



Rapid growth of the Indian economy has placed a heavy demand on electric power. The 11th Plan therefore must ensure substantial expansion to match with GDP growth rate of 9% - 10% per annum. This article attempts to analyze the progress of power sector one year down the plan period and see what lies ahead.

Capacity additions targets in the previous plan periods have failed miserably, as the targets accomplished in the 8th, 9th and 10th Plans were only 54%, 47% and 51.6%, respectively. Even in the first year of the 11th Plan, against the target of capacity addition of 12,039.20 MW in 2007-08, actual capacity addition was 8,679 MW.

Tenth Plan Programmes

Capacity Addition

The all India installed generating capacity of utilities at the beginning of the 10th Plan was 105,046 MW. The capacity addition target for the 10th Plan was 41,109.84 MW, against which a capacity addition of 21,180 MW was actually achieved during the plan period. This capacity included 1210.6 MW thermal based capacity (Central: 500 MW, State: 538 MW, and

Private: 172.60 MW), which was not included in the original plan target. Despite these additional projects, the 10th Plan performance had been disappointing. The cumulative capacity at the end of the 10th Plan was 132,329.21 MW, including 7,760.60 MW renewable sources of energy.

T&D /AT&C Losses

The reported all India average T&D losses increased from 19.8% in 1992-93 to 33.98% at the start of 10th Plan. AT&C losses are presently in the range of 18% to 62% in various States, with average AT&C loss in the country being about 40%.

The greatest weakness of the Power Sector is on the distribution front, which is entirely the domain of the states. AT&C losses of most of the State Power Utilities remain as high as 40% which has made them financially sick and unable to invest adequately in additional generating capacity. For the same reason, these utilities have had only limited success in attracting private investors to set up power plants.

Power Sector Reforms

Power sector reforms have been underway for over a decade now. Enactment of Electricity Act 2003

during the 10th Plan was an important step in this direction. Following milestones were achieved in the power sector during the 10th Plan:

- 14 States have restructured or corporatised their power sector, unbundling their boards into separate entities for transmission, distribution and generation.
- Distribution has been privatized in 5 States.
- 25 States have either constituted or notified the constitution of SERC. 21 SERCs have issued tariff orders.
- Central Government has notified the National Electricity Policy in 2005. National Tariff Policy was also notified in 2006. Central Government has also notified the Rural Electrification Policy on 28 August 2006.
- Open access has been technically allowed and also made functional for inter-state transmission. However, it has been hindered by the high cross-subsidy surcharge set by many SERCs.
- Under APDRP, nine states have shown cash loss reduction of Rs 5,254.60 crore over their loss levels of 2001-02. However the progress is small and AT&C losses continue to remain high in most States.
- Guidelines were formulated on Merchant Power Plants.
- Central Government has notified guidelines for procurement of power by distributing licenses through competitive bidding. Government has also issued standard bid documents for long-term procurement of power from projects having specified site and location.
- A scheme was launched for development of coal based UMPPs with a capacity of 4,000 MW or above through tariff based competitive bidding, with projects to be awarded to developers on BOO basis. The bidding process has been completed in respect of three projects, Sasan in Madhya Pradesh, Krishnappatanam in Andhra Pradesh and Mundra in Gujarat and the projects allotted to Reliance Energy for Sasan & Krishnapattanam and Tata Power for Mundra respectively.
- Central Govt. has notified guidelines for encouraging competition in development of transmission projects through tariff based bidding.

APDRP

APDRP was launched in March 2003, with the premise of bringing down AT&C losses to 15% over five years. Actual performance has however not come anywhere close to the targeted level. The scope for further tariff increase is limited since tariffs for paying

customers are already among the highest in the world and it may make sense for them to opt out for captive generation. The reported AT&C loss of Rs 28853 crore for 20 major States is an underestimate. SEB accounts conceal more than they reveal because of unaccounted ghost billing, manipulated consumer mix, and recording of sales and expenditure on accrual and cash basis respectively. Actual AT&C losses are estimated to exceed Rs 40000 crore.

The performance under APDRP has varied across States. Haryana and Andhra Pradesh have shown considerable improvement. Other States such as Rajasthan, Uttar Pradesh, Bihar, Gujarat and Kerala have shown significant worsening between 2001-02 and 2005-06. Haryana, which started with a very low ratio (energy billed/energy available) in 2001-02 later saw its performance deteriorate considerably in 2006-07. However, Gujarat has shown improvement in 2006-07. Given absence of a baseline, lack of consistency in reporting and fluctuating performances, it may be difficult to state whether the improvement is permanent in nature.

