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Arthur D Little

Restructuring Debts of Discoms' for Sustainable Power Growth

A PHD Chamber and Arthur D. Little viewpoint

10th April 2013
New Delhi

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सत्यमेव जयते

विद्युत राज्य मंत्री (स्वतंत्र प्रभार)
भारत सरकार
Minister of State (I/C) for Power
Government of India

20 MAR 2013

MESSAGE

PHD Chamber of Commerce and Industry is organizing a conference on "Restructuring Debts of Discoms' for Sustainable Power Growth" to highlight the issues and challenges pertaining to power sector to attain industrial and commercial development of the Nation.

PHD Chamber in association with Arthur D Little is bringing out this Research paper presenting all aspects of power sector. I sincerely acknowledge their efforts in coming out with this publication and hope that this will benefit all stakeholders concerned.

I wish the Conference all success.

JYOTIRADITYA M. SCINDIA

Message
Mr Suman Jyoti Khaitan

The availability of adequate power has an immense impact on accelerating the economic growth and sound health of distribution sector is essential for sustenance of entire power sector. The Cabinet Committee on Economic Affairs (CCEA) has approved the much awaited scheme for Financial Restructuring of State Distribution Companies (Discoms) which is an outcome of efforts being made by the Government of India on the measures required to improve the commercial viability of the distribution segment.

On this backdrop, PHD Chamber of Commerce and Industry is organizing conference on "Restructuring Debts of Discoms' for Sustainable power Growth" to highlight the issues and challenges of Power sector to attain industrial and commercial development of the country.

PHD Chamber in association with Arthur D Little is bringing out this Research paper presenting various aspects of Power sector. I sincerely hope that this report will benefit all stakeholders.

I wish the Conference all the success

Mr. Suman Jyoti Khaitan,

President, PHD Chamber of Commerce and Industry

Message
Mr. Sharad Jaipuria

PHD Chamber is organizing conference on "Restructuring Debts of Discoms' for Sustainable Power Growth" on 10th April, 2013 at Hotel The Imperial, New Delhi. The purpose of the conference is to pursue the ongoing discussion process and to support the further work on improving the financial sickness of the distribution companies and to share views and discuss the state of Power sector in India.

PHD Chamber in association with Arthur D Little is coming out with the research report in Power. This report will help us to understand the various issues, as well as to share good practices and lessons learned in order to work towards a common understanding and guidelines to go forward.

I heartily congratulate everyone involved and wish success for the conference.

Mr Sharad Jaipuria
Senior Vice President, PHD Chamber of Commerce and Industry

Message
Mr. Bimal Sareen

The Discoms' are undergoing a lot of financial stress and are burdened with huge liabilities and it directs for urgent reforms in the distribution sector. PHD Chamber of Commerce and Industry is organizing conference on "Restructuring Debts of Discoms' for Sustainable power Growth" to address the grim situation of the Discoms' and measures to overcome.

PHD Chamber in association with Arthur D Little is bringing out this Research paper covering many aspects of Power sector. I sincerely hope that this report will not only highlight the key challenges but will also suggest credible measures for sustainable power growth.

I wish all the success to the conference.

Mr. Bimal Sareen
Chairman, Energy Committee, PHD Chamber of Commerce and Industry

Message
Dr. Srini Srinivasan

We are proud to be associated with the PHD Chamber as their Knowledge Partner for the Conference on "Restructuring Debts of Discoms' for Sustainable Power Growth" on 10th April, 2013. Based on our 127 years of global experience in the Power Sector, we are confident that the Discoms will define a courageous path forward towards profitable financial restructuring. We wish the Conference much success.

Dr. Srini Srinivasan
Managing Director, Arthur D. Little India

Executive Summary

Electricity is the fulcrum of economic development in any country. India has installed power generation capacity of 210 GW as on November 30, 2012, which is about 154 times the installed capacity in 1947 (1362 MW).

Electricity generation growth has been steadily improving year after year, and in the year 2011-12, the total electricity generation was about 876.8 billion units of energy with a growth of around 8% over the previous year.

During the XI plan, the power sector made considerable progress with a capacity addition of approximately 58 GW which was significantly more than the capacity commissioned in the previous plans. Such an improvement in performance was possible mainly because of strong private sector participation.

However, India still faces the challenge of poor reliability and quality of electricity, leading to occasional blackouts. Even as availability of power has increased substantially with significant investments on the supply side, the demand has consistently outstripped supply.

The constant losses of State Electricity Boards have created a debt trap. The estimated total loss run up by the SEBs has been pegged at Rs 2.4 lakh Crores.

The Indian power sector has been in a state of transition, from vertically integrated public utilities to unbundled entities, especially with more private participation on the generation side. The changes have brought in improvement in efficiency and competition and offer opportunities with better price signals to incentivize market participants across the value chain.

However, the sector needs to respond quickly and definitively to a number of complex challenges that have emerged lately.

Introduction

The history and evolution of the power sector in India dates back to 1880's, when a small power generating station with local distribution was established in Darjeeling. Since then, this sector has had a chequered history.

The electricity sector in India had an installed capacity of 214.630 GW as of February 2013, the **world's fifth largest**.

The country's annual electricity generation capacity has increased in the last 20 years by about 130 GW, (from about 66 GW in 1991to over 100 GW in 2001, to over 199 GW in 2012).

India's Power Finance Corporation Limited projects that current and approved electricity capacity addition projects in India are expected to add about 100 GW of installed capacity between 2012 and 2017.

This trajectory makes India one the fastest growing markets for electricity infrastructure equipment in the world.

However, India's installed capacity growth rates are still less than those achieved by China, and short of capacity needed to ensure universal availability of electricity throughout India by 2017.

