABPS Research

Figure 3 : Energy Requirement and Availability



Source : CEA and ABPS Research

Nearly all States, including the most industrialized states like Maharashtra, Karnataka, Andhra Pradesh, Tamil Nadu, etc, are reeling under acute power shortage during the peak hours. The distribution utilities are adopting load shedding measures for bridging the demand supply gap and presently, the load shedding measures are limited not only to the towns and villages, but metropolitan and urban areas are also facing load shedding of 2-6 hrs varying from state to state. Industrial production is also adversely affected due to load shedding, mandatory weekly holiday etc. In order to alleviate the plight of consumers from load shedding and frequent power cuts, several models are being tried out in the country. The Distribution Utilities are procuring power from the electricity traders, **cogeneration and captive power plants**, renewable energy sources, etc. Thus, in the current power shortage scenario, the Captive Power Plants are not only meeting their own requirements but also are helping in reducing the load shedding to other consumers.

2 OVERVIEW OF CAPTIVE POWER IN THE COUNTRY

Industrial sector is one of the largest consumers of electrical energy in India. However, a number of industries over a period of time are relying on their own generation (captive power generation and/or cogeneration) rather than depending on the grid supply, primarily due to the following reasons:

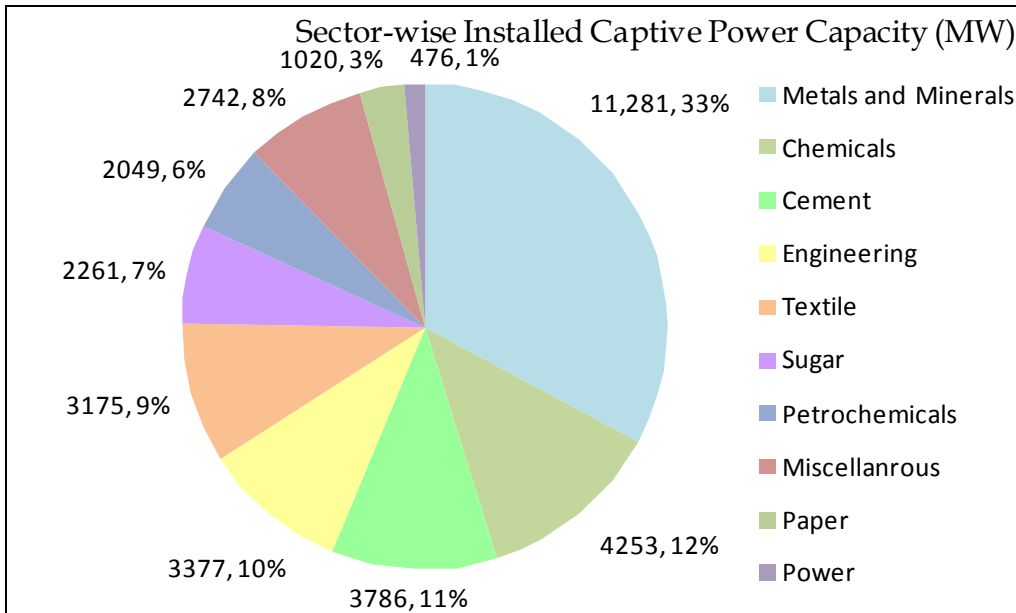
- Non-availability of adequate grid supply (Huge Demand Supply shortage)
- Poor quality and reliability of grid supply
- High tariff as a result of heavy cross-subsidization.

Captive Power Plants (CPP), which are essentially non utility power plants and are owned by specific industry/ies which consume majority of the power produced for its production purposes. The total installed captive power capacity in the country is around 32000 MW.

2.1 Sector wise Captive Power Plants

The sector wise installed captive power capacity is given in the following figure:

Figure 4: Sector wise Installed Captive Power Capacity



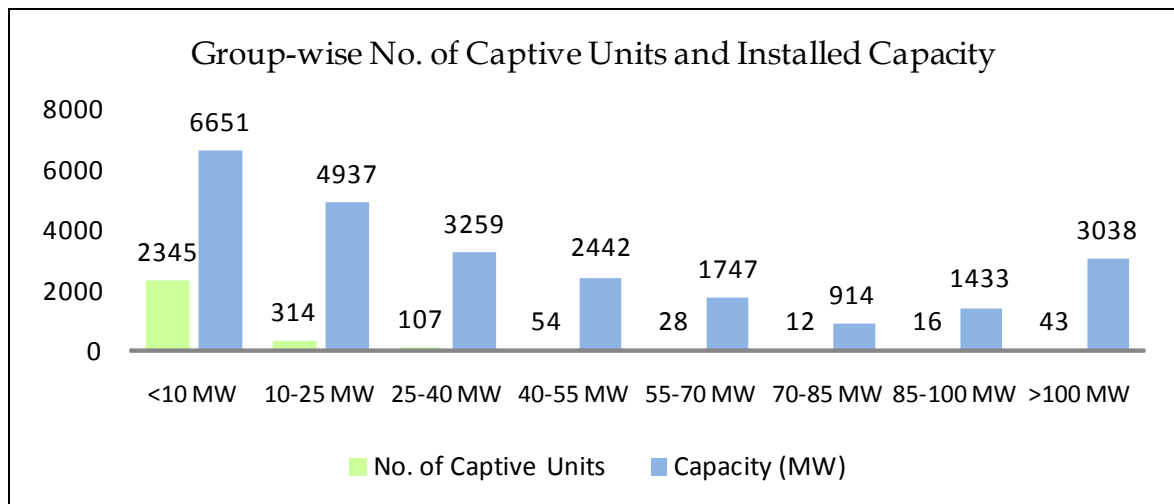
Source: India Infrastructure Report

As observed from the above figure, around 33% of the total captive power capacity has been installed in metals and minerals industry followed by 12% in chemicals, 11% in cement, 10% in Engineering, 9% in textile and remaining in other sectors such as sugar, petrochemicals, etc.