Evaluation studies have shown what went wrong with APDRP, which is summarized below:

- It was an investment driven programme without any outcome accountability.
- The projects reports were ill prepared, which replicated the same type of investments without a full buy in by the host utility.
- There was no baseline data established on the distribution losses or on billing/collection efficiency. This made it difficult to determine what has been achieved.
- Unrealistic targets were set and the scheme did not provide incentive for SEB staff to co-operate. Thus there was a need to restructure the scheme in order to obtain better results.

Eleventh Plan Programmes

Strategic Capacity Addition

The government has come out with a strategy paper titled "Accelerated development of Indian power sector for the 11th Plan and beyond", projecting a total investment of Rs 10 lakh crore, of which Rs 4 lakh crore is for generation and Rs 2 lakh crore for each distribution and transmission. The centre has estimated an investment of Rs 1.15 lakh crore for the capacity addition of over 10,000 to 14,000 MW by the captive power producers and 10,000 MW in the non-conventional sector, while Rs 40,000 crore would be needed for the development of merchant power plants. According to the strategy paper, of the 78,577 MW, projects worth 48,955 MW (62.3%) are already under construction. For projects totaling to

29,402 MW, a letter of award is yet to be placed. Coal linkages in respect of 84% of the coal-based capacity are already available. Out of the proposed hydro capacity addition of 16,553 MW, 14,431 MW (87%) is already under construction. Projects with 3,160 MW nuclear capacities are also under construction.

The center has further estimated gas-based projects of 4,289 MW capacity for benefits in the 11th Plan. A large number of gas-based projects totaling to about 13,000 MW have been identified at various locations.

Hydro Power Development

A 50,000 MW hydro initiative was launched in 2003 for accelerated development of hydro power in the country. Preliminary feasibility reports of 162 projects totaling to 48,000 MW were also prepared. Out of this, 77 projects with total capacity of about 37,000 MW were selected for execution.

In the 11th Plan, a capacity addition of about 16,553 MW has been earmarked under hydro power keeping in view the present preparedness of these projects. Projects totaling to a capacity of 30,000 MW have been identified for the 12th Plan. Thus the effect of 50,000 MW initiatives would be visible in the 12th Plan period.

The share of hydro capacity in the total generating capacity of the country has declined from 34% at the end of the 6th Plan to 25% at the end of the 9th Plan. Share of hydro capacity is envisaged to be about 23% by the end of the 11th Plan, if the capacity addition programme is achieved.

Nuclear Power

The 11th Plan power programme also includes 3,380 MW of nuclear power plants. It is also expected that the execution of nuclear projects will also be opened up to enable participation by other PSUs and private sector. NPCIL has indicated a capacity addition of about 1,100 MW during the 12th Plan.

Merchant Power Plants

About 10,000 MW capacity is expected to be developed through this initiative. This capacity has not been taken into account while working out the capacity requirement over the 11th Plan period, as MPPs are not likely to materialize before the 12th Plan.

Captive Power Generation

The installed capacity of captive power plants has increased from 588 MW in 1950 to 24,680 MW in March 2007. Captive plants, including co-generation power plants, could play a supplementary role in meeting the country's power demand. It is envisaged that during the 11th Plan period about 1,200 MW capacity power plants would be added to the system, which will take care of the demand of the industry and also supply surplus power to the grid.

The policy of inducting private investment into the power sector initiated in 1991 was expected to result in the addition of 17,588 MW of power capacity in the 9th Plan. The actual achievement was 5,061 MW, a mere 29% of the target. Further during the 10th Plan capacity addition target in private sector was 2,670.60 MW, which is merely 37.50%. Initiatives such as UMPPs, Merchant Power Plants and Captive Power Plants are expected to trigger the capacity addition in private sector during the 11th Plan.

Renewable Energy

Despite generating a huge amount of grid-interactive renewable power, only a few states in India are using renewable energy through power grids. In fact, only 14 states have set quota for sourcing renewable energy for their grids. According to the estimates of Ministry of New and Renewable Energy (MNRE), India generated 12,043 MW of cumulative grid interactive renewable power by the end of March 2008 and is now planning to achieve a target of 20,000 MW by 2020. However the use of renewable energy through power grids is negligible. Renewable energy accounts for only 8% of the total installed power capacity in India.

