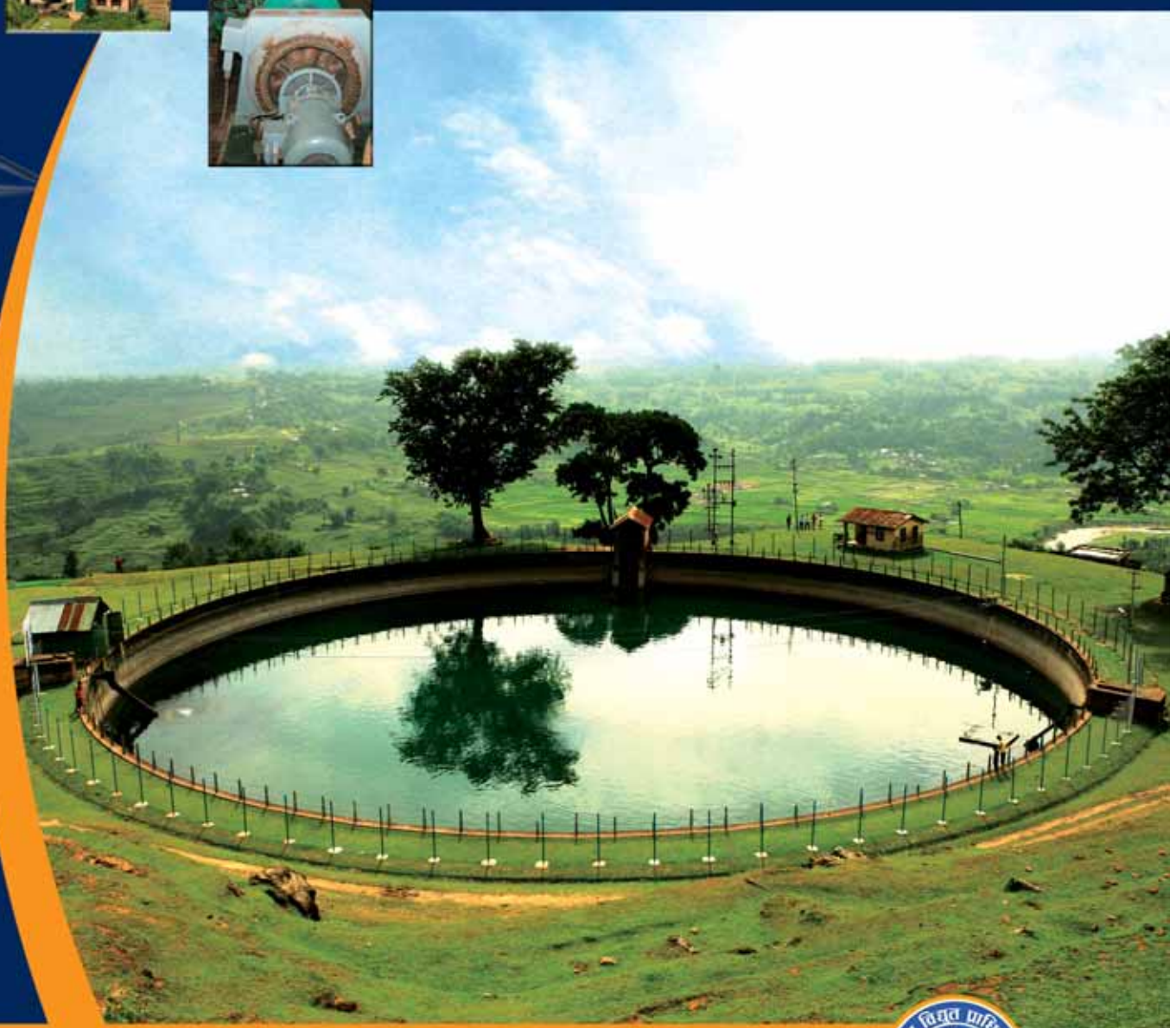
A Year in Review
Fiscal Year 2008/09

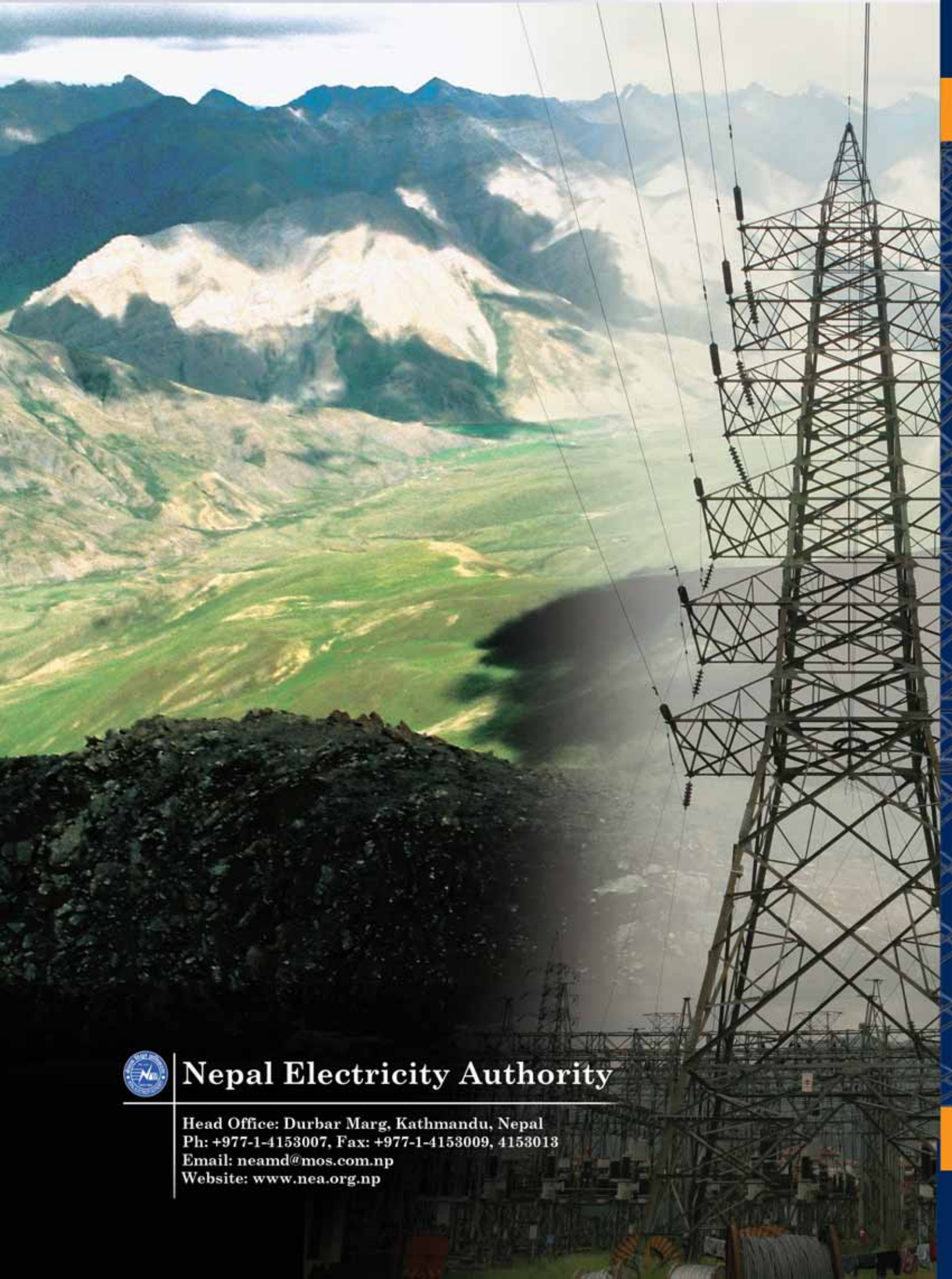
NEPAL ELECTRICITY AUTHORITY



August 2009 (Bhadra 2066)
Durbar Marg, Kathmandu, Nepal

Inauguration ceromony of Middle Marsyangdi Hydropower Project

Dam site of Kali Gandaki 'A' Hydropower Station



Nepal Electricity Authority

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COMPLIMENTARY COPY

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Front Cover Photo

- *Reservoir of Pharping Power Stations - The First Power Station of Nepal*

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Message from the Chairman

Dr. Prakash Sharan Mahat
Minister of Energy

It is a matter of great honor for me to express my thoughts as a Chairman of Nepal Electricity Authority (NEA) as the organization completes its twenty-third years of operation. Without electricity one cannot envisage a society, which can deliver the basic services to the people. As a predominant player in the power sector, NEA has an important role to play in the provision of electricity in Nepal.

Following the enactment of the Electricity Act 1992, there was an initial surge in the development of hydropower by the private sector but the momentum was short lived. In successive years, despite government's plan to bring in more private investment in this sector, not much have happened. Unstable political climate, poor security situation are but a few reasons often cited for the lack of adequate private participation in this sector. With the political and security situation improving, I am hopeful that more and more private sector investment will be channelized in this sector.

I believe NEA should play vital role as a public sector utility in the development of power sector. From the system's optimal operational point of view, the generation mix of the system should consist of a combination of both run-of-the-river (ROR) plants as well as reservoir plants with seasonal regulation capability. Therefore NEA should focus its efforts in the development of storage type hydropower projects.

The FY 2008/09 was a challenging year for NEA. Significant drop in water level in the rivers together with damage of principal transmission link for import of power from India resulted in a severe supply-demand gap in the system causing NEA to resort to an unprecedented load shedding up to sixteen hours a day. This situation has severely impacted its financial condition. In addition, there are other challenges facing NEA such as those resulting from high system losses, transmission capacity constraints, lack of necessary investment capital and so on.

I am pleased to note that, amidst these challenges, NEA has begun to take a long term perspective in adding its generation and transmission capacity. Among the generation projects that NEA has initiated implementation include Upper Tamakoshi, Trishuli 3A and 3B, Upper Seti and Rahughat. NEA is also implementing various transmission projects to enhance power evacuation capacity within the country, as well as cross-border transmission lines to exchange power with India. These are commendable efforts to meet the long term demand growth as well as to encourage private sector investment in this sector.

To address the immediate challenge of load shedding, NEA is working towards rehabilitation/ overhauling of the existing generation plants. The Multi Fuel Power Plant, Hetauda Diesel Plant, and Kali Gandaki 'A', Marsyangdi and Gandak Hydropower stations are being rehabilitated. Similarly, import of electricity from India and demand side management are some of the other measures taken by NEA to reduce the gap between demand and supply. With the completion of these activities, I hope there will be some relief from load shedding.

Another area where NEA needs to focus its efforts is in the loss reduction. The poor security situation in the past not only impacted the loss reduction efforts but also the billing and collection. While further efforts to address this situation on NEA's part is necessary, support from the local administration and various political parties on the ground is also equally necessary.

In spite of the numerous challenges, I must commend NEA for the services it has provided to the customers and for its efforts to address the load shedding situation. I wish NEA and its staff best wishes in their effort to serve the nation by providing reliable and affordable electricity.

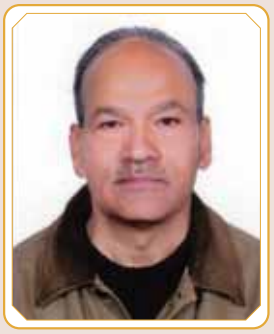
Dr. Prakash Sharan Mahat
Minister of Energy
Chairman, Nepal Electricity Authority

Board of Directors

Chairman
Dr. Prakash Sharan Mahat
Minister of Energy

Member
Mr. Shankar Prasad Koirala
Secretary, Ministry of Energy

Member
Secretary, Ministry of Finance



Member
Mr. Lekh Man Singh Bhandari

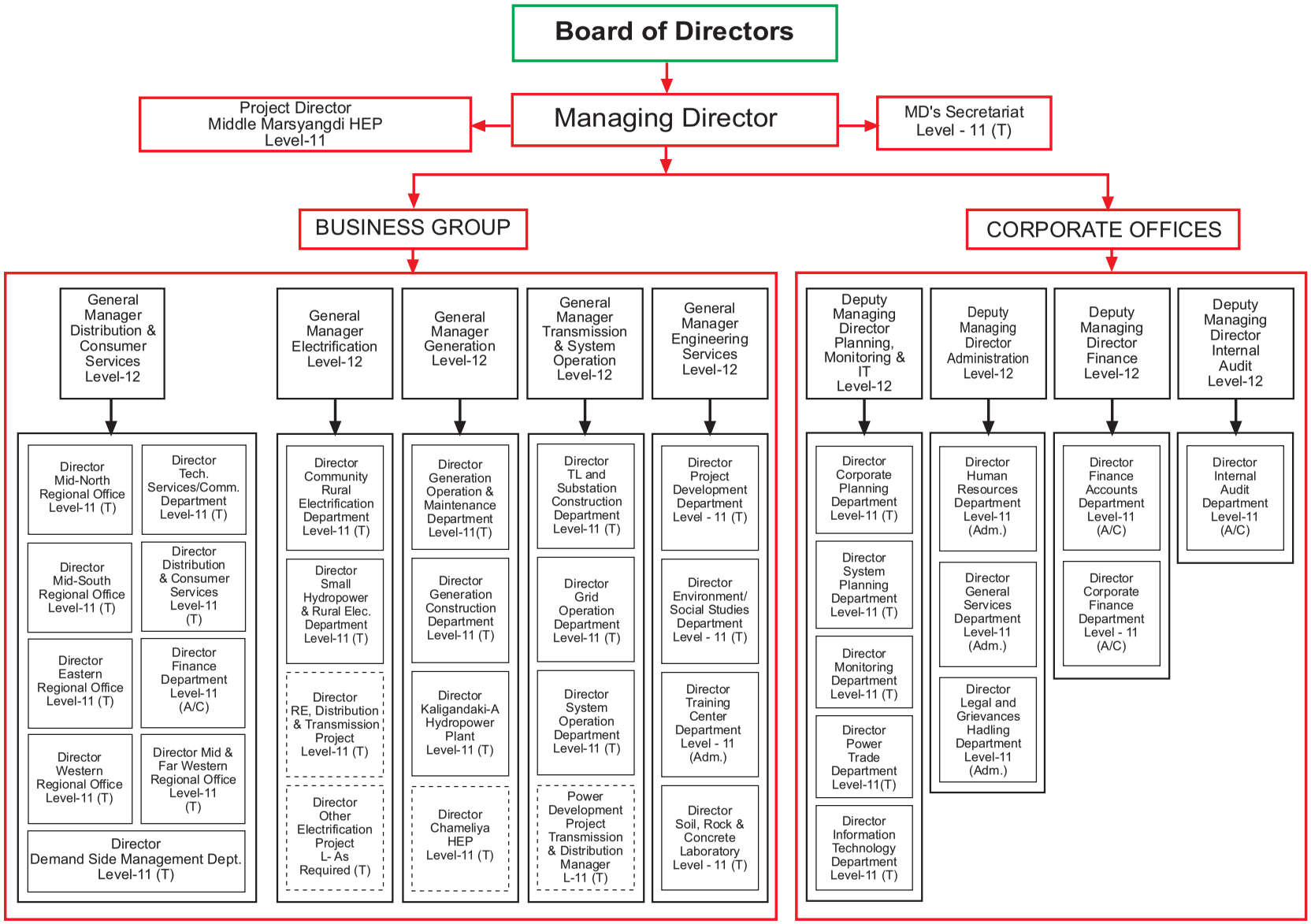
Member
Mr. Ananda Raj Batas

Memeber

Member

Member Secretary
Dr. Jivendra Jha

CORPORATE STRUCTURE OF NEA



Chief Executives of NEA

1. Mr. Dipak Prasad Upadhyay (GM, Distribution & Consurmer Services)
2. Mr. Bhojraj Regmi (GM, Engineering Service)
3. Mr.Yugal Kishor Shah (GM, Transmission & System Operation)
4. Mr. Shiv Chandra Jha (DMD, Planning, Monitoring & IT)
5. Mr. Chhatra Bahadur Bajracharya (GM, Generation)
6. Mr. Rameshwar Yadav (GM, Electrification)
7. Mr. Diwakar Poudel (DMD, Finance)
8. Mr. Tika Ram B.C (DMD, Internal Audit)
9. Mr. Binod Kumar Dhakal (DMD, Administration)

Department Chiefs

Mr. Upendra Dev Bhatta
Director
Information Technology

Mr. Tirtha Man Shakya
Project Coordinator
RE, Distribution & Transmission Project

Mr. Harihar Man Palikhe
Director
TL/SS Construction

Mr. Birendra Kumar Pathak
Director
Generation Construction

Mr. Mahendra Lal Shrestha
Director
Mid-North Regional Office

Mr. Ram Chandra Mandal
Director
Mid-South Regional Office

Mr. Ram Chandra Pandey
Director
Nepal India Cross Border 400 kV TLP

Mr. Lava Bahadur Ghimire
Director
Corporate Finance

Mr. Sashi Sagar Rajbhandari
Director
Power Trade

Department Chiefs

Mr. Rajeswor Man Sulpya
Director
Upper Trisuli 3 'A' HEP

Mr. Pradeep Lal Shrestha
Director
DCS

Mr. Ganesh Prasad Raj
Director
Eastern Regional Office

Mr. Mohan Krishna Upreti
Director
Grid Operation

Mr. Chiranjibi Sharma Poudel
Director
Technical Services/Commercial

Mr. Keshab Raj Bhatta
Director
Chameliya HEP

Mr. Anuj Ratna Shakya
Director
Monitoring

Mr. Vishnu Bahadur Singh
Director
Project Development

Mr. Subhash Dahal Chhetri
Director
Western Regional Office

Department Chiefs

Mr. Puspa Raj Khadka
Director
MD Secretariate

Mr. Sher Singh Bhat
Director,
System Operation

Mr. Sunil Kumar Dhungel
Project Director
Middle Marsyangdi HEP

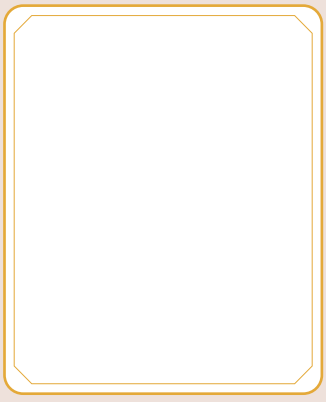
Mr. Jaya Narayan Thakur
Act. Director
Mid & Far Western Regional Office

Mr. Radesh Man Pradhanang
Act. Director
Soil, Rock & Concrete Laboratory

Mr. Rishikesh Sharma
Act. Director
Environment & Social Studies

Mr. Dev Sharma Poudel
Act. Director
Generation, Operation & Maintenance

Mr.Madhab Prasad Luitel
Act. Director.
Training Centre



Mr. Sudhir Prasad Singh
Officiating Director
Corporate Planning

Department Chiefs

Mr. Ishwori Prasad Khatiwada
Act. Director
Human Resources

Mr. Dandapani Bashyal
Act. Director
General Service

Mr. Badrinath Roka
Act. Director
Finance & Account

Mr. Govinda Raj Kharel
Act. Director
Legal & Grievance Handling

Mr. Arjun Kumar Chauhan
Act. Director
Internal Audit

Mr. Ishwori Prasad Tiwari
Act. Director
Kaligandaki 'A' HEP

Mr. Juju Kaji Ranjit
Officiating Director
SHP and Rural Electrification

Mr. Asta Ratna Shakya
Act. Director
System Planning

Mr. Yogendra Prasad Baidya
Officiating Director
Finance, DCS

Managing Director's Report

Dr. Jivendra Jha
Managing Director

I feel honored to present this 24th Annual Report of Nepal Electricity Authority on the occasion of this Annual Anniversary Ceremony as Managing Director. It is of great pleasure to all of us that unperturbed by joys and despairs our beloved organization has completed 24 glorious years in the service of the nation.

FY 2008/09 shall be noted historic because for the first time in a century long history of electricity generation and consumption, government declared "National Electricity Crisis" in the country and introduced a 38 point package program to mitigate this crisis. Reviewing the slow pace of developments in the sector, NEA through its "White Paper" published in 2007, had indicated the stepping of grave situation and need of government intervention. Ultimately we faced it in 2008/9 in form of 16 hours of load shedding per day, though a little early than expected. Combination of expected normal unbalance and natural contingencies aggravated the mismatch between demand and supply to this level. NEA as single buyer cannot be solely held responsible for this severe mismatch of demand and supply but had to absorb and dissipate the mounting pressure of dissatisfaction of consumers which some times went violent. As NEA is not the only player in the sector, I cannot promise a magical change in situation although we will intensify our efforts through our strategic options to minimize the crisis. It is high time and I request government to extend arms to help NEA to pull country out of darkness.

I believe that though distressful, Year 2008/9 has been helpful to open eyes of all stakeholders that NEA must be supported for what it has been requesting i.e. revision of retail tariff, financial restructuring and autonomy etc. We assess Year 2008/9 more of challenges than achievements and get inspired with the famous quote "Success is not measured by the heights one attains, but by the obstacles that were overcome in the attainment."

System Operation

Year 2008/9 recorded a 12.58% growth in peak power demand and 10.58% growth in energy demand. Presuming normal availability of domestic and import supply sources, we had forecasted mild two hours per day load shedding from month of November to a maximum of eight to nine hours per day for driest few days in February. But additional six hours of load shedding was attributed to natural causes including historic low water level in Kulekhani reservoir, relatively low inflow in rivers in dry season and damage to towers of Kataiya - Duhabi 132 k V Transmission line. Justifying the saying "Trouble never comes alone" reliable supply from Bhotekoshi power plant was also interrupted due to technical problem thereby contributing one more hour of load shedding and making it up to sixteen hours per day per consumer. NEA resorted to all possible options to minimize this crisis including purchase of all excess energy from IPPs, operation of costly diesel plants, possible import in trading mode and call for captive supply but these measures could not offset the large gap between demand and supply.

Contingencies caused by nature are beyond control of NEA but we had to absorb mounted dissatisfaction of consumers expressed as lockups, agitations, physical assault on our employees and damage to NEA property at many places. As a backstopping measure to such situation, additional seasonal storage capacity and high capacity cross border interconnections have emerged as need of the time to reduce our dependence on Run-of-river plants.

System load factor over the year is recorded 54.22% compared to 55.2% of previous year. Analysis of load factor and other such system indicators is misleading when the system is running in abnormal conditions of very long hours of load shedding daily. A massive campaign on use of efficient lighting and other appliances, off peak use of electricity and other various Demand Side Management techniques may contribute to peak flattening which is already started and will get continuity in future.

Operational performance

Peak power demand of Integrated Nepal Power System (INPS) over the year in review 2008/9 reached 812. 50 MW at 18:25 hours on January 20, 2009 registering 12.58% increase over peak demand of previous year 721.73 MW. Likewise annual energy demand totaled 3,859 GWh marking 10.58% growth over annual energy demand of previous year 3,490 GWh. Out of this total energy demand only 3,130.77 GWh could be served through available sources and 728.23 GWh had to be curtailed as load shedding to keep the system in operation.

Contribution of hydro sources in the served energy volume was 88.33% including 29.57% contribution from IPPs. Import accounted for 11.39 % and rest 0.29% of served energy was managed from thermal plants. Unavailability of Kataiya – Duhabi 132 k V transmission line, has reduced net import from India compared to previous year.