2.2 CPPs-Capacity Range wise

In terms of capacity, the size of captive power plants varies significantly. While some of the CPPS are as small as 0.2 MW, a few others are of more than 300 MW in size. The number of captive power plants alongwith capacity in various range of size is given in following figure:

Figure 5: No of CPPS and corresponding Installed Capacities in various size ranges



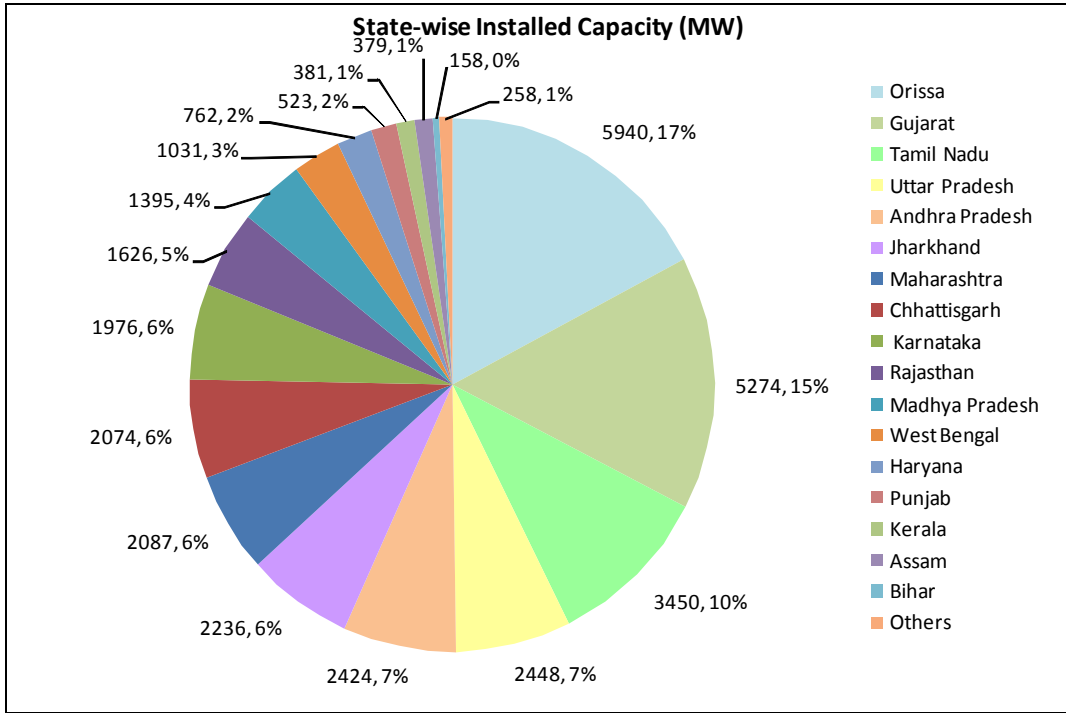
Source : India Infrastructure Report

As observed from the above figure, the maximum numbers of CPPS i.e., 2345 are of less than 10 MW and installed capacity of these CPPS is 6651 which corresponds to average size of around 3 MW each.

2.3 CPPs-State wise

The State-wise installed capacity of Captive Power Plants in the country is pictorially depicted below:

