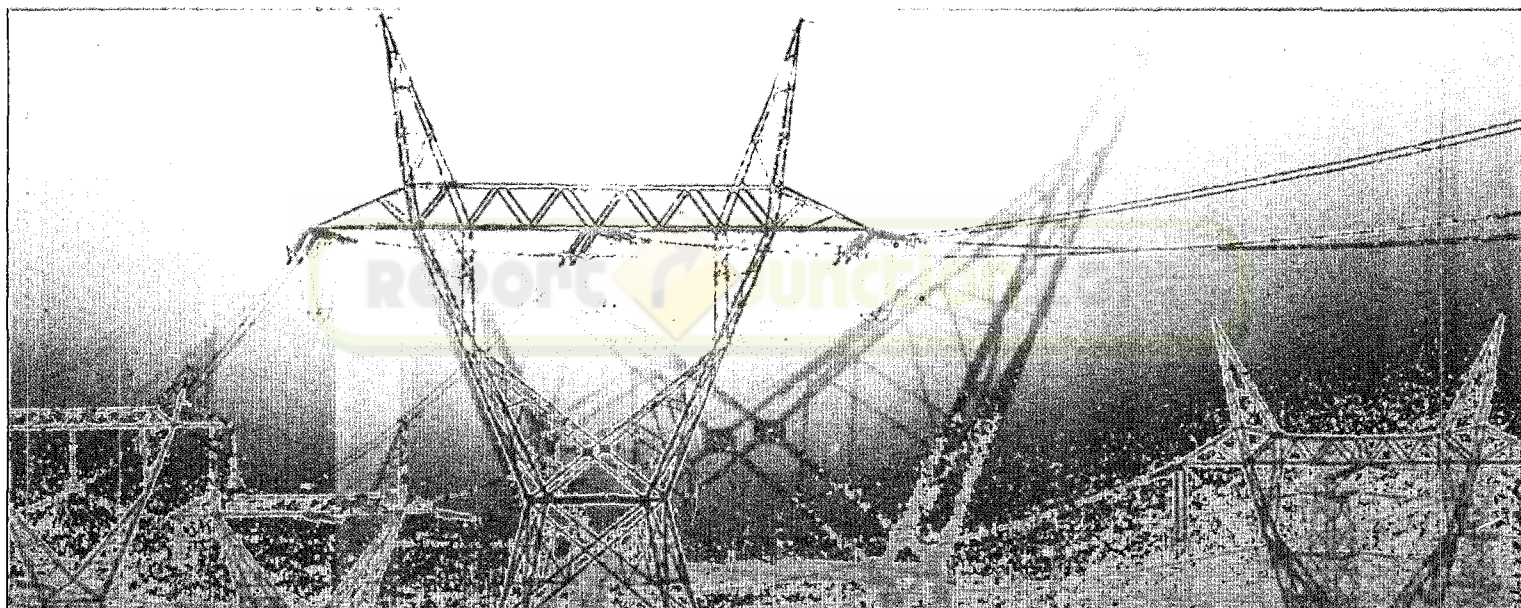


# ANNUAL REPORT 2006-07



पावरग्रिड

**POWER GRID CORPORATION OF INDIA LIMITED**

(A Government of India Enterprise)

[www.powergridindia.com](http://www.powergridindia.com)

[www.reportjunction.com](http://www.reportjunction.com)