NEA has been able to maintain consistent growth in its number of customers during 2008/9 also. With a 10.13 % growth over last year, our total number of customers at the end of FY 2008/9 reached 16,70,610. Around 95.48% of total customers belong to domestic category accounting for 42.52% of total energy sales and 41.87% of total revenue earned during the year under review. Although industrial category of consumers is only 1.71% of total number of consumers but it contributes a substantial 37.37% of energy sales and 34.80% of total revenue earned. It indicates that average tariff of industrial consumers is lower than domestic category.

NEA owned power stations managed to generate 1,839.52 GWh during FY 2008/09 with an increase of 2.59% over the figure of previous year. This could be possible after the onset of operation of the long awaited Middle Marsyangdi Hydropower Station on December 14, 2008. Apart from regular preventive maintenance of generating plants, major overhauling works were carried out on generating units of number power stations. Overhauling of turbine of one unit of major power plants Kaligandaki “A”, Marshyangdi, Gandak and Puwakhola was accomplished. Repair and overhaul of generator and turbine of second unit of Kulekhani-2 was completed whereas repair of unit no. 1 of Kulekhani – 1 was in progress at the year end. Kaligandaki “A” suffered a set back due to problem in GIS PT and a temporary solution was sought by installing outdoor CVT to run the units.

Commissioning of Chandranigahpur 132/33 kV and Kawaswoti 132/11 kV, rehabilitation of five towers of Duhabi - Kataiya 132 kV transmission line that were washed away by Koshi floods within stipulated time and reinforcement of overloaded grid substations by installing new transformers and relocating the old ones at Parwanipur, Butwal, Anarmani, Lahan and Lamosangu Substations were major accomplishments in transmission business area. But our system reliability is degraded as indicated by increased number of system collapses during the year compared to previous years. Lack of protection coordination, inappropriate load frequency response of governors of major units and absence of alternative transmission paths to meet “n-1” criterion are identified as reason to degrading reliability and work has been initiated to update the same. Study of protection coordination of whole INPS is in progress. Although System Average Interruption Frequency Index (SAIFI) is degraded by increased frequency of interruptions yet System

Average Interruption Duration Index (SAIDI) is good making time availability of the transmission system 99% during the period.

I sincerely confess that we have not been able to perform and meet the target of reduction of system losses. Our efforts have not generated encouraging results and INPS has endured 25.27% system loss provisionally in FY 2008/9. There is little contentment on this figure as the audited final loss figure of preceding year was 26.52% (provisioned 25.15%). Our loss reduction activities could not yield much because our employees had to face fierce resistance from misusers. Yet, we are committed to intensify our efforts to bring down the system loss to an acceptable level.

Financial Performance

Historically low replenishment of water in Kulekhani reservoir and poor run off in various rivers during dry season had a direct impact of more than a billion rupees on our revenue. Managing the energy deficit so caused to the extent possible through other sources like operation of costly thermal plants and importing costly energy from short term market under trading mode imposed additional costs of about half billion rupees. Thus due to lack of supply sources we missed the opportunity of translating the encouraging demand growth into revenue. Besides this about one billion rupees due of Street Lights was written off and we had to bear about 0.8 billion rupees loss from foreign currency exchange rate fluctuations. All these factors have directly imposed a loss of about 3 billion rupees.

Normal operation of business was frequently disturbed by work stoppages and strikes as well as heightened insecurity experienced as physical threats, extortions, manhandling, cutting water supply to staff quarters and vandalizing the property. We were deprived of performing effectively in meter reading, cash collection, loss reduction and system improvement. These activities have large bearing on our financial performance.

Operating costs also increased due to hike in price of spare parts and consumables as well fluctuating rates of exchange of foreign currencies in upward direction.

One basic reason of financial losses appeared in the income statement of FY 2008/9 and preceding years is pegging of retail price for many years there by not making up the increasing cost of service. Reasonable cost of service must be allowed to pass through to consumers for the financial sustainability of the utility.

NEA has a revenue rate of Rs 6.71 per kWh against cost of service Rs 9.05 per kWh for its main business. Besides its main business NEA makes miscellaneous income contributing Rs 0.43 per kWh of sales. Even after adjusting this miscellaneous income to revenue rate of main business, NEA suffered a loss of NRs 1.91 per kWh of energy sales.

Total earning of NEA during FY 2008/09 reached NRs 16,212.65 million which includes NRs 15,220.87 million from sale of electricity and NRs 991.78 million as other incomes. Electricity sales revenue increased marginally by only 1.19% compared to NRs 15,041.49 million figure of previous year. With an increase of 12.95% over the previous year figure, Operating expenditure reached NRs 16,184.19 million thereby recording operating surplus of NRs 28.46 million. However net loss incurred during the year mounted NRs 4,681.24 compared to NRs 961.47 million of previous year. Accumulated losses by the end of fiscal year reached to an alarming figure of NRs 12,332.67 million. Net property of NEA in terms of plant and equipment valued at historical cost reached NRs 78,678.89 million whereas Capital works in progress at the end of fiscal year amount for NRs 18,054.38 million. Similarly NEA has NRs 2,320.19 million remained as equity investment in subsidiary and joint venture companies like Chilime, Upper Tamakoshi etc. Likewise NEA has liability of NRs 32,273.67 million as equity towards Government of Nepal and NRs 58,217.77 million as long term loan.

Overall picture and trend of the financial condition by the end of FY 2008/9 is crippling and asks for urgent and effective financial restructuring for the sustainability of the organization. Gradual recovery of accumulated financial losses and generation of investment funds for expansion may be possible only by reviewing retail tariff, reducing interest rate on government loans, capitalization of grant projects

at average cost estimate of the region, reduction of system losses and management of seasonal surplus energy.

Ongoing Projects

Apart from professional operation and maintenance of existing plant and equipment, NEA has the responsibility to expand the system to meet the growing needs. This includes development activities related to generation, transmission and distribution services.

Chameliya Hydroelectric Project (30 MW) scheduled to be commissioned in 2011 is progressing amidst frequent disturbances at site. Civil contractor China Gezhouba Water and Power Group Company Limited (CGCC) has completed 35% civil works including two adit tunnels, one diversion tunnel, two connecting tunnels, one aeration tunnel and one access tunnel to desander. Excavation of 950 m of headrace tunnel is completed whereas that of power house is 90% complete. Contract for construction of Electromechanical, Hydromechanicaland Transmission line is also awarded whereas Saman Corporation, Korea has been appointed consultant for these works. Government of Republic of Korea is financing USD 45 million as soft loan for electro-mechanical, hydro-mechanical & transmission line works, including cost of Engineering Services for these works.

Kulekhani -III Hydroelectric Project (14 MW) is scheduled to be commissioned in FY 2010/11 at an estimated cost of NRs 2.43 billion. Excavation of the powerhouse, adit tunnel -1A and 325 m of headrace tunnel has been completed whereas work at intake portal, adit tunnel - 4 and access road to adit tunnel-3 are progressing. Invitation for the prequalification of contractors for electromechanical, hydromechanical, transmission line and substation works of the Project through International Competitive Bidding was published on 26 June 2009. The process for the prequalification is in progress.

On May 5, 2009 tenders were submitted for the first package of Upper Trshuli 3-A (60 MW) and technical proposal of Chinese Bidders for this package is in final stage. Actual construction of the project is envisaged to start in the dry season of FY 2009/10. Draft Tender Documents and Tender Drawings for the civil works of Upper Trishuli 3- B project (37 MW) have been completed. The prequalification of bidders for civil works of Rahughat Hydroelectric Project (30 MW) has already been initiated as well as invitation for the expression of interest from local, international or/and the Joint venture of both for the construction supervision and management of the project has already been published. This being less than 50 MW project, IEE is sufficient and has been initiated. Topographical survey including reservoir mapping and surface geological mapping of the project areas of Nalsyagu Gad storage project (400 MW) have already been completed. A gauging station has been established at the dam site and hydrological data is currently being updated. Detailed geological investigation followed by detailed feasibility design will be carried out in this fiscal year. Negotiations are ongoing with Korean Public Company KEPCO regarding joint development of 40 MW Upper Modi – A project.

Transmission expansion has been realized as the main thrust for development of hydropower and government has come forward for public investment in this sector. Khimti – Dhalkebar 220 kV, Hetauda-Bharatpur 220 kV, Thankkot-Chapagaun-Bhaktapur 132kV, Kusum-Hapure 132kV Transmission lines and Hetauda (Kamane) 132kV S/S are the major projects under construction. Parallel to this Bharatpur-Bardghat 220kV, Butwal-Kohalpur 132kV Second Circuit, Marsyangdi-Dumre-Damauli 132kV, Mirchaiya-Katari132Kv transmission lines as well as Matatirtha 132kV Substation Expansion, Chapali 132kV new Substation, Pathalaiya 132 kV new Substation, Syangja 132 kV new Substation Projects are under preparatory stage. New proposed projects include Lekhnath-Damauli 220kV Transmission Line and High Voltage Transformer Upgrading & HV Capacitor Bank. Funding negotiation with Norwegian Government for Capacitor banks is in progress. In total 32 transmission line projects of 400 k V, 220 k V and 132 k V of total length 2439 km have been envisioned to be completed within a decade under National Electricity Crisis Mitigation Program - 2065. Estimated cost of these projects amounts NRs 55 billion.

Various rural electrification programs are launched through financial assistance of donor agencies and progressing to make electricity accessible to rural dwellers. Rural Electrification, Distribution and Transmission Project with loan assistance from Asian Development Bank(ADB) and OPEC Fund for International Development (OFID) and the Distribution and Rural Electrification Project financed by the World Bank are nearing completion, The Kailali-Kanchanpur Rural Electrification Project (KKREP) funded by DANIDA and Ilam Rural Electrification Project (IREP) with non-project grant assistance from the Government of Japan have been successfully completed in this reviewed period. Government of Nepal (GoN) has also financed many rural electrification projects through 20:80 partnership scheme. Total 55,453 consumers were served through offices under Electrification business in the review period. 500 kW Heldung Small Hydropower Project (Humla District) has been commissioned and providing electricity to about 300 consumers. Construction work of 400 kW Gamgad Small Hydropower Project (Mugu District), is making good progress and expected to be completed within FY 2009/10.

It is realized that NEA cannot afford its scarce resources in development activity like rural electrification as well as it cannot continue to provide bulk electricity to Communities at almost half of the average retail tariff. We hope that formation of Rural Electrification Company will take shape soon to carry out rural electrification and associated works as government responsibility.

Capacity Building and Institutional Strengthening

According to approved organizational structure in place at the end of FY 2008/9 there are 10314 staff positions; of which a total of 9280 are already placed. A total of 304 positions were filled by new recruitment during the year under review.

NEA firmly believes that employees are one of the major factors of success of an organization. To sharpen the skill of employees NEA training center organized need based trainings for its employees and a total of 709 staffs got benefited through these training programs. Similarly Information Technology Department also conducted a total of 5 training programs participated by 86 NEA staff on use of the software applications developed/supported by the Department. NEA executives were given opportunity to study, participate, interact and learn from the development taking place elsewhere in the world through peer exchange programs.

There have been significant developments in the use of information technology for reporting, creating database, analyzing and developing a knowledge base to improve our operational efficiency. To enhance and expand NEA intranet into a country-wide data network, fiber network is extended to Lagankhel, Bhaisipati and Pulchowk DCS branches. The public service telephone system (PSTN) lines within NEA complex are replaced with telephone lines from Optical Network Unit provided by Nepal telecom. Enhanced availability and use of IT in our decision making and delivery of service has shown clear indication of improvement in these areas. The fabric of organization structure as corporate and business functions has been suitable for concentrated efforts in particular business area and creation of expertise in specific areas.

NEA's Subsidiary Companies and the Private Sector

Chilime Hydropower Company Limited (CHPCL), the first subsidiary company of NEA, has been successfully delivering deemed as well as excess energy to NEA from its Chilime Hydroelectric Power Plant in six years of operation including the year in review. It has distributed attractive dividends to its share holders at the rate of 10%, 20%, 35%, 30% and 35% respectively in the last five fiscal years. CHPCL has included four more projects for development in its corporate plan. These include Sanjen Upper (11 MW), Sanjen (35 MW), Rasuwagadhi (100MW) and Middle Bhotekoshi (80 MW).

Upper Tamakoshi Hydropower Company Limited (UTHPCL) has arranged financing for its 456 MW Upper Tamakoshi Hydroelectric Project in Dolkha District. Employee Provident Fund (EPF) has pledged to provide NRs 10 billion as debt and NRs

2 billion as debenture whereas Himalayan Bank Ltd. (HBL), the lead bank for the consortium of commercial banks of Nepal has also pledged to provide NRs 6 billion as debt for the project. Citizen Investment Trust has committed a loan investment of NRs. 2 billion and discussions are underway with Rastriya Beema Sansthan to arrange remaining funds required for the Project. Six international construction companies have been prequalified for Project civil works and 5 international consultants have been short listed for the construction supervision of the project. Last 28.5 km stretch of the 68 km long access road and upgrading of its 35 km long Dolakha-Singati section is underway. Power Purchase Agreement with NEA is at final stage. Local Construction Company Himal Hydro is in progress with the construction of 700 m long access tunnel.

Power Transmission Company of Nepal (PTCN) engaged in development of cross border power transmission line is preparing to float the tenders for proposed Dhalkebar – Muzaffarpur 400 k V transmission line. NEA is reviewing the draft Transmission Service Agreement (TSA) submitted by the company.

NEA has always considered Independent Power Producers as trusted peers in meeting country's growing electricity demand. Total number of PPAs concluded so far has reached 52 with total installed capacity of 286,179 KW. Out of this, 19 projects with total installed capacity of 158,315 KW are already in operation. To encourage small size developers using domestic sources, NEA declared fixed generation tariff for PPA of plant size less up to 25 MW. This was a major event of the year that has simplified the PPA process and attracted developers of that range. As a result 12 new PPAs worth 42.963 MW were concluded and 3 active PPAS were revised to enhance a total of 8.986 MW during FY 2008/9. A total of 87 PPAs are under consideration and combined capacity of projects in these PPAs happens to be 1209.680 MW.

Future Plans

NEA is passing through critical stage and we are aware that the challenges will grow exponentially in the days to come. But we have a vision to face these challenges and rejuvenate. We are ready with short term, medium term and long term strategic plans to expand our generation, transmission and distribution capacity; curb the system losses and improve financial health. Implementing Demand Side Management techniques, importing maximum possible power from India, rehabilitating existing hydro and thermal plants for 100% availability shall be launched as short term measures. Kulekhani - 3 Hydroelectric Project, Chameliya Hydroelectric Projects and Muzaffarpur – Dhalkebar 400 kV Cross border Transmission Line Project will be completed as medium term measure. Upper Tamakoshi (456 MW), Upper Trishuli- 3A (60 MW), Upper Trishuli 3-B (37 MW), Rahughat (30 MW) and Upper Seti Storage (127 MW) hydroelectric projects will go in implementation as long term measures. Similarly from private sector Kabeli – A (30 MW), Upper Marshyangdi (50 MW), Upper Modi-A (40 MW) and few more projects are expected to be completed within five years from now. With the completion of high capacity cross border interconnection, seasonal trading shall be possible and problem of base load supply during dry season shall be resolved. NEA plans to take up storage projects like Nalsyagugad and Budhigandaki as longer term option. With plans in hand for expansion, we shall have a vast fabric of transmission network to meet our domestic and export capacity requirement. NEA will intensively expand distribution facilities and network and reinforce it for reliable supply. Modes operandi of distribution and supply services shall be changed to make it consumer friendly by use of Information Technology and latest state of art used elsewhere.

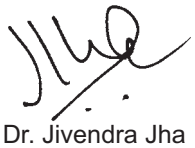
Acknowledgements

It is opportune to mention that credit for NEA's performance and achievements attained during 2008/09 goes to all those who have been directly or indirectly contributing to this cause. Our deep gratitude goes to Chairman and members of NEA Board of Directors who have strategically steered the course in adverse conditions.

I also sincerely acknowledge government support in our regular operation and development pursuits. I am also indebted to bilateral donors such as India,

Japan, Germany, South Korea, Norway, Denmark, Sweden and USA as well as the international development banks such as World Bank, Asian Development Bank, Japan Bank for International Cooperation and Kreditanstalt fur Wiederaufbau (kfW) that have generously supported us and contributed in our development and institutional strengthening activities. I sincerely express my thanks for their support in meeting the growing energy needs of the nation. I am aware that NEA has a large well wisher community in the society that stands in favor of NEA at difficult times. I sincerely thank that community and request for continued support in future. Our staffs have shown consistent strive for betterment and dedication throughout the year. I am thankful to the entire staff of NEA as well as their representative Unions for their support and cooperation. At last I apologize to our valued customers for not meeting their expectations and sincerely thank them for bearing with us during adversities.

Thank You.



Dr. Jivendra Jha
Managing Director

Generation Business Group

The Generation Business Group is entrusted with the responsibility of constructing new power projects and the operation and maintenance of NEA owned power plants. It is headed by a General Manager and has Generation Construction Department, Operation and Maintenance Department and Kaligandaki "A" Hydropower plant under it.

This Business Group is now overseeing the construction of Chameliya Hydroelectric Project (30 MW) and Kulekhani - III Hydroelectric Project (14 MW). It is operating and maintaining seventeen hydropower stations with a total installed capacity of 424.12 MW and two thermal power plants with a total installed capacity of 53.41 MW. It is also operating the Middle Marsyangdi Hydropower Station following its inauguration on 14 December 2008.

Generation from NEA owned power stations in FY 2008/09 was 1841.63 GWh, an increase of 2.55 % over the previous fiscal year's figure.

Operation and Maintenance Department

The Operation and Maintenance Department, headed by a Director, is responsible for operating and maintaining NEA owned power plants with the exception of Kaligandaki "A" Hydropower Plant. A total of 1088.26 GWh of energy was generated from these power plants in FY 2008/09.

In FY 2008/09, preventive maintenance works were carried out on a regular basis in all the power stations to ensure timely detection of faults and their rectification. Overhauling of turbine runners of Marsyangdi, Gandak and Puwakhola Hydropower Stations was performed. Repair and major overhauling of Unit No. 2 generator and turbine set of Kulekhani-II Hydropower Station (KL-II) were completed under the supervision of experts from Fuji Electric Systems Co. Ltd. (Japan). Repair of inlet valve and overhauling of Unit No. 1 generator and turbine set of Kulekhani -I (KL-I) is presently under progress.

On 6 April 2008, NEA entered into a contract agreement with the Bharat Heavy Electricals Limited (BHEL) of India for the rehabilitation of Devighat Hydropower Station. The fabrication of turbine, generator and the spare parts required for the rehabilitation work has already commenced and other equipment and materials have already arrived at the Birgunj Customs. The rehabilitation project is funded jointly by the Government of India (GOI) and NEA. GOI has agreed to provide IRs 150 million as grant assistance and IRs 150 million as loan under a line of credit. The balance of fund required for the rehabilitation work will be managed by NEA.

With the loan from the Asian Development Bank (ADB), procurement for the rehabilitation of excitation system and the modernization of weir control system at Marsyangdi Hydropower Station and installation of trash rack cleaning machine at Gandak Hydropower Station is presently under way. Similarly, the procurement of spare parts and overhauling of Hetauda Diesel Plant and Multifuel Power Plant are scheduled to be carried out in FY 2009/10 in order to enhance their reduced outputs.

A Central Maintenance Division is being proposed under this Department for the purpose of regular preventive maintenance and repair work at NEA owned stations. A mobile team of this proposed maintenance division will travel to different NEA power stations on an as-and-when required basis and maintain them as far as practicable. The Department also avails the services of other experts or technicians as the case may be in case such expertise is not available within NEA for maintaining and repairing power plants in NEA.

Kaligandaki-A Hydropower Plant

The Kaligandaki-A Hydropower Plant, headed by a Director, oversees the operation and maintenance of the 144 MW plant, Nepal's largest hydropower plant to date.

In FY 2008/09, a total of 753.368 GWh of energy was generated from Kali Gandaki -A Hydropower Plant, a decrease of 0.74 % over the preceding fiscal year's figure. This decrease was mainly due to the problems noticed with the Gas Insulated Switchgear (GIS) Potential Transformer (PT) of Unit Nos. 1 & 2 of the station. The GIS PT of Unit No. 1 and 2 were damaged on May 5, 2009 and April 4, 2009 respectively. This resulted in non-operation of Unit Nos. 1 and 2 till June 18, 2009 and May 11, 2009 respectively primarily due to non-availability of spare PTs. Damaged PT of unit No.2 was replaced with the PT from the rural transformer and an outdoor CVT was installed temporarily to bring Unit No. 1 in operation

In FY 2008/09, spillway gates, intake under-sluice gates, de-sander flushing gates and trash rack cleaner were repaired and maintained. Similarly, inspection & runner replacement of Unit No. 1 and major overhauling of Unit No. 3 were successfully completed. Analog input/output PLC cards, EPABX communication cards and high voltage bushings of 56.5 MVA power transformer of Unit No. 2 that were damaged, were also replaced.

Generation Construction Department

The Generation Construction Department is also headed by a Director and presently is executing the construction of 14 MW Kulekhani-III Hydroelectric Project. The status of the Project is outlined below.

Kulekhani-III Hydroelectric Project

The 14 MW Kulekhani-III Hydroelectric Project (KL-III) is located at Bhaise Village Development

Tunnel Construction of Kulekhani III HEP

Committee (VDC) of Makwanpur District, about 115 km south west of Kathmandu.

Kulekhani -III Hydroelectric Project is a cascade project, which utilizes the regulated flow of Kulekhani I and II hydropower stations and water of Khani Khola for power generation. Main features of the Project comprise head pond, 4293 m long and 3.5 m diameter headrace tunnel, underground forebay, 370 m long penstock and semi-underground powerhouse with two units of 7 MW vertical shaft Francis Turbines. The Project is estimated to generate about 40.85 GWh of energy annually. Power generated from this Project will be evacuated to Hetauda Substation through 0.5 km long 132 kV single circuit transmission line.

Excavation at the powerhouse site, 308 m long adit tunnel 1A and 325 m headrace tunnel has been completed so far. In addition, work is in progress at intake portal and adit tunnel 4. Construction of access road to adit tunnel 3 that provides access to the forebay as well is also moving ahead.

Invitation for the pre-qualification of Contractors through International Competitive Bidding for electro-mechanical, hydro-mechanical, transmission line and substation works of the Project was published on 26 June 2009. The process of pre-qualifying the Contractors is in progress.

This Project has been accorded a National Priority Project by the Government of Nepal (GON). The total project cost is NRs. 2.43 billion and is being funded by GON and NEA. The Project is scheduled to be commissioned in FY 2010/11.

Chameliya Hydroelectric Project

The Chameliya Hydroelectric Project (CHEP) is being handled by a Project Director reporting directly to the General Manager, Generation Business Group. It is a six-hour daily peaking run-of-the-river (PROR) project with an installed capacity of 30 MW. The Project is estimated to generate an average of 184.21 GWh annually. The project lies in the Far Western Region of Nepal, about 950 km west of Kathmandu in Chameliya valley, Darchula District. Main features of the Project are 54 m high concrete dam with two 13.5 m high radial gates, underground de-sander with 2 basins, 4,067 m long headrace tunnel, 49.8 m high restricted orifice type surge tank, 461 m long penstock and semi-underground powerhouse with two units of 15.3 MW vertical shaft Francis turbines. Power generated from the project will be evacuated through 131 km long 132 kV transmission line to Attariya Substation in Kailali District.