The per capita average annual domestic electricity consumption in India in 2009 was 96 kWh in rural areas, and 288 kWh in urban areas for those with access to electricity, in contrast to the worldwide per capita annual average of 2600 kWh and 6200 kWh in the European Union.

While the Power sector in India has witnessed a few success stories in the last 20 years, the road that lies ahead of us is dotted with innumerable challenges that result from the gaps that exist between what is planned versus what the power sector has been able to deliver. This Report highlights and quantifies some of these gaps, attempts to analyse the problem and offer some potential remedies.

Current Scenario

Generation-GENCO - India has the fifth largest generation capacity in the world, with an installed capacity of 152 GW as on 30 September 2009[1], which is about 4 % of global power generation. The average per capita consumption of electricity in India is estimated to be 704 kWh during 2008-09. However, this is fairly low when compared to that of some of the developed and emerging nations such US (~15,000 kWh) and China (~1,800 kWh)[2]. The world average stands at 2,300 kWh[2]. India currently suffers from a major shortage of electricity generation capacity, even though it is the world's fourth largest energy consumer after United States, China and Russia.

Transmission-TRANSCO - The current installed transmission capacity is only 13 % of the total installed generation capacity[3]. With focus on increasing generation capacity over the next 8-10 years, there is renewed hope for corresponding investments in the transmission sector.

Distribution-DISCOM - Most of us get electricity in our houses and offices via the power distribution companies. In India, the share of private sector in power generation has risen substantially over the past few years, but state electricity boards continue to own nearly 95% of the distribution network. Thus, the entire value chain of the Power sector in India is dominated by the state owned companies. Over the period of time, state owned companies have become unviable and unprofitable due to heavy accumulated losses and liabilities.

With the power distribution companies (Discoms) under heavy debt and losses, the Indian Power industry is facing a severe crisis, the brunt of which is borne by common citizens. The sector is already in deep trouble with severe coal scarcity, and the mounting debts are an added problem.

The Government of India gave the States an earlier opportunity to adopt power sector reforms and recommended the unbundling of the boards to improve their efficiency. Unfortunately, most of these opportunities were not availed, and the losses of the electricity agencies have increased over the years. The estimated total loss run up by the SEBs has been pegged at Rs 2.4 lakh Crores.

The Discom Dilemma in India - What could have led to the debt spiral?

Reason of losses to power distribution companies

India's power distribution segment is generally plagued by two types of losses.

1. **Transmission and Distribution (T&D) Losses:** These losses are due to inefficiency in the transmission sector and have mainly occurred due to feeder metering in the past. A substantial portion of T& D loss, including theft of electricity gets attributed to agricultural consumption

2. **Aggregate technical and commercial (AT&C) losses:** These losses refer to the difference between units input into the system and the units for which the payment is collected

ATC loss captures technical as well as commercial losses in the network and is a true indicator of total losses in the system.

The principal reasons of **T&D and AT&C** losses are as follows**:**

- Power theft
- Non-billing
- Incorrect billing
- Inefficiency in collection
- Leakage in transmission and distribution system

The T&D losses have been consistently high. Overall AT&C loss was 38.86% in 2001-02. In 2012- the all-India T&D losses are 24.15%.

State Discoms have been losing money due to high transmission T&D losses. The commercial losses for Discoms in India (after including subsidies) increased from Rs 16,666 Crores in 2007-08 to Rs 37,836 Crores in 2011-12.

The overall accumulated book losses of Discoms till March 31, 2011 is estimated at Rs 1.90 trillion; 70% of these losses are estimated to be contributed by Discoms in six states, namely, Rajasthan, Tamil Nadu, Uttar Pradesh, Haryana, Punjab and Madhya Pradesh.

Another reason of losses in the Power sector is a mismatch between the tariffs and cost of generating power.

Mismatch between the tariffs and cost of generating power

The cost of supplying electricity increased at a rate of 7.4% annually between 1998-99 and 2009-10. Also, in the same time, the average tariff also increased at an annual rate of 7.1%.

However, the average tariff per unit of electricity has consistently been much lower than the average cost of supply per unit. Between 2007-08 and 2011-12, the gap between average cost and average tariff per unit of electricity was between 20 and 30% of costs.

Gap between Tariffs and unit cost:

Year	Unit Cost	Average Tariff per Unit	Gap between Cost and Tariff	Gap as % of Unit Cost
2007-08	4.04	3.06	.98	24%
2008-09	4.6	3.26	1.34	29%
2009-10	4.76	3.33	1.43	30%
2010-11	4.84	3.57	1.27	26%
2011-12	4.87	3.8	1.07	22%

(Source: "Annual Report 2011-12 on the Working of State Power Utilities and Electricity Departments", Planning Commission)

Subsidy dependence

Another problem for Discoms is subsidy dependence. Most of the SEB's are dependent on the Government's subsidy. Any delay in getting the subsidy does impact the financial and liquidity position of these companies. Overall subsidy dependence for Discoms on an all-India basis is about Rs. 43,000 Crores in FY 2012, which represents an increase of 13% from FY 2010.

Such high subsidy dependence for Discoms is extremely critical for the liquidity profile of the Discoms. There have been delays in many states such as Rajasthan, Punjab, Karnataka and Andhra Pradesh, which in turn, has adversely affected the financial and liquidity position of the Discoms in such states.

Debt Spiral

With increasing losses and liquidity problems, the working capital needs of SEB's have consistently increased.

The banking sector's short term exposure to Discoms is quite substantial, and is estimated at Rs. 1.5- 1.7 trillion as on March 2012, which is 3-3.6% of banking credit and 45-52% of total power credit. A large part of these loans were taken to fund the cash losses of the Discoms.