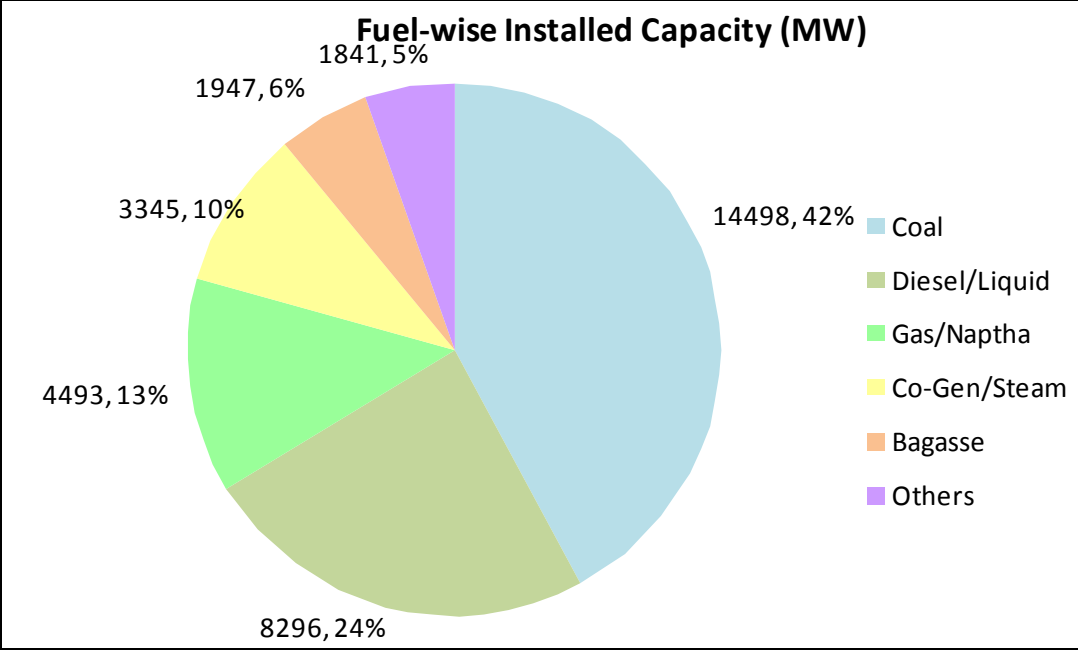
Figure 6: State wise CPPs



2.4 CPPs-Fuel/Source wise

Coal is the major fuel source for captive power plants in India and constitutes around 42% of total 32,000 MW captive capacity followed by liquid fuels which constitutes around 24% of total captive capacity. The chart below demonstrates the fuel-wise installed capacity of captive power in India:

Figure 7: Fuel wise CPPs



Source : India Infrastructure Report

In 2005, the total captive power generation using coal as fuel constituted 44% of total generation, while the same has been reduced to 42.1% in 2008 and is expected to be reduced further with an expected increase of wind and other renewable sources.



3 POLICY AND REGULATORY FRAMEWORK FOR CAPTIVE POWER GENERATION

Prior to enactment of Electricity Act 2003, industrial sector in many States was at the receiving end in terms of supply of electricity. Unscheduled power cut, fluctuating voltage and frequency, resulted in the huge production and revenue loss to the industry. In order to guard themselves against such erratic supply, industries explored various options including setting up their own generating plants mainly for their own use. Repealed Indian Electricity Act 1910 and Electricity Supply Act 1948 had no specific provisions for construction, operation of captive generating plants, and the development of captive generating plants was essentially dependent on the CPP Policies formulated by the respective State Governments. Also, development of CPP was difficult as it entailed availing of many clearances and approvals from Central Electricity Authority, State Government, and State Electricity Board in accordance with the policies prevalent in respective State for setting up a captive generating station.

However, pursuant to enactment of Electricity Act 2003 and subsequent notifications of the National Electricity Policy (NEP) and Tariff Policy (TP) by the Central Government, the issue of clarity and uniformity in policy and regulatory framework has been specifically addressed in respect of Captive Power Plants. This has facilitated development of captive power plants. The provisions related to captive generating plants as mentioned in Electricity Act 2003, NEP and TP with their implications are discussed in the following paragraphs:

3.1 PROVISIONS IN ELECTRICITY ACT 2003

Section 9 of Electricity Act 2003 contains the provisions related to construction of captive generating station and construction of dedicated transmission lines, and is reproduced below;

*“9. (1) Notwithstanding anything contained in this Act, a person may construct, maintain or operate a captive generating plant and dedicated transmission lines:
Provided that the supply of electricity from the captive generating plant through the grid shall be regulated in the same manner as the generating station of a generating company.”*



Electricity Act 2003 has provided the definition of Captive Generating Plant under Section 2(8) and the same is reproduced below:

“Captive generating plant” means a power plant set up by any person to generate electricity primarily for his own use and includes a power plant set up by any co-operative society or association of persons for generating electricity primarily for use of members of such cooperative society or association;”

From the above definition, it can be concluded that captive generating station can be set up by any **Person, Co-operative Society and Association of Person, primarily for own use.**

Person

In this regard, the definition of ‘person’ assumes great significance. The definition of Person as provided in the Section 2(47) of Electricity Act 2003 is reproduced below:

“person” shall include any company or body corporate or association or body of individuals, whether incorporated or not, or artificial juridical person;

3.2 ELECTRICITY RULES 2005

Although, Electricity Act 2003 has provided the basic framework for establishing the captive generating plant, there was ambiguity over the ‘**eligibility criteria**’ and interpretation of the term ‘**Primarily for own use**’ for the purpose of meeting requirements of Captive Generating Plant. To clarify this matter, Ministry of Power, Govt of India, notified a set of rules namely ‘Electricity Rules 2005’ on 8th June 2005.

3.2.1 Eligibility Criteria for Captive Generating Plant

The Clause 3 of Electricity Rules 2005 has specified the minimum eligibility criteria in terms of energy consumption as well as ownership stake in the captive generating Station. The relevant text of the Clause 3 of Electricity Rules 2005 is reproduced below:

“(1) No power plant shall qualify as a ‘captive generating plant’ under section 9 read with clause (8) of section 2 of the Act unless-

(a) in case of a power plant -

(i) not less than twenty six percent of the ownership is held by the captive user(s), and



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(ii) not less than fifty one percent of the aggregate electricity generated in such plant, determined on an annual basis, is consumed for the captive use:"

Any person must have at least 26% equity stake in the power plant and must have at least 51% energy consumption on annual basis out of total electricity generated by the power plant to qualify it as captive power plant.