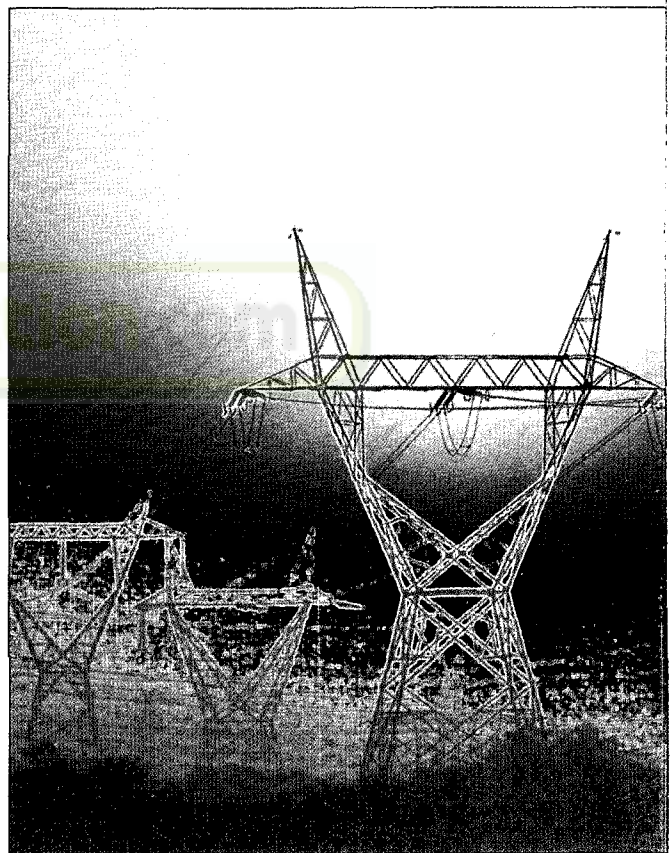


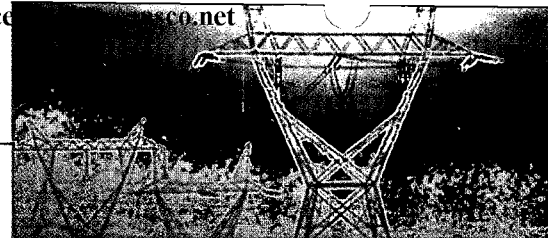
## ANNUAL REPORT 2006-07

# Integrated Management Policy

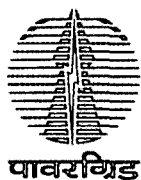
POWERGRID is committed to :

- Establish and maintain an efficient and effective "National Grid" with due regard to time, cost, technology and value additions,
- Sustainable development through conservation of natural resources and adopting environment friendly technology on principle of Avoidance, Minimization and Mitigation,
- Ensure safe, occupational hazard free and healthy work environment, to the satisfaction of stakeholders in all areas of its activities and shall endeavor to continually improve its management systems and practices in conformity to legal and regulatory provisions.





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## Mission

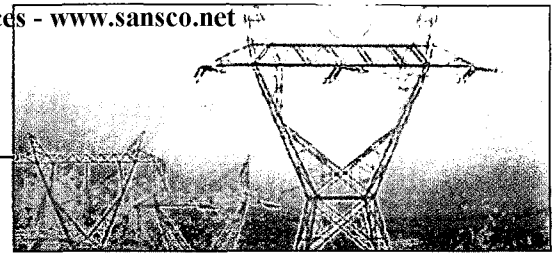
Establishment and Operation of Regional and National Power Grids to facilitate transfer of power within and across the regions with reliability, security and economy, on sound commercial principles.

## Objectives

The Corporation has set following objectives in line with its mission and its status as "Central Transmission Utility":

- Undertake transmission of energy through Inter-State Transmission System.
- Discharge all functions of planning and coordination relating to Inter-State Transmission System with-
  - (i) State Transmission Utilities;
  - (ii) Central Government;
  - (iii) State Government;
  - (iv) Generating Companies;
  - (v) Regional Electricity Boards;
  - (vi) Authority;
  - (vii) Licensees;
  - (viii) Transmission Licensees;
  - (ix) Any other person notified by the Central Government on this behalf.
- Exercise supervision and control over the Inter-State Transmission System.
- Efficient Operation and Maintenance of Transmission Systems.
- Establish/augment and operate all Regional Load Despatch Centres and Communication facilities.
- To facilitate private sector participation on Transmission system through Independent Private Transmission Company, Joint Ventures.
- To assist various SEBs and other utilities in upgradation of skills & sharing of expertise by organising regular conferences, tailor-made training workshops directed towards specific technological and O&M areas and extending laboratory facilities for testing purposes etc.
- Restoring power in quickest possible time in the event of any natural disasters like super-cyclone, flood etc. through deployment of Emergency Restoration Systems.
- To provide consultancy services at national and international levels in transmission sector based on the in-house expertise developed by the organisation.
- To participate in long distance Trunk Telecommunication business ventures.