As loans from banks were freely available to fund the losses, there was limited pressure on the State Governments/Distribution entities to go in for more difficult decisions like tariff hikes and improvement of operating efficiencies.

SEB's are constantly piling up losses. The heavily debt-laden State Electricity Boards (SEBs) have piled up losses of around Rs. 190,000 Crores at the end of fiscal 2010-2011. Among others, Tamil Nadu had losses of Rs .40,183 Crores as of March 31, 2011, followed by Rajasthan (Rs. 37,200 Crores), Uttar Pradesh (Rs. 35,211 Crores), Madhya Pradesh (Rs. 11,491 Crores), Punjab (Rs. 11.363 Crores) and Haryana (Rs.6,505 Crores).

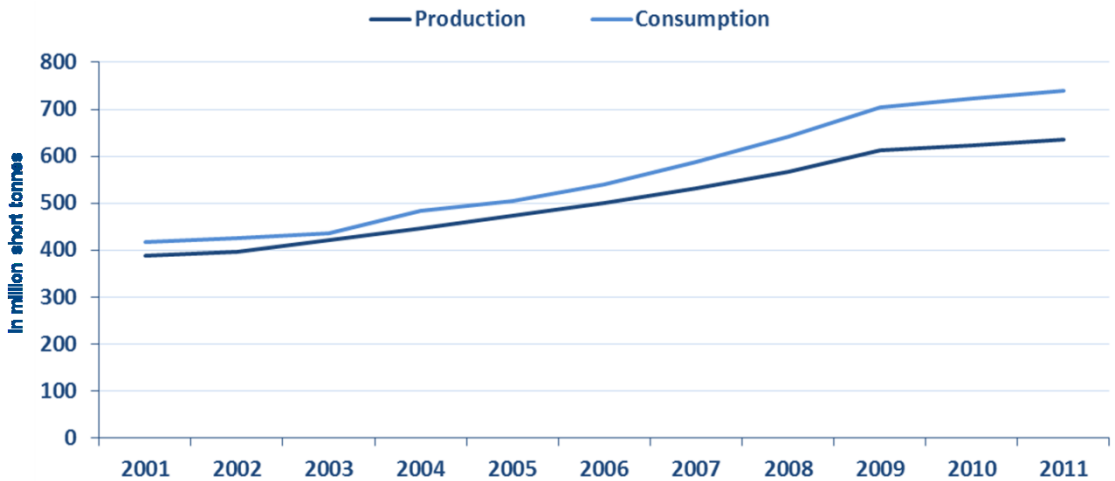
Finally, in FY 2012, banks' reluctance to fund these losses led to tightening in liquidity of distribution entities, which in turn started stretching payments to their creditors (Power generating companies, Transmission companies, fuel suppliers, capital equipment suppliers, Power trading companies etc.) and delaying payments to some of the lenders.

Problems of Power Sector:

1. Coal Shortage:

India has the **world's fifth largest coal reserves** and is the **third largest coal producing country in the world** after China and USA. In spite of this the country does not possess sufficient technology to get engaged in underground mining. Also, the gap between demand and supply keeps increasing.

Coal consumption and production in India – 2001 to 2011



(Source: Ministry of Coal, Government of India)

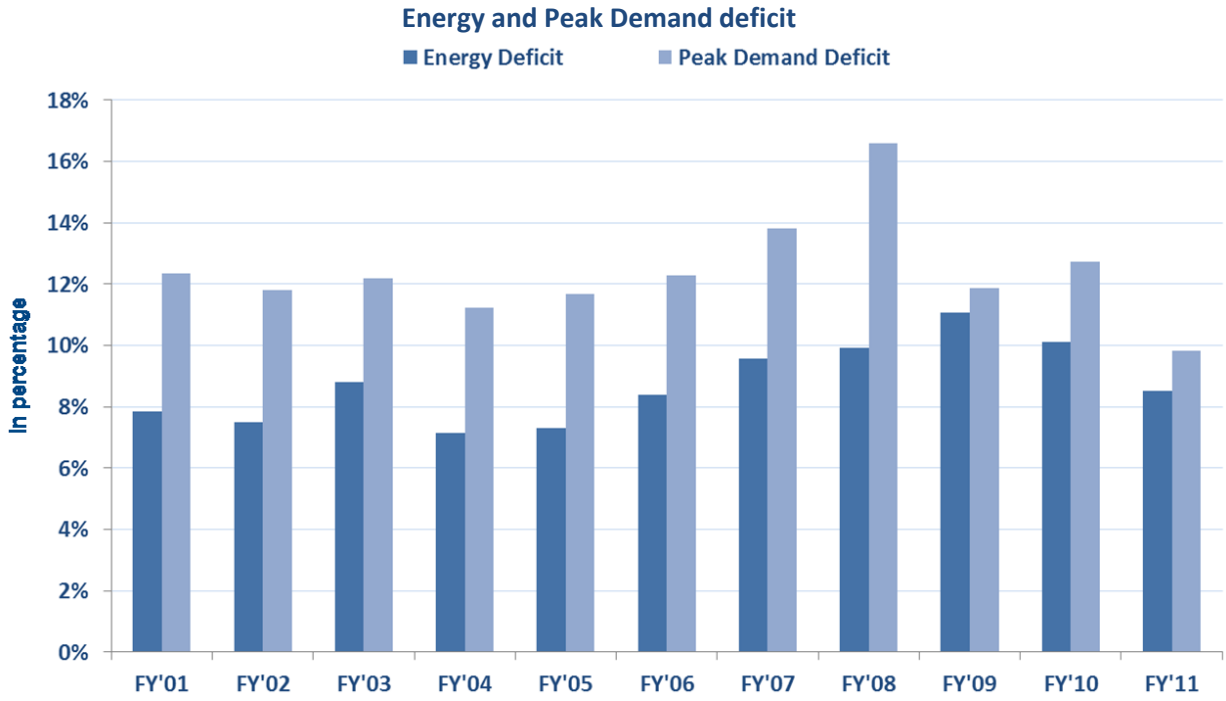
Coal meets around 52% of primary commercial energy needs in India, against 29% the world over. Around 66% of India's power generation is coal based. As power plants rely heavily on coal, its shortage contributes decreases electricity generation.