Further the "Captive User" in Electricity Rules, 2005 is defined as end user of the electricity generated in Captive Generating Plant and the term "Captive Use" shall be construed accordingly.

3.2.2 Captive Generating Plant by AOP or Co-operative Society

Further, the Clause 3 of Electricity Rules 2005 has elaborated on the eligibility criteria for qualification of captive power plant, in case such plant is being set up by an Association of Person, or a co-operative society. The relevant text of Clause 3 is reproduced below:

"Provided that in case of power plant set up by registered cooperative society, the conditions mentioned under paragraphs at (i) and (ii) above shall be satisfied collectively by the members of the co-operative society:

Provided further that in case of association of persons, the captive user(s) shall hold not less than twenty six percent of the ownership of the plant in aggregate and such captive user(s) shall consume not less than fifty one percent of the electricity generated, determined on an annual basis, in proportion to their shares in ownership of the power plant within a variation not exceeding ten percent:"

Here, the point to be noted that energy consumption by the members will have to be in proportion of their equity stake in the captive generation plant. Variation in the proportionate consumption up to 10% has been allowed.

3.2.3 Captive Generating Plant by Special Purpose Vehicle

Further, the Clause 3 of Electricity Rules 2005 has elaborated on the eligibility criteria for qualification of captive power plant, in case such plant is being set up by Special Purpose Vehicle. The relevant text of Clause 3 (b) is reproduced below:



“In case of a generating station owned by a company formed as special purpose vehicle for such generating station, a unit or units of such generating station identified for captive use and not the entire generating station satisfy (s) the conditions contained in paragraphs (i) and (ii) of sub-clause (a) above including -

Explanation:-

(1) The electricity required to be consumed by captive users shall be determined with reference to such generating unit or units in aggregate identified for captive use and not with reference to generating station as a whole

(2) the equity shares to be held by the captive user(s) in the generating station shall not be less than twenty six per cent of the proportionate of the equity of the company related to the generating unit or units identified as the captive generating plant.

(3) It shall be the obligation of the captive users to ensure that the consumption by the Captive Users at the percentages mentioned in sub-clauses (a) and (b) of sub-rule (1) above is maintained and in case the minimum percentage of captive use is not complied with in any year, the entire electricity generated shall be treated as if it is a supply of electricity by a generating company.”

Further, the Special Purpose Vehicle (SPV) is defined as *“Special Purpose Vehicle shall mean a legal entity owning, operating and maintaining a generating station and with no other business or activity to be engaged in by the legal entity”*

Thus the Rules restrict the SPV created for developing, operating and maintaining CPP from engaging in any other activity.

3.3 STATUTORY PROVISIONS UNDER NEP AND TP

The National Electricity Policy (NEP) highlights that the Government of India has initiated several reform processes to create a favourable environment for addition of new generating capacity in India. Thus, the captive generation has been freed from all controls like license, techno-economic clearance from CEA etc.

NEP, in regard to captive power generation specifies as follows:

“The liberal provision in the Electricity Act, 2003 with respect to setting up of captive power plant has been made with a view to not only securing reliable, quality and cost effective power but also to facilitate creation of employment opportunities through speedy and efficient growth of industry.”



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“The provision relating to captive power plants to be set up by group of consumers is primarily aimed at enabling small and medium industries or other consumers that may not individually be in a position to set up plant of optimal size in a cost effective manner. It needs to be noted that efficient expansion of small and medium industries across the country would lead to creation of enormous employment opportunities.”

“A large number of captive and standby generating stations in India have surplus capacity that could be supplied to the grid continuously or during certain time periods. These plants offer a sizeable and potentially competitive capacity that could be harnessed for meeting demand for power. Under the Act, captive generators have access to licensees and would get access to consumers who are allowed open access. Grid inter-connections for captive generators shall be facilitated as per section 30 of the Act. This should be done on priority basis to enable captive generation to become available as distributed generation along the grid. Towards this end, non-conventional energy sources including co-generation could also play a role. Appropriate commercial arrangements would need to be instituted between licensees and the captive generators for harnessing of spare capacity energy from captive power plants. The appropriate Regulatory Commission shall exercise regulatory oversight on such commercial arrangements between captive generators and licensees and determine tariffs when a licensee is the off-taker of power from captive plant”

The Tariff Policy (TP) notified by Ministry of Power recognizes that the State Governments have the rights to impose duties, taxes, cess on generation and consumption of electricity from captive power plants. However, it has advised State Governments to avoid discriminatory treatment meted out to CPPs by levy of excessive taxes thereby rendering the consumption from captive power plants uneconomical. The relevant extract of the TP provision is as under:

In some cases, the duties etc. on consumption of electricity is linked to sources of generation (like captive generation) and the level of duties levied is much higher as compared to that being levied on the same category of consumers who draw power from grid. Such a distinction is invidious and inappropriate. The sole purpose of freely allowing captive generation is to enable industries to access reliable, quality and cost effective power. Particularly, the provisions relating to captive power plants which can be set up by group of consumers has been brought in recognition of the fact that efficient expansion of small and medium industries across the country will lead to faster economic growth and creation of larger employment opportunities.



