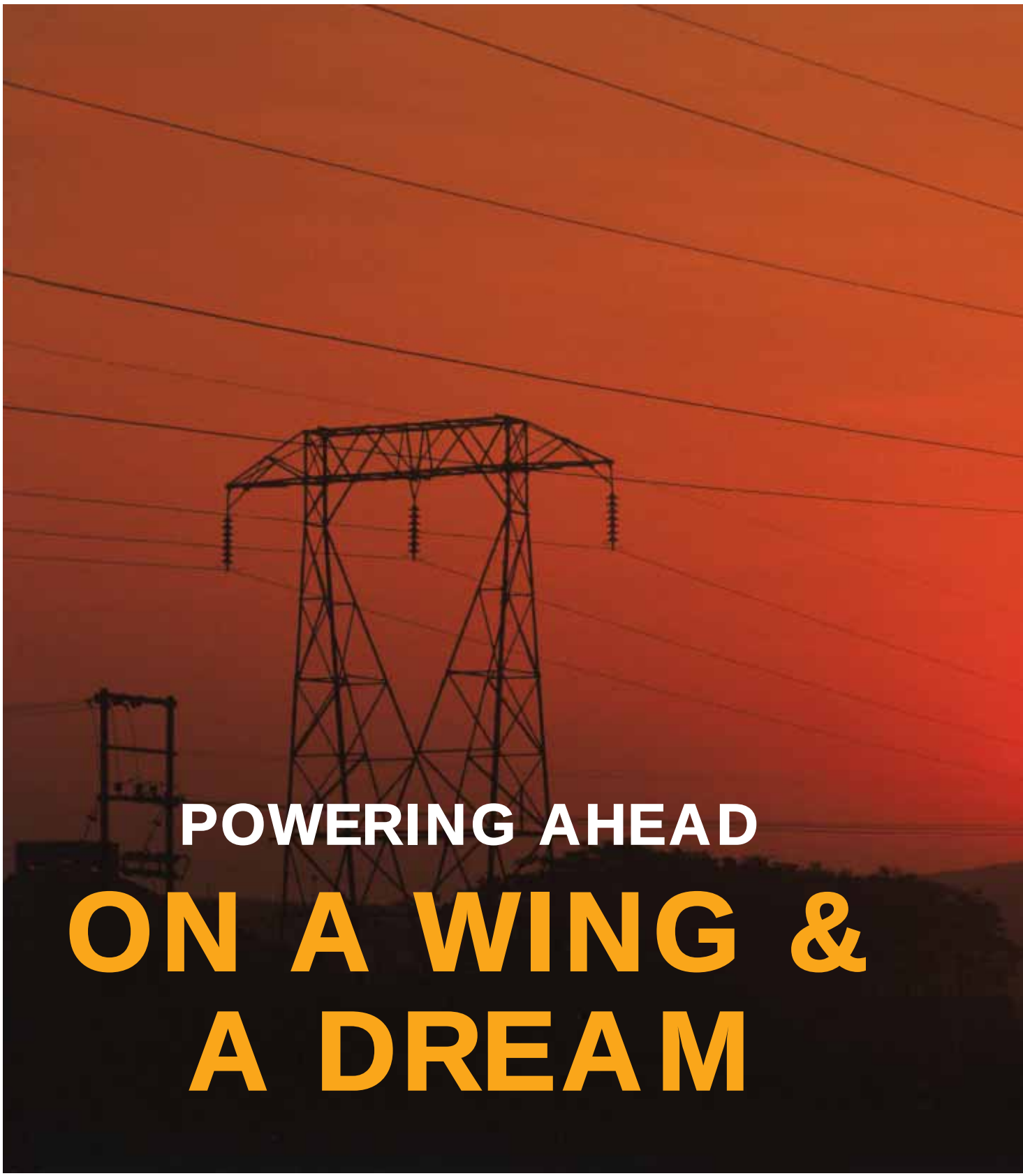

POWERING AHEAD

ON A WING & A DREAM

Recent reforms in the power sector have increased the viability of projects, attracting both international and domestic players, says **Dipta Joshi**

India's power sector is surging ahead on the wings of change. Realising the necessity of power to fuel India's economic growth, the Indian government has introduced a slew of much needed reforms in the sector and is planning several Ultra Mega Power Projects to resolve India's power problems.