India's coal mines are located far away from the highest demand markets in southern and western India, posing a **significant logistical challenge** to coal producers and distributors. Most coal reserves are located in the eastern parts of the country. Jharkhand, Chhattisgarh, and Orissa account for approximately 70% of the country's coal reserves. Other significant coal producing states include West Bengal, Andhra Pradesh, Madhya Pradesh, and Maharashtra.

2. Shortage of electricity generation:

India has 211 GW of installed electricity capacity, mostly in coal-powered plants. Because of insufficient fuel supply, the country suffers from a severe shortage of electricity generation, leading to rolling blackouts. Utilization rates in Indian power plants have fallen steadily since 2004 because of **insufficient fuel supplies.**

The installed capacity from coal and natural gas power plants is **heavily clustered** in the more populated western region of the country, particularly in Maharashtra and Gujarat. For example, Maharashtra, the largest Indian state by GDP contains 13% of the nation's generating capacity.



(Source: Central Electricity Authority)

3. Lack of credible information

Lack of proper consumer databases is the biggest obstacle for the Discoms with respect to proper billing and collection of revenues. There is a need for implementation of comprehensive IT interface system in this context. Also, lack of proper information is a major hindrance to estimating losses.

4. Inadequate power supply

The lack of reliable power supply is a major problem faced by the private sector. Indian companies are increasingly setting up their own power plants to ensure reliable power supply and protect their operating costs from the effects of cross-subsidy schemes in most states.

Under such schemes, state governments charge a small subset of power users, such as industries, much higher rates to compensate for the lower charges for the majority of users. Agricultural consumers in some states, for example, receive free power. These consumers use almost a quarter of the power generated in states, but contribute less than 10% of total revenues of Discoms.

5. Inadequate investment in Essential Infrastructure

Although power demand has been mushrooming, the growth in installed capacity and the improvement in transmission and distribution infrastructure, particularly at the state level, have not kept pace. This has caused severe instability in the system. In fact, India has consistently failed to meet its planned power capacity expansions since the 1950s.

According to a recent Reserve Bank of India report, investment in infrastructure in India fell by about 52% in fiscal year 2012 (ended March 31st) compared with a year ago, led by the power and telecom sectors.

The major reasons of falling investments in the power sector are:

- The weak financial health of Discoms
- Delays in securing environmental clearances
- Fuel-supply risks

6. Inadequate Tariff Hike

The average tariff per unit of electricity has consistently been much lower than the average cost of supply per unit. Tariff hike is required so as to cover the existing revenue gap (i.e. gap between revenue requirement and cost of supply even without considering recovery of outstanding regulatory assets). The adequate tariff determination is a challenge, given the critical need for tariff revision to improve the financial position of the utilities, and also in view of the interests of the consumers to avoid any tariff shock.

Possible Remedies:

1. Consistent adoption of RAPDRP (Restructured Accelerated Power Distribution Reform Program) - Government took up RAPDRP to assess actual performance of Discoms in terms of loss reduction. This programme comprises of two main parts-

- **Part-A** - This part provided assistance to states for preparing the base-line data for using new technology tools in project areas having more than 4 lakh people and annual input energy of the order of 350 MU.
- **Part-B**- This part provided assistance for renovation, modernization and strengthening of 11 kV level Substations, Transformers/Transformer Centres, and re-conducting of lines at 11kV level. In exceptional cases, where sub-transmission system is weak, strengthening at 33 kV or 66 kV levels was also to be considered.

To get assistance under the scheme, the states were required to constitute the State Electricity Regulatory Commission, and achieve the target of AT&C loss reduction of 3% per year for utilities that have AT&C loss above 30% and 1.5% for utilities having AT&C loss below 30%. The states were also required to commit a time frame for introduction of measures for better accountability at all levels in the project area. The monitoring was to be done by independent agency of Ministry of Power.

2. Private players in the distribution sector - The Government should find ways to attract private players to the distribution sector in different forms, like multi licensing model, outsourcing, privatization and franchisee models. The best example of implementation of privatization model was in Orissa and New Delhi. This can be replicated in other states of the country.

3. Distribution Franchisee Model - This would be the way forward on an urgent basis for the utilities to bring down their distribution loss levels significantly, given the advantages over the public-private partnership model and successful implementation of the franchisee model for the Bhivandi Circle in Maharashtra. This should be extended to the states during the next few years to at least 255 towns, which account for over 40% of the consumptions.

Government of India has made it a pre-condition of its financial revival package that the Discoms should introduce input based distribution franchise.

4. Professionally qualified and technically oriented management - Government may wish to analyze the practices and methods utilized in the best performing Discoms which have succeeded in reducing the AT&C losses to a level of below 15%.

Our analysis suggests AT&C losses can be better controlled and reduced within the framework of public sector functioning, with a professionally qualified and technically oriented management to guide the policy, and backed by the political will of the state government.

In the case of Andhra Eastern Discom, the engineers and the management have demonstrated that with best practices of loss reduction and introduction of information technology, AT&C losses can be reduced to a level even lower than 10%. Tamil Nadu and Punjab have succeeded in bringing the distribution losses to near 15%. There is a need to ensure that the other states of the country which have higher AT&C losses adopt these methods and practices.