In December 2001, detailed design and preparation of tender document were completed with the grant assistance from Korea International Co-operation Agency (KOICA). Construction of 18 km long access road has been completed. Six of the seven bridges on the access road have already been completed and the construction of the remaining one is in progress. Construction of the camp facilities is about 93 percent complete. Land acquisition for the Project has been completed.

China Gezhouba Water and Power Group Company Limited (CGGC), China was awarded the contract for the construction of the civil works of the Project on 21 December 2006. Excavation works for 308 m long adit 1, 214.0 m long adit 2,274 m long adit 3,203 m long diversion tunnel, 127 m long connecting tunnel 1, 116 m long connecting tunnel 2,156 m long aeration tunnel and 182 m long access tunnel to de-sander have been completed. Likewise, excavation works for de-sander and tailrace are in progress. Out of 4067 m headrace tunnel (HRT), 950 m excavation is complete, whereas that for the powerhouse is 90% complete. The overall progress of the civil works is about 35 %.

The Government of Republic of Korea is providing USD 45 million as soft loan towards the cost of electro-mechanical (E/M) equipment, hydro-mechanical (H/M) equipment & the construction of 132 kV transmission line (T/L), including the cost for Engineering Services of E/M and H/M works.

On 30 April 2009, KHNP Consortium comprising Korea Hydro & Nuclear Power Co. Ltd. (KHNP) Korea; Hwachon Plant Construction Co. Ltd. (HWACHON) Korea; Sean Engineering and Construction Co. Ltd. (SEAN) Korea; and Nepal Hydro & Electric Ltd. (NHE) Nepal was awarded the contract for the E/M, H/M & 132 kV T/L works of the Project. Similarly on 11 May, 2009; Saman Corporation, Korea was appointed Consultant for the E/M, H/M & 132 kV T/L works. Both the contractor and the consultant for the E/M, H/M & T/L works have already started their respective work.

The Project is scheduled to be completed in year 2011.

Flushing Tunnel of Chameliya HEP

Middle Marsyangdi Hydroelectric Project

Background

Middle Marsyangdi Hydroelectric Project is located near Besishahar in Lamjung District, Gandaki Zone, about 170 km West of Kathmandu. The Project is a peaking Run-of-River Project with an installed capacity of 70MW and an average annual generation of 398 GWh. The Consultant (Engineer) Fichtner JV (FJV) was selected in the year 1999 after concluding financial and project agreements between Government of Germany, the Government of Nepal (GoN) and Nepal Electricity Authority (NEA) for the grant of Euro 178.26 millions through Kreditanstalt fur Wiederaufbau (KfW). The procurement of Consulting Service, Civil Works and Electromechanical Equipment was carried out through Limited Bidding System. The initial estimated Project Cost in year 2000 was USD 181.27 millions equivalent to Euro 212 millions at the exchange rate USD1=Euro 1.17. But due to different circumstances, the project could not be completed within the original scheduled completion period of 43 months and accordingly, the project cost increased. As per the Engineer's updated project cost in January 2009 (Paush 2065), the revised cost is estimated to be Euro 276.35 million. These costs do not include Interest During Construction (IDC).

In addition, KfW has provided Euro 3.0 million for Neighborhood Support Program (NSP) to support the development activities and to improve the infrastructures related to education, health, water support & sanitation and rural electrification of eleven Village Development Committees (VDCs), in Lamjung District, in the vicinity of Project area.

Reservoir of Middle Marsyangdi HEP

Civil construction works started from June 25, 2001 (Ashad 11, 2058) with the completion target of 39 months on September 24, 2004 (Ashoj 8, 2061). But, due to law and order situation such as bandhs, strikes and design changes, the civil works was completed only on November 7, 2008 (Kartik 22, 2065). The Engineer issued Taking Over Certificate effective from November 7, 2008 with the punch list of remaining works. After impounding of the reservoir, wet commissioning of 2 units started from November 28, 2008 (Mangsir 13, 2065) and subsequently, on December 14, 2008 (Mansir 29, 2065), the project was inaugurated and synchronized with the National Grid. As of July 15, 2009 (Asad 31, 2066), altogether 169 GWh of energy has been successfully generated from two units.

Status

Payment: Till June 14, 2009 (Jestha 31, 2066), an amount of NRs 21,840 million for the services and works has been spent excluding IDC amount of NRs 4,360 million. With IDC, the total expenditure comes to NRs 26,200 million. The expenditure of NRs 21,840 million consists of about NRs 13,427 million for total works and services, about NRs 5,130 million for foreign exchange rate difference, about NRs 913 million for prices escalation and about NRs. 2,370 million for claims.

Contractor's Claim: The Civil Contractor DDC-JV till date has submitted the claim of Euro 122 million and NRs 2,928 million. The amount of Euro 26 million and NRs 417 million has been paid as on account basis as per the Engineer's certification. With regard to Electromechanical lots, an amount of Euro 4 million and NRs 0.1 million has been paid as per the Engineer's certification.

Arbitration and Amicable Settlement: As per the provision of the Contract, both parties DDC-JV and NEA issued the Notice of Intention to commence Arbitration in March 2005 (Chaitra 2061) after having dissatisfaction with the Engineer's decision. Two attempts of amicable settlement have been made but settlement of the dispute could not be made amicably. As part of the first phase of the Arbitration, the Contractor has referred disputed claim amount of Euro 38.4 million and NRs 527 million to the International Court of Arbitration (ICA) of the International Chamber of Commerce (ICC) for the commencement of the Arbitral proceedings. Three Evidentiary Hearings and one Post Hearing have been conducted and the partial award is expected by the end of the year 2009. In this regard, NEA has also made counter claim amounting Euro 37 million against DDC-JV.

Overview of Middle Marsyangdi HEP Site

Transmission and System Operation Business Group

Among five business groups of Nepal Electricity Authority (NEA), Transmission and System Operation (TSO) business group is responsible for the design, construction, operation and maintenance of 66 kV and higher voltage level of transmission system. These functions are entrusted to the Transmission Line/Substation Construction Department, Grid Operation Department and System Operation Department.

The issues and challenges facing NEA in general, TSO business group in particular, are funding constraints, hurdles in acquisition of land for transmission line tower footing, substation, and acquisition of right of way (RoW) for transmission line, bottlenecks in major transmission system, inordinate time taken in environmental studies (EIA/IEE). Other challenges include implementation of 38-point program of the government related to transmission system expansion under National Electricity Crisis Mitigation Program – 2065 of the government, synchronization of INPS with Indian Grid etc.

Transmission Line / Substation Construction Department

Transmission Development Planning performed by the System Planning Department of NEA guides the implementation of transmission projects. The Transmission Development Plan is based on system studies of INPS and the generation expansion plan. Development of transmission projects involve several phases-- acquiring license for survey, conducting survey, performing EIA/IEE studies, acquiring construction license, forest clearance, acquiring land for tower footings and substation, acquiring right of way (RoW) of transmission line, designing, tendering, construction and handing over the constructed transmission system to the Grid Operation Department for operation and maintenance. Most of the transmission development works are carried out through turn key contracts. Recently completed projects, projects under construction and those in pipeline are described below.

Recently Completed Projects

Chandranigahpur System Reinforcement

The objective of this project is to meet the increasing electricity demand of Rautahat and Sarlahi districts and to reduce the technical loss in the transmission system in Chandranigahapur area. The scope of this project included construction of a new substation at Chandranigahapur consisting of 132/33 kV, 30 MVA and 33/11 kV, 8 MVA transformers and associated equipment; and 74 km of 33 kV sub-transmission line to connect the new Chandranigahpur substation with the existing 33 kV substations at Harsaha, Haripur, Gaur and Nijgadh. Completion of this project is expected to contribute to reduction in system losses, improvement in the reliability and quality of supply in the project areas mentioned above as well as in and around Birgunj. Construction of the 132/33/11kV, 30 MVA Chandranigahpur Substation has been completed, commissioned and charged in FY 2065/066 (2008/09) whereas construction of 33 kV sub-transmission line is in progress. In this project, AAAC-250 sq. mm. conductor has been used for the 33kV sub- transmission line for the first time in Nepal to avoid growing cases of stolen conductor.

This project was jointly funded by NEA/GoN and WB and is estimated to cost about NRs. 421.00 Million (equivalent to US$ 5.26 Million).

New Kawasoti 132 kV Substation

This project was undertaken to cater to the high electricity demand in the eastern part of Nawalparasi District. The main objective of this project is to provide reliable and quality of electricity supply to the consumers of Kawasati and its vicinity, and reduce system losses. Moreover, this substation is

also expected to attract the industrial consumers and independent power producers (IPPs) in the area. Additionally, this project provides opportunities for 33/11kV sub-transmission / distribution network expansion to supply electricity to the large number of rural hilly communities living in the northern part of the district.

Under this project the existing Bardghat - Bharatpur 132 kV transmission line is looped-in- looped - out (LILO) at Pragatinagar to construct a new 132/33/11 kV substation.

Major components of the project are two 132 kV line bays, one 132 kV transformer bay with 132/33 kV, 30 MVA power transformer; one 33 kV transformer bay with 33/11 kV, 8 MVA power transformer, two outgoing 33 kV feeders and 11 kV cubicles.

This project is jointly funded by the Government of Nepal / Government of Japan and Nepal Electricity Authority. The total cost of the project is equivalent to NRs.581.00 Million, which includes Japanese Grant of JP¥ 847.00 Million, and local fund amounting to NRs.56.00 Million borne by GoN and NEA. The Project was completed on Baisakh 2066 (May 2009).

Power Development Project

The Power Development Project under NEA Transmission and Distribution component is being implemented under the loan/grant assistance of the World Bank. The initial allocation to this project was about USD 31 million. As part of the original scope, the following projects are being implemented:

- Khimti-Dhalkebar 220 kV Transmission Line Project
- Distribution and Rural Electrification Project
- Chandranigahapur System Reinforcement Project
- NEA Institutional Strengthening Project

Under the Khimti-Dhalkebar 220 kV Transmission Line Project, a 75 km long 220 kV line is being constructed. The Distribution and Rural Electrification Project consists of reinforcement of distribution systems and electrification in Lalitpur, Bhaktapur,

Bardaghat Substation

Kavre, Dhading and Nuwakot districts. The Chandranigahpur System Reinforcement Project involves construction of a 132/33 kV substation at Chandranigahpur and related 33 kV sub-transmission lines. Finally, the Institutional Strengthening Project focuses on improving the processes in finance, accounts and internal audits within NEA.

The 220 kV Khimti-Dhalkebar Transmission Line and the facilities under the Distribution and Rural Electrification projects are currently under construction. The 132/33 kV substation at Chandranigahpur has been completed and the related sub-transmission lines are under construction. The activities under the NEA Institutional Strengthening have been completed.

In February 2008, the Power Development Project was restructured, whereby the scope of work under the NEA Transmission and Distribution component was increased providing an additional allocation of about USD 36 million. Under this additional scope of work the following projects are being implemented:

- Hetauda-Bharatpur 220 kV Transmission Line Project
- Distribution System Reinforcement Project
- NEA Institutional Strengthening (II)

The tender for the supply and installation of Hetauda-Bharatpur 220 kV has been awarded, and the constructors have begun route survey work. The tender notice for the construction of 132/11 kV substations at Hetauda and Bharatpur has been published. The Distribution and System Reinforcement Project includes two major activities (a) Energy and Customer Accountability Enhancement focusing large customers in Kathmandu valley and in major industrial corridors, and (b) Distribution System Reinforcement and Rehabilitation of 33/11 kV substations in the following ten locations : (i) Khanar, (ii) Inaruwa, (iii) Rupani, (iv) Jankpur, (v) Haripur, (vi) Chanauli, (vii) Bhairahawa, (viii) Ghorahi, (ix) Tikapur, and (x) Gularia.

The Energy and Customer Accountability activity focuses on NEA's efforts (a) to enhance accountability to its customers through (i) the improvement of services to customers; (ii) the improvement of customer interface and responsiveness by establishing easy and quick systems and processes for new service registration to enhance customer satisfaction, and through easy and convenient any-time access to customer information over the Internet; (b) to build an energy accountability framework (metering and billing, verification) and revenue collection system for large customers receiving high voltage supply.

The short listing of consultants to implement this activity has been completed and the Request for Proposal (RFP) is being issued soon.

The progress of implantation of Distribution System Reinforcement is in various stages. Contracts for the supply of equipment have been awarded. The tenders for the rehabilitation of 33/11 kV substation are under advanced stage of evaluation/award. The tenders for the rehabilitation of distribution networks are being issued soon.

In May 2009, the World Bank has decided to provide additional credit of about USD 74 million to NEA primarily to address the energy crisis. The activities being implemented as part of this additional financing are:

- Kali Gandaki 'A' HEP rehabilitation
- Duhabi Multifuel Plant rehabilitation
- Hetauda Diesel Centre Rehabilitation
- Bharatpur-Bardaghat 220 kV Transmission Line construction
- Pathlaiya 132 kV substation construction
- Kathmandu Valley distribution network strengthening

Initial procurement actions such as preparation of tender documents and hiring of consultants, have been initiated for all the above activities.

Projects under Construction

The projects under construction are listed below

S.N.	Project	Scope of Works & Status	Funding Source	Completion Year
1	Khimti-Dhalkebar 220kV Transmission Line	75 km of 220kV Transmission Line & two Substation Bays at Khimti and Dhalkebar substation. The construction work is in progress	NG,NE,WB	2009/10
2	Chandranigahapur System Reinforcement	75 km of 33kV Transmission Line The construction work is ongoing.	NG,NE,WB	2009/10
3	Hetauda-Bharatpur 220kV Transmission Line	70 km of 220kV Transmission Line & Substations at Hetauda, Bharatpur & Bardghat. Check Survey of Transmission line is in progress, the tender has been floated for construction of substations.	NG,NE,WB	2010/11
4	Thankkot-Chapagaun-Bhaktapur 132kV Transmission Line	28km of 132kV Transmission Line from Matatirtha to Bhaktapur, New 132kV, 22.5MVA Substation at Harisiddhi, Switching Station at Matatirtha, 132/11 kV & 66/11kV, 22.5MVAX2 Transformer replacement at Bhaktapur & Balaju substations respectively. Transmission line construction partially completed. RoW problem and local problem for land acquisition in Harisiddhi 132 kV S/S hindered construction works, Substation extensions at Matatirtha, Balaju & Bhaktapur substations are in progress.	NG,NE,AD,OF	2009/10
5	Kusum-Hapure 132kV Transmission Line	20 km Transmission Line and 132/11 kV, 30 MVA S/S. The project is financed by the GoN through Ministry of Industries to supply power to Dang Cement Industry. The project is in the final stage of tender floating.	NG	2010/11
6	Hetauda 132kV S/S and 33 kV sub - transmission line	10 km 33 kV Transmission Line and 132/33/11 kV substation at Kamane, Hetauda. The project is financed by the GoN through Ministry of Industries to supply power to Hetauda Cement Industry. The project is in the final stage of tender floating.	NG	2011/12

Projects under Preparatory Stage

S.N.	Project	Scope of Work & Status	Funding Source	Completion Year
1	Butwal-Kohalpur 132kV Second Circuit Transmission Line	208 km of second circuit stringing with associated substations extension. Country Agreement with ADB is expected in September 2009. Tender Document Preparation is in final stage.	NG,NE, AD	2010/11
2	Marsyangdi-Dumre-Damauli 132kV Transmission Line	38 km of second circuit stringing & 18 km of 132 kV transmission line with Aabukhaireni substation and bay extensions. Country Agreement with ADB is expected in September 2009. Tender Document Preparation is in final stage.	NG,NE, AD	2011/12
3	Matatirtha 132kV Substation Expansion	132/33/11 kV substation extension. Country Agreement with ADB is expected in September 2009. Tender Document Preparation is in final stage.	NG, NE, AD	2010/11
4	Chapali 132kV Substation	132/11 kV substation at Chapali & High Voltage UG cable with associated bay extensions at Lainchaur S/S and Chabel S/S. Country Agreement with ADB is expected in September 2009. Land acquisition is in process. Tender Document Preparation is in final stage.	NG, NE, AD	2010/11
5	Capacitor Bank	Capacitor Bank Installation in different grid substations. Country Agreement with ADB is expected in September 2009. Tender Document Preparation is in final stage.	NG,NE.AD	2011/12
6	Bharatpur-Bardghat 220kV Transmission Line	70 km of 220 kV transmission line. MOU signed with WB, Tender Document completion process is final stage.	NG, NE, WB	2011/12
7	Pathalaiya 132 kV Substation	132 kV Substation at Pathalaiya. MOU signed with WB, Tender Document Preparation is in progress.	NG, NE, WB	2011/12
8	Syangja 132 kV Substation	132 kV Substation at Syangja. Land acquisition for substation is completed. Tender Document Preparation is in progress.	NG,NE	2010/11
9	Mirchaiya-Katari132kV Transmission Line	20 km transmission line and 132/11 kV substation at Mirchaiya. The project is financed by the GoN through Ministry of Industries to supply power to Katari. Survey work is in progress.	NG,NE	2011/12

Proposed New Projects:

S.N.	Project	Scope of Works & Status	Funding Source	Completion Year
1	Lekhnath-Damauli 220kV Transmission Line	45 km transmission line with bays extension	NG,NE	2012/13
2	High Voltage Transformer Upgrading & HV Capacitor Bank	Grid Transformer Upgrading and HV Capacitor Bank Installation at grid substation. Funding negotiation with Norwegian Government is in progress	NG,NE, NR	2011/12

38 Point Transmission System Expansion Related Programs of Government of Nepal under National Electricity Crisis Mitigation Program – 2065

S.N.	Project	Funding Source	Preliminary Scope of Works & Status
1	Kabeli 132kV Transmission Corridor	NG	79 km TL and S/S hub at Godak -3 of Ilam, Phidim - 4 of Panchthar & S/S at Lakhanpur -1, Damak. Survey and EIA in progress.
2	Singati-Lamosangu 132kV Transmission Corridor	NG	40 km TL and S/S at Singati. Survey and EIA in progress.
3	Kohalpur-Surkhet 132kV Transmission Line	NG	55 km TL and S/S
4	Lamki-Upper Karnali 132kV Transmission Line(Karnali Corridor)	NG	60 km TL and S/S
5	Marsyangdi 132kV Corridor	NG	45 km TL Corridor and S/S ,
6	Sunkoshi-Dolakha 132kV Transmission Corridor	NG	20 km TL Corridor and S/S ,
7	Hapure-Tulsipur 132kV Transmission Line	NG	18 km TL and S/S at Tulsipur,
8	Middle Marsyangdi-Manang 132kV Transmission Line	NG	60 km TL and S/S
9	Kaski-Bhurjung-Parbat-Kusma 132kV Transmission Line	NG	45 km TL and S/S ,
10	Surkhet-Dailekh-Jumla 132kV Transmission Line	NG	110 km TL and S/S ,
11	Katari-Okhaldhunga-Solu 132kV Transmission Line	NG	70 km TL and S/S ,
12	Kaligandaki-Jhimruk 132kV Transmission Line	NG	90 km TL and S/S ,
13	Duhabi-Dharan-Dhankuta-Tirtire 132kV Transmission Line	NG	100 km TL and S/S , Survey in Progress
14	Raxual-Parwanipur 132kV Transmission Line	NG	20 km TL and S/S, Survey in Progress
15	Kataiya-Kusaha 132kV Transmission Line	NG	20 km TL and S/S ,
16	Modi-Lekhnath 132kV Transmission Line	NG	45 km TL and S/S ,
17	Samundratar-Naubise 132kV Transmission Line	NG	50 km TL and S/S ,

S.N.	Project	Funding Source	Preliminary Scope of Works & Status
18	Ramechap-Garlyan-Khimti 132kV Transmission Line	NG	50 km TL and S/S ,
19	Chilime-Trishuli-Galchhi 132kV Transmission Line	NG	60 km TL and S/S ,
20	Madi-Lekhnath 132kV Transmission Line	NG	22 km TL and S/S ,
21	Bajhang-Deepayal-Attariya 132kV Transmission Line	NG	110 km TL and S/S ,
22	Gulmi-Arghakhanchi-Chanauta 132kV Transmission Line	NG	60 km TL and S/S ,
23	Khimti-Kathmandu 220kV Transmission Line	NG	100 km TL and S/S at Kathmandu ,
24	Marsyangdi-Kathmandu 220kV Transmission Line	NG	85 km TL and S/S , Survey, EIA in Progress
25	Koshi Corridor (Basantapur-Kusaha) 220kV Transmission Line	NG	70 km TL and S/S , Survey in Progress
26	Kaligandaki (Parbat-Butwal-Bardghat) Transmission Corridor	NG	105 km TL Corridor and S/S , Survey in Progress
27	Hetauda-Butwal 400kV Transmission Line	NG	160 km TL and S/S ,
28	Butwal-Lamki 400kV Transmission Line	NG	200 km TL and S/S ,
29	Lamki-Mahendranagar 400kV Transmission Line	NG	105 km TL and S/S ,
30	Duhabi-Anarmani 400kV Transmission Line	NG	80 km TL and S/S ,
31	Hetauda-Dhalkebar 400kV Transmission Line	NG	140 km TL and S/S ,
32	Dhalkebar-Duhabi 400kV Transmission Line	NG	160 km TL and S/S ,
	Total		2439 km of Transmission Lines (1229 km of 132kV, 365 km of 220kV, 845 km of 400kV Lines)

Note:

NG = Nepal Government
NE = Nepal Electricity Authority
AD = Asian Development Bank
WB = World Bank
OF = OPEC fund for International Development
NR = Norwegian Government

GRID OPERATION DEPARTMENT

The Grid Operation Department under the Transmission and System Operation (TSO) business group performs various activities related to operation, maintenance, up-gradation, reinforcement, reactive compensation and rehabilitation works in substations and transmissions lines. The Department along with six offices under it carried out the following major works in the FY 2008/09.

Transformer Upgrading, Compensation and Substation Reinforcement Works (Completed)

Up-gradation, extension and replacement works have been regularly carried out by this department to manage the growing demand in the existing substations. Similarly, reactive power compensation works are regularly carried out to improve the system voltage and overloading problems of transformers and transmission lines. Some intermediate substations are also built to improve voltage and increase the power transfer capability in the system. Activities like strengthening of bus system to facilitate power import from India were also completed. This year, NEA faced a severe load shedding situation. With a view to address this situation, additional connection facilities were constructed in some of the substations to facilitate the evacuation of power from independent power producers (IPPs).

Activates performed by this Department have supported reduction of load shedding caused by inadequate transformation capacity. This department has carried out and completed following major up-gradation and reinforcement works in FY 2008/09.