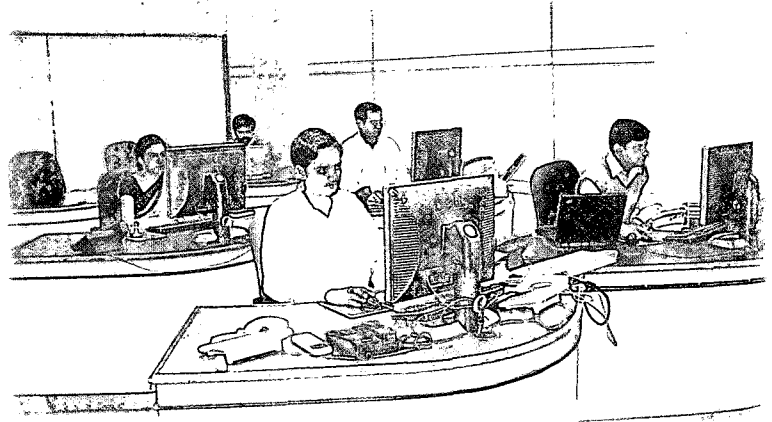


## Powertel

### Touching lives everywhere

Diversified into telecommunication to mobilise additional resources to establish much needed National Grid.

- To establish Broadband Telecom Network of 20,000 kms connecting over 60 cities on extensively spread Transmission Infrastructure.
- Only utility in the country having overhead optic fibre on its Extra High Voltage Transmission Network.
- POWERGRID Telecom Network
  - Sturdy & Secure
  - Free from rodent menace and vandalism.
- Network has multiple self resilient rings for complete redundancy in backbone as well as intra-city access networks.
- To offer Total Solutions and to meet specific needs of the customers.



- Reliability of Telecom Network 99.99%
- Bandwidth capacity available on all the metros & major cities.
  - Delhi, Mumbai, Chennai, Kolkata
  - Jammu, Jalandhar, Shimla, Guwahati, Shillong, Imphal, Kohima, Hyderabad, Bangalore, Cochin, Ahmedabad, Indore, Jaipur, Lucknow, Chandigarh, Varanasi, Jhameshpur, Patna, Bhuvneshwar etc.
- Extended telecom network to serve uneconomic and backward areas for the benefit of the common man.
- Plan to extend network to neighbouring countries for terrestrial SAARC Telecom Grid.
- Possess Infrastructure Provider-I (IP-I), NLD Licence & ISP Category - "A" Licence to provide telecom services in the country.
- Plan to introduce other Value Added Services.
  - Video Conferencing
  - Virtual Local Area Network (VLANs)
  - Multi Protocol Label Switching (MPLS) based VPNs Data Centres.
  - Voice Over Internet Protocol (VOIP)





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## *Board of Directors*



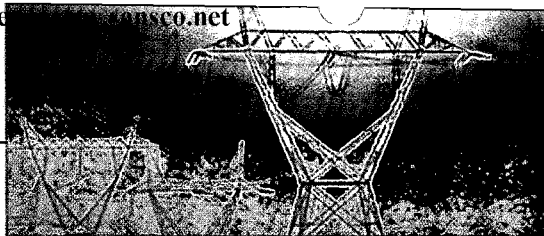
**Dr. R. P. Singh**

Chairman & Managing Director  
(Since 23.08.1997)