TP further entrusts responsibility of creating an enabling environment on the Appropriate Commission. Relevant extract of the TP states:

“Captive generation is an important means to making competitive power available. Appropriate Commission should create an enabling environment that encourages captive power plants to be connected to the grid.”

3.4 ELECTRICITY (AMENDMENT) ACT 2007

While the Electricity Act 2003, NEP and TP provided ample clarity on the issue of setting up of captive generating plant, there was ambiguity on the issue of sale of surplus power from the captive power plant to licensees or to open access consumer. The Hon Supreme Court in the matter of captive power plant case of M/s Bhushan Steel Ltd in Maharashtra had upheld the judgment of Maharashtra High Court in WP No.882/05 (MSEB Vs State of Maharashtra & Others) that a captive generator would require a licence to sell its surplus electricity.

If the Captive Power Plant would have required to seek license from regulator to be able to sell surplus power to any other consumer, it would have rendered the entire concept of captive power ineffective. Therefore to address this specific aspect, the Government of India enacted the Electricity (Amendment) Act, 2007 which came into effect on June 12, 2007. The relevant extract (clause 3) of Electricity (Amendment) Act, 2007 is as under:

3. In Section 9 of the Principal Act, in sub-Section (1), after proviso, the following proviso shall be inserted, namely:

“Provided further that no licence shall be required under this Act for supply of electricity generated from a captive generating plant to any licensee in accordance with the provisions of this Act and the rules and the regulations made thereunder and to any consumer, subject to the regulations made under Sub-Section (2) of Section 42 of the Act”

In view of above, the sale of surplus power from captive power plant to licensees or open access consumers has been enabled without need to avail any licence for the same.



3.5 CASE STUDY ON ELIGIBILITY CRITERIA FOR SPV: MALANPUR CAPTIVE POWER LIMITED

A case of Captive power plant set up in Malanpur, (District Bhind) Madhya Pradesh provides a reference case for establishing the group captive scheme, wherein ownership issues have been addressed pursuant to notification of MOP Rules. Madhya Pradesh Electricity Regulatory Commission (MPERC) approved the Group Captive Scheme through its Order dated May 22, 2007 (Petition No. 2/2007).

The summary of scheme and MPERC Order has been presented in the following paragraphs:

Captive power plant of 26.19 MW has been established by three user shareholders namely SRF, Montage and Supreme and two sponsor shareholders namely Wartsila India Ltd. and Crompton Greaves Ltd through the formation of a Special Purpose Vehicle 'Malanpur Captive Power Limited'(Petitioner) which owns, operates and maintains the generating station, has no other business or activity. Captive Power Plant, (CPP) users are expected to consume a minimum of 13.90 MW, which translates to 69.5% of the available capacity (fuel is available only for 20 MW). In this case, respondent was MP Madhya Kshetra Vidyut Vitaran Co. Ltd. Bhopal. The relevant extract of the MPERC Order is reproduced below:

“During the course of hearing on 4th May 2007, it was submitted by the respondent that various companies have become shareholders in the petitioner company and wanted to avail power supply. The petitioner company is a different entity and is not using the power for itself but is supplying/selling power to other companies for their use in their respective plants. It was submitted that Rules cannot supersede the Act. The petitioner company is nothing but a distribution company and wants to do business of sale of power under the mask of captive generation to save itself from the clutches of obtaining a license and to deprive the respondents of payment of charges.

.....

Going through the records submitted by the petitioner, the Commission is in agreement with the petitioner company that it is a captive generating plant within the meaning of Section 2(8) and section 9 of the Act. Also the petitioner's company is a “Special Purpose Vehicle” within the meaning of rule 3(1) (b) of the Electricity Rules 2005. As submitted by the petitioner, it is engaged only in the generation of power and in no other business. The petitioner has denied the allegation of the respondent that under cover of captive power



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plant the petitioner is selling power to other consumers. It is worth-mentioning here that the respondent has not advanced specific evidence to substantiate the allegation that the petitioner is indulging in sale of power to consumers other than CPP users.

.....

The Commission is not in agreement with the argument of the respondent that he is entitled to recover the cross subsidy surcharge as per provisions of Section 42(2) of the Act. It is provided in the 4th proviso of Section 42(2) that such charge shall not be leviable in case open access is provided to a person who has established a captive generation plant for carrying the electricity to the destination of his own use”

Various directives issued by MPERC to said SPV for implementation of Group Captive Scheme are as under:

- (1) *The petitioner shall strictly abide by the provisions of the Electricity Act 2003 and the Rules made there under and the regulations framed by the Commission along with the necessary amendments to be notified in the Act, rules and regulations from time to time.*
- (2) *The petitioner shall always adhere to the following:*
 - (a) *not less than 26% of its ownership shall be held by its CPP users holding voting rights*
 - (b) *not less than 51% of the aggregate electricity generated in its plant, determined on annual basis shall be consumed by its CPP Users.*

The respondent may bring to the notice of the Commission if any violation is noticed by them in this regard for appropriate action by the Commission.