- Supply, Delivery & Commissioning of 132/33kV Transformer Bay at Lamoshangu with shifting of Transformer from Anarmani Substation. Provision of evacuating the Power from Independent Power Producers (IPPs) at 33kV level was provided as part of this upgradation.
- Supply, Delivery & Commissioning of 33/11kV, 16.6MVA Transformer with replacement of 33/11kV, 8MVA Transformer at Butwal Substation. The 8MVA Transformer was shifted to Lahan Substation. Replacement of old 12kV Switchgears with new switchgears was also carried out at Butwal Substation.
- Supply, Delivery & Commissioning of 33kV, 10MVAr & 11kV, 10MVAr Capacitor Banks at Birgunj Substation. There are now a total of 15MVAr Capacitor Banks in 33kV and 15MVAr in 11kV sides.
- Conversion of main and transfer bus to double bus system at Butwal and Chanauta Substations to make power transfer from India possible.
- Supply, Installation & Commissioning of 132/66kV, 45MVA Transformer at new Parwanipur Substation with interconnection of 132kV and 66kV system. This was helpful to improve poor voltage problems at Birgunj corridor.
- Installation of 132/33kV, 5MVA Transformer Bay at Mahendranagar Substation in addition to existing 7.5MVA Transformer.
- Replacement of 23 numbers of old Indoor Vacuum Circuit Breakers (VCBs) with new VCBs at Teku Substation.

Work in progress: Following major up-gradation & reinforcement works at various substations have been initiated and works are in progress:

- Installation of 132/33kV, 63MVA Power Transformer to replace the existing 30MVA Power Transformer in addition to existing 132/33, 63MVA Power Transformer at Duhabi Substation to meet the growing load demand of Eastern region.
- Installation of two numbers of 132/33kV, 63MVA Power Transformer in replacement of two numbers of 132/33kV, 30MVA Power Transformers at Butwal Substation to meet the growing load demand of Western region.
- Supply, Delivery and Commissioning of 66/11kV, 7.5MVA Transformer at Indrawati III Power House to facilitate the local loads.
- Shifting, Installation and Commissioning of 132/33kV, 30MVA Power Transformer at

Anarmani Substation and installation of On load Tap Changer (OLTC) on this transformer.

- Shifting, Installation and Commissioning of 132/33kV, 30MVA Power Transformer from Butwal to Dhalkebar Substation and 132/33kV, 15MVA Power Transformer from Dhalkebar to Attaria Substation.
- Shifting, Installation and Commissioning of two numbers of 66/11kV, 10MVA Power Transformers from Balaju to Hetauda Substation with replacement of old two numbers of 66/11kV, 6MVA Power Transformers.
- Shifting and Installation of 66/11kV, 10MVA Power Transformer from Bhaktapur to Panchkhal Substation to augment the capacity from the existing 66/11kV, 5MVA Power Transformer.
- Shifting and Installation of 132/33kV, 5MVA Power Transformer from Kohalpur to Damauli Substation to replace the damaged 132/33kV, 10MVA Power Transformer.
- Supply, Delivery and Commissioning 33kV line Control and Relay Panel at Damauli Substation.

Transmission Line Maintenance Work (Completed)

Re-routing, erection and stringing of 132kV Kusaha-Kataiya Transmission Line damaged by the Koshi floods were successfully completed. Five numbers of transmission line towers were heavily damaged at Shreepur in Sunsari district due to this flood. Around 60MW of Power could not be transferred from India to Nepal Grid due to this incident.

Relay Testing and Energy Meter Testing Works

- Purchase of portable three-phase online meter testing equipment was completed.
- Meter Testing Group of the Department has carried out Relay and Energy Meter Testing works from various Grid Substations including from IPPs.

Routine & Breakdown Maintenance Works

Routine Maintenance works were carried out as per schedule for substations and transmission lines.

SYSTEM OPERATION DEPARTMENT

As a department responsible for the operational planning, scheduling, dispatching and contingency action, the System Operation Department had to perform its responsibilities in a very difficult time of severe generation capacity constraints during this year. Unprecedented low water level in Kulekhani reservoir, historically low inflow in the rivers, problem in Bhotekoshi Power Plant and damage of towers of Duhabi–Kataiya 132 kV transmission line thereby eliminating the key power import backbone made the FY 2007/08 “a year never before”. Despite conscientious efforts of the department to minimize load shedding, the demand and supply gap widened recording about 50% supply deficit in terms of capacity and energy. In this situation, the system operation could be made possible by enforcing a load shedding of 16 hours per day per customers.

Due to extreme supply conditions and poor protection coordination, the number of system tripping events increased to 40 this year compared to 15 tripping events last year. This situation further degraded system reliability. As a preventive measure, the System Operation Department has taken initiatives to improve protection coordination, load frequency responses and voltage compensations.

SCADA and associated telecommunication system remained fully functional throughout the country due to timely scheduled maintenance and immediate repairs. Inclusion of new substations and extension of bays in the existing substations was successfully completed. Availability factor of the fiber communication system has been high contributing to continued growth in revenue through optical fiber leasing.

CROSS-BORDER 400 kV Transmission Interconnections

Under Cross-Border Transmission Line Project, following three cross-border Indo-Nepal Transmission Interconnections have been identified

- Dhalkebar-Mujaffarpur 400 kV Transmission Interconnection
- Duhabi-Purnia 400 kV Transmission Interconnection
- Butwal-Gorkhapur 400 kV Transmission Interconnection

The Dhalkebar (Nepal)-Mujaffarpur (India) 400 kV Transmission Interconnection consists of about 145 km of transmission line, of which approximately 45 km of transmission line section from Dhalkebar to Bhittamod near Indo-Nepal border falls under the Nepalese territory and remaining part of this line (about 100 km) falls in the Indian territory. The interconnection would be designed at 400kV Double Circuit line to be initially charged at 220kV and would be operated in synchronous mode between the Nepalese and Indian grids.

- As per latest development with the Indian counterparts, this part of transmission interconnection has been prioritized to be constructed in phase-1. Efforts are underway to realize this project. This project will solve the problem of power shortage in central region where the demand for power is higher.
- Total project cost of Nepalese portion is NR 1.28 billion (USD 20.0 million), of which the Government of India is financing INR 13.2 million as soft loan to Government of Nepal. The Indian portion of the transmission line is being financed through domestic sources by the Indian company "Cross Border Power Transmission Company".
- The "Power Transmission Company Nepal Ltd." (JVC Nepal)- has been incorporated in Nepal for the construction of the 45km section of Nepal portion of the line. Similarly, the "Cross Border Power Transmission Pvt. Ltd." has been incorporated in India for the construction of 100km of Indian portion of the transmission line.
- The investors in "Power Transmission Company Nepal Ltd." are NEA (50%), JVC Nepal-IL&FS IDC (26%), and Banks/IPPs of Nepal (24%),

The Duhabi-Purnia 400 kV Transmission Interconnection consists of about 22 km of transmission line section from Duhabi in Nepal to Jogbani near Indo-Nepal border in the Nepalese territory, and 99 km of line in the Indian territory. NEA has secured the survey license for the project. An application for construction license has been filed.

The Butwal-Gorkhapur 400 kV Transmission Interconnection consists of about 25 km of transmission line section from Butwal in Nepal to Sunauli near Indo-Nepal border, and remaining section of bout 100 km of the line falls in the Indian territory. NEA has secured the survey license for the project. An application for construction license has been filed.

Present Status of the Transmissions Line

- The Nepal Electricity Authority is pursuing EIA studies of Dhalkebar–Bhittamod (Nepal), Duhabi-Jogbani and Butwal-Sunauli sections of the Transmission Line. EIA studies of all these lines are expected to be completed within December 2009.
- Preliminary works such as route alignment and survey of transmission line route have been completed.
- Expression of interest for construction has been invited from Indian contractors. Thirteenth Indian firms have submitted their expressions of interest in ILFS-Delhi office.
- Tender documents under preparation by POWER-GRID through PTCN is expected to complete in this F/Y 2009. For seamless execution of the work, the technical parameters of the transmission lines on both the sides have been kept same.

- 13.5 million USD funding is available through the Government of India under the line of credit to execute the project. Indian counterpart is exploring different financial option for funding of the transmission line in Indian side.
- Draft Implementation and Transmission Service Agreement and back to back Transmission Agreement prepared by PTCN were sent to NEA for review and comments. NEA has sent its comments.
- Project is expected to complete within two years from the date of contract agreement. Tenders for both Nepal and India portions of the lines will be floated simultaneously under one Notice Inviting Tender and IL & FS Infrastructure Development Company Limited has been authorized to publish the notice.
- As per mutual understanding with the Indian Counterparts, Duhabi-Purnia and Butwal-Gorkhapur interconnections will be realized under the second phase after completion of Dhalkebar-Mujaffarpur interconnection. Feasibility study is yet to be undertaken for these interconnections.

132 kV Matatirtha substation under construction

Distribution and Consumer Services Business Group

Distribution and Consumer Services (DCS) is the largest business group of NEA in terms of number of employees and business activities. About 62% of the total staff employed by NEA is in this Business Group providing service to 97 % of NEA's customers through 34 Distribution Centers and 32 branch offices spread over 49 districts.

This business group is entrusted with the key responsibility for the overall management of electricity distribution network of NEA. It includes construction, operation, maintenance, rehabilitation and reinforcement of the network up to 33 kV voltage levels, as well as customer services like new connection, meter reading, billing, revenue collection and grievance handling. It is also involved in Demand Side Management activities such as encouraging and supporting the use of energy saving lamps and appliances.

This business group is headed by the General Manager. Five regional offices, each headed by a Director, cater to the need of ever growing number of customers for providing a better service. In the central office, there are four departments namely, Technical Services/Commercial, Distribution & Consumer Services, Demand Side Management and Finance.

Performance Highlights

New Service Connections

In FY 2008/09, 156,574 new service connections and 613 bulk supply connections were made. The total number of customers under DCS at the end of FY 2008/09 reached 1,625,506 an increase of 10.70% over that of previous fiscal year's figure.

Revenue Collection

A total of 2,227 GWh of energy was sold, earning gross revenue of Rs. 14,931 million in FY 2008/09, an increase of 0.65% and 0.73% respectively over previous fiscal year's figures. Sales and revenue contribution of different customer groups under DCS in FY 2008/09 are depicted in the following table.

Customer Category	No. of consumer	Sales	Revenue
Domestic	95.33%	40.36%	41.23%
Non- Commercial	0.65%	4.60%	6.25%
Commercial	0.0.43%	6.64%	9.57%
Industrial	1.66%	39.21%	37.31%
Others	1.94%	9.19%	5.64%

Industrial and Commercial customer categories together comprise only 2.09% of the total number of customers but share 46.81% of total sales. Domestic customer category, however, comprises 95.33% of the total number of customers, but share 41.80% of total sales.

Operational Highlights

New Distribution Lines

The Government of Nepal (GoN) in FY 2008/09 continued funding electrification works that have remained incomplete since last several years. Distribution networks were expanded by erecting 22 km of 33 kV overhead lines, 707 km of 11 kV overhead lines and 2,290 km of LT lines. Similarly, Distribution Transformers (DTRs), totaling 718, were also installed.

Reinforcement/Upgradation of Existing Distribution Network

Upgradation of 185 nos. of distribution transformers, 1 km of 33 kV line, 75 km of 11 kV line and 105 km of 0.4 kV line were made in various parts of the country to improve and strengthen the existing distribution network. DTR failure rate in FY 2008/09 increased to 10% from 7% in FY 2007/08, primarily due to increased incidence of sudden energization of distribution transformers after load shedding hours.

Major Substation Works carried out in FY 2008/09

Upgradation of 1.5 MVA, 33/11 kV Transformer to 3 MVA at Ghorahi S/S, installation of 33KV, 800A VCB with Control panel at Tikapur S/S, 12 kV VCB in Inruwa S/S, 33 kV Isolator switch in Bhaktapur, and 33 kV VCB for Jiri Feeder at Dolakha Branch.

Supply Reliability

During the year under review, the supply reliability improved with the exception of load-shedding hours. The number of breakdowns per month remained at about 5,550 for High Tension lines and at 10,986 for Low Voltage lines. Analysis of supply failures has revealed that the main causes for the supply failures were obstructions by growing trees, burning of jumpers due to loose connections, and damaged insulators. Rehabilitation of lines and clearing of branches/twigs of growing trees are being continuously carried out as precautionary measures.

Loss Reduction Activities

New laptop computers have been provided to 20 distribution centers/branch offices to download and analyze the data from bulk supply meters. Now the data download works have been carried out in almost all the branches.

Use of Ariel Bundle Conductor has been encouraged in high non-technical loss prone areas.

Installation of metering units and meters in all the incoming and outgoing feeders of all the distribution substations continued in the year under review as well. This has helped in identifying high loss feeder as well as areas.

Upgrading of overloaded conductors and replacement of defective insulators have helped improving the voltage and reducing the loss in some of the areas.

In FY 2008/09 around 268 km of single wire, for the purpose of street lighting were strung and 1,706 nos. of meters and photovoltaic switch installed at 162 locations.

Under the chairmanship of the Chief District Officer, an Electricity Theft Control Coordination Committee has been formed in 20 districts to curb the non-technical losses. In other districts, it is in the process of being formed.

Similarly, interactive programs were held in Hetauda and Biratnagar jointly in coordination with Nepal Engineering Council and Nepal Engineers Association with the participation of Regional Administrative & Security Officers and other stakeholders to discuss and formulate plans and programs to curb the non-techncal losses.

Despite continued measures taken, the desired outcome could not be realized to control the non-technical losses. This is mainly due to adverse local work environment especially in terai. Strikes, extortion and even manhandling of NEA staff in the field continued throughout the year. Given these situations addressed, NEA is committed to achieve the set target for the loss reduction.

Meter Calibration and Testing

A total of 137,193 new meters were calibrated and tested at the Meter Testing Laboratory during FY 2008/09.

Customer Service Reforms

DCS is striving hard to provide best service to its customers using the latest technology. The major reforms that have been made in this direction are as follows:

Separate Feeder to Industrial Corridor

As part of government program to serve high valued consumers in a reliable manner, NEA has constructed dedicated feeders for the industry and other essential services such as hospitals.

Queue Management System (QMS)

To provide better service to our customers, DCS has introduced Queue Management System (QMS) in its cash collection operations in another 6 Revenue Centers in FY 2008/09. With this the number of Revenue Centers with QMS facility has reached 20. Improvement in physical facilities at these centers has also been made for the benefit of consumers at the time of bill payment.

Que Management System (QMS)

Computer Assisted Interactive Voice Response Service

The Computer Assisted Interactive Voice Response Service has been implemented in some of the offices. This will enable the customers to know their payment dues and other service related queries over the telephone promptly. It is planned to be implemented in all the major branch offices in near future.

Handheld Meter Reading Device

The handheld meter reading device that automatically generates the electricity bill has been introduced in one branch office. With the introduction of this device, error in calculating the bill amount and meter reading manipulation will be reduced to a great extent. It will be implemented in 40 large collection centers during FY 2009/10 and to other collection centers in a phase-wise manner.

Automatic Bill Payment Kiosk System

DCS is planning to set up 10 numbers of Bill Payment Kiosks in public places or NEA premises in FY 2009/10. This will enable the customer to pay the bill using Cash and Electronic Cards - Credit cards / Debit cards.

One Window Service Delivery System

One window service delivery system has been implemented in 5 distribution centers and it is planned to be implemented in all the distribution centers and branch offices. This will facilitate the customers greatly to complete all the formalities required for a new connection and they will know the exact date for the new connection.

MOU with PEA

A Minute of Understanding (MOU) between NEA and the Provincial Electricity Authority (PEA) of Thailand was signed in FY 2008/09. As per the MOU, PEA will share their experience with this Business Group in the field of preparation/updating of existing distribution construction standards, distribution automation, SAIDI & SAIFI indices improvement and loss reduction.

Signing of MOU between NEA and the Provincial Electricity Authority (PEA), Thailand

Information Technology

'DCS Mail Club' launched to facilitate exchange of ideas and information on pertinent issues and assignments using the available IT facilities has continued to accelerate the speed of information sharing and reduced the usage of paper. It has further helped in creating a positive environment among the concerned branch offices to perform better by floating and learning from the innovative ideas for solving the problems effectively.

Human Resource Development

To enhance the technical and managerial skills of employees, around 188 nos. of technical and non-technical staffs were deputed to participate in various training programs and seminars organized by NEA and other agencies. The outcome of such trainings helps in increasing the operational efficiency of employees.

Demand Side Management Department

DCS has initiated an awareness campaign for consumers regarding the efficient use of electricity. NEA has created a separate department to look after all the activities relating to demand side management.

CFL Pilot Program

Much awaited and publicized program for the demand side management was initiated this year as part of "National Electricity Crisis Mitigation Plan 2065' of Government of Nepal. The main objectives of the campaign are: replacement of incandescent and inferior CFL lamps by quality CFL lamps, promotion on the use of quality CFL lamps, increased public awareness on the usage of energy efficient lamps and appliances and reduction of evening system peak. This campaign will be implemented initially at 21 locations in the country (as a pilot program) with funding from Government of Nepal and NEA. As part of the program, one CFL lamp will be given free to NEA's domestic consumers with monthly electricity consumption of energy up to 20 kWh. For consumers consuming more than 20 kWh of electricity per month, one additional CFL

lamp will be provided free of cost for the purchase of one CFL lamp and two additional CFL lamps will be provided free of cost for the purchase of two or more than two CFL lamps. In this program, around 627 thousand CFL lamps are planned to be distributed. A high level CFL Lamp Committee formed by the then MoWR has selected 'GE' and 'Radiant' Brands as quality CFL through open bidding. The selected models are ELI certified.

The procurement of CFL by vendors and media campaign by NEA are both in advanced stages. Orientation trainings have been given to NEA Meter Readers and vendors' retail outlets in Kathmandu Valley. CFL distribution is expected to commence from the first week of Bhadra, 2066 in Kathmandu Valley and 15 days later in other parts.

Projects

Computerized Billing Project

The New Computerized Billing System prepared under this project has been in operation at 25 revenue collection centers. It is planned to implement this system in 40 more revenue collection centers by July, 2010. The project is also planning to implement the centralized billing system starting initially from Kathmandu Valley which will be extended to other offices in a phase-wise manner.

Chitwan Madi Electrification Project

This project, aimed at electrifying the Madi areas of Chitwan district, consists of construction of 3 MVA 33/11 kV sub-station at Madi. Similarly, around 22 km of 33 kV overhead line & 10 km of 33 kV underground cable, 30 km of 11 kV line and 50 km of 0.4 kV line using ABC Cable will also be constructed under this project.

The project, being jointly financed by the Govt. of India (GoI) and Govt. of Nepal (GoN). The GoI is providing a grant assistance of approx. USD 1.5 million and the remaining amount will be provided by GoN. The EIA study for the project is in an advanced stage.

Visit of Vice President of ADB to observe Computarised Billing System at Pulchwok Distribution Center

Rural Electrification Master Plan Project

As part of plan to provide electricity to all, the Government of Nepal is providing funds to prepare a Master Plan for rural electrifications. The project will identify the resources to electrify and prepare a policy and guidelines for systematic and planned rural electrification.

Projects under WB Assistance

Kathmandu Valley Distribution System Strengthening Project

The preliminary scope of the Project includes rehabilitation of 733 km of 11 kV line, 992 km of 0.4/0.23 kV line; addition of 901 distribution transformers and addition and replacement of 2,350 poles in Kathmandu Valley.

The project cost is estimated at USD 24 million, which is jointly financed by the World Bank (WB), GoN and NEA.

Distribution System Rehabilitation Project

The scope of the Project includes up-gradation of distribution substations at 10 locations viz: Khanar, Inaruwa, Rupani, Janakpur, Haripur, Chanauli, Bhairahawa, Ghorahi, Gulariya and Tikapur. It also includes construction of 68 km new 11 kV lines, rehabilitation of 131 km existing 11 kV distribution network, construction of 49 km of 0.4 kV new line using ABC Cable and rehabilitation of 155 km existing 0.4 kV distribution network.

This Project, jointly financed by the World Bank (WB), GoN and NEA, is being implemented. Contract for procurement of various line materials has already been awarded and tender for the supply & construction of substations is under evaluation. Preparation of bidding documents for the construction of 11 kV and 0.4 kV networks is in progress.

Energy and Customer Accountability Enhancement Project

The Energy and Customer Accountability Enhancement Project, funded by the World Bank under the Power Development Project, has the objectives of assisting NEA in its efforts to enhance its accountability to its customers and building an energy accountability framework (metering and billing; verification) and revenue collection system for large customers getting supply at high voltage level.

In FY 2008/09, international consulting firms expressing their interest in the job were short listed. Presently, the Request for Proposal (RFP) document is under preparation and is expected to be issued to the short listed consulting firms shortly. The project is targeted to be completed by FY 2010/11.

Projects under ADB Assistance

Distribution System Augmentation Project

This project covers construction of new distribution substations at 8 locations namely at Baniyani, Mirchaiya, Dhanushadham, Paraul, Barahathwa Mainapokhar, Kusma, Banskot, and new switching stations at 3 locations viz: Mirmi, Swoyambu and Mulpani. During this FY, tender documents were prepared and submitted to ADB for approval.

Project for Energy Efficiency through Loss Reduction

This component is proposed to address high technical and non technical losses in medium and low voltage distribution networks in Kathmandu valley and Birgunj corridor. Around 22 number of feeders and distribution lines have been identified with unacceptable level of loss and are to be rehabilitated with the technical advice and support from international consultant.

These feeders then will become model components of networks that can be replicated across the country. They will incorporate best international practice with respect to design, construction and commercial operation. The project cost is estimated to be around USD 13 million.

Project for Introduction of Compact Fluorescent Lamps (CFLs)

This project is the continuation of NEA's current

CFL pilot project and aims to scale-up nationwide distribution of one million high quality CFL with rating of 9 W, 12 W and 20 W. Implementation of this project is expected to reduce Peak demand by 10 MW and curtail consumption by 23 GWh annually. Assistance will also be available for public awareness campaign, hiring of consultant and other resources required for the establishment of a DSM cell. The project cost is estimated to be around USD 2.1 million.

Project for Solar Powered Street Lighting

This component will facilitate the promotion of solar-powered street-lighting in urban areas of Nepal and will fund a pilot project in Kathmandu Valley. The areas where the solar-powered street lighting system is to be installed are Kathmandu, Patan and Bhaktapur Durbar Squares; Pashupatinath, Boudhdhanath and Swayambhunath temples; New Road and King's Way. The project includes purchase of solar powered street- lighting system, replacement/ installation and setting up a system to ensure a smooth maintenance. Around 1200 existing street lamps will be replaced by solar-powered lamps which will reduce peak demand by 0.2 MW and save 750 MWh of energy annually. The project cost is estimated to be around USD 2.7 million.

Effect of Terai Turmoil

The turmoil in Terai continued throughout this year also, restricting the movement of men and materials and creating numerous hurdles on the way for the smooth functioning of distribution and customer services works. In addition, severe security concern including the cases of extortion and manhandling of NEA staff in the field had negative motivational impact on them. Despite the above adverse situation, the Distribution and Consumer efforts Services Business Group has continued to achieve the set target.