5. Adequate and transparent tariff increases - The power tariff should be set on the basis of best available data, rather than waiting for audit reports. There should be a built-in formula for retail tariffs, and the rise in fuel costs should be passed on to consumers. Since T&D losses are not uniform across a state, consumers in an area that has a high default rate should be charged more compared with those consumers in the areas of lesser default.

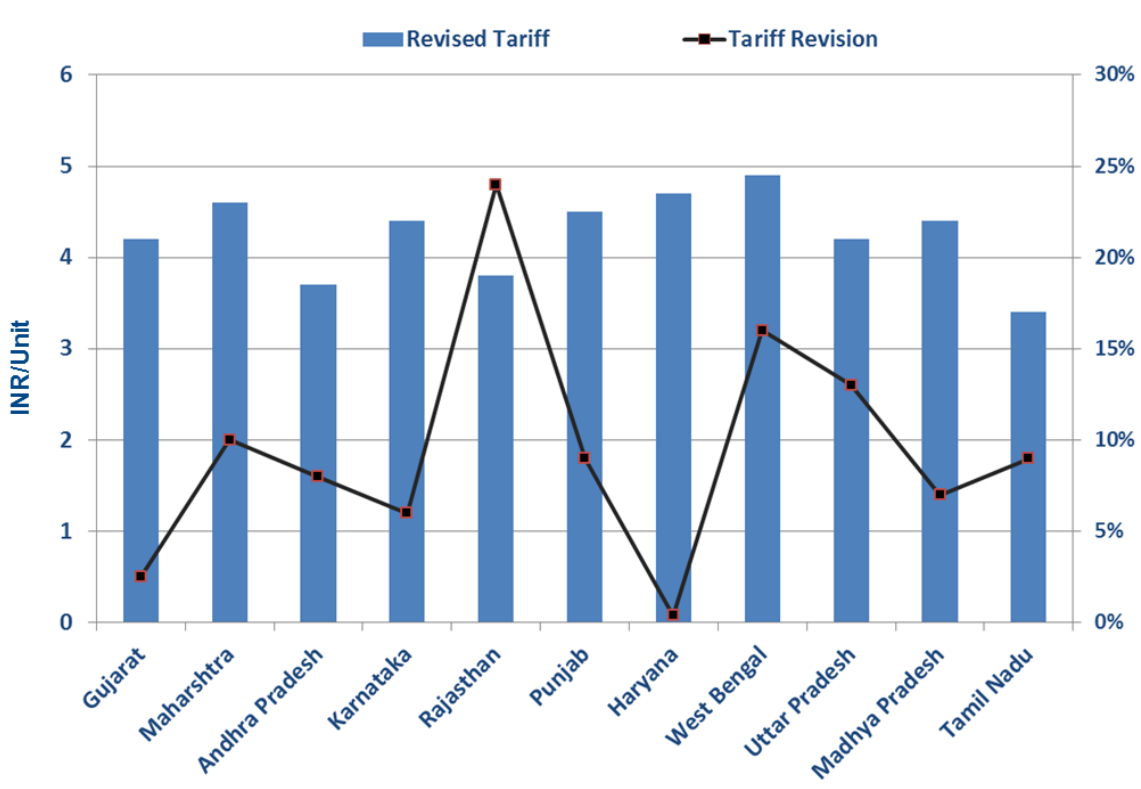
There are four components of power tariffs – costs of generation, transmission, distribution and subsidy (which can be positive or negative). Power pricing should be done taking into consideration each component.

There is also a large amount of cross-subsidisation between consumer categories. The agriculture and household sectors are cross-subsidised by above-cost tariffs for commercial and industrial customers and railways. In fact, Indian industry pays a much higher price for the power it consumes in comparison with even developed nations such as the US, Germany and the UK, with just the Japanese counterparts paying more. On the flip side, Indian households pay the lowest tariffs for the power they consume.

The Government has now moved towards average cost of supply model. In the new pattern, suppliers are supposed to submit a five-year business plan, which will require the utilities to project the demand-supply scenario, power procurement plan and capital investments required to achieve the desired operational efficiency and meet load growth requirements over five years. The Commission has also put a cap on charging operation and maintenance costs to consumers. Some states have taken steps to increase distribution tariffs.

As may be seen in the following chart, several states have seen tariff revision in last two year. The extent of tariff revision has been varied - from as low as 0.4% to 24%; and is inadequate to meet the actual cost of supply in many states, thus resulting in large, uncovered revenue deficits. There is a requirement of consistent and adequate tariff hike.

Tariff revisions in several states in FY 2012



(Source: ICRA, SERCs across the States)

6. Regulatory transparency

Greater coordination between central and state electricity regulatory boards is

essential for implementing consistent and transparent regulation in India's power sector.

Constraints in securing clearances, land rights, and transfer of land between government ministries and to state governments have often delayed power projects. An efficiently operating and well-regulated distribution sector would promote transparent, consistent, and predictable pricing of power. In the long run, this would provide power producers with greater flexibility to pass-on increases in generation costs while safeguarding the interest of consumers and promoters.

Government of India Initiatives:

Rating Initiative by Honourable Power Minister, - Mr. Jyotiraditya Scindia

India has launched an annual rating system of state power distribution companies to boost lending to them and also help improve their performance.

The Power Ministry, has hired ICRA and CARE for providing ratings to the distribution companies. The lending to Discoms will be based on ranks given by the agency

The utilities have been graded on a scale of six—from A+ to C— by ICRA Ltd and Credit Analysis and Research Ltd (CARE).