The sector now has close to a dozen small and large projects coming up. Recent reforms in the sector have increased the viability of power projects and made it an attractive investment destination for both domestic as well as foreign investors.

Among the foreign power majors, who want a piece of the action in the power sector are AES and Khanjee Holdings from the US; Sumitomo, Itochu and Mitsui from Japan; Korea Electric Power Co; the UK's Duncan Machneil and Electricte De France.

The interest in India is due to the opportunities available in the power sector given that the average energy deficit is 8.5 per cent and peak time deficit is 12.5 per cent (2005–06). India's current installed power capacity is 128,750 MW (excluding captive capacities of around 30,000 MW) significantly lower than the demands of a nation of a billion people.

Even major metros like Delhi – and now Mumbai – are facing power shortages. Mumbai was among the few cities that enjoyed uninterrupted power until recently. Now there are big hoardings that ask residents to save power and the government has asked cinema houses to stop the afternoon shows to save power.

All that is set to change as the government has now embarked on a plan to provide 'Power to All' by the end of 2012. This would mean a capacity addition of 68,000 MWs in the current 11th Five Year Plan (2007-2012) besides large scale investments.

Arvind Mahajan, executive director and head of Power, Infrastructure and Government Departments at KPMG, says this is the right move from the India perspective. "The need of the hour is more bankable projects; otherwise there is enough amount of money to flow into these projects," he says.

CLEAN POWER: The focus is now on both small and large projects to meet the growing demand for electricity

Currently, out of India's installed power capacity the private sector contributes just 10.9 per cent (55.4 per cent comes from the states' utilities and 33.7 per cent comes from the central sector undertakings). And this is what the government is intent on changing.

The policy shift has led to renewed interest in the sector.

Currently the biggest players in power generation are public sector units like National Thermal Power Company (NTPC), National Hydroelectric Power Corporation (NHPC), Nuclear Power Corporation Ltd and Neyveli Lignite Ltd apart from private players like Tata Power and Reliance Energy.

NTPC generates about 26 per cent of the nation's power and plans to add 17,000 MW of capacity between 2007 and 2012. Extending its business strategy, it has now ventured into hydropower generation as well.

> Ideally, knowing about how much power the consumer will need and then working towards building capacities to meet them should have been the right approach.

NHPC, the largest player in the hydro power sector, is implementing projects with a total capacity of 4,700 MW. Projects worth another $2.75 billion and $3.45 billion are targetted for completion by 2012 and will add an additional 3,000 MW of power.

Transmission of power falls mainly in the domain of the Power Grid Corporation of India Ltd (PGCIL). The sector has been opened to 19 more private players to trade in interstate and inter-regional transmission systems.

The private sector players in the power sector include Tata Power, the largest private power utility in India. It is involved in generating, transmission and distribution of power. The compay's installed generation capacity is of

GREEN POWER: Renewable energy such as wind power is being looked at seriously

2,323 MWs with thermal power stations at Trombay in Mumbai, Jojobera in Jamshedpur and Belgaum in Karnataka. It also operates hydro stations located in Maharashtra's Raigad district and a Wind Farm in Ahmednagar (Maharashtra).

Reliance Energy is another of India's leading integrated power utility company in the private sector. It has a total capacity of 892 MW of power generating units at Dahanu near Mumbai, Kerala, Andhra Pradesh and Karnataka.

Besides having transmission stations in Mumbai, the company distributes power to 5 million customers with an annual consumption of 15,600 million units.