Meter Testing Bench installed by REDSRP at NEA Office, Hetauda

Electrification Business Group

Government of Nepal (GoN) has an objective of extending electricity services to rural areas for the socioeconomic development of the rural people. Electrification Business Group, headed by a General Manager, is mainly responsible for rural electrification in Nepal. Several donor assisted projects are being implemented under this Business Group. The Rural Electrification, Distribution and Transmission Project with loan assistance from Asian Development Bank (ADB) and OPEC Fund for International Development (OFID) and the Distribution and Rural Electrification Project financed by the World Bank are nearing completion. The Kailali-Kanchanpur Rural Electrification Project (KKREP) funded by DANIDA and Ilam Rural Electrification Project (IREP) with Non-project Grant Aid from the Government of Japan have been successfully completed in FY 2008/09. Apart from these, with financing from GoN, many other rural electrification projects are being implemented through Small Hydropower and Rural Electrification Department and Community Rural Electrification Department of this Business Group. Besides rural electrification, this Business Group is also providing distribution and consumer services to rural people through small hydropower plants and branch offices in the remote and hilly districts in the country. In FY 2008/09, the Small Hydropower and Rural Electrification Department under this Business Group served 55,453 consumers, generated 6,819,421 kWh, sold 29,331,554 kWh and earned revenue of Rs. 172,153,723. The highlights of the activities of different departments and projects under this Business Group are presented below:

Small Hydropower and Rural Electrification Department (SHPRED)

This department is responsible for construction, operation and maintenance of isolated small hydropower plants, execution of rural electrification, and extension of the National Grid to remote hilly regions and establishing distribution system to provide electricity to rural population. Under this Department, 26 small hydropower plants, 2 solar plants and 7 distribution branch offices carry out various activities related to operation and maintenance of electricity generation, distribution and consumer service, covering 27 districts in 12 zones of the country. Out of 26 Small Hydropower Plants (SHP) in operation, eight are leased out to private firms and four are leased out to the consumer communities, which operate under the guidelines set forth by NEA. A number of 33 kV transmission lines and 33/11 kV substation projects are under construction. The status of projects carried out by SHPRED in FY 2008/09 is summarized below.

Heldung Small Hydropower Project (Humla District)

Construction work of this 500 kW project, which commenced in FY 2001/02, is almost fully complete. The power plant has been commissioned and providing electricity to about 300 consumers.

Gamgad Small Hydropower Project (Mugu District)

Construction work of this 400 kW project, which commenced in FY 2001/02, is ongoing. Construction of most of the civil structures has been completed. Electro-mechanical equipment has been transported to the site. The Project is expected to be completed within FY 2009/10.

Buipa-Okhaldhunga 33 kV Transmission Line Project (Khotang and Okhaldhunga Districts)

Major components of the Project consist of construction of 32.5 km of 33 kV transmission line, 35 km of 11 kV and 30 km of distribution line and two 33/11 kV, 1.5 MVA substations in Okhaldhunga and Khotang districts. Construction of 33/11 kV, 1.5 MVA substation at Buipa is about 90% completed. Altogether, 30 km of 33 kV transmission line, 6.5 km of 11 kV transmission line and 7 km of distribution line have been completed.

Ilam-Phidim-Taplejung 33 kV Transmission Line Project (Panchthar and Taplejung Districts)

The project includes the construction of 90 km of 33 kV transmission line and 33/11 kV, 1.5 MVA substation each at Phidim and Taplejung districts. Out of 90 km long 33 kV transmission line, stringing of conductor in 60 km & erection of poles in 73 km have been completed. Construction of 33/11 kV, 1.5 MVA Substation at Phidim is expected to be completed soon.

Sitalpati-Musikot 33 kV Transmission Line Project (Salyan and Rukum Districts)

The project includes the construction of 50 km of 33 kV transmission line, 50 km of 11 kV line, 40 km of distribution line and two 33/11 kV substations of 1.5 MVA capacity one each at Sitalpati and Musikot. Out of 50 km long 33 kV transmission line, stringing of 32 km line & pole erection has been completed. Construction of 33/11 kV, 1.5 MVA substation at Sitalpati and 33 kV bay extension at Tulsipur are ongoing and are expected to be completed in FY 2009/10.

Chhinchu-Rakam-Jajarkot 33 kV Transmission Line Project (Surkhet and Jajarkot Districts)

The project includes the construction of 70 km of 33 kV transmission line, 100 km of 11 kV, 100 km of distribution line and two 33/11 kV substations in Surkhet and Jajarkot districts. Out of 70 km long 33 kV transmission line, pole erection and stringing of conductor for 33 km and 9 km of 11 kV line has been completed. Construction of 33/11 kV, 750 KVA substation at Rakam is ongoing and expected to be completed in FY 2009/10. Contract for 33 kV & 11 kV Protection Scheme of Rakam substation has been awarded.

Ghorahi-Holeri 33 kV Transmission Line Project (Rolpa District)

The project includes the construction of 45 km of 33 kV transmission line, 50 km of 11 kV, 50 km of distribution line and two 33/11 kV substations at

Transportation of Distribution Transformer to Remote Areas by Helicoptor

Holleri & Ghorahi. Construction of 33 kV transmission line have been completed and 4 km of 11 Kv line & 5 Km of 400 V distribution line has been constructed. Construction of 33/11 kV, 750 kVA substation at Holleri and 33 kV bay extension at Ghorahi are ongoing and expected to be completed in FY 2009/10. Contract for 33 kV & 11 kV Protection Scheme of Holleri substation has been awarded.

Udipur-Besisahar-Manang 33 kV Transmission Line Project (Lamjung and Manang Districts)

The project includes the construction of 90 km of 33 kV transmission line, 53 km of 11 kV , 53 km of distribution line and one 33/11 kV, 1.5 MVA substation in Manang and 33 kV bay extension in the existing Udipur substation. Out of 70 km long 33 Kv transmission line, pole erection for 66 km and stringing of conductor for 35 km have been completed.

Dadeldhura-Baitadi 33 kV Transmission Line Project

The project includes the construction of 14 km of 33 kV transmission line, 15 km of 11 kv & distribution line, one 33/11 kV 3 MVA substation at Baitadi and 33 kV bay extension in the existing Dadeldhura substation. Construction of 33/11 kV, 3 MVA substation at Baitadi is in progress and is expected to be completed in FY 2009/10.

Dhankuta-Hile-Leguwa-Bhojpur 33 kV Transmission Line Project

The project includes the constructions of 35 km of 33 kV transmission line, 52 km of 11 kV , 50 km of distribution line and one 33/11 kV substations in Bhojpur district. Out of 35 km long 33 kV transmission line, pole erection of 34 km and stringing of conductor for 28 km have been completed. Construction of 33/11 kV substation at Bhojpur is ongoing and expected to be completed in FY 2009/10. Contract for 33 Kv & 11 Kv Protection Scheme of Bhojpur substation has been awarded.

Tumlingtar-Dingla-Bhojpur 11 kV Transmission Line Project

The project includes the construction of 30 km of 11 Kv, 25 km of distribution line in Sankhuwasabha and Bhojpur districts. Pole erection of 27 km & stringing of conductor in 19 km has been completed. Similarly, 16 km of distribution line has also been completed.

Rasuwaghat-Khotang 33 kV Transmission Line Project

Major works under this Project are construction of 14 km of 33 kV transmission line, one 33/11 kV, 1.5 MVA capacity substation at Rasuwaghat of Khotang district, 90 km of 11 kV and 90 km of 400 V distribution lines in Khotang district. Out of these, 6 km of 33 kV transmission line, 14.44 km of 11 kV and 21 km of 400 V distribution line constructions have been completed. Construction of 33 kV bay extension at Jaljale substation is nearing completion.

Dipayal-Sanfebagar-Manma-Jumla 33 kV Transmission Line Project

The project includes the construction of 155 km of 33 kV, 15 km of 11 kV & 3 nos. of 33/11 kV substations at Sanfebagar, Manma and Jumla. For 33 kV transmission line, pole erection of 12 km has been completed.

Dailekh Substation Project

The project includes the construction of 25 km of 33 kV, 15 km of 11 kV, 10 km of 400 V distribution line & one 33/11 kV, 750 kVA substation at Dailekh.

Galkot Substation Project

The main purpose of the Project is to provide electricity to Galkot area in the Baglung district. Bay extension work at Baglung substation is being constructed. Line survey is ongoing.

Rake Ravi-Chisapani-Dashami Bazaar 33 kV Transmission Line Project

The project includes the construction of 25 km of 33 kV, 40 km of 11 kV, 40 km of 400 V distribution line in Panchthar district. Line survey is ongoing and procurement of poles for 6 km of 33 kV transmission line has been completed.

Manthali-Sangutar 33 kV Transmission Line Project

The project includes the construction of 30 km of 33 kV, 40 km of 11 kV, 40 km of distribution line in

Ramechhap district. Line survey is ongoing and procurement of poles for 6 km of 33 kV transmission line has been completed.

Kapurkot-Koilachaur 33 kV Transmission Line Project

The projects includes the construction of 15 km of 33 kV, 25 km of 11 kV, 25 km of 400 V distribution line in Salyan and & Rolpa districts and 33/11Kv substations one each at Koilachaur & Kapurkot. Line survey is ongoing & procurement of poles for 6 km of 33 kV transmission line completed.

Furkot-Nepalthok 33 kV Transmission Line Project

The project includes the construction of 25 km of 33 kV, 25 km of 11 kV, 40 km of 400 V distribution line in Kavrepalanchowk district and one 33/11 kV, 1.5 MVA substation at Nepalthok. Line survey is ongoing.

Aatha Rai VDC-Sankranti Bazaar 33/11 kV Substation Project

The project includes the construction of 25 km of 33 kV, 25 km of 11 kV, 40 km of 400 V distribution line in Tehrathum district and one 33/11 kV substation at Sankranti Bazaar. Line survey is ongoing.

Panchthar 33/11 kV Substation Project

Major expected outcome of the Project is to take 11 kV line to the Panchthar district from a 33/11 kV 1.5 MVA substation at Phidim.

Community Rural Electrification Department (CRED)

This Department was established in February 2003 following the enactment of the "Community Distribution Regulation-2060", to carry out community based electrification works in an organized way. The idea behind this regulation is to promote community participation in rural electrification by providing 80% of the capital cost of electrification by the government and the remaining 20% of the cost by the community. The public response to this initiative has been overwhelming. Altogether, about 225,000 households will be provided with electricity after completion of programs approved until F/Y 2008/09.

CRED status till July 15, 2009

Details of Works accomplished under CRED from 2004/05 to 2008/09

HT Line length	1,320 km
LT Line Length	3,841 km
Distribution Transformer	890 Nos.
33/11 kV, 3 MVA Substation	4 Nos.

Description	CBRE	CBOM	CBG	Total
Applications registered	274	196	4	474
Applications approved	252	46	-	298
Agreements signed	193	23	-	216
Currently in operation	79	22	-	101

Note: CBRE: Community Based Rural Electrification Program; CBOM: Community based Operation and Maintenance CBG: Community based generation

Rural Electrification, Distribution and Transmission Project

This project is being implemented with loan assistance from Asian Development Bank (ADB) and OPEC Fund for International Development (OFID). In addition to it, GoN and NEA are financing the local expenses of the project. Out of six components of the REDTP, the following components have already been completed.

- Grid Substation Reinforcement Project
- Fixed Assets Revaluation Project
- Distribution District Profit Center Project

The following remaining components are under implementation and are expected to be completed in FY 2009/10.

- Rural Electrification and Distribution System Reinforcement Project
- Computerized Billing Project
- Thankot-Chapagaon-Bhaktapur 132 kV Transmission Line Project

Construction of 33/11 kV Substation at Aurahi

Rural Electrification and Distribution System Reinforcement Project

This Project is jointly funded by ADB, GoN & NEA. The Scope of this Project includes rural electrification in 22 Districts covering 277 VDCs of the Eastern, Central and Western development regions with estimated cost of USD 37.3 million. So far, nearly 98.96% of works under the Project have been completed and the remaining works are expected to be completedÊin FY 2009/10. The status of the 33/11 kV Substations under this Project is as follows.

Status of the 33/11kV Substations

Substations		Status
A: New Substations under RE		
1	Rangeli	Construction work completed
2	Phattepur	Construction work completed
3	Simraungarh	Construction work completed
4	Bhiman	Completed and charged at no-load
5	Yadukuha	Construction work completed
6	Aurahi	Testing and commissioning undergoing
7	Manthali	Construction work completed
8	Gorkha	Construction work undergoing
B: New Substations under DSR		
9	Biratchowk	Completed and charged
10	Phikkal	Testing and commissioning undergoing
11	Devdaha	Completed & charged at no-load
12	Mukundapur	Construction work completed
13	Milanchowk	Testing and commissioning undergoing
14	Jeetpur	Completed and charged
C: Upgrading of Substations under DSR		
15	Dhankutta	Completed and charged
16	Rajbiraj	Completed and charged
17	Pokhariya	Completed and charged
18	Jaleshwar	Completed and charged
19	Kalaiya	Completed and charged
20	Katari	Completed and charged at no-load
21	Gaur	Completed and charged
22	Tulsipur	Completed and charged
D: Rehabilitation of Substations under DSR		
23	Bhardaha	Completed and charged
24	Khanar	Completed and charged
25	Rupani	Completed and charged
26	Rani	Completed and charged
27	Dhalkebar	Completed and charged
28	Mujeliya	Completed and charged
29	Birgunj	Completed and charged
30	Amuwa	Completed and charged
31	Malangwa	Completed and charged
32	Chanauta	Completed and charged
33	Krishna nagar	Construction work completed
34	Abukhaireni	Construction work completed
35	Ghorahi	Construction work completed

Distribution and Rural Electrification Project

This project is funded by International Development Association (IDA) of the World Bank under the Power Development Project formulated to help realize the government's objective of increasing the population coverage of electricity service by extending the distribution network to the rural areas of the country. Total estimated cost of the Project is NRs. 859 million. Physical progress up to FY 2008/09 is 92.65%. The Project is scheduled to be completed by FY 2009/10. This project is expected to benefit 170,625 people.

This project covers five districts, namely, Dhading, Nuwakot, Lalitpur, Bhaktapur, and Kavrepalanchok. The project comprises of the Rural Electrification Schemes and Distribution System Reinforcement schemes as follows :

Rural Electrification Schemes

Rural Electrification schemes cover the extension of the sub-transmission and distribution systems to the rural not yet electrified. The Project scope is summarized below.

S. N.	Description	Dhading	Nuwakot	Lalitpur	Bhaktapur	Total
1.	33/11 kV substation / switching station (set)	1	1	1		3
2.	33 kV Line (km)	20	13			33
3.	11 kV Line (km)	84	36	50	9	179
4.	Extension of LV Line (km)	143	79	112	23	357
5.	Installation of new 11/0.4 kV Transformer	34	24	40	6	104
6.	New consumers to be added	5,960	5,954	3,960	1,300	17,174

Distribution System Reinforcement Schemes

The Project also covers the reinforcement and replacement of the existing system in Lalitpur, Bhaktapur and Kavrepalanchok districts. The Project scope is summarized below.

S. N.	Description	Lalitpur	Bhaktapur	Kavre	Total
1.	11 kV Line (km)	13	28	16	57
2.	400/230 V Line (km)	42	67	44	153
3.	11/0.4 kV distribution transfermer (set)	43	42	15	100
4.	Consumers to be benefited (nos.)	4,100	7,200	5,620	16,920

Supply of equipments and materials has been completed except for some spare parts of circuit breakers and load break switches. The construction of substation, 33 kV Sub-transmission lines and other distribution lines are completed 80%. The overall physical progress of the project is about 95% and the project is scheduled to be completed by FY 2009/010

Ilam Rural Electrification Project

This Project was started on July 17, 2006 with NRs. 70 million Non Project Grant Aid (NPGA) of Government of Japan for electrification of 11 VDCs only. Later NRs. 45 million added for additional 6 VDCs. In FY 2007/08, additional sum of NRs. 20 million was provided by the Government of Japan as grant. Thus the

total Project cost adds up to NRs. 135 million. Scope of work consists of construction of 120 circuit km of 11 kV line, 150 circuit km of distribution line and installation of 75 distribution transformers. The Project provides electricity to around 5000 households in 17 Village Development Committees (VDCs), namely, Maipokhari, Sulubung, Jamuna, Soyang, Nayabazar, Chisapani, Siddhithumka, Mangalbare, Dhuseni, Jitpur, Phakphook, Laxmipur, Shantipur, Shree Antu, Godak, Danawari and Samalbung of Ilam district, Mechi Zone. The Project has been completed in FY 2008/09. The Rt. Honorable Speaker of the Constitutional Assembly, Mr. Subhas Nemwang inaugurated the Project on May 24, 2009 in the presence of his Excellency the Ambassador of Japan to Nepal.

Rt. Honorable Speaker of the Constitutional Assembly Mr. Subash Nemwang inaugurating the Illam Rural Electrification Project in the presence of His Excellency the Ambassador of Japan to Nepal

Kailali Kanchanpur Rural Electrification Project

Kailali Kanchanpur Rural Electrification Project started in 1999 with DKK 85 million grant assistance of Danish Government and NRs. 420 million of GON & NEA. The Project has been completed in FY 2008/09 The Project supplies electricity to around 70,000 new consumers of 35 VDCs and one municipality in Kailali and Kanchanpur districts.

The project comprises of six numbers of 33/11 kV, 3 MVA substations at Lamki, Attariya, Lalpur, Joshipur, Choumala and Jhalari; and one 33/11 kV, 1.5 MVA substation at Shripur. Similarly, 93 km of 33 kV, 587 km of 11 kV and 1,935 km of distribution line are also part of the project. The substations are already in operation and have resulted in improvement of the voltage and reliability of power supply in the districts.

The substation and high voltage lines shall remain as property of NEA while the low voltage distribution line and distribution transformers were handed over to load centre based electricity user's cooperatives, responsible for owning, operating and maintaining distribution systems.

Altogether, 216 cooperatives are registered at district cooperative office. Umbrella organization of cooperatives covering both the districts has been established and it provides technical, management and administrative support to load centre based cooperatives.

The 33/11 kV substations, 33 & 11 kV lines had been handed over to respective distribution and grid office of NEA while Danida funded low voltage distribution line along with distribution transformers were handed over to 216 rural electric cooperatives formed in the district. Each individual cooperative is given a subsidy of Rs. 7,200 per household while the balance of investment in low voltage distribution line, transformer and service connections are provided as an index loan at 2% real rate of interest over 20 years to be collected along with payment for NEA's wholesale supply of electricity. The total amount of index loan to cooperatives is Nepalese Rupees 167 million.

Sindhu Dolakha Distribution Line Extension Project

Started in FY 1999/2000, the project is under implementation with funding from the Government of Nepal. The Project is expected to benefit about 50,000 households, and some small and medium industries in Dolakha and Ramechhap districts. The major works under the project are as follows.

- Construction of 82 km of 33kV, 200 km of 11 kV and 460 km of low voltage line
- Installation of 278 nos. of distribution transformers
- Construction of 4 nos. of 33/11 k V, 1.5 MVA Substations at Makaibari, Jiri, Kirnetar and Singati

The 1.5 MVA substations at Jiri, Makaibari & Kirnetar are completed. Likewise, construction of 60 km of 11 kV and 100 km of 400 volts lines are completed. Construction of Singati Substation is 78% completed. The project is scheduled to be completed by FY 20010/11.

Engineering Services Business Group

The consulting and other engineering services within Nepal Electricity Authority (NEA) is mandated to the Engineering Services (ES) business group. This business group under takes services such as the preparation of projects from their identification stage up to its implementation phase including all the environmental study requirements, field investigations, manpower training and other works related to electromechanical services. With over several decades of sound experience in these fields, Engineering Services also caters to the private sector and other agencies in providing services related to numerous technical fields. These services are provided by the following four departments and one division.

- Project Development Department
- Environmental and Social Services Department
- Soil, Rock and Concrete Laboratory
- NEA Training Centre
- Electromechanical Division

Project Development Department

Project Development Department (PDD) is involved in the identification and the subsequent development of hydropower projects through several levels of studies. It has ample experience in identifying, carrying out pre-feasibility studies, feasibility studies, detailed engineering studies, preparation of EPC (Engineering, Procurement and Construction) and BOQ (Bill of Quantities) related tender documents and also the supervision of the construction activities of hydropower projects. Construction supervision of Chameliya HEP, preparation of detailed engineering design for Kulekhani III HEP, preparation of the feasibility study for Upper Tamakoshi HEP, are some of the works that have been carried out by PDD in the past. It is currently involved in the following projects.

Upper Trishuli 3 B Hydroelectric Project

Upper Trishuli 3 B Hydroelectric Project with an installed capacity of 37 MW is a cascade development of Upper Trishuli 3 A Hydroelectric Project. Project Development Department recently completed the preparation of draft Tender Documents and Tender Drawings for the civil works of the project. NEA plans to implement this project by forming a Public – Private Company. Necessary is currently in the process of forming an NEA Subsidiary Company along with the involvement of the people from the project area and other government bodies as equity partners.

The project is estimated to cost USD 68 Million and will generate 296 GWh of energy annually.

Rahughat Hydroelectric Project

Rahughat Hydroelectric Project is also entering the construction phase. This 30 MW project is located in Myagdi District. The project is being implemented under financing arrangements involving a soft loan from the EXIM Bank of India, Government of Nepal and Nepal Electricity Authority. Upgraded Feasibility Study for this project was carried out in the FY 2007/08 which increased the capacity from 27 MW to 30 MW. Subsequently, a Detailed Project Report was prepared in FY 2008/09, using its indigenous resources. Preparation of the tender documents and tender drawings are in its final stages of completion.

NEA has plans to immediately take up this project with the construction of the civil works and the camp facilities. The prequalification of bidders for civil works has already been initiated and evaluation is ongoing. Invitation for the expression of interest from consulting firms for the construction supervision and management of the project has already been published and the submission of the related documents took place on July 7, 2009.

The estimated cost of the project is USD 65.5 Million and the project will generate 186 GWh of energy annually. This project will also have a capacity to supply 6 hours of peak power. According to the project construction schedule the project is expected to be completed in 3.5 years after the start of its construction. IEE study for this project has already been started.

Upper Seti Storage Project

The proposed 128 MW Upper Seti (Damauli) Storage Hydroelectric Project is located in Tanahun District of Gandaki Zone. In order to enhance the peak hour supply with firm energy and to minimize the prevailing seasonal deficit in energy supply, Nepal Electricity Authority had identified and carried out the feasibility study of this project in year 2001. Subsequently, as per the agreement with JICA in 2004, the Upgrading Feasibility Study of this project was carried out and completed in June 2007. The 140 m high dam located near Damauli creates a reservoir with a storage capacity of 295 million cubic meters of water which is diverted to the underground powerhouse through a 1 km long headrace tunnel.

The project will generate 484 GWh annual average energy and the project cost is USD 341 million. Damauli-Bharatpur Transmission Line of 220 kV voltage and 39 km length is planned for power evacuation.

Project Road, Bridge, Camp facilties and Field Investigation works for detailed engineering shall be initiated in FY 2009/10.

Tama Koshi V Hydropower Project

Tamakoshi-V Hydroelectric Project is located just downstream of the existing Upper Tamakoshi Hydroelectic Project, being implemented by Upper Tamakoshi Hydroelectric Company. Due to this, it does not require any additional infrastructures for its development. This project can be developed to operate in tandem operation with Upper Tamakoshi HEP.

This project is located in Dolakha District approximately 170 km north east of Kathmandu and approximately 42 km away from Charikot Bazaar. The topographical survey, the hydrological studies and the geological studies were carried out in the last fiscal year. Currently, a feasibility study of the project is being carried out and according to this study, two possible powerhouse locations on the right bank of Tamakoshi River with installed capacities of about 80 MW are studied. The feasibility study of this project is expected to be completed by FY 2009/10.

