

# MAJOR ISSUES AND CHALLENGES FOR URBAN CUSTOMERS SATISFACTION IN INDIAN ELECTRICITY DISTRIBUTION SECTOR - A REVIEW

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## ABSTRACT

*The objective of this study is provide an overview of the issues and challenges for electricity distribution service quality and customer satisfaction in Indian electricity distribution sector. To investigate all genuine issues researcher has chosen a literature review approach methodology in this study. The preliminary analysis has revealed some interesting findings which are explained in detail in this paper. The paper specifically discusses the problems with respect to urban household level electricity distribution service quality of various electricity distribution companies in India. Further, it highlights the discussion on needed service quality schemes and policies for customer satisfaction. The first section of this study provides introduction. Next part of study i.e. section 2 takes overview of global and regional utility industry scenario. Section 3 deals with findings which include key issues confronting the distribution segment and possible solutions. Lastly, discussion / Recommendations are given.*

**Key words:** Power Sector, Urban Customers, Electricity Distribution, Customer Satisfaction

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## 1. INTRODUCTION

Our nation faces the humiliating reality of having one of the planet's most inefficient power infrastructure, with the largest number of energy deprived households and an economy deprived of consistent, clean power to sustain economic growth [1] [2]. The outages in recent years also drew attention to India's power distribution firms having accumulated losses worth a whopping \$40 billion and needing staggered hikes in

tariff to ensure their sustainability. India's Power Sector is and has been for many years, confronted by significant challenges (BMI, 2012). Therefore, the need of this study.

## **2. UTILITY INDUSTRY OVERVIEW**

### **2.1. Global Industry Overview [3]:**

According to BMI (2012) the global power landscape will be characterized by weakened economic growth prospects, intensifying a divergence in the performance of power markets across regions. Tied to this, severity measures and growing risk dislike will favour divestments, especially in Europe and other developed markets.

### **2.2. Regional Industry Overview**

Asia's power market remains relatively positive, with the region maintaining its status of global outperformer in the sector. A combination of strong and growing demand and largely inadequate electrification rates and installed capacity levels is expected to make the power sector a priority for governments. Furthermore, vast growth potential in the power segment and improved access to financing in the overall infrastructure sector should keep investors interested in the region. BMI (2012) power forecasts [4] show that power consumption in Asia will see a sharp expansion over our 10 year forecast period. With hikes in power demand expected in Asia over the coming decades, regional power markets will be exposed to even more severe power shortages, forcing regional governments to refurbish and expand their electricity generating capacity.

## **3. METHODOLOGY**

To investigate all genuine issues researcher has chosen a literature review approach methodology in this study. The secondary data was collected through many referred journals, data bases like KNIMBUS [5], PROQUEST [6], EBESCO[7], etc, Industrial reports, Government industrial surveys, Handbooks, Various power sector websites etc.

## **4. FINDINGS**

Findings about major issues and challenges for urban customer's satisfaction in Indian electricity distribution sector are presented in the form of the problems and solutions.

### **4.1. Key Issues confronting the distribution segment**

Following are few key issues in distribution segment.

#### ***4.1.1. High investment into power infrastructure and Indian budget allocation***

Required investment in the distribution sector in every five year plan is estimated at a staggering Rs. 4,30,000 crore (\$86.4 billion) and above. The amount of infrastructure that must be installed to meet the five year plans is sizable. For example, 2.5 million poles for 33-kV overhead lines, another 9.4 million poles for other lines rated above 11 kV and 20 million poles for low-tension lines. More than 50 million service connections would need to be added. Further, 33-kV lines a planned total of 180,000 circuit kilometers (ckm), 11-kV lines 750,000 ckm and low-tension lines 800,000 ckm. Investment into power in various stages of the supply chain will account for 45% of the Indian budget allocation for the five year plan from 2012-2017 [8].

#### ***4.1.2. Incomplete electrification & urban-rural dichotomy in supply***

Electrification is vitally important for socio-economic development and is essential in order to bridge the rural-urban divide. Rural electrification in India represents a rather gloomy picture. Only around half of the total of 135 million households in India has been electrified so far. Of the remaining 90,000 villages yet to be electrified, some 18-20,000 villages are located in remote areas where extension of the power grid would be highly expensive. Coupled with this is the urban-rural dichotomy in supply. As per Census 2001, only about 56% of households have access to electricity, with the rural access being 44% and urban access about 82% (Census, 2001).

#### ***4.1.3. Uneconomic Tariffs***

Power tariffs do not cover costs because some segments, especially agriculture consumers, are charged very low tariffs, while and household, industry and commercial users are overcharged. However, the overcharged segments do not always pay the high charges because theft of electricity, generally with the connivance of the staff in the distribution segment, is very high.

#### ***4.1.4. Bulk of Losses in sub transmission and distribution (ST&D) systems***

All India T&D losses which were about 15% till 1966-67, increased gradually and were at 24.79% in 1997-98. During the last few years some of utilities variously estimated the losses in the range over 30% to 50%. Taking into consideration the Indian conditions such as far flung areas, nature of loads, system configuration etc. the reasonable permissible (technical) energy losses should be 10% - 15% in different states. While the losses in extra high voltage (EHV) network are about 4% - 5%, bulk of the losses occur in sub transmission and distribution (ST&D) system.