**"True worth of a company lies in its people"**



## Board of Directors

**Shri S. Majumdar**

Director (Projects)  
Since 27.09.2005

**Shri J. Sridharan**

Director (Finance)  
Since 21.12.2005

**Shri G.B. Pradhan**

Jt. Secretary (MOP), Govt. Director  
Since 27.11.2003

**Shri Rajesh Verma**

Since 02.08.2007  
JS & FA (MOP), Govt. Director

**Shri Anil K. Agarwal**

Since 10.07.2007

**Shri F. A. Vandrevale**

Since 10.07.2007

**Dr. A. S. Narag**

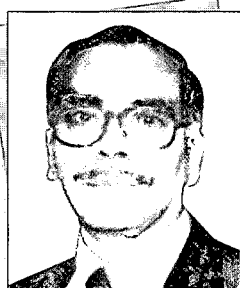
Since 10.07.2007

**Dr. P. K. Shetty**

Since 10.07.2007

**Shri M. Sahoo**

JS & FA (MOP), Govt. Director  
From 22.07.2002 to 29.06.2007

**Shri U.C. Misra**

Director (Personnel)  
From 01.08.2002 to 25.01.2007

**Shri J. Haque**

Director (Operations)  
From 16.09.2004 to 31.01.2007

**Shri M. S. Kapur**

From 10.07.2007 to 05.10.2007

**Ms. Divya Tandon**

Company Secretary

**M/s. O.P. Bagla & Co.**

8/12 Kalkaji Extension  
New Delhi - 110 019

**M/s. B.M. Chatrath & Co.**

India Steemship House,  
25, Old Court House Street, Kolkata - 700 001

**M/s. Nataraja Iyer & Co.**

1-10-126, Ashok Nagar  
Hyderabad - 500 020

**Registered Office :** B-9, Qutab Institutional Area, Katwaria Sarai, New Delhi - 110 016

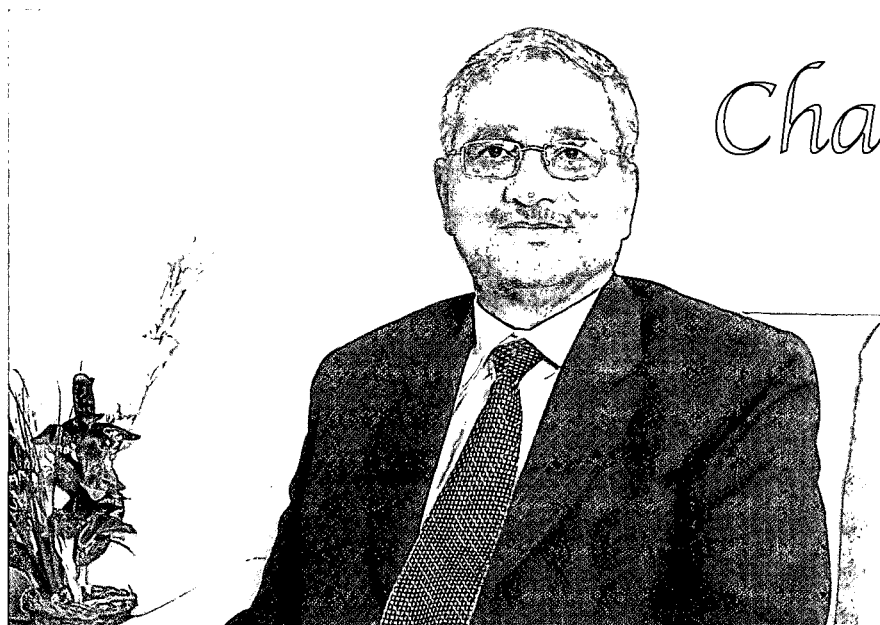
**Corporate Office :** "Saudamini", Plot No. 2, Sector 29, Gurgaon - 122 001 (HARYANA)