- (3) *The petitioner shall give an undertaking to the respondent that the Petitioner Company is not engaged and shall not be engaged in other business or activity except the captive generation of power and supply as per explanation 1 (d) of rule 3 of the Electricity Rules, 2005. The respondent may bring to the notice of the Commission if any violation in this regard is noticed by them for taking appropriate action by the Commission.*
- (4) *The petitioner shall submit to the respondent and the Commission the annual information of the status of ownership and of consumption by the captive users in the above CPP. The petitioner shall also be informing the respondent and the Commission of any changes occurring in the shareholdings and /or consumption by the shareholders within a period of one week of occurrence of such change. The petitioner has to inform the respondent immediately after commissioning of the remaining 2 units and status of equity pattern at the time of commissioning.*



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- (5) *According to the rule 3(2) of Electricity Act, 2005, it shall be the obligation of the captive users to ensure that the consumption by the captive users at the percentage mentioned in sub-clause (a) and (b) of sub-rule (1) above is maintained and in case percentage of captive use is not complied within any financial year, the entire electricity generated shall be treated as if it is a supply of electricity by a generating company.*
- (7) *The CPP shall be established, operated and maintained as per technical safety and grid standards specified by the Authority or State Transmission Utility (STU) or the Commission and shall also comply with the provisions of MPERC (Power purchase and other matters with respect to conventional fuel based Captive Power Plants) Regulation 2006.*
- (8) *The above approval is subject to the condition that the petitioner shall obtain the written permission from GoMP for "Right of the way" for erection of own dedicated H.T. line and permission from Chief Electrical Inspector, GoMP for erection, charging and observing safety rules.*



4 REGULATORY AND POLICY FRAMEWORK FOR TRANSMISSION OF CAPTIVE POWER

Earlier, captive generating stations were set up within the industrial premises wherein load/consumption was situated. Hence, there was rarely any requirement of establishing elaborate evacuation and transmission arrangement with connectivity to the Grid. Most of the CPP installations were on stand-alone basis with 'island mode' of operation, not connected with the Grid. However, pursuant to enactment of the Electricity Act 2003, many captive power plants are being set up outside the industry premises, mainly due to space constraint within industry premises and availability of fuel sources at pit head. In order to optimise capital investment and resource utilisation, a concept of Group Captive Power plants is also emerging wherein captive power plant capacities can be optimally designed and sized to meet collective load requirement in optimal and efficient manner. The Electricity Act 2003 has provided following two mechanisms under which electricity generated from CPP can be transmitted from the remotely located CPP to its point of use:

1. Dedicated transmission lines
2. Open Access

4.1 WHEELING OF POWER USING DEDICATED TRANSMISSION LINES

The Electricity Act 2003 has provided the definition of Dedicated Transmission Lines under Section 2 (16) and same is reproduced below:

"Dedicated Transmission Lines" means any electric supply line for point to point transmission which are required for the purpose of connecting electric lines or electric plants of a captive generating plant referred to in section 9 or generating station referred to in section 10 to any transmission lines or sub-stations or generating stations or the load centre, as the case may be;

The option of establishing a dedicated transmission line has been explored in case of a few captive power plants. The option of 'dedicated transmission line' needs to be



tested on technical grounds as well as commercial considerations. Prima facie it does not appear to be the feasible alternative on account of following factors:

- Under an integrated grid operation scenario, while legally it may be feasible to develop a 'dedicated transmission' line, it would be difficult to ensure 'dedicated' nature of its operations. In interconnected transmission system, the flow of power or variations in flow in any element shall affect the power flows in other parts of transmission system. Thus, operational command and control of such transmission element will have to be undertaken in co-ordination with STU/SLDC. Thus, 'dedicated transmission line' may be feasible only in case of limited 'point to point' transmission typically, on stand alone basis.
- Further, cost of 'dedicated transmission' lines will have to be recovered only from 'dedicated users' of such transmission line which may be expensive if the 'dedicated transmission line' is very long.

Hence, it does not appear to be economical to develop long 'dedicated transmission lines' unless there is any technical compulsion or a specific commercial consideration to do so.

4.2 WHEELING OF POWER USING OPEN ACCESS

Open Access mechanism provides freedom to consumers to source power from their choice of power supplier. Open Access allows a bulk consumer, according to the framework developed by the appropriate Regulatory Commission, to contract directly with the generation company or with any other source of supply (other than the incumbent distribution licensee in whose area the consumer is situated). The open access framework also offers such freedom to generating company to supply power to such consumers who are eligible to avail open access. The Electricity Act 2003, vide Section 2(47) defines Open Access as under:

“Open access” means the non-discriminatory provision for the use of transmission lines or distribution system or associated facilities with such lines or system by any licensee or consumer or a person engaged in generation in accordance with the regulations specified by the Appropriate Commission;

Further, as per provisions of Section 9(2) of EA 2003, the Captive Generating plant has the right to open access for the purposes of carrying electricity from its captive



generating plant to destination of its use. The relevant extract of Section 9(2) is as under:

“(2) Every person, who has constructed a captive generating plant and maintains and operates such plant, shall have the right to open access for the purposes of carrying electricity from his captive generating plant to the destination of his use:

Provided that such open access shall be subject to availability of adequate transmission facility and such availability of transmission facility shall be determined by the Central Transmission Utility or the State Transmission Utility as the case may be:”

Further, Section 42 (2) of the Electricity Act, 2003 stipulates that surcharge (for meeting the requirements of cross-subsidy) in addition to charges for wheeling shall not be leviable in case open access is provided to a person who has established a captive generating plant for carrying electricity to the destination of his own use.