#### ***4.1.5. Bad management***

According to the Central Electricity Regulatory Commission, half the electricity supplied in the country is unmetered. This is a major hurdle in the way of efficient management of electric supply and good remuneration from the service. Badly managed system is also the major factor that lend misleading credence to the notion of shortage of power.

#### ***4.1.6. Political and Governmental Interference***

Political interference in the management of State Electricity Boards (SEBs) has become the norm in most States, making it difficult to ensure high levels of management efficiency. Governmental interference is also a major roadblock to serious reform [12].

#### ***4.1.7. Electricity misuse***

Few sections of society misuse power. In India, for instance, while common citizens suffer inordinately long power outages, media reports have often highlighted how free and unlimited power supply make government departments and residences the biggest defaulters.

#### ***4.1.8. Subsidies***

Experts working in the power tariffs areas are divided on many issues including the highly subsidized tariff for the agriculture sector. Critics say it is unfair to subsidize well-to-do farmers as it would encourage them to keep drawing on this seemingly

limitless and cheap resource. Electric supply to the agriculture sector manages to recover, on an average, only 12% of the average cost of supply, while 54% is recovered from the residential sector [12].

## **4.2. Solutions**

Following are few solutions for better performing distribution sector:

### ***4.2.1. Efficient use of accelerated power development and reforms programme (APDRP)***

For improvement during the period of implementation of projects aimed at up gradation of sub-transmission & distribution network in the high density areas, the state utilities need to be urged to :- a) Meter all the consumers. b) Rationalize tariff by removing cross subsidies. c) Develop local bodies & local institutions to take up electricity distribution to develop a large number of bulk & retail consumers.

### ***4.2.2. Utilization of latest IT technologies***

Technological leapfrogging is observed in several customer centric utility services, witnessing proven results of better performance, services and operational use. Power Sector should make use of new IT technologies in its operations, services, customer care and maintenance for improvement and better performance.

### ***4.2.3. Governance and institutional autonomy***

Indian distribution companies (DISCOMs) are directly controlled by state electricity regulatory commissions (SERC's). DISCOMs must be empowered with full operational control of its business systems, expansion planning, investment prioritization, human resource management, and commercialization of electric service for electricity customer benefit. All outside interference by institutions external to DISCOMs must be eliminated and this change must receive the full and unequivocal support of the Ministry of Power (MOP).

### ***4.2.4. Implementation of an enterprise resource planning (ERP) system***

There is a need of re-engineering commercial practices and organization, improving data transfer between pay points, DISCOMs commercial offices. Perhaps most importantly, future implementation of an enterprise resource planning (ERP) system will all contribute to customer satisfaction along with revenue enhancement of electricity distribution company.

### ***4.2.5. Privatization***

Power Sector which had been funded mainly through budgetary support and external borrowings was opened to private sector in 1991. Power distribution need to be privatized to ensure India is using the most advanced and efficient methods to uncover and distribute the power to consumers. Privatization of electricity distribution will fetch market efficiency and improve competition. Developing country like India cannot have very efficient and competitive electricity market without privatisation. Better customer participation through privatization can be a strong alternative for improving distribution sector performance. More private firms should be allowed to enter the utility business [13] [14] and to pass on higher energy costs to consumers, something state-run utilities clearly aren't doing.

## 5. DISCUSSION

Improving the efficiency of the country's power distribution system could bring enormous benefits in the form of savings to electricity customers as well as utilities, which could be applied to other sectors of the society. Those savings could well be used by the government to increase healthcare services, expand education, and reduce poverty and in doing so increase the electricity market.

## 6. RECOMMENDATIONS

For facilitating and solving the problems in distribution sector of Indian power system, there is a need of new investments. The new investments in the power sector will depend on the commercial feasibility of the distribution sector to guarantee the power purchase agreements. The commercial viability has to be achieved in distribution in coming years by creating profit centers with full accountability, handing over local distribution to Panchayats/Local Bodies/Franchisees/Users association etc. and privatization of distribution [15]. This will necessitate a widespread increase in the quality of governance and maintaining the pace of reform. As a consequence, funding for the distribution sector, will depend upon reforms. The reforms imitative undertaken by the government is expected to encourage investments in the power sector, however, the Enron debacle has still left a bitter precedent in the minds of foreign investors. Gaining back the confidence of foreign investors is an arguably difficult yet important task. Further, cost-effective efficiency improvement and demand management should also be pursued as a top priority [16]. To capture some of the DSM/end-use efficiency improvement potential, the government of India needs to target higher %age of improvement in energy efficiency in future.

## 7. CONCLUSION

The main issues facing the distribution segment are slow improving governance and the reduction of distribution losses to acceptable minimum levels. In addition to this removing obsolescence, maintaining the pace of reforms and increasing investments for distribution sector are some of the major concerns in power sector for customer satisfaction. The distribution segment of power sector needs immediate attention and an action needs to be taken to achieve a turn around and self-sustenance of power sector. The large amount of commercial losses cannot, however, be reduced only by up gradation of network. An urgent and separate programme of action comprising legislative changes, strict vigilance, enforcement of punitive measures, enhanced accountability at the field level of utility etc. is essential to be implemented to reduce electricity distribution issues.

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