**Bankers**

- Indian Overseas Bank ● ICICI Bank ● Union Bank of India ● Bank of Baroda ● State Bank of Hyderabad ● State Bank of Travancore ● State Bank of India ● State Bank of Patiala ● Central Bank of India ● Corporation Bank ● Canara Bank ● Oriental Bank of Commerce ● Syndicate Bank ● Dena Bank ● Punjab National Bank ● Vijaya Bank ● Indian Bank ● Citi Bank ● J & K Bank ● IDBI Bank ● DA Afghanistan Bank



## ANNUAL REPORT 2006-07



## Chairman Speaks

at the 18th  
Annual General Meeting  
held at New Delhi on  
14th August, 2007.

*Ladies and Gentlemen,*

It is my pleasure to extend a very warm welcome to all of you to your company's 18th Annual General Meeting.

### **Financial Performance FY 2006-07**

At the outset, I would like to inform you that POWERGRID's performance in 2006-07 has been spectacular. Your company has earned a profit of Rs. 1,229 crore on a turnover of Rs. 4,082 crore. The transmission line availability was 99.2 per cent, at par with international standards. POWERGRID had a capital budget of Rs. 6,329 crore during this year, as against budgetary estimates of Rs. 4,849 crore, an increase of 23 per cent – a standout performance amongst the power utilities. POWERGRID employees need to be commended for this effort. Yet, let us remember, the financial strength of POWERGRID, resulting from sustained performances of such nature, is not merely an end in itself. It lays the foundation to help us achieve even greater heights in the years ahead.

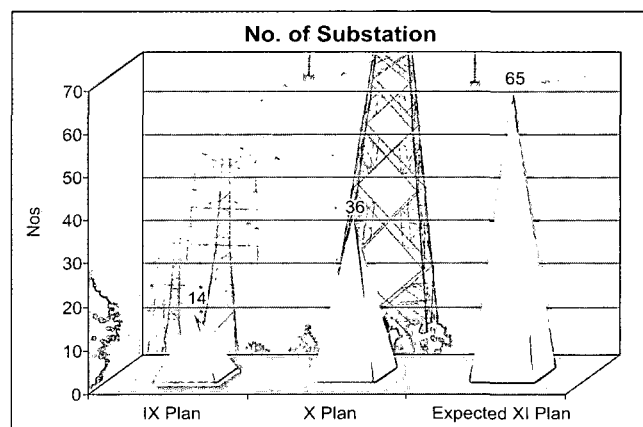
### **Performance in the 10th Plan**

The year 2006-07, being the last year of the X plan, I would also like to share our overall performance in the X plan. Your Company's performance in the X Plan also has been spectacular, against the previous plans. In this regard, I would like to place before you the views expressed by the Standing Committee on Energy on our performance.

*"The Committee noted that out of 10<sup>th</sup> Plan outlay of Rs. 21,370 crore, POWERGRID could spend only Rs. 18,181 crore. However, with this lesser outlay, the physical achievements have been more than the 10<sup>th</sup> Plan targets. The Committee appreciated the work done by POWERGRID in the field of transmission of power."*

During the 10<sup>th</sup> Plan, your company added 25,127 MVA of transformation capacity and 36 sub-stations at Rs. 18,865 crore. The comparable figures for the Ninth Plan (1997-2002) had been 10,957 MVA of transformation capacity and 14 sub-stations