A highly rated distributor will be eligible for funds from state-owned banks and other financial institutions at a lower rate of interest.

The system has been instituted at a time when the government plans to bail out debt-laden power distributors by recasting their short-term borrowing.

Such a mechanism may provide incentives to distributors to improve their operational and financial performance and help lending institutions assess exposure risks. The rating may also serve as a basis for the Central Government's assistance to the state power sector.

In an exercise carried out among 39 state power distribution utilities, four were awarded A+ and two were given A. Eleven utilities have been given a B+ rating, 10 have been given B, eight got C+ and four got C.

The top rating of A+ has been awarded to four utilities from Gujarat—Dakshin Gujarat Vij Co. Ltd, Uttar Gujarat Vij Co. Ltd, Madhya Gujarat Vij Co. Ltd., and Paschim Gujarat Vij Co. Ltd.

Key Policies:

Key Policy Features of V.K.Shunglu Committee Report -

i. The State Electricity Regulatory Commissions (SERC) should be made independent financially and in their functioning.
ii. The selection of Chairman and Members of Electricity Regulatory Commissions should be fine-tuned and their functioning should be scrutinized by an expert group.
iii. In areas where losses are high, a loss surcharge should be imposed over and above the basic tariff.
iv. Losses of Discoms have been financed by commercial banks, for which the larger share of backing via guarantees have been provided by the state government. In such scenarios loans could be rescheduled subject to the agreement of utilities and the state government.
v. On failure of meeting the rescheduled obligations, assets should be re-possessed by the bank and a Special Purpose Vehicle (SPV) should be set up for the purpose.
vi. The SPV should be owned by the Reserve Bank of India and shall have the powers to deal with the defaulting utilities/state governments.

The Government, through the Ministry of Power, has laid out the following broad strategies to achieve the objectives:

- Power Generation Strategy: focusing on low cost generation, optimization of capacity utilization, controlling input costs, optimisation of fuel mix, technology upgrades and utilization of non-conventional energy sources
- Transmission Strategy: focusing on developing the National Grid, including interstate connections, Technology upgrades and optimization of transmission cost
- Distribution Strategy: achieving distribution reforms by focusing on system upgrades, loss reduction, theft control, consumer service orientation, quality power supply commercialization, decentralized distributed and supply for rural areas
- Regulation Strategy: protecting consumer interests and making the sector commercially viable
- Financing Strategy: to generate resources for required growth of the power sector
- Conservation Strategy: to optimise the utilization of electricity with a

focus on demand side management, load management and technology upgrades to provide energy efficient equipment; and Communication Strategy; forming political consensus with the media support to enhance public awareness

Government backed debt restructuring programs

The Cabinet Committee on Economic Affairs (CCEA) approved the much awaited scheme for Financial Restructuring of State Distribution Companies (Discoms) on September 24, 2012. The scheme will be available for all participating State owned Discoms on fulfilling certain mandatory conditions. The scheme is an outcome of efforts being made by the Government of India on the measures required to improve the commercial viability of the distribution segment.

The proposed scheme is likely to provide a **temporary relief** to Discoms and other power sector (IPPs, Transmission companies, Power trading companies etc.) companies as well as to lenders. Importantly the scheme does provide for effective monitoring of the progress through two committees as well as a carrot in the form of the Central Government taking over 12.5% of loans for better performing Discoms.

Key features of the Debt Restructuring- Scheme

The Union Cabinet has approved the proposal to restructure debt worth Rs.1.9 Lakh Crores of state electricity companies (Discoms). As part of a scheme for the financial turnaround, the 50% of the outstanding short-term liabilities (STLs) of Discoms as of March 31, 2012 will be taken over by state governments.

This shall be first converted into bonds to be issued by Discoms to participating lenders, backed by a state government guarantee. State governments will take over the liability during the next two to five years by issuing special securities in favour of participating lenders in a phased manner; keeping in view the fiscal space available till the entire loan (50% of STL) is taken over by state governments.

The balance 50% of STL will be rescheduled by lenders and serviced by Discoms with a principal moratorium of three years. Repayment of principal and interest would be fully secured by a state government guarantee.

BOND ISSUE

In the three-year first phase, the States would issue bonds based on their targets under the Fiscal Responsibility and Budget Management (FRBM) Act. All bonds would not be issued in the first year. After facilitating the stimulus successfully over three years, 25% of benefit would go to the respective States as incentive. The coupon rates for these bonds would be at a premium to market rates. However, it will be at sub-9% tariff based on power purchase fluctuations. All these steps would be monitored by the Power Ministry.

SECOND PHASE

In the second phase, the Government expects the distribution utilities to become cash-surplus. The remaining debt would, thereby, be restructured for seven years. Although the scheme is not mandatory for all states, but it requires that the states which agree on adopting the package will have to pass the State Electricity Distribution Responsibility Bill in their respective states following which the package will be made effective and the government grants will start flowing in. The real bail-out will come only after 5 years of consistent performance by Discoms when the centre will pay 25 % of restructured debt.

Phasing plan for state government securities for 50% STIs of Discoms (INR Crores)

State	50% of STLs	FY'13	FY'14	FY'15	FY'16	FY'17
Andhra Pradesh	3,151	2,211	940			
Haryana	7,859	2,518	2,469	2,845		
Madhya Pradesh	585	72	513			
Punjab	5,823	881	1,004	1,145	1,305	1,488
Rajasthan	19,855	2,649	3,496	3.986	4,544	5,180
Tamil Nadu	9,573	884	2,526	2,880	3,283	
Uttar Pradesh	12,967	1,919	2,245	2,559	2,918	3,326
Total	59,813	11,134	13,220	12,415	12,050	9,994

Impact Assessment of Debt Restructuring package

The bailout plan for the Power sector by way of debt restructuring of power distribution companies (Discoms) with total losses of Rs. 1.9 lakh crores is a welcome step.