The government is planning to enact a new Renewable Energy Law that would stipulate mandatory procurement of prescribed minimum renewable energy in each state. The move is aimed at diversifying the country's energy mix that is dominated by oil, gas and coal as basic fuel feed. The new legislation is expected to give legal teeth to renewable energy policy that failed to get the desired investment in the sector. The law is also likely to make it mandatory for power generation companies to generate a certain percentage of power from renewable sources. The gross installed capacity of grid interactive renewable power in the country is estimated at 11,273 MW, which accounts for 8% of the installed generation capacity. Out of the government plans to generate an additional 78,577 MW power by the end of 11th Plan, it has set a target of 14,000 MW from renewable energy sources.

Establishment of new generation capacity will require action on many fronts such as:

- Long-term finance to be made available to lower the capital cost.
- Inter-state and intra-state transmission system of adequate capacity to be built that is capable of transferring power efficiency from one region to another.
- Distribution system to be made efficient which alone can ensure financially viable expansion.
- Supply side and demand side efficiencies to be improved to effectively lower energy demand by 5%-7% during the 11th Plan period.

- Captive capacity to be harnessed to meet the power deficit.

Transmission

The transmission system facilities had earlier been planned on regional basis with provision of inter-regional link to transfer regional surplus power arising out of diversity in demand. As generation resources in the country are unevenly located, development of strong national grid has become a necessity to ensure reliable supply of power to all. A national grid can exploit the diversity of peak demand. The planning and operation of the transmission system has thus shifted from the regional level to the national level.

Development of National Grid

It is envisaged to add new inter-regional capacity of 23,600 MW at 220 kV and above during the 11th Plan period. This would increase the total inter-regional transmission capacity of national power grid from 14,100 MW (by the end of 10th Plan) to 37,700 MW by end of 11th plan. The plan for national power grid and the schemes have been identified. The growth in 765 KV transmission lines during the 11th plan is expected to be from 1,704 ckm at the end of 10th plan to about 7,132 ckm by the end of 11th plan.

The requirement of transmission system for evacuation of hydropower from the North East Region has also been estimated, corresponding to the capacity of hydro projects, which may be feasible to develop in the next 20 years. This generation is estimated to be about 35,000 MW in the NER, about 8,000 MW in Sikkim and about 15,000 MW in Bhutan. The transmission requirement through the chicken neck itself works out to be of the order of 45,000 MW.

Distribution

Distribution is the key segment of the electric supply chain, which caters to the rural and urban areas. Rural distribution segment is characterized by wide dispersal of network over large areas with long lines, low demand density, high cost of supply, low paying capacity of the people, large number of subsidized customers, unmetered flat rate supply to farmers, non metering due to high cost and partial difficulties, low load and low rate of load growth. Urban distribution on the other hand is characterizes by high consumer density and higher rate of growth of load. Both segments are distinct with different problems and issues. The biggest challenge of the power sector is in the high T&D losses.

APDRP II

The sub-transmission and distribution system were the thrust areas during the 10th Plan. Since the performance of APDRP scheme was not found

to be up to the mark in the 10th Plan period, it is being reconstructed in the 11th Plan period with the following suggested actions:

- All distribution companies should target a reduction of 3% per annum of their AT&C losses in next five years. High loss making feeders need to be franchised by distribution companies.
- Introducing bifurcation of feeders for agricultural users with unmetered power supply, automated metering of all distribution transformers, and GIS mapping of all consumers.
- Preparation of baseline data in respect of energy flow for each distribution transformers within three months of completing the above.
- Incentive for staff linked to specific measures of improvement.
- Web based transparency of performance of each distribution transformer level including names of the staff responsible.
- Independent external audit to track and monitor outliers.
- Funds initially to be given as loan, which may be converted, to grant based on achievement of specific milestones on outcomes of investments.

The restructured APDRP scheme has been approved by the Cabinet very recently. Power Ministry is expected to release detailed guidelines shortly. Programme size of the restructured APDRP is pegged at Rs 51,577 crore.

Rajiv Gandhi Grameen Vidyutikaran Yojana

The Government of India had launched RGGVY in April 2005 to provide electricity access to all rural households and extend free connections to all BPL households (estimated at 2.34 crore) by 2009.