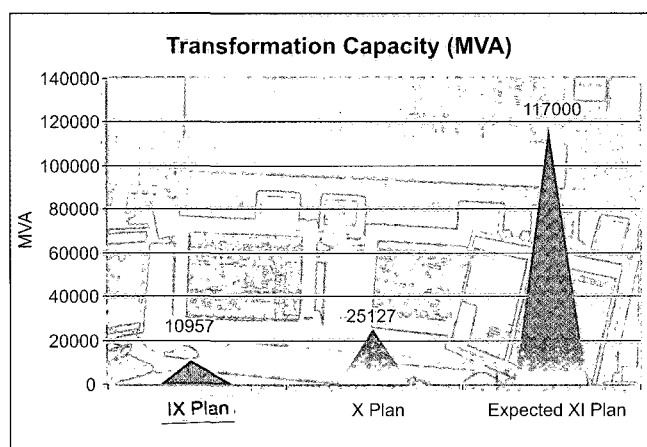
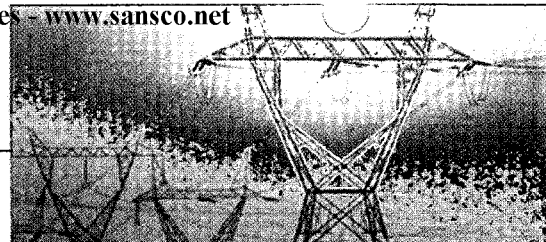
at Rs. 8,532 crore. The inter-regional power transfer capacity of the national grid has increased from 5,000 MW at the end of the Ninth Plan to 14,100 MW at the end of 10<sup>th</sup> Plan. Similarly, in the Ninth Plan, the inter-regional power exchange stood at 37,390 MUs; at the end of the 10<sup>th</sup> Plan it had grown almost four times to 138,729 MUs, ushering in substantial economy in operation, thereby contributing in national savings.



On the operational front, there have been only four grid disturbances during the 10<sup>th</sup> Plan – all in the first year. In the Ninth Plan, there were 58 grid disturbances. The remarkable improvement is there for all to see. In the past four and a half years, there has not been a single major grid disturbance and even the minor grid disturbances have been reduced to miniscule. This achievement of your company is making news in power sector circles across the globe.

I believe we are at the cusp of great things. Your company has planned capital expenditure of Rs 55,000 crore, out of Rs. 75,000 crore needed for Central Transmission System during the 11<sup>th</sup> Plan period. This shall be raised through its own internal





resources, national and international borrowing including raising domestic bonds and so on. About Rs. 20,000 crore will be mobilised through private sector in the form of joint ventures with POWERGRID or 100 per cent investment by private companies. At the conclusion of the 11<sup>th</sup> plan, in 2012, I am certain we will be in another orbit.

To meet the pace of growth, address the problem of Right-of-way and to bring much needed stability, quality, reliability & affordability (SQRA) in the system, POWERGRID plans to introduce state-of-the-art technologies such as  $\pm 800$  kV, 6000 MW, HVDC Bipole; 1200 kV AC Transmission System; High Surge Impedance Loading (HSIL) Line; Large Scale Automation of Sub-stations; Use of Helicopter in construction & maintenance; etc. Extensive planning and studies are being carried out to implement these technologies during XI plan.

### National Obligation

Friends, I have always believed that the true worth of a company lies not in mere numbers – important as these are – but in its people and people management, and its ethos. At POWERGRID, we are committed to a performance-driven culture, transparency, project and quality management benchmarks that match the best in the world, training and empowerment of human resources, and state-of-the-art technology to conserve much needed, Right-of-Way, environment, flora & fauna and land mass in this populous country. Your Company has taken up massive upgrading & uprating of existing Transmission Lines through use of High Temperature Conductors, Series Compensation including Thyristor Control, use of Multi Circuit & Compact tall Towers etc.