However, for transmission of power under Open Access route, the various kinds of charges and losses are payable depending upon the use of transmission and/or distribution network, as the case may be. These charges are as follows:

1. Transmission Charges (In case of Transmission Open Access)
2. Transmission Losses (In case of Transmission Open Access)
3. Wheeling Charges (In case of Distribution Open Access)
4. Wheeling Losses (In case of Distribution Open Access)
5. Additional Surcharge
6. Connectivity Charges
7. Balancing Market (UI) Charges
8. Operating Charges (SLDC charges)
9. Default Supply Charges



5 STATE GOVT. TAXES/DUTIES ON CAPTIVE GENERATION

The Tariff Policy cautions against the imposition of higher duties on captive consumption of electricity. The Policy also provides for facilitating harnessing of surplus captive generation. However, various State Governments have been levying duties on generation and/or consumption of power from CPPs. These duties/taxes are summarized below:

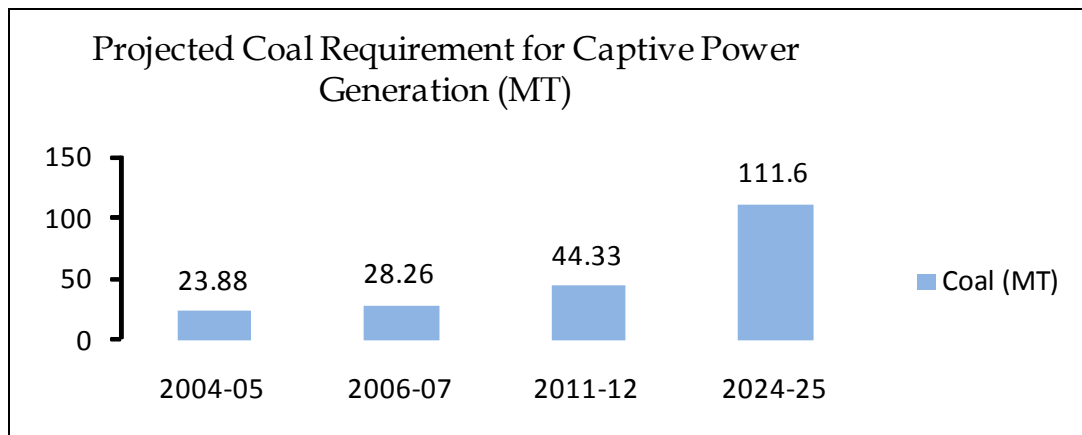
- i. Andhra Pradesh - 25 paise / unit
- ii. Assam - 10 paise/unit
- iii. Gujarat - 40 paise / unit on self consumption by CPP and rate applicable in accordance with tariff schedule, on consumption.
- iv. Madhya Pradesh - Electricity duty on consumption / self-consumption @ 8% of applicable tariff and cess of 10 paise / unit.
- v. Chhattisgarh : Electricity duty on consumption / self-consumption @ 8% of applicable tariff and cess of 10 paise /unit Cess of 10 paise/unit on generation
- vi. Orissa - Electricity duty on consumption - 20 paise / unit.
- vii. Tamil Nadu - Electricity duty on self consumption - 10 paise / unit
- viii. Karnataka - Tax at 5 % of bill amount.
- ix. Uttarakhand - Electricity duty on generation - 2 paise/unit
- x. Maharashtra - Electricity duty on consumption / self-consumption - 30 paise/unit.
- xi. Meghalaya - Electricity duty on generation / consumption / self-consumption - 6 paise/unit.

6 COAL LINKAGE POLICY FOR CAPTIVE POWER

6.1 Projected Coal Requirement

As discussed in Section 2.3. Coal is the major fuel source for captive power plants in India and constitutes around 42% of total 32,000 MW captive mainly because it is the most economical source for captive power generation. Though the share of coal based captive power plants as percentage of total captive capacity has reduced marginally, the coal based captive power plants are likely to constitute the major share of the total installed captive capacity. The projected coal requirement for captive power generation is given below:

Figure 7: Projected Coal Requirement for Captive Power Plants



Source: India Infrastructure Report

6.2 Coal Linkage Policy

The new coal distribution policy formulated by Ministry of Coal, Government of India in October 2007 dispensed with the previous classification of consumers into core and non core sector and provides for treatment of consumers on the basis of merit. The coal linkage system has been replaced with a more transparent bilateral contractual enforceable agreement called Fuel Supply agreement (FSA).



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For captive power plants, supply of coal has been facilitated in terms of the recent coal distribution policy as well as the policy of allocating captive coal blocks. As per the policy:

“100% of the quantity as per the normative requirement of the consumers would be considered for supply of coal, through Fuel Supply Agreement (FSA) by Coal India Limited (CIL) at fixed prices to be declared/notified by CIL. The units/power plants, which are yet to be commissioned but whose coal requirements has already been assessed and accepted by Ministry of Coal and linkage/ Letter of Assurance (LOA) approved as well as future commitments would also be covered accordingly.”

The policy envisages a fuel supply agreement in which both the supplier and consumer have an obligation to honour the contractual agreement.