RGGVY subsidizes the capital cost by 90% through GOI grants. The approved capital cost estimate for RGGVY is Rs 1,600 crore with a subsidy component of Rs 14,750 crore. The physical targets included electrification of 1,25,000 un-electrified villages by creating rural electricity distribution backbone and village electrification infrastructure and last mile service connectivity to 10% households in the village at a rate of Rs 6.50 lakh per village. The target to give free connections to 2.34 crore BPL households was also included in the above estimates. Further the estimates covered intensification works in already electrified villages at a rate of Rs lakh per village for 4.62 lakh villages.

The target set by the Power Ministry was electrification of 10,000 villages in 2005-06 and the achievement reported was 9,819 villages. MoP had also reported that a total of 34,003 households (including

16,815 BPL households) were provided electricity access. The implementation of RGGVY in 2005-06 was mainly in the States of Bihar, Karnataka, Rajasthan, Uttar Pradesh, Uttarakhand and West Bengal.

The Power Ministry further set a target to electrify 40,000 unelectrified villages in 2006-07. As on 31st March 2007, Power Ministry had reported cumulative achievement of electrification of 50,402 villages, including 11,177 villages when intensive electrification has been carried out.

RGGVY in the Eleventh Plan

An amount of Rs 3,983 crore had been provided in the Power Ministry budget for 2007-08 to meet capital subsidy under RGGVY. The Power Ministry has set a target to electrify 4000 un-electrified villages during 2007-08. Meanwhile RGGVY for 11th Plan has been approved by the Cabinet at a cost of Rs 2,800 crore.

According to figures released by the Power Ministry, majority of states are yet to achieve the targets set under RGGVY. Of the total 1.25 lakh villages to be covered under the programme, only 38,525 villages under RGGVY were electrified and just 6.72 lakh (of the targeted 2.34 crore) BPL households were provided electricity connections till March 31, 2007-the end of the 10th Plan period. As against the target of electrifying 114,684 non electrified villages, actual achievement has been 47,837 villages. During the middle of the 10th Plan, 235 projects were sanctioned at an estimated cost of Rs 9,696.3 crore. Completion of these projects would ensure electrification of 67,012 non-electrified villages, intensive electrification of 111,936 electrified villages and free connections to 83.1 lakh BPL households.

Since January 2008, 316 projects have been sanctioned at an estimated cost of Rs 15,353.13 crore. The projects would cover 47,672 non-electrified villages and provide power connections to 158.52 lakh BPL households. Andhra Pradesh, Gujarat, Manipur, Maharashtra, Madhya Pradesh, Rajasthan, Uttar Pradesh, Uttarakhand and West Bengal are some of the states that have met some amount of the targets set for providing electricity to the rural areas. Even Bihar, Chhattisgarh and Jharkhand have achieved much of their targets under the scheme. All other states are lagging way behind in implementing the RGGVY schemes.

Franchisee Model

While privatization of utilities in the distribution sector has failed to make much headway, the franchisee model is increasingly emerging as an alternative distribution reform model, with most states warming up to the idea of appointing franchisee within

the SEB framework to spruce up efficiency. A total of 14 states including Uttar Pradesh, Bihar, Orissa, West Bengal, Haryana, Andhra Pradesh, Karnataka and Gujarat are reported to have appointed franchisee. Models for appointment of franchisees being followed by utilities in these states range from the revenue based ones under which franchisees are entrusted the task of undertaking metering, billing and collection to an input-based franchisees model where these players are responsible for revenue collection, operations and maintenance and improvement of services.

Awarding distribution zones through the franchisee route does not involve political fallout associated with the privatization of a state owned utility since the distribution assets stay under state control, while simultaneously allowing for benefits of private sector efficiency to come in.

Players including Tata Power, Torrent Power, Crompton Greaves, Indo Asian Fusegear and Kalpataru Power Transmission have entered into the fray for bagging distribution franchisee contracts on offer in states. While a handful of distribution zones across Maharashtra and Madhya Pradesh have been handled out smoothly to Torrent, Crompton Greaves and Indo Asian, others such as Uttarakhand, Rajasthan, Uttar Pradesh, Madhya Pradesh and Haryana are also eyeing the franchisee route.