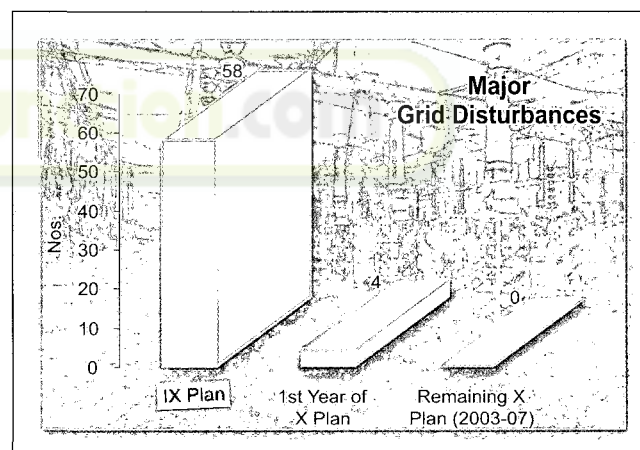
We live in an exciting, booming India, a country and society that changes every day, an economy that has the world transfixed thanks to its pulsating energy and scorching pace of growth. In our euphoria, let us not forget the basics – the sinews of our economy. A strong power sector is the backbone of a strong economy and is essential to support nine or ten per cent – or perhaps even higher – GDP growth rates. A well designed, integrated transmission system leading to a country wide national grid could go a long way in optimal utilisation of energy and would encourage achieving larger goal of environmental sustainability. It is for these reasons that I sometimes see the

POWERGRID network as an analogue to the national highway system – carrying not cars and trucks, goods and people, but electricity.

In making power available, for instance, from energy sources in the East to the buzzing factories of the South, we perform, I believe, a nationally integrative role. As a Central Transmission Utility, POWERGRID has facilitated development of a strong all-India grid providing enhanced inter-regional transmission capacity. As recognition of our contribution in building national infrastructure, your Chairman was conferred with the SCOPE Excellence Award by the Hon'ble Prime Minister.

### Towards Strengthening National Grid

In the year 2006-07, POWERGRID achieved a major milestone in further strengthening of national grid with the commissioning of the Muzzaffarpur-Gorakhpur high capacity line. Our four regional grids – Northern, Western, Eastern and Northeastern – are now operating as one synchronous grid covering a distance of nearly 2,800 km. From the extreme Northeast to the western coast, we cover 80 per cent of the country's land mass, 78 per cent of its population. Our total installed capacity of this



synchronous Grid is about 90,000 MW; this is amongst the world's largest grids.

Contrary to an erroneous belief by some, I would like to point out that the Southern grid is strongly connected to this large grid. This is done so asynchronously through HVDC bipoles and back-to-back links of 4,500 MW capacity in less than five years, we plan to connect it synchronously. As of March 31, 2007, the total inter-regional power transmission capacity of the national grid has now been enhanced to 14,100 MW. By 2012, we plan to reach 37,000 MW.

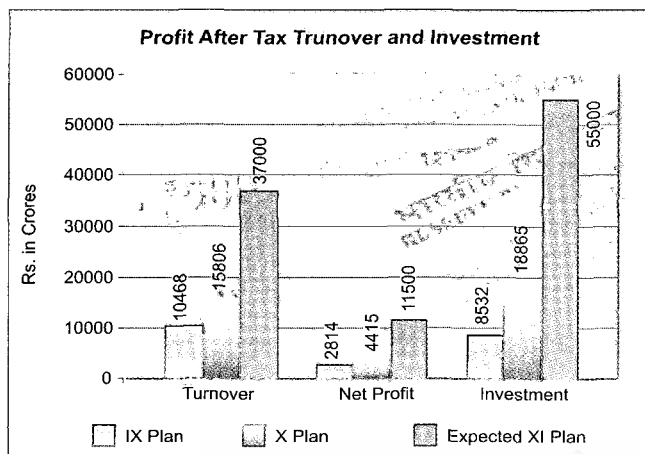
With these endeavours, inter-regional power transfers are on the rise. This has facilitated not only exchange of power from surplus to deficit regions but also enabled open access, and trading and development of a competitive electricity market. In 2006-07, 38,000 MUs of inter-regional energy transfer was facilitated. Of this, 18,000 MUs have been transacted through short-term open access and unscheduled interchanges. This led to a saving of about Rs. 3,000 crore.