Impact on Discoms

1. **Immediate liquidity**- The Discoms will get immediate liquidity with the help of the package. The restructuring could provide the loss-making distribution companies temporary relief and help them to cover costs in the short-term. It will give the immediate liquidity to debt ridden Discoms.
2. **Reduction in Discom losses**-A reduction in the aggregate cost of servicing debt following the proposed restructuring, however, could reduce Discoms' overall costs.
3. **Improvement in Credit profile**-The credit profiles of Discoms as counterparty in power purchase agreements with power generation companies could also improve.
4. **Financial Flexibility**-This could increase Discoms' financial flexibility to purchase power from generation companies to accommodate greater power demand. Power generators may be more willing to expand capacity and increase supply to Discoms with better credit quality due to the higher likelihood of recovery of generation and project costs.

Impact of debt restructuring on Government's finances

Restructuring of state electricity distribution companies (Discoms) will have an impact of Rs 14,953 Crores on Central Government finances.

Additional interest burden on state budget (%of GDP)		
State	**FY'14**	**FY'15**
Andhra Pradesh	0.02	0.03
Haryana	0.06	0.10
Madhya Pradesh	0.00	0.01
Punjab	0.03	0.06
Rajasthan	0.06	0.13
Tamil Nadu	0.01	0.04
Uttar Pradesh	0.02	0.05

(Source: India Ratings)

Impact of debt restructuring on Banks

Banks may incur a loss of Rs. 4,500 because of NPAs.

The banking sector may have to pay a price for the debt restructuring of Discoms. According to CRISIL, - "There may be a need for some regulatory forbearance for banks if the terms of restructuring involve a loss in net present value (NPV) terms... this loss (estimated at Rs 4,500 Crores) may arise from the debt that will be converted into state governments bonds."

Banks have agreed to keep interest rates below 9% for extending short-term working capital loans to state-owned power distribution companies (Discoms) during the tenure of the Rs 1.9 lakh crores debt restructuring scheme.

However, the risk of rising nonperforming assets from the Power sector persists for commercial banks and finance companies that lend to this segment.

Hurdles

a. **Pre-conditions**- It requires that the states which agree on adopting the package will have to pass the State Electricity Distribution Responsibility Bill in their respective states following which the package will be made effective and the government grants will start flowing in. The real bail out will come only after 5 years of consistent performance by Discoms when the centre will pay 25 % of restructured debt.
b. **Punjab seeks upfront payment-** Punjab government had sought upfront payment of incentives before taking over 50 % loan liabilities of state power distribution company. As per the financial restructuring plan, Central Government would provide 25 % capital reimbursement of principal repayment by the respective State Government on the liability taken over by it.
c. **Not all states have participated yet-**only 8 states till date have agreed to participate in the restructuring plan. The States include Tamil Nadu, Rajasthan, Uttar Pradesh, Haryana, Jharkhand, Kerala, Andhra Pradesh and Bihar.

Best practices in power sector

Electric utility restructuring

The most important step in any electric utility restructuring is to clearly understand and articulate the country's goals and constraints.

Typical goals may include

- Reducing electric costs
- Attracting private capital
- Maximize public revenues from the sale of government owned assets
- Creating an environmentally sustainable electricity sector
- A more efficient sector

Constraints are equally important to know, and they may typically include the following

- Existing prices subsidized for some customers and others are overcharged
- Rapidly increasing prices caused by rapid implementation of electric utility restructuring and competitive markets, may be politically and practically Impossible
- National security or economic conditions may force the use of local resources
- Rapid reductions in the workforce may not be possible, even though current employment levels may be well above those that a competitive sector would support
- A full and complete understanding of a country's goal and constraints will control the shape and pace of industry restructuring

Independent Power Producers (IPPs)

IPPs are companies that build and usually operate generating facilities, but are not usually considered utilities. They provide the large capital resources needed to build or buy these plants and recover their costs from the sale of electricity. Depending on the restructuring model selected, the role of IPPs can range from representing a fraction of new generating resources to the ownership and operation of all generation.

Goals

- Attract outside capital to meet rapidly growing electricity needs without

imposing large strains on the nations internal financial capabilities;
- Reduce electricity costs though competitive pressures; and,
- Assign risks in a more efficient or desirable manner.

International R&D and Technology Transfer*:* International co-operation in R&D, setting up of technology transfer mechanisms to accelerate technology transfers between developed and developing countries and promotion of co-operation will aid in technology cost reductions.

Renewables in the Power Sector-
The renewable energy power generation capacity as on December 2000 was 3000 MW, accounting for 3% of the overall generation capacity. The total potential of renewables in the country is estimated at 100,000 MW (MNES, 2000). Till now, contribution of renewable energy technologies in total electricity generation has been at around 1% of the overall generation due to the low capacity utilisation of most of the renewable energy technologies. India is the only country to have a full-fledged national ministry to deal with renewables.

Regional Power exchanges - Bhutan and Nepal have huge hydro power potential. It provides a good opportunity for energy trade within the region to bridge the demand -supply gap. There is a huge potential for cross border hydro power exchanges due to varying seasonal and daily load curves.

Bangladesh, Myanmar and have proven reserves of 184 billion cubic meters (bcm) and 283 bcm respectively. There is ample opportunity for mutually beneficial trading in energy resources with these countries. India can supply its surplus electricity to Bangladesh in return for the natural gas imports by gas pipe lines.