Fund Requirements

In his budget speech, the Finance Minister had announced a new fund in the power sector that focused on transmission and distribution reforms. The corpus of the fund will be a whopping Rs 1,00,000 crores, which will provide much needed financial support in the form of equity/ interest free loan and concessional loans to states for creation and strengthening of various sub-transmission and distribution schemes across the country. The working group on power has estimated capacity addition of over 119,000 MW, with an estimated investment requirement of over Rs 1,063,000 crore including over Rs 3,00,000 crore to strengthen and upgrade sub-transmission and distribution sector in the country. The States neither have the requisite resource of their own nor the borrowing capacity. States are also hesitant to borrow at commercial rates as the repayment in most of the cases has to come out of reduction in AT&C losses which may not reach to the desired level and the level of reduction in AT&C losses so achieved may not be able to service the commercial debt.

The country has failed to fulfill the target of adding generation capacity for the financial year 2007-08 as well. The target was to add 12,039 MW to generating capacity during 2007-08, but the actual capacity addition during the year has been reported



as 9,263 MW. Power famine can create a hurdle not only in achieving the target of power to all by 2012, but also future economic growth. If GDP is to grow sustainably, the rate of growth of power generation should exceed it. However, this has hardly been the case in India where GDP growth rates in recent years have been in the range of 8-9%. In the light of this fact the Planning Commission has proposed \$200 billion as the investment requirement in the power sector during the 11th Plan period. Therefore, apart from the public sector, a crucial role for the private sector is also envisaged for achieving the target.

Apart from adding generation capacity, the Public Private Partnership (PPP) model may be quite helpful in expanding power supply to rural areas. Presently about 55% of the country's population does not have access to electricity. Through the National Electricity Policy 2005, the government has fixed a target of providing electricity to all households and to increase per capita consumption to 1,000 KW per annum by 2012, which seems to be too ambitious.

The success of PPP model in the power sector would depend upon the sincerity of efforts made by the government to provide the required support to private players. The Delhi model where the government has provided subsidy to private distribution companies at the initial stage of reforms is a good example. As a result, the companies have been able to reduce their losses significantly. Given that supply of electricity in rural areas scores low in terms of profitability and the fact that AT&C loss in rural areas is as high as 50%; no private player seems keen on coming forward to invest in the sector. Keeness can only be generated through a PPP in which the private companies would be provided adequate financial support by the government to not only bridge the gap between the per unit cost of supply and revenue from energy sales but make rural power supply profitable. It is only in this manner that targets for rural power supply can be met by the government.

“Powering India-The road to 2017”, a report by McKinsey has advocated a radical new approach through a 10 point programme that primarily suggests methods to reduce the AT&C losses to 15% from the current 30-40% by 2017. As per the report, the reduction in AT&C losses can be made possible by implementing a series of distribution reforms, including separating agriculture feeders that allow SEBs to distinguish agricultural from non-agricultural supply. It also talks about partial or complete privatization of distribution circles in tier 1 and tier 2 cities, lowering industrial tariffs by driving open access and setting up multi-year loss reduction targets for SEBs and franchisees using modern technologies.

The Investment Commission headed by Mr Ratan Tata has asked the government to re-work its distribution reform strategy by negotiating a tailor made distribution reform incentive package with each state. The commission has also suggested adopting a “carrot and stick” approach with incentives for distribution reforms and stiff penalties for non-compliance. In its report submitted to Finance Minister Mr P Chidambaram, the commission has projected a capacity shortfall of about 43,000 MW and 72,000 MW by 2012 and 2017 respectively. It has cited government's obsession to develop only large-scale power projects (like the latest round of UMPPs) as against short gestation projects as a main reason for persistent capacity shortfalls in the country.

The Commission has noted that only five states have corporatised distribution so far and in most other states the distribution reforms process has been stalled. Therefore, it said the distribution reform incentive package should be such that it incentivises states to undertake the reform process. The incentive package proposed by the commission includes funding support besides assured power supply to the SEBs from PSUs like NTPC, NHPC and NPC for five years. The package should however be given to only those states that commit to implement distribution reforms. The Commission has suggested that no further exemptions be given to any state from the Electricity Act provisions. In order to bridge the immediate capacity gap, the Commission has suggested capacity addition through short gestation projects.