Nalsyaugad Storage Hydropower Project

Nalsyagu Gad Storage Hydropower Project was conceived as one of the most attractive storage projects among the 93 storage projects screened and ranked during the "Identification and Feasibility Study of Storage Projects" (IFSSP).The feasibility study of this project is currently being carried out by the Project Development Department (PDD). The Project is located in Jajarkot District in the Mid-western Development Region of Nepal. Nalsyaugad is a small tributary of Bheri River in the Karnali River Basin. An access road of approximately 30 km length is required to reach the powerhouse site from the district head quarter. An additional 20 km of road will be required to access other components of the Project.

The present study has established the dam site approximately 9.25 km upstream from the confluence of Nalsyaugad and Bheri Rivers.

The topographical survey including reservoir mapping and surface geological mapping of the project area have already been completed. A gauging station has been established at the dam site and hydrological data is currently being updated. Detailed geological investigation followed by detailed feasibility design will be carried out in FY 2009/10.

Transmission Line Projects

As in the past, Project Development Department has been extending its services, especially in the survey of transmission line alignment. During the FY 2008/09, PDD was involved in the study of 16 transmission line projects. Most of them have already been completed. The status of these projects are as follows:

S.No	Name of the Project	Project Status
1	Syagnja Substation	Detailed Survey work completed
2	New Marshyangdi-Kathmandu 220 kV T/L	Detailed field survey has been completed
3	Singati-Lamasangu 132 kV T/L	Detailed Field Survey work has been completed
4	Sunkoshi -Dolkha 132 kV T/L	Reconnaissance survey has been completed
5	Kabeli -Damak 132 k/V T/L	Detailed field survey has been completed
6	Phidim Hub in the proposed Kabeli -Damak 132 kV T/L	Detailed survey work has been completed
7	Kaligandaki 220/132 kV T/L	Desk study and the site visit for the location of the hub has been completed.
8	Dhankuta- Tirtire T/L	Desk study and walkover survey has been completed
9	Marshyangdi Transmission Line corridor	Desk study has been completed and the preparation for the walkover survey is going on.
10	Hetauda-Dhalkebar-Duhabi 400 kV T/L	Desk study has been completed and the preparation for the walkover survey is going on.
11	Kohalpur- Surkhet 132 kV T/L	Desk study has been submitted to TLSCD.
12	Karuwa- Katari Cement Industry	Desk study and walkover survey has been completed
13	Mamane -Laxmipur 33 kV T/L	Detailed survey has been completed
14	Raxual- Parwanipur 132 kV T/L	Desk study has been completed and the preparation for the reconnaissance survey is going on.
15	Singti 132 kV Sub-station	Detailed survey has been completed
16	Pathlaiya 132 kV Substation	Detailed survey has been completed

Other Activities

Apart from the regular works of carrying out studies at different levels for different projects, PDD is involved in various other activities which have been very instrumental in developing the institutional strength of Nepal Electricity Authority in the field of consulting services. Other activities that were carried out during the FY 2008/09 are as follows.

Continuation of the construction supervision of Chameliya Hydroelectric Project in association with the Joint Venture of three local consulting firms (Shah Consult. SILT and ICON).

Conducting of the annual sediment survey at Kulekhani Reservoir.

Initiation for the design of three new NEA Office Complexes based on the new master plan within the NEA premises in Ratna Park.

Construction supervision of the following substation buildings

Unichaur substation building in Lalitpur District

Salyantartar substation building in Dhading District

Chaughada substation building in Nuwakot District

Upper Trishuli 3 A Hydroelectric Project

This 60 MW run of river type hydropower project located in Rasuwa and Nuwakot districts is being implemented on a priority basis so as to augment the generation capacity of the Integrated Nepal Power System (INPS) at the earliest. This project

Public Hearing of Upper Trisuli 3 'A' HEP

was studied by PDD using its indigenous resources and a Detailed Project Report (DPR) was prepared for the FY 2064/065. The project is envisaged to be funded through a concessional loan from China EXIM Bank. The estimated cost of the project is USD 125 Million and it will generate 460 GWh of energy annually. This project will be the first major hydropower project that will be implemented under the Engineering, Procurement and Construction (EPC) model.

NEA is currently developing this project in two packages.

1. EPC contract for major works comprising of infrastructure, civil, electromechanical and hydro mechanical works

2. Construction of 220 kV Transmission Line to Kathmandu

Tender submission for the first package took place on 5th May 2009. The technical proposal submitted by the Chinese Bidders for Package 1 is in its final stage of evaluation and the actual construction of the project is envisaged to start in the dry season of the year 2009. The expression of interest for the construction supervision and tendering for the transmission line will be carried out in the near future. The project construction period is estimated as 3 years after the start of the construction. NEA is also in the process of finalizing the EIA study of the project, which will provide multifarious benefits to the local area as well as improve the macro economy of the area.

Upper Trisuli 3'A' Project Site

Environmental and Social Studies Department

Environment and Social Study Department (ESSD) is one of the integral departments of Engineering Services Business Group. It has been providing all activities related to the environmental aspects of all projects, designed, and constructed or operated by NEA. This department has now developed into a full-fledged commercial unit of NEA and in close association with different national and international consulting companies is now involved in conducting EIAs,SIAs,IEEs,monitoring and implementing mitigation measures and environmental auditing of hydroelectric, transmission line and distribution line projects.

The department currently has the following works in hand:

- The EIA study of Upper Trishuli -3A (Draft Report Completed)
- The EIA study of Dumre-Damauli 132 kV T/L Project (Draft Report Completed)
- The IEE study of the following cross-border 400kV T/L Project.

  - Duhabi – Jogbani (Draft Report Completed)
  - Butwal – Sunauli (Draft Report Completed)
  - Dhalkebar – Bittamod (TOR Approved)
- The EIA study of Upper Trishuli -3B (TOR Approved)
- The IEE study of Rahughat HEP (TOR Approved)
- The EIA study of Galeswar – Modi Substation (Scoping/TOR draft report completed)
- The EIA study of Bharatpur - Damauli 220 kV T/L project (Public hearing completed)
- The EIA study of Marshyangdi-Kathmandu 220kV T/L (On-going)
- The EIA study of Singati- Lamasangu 132kV T/L (On-going)
- The Implementation of Environmental monitoring and mitigation program for the following projects.

  - Chameliya HEP (On-going)
  - Khimti-Dhalkebar 220kV project (On-going)
- Vulnerable Community Development Plan, Social Impact Assesment and Resettlement Action Plan (Draft Report Completed)
- Quarterly Monitoring of air noise and water quality of Middle Marsyangdi HEP (Completed)
- Chitwan – Madi Electrification Project (On-going)

Soil Rock and Concrete Laboratory

Soil, Rock and Concrete Laboratory (SRCL) provides services in material testing, geological and geotechnical investigations for the different phases of a hydroelectric project development.

It provides services like geological mapping, various types of geophysical surveys, core drilling and construction material investigation at different level of studies to various departments of NEA and the private sector. In the field of soil and rock engineering, it also provides services of carrying out in-situ tests and laboratory tests viz. determination of index properties, tri-axial tests, consolidation tests, point load tests, direct shear tests, uniaxial compressive strength tests etc.

The following works were undertaken by this laboratory during the FY 2008/09:

- Core drilling at Sunkoshi storage cum diversion scheme in Okhaldhunga District for Sapta Koshi Multipurpose Project
- Geological Study of Kabeli Damak Transmission Line (ongoing).
- Seismic Refraction Survey of Upper Marshyangdi Hydroelectric Project for GMR.

- Core Drilling at Tamakoshi – 2 Hydroelectric Project for SN Power Holding Singapore Pte. Ltd.
- Core Drilling at Misti Khola Hydroelectric Project for Nepal Mountain Energy.
- Surface Geological Mapping of Nalsyaugad Hydroelectric Project in Jajarkot
- Soil Test for the foundation of the substation at Syangja
- Construction Material Survey and Laboratory Tests of Misti Khola Hydroelectirc Project for Nepal Mountain Energy.
- Construction Material Survey and Laboratory Tests of Tamakoshi – 2 Hydroelectric Project for SN Power Holding Singapore Pte. Ltd (ongoing)

NEA Training Centre

As human resource is one of the most important ingredients for any organization, its development is indispensable for the survival and advancement of the organization. So, investment in training is treated as a corporate asset of any organization.

For upgrading and enhancing the skill, knowledge and attitude of human resources, NEA, Training Center TC has been providing need-based short terms trainings covering 3 days to 23 days for NEA employees with an objective to upgrade their professional knowledge, skills and attitudes of manpower at operational and managerial levels.

The training programs are designed as per the Training Needs Assessment (TNA) of an organization and at the personnel level after discussions with the management and after the feedbacks provided by trainees respectively.

These trainings are conducted as per the contract with corporate and GM office levels of NEA. Since FY 2007/08, with a view to expand its training programs for clients outside NEA, upon their request, TC has conducted various programs to non NEA staff also. Altogether 50 numbers of trainings were conducted during the FY 2008/09. The following table summarizes the training programs conducted during the FY 2008/09 to meet the needs of different offices within and outside NEA.

The details of the trainings conducted in the FY 2008/09 are given below

In addition to the employees of NEA, participants from other business organizations of power industries such as Chilime Hydropower Limited (CHPL) and other agencies have also participated in the training programs.

In addition to regular training programs, NEA Training Center also conducts different training programs in the areas of distribution, transmission, generation, management and information technology upon request.

In the last 14 years, NEA Training Center has trained a total of 8,825 employee from the different business groups within Nepal Electricity Authority and other organizations as well.

S.N.	Types of Training	Officer		Assistant		Total
		Technical	Non - Technical	Technical	Non - Technical	
1	No. of Participants in On the Job Training according to Contract with business group and private hydropower Company (Short-term courses)	47	71	192	101	411
2	No. of Participants in Induction training for the newly recruited employees in NEA.	44	8	148	98	298
	Total number of Participants	**91**	**79**	**340**	**199**	**709**

Electromechanical Design Division

This division handles all of the electromechanical issues arising within Engineering Services. These issues range from the design of electromechanical equipment of projects to the transmission line and power evacuation studies for private sector projects. The jobs that have been completed or are currently being undertaken by this division are as follows.

- Techno-Feasibility Study for elelctrification of 13 VDCs of Nawalparasi District.
- Project Identification and Feasibility Study for transmission system development.
- System Study required for power evacuation of Tama Koshi Sub Basin Projects.
- System study required for power evacuation of Nyadi and Marshyangdi III Hydropower Projects

Apart from the above mandate, this division also runs and maintains a central workshop in Hetauda and manufactures concrete poles from its two concrete pole manufacturing plants, one in Kotre and the other one in Amalekhgunj. During the last fiscal year, a total of 11,017 concrete poles were manufactured at the Concrete Pole Plant in Amalekhgunj. Similarly, a total of 1488 concrete poles were produced from Kotre Pole Plant in Tanahun. Likewise, approximately one hundred transformers were repaired at the Central Workshop in Hetauda.

Project Site of Upper Modi 'A' HEP

NEA's Subsidiary and Joint Venture Companies

Upper Tamakoshi Hydropower Limited

Upper Tamakoshi Hydropower Limited(UTKHPL) was formed as a subsidiary company of NEA on March 9, 2007 (Falgun 25, 2063) with the primary aim of developing and managing 456 MW Upper Tamakoshi Hydroelectric Project (UTKHEP) utilizing the financial and technical resources from within the country. NEA is the major shareholder of the Company with 51% stake. Employment Provident Fund (EPF) will contribute 20% of the equity. The rest of the equity capital will be raised from general public (10%), natives of Dolakha District (10%), NEA staff (6%), and staff of financial institutions providing debt for the Project (3%). NEA Board has constituted a five-member Board of Directors for the Company on March 12, 2008 (Falgun 29, 2064). The Company also has plans to develop other hydropower projects in Nepal.

Project Features

Upper Tamakoshi Hydroelectric Project (UTKHEP) is located in Lamabagar Village Development Committee of Dolakha District and is a peaking run-of-river type of project with 820 m gross head, design discharge of 66 m3/s and Installed capacity of 456 MW. The Project will be generating about 2,281.2 GWh of energy annually. The major components of this Project are an intake, a 22 m high concrete dam, twin desanding basins, 7.86 km long headrace tunnel, 360 m high surge shaft, 495 m long penstock pipe, underground powerhouse with six units of Pelton turbines, 2.9 km long tailrace tunnel and 47 km long 220 kV transmission line to Khimti substation.

Upper Tamakoshi Project Site

Project Status

A MoU was signed between NEA and EPF on January 29, 2008 (Magh 15, 2064) where the latter pledged to provide NRs. 10 billion as debt and NRs. 2 billion as debenture totaling NRs. 12 billion for the project. Similarly in another MoU signed on July 16, 2008 (Shravan 1, 2065) between NEA and Himalayan Bank Ltd. (HBL), the lead bank for the consortium of commercial banks of Nepal, the latter has pledged to provide NRs. 6 billion as debt for the Project. Likewise, a MOU between NEA and Citizen Investment Trust was signed on December 5, 2008 (Mangsir 20, 2065) for a loan investment of NRs. 2 billion. Discussions are underway with Rastriya Beema Sansthan to arrange remaining funds required for the Project. The Project is estimated to cost USD 441 Million, 70% of which is structured as debt and the rest as equity.

Detailed engineering design for tender document preparation of the Project has been completed in December 2008 (Mangsir / Poush, 2065). In response to the Company's call for proposals for pre-qualification of contractors for Civil Works Lot-1, six international construction companies

have been prequalified for civil works and five international consultants have been short listed for the construction supervision work of the Project. Invitation for Tender to prequalified contractors and consultants is underway. At the project site, construction of the last 28.5 km stretch of the 68 km long access road and upgrading of 35 km long Dolakha-Singati section of access road are underway. Power Purchase Agreement with NEA is at final stage. Regarding funding for the project discussion with EPF and the Banks are underway. Local Construction Company Himal Hydro has been awarded a contract for the construction of the 700 m long access tunnel and the work is in progress.

Chilime Hydropower Company Limited

Chilime Hydropower Company Limited (CHPCL) was established in 1996 AD as a subsidiary company of Nepal Electricity Authority (NEA). NEA has a 51% stake in this company while the employees of NEA and CHPCL have a stake of 25% and the remaining 24% of the stake is intended for the general public. The Company recently published a notice, inviting the general public for participation in the 24% of its equity share. However, the process was suspended due expressions of disagreement by the local inhabitants, regarding the allotment of the shares. It will be continued after a decision has been received from the Supreme Court regarding this issue.

With the objective of promoting and utilizing the national resources from within the country in the field of hydropower development, the company successfully commissioned and commenced its commercial operation of Chilime Hydropower Project (CHPP) with an installed capacity of 22.1 MW on August 24, 2003 (Bhadra 8, 2060). Accepted as a model project, it has been successful in delivering its deemed as well as excess energy to NEA in its six years of operation. As a result of this, the Company has been successful in providing dividends to its share holders at the rates of 10%, 20%, 35%, 30% and 35% in the last five fiscal years 2003/04, 2004/05, 2005/06, 2006/07 and 2007/08 respectively. The following table shows the status of the generation and sales scenario since the date of commissioning of the project on August 24, 2003.

Fiscal Year	Deemed Energy Kwh	Units (Kwh)			Amount Received NRs.
		Total Generation	Excess Generation	Total Sales	
2003/ 04	115,198,000	119,831,494	2,263,669	111,412,807	585,837,395
2004 / 05	132,795,000	134,309,206	2,646,070	124,486,883	690,902,201
2005 / 06	133,223,644	145,083,730	6,530,200	136,328,395	816,607,088
2006 / 07	132,790,000	147,619,730	7,188,325	139,650,818	903,540,792
2007 / 08	132,795,000	145,075,049	6,908,035	138,165,844	870,014,527
Total	644,871,810	691,919,209	25,536,299	650,044,747	3,866,902,003

Projects in Pipeline

At present, the company has four hydropower projects, at different level of studies and with a total installed capacity of 226 MW in the pipe line. Detailed engineering studies of two of these projects namely, Sanjen Upper Hydroelectric Project with an installed capacity of 11 MW and Sanjen Hydroelectric Project with an installed capacity of 35 MW are in progress. Activities for the construction of the access road for these projects have already been initiated. Plans are currently underway to form a subsidiary company of Chilime Hydropower Company Limited for the development of these projects. It is envisaged that a wider participation of the village development committee of Rasuwa will be involved in the formation of the company with the purpose of sharing the benefits accruing from these projects. Similarly, the feasibility study of Middle Bhotekoshi Hydroelectric Project located in Sindhupalchowk district, with an installed capacity of 80 MW and Rasuwagadhi Hydroelectric Project with an installed capacity of 100 MW is also in progress.

Power Transmission Company Nepal Limited

The need of development of cross-border transmission lines have been felt for some time as a link for the export of power from Nepal to India. With increased interest shown by Indian IPPs to develop hydropower projects in Nepal in the last few years, there has been renewed interest to implement such interconnections. Considering this fact, NEA and IL&FS has formed a joint venture company under the name "Power Transmission Company Nepal Limited (PTCN)" on September 16, 2007 for taking up the development of transmission projects in Nepal including cross border transmission links. The investors in PTCN are NEA (50%), JVC Nepal-IL&FS IDC (26%), and Banks/IPPs of Nepal (24%). Similarly, "Cross Border Power Transmission Company Limited (CPTC) has been incorporated in India on December 19, 2006 to undertaken line construction activities in India.

Under Cross-Border Transmission Line Project, following three cross border Indo-Nepal Transmission Interconnections have been identified

- Dhalkebar-Mujaffarpur 400 kV Transmission Interconnection
- Duhabi-Purnia 400 kV Transmission Interconnection
- Butwal-Gorkhapur 400 kV Transmission Interconnection

The Dhalkebar (Nepal)-Mujaffarpur (India) 400 kV Transmission Interconnection consists of about 145 km of transmission line, of which approximately 45 km of transmission line section from Dhalkebar to Bhittamod near Indo-Nepal border falls under the Nepalese territory and remaining part of this line (about 100 km) falls in the Indian territory. The interconnection would be designed at 400kV Double Circuit line to be initially charged at 220kV and would be operated in synchronous mode between the Nepalese and Indian grids.

The Duhabi-Purnia 400 kV Transmission Interconnection consists of about 22 km of transmission line section from Duhabi in Nepal to Jogbani near Indo-Nepal border in the Nepalese territory, and 99 km of line in the Indian territory. NEA has secured the survey license for the project. An application for construction license has been filed.

The Butwal-Gorkhapur 400 kV Transmission Interconnection consists of about 25 km of transmission line section from Butwal in Nepal to Sunauli near Indo-Nepal border, and remaining section of bout 100 km of the line falls in the Indian territory. NEA has secured the survey license for the project. An application for construction license has been filed.

Planning, Monitoring and Information Technology

The Planning, Monitoring and Information Technology, a corporate office of NEA is headed by a Deputy Managing Director. This office is responsible for directing and supervising the activities of five departments, namely, Power Trade Department, System Planning Department, Information Technology Department, Monitoring Department and Corporate Planning Department. Each of these departments is headed by a Director. The activities thus supervised by this office include power purchase agreements; coordination of cross-border power exchange and trading; load forecast, generation and transmission plans, grid impact studies and periodical monitoring and evaluation of NEA projects.

Power Trade Department

Power Trade Department is responsible for coordinating the trading of power both within the country and across the border as per the policy and strategies of Nepal Electricity Authority. NEA has been executing Power Purchase Agreements (PPAs) with Independent Power Producers (IPPs) for the purchase of power on long-term basis. Following the recent announcement of price and policy incentives, there has been a huge upsurge in the applications for PPAs. The Department is working diligently to accommodate the ever increasing applications for PPAs. As part of the PPA process, the Department verifies the documents submitted by the IPPs, reviews the technical as well as financial aspects of the project, facilitates execution of the Connection Agreement between the IPP and the concerned department of NEA, negotiates and finalizes the PPA for signing by both parties. Besides the PPA processing, this Department also plays prominent role in PPA policy formulation, monitoring and administration of the PPAs including processing of invoices submitted by IPPs.

During Fiscal Year 2008/09, this Department has concluded PPAs for 12 projects with total installed capacity of 42,983 kW and amended PPAs of 3 projects to accommodate the capacity increase of these projects by a total of 8,986 kW. Draft Agreements for 6 new projects and amendment draft for one project have been prepared by the end of the Fiscal Year. These PPAs and amendment

Chart 1: Summary of activities of Power Trade Department in FY 2008/09

PPAs concluded			**51,969 kW**
	New Projects (12 projects)	42,983 kW	
	Capacity Upgrading (3 projects)	8,986 kW	
Draft PPA prepared			**43,347 kW**
	New Projects (6 projects)	43,247 kW	
	Capacity Upgrading (1 project)	100 kW	
Connection Agreement Concluded			**293,505 kW**
	New Projects (22 projects)	290,295 kW	
	Capacity upgrading (1 project)	3,210 kW	
Projects under Detail Technical Review (20 projects)			**126,009 kW**
Projects under General Review (11 projects)			**126,300 kW**
Projects with Problems for connections (9 projects)			**45,989 kW**
Projects under Preliminary Review (10 projects)			**96,300 kW**
Applications for Upgradation (5 projects)			**19,730 kW**
Total Projects under PPA considerations (87 projects)			**1,209,680 kW**

are expected to be signed soon. Total number of PPAs concluded by the end of the FY 2008/09 has reached 52 which amounts to a total capacity of 286,179 kW. Out of these 52 projects, 19 projects with total installed capacity of 158,315 kW are already in operation. Two of these 19 projects, namely, Pati Khola Small Hydropower Project (996 kW) and Seti–II Small Hydropower Project (979 kW), both located in Kaski district, were commissioned in FY 2008/09. Three more projects with total installed capacity of 6,491 kW are scheduled to be commissioned within few months. Out of the 33 IPP projects yet to be commissioned only 4 projects with total installed capacity of 12,345 kW are under construction. The processing of PPA for the Upper Tamakoshi Hydroelectric Project (456,000 kW) is being carried out with priority. It is expected that a Memorandum of Understanding will be signed for the purchase of power from this project soon. The Department is processing 87 proposals with total installed capacity of 1,209,680 kW at present.

Under the cross–border power trading, this Department deals with agencies in India and negotiates and finalizes cross border power purchase and sale arrangements as per the directives of NEA management. This Department also assists in the processing as well as settlement of the Invoices received from PTC India Ltd., the nodal agency appointed by the Government of India for power trading with Nepal. Furthermore, coordinating the activities related to the power exchange with India is another facet of this Department's responsibility. Under the Power Exchange Agreement, up to 50 MW power is being imported via Duhabi–Kataiya 132 kV transmission line. In order to mitigate the sever power crisis, 20 MW power was imported from India through Tanakpur Delivery Point on commercial basis. Due to lack of transmission line facilities, enough power could not be imported to ease the power crisis. Though, arrangement were completed on Nepal side, 30 MW power import through Gandak Delivery Point could not be materialized.