Essar Power, another important player has planned to invest over $3 billion in power and mining projects over the next five years. The company plans to set up two 1,000 MW coal based power projects in Maharashtra and Jharkhand. Similarly, GMR Energy is involved In both hydel and thermal power generation, while Jaiprakash Hydro is into hydro power generation.

Wind energy is another sunrise sector and a lot of private players are eager to enter the sector. India is today the world's fourth largest producer of wind energy (after Germany, Spain and the US), with a capacity of 6,270 MW.

The Indian power sector was also plagued by several problems ranging from plant inefficiency and transmission and distribution (T&D) losses, to fuel and pricing issues. Except for the eastern sector, most SEBs have been grappling with power shortages themselves. Some of them have been prepared to buy power at over 13 cents per unit, compared to an average cost of generation of between 4.6 cents and 5.7 cents per unit on their own.

All this resulted in SEBs posting a total loss of $6 billion during 2006-07. The unfortunate outcome resulted in SEBs being unable to invest adequately in generating additional capacity.

However, since the passing of the Electricity Act 2003 (notified in 2004), the sector has seen significant changes. The Act has made competition and accountability the cornerstone of every segment of the power sector, be it generation, transmission or distribution.

Regulatory authorities were set up within the states to keep an eye on the functioning of the SEBs. Most states unbundled their SEBs into generation, transmission or distribution companies for better transparency and accountability. The Act eased licensing norms for entering power generation and T&D business thus leading to a rush among private sector players.

These steps have led to improved individual balance sheets of SEBs, and for the last three years, NTPC has been recovering 100 per cent of its dues from the boards. The government took up the cause of T&D losses in 2001 launching the Accelerated Power Development and Reform Programme (APDRP); as a one-time measure the SEBs dues to the central utilities are converted into state-backed bonds. In exchange, the states gave an undertaking that SEB losses will not occur and T&D losses will be checked in a time bound manner.

Montek Singh Ahluwalia, the deputy

How India meets its power demands (2006)

Fuel	MW	% of total
Thermal*	84,400	65.6
(Coal	69,616	54.1)
(Gas	13,582	10.6)
(Oil	1,202	0.9)
Hydro	33,942	26.5
Nuclear	3,900	3.0
Renewable	6,191	4.8
Total	128,432	100

* Thermal includes Coal, Gas & Oil

Source: Ministry of Power

ULTRA MEGA POWER PROJECTS

HUGE INVESTMENTS: There will be no dearth of buyers for electricity from UMPPs

Of the nine Ultra Mega Power Projects (UMPPs) so far seven sites have already been selected. These are Sasan in Madhya Pradesh, Mundra in Gujarat, Girye in Maharashtra, Tadri in Karnataka, Krishnapatinam in Andhra Pradesh, Akaltara in Chatttisgarh and one in Orissa. Two, at Sasan and Mundra, have already been awarded to private players.

These plants will be awarded to developers on a Build, Own, Operate and Transfer (BOOT) system. Being large in size (4,000 MW) the projects have scope for expansion and will meet the power needs of a number of states through transmission of power on regional and national basis.

Each of these plants would require an investment of about $3.7 billion. Both the central and state governments are facilitating payment guarantees and most SEBs are keen on picking up some of the power. The projects are being auctioned through competitive bidding to Indian and foreign investors, with the main bidding criteria being the price at which power will be supplied.

The financial, engineering and operational flexibility that private players will now have makes the business lucrative.

At the competitive price the developers offer, there will be no dearth of buyers for the ever growing demand for power. A number of joint ventures between Indian and foreign companies are expected since UMPP developers are expected to have tie-ups with equipment companies too.