Similarly India can develop on BOOT basis hydro power projects in Nepal, Myanmar and Bhutan. India can also enter into long term power purchase agreements with China for developing the hydro power potential in the Brahmaputra river basin of Tibet region. India can also supply its surplus electricity to Sri Lanka by undersea cable link. There is ample trading synergy for India with its neighbour countries in securing its energy requirements.

Due to its geographical location India can benefit from the wheeling charges for the utilization of its transmission system for power wheeling between these

countries. Indian could provide transit rights for building of dedicated transmission systems for power trading in the subcontinent. Power exchanges between India and Pakistan could also meet the demand of electricity in the border areas. Power exchange between India's and Bangladesh is also possible as suggested by the 'Regional Report', issued by South Asia Initiative for Energy (SARI/Energy).

Restructuring of Power Sector

A state owned electricity sector can be restructured as per the following:

- Generation can be privatized into several GENCOs.
- Transmission can be privatized into single TRANSCOs
- Distribution can be privatized into several DISCOMs.
- Markets can include bilateral contracts, long term contracts, purchased power agreements, ancillary service market and a spot market.

Examples

Eastern European countries faced similar issues in the last decade. Countries like Romania and Serbia launched reform programs in the shape of restructuring the Discoms. As a part of the reforms, the Discoms were taken through a privatization program wherein the European utility majors bid to acquire operating stake in the Discoms.

Romania opened up its power sector to private players. Majors like AES Corporation, CEZ, Enel, EnBW Energie, E.ON, Gas de France, RWE and Union Fenosa lined up to be part of this exercise. The entire Romanian electricity distribution was divided in eight Discoms. Enel took stake in three, FDEE took stake in three, CEZ and E.ON acquired one each. This gave the Romanian power sector a fresh breath of life as the efficiencies improved which in turn had positive impact on overall financials of the Discoms.

Serbia also undertook similar measures and was assisted by Arthur D. Little in formulating a strategy towards restructuring and privatization of the sector.

In the above cases, the outcome was positive not only for the Discoms but also for the entire power sector.

Our Viewpoint

The bailout plan for the power sector by way of debt restructuring of Discoms is a welcome step. It will give immediate liquidity to debt ridden Discoms, will reduce the aggregate cost of servicing debt, could reduce Discoms' overall costs, and the credit profiles of Discoms as a counterparty in power purchase agreements with power generation companies could also improve. However, issuance of the package is not the long term solution to the problem.

Discoms in India are terminally ill, and in a vicious downward spiral. It is necessary to diagnose the problem rather than trying only to treat the symptoms.

A bailout package is akin to treating the symptoms, whereas the Discoms need a permanent solution to the problem. They need a permanent, sustainable diagnosis so that the illness will not revert and the ill effects of the problem will not impact the Power sector and more importantly the Indian economy.

There are some major unresolved issues facing the power sector, such as:

- Coal shortage
- Land, environment clearance
- Regulatory Transparency
- Tariff hikes
- Operational inefficiencies
- Subsidy dependence
- Free power to some sections of the population

The long-term benefits will only be achieved if these problems can be resolved and a sustainable model is prepared for the power sector.

Proposed Long-term solution for sustainable growth in Power Sector

1. **Operational efficiency linked incentives**
   The Discoms should be given the incentives, bailout packages and other financial support on the basis of their operational efficiency.

2. **Regular operational audits**
   There should be proper control mechanisms in place which can regularly

monitor the operations of Discoms. There should be corrective actions on a timely basis rather than making the problem bigger.

3. **Transparent tariff regulation**
   There should be transparency in the tariff. Though the regulations are required to give some additional benefits to certain sectors, these should not interfere with the profitability model of the Discoms.

4. **Decentralization of decisions**
   Like any other business, it is necessary for the Discoms also to have sufficient profits and have sustainable growth. This can only be achieved if they are given some liberty to take their decisions. Politically motivated decisions may impact the Discom efficiency.

5. **Sustained improvement in the credit quality of Discoms**
   It would encourage more capacity addition to address the country's power deficit.

6. **Greater private sector participation** in power transmission and distribution. It would support on-going maintenance and upgrades of essential infrastructure.

7. **Reliable fuel supply**: Reliable fuel supply in turn hinges on availability of timely clearances, a transparent framework for fuel production, and adequate quality of supporting infrastructure such as ports and railroads for transporting fuel.

8. **More active participation from States**: States can organize a committee of members from both Public and Private sectors related to Discoms. This committee, on a regular basis, can submit their analysis and recommendations to the Central Ministry. This will enable the Centre to develop strategies which will be more direct and relevant to the states.

The future growth of our country critically depends on Power sector development along healthy lines. This is the right time to take stock of the situation and initiate bold measures for a rapid growth of the power sector.

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PHD Chamber of Commerce and Industry is 108 years old proactive and dynamic multi-State apex organization working at the grass-root level and with strong national and international linkages. PHD Chamber serves 12 North and Central Indian States along with Bihar, Jharkhand in the Eastern region and UT of Chandigarh. It has direct and indirect membership of about 48,000. PHD Chamber acts as a catalyst in the promotion of industry, trade and entrepreneurship. PHD Chamber, through its research-based policy advocacy role, positively impacts the economic growth and development of the nation.

We are globally connected through institutional linkages with over 60 important foreign Chambers of Commerce. Government of India has authorised us to issue certificate of origin (non-preferential) to Indian exporters. We also attest commercial documents of various types. Recommendation letters for visas for business promotion to foreign diplomatic missions in India are also issued for representatives of Indian companies.
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At last but not the least PHD Chamber's offices at New Delhi and Chandigarh provide modern conferencing and catering facilities for corporate events, board meetings, training programmes, etc. With a modern auditorium, several conference and meeting rooms to suit different requirements and also a business centre, while the ambience is international, the cost is economical.

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