Augmentation of manufacturing capabilities is crucial for the achievement of the proposed target. Nearly 11,000 MW of capacity could not come in the 10th Plan due to slippages in supply of main plant equipment. As per the estimates, BHEL today has 8,000 MW manufacturing capacity which by the end of 2009 would be 14,000 MW and by the end of 2012 would touch 15,000 MW. The 11th Plan target is about four times the amount that was achieved during the 10th Plan, which calls for augmentation of manufacturing capacity of main plants and balance

of plant manufacturers. Besides augmentation in construction sector is essential as there is lack of qualified contractors for taking up construction of large hydro and thermal power plants in civil, mechanical and electrical works.

However tardy progress on award of ancillary projects accompanying upcoming thermal power stations could end up playing spoilsport to the capacity addition target for the current plan period. While the government has been focused on expeditious placement of main plant equipment orders to minimize slippages in the current Plan period's capacity addition target till mid June 2008, BOP packages for over 45% of the thermal projects slated to coming up during the current Plan are still to be placed with suppliers. Inadequate numbers of BOP equipment suppliers, besides lackluster response from existing players, are among the key reasons cited for slow progress in award of BOP packages.

The country could also miss its target of adding power over the next four years by almost 20% because of poor transport infrastructure. India roads and ports are in a bad shape. Even if the equipment gets delivered at the ports, moving them to the project sites is a nightmare. A case point is NTPC's Sipat power project turbine being stuck at Kasara Ghat on NH3 between Mumbai and Nashik for around six months because the road was not ready to take the load. The traditional gateways of Mumbai, Chennai and Kolkata are already under infrastructural pressure and the landslide logistics from there on, especially for heavy machinery is less than adequate.

South Asian Electricity Network

While the upcoming projects are expected to provide the necessary power to the users, government is also working actively on plans to build a pan-South Asia electricity ring to meet the growing needs. While a transmission link with Bhutan is already in place, there are plans to develop two more projects there, besides sprucing up the existing power line, to enable up to 5,000 MW of electricity imports into India by 2020. Plans are already under way for setting up an under sea link with Sri Lanka. In Nepal, two Indian firms-GMR group and Satluj Jal Vidyut Nigam are setting up hydroelectric stations, while power trading company PTC India has signed pacts to wheel power from two other projects. In Myanmar, joint development of a 1,200 MW hydro project, along with a power link, is being envisaged.

Nepal, with a hydroelectric potential 83,000 MW of which generating 45,000 MW has been estimated techno-economically feasible, is the biggest draw. In Bhutan after the success of the 1,020 MW Tala projects, from which power is already being wheeled into India, three new major hydro projects totaling

2,680 MW have been identified for joint development. With Sri Lanka, India is already working on putting in place a \$450 million mega under sea transmission link. The 200 km submarine cable is likely to be set up with a capacity to wheel around 1,000 MW of electricity. NTPC is already working on a 500 MW coal fired plant in Trincomalee. In the case of Burma, the Tamanthi Hydroelectric project (1,200 MW) has been identified for joint development and a transmission link could be decided upon based on the progress on the project.

Manufacturing Capacities Augmentation

The Power Ministry and CEA have begun preparations for the capacity addition of 82,200 MW for the 12th Plan, as recommended by the working group on power. CEA has also asked the equipment manufacturers in particular to ramp up their capacities to meet the targets, set for the 12th Plan. The Power Ministry has been working hard to offer red carpet treatment to manufacturers of boilers and turbines and other main plant equipment in the country. It has also received positive response from global players such as Toshiba, Alstom, Ansaldo, BWE and Skoda for setting up of manufacturing facilities. The reason for shortfall in achieving the capacity-addition of previous plans was the delay of awards of work, besides delay in supply/erection of suppliers and contractors. Efforts to widen the manufacturing base of critical power plant equipment besides strengthening the existing facilities of BHEL have so far paid off. BHEL and NTPC have already tied up for the same while L&T and Mitsubishi have come together in this segment. The Ministry is also making efforts for enhancing manufacturing capability of balance of plants, coal handling plants and ash handling plant capacity.

Conclusion

The proposed capacity addition of 78,577 MW during the 11th Plan is three and a half time of the achieved capacity addition in the 10th Plan, which as of now at the end of first year of the plan period appears to be highly ambitious. However, the Power Ministry is optimistic, and we need to share this optimism, if the GDP growth rate of 9% - 10% per annum is to be maintained during the 11th plan period and beyond.

(Compiled by Mr J Pande based on various reports of Ministry of Power, CEA, Planning Commission and newspapers reports, with inputs from Mr Rajeev Dalela, KEC International Ltd.)



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