Along with Indian companies like Tata Power, Ashok Leyland, Aditya Birla Power, Torrent, Essar Power and L & T Power, AES and Khanjee Holdings from the US, Sumitomo, Itochu and Mitsui from Japan, Korea Electric Power Co, and China Line Power are also involved in these projects.

chairman of the Planning Commission, recently hinted at further reforms: "The APDRP in its current form has not sufficiently improved efficiencies. We feel there is a need to expand the scale of APDRP and improve incentivisation." The target is to bring down T&D losses to 15 per cent by the end of the 11th plan. The Coal Ministry, in a bid to resolve the issue of fuel source for power plants, is working out a strategy whereby almost 20 billion tonnes of coal will be developed by the utilities. The demand for coal, one of the raw materials for thermal power generation, is expected to reach 500 million tonnes in 2012 from the 180 million tonnes required now.

Currently power generation through gas accounts for 10 per cent of India's total generated capacity and 35 per cent of this is produced by the private sector. Due to unavailability of gas, gas-based power plants suffered a generational loss of 18.43 million units from April to October 2006 alone.

The high cost of alternative (to gas) fuels like naphtha makes it impossible to run the plants economically. The scenario is likely to improve once gas from recent finds like those of Reliance's Krishna Godavari basin begin to flow after 2008-09.

The 11th Plan could also see policies that emphasise exploitation of India's hydro-power potential and nuclear capabilities. Increasingly, renewable energy such as wind power is also being looked at more seriously. Reiterating the government's commitment to provide `Power To All', Finance Minister, P Chidambaram said his government would promote setting up of Ultra Mega Power Projects (UMPPs) and facilitate merchant power plants by private developers.

Under the rural electrification programme, Bharat Nirman, the government has targeted providing electricity to all un-electrified villages (125,000 of them) and to connect 23 million households below the poverty line till 2009. Allocations for the long standing electrification scheme have been increased.

Clearly, India is working hard to keep its infrastructure in pace with the economic boom being witnessed in the country. The working committee preparing the approach for the 11th Five Year Plan has worked out a figure of $231 billion for generation, transmission, distribution and rural electrification during the same period.

Going by the minimum 30 per cent equity ratio required for investment in the power sector, "about $70 billion of this money would come in the form of equity," says R V Shahi, who was heading the working committee group and has just completed his tenure as Power Secretary.

The big news for private players is that about 20 per cent of all capacity addition is open to the private sector. "Even at this moment, around 46,000 MW of capacity addition work is under construction," says Shahi.

The nine Ultra Mega Power Plants (UMPPs) targetted by 2012 will attract the bulk of the investments into the sector. These large sized power projects will each produce 4,000 MWs of power. Two projects at Sasan in Madhya Pradesh and Mundra in Gujarat have

ASSURED POWER: The transmission sector has also been opened up and nearly a score of private players are entering the business

already been approved. Two more will be awarded in July this year.

To make it easy for private players interested in such projects, the government has spent a fair amount of time in preparing for the two approved UMPP projects by tying up in terms of coal supplies, fixing up environmental clearances etc. The transparency and easy approach will bring in the more risk averse foreign players into the sector feels Mahajan.

Merchant Power Plants (capacity of up to 1,000 MWs) are also being encouraged to generate competitively priced power. The scheme allows any power developer to sell in part or full, the power generated by it as Merchant power at market-driven prices.

In the earlier regime, power generators had to sign PPAs with SEBs whereby they were assured of a 14 per cent Return on Equity (ROE) on an equity component of 30 of the total cost. Now, in the UMPP scheme, depending on the investors debt equity ratio, the ROE could go up significantly. An added benefit would be the lowering of per unit cost of power. Being large scale operations, most of the UMPPs are good news for power deficit states too.

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The most important change in the power sector today is being seen at the consumer's end. Lured by the idea of free power, earlier consumers refused to pay for power. Now there is a change in the mindset. Consumers, farmers and industrialists prefer to pay a price – possibly a higher price – in return for assured power. Also, under the open access regulations, large consumers, who consume 1 MW or above now, have the option to choose their source of power.

There appears to be a light at the end of the tunnel. The good news is India is not just trying to reach the end of the tunnel, rather to light up the entire tunnel with its mission of 'Power to All'. A billion people are counting on it.