System Planning Department

FY 2008/09 was a defining year for System Planning Department (SPD) with regard to its new roles and responsibilities. On December 24, 2008; Government of Nepal (GoN) declared 35-point National Power Crisis Mitigation Action Plan to which 3 more programs were appended on March 3, 2009. Among various measures, the Mitigation Plan envisaged to build 29 transmission lines in different parts of the country. Earlier, GoN had announced a plan to add 10 thousand Megawatts by 10 years. On July 13, 2009, the new government made public a plan to generate 25 thousand Megawatts by 20 years. The plans and priorities thus already defined, the system planning functions have to go through a phase of assessment and adjustment to suit the emerging environment. The conventional planning process comprising of indentifying the least cost option out of the basket of hydropower projects, determining the needs of new transmission links for the evacuation of selected generation projects and identifying the reinforcement requirements of NEA's transmission network as per the load forecast and selected generation plan, did have little relevance in the changed scenario. On the other hand, the upsurge of requests for the Grid Impact Study, a mandatory step for all power generation projects wishing to be connected to the Grid before a Connection Agreement, conferred Grid Impact Studies as the major responsibility on the System Planning Department.

In the year under review, Grid Impact Studies of 9 Projects with a total capacity of 148.6 MW were accomplished (see Table 1). Furthermore, the Department also carried out Power Evacuation Studies of five private power projects with a total capacity of 786 MW on behalf of the Engineering Services of NEA (see Table 2). The Department was also involved in five packages of transmission system development studies carried out by the Engineering Services Business Group of NEA (see Chart 1).

Information Technology Department

The Information Technology Department, in FY 2008/09, took up significant initiatives towards the expansion of NEA intranet, development of new software, implementation and roll-out of the software that were developed in the past years.

To enhance and expand NEA intranet into a country-wide data network, the Department initiated and accomplished stringing of fiber optics cable for

Lalitpur and Pulchowk Distribution Centers and Saibu-Bhaisepati Sub branch of Distribution and Consumer Services (DCS). Further initiatives are being taken with the aim to extend its network reach to all the DCS offices in Lalitpur district which the Department hopes to achieve within next few months.

Initiatives were also taken towards the development of application software, roll-out of tested software

Chart 1 :Project Identification Studies carried out under Engineering Services

Package A	Project Identification and Feasibility Study for Transmission System Development
Package B	Dhankuta-Tirtire Corridor Transmission Feasibility Study
Package C	Marsyangdi Corridor Transmission Line Study
Package D	Modi-Butwal Corridor Transmission System Development Study
Package E	Kabeli Corridor Transmission System Development Study
Package F	Sunkoshi Corridor Transmission System Development Study

Table 1 : List of the Projects for which Grid Impact Studies were carried out by System Planning Dept.

S.No.	Projects	MW	Connection Substation
1	Mai HPP	14.5	Proposed Ilam Hub
2	Sanjan HPP	35.0	Proposed Trishuli Hub
3	Upper Sanjan	11.0	Proposed Trishuli Hub Through Sanjan HPP
4	Devighat Cascade HPP	9.6	Devighat
5	Bijayapur-1 Small HPP	4.5	Lekhnath
6	Lower Balephi HPP	20.0	Lamosanghu
7	Upper Chaku-A HPP	22.0	Lamosangu
8	Lower Sunkoshi-III HPP	10.0	Lamosanghu
9	Dordi Khola HPP	22.0	Middle Marsyangdi
	Total	**148.6**	

Table 2 : List of the Projects for which Power Evacuation Studies were carried out by System Planning Dept.

S.No.	Projects	MW	Connection Substation
1	Marsyangdi-III HPP	34	Middle Marsyangdi
2	Nyadi HPP	20	Middle Marsyangdi
3	Tamakoshi 2 & 3	640	Dhalkebar
4	Khimti-I Unit 6	46	Khimti
5	Khimti-II	46	Khimti
	Total	**786**	

into newer locations, extension of the NEA Intranet system, etc. The Department has also conducted a total of 5 training programs participated by 86 NEA staff on use of the software applications developed/supported by the Department. Software developed and supported by the Department was also updated with additional facilities this year on the request of the users. These include the accounting and payroll software.

Software application for Power Trade Department and Technical Services/Commercial Department has been completed. Testing, implementation and roll-out of these software applications are scheduled for FY 2009/10. Power House Maintenance software developed and tested in the previous fiscal year was rolled out to 13 new centers this year. The Department is also implementing the Customized Accounting and Inventory System (CAIS) in additional NEA offices. So far, CAIS has been implemented in 129 locations of NEA.

Enhancing telecommunication system was another task taken up by the Department in the fiscal year under review. The public service telephone system (PSTN) lines within NEA complex were replaced with telephone lines from Optical Network Unit provided by Nepal Telecom. This will cater to the increasing communication needs of NEA.

NEA intranet site www.nea.org was refurbished this fiscal year with improved interface updates and inclusion of various utilities. NEA intranet site now includes important facilities like telephone inquiry system, library, book inquiry system, document dispatch system, complain management system and so forth. Most of the information about NEA activities can be downloaded from the NEA website: and NEA intranet site www.nea.org.

Corporate Planning Department

Corporate Planning Department undertakes various tasks involving plans and programs at corporate level. The Department assists the National Planning Commission and ministry of Finance in the preparation of Annual Budget and programs by providing data related to projects undertaken by NEA. Besides, the Department also provides data input for studies undertaken by various organizations on topics related to NEA and provides necessary support to NEA management. This Department also assists in obtaining new licenses and any extension there of as required for development of power projects.

NEA Board Matters

MThe Board of Directors of NEA has been recently reconstituted. Dr. Prakash Sharan Mahat, Honorable Minister, Ministry of Energy became the Chairman of Board of Directors of NEA since July 1, 2009. Likewise, Mr. Shankar Prasad Koirala, Secretary, Ministry of Energy continued as Board Member. Similarly, Mr. Lekha Man Singh Bhandari and Mr. Ananda Raj Batas were re-appointed as Board Members by the Government of Nepal on August 4, 2009. Also, Dr. Jivendra Jha has been appointed to the post of Managing Director on July 29, 2009 and he also serves as the Member Secretary of the Board.

During the year in review, altogether, twenty-three board meetings were convened. Various by-laws relating to personnel, financial & consumer management were amended to impart greater degree of efficiency and effectiveness on the functioning of NEA.

Administration

Administration wing of NEA is responsible for management of human resources of NEA. Besides human resource management, Administration wing is also responsible for logistic support, legal advice and arbitration, property management, security arrangement of central office and promotion of public relations functions. Timely amendment of the Personnel Administration Regulation of NEA also falls under the purview of this wing. This office is headed by a Deputy Managing Director and supported by three departments, namely, Human Resources Department, General Services Department and Legal & Grievance Handling Department.

Human Resources Department

This Department is responsible for executing manpower planning, recruitment, employees training and development, employees record keeping, disciplinary actions, implementation of staff welfare activities and other human resource related functions.

At the end of FY 2008/09, there are 10,314 approved positions and a total of 9,280 staff employed in NEA. During the year under review, 5 Directors were promoted to General Manager/Deputy Managing Director level based on performance evaluations. Similarly, 120 Officers and 190 Assistants were promoted to higher levels in the fiscal year. The Department also carried out internal competition to promote 5 Officers and 105 Assitants to higher levels. Moreover, 5 Officers and 59 Assistants were promoted under 12 year time-bound promotion scheme. NEA organizational structure and approved staff positions were also revised in the FY which came into effect from April 12, 2009. In order to keep the NEA regulations in tune with requirement the changing time, amendments were made to various NEA regulations. Accordingly, Personnel Administration Regulation-2006, Travel Allowance Daily Allowance Regulation-2009 and NEA Personnel Code of Conduct were amended and implemented in the FY 2008/09.

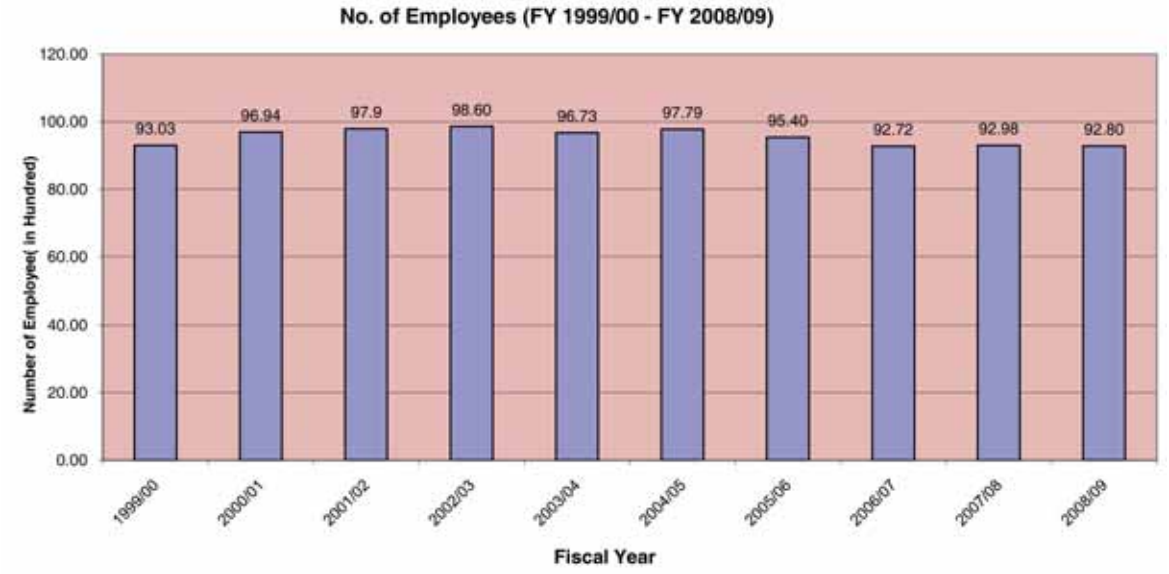
As part of human resource development activities, arrangements were made for a total of 278 NEA staff to participate in trainings, seminars, workshops, conferences, and study and inspection tours in Fiscal Year 2008/09. Similarly, 170 officer level and 539 assistant level staff were given training in NEA Training Center. As part of the program to familiarize newly recruited staff on various aspects of NEA functions, induction trainings were organized for 298 newly recruited employees of NEA.

As part of staff welfare activities, financial supports were provided to 10 employees for causes like cancer treatment, kidney transplant, cardiac surgery and treatment of other serious illnesses. Similarly, under the staff welfare loan, a total sum of Rs. 6,04,00,000 were disbursed as loan to 456 staff for purchase, construction and maintenance of house/land, social events and so forth. In FY 2008/09, 189 staff were retired, 16 staff took voluntary retirement, 27 staff resigned and 36 staff passed away. In different accident cases in course of duty, 30 staff were injured and 4 staff passed away.

NEA has been providing conducive environment for their staff to develop and excel in sport activities. This policy yeilded a plethora of medals in the sports fete organized by the Public Enterprises Sports Development Association in June 30–July 5, 2009. NEA was succesful in bagging the running shield as team champion. Moreover, NEA staff were also succeessful in bagging 8 gold medals, 10 silver medals and 7 bronze medals in the sports event thus making the year an eventful and satisfing year sportwise.

Employees Status FY 2008/09 (July 15, 2009)

Level	Service	Approved Position			Existing Situation			
		Regular	Pool	Total	Permanent	Monthly Wages	Daily Wages	Total
Managing Director		1	0	1	1	0	0	1
GM/DMD (Level -12)		9	0	9	9	0	0	9
Officer Level	Technical	1073	2	1075	839	8	1	848
(Level 6 - 11)	Non Tech.	507	1	508	400	1	0	401
	Total	**1590**	**3**	**1593**	**1249**	**9**	**1**	**1259**
Assistant Level	Technical	5281	172	5453	4410	864	0	5274
(Level 1-5)	Non Tech.	2977	291	3268	2352	390	5	2747
	Total	**8258**	**463**	**8721**	**6762**	**1254**	**5**	**8021**
	Grand Total	**9848**	**466**	**10314**	**8011**	**1263**	**6**	**9280**



General Services Department

General Services Department is entrusted with the responsibility of vehicle management, repair & maintenance works of NEA buildings, property management, logistic support for corporate offices and security management of NEA offices. This Department also deals with trade unions of NEA. It also deals with the Media, organizes press conferences and various ceremonial activities. This Department also publishes "Vidhyut" magazine every six month.

Legal and Grievance Handling Department

Legal and Grievance Handling Department deals with all legal matters and cases of NEA. In FY 2008/09, in total 122 cases were registered in different courts and arbitration tribunals out of which the courts have given their verdict in favour of NEA in 17 cases and against NEA in 5 cases. One case was withdrawn by the concerned party and another one was settled through amicable settlement. At present, 98 cases are sub judice and being defended by NEA in different courts.

Internal Audit

Internal Audit is headed by the Deputy Managing Director (DMD). The Deputy Managing Director is supported by a Director and four Divisions namely, Financial Audit Division, Energy Audit Division, Technical Audit Division and Management Audit Division. In addition, there are four regional centers responsible for the audit of offices falling under respective jurisdiction: (i) Mid- north Centre Kathmandu, (ii) Mid-south Centre Hetauda, (iii) Eastern Centre Biratnagar, (iv) Western Centre Butwal, (v) Mid and Far West Centre Nepalgunj.

Internal Audit is responsible for carrying out the function of internal control using the tools of audit observation. It performs auditing of various budget centers as per its annual plan covering the areas of revenue, expenditure and project accounting. It also audits technical affairs, energy balance and management activities conducted by the various business groups. As part of its control function, it discloses non-compliance to the rules and regulations, the circulars and directives issued by the corporate office from time to time by the concerned budget centers. It also brings to the notice of the Managing Director the audit issues and its recommendations for appropriate rectification and reforms in the rules and regulations.

Activities of Internal Audit with respect to financial audit coverage during FY 2008/09 are listed below:

S.N.	Regional Office	Total Number of Budget Centers	Audit Coverage Within 2066 Asadh	Annual Audit Completion Target
1	Mid North	44	Distribution Center-8 Others - 33	Sept. 16, 2009
2	Mid South	25	Distribution Center-6 Others - 14	Sept. 16, 2009
3	Eastern	25	Distribution Center-6 Others - 5	Sept. 16, 2009
4	Western	30	Distribution Center-6 Others - 5	Sept. 16, 2009
5	Mid & Far Western	24	Distribution Center-5 Others - 14	Sept. 16, 2009

Financial audit was carried out in 102 budget centers out of total 148 budget centers.

Regarding the technical audit only 7 budget centers were covered in this fiscal year. Non-availablity of adequate human resource significantly constrained the coverage of technical audit function.

To enhance the professional skill for internal audit officers, intensive training program was conducted in association with Indian Cost and Works Accountants Association (ICWA) in Calcutta and Gantok from 14-22 April 2009. Altogether 24 officers participated in the training program.

Finance

The Corporate Finance is headed by the Deputy Managing Director, and is responsible for the overall finance and accounting functions. It is supported by the Corporate Finance Department and Finance & Accounts Department, each headed by a Director.

Corporate Financial Performance

FY 2008/09 has been a mixed year in terms of achievements and challenges facing NEA businesses. Despite financial difficulties, NEA has been able to commission the long awaited 70 MW Middle Marsyangdi Hydroelectric Project (MMHEP) in this financial year. NEA was also able to manage the required funds for Chameliya (30 MW) and Kulekhnai-3 (14 MW), which are planned to be commissioned by FY 2010/11. Similarly, required funds for Upper Trishuli-3A (60MW) Rahughat (30 MW) have been mobilized. Furthermore, Upper Tamkoshi Hydro Electric Project (456 MW) promoted by NEA along the PPP modality has entered into construction phase and is planned to be commissioned by FY 2013/14. The financing for this project is provided by the Employment Provident fund, Citizen Investment Trust, Rastriya Bima Sansthan and a Consortium of Banks with Himalayan Bank as Lead Bank.

Notwithstanding these achievements in fund mobilization and investment for the generation capacity augmentation, it has not been a good year for NEA in terms of realization of targeted sales. Against 17 percent of target sales growth, NEA experienced for the first time in its sales history a negative sales growth in FY 2008/09. However, even with the negative sales growth, NEA experienced a marginal revenue growth by 0.69 %. In FY 2008/09, total sales is 2,308.91 GWh, which is equivalent to 84.90 % of the target, less than 0.06 % in comparison to the sales of 2,310.32 GWh in FY 2007/08. In the period under review (FY 2008/09) the total internal sales grew marginally by 0.45 %, whereas export to India decreased by more than 19.15 % in comparison to the last review period In FY 2008/09, total internal sales and export stood at 2,260.32 GWh and 48.59 GWh respectively.

Revenue from internal sales (net) and export amounted to NRs. 14,870.41 million and NRs.350.45 million respectively in the year under review. The increase in gross internal sales revenue of less than 1 % was recorded whereas the export revenue declined by less than 3 % in the same period. Strikes, bandhs and unrest in Terai as well as in other parts of Nepal not only restricted mobility leading to lapses in theft control, meter reading and maintenance etc. but also resulted in decrease in energy sales, particularly in industrial and non-commercial consumer categories. As a result, overall sales income was only NRs. 15,499.37 million, against the target of NRs.18,234.55 million in FY 2008/09. This is a marginal increase by less than 1 % in comparison to sales of NRs. 15,391.97 million in FY 2007/08. Net sales revenue was NRs. 15,220.87 million after rebate amount of NRs. 278.50 million. This rebate amount is 1.80% of the sales revenue which is little less in comparison to FY 2007/08 (2.28 %). As a result, increase in net sales revenue for the review period is slightly higher (1.19 %) in comparison to the same period last year.

Income from other services such as surcharge dividend, lease rent, interest, sales of goods etc. is estimated at NRs. 992 million, an increase of 6.11 % as compared to FY 2007/08. Income from other services contributed to 6.12 % to total income in FY 2008/09. Total revenue inclusive of income from other sources for FY 2008/09 amounted to NRs. 16,212.65 million, showing an increase of 1.48 % over preceding year's income.

In NEA's total operating expenditure, an increase of 12.95 % is observed in FY 2008/09 in comparison to FY 2007/08 and stood at NRs.16,184.19. Of the total expenditure, NEA spent NRs. 2,665.79 million in staff cost in FY 2008/09 which is less by 5.20 % in comparison to budget figure. Staff cost is equivalent to 16.47 % of the total operating expenditure and 16.44 % of the total income. The corresponding figures were 14.64 % and 13.31 %

in FY 2007/08. Reason behind this increase in staff cost is attributable to a raise in staff salary in FY 2008/09. Operation and maintenance expenses stood at NRs. 1,117.35 million in FY 2008/09, which is around 6.90 % of total operating expenditure. There has been a saving of 26.39 % in comparison to budget figure. Saving in operation and maintenance cost in comparison to budget is resulted mainly due to non procurement of spare parts for diesel and multi-fuel plants.

Depreciation, royalty, provisions and administrative expenditure amounted to NRs. 2,231.40, NRs. 811.70, NRs. 110.00 and NRs. 730.43 million respectively.

Power purchase expense is the largest component of the total expenditure and is equivalent to 52.05 % of total operating expenditure and 51.95 % of total income. The figure for power purchase expenses amounted to NRs. 8,423.09 million for FY 2008/09. Notwithstanding the decrease in energy purchase by 7.33% in comparison to FY 2007/08, there has been increase of 13.26 % in power purchase expenses. As a result, there has been more than 22.35% increase in average power purchase rate (from NRs. 5.37/ kWh in FY 2007/08 to NRs. 6.57/kWh in 2008/09).

Interest on long term loan is second largest expenditure amounting to NRs. 2,809.46 million in FY 2008/09. There is 23.53 % increase of interest cost over the last year's figure. Interest on Power Bond and Middle Marsyangdi HEP has resulted in an increase in interest cost for this year in comparison to last year figure.

In FY 2008/09 NEA recorded operating surplus of NRs. 28.46 million as against NRs. 1647.65 million in FY 2007/08. Increased cost of power purchase and other expenses are the reasons behind the decrease in operating surplus. In FY 2008/09, NRs. 980 million was written off in respect of municipalities' street light dues after receiving an equal amount as the full settlement from GoN. Translation loss on foreign exchange loan in Japanese Yen for Kulekhani Disaster Prevention Project further added a burden of NRs. 800.24 million in F/Y 2008/09. Consequently, NEA suffered a net loss of NRs. 4,681.24 million (previous year NRs. 961.47) and accumulated loss reached NRs. 12,332.67 million at the end of FY 2008/09.

The realized average revenue rate after rebate of NRs. 6.59 per kWh was marginally higher in comparison to FY 2007/08 figure. Cost of service for providing electricity to consumers which increased by 23.46 % and reached NRs. 9.05 per kWh (NRs. 7.33 in FY 2007/09), is the primary reason for financial losses to NEA. The last tariff adjustment was made in FY 2001/02. It is evident that tariff adjustment is a must for financial sustainability of NEA.

At the end of the FY 2008/09, total assets was valued at NRs. 80,377.50 million, an increase of NRs. 5,831.48 million (7.82%) as compared to previous years figure. In FY 2008/09, NRs. 28,950.00 million worth of capital expenditure spent in the completed projects was capitalized of which NRs. 25,950.00 million was from recently completed 70 MW Middle Maryangdi Hydro Electric Project (MMHEP). At the end of FY 2008/09, net property, plant and equipment valued at historical cost reached NRs. 78,678.89 million of which NRs. 3,663.70 million was received as Government equity, NRs. 6,628.00 million through GoN loan and NRs. 3,021.70 million was born by NEA during the review period. At the end of FY 2008/09, construction expenditure in ongoing projects stood at NRs. 18,054.38 million.

NEA´s total borrowing stood at NRs.58, 217.77 million as of end of FY 2008/09. In FY 2008/09, NEA paid NRs. 485.78 million for interest, NRs. 586.63 million for royalty and NRs. 579.31 million for repayment of loan to government.

There is a small improvement in collection rate in the review period in comparison to last year. Revenue collection in FY 2008/09 was about 92 % of the total sales as against 88 % in FY 2007/08. Dues with Municipalities have been cleared up to end of FY 2008/09 by writing off 50 % of the dues and rest being collected through Ministry of Local Development. However, dues of street light of different VDCs amounting to NRs.897.00 million is yet to be settled. Similarly, the public sector dues

still remain a serious problem in revenue collection. The receivable balances from VDCs, government offices and public institutions stood at approximately NRs. 487.20 million at the end of FY 2008/09. This is about 29.04 % of total receivables of NRs. 4,765.88 million. Hence the total receivables stood at 3.74 months of total sales.

NEA has initiated promoting various subsidiary and joint venture companies relating to generation and transmission business. Chilime Hydro Power Company Limited (CHPCL), already in commercial operation, and Upper Tamakoshi Hydropower Limited (UTKHPL), under construction, have been incorporated as subsidiary companies of NEA. Similarly, Power Transmission Company Nepal Limited (PTCN) was promoted as a joint venture company of NEA and IL & FS for taking up the development of transmission projects in Nepal including the cross boarder transmission links. A total of NRs. 1,363.01 has been invested in CHPL (NRs. 489.60 million) UTKHPL (NRs. 870.91 million) and PTCN (NRs. 2.5 million) till the end of FY 2008/09. Other investments of NEA include equity investment in Nepal Engineering Consultancy (NRs. 2.28 million), Khumbu Bijuli Co (NRs. 20.65 million), Salleri Chaylsa Hydro Electric Company (NRs. 11.63 million) and Butwal Power Company (Rs 8.86 million). In addition to this NRs 466.25 million was invested in Citizen Investment Trust (CIT) towards gratuity and pension liabilities up to FY 2008/09.