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### Facilitating Private Participation

The year 2006-07 has also witnessed the successful commissioning of first public-private Joint Venture project between POWERGRID and TATA Power, namely, Tala Transmission System. The project has been completed within approved cost and time. This makes POWERGRID the only power sector utility that has been successful in facilitating private investment in



transmission. The JV is functioning successfully and in the very first year of its operation, Powerlinks has paid dividends. I need say no more. The World Bank, who partly funded this project through its affiliate the International Finance Corporation, has said of this project:

*"This is a landmark transaction for India and we believe this the first joint venture transmission project in a developing country in Asia. The project is an excellent example of public-private partnership and has great potential to be replicated in order to attract private investment into infrastructure."*

Two more JVs are already in place and more are in the pipeline, as is a project with 100 per cent private investment.

### Operational Excellence

We have good news on the operational side, too. Our transmission network of 59,461 ckt. kms. of EHV AC & HVDC systems – along with 104 sub-stations – carries 40-45 per cent of total power generated in the country. In 2006-07, it was maintained at an availability of 99.20 per cent, comparable to the best internationally.

The operation of a grid of such mammoth dimensions is becoming more and more challenging, particularly because of high drawals, during winter months in the Northern Region, coupled with high pollution and foggy weather conditions. In spite of our best efforts – and, indeed, for no fault of ours – on February 08, 2007, about 56 transmission lines of the Northern Region tripped one after the other. However, thanks to proactive system design and modern load despatch centres, manned by dedicated personnel, grid collapse was averted. The caving in of only a few lines has had a cascading effect and led to major grid

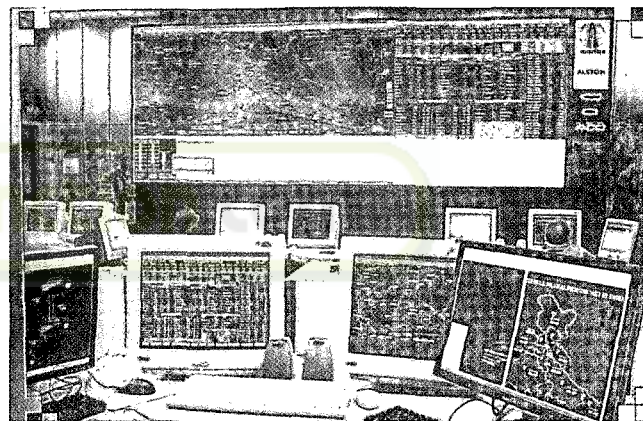
failures even in developed countries. If we have been able to prevent such an occurrence, it is no mean achievement.

### Future Operational Challenges

You will appreciate, with rapid addition of generation capacity, integrated operation of the grids and the increased digital quality of power required, more & more complexities to the grid operation are being added. Therefore, there is a need that we work on creating self-healing Intelligent Grids so that on its own, it forecasts and addresses grid problems. In this direction, your Company is working very aggressively with a Group of Very Large Power Grid Operator of the world. The third meeting of this Group is proposed to be held in October 2007 in New Delhi.

### Diversifying Profitably

POWERGRID's diversification into telecommunication, a synergic business, is also progressing satisfactorily. During 2006-07, revenue from telecommunication business has been about



Rs. 78 crore. It is expected that in 2007-08, your Company would earn a revenue of Rs. 125 crore or more, a year before projected schedule of 2008-09. Encouraged by above achievements, your Company is thinking bigger & bolder and further enlarge its horizon in the areas of entertainment and door-to-door service.

### Consultancy

It has been our constant effort to explore and tap all possible and even unconventional revenue sources. This year too, we made new forays in the consultancy business. One of the prized assignments of the year has been consultancy for construction of Transmission Line associated with M/s. ONGC Tripura Power Corporation Private Limited at a consultancy fee of Rs. 120 crore. I am delighted to inform you that the transmission project in Afghanistan – despite the tough terrain, weather conditions and law & order situation is progressing ahead of schedule. Overall, our consultancy revenue during the year grew 28 per cent.

### Corporate citizen

In today's context, when global warming is being talked world over, we took proactive steps and developed "Environment &