The policy for new consumers stipulates that:

“The Letter of Assurance (LoA) to be issued now pursuant to the new policy will have a validity of 24 months for consumers/applicants of Power Utilities, CPPs & IPPs and 12 months for other consumers instead of 30 months as earlier. The allottee of LoA would be required to fulfill certain stipulated conditions and meet the milestones within this period and there upon approach coal companies for entering into FSA. Such FSA would be completed within three months. Further, with a view to ensure that only serious and committed consumers approach for LoA, they would be required to furnish an "Earnest Money Deposit (EMD). EMD can be in the form of Bank Guarantee and would stand discharged once FSA is concluded within the stipulated period. However, on failure, the EMD will be forfeited. The amount of EMD could be initially kept at 5% of the value of Annual coal requirement. However, CIL may decide a different level, based on various relevant facts, with the approval of Board of Directors of Coal India Limited. “

The various milestones to be achieved within 24 months from the date of Letter of Assurance are tabulated below:



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Milestones in Power Sector to be achieved by LOA Holders		
Time limits as from the date of LOA	Target activities as milestones	Supporting documents
6 months	In principle approval of the Board of Directors of investment decision, In principle water allocation, Land Acquisition Notification (Section 6)	Certified copy of the Decision of the board, Relevant letter from appropriate state authority, relevant notification
12 months	Firm water allocation, In-principle environmental clearance, Recommendation for forest clearance from State Government	Relevant letter from appropriate state authority, Relevant letter from State/Central Government Departments
18 months	Final environmental clearance, Land in possession for main plant and coal handling plant	Relevant letter from State/Central Government Departments, Possession certificate from the competent revenue authority
24 months	Forest Clearance, Financial closure, Land in possession -90%	Letter from competent authority, Letter from bank/financial authority, Possession certificate from the competent revenue authority

Allocation of captive coal mines provides a greater scope for captive power companies in terms of the quality and quantity of coal. In recent years, there has been a rush to seek allocation of captive coal mines. Sectors such as cement, steel and aluminium are the prominent sectors which are pursuing allocation of coal mines.



7 UTILISATION OF SURPLUS CAPTIVE POWER

As per the National Electricity Policy, a large number of captive and stand by generating stations in India have surplus capacity that could be supplied to the grid continuously or during certain time periods. These plants offer a sizeable and potentially competitive capacity that could be harnessed for meeting demand for power. Under the statutory and regulatory provisions, the Captive Power Plants can sell upto 49% of power generated in the captive power plants either to the Utilities or to the eligible Open Access Consumers. The market mechanism for sale of power from Captive Power Plants has been deliberated in the separate theme paper. However, there are other ways of utilizing the idle captive capacity and one such innovative successful story is CII Pune Model.

7.1 CII Pune Model: Example of the Best Utilization of Captive Power.

Conceived in 2004 and made operational from 4th June 2006, the popularly known "Pune Model" steered by CII has resulted in the city of Pune being completely free from load shedding for around 1.5 years since its implementation. For many months and years prior to that, Pune was facing load shedding regularly from one to four hours a day as was the case with every other city and village in Maharashtra (with the exception of Mumbai which is not in the purview of MSEDCL). This Innovative Model was based on some fundamentals which included:

- Public Private Partnership (PPP) pattern where the civic society and industry work with Government agencies to solve problems
- Mitigation of Load Shedding in Pune not at the expense of any other Community
- The incremental cost of this initiative paid for by the beneficiaries (Citizens of Pune in this case). Hence a "pass through" for Distribution Utility MSEDCL with no financial burden on the State of Maharashtra.

After an elaborate public process conducted by Maharashtra Electricity Regulatory Commission (MERC) which involved, amongst others, three Public Hearings, CII's proposal was accepted by the Citizens & approved by the Regulatory Commission.



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How the Pune power arrangement was structured is a study in elegance. The Companies having captive power plants (CPPs) agreed to use their gensets (based on liquid fuel) during peak hours of load shedding, so that they do not draw the power from the MSEDCL grid to the extent of around 90MW which could be available to the citizens of Pune. In return for the units generated and consumed by the CPPs during the agreed hours, the CPPs were reimbursed the incremental cost, that is, the difference between the variable cost of running CPPs and the applicable MSEDCL tariff.

Based on the prevalent fuel prices, weighted average variable cost of generation as approved by the MERC worked out to Rs 10.18/kWh. Considering the average tariff for high-tension industrial users as Rs 4.04/kWh; the reimbursement required per kWhr generated and consumed by the CPP worked out to be Rs 6.14 /kWh. When this cost was spread over all consumers of the Pune urban circles which enjoyed the benefit of zero load shedding, it worked out to be approximately 40 paise per unit. This additional tariff called 'reliability charge' was levied only on those consumers which consumed 300 units per month and more. Consumers consuming less than 300 units per month were exempted from the reliability charge. Out of the targeted 6 lakh consumers in Pune's urban circles, only 2 lakh recorded a reading of 300 units and above. Thus, only they were liable to pay the reliability charge for un-interrupted power supply. Further, the cost recovery from citizens was so framed that it was both "progressive" as well as conducive to "conservation". So small and marginal consumers got the benefit of '24 X7' Power without having to pay a premium. This further encouraged consumers to bring down their monthly consumption below 300 units so that they don't have to pay the extra charge.