In the context of the financial losses in successive years and difficult cash flow situation, NEA faceed daunting task of managing huge budget deficit in FY 2008/09. However, in comparison to the proposed deficit budget of NRs. 4,383 million, NEA managed to bring down the deficit substantially. A budgetary support of NRs. 1,000 million for rural electrification by the Government of Nepal and receipt of payment against Municipalities dues for electricity sales of NRs. 980 million eased to a larger extent the task of managing the cash flow. Furthermore, NEA borrowed short term loan of NRs. 1,000 million from different commercial banks with interest rate ranging from 7.25 % to 7.75 % per annum.

Assessment of financial performance against the challenging task of improving supply situation for the excising customers and for population without access to electricity suggest that NEA needs to put in serious efforts to enhance efficiency in financial management and business practices. In this context, various initiatives have been taken for the improvement of financial health of NEA.

As a result of persistent request from NEA, GoN has revised the on lending interest rate from 10.25 % to 8.0 % and a new royalty calculation procedure has been established. This has resulted into a positive and a long term impact on financial health of NEA. Further GoN has agreed to make a due diligence study on financial health of NEA, review its existing capital structure and its impact on NEA's financial performance and explore an alternative financial restructuring plan. A separate committee has been formed by GoN in this regard in 2008/09, the recommendation of which is expected to come shortly.

The audit for the FY 2007/08 was carried out by the Office of the Auditor General in FY 2008/09. The Audit Report was made available to Donors as per the loan agreement. Similarly, Income Tax Return of the Income Year 2007/08 was filed with the concerned Authority under self assessment procedure. In FY 2008/09, due diligence audit of NEA was conducted by an independent professional in order to provide comfort to Upper Tamakoshi Hydro Power Limited's to the principal lender, Employees' Provident Fund.

During FY 2008/09, a Short Term Financial Improvement Action Plan, based on audit observation report of the previous years, was drawn and circulated to all business groups as well as to different units of corporate level for implementation. Notable achievements on various issues were recorded in FY 2008/09. Likewise, NEA board has issued a number of instructions to be implemented immediately for improving the overall performance of NEA.

NEA has different post employment benefit schemes. At present, the future liability in respect of gratuity, pension and accumulated leave is provided on estimated basis which is inconsistent with NAS/IAS.

In FY 2008/09, employees' personal data collection and updating work for actuarial valuation was completed. Procurement of consultancy service of actuarial professional has been initiated.

For the proper management of gratuity fund, a by law "Gratuity Fund Management and Operation Procedure 2008" was approved by NEA Board of Directors and a separate division under Administration has already been formed in order to manage the fund.

In the FY 2008/09, Pending audit remarks of NRs. 14.51 million, out of NRs. 35.37 million, was settled for the period FY 1973/74 to FY1993/94 fulfilling the target fixed by the GoN.

NEA management has also perceived the need for improvement in the financial management system and accounting practice for strengthening financial accounting and financial management decision support system to enhance financial performance of NEA. Accordingly, NEA has developed Oracle based Customized Accounting and Inventory System (CAIS), which is considered as a remarkable step in the computerization of accounts. The implementation of the CAIS is well underway; out of 147 accounting units, 119 units are using CAIS. This includes 96 accounting units using the inventory module. NEA is planning to adopt full automation in the near future by introducing new financial accounting system in ERP platform under the financial assistance of International Development Association to be implemented under Institutional strengthening Project.

A Technical Assistance (TA) has been approved by the World Bank to implement the strategy and road map to bring about desired changes in system and practices in financial management that includes strengthening its accounting system and internal audit system as recommended in a recent study under first phase of NEA Institutional Strengthening Project. Accounting framework reform and design, development, procurement, installation and rolling out of a new Financial Accounting System (FAS) along with required capacity building program will be implemented under this TA.

NEA Team Receiving Intercorporation Championship Trophy Awarded by Rt. Honorable Youth and Sports Minister, Ganesh Tiwari Nepali

Nepal Electricity Authority

Highlights of FY 2008/09

(NRs. in million)

DESCRIPTION	2009*	2008	INCREASE/DECREASE	
			Amount	Percent
Revenue:				
Net Sale of Electricity (M.NRs.)	15,220.87	15,041.49	179.38	1.19
Income from Other Services (M.NRs.)	991.78	934.66	57.12	6.11
Total Revenue (M.NRs.)	**16,212.65**	**15,976.15**	**236.50**	**1.48**
Operating Expenses:				
Generation Exps. (M.NRs.)	1,121.82	979.76	142.06	14.50
Power Purchase (M.NRs.)	8,423.09	7,437.04	986.05	13.26
Royalty (M.NRs.)	811.70	839.18	(27.48)	(3.27)
Transmission Expenses (M.NRs.)	318.84	274.85	43.99	16.01
Distribution Expenses (M.NRs.)	2,436.91	2,110.01	326.90	15.49
Administration Expenses (M.NRs.)	730.43	683.98	46.45	6.79
Depreciation Expenses (M.NRs.)	2,231.40	1,895.17	336.23	17.74
Deferred Revenue Expenditure (M.NRs.)	110.00	108.51	1.49	1.37
Total Operating Expenses (M.NRs.)	**16,184.19**	**14,328.50**	**1,855.69**	**12.95**
Operating Surplus (M.NRs.)	**28.46**	**1,647.65**	**(1,619.19)**	**(98.27)**
Interest on Long-Term Loans (M.NRs.)	2,809.46	2,274.37	535.09	23.53
Foreign exchange translation losses	800.24	484.10	316.14	65.30
Municipalities street light dues written off	980.00	-	980.00	-
Other Exps. (income) including prior year's Adj.	120.00	(149.35)	269.35	(180.35)
Net Income/(Loss) (M.NRs.)	**(4,681.24)**	**(961.47)**	**(3,719.77)**	**386.88**
Longterm Loans (M.NRs.)	58,217.77	51,368.84	6,848.93	13.33
Net Property, Plant & Equipment (M.NRs.)	78,678.88	52,030.28	26,648.60	51.22
Number of Consumers	1,670,610	1,516,883	153,727	10.13
Total Sales of Electricity (GWh)	2,308.91	2,310.32	(1.41)	(0.06)
Internal Sale/Utilised (GWh)	2,260.32	2,250.22	10.10	0.45
Annual Average Consumer's Consumption (kWh)+	1,352.99	1,483.45	(130.46)	(8.79)
Average Price of Electricity (NRs./kWh)	6.71	6.66	0.05	0.75
Peak Load Interconnected System (MW)	812.50	721.73	90.77	12.58
Total Available Electric Energy (GWh)	3,130.77	3,185.95	(55.18)	(1.73)
NEA Hydro Generation (GWh)	1,839.52	1,793.14	46.38	2.59
Thermal Generation (GWh)	9.06	9.17	(0.11)	(1.20)
Purchased Energy (GWh)-India	356.45	425.22	(68.77)	(16.17)
-Nepal(Internal)	925.74	958.42	(32.68)	(3.41)
Average Power Purchase Rate(NRs./kWh)++	6.57	5.37	1.20	22.35
Exported Energy (GWh)	48.59	60.10	(11.51)	(19.15)
Self Consumption (GWh)	30.70	30.80	(0.10)	(0.32)
Net System Losses (Percentage)	**25.27**	**26.52**	**(1.25)**	**(4.71)**

Note:
* Provisional figures; Subject to final audit.
+ On Internal sales.
++ On total purchase

Nepal Electricity Authority

Balance Sheet as of July 15, 2009

(NRs. in million)

Particular	*2009	2008	2007	2006	2005	2004	2003	2002	2001	2000
Capital and Liabilities										
Capital and Reserve										
Share Capital	32,273.67	28,609.97	26,382.18	23,113.10	20,161.80	18,215.85	16,976.87	16,601.30	15,360.30	14,634.00
Reserve and Accumulated Profit	(10,905.02)	(6,223.78)	(5,651.12)	(5,545.32)	(4,294.14)	(2,997.69)	(1,269.87)	696.51	1,626.96	1,600.09
Secured Long Term Loan	58,217.77	51,368.84	47,616.15	46,487.91	44,537.51	41,103.14	39,637.11	37,325.61	36,707.50	30,155.70
Deferred Tax	791.08	791.01	848.40	-	-	-	-	-	-	-
Grand Total	**80,377.50**	**74,546.04**	**69,195.61**	**64,055.69**	**60,405.17**	**56,321.30**	**55,344.11**	**54,623.42**	**53,694.76**	**46,389.79**
Asset										
Property, Plant & Equipment	78,678.89	52,030.28	51,781.76	51,743.38	52,166.56	51,415.14	50,094.75	51,080.91	28,238.26	25,106.49
Capital Work in Progess	18,054.38	35,699.71	29,145.19	21,991.50	16,060.40	10,619.55	8,655.48	4,837.80	23,640.00	18,947.00
Investment	2,320.19	1,620.19	882.05	819.90	777.00	713.01	613.01	553.00	517.10	521.10
Sub Total	**99,053.46**	**89,350.18**	**81,809.00**	**74,554.78**	**69,003.96**	**62,747.70**	**59,363.24**	**56,471.71**	**52,395.36**	**44,574.59**
Current Asset										
Inventories	1,856.41	1,800.13	1,498.45	1,354.80	1,372.70	1,048.01	1,017.22	1,058.10	960.90	982.30
Sundry Debtors and Other Receivable	4,765.88	5,721.08	5,151.41	4,088.00	3,697.70	3,735.71	3,380.20	2,284.90	1,678.50	1,525.50
Cash and Bank Balance	697.11	1,337.15	1,447.58	1,258.60	1,322.60	1,036.42	1,076.15	664.60	1,039.30	1,321.30
Prepaid,Advance, Loan and Deposits	2,417.15	2,319.72	2,225.53	2,293.90	2,098.60	2,063.27	2,216.91	3,314.40	2,634.90	1,932.00
Total Currents Asset	**9,736.55**	**11,178.08**	**10,322.97**	**8,995.30**	**8,491.60**	**7,883.41**	**7,690.48**	**7,322.00**	**6,313.60**	**5,761.10**
Less: Current Liabilities and Provision										
Sundry Creditors and Payables	27,599.46	25,482.01	22,119.00	19,144.39	16,768.69	13,856.61	11,593.69	8,852.79	5,070.80	4,488.50
Provision	881.38	731.38	693.13	709.80	697.70	681.48	753.31	1,244.20	1,042.90	988.90
Total Currrent Liabilities and Provision	**28,480.84**	**26,213.39**	**22,812.13**	**19,854.19**	**17,466.39**	**14,538.09**	**12,347.00**	**10,096.99**	**6,113.70**	**5,477.40**
Net Currents Assets	**(18,744.29)**	**(15,035.31)**	**(12,489.16)**	**(10,858.89)**	**(8,974.79)**	**(6,654.68)**	**(4,656.52)**	**(2,774.99)**	**199.90**	**283.70**
Deferred Expenditures (To be Written Off)	353.33	423.33	130.94	32.40	126.70	250.01	506.82	916.50	978.60	1,302.80
Inter Unit Balance(Net)	(285.00)	(192.16)	(255.17)	327.40	249.30	(21.73)	130.57	10.20	120.90	228.70
Total Def. Exp.& Inter.	**68.33**	**231.17**	**(124.23)**	**359.80**	**376.00**	**228.28**	**637.39**	**926.70**	**1,099.50**	**1,531.50**
Grand Total	**80,377.50**	**74,546.04**	**69,195.61**	**64,055.69**	**60,405.17**	**56,321.30**	**55,344.11**	**54,623.42**	**53,694.76**	**46,389.79**

* Provisional

Nepal Electricity Authority

Income Statement for the FY ending July 15, 2009

(NRs. in million)

Particulars	*2009	2008	2007	2006	2005	2004	2003	2002	2001	2000
Sales	15,220.87	15,041.49	14,449.73	13,331.90	12,605.20	11,874.70	11,012.60	9,476.20	8,160.80	6,856.00
Cost of sales	**10,675.45**	**9,530.83**	**9,034.55**	**8,332.70**	**7,462.41**	**6,765.40**	**5,348.00**	**5,886.70**	**4,480.70**	**2,190.26**
Generation	1,121.82	979.76	855.64	811.12	642.06	544.18	422.17	478.33	431.77	392.39
Power Purchase	8,423.09	7,437.04	6,967.57	6,391.95	5,760.31	5,415.62	4,087.01	4,659.32	3,348.92	1,151.32
Royalty	811.70	839.18	970.46	897.50	844.11	606.10	660.22	591.05	562.71	524.82
Transmission	318.84	274.85	240.88	232.13	215.93	199.50	178.60	158.00	137.30	121.73
Gross profit	**4,545.42**	**5,510.66**	**5,415.18**	**4,999.20**	**5,142.79**	**5,109.30**	**5,664.60**	**3,589.50**	**3,680.10**	**4,665.74**
Other income	991.78	934.66	1,016.61	639.90	617.50	671.40	512.50	459.60	593.10	356.40
Distribution Expenses	2,436.91	2,110.01	1,834.39	1,703.70	1,484.20	1,376.10	1,308.60	1,174.40	982.22	711.53
Administrative Expenses	730.43	683.98	479.59	419.50	622.40	489.10	536.10	447.40	850.08	703.47
Profit from operation	**2,369.86**	**3,651.33**	**4,117.81**	**3,515.90**	**3,653.69**	**3,915.50**	**4,332.40**	**2,427.30**	**2,440.90**	**3,607.14**
Interest	2,809.46	2,274.37	2,385.41	3,050.90	3,079.80	2,991.50	2,973.40	1,395.50	1,188.20	1,244.30
Depreciation	2,231.40	1,895.17	1,856.47	1,816.90	1,733.50	1,686.00	1,656.70	1,420.10	1,119.30	948.80
(Profit) loss on foreign Exchange	800.24	484.10	(493.39)	42.70	(230.00)	59.10	-	271.60	-	-
Street light dues written off	980.00	-	-	-	-	-	-	-	-	-
Provision for losses on property, plant & equipment	70.00	60.00	60.00	65.00	40.00	-	191.50	37.00	-	-
Deferred revenue expenditure writen off	110.00	108.51	42.56	105.40	123.30	320.10	411.10	512.50	426.90	440.80
Sub total	**7,001.10**	**4,822.15**	**3,851.05**	**5,080.90**	**4,746.60**	**5,056.70**	**5,232.70**	**3,636.70**	**2,734.40**	**2,633.90**
Profit (loss) from operation in the current year	***(4,631.24)***	***(1,170.82)***	***266.76***	***(1,565.00)***	***(1,092.91)***	***(1,141.20)***	***(900.30)***	***(1,209.40)***	***(293.50)***	***973.24***
Prior years (Income) Expenses	50.00	(151.96)	(47.44)	(297.20)	219.90	344.90	444.40	492.00	291.60	(216.70)
Net profit (loss) before tax	**(4,681.24)**	**(1,018.86)**	**314.20**	**(1,267.80)**	**(1,312.81)**	**(1,486.10)**	**(455.90)**	**(717.40)**	**(1.90)**	**756.50**
Provision for Tax	-	-	-	-	-	274.20	1,497.80	143.30	49.10	571.40
Deferred Tax Expenses (Income)	-	(57.39)	73.42	-	-	-	-	-	-	-
Net profit (loss) after tax	**(4,681.24)**	**(961.47)**	**240.78**	**(1,267.80)**	**(1,312.81)**	**(1,760.30)**	**(1,953.70)**	**(860.70)**	**(51.00)**	**185.10**
Balance of profit as per last account	(7,631.43)	(6,649.96)	(6,095.81)	(4,808.01)	(3,475.20)	(1,694.90)	278.90	1,159.60	1,230.60	1,065.30
Prior years Deferred Tax Expenses	-	-	774.93	-	-	-	-	-	-	-
Total profit Available for appropriation	(12,312.67)	(7,611.43)	(6,629.96)	(6,075.81)	(4,788.01)	(3,455.20)	(1,674.80)	298.90	1,179.60	1,250.40
Insurance fund	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00
Profit (loss) transferred to balance sheet	**(12,332.67)**	**(7,631.43)**	**(6,649.96)**	**(6,095.81)**	**(4,808.01)**	**(3,475.20)**	**(1,694.90)**	**278.90**	**1,159.60**	**1,230.60**

* Provisional

Accounting Policies

1. Basis of preparation of Financial Statements

The financial statements have been prepared on the basis of historical cost convention in accordance with the generally accepted accounting principles.

The financial statements comply with Nepal Accounting Standards (NAS) and presentational requirement of the Companies Act 2063.

2. Revenue from Sale of Electricity

(i) Revenue from sale of electricity is recognized at the time of raising of bills on the customers as per the billing cycle. Revenue from the billing cycle date up to 31 Ashad (15 July) has been accrued taking average rate. Revenue from sale of electricity is shown net of rebate.

(ii) Rebate and surcharge for delayed payments are accounted on cash basis.

3. Income from Other Services

(i) Interest on investments and lease rent are recognized on accrual basis.

(ii) Dividend on investment in shares is recognized when received.

(iii) Revenue from other services is recognized on cash basis.

(iv) Revenue from services provided by Engineering Services are accounted for on cash basis on the completion of the relevant job.

4. Property, Plant and Equipment

Property plant and equipment are stated at cost of acquisition or cost of construction less accumulated depreciation. The cost of acquisition, construction/ erection include interest on loans related to the period of construction/erection up to the date of completion of the project, along with other incidental costs and charges attributable to bringing the asset to its working condition for its intended use. The incidental costs include proportionate overheads relating to the following offices at the rates given below:

(a)	Planning	50%
(b)	Distribution and Consumer	10%
(c)	Engineering	50%
(d)	Finance and Administration	10%

5. Foreign Currency Loans

Liabilities on foreign currency loans which remained unpaid at the year end are converted at the year end exchange rates. The profit/loss arising there from is recognized as income or expenses in the Income Statement.

6. Contribution from Customer/ Local Authority

Contribution from customer or local authorities for property plant and equipment are shown as capital reserve. An amount as depreciation of the contributed amount for the respective assets is charged on capital reserve.

7. Investments in Shares

Investment in the shares of subsidiary and other companies held for long term are stated at cost.

8. Depreciation

Depreciation is provided on all categories of property, plant and equipment on straight line basis which reflects the estimated useful lives of the assets.

The rate of depreciation on property, plant and equipment is as follows

S. N.	Assets	Historical Cost Basis
1	Land	-
2	Buildings	2.00%
3	Hydro Electric Structures	2.00%-3.00%
4	Hydro Electric Plant & Machinery	3.00%
5	Internal Combustion on plant & machinery	2.50%
6	Transmission lines (66 kV, 132 kV and above)	3.00%
7	Transmission lines (33 kV)	3.00%
8	Transmission Substations	3.00%
9	Distribution system (including below 11 kV Transmission lines)	3.00%-4.00%
10	Solar Power	3.00%
11	Meter & mobile plant metering equipment	10.00%
12	Consumer Services	7.00%
13	Public lighting	3.00%
14	Vehicles, tools and instruments, furniture and fixtures.	20.00%
15	Office Equipment	15.00%
16	Miscellaneous properties	50.00%
17	Additions during the year	At applicable rates for half year

9. Inventories

Inventories are valued at cost, using the weighted average method.

10. Accounts Receivable

Accounts receivable are stated at book values, less provision as may be considered appropriate by the management.

11. Deferred Revenue Expenditure

Certain expenditure incurred on training, investigation, survey, software development, feasibility studies of infrastructure projects and major overhauling etc. which are expected to generate benefits over a period of time, are treated as deferred revenue expenditures and written off over a period of five years, including the year in which the said expenditures are incurred.

12. Employees Benefits

Salary, wages, allowances, overtime, paid annual leave and electricity facility are accrued in the financial year in which the services are rendered by the employees. NEA's contributions to provident fund are charged to income statement. The provision for Pension and Gratuity is created by 15 % of annual salary less actual amount paid during the year. If any amount appears short fall, then additional provision is made. Liability on account of accumulated home and sick leave has been provided for on an estimated basis to cover the liability. Liability on account of medical reimbursement continues to be accounted for on cash basis.

13. Insurance Fund

Insurance fund is created by setting aside a sum of Rs. 20 million every year irrespective of profit/loss for the year to cover any loss of property, plant and equipment, in case of any eventuality.

14. Prior year's figures/ Regrouping

Previous year's figures have been reclassified/ regrouped, where necessary, to make them comparable with current year's figures.

Tariff Rates

(Billing Effective since September 17, 2001)

1:	DOMESTIC CONSUMERS			
	A	Minimum Monthly Charge : METER CAPACITY	Minimum Charge (NRs.)	Exempt (kWh)
		Up to 5 Ampere	80.00	20
		15 Ampere	299.00	50
		30 Ampere	664.00	100
		60 Ampere	1394.00	200
		Three phase supply	3244.00	400
	B	Energy Charge:		
		Up to 20 units	Rs. 4.00 per unit	
		21 - 250 units	Rs. 7.30 per unit	
		Over 250 units	Rs. 9.90 per unit	
2:	TEMPLES			
	Energy Charge		Rs. 5.10 per unit	
3:	STREET LIGHTS			
	A	With Energy Meter	Rs. 5.10 per unit	
	B	Without Energy Meter	Rs. 1860.00 per kVA	
4:	TEMPORARY SUPPLY			
	Energy Charge		Rs. 13.50 per unit	
5:	COMMUNITY WHOLESALE CONSUMER			
	Energy Charge		Rs. 3.50 per unit	
6:	INDUSTRIAL		Monthly Demand Charge (Rs./kVA)	Energy Charge (Rs./unit)
	A	Low Voltage (400/230 Volt)		
		(a) Rural and Cottage	45.00	5.45
		(b) Small Industry	90.00	6.60
	B	Medium Voltage (11 kV)	190.00	5.90
	C	Medium Voltage (33 kV)	190.00	5.80
	D	High Voltage (66 kV and above)	175.00	4.60
7:	COMMERCIAL			
	A	Low Voltage (400/230 Volt)	225.00	7.70
	B	Medium Voltage (11 kV)	216.00	7.60
	C	Medium Voltage (33 kV)	216.00	7.40
8:	NON-COMMERCIAL			
	A	Low Voltage (400/230 Volt)	160.00	8.25
	B	Medium Voltage (11 kV)	180.00	7.90
	C	Medium Voltage (33 kV)	180.00	7.80

9:	IRRIGATION				
	A	Low Voltage (400/230 Volt)		-	3.60
	B	Medium Voltage (11 kV)		47.00	3.50
	C	Medium Voltage (33 kV)		47.00	3.45
10:	WATER SUPPLY				
	A	Low Voltage (400/230 Volt)		140.00	4.30
	B	Medium Voltage (11 kV)		150.00	4.15
	C	Medium Voltage (33 kV)		150.00	4.00
11:	TRANSPORTATION				
	A	Medium Voltage (11 kV)		180.00	4.30
	B	Medium Voltage (33 kV)		180.00	4.25

TIME OF DAY (TOD) TARIFF RATES

		Consumer Category &	Monthly Demand	Energy Charge (Rs./unit)		
		Supply Level	Charge (Rs./kVA)	Peak Time	Off-Peak	Normal
				18:00-23:00	23:00-6:00	6:00 - 18:00
A:	High Voltage (66 kV and Above)					
	1	Industrial	175.00	5.20	3.15	4.55
B:	Medium Voltage (33 kV)					
	1	Industiral	190.00	6.55	4.00	5.75
	2	Commecial	216.00	8.50	5.15	7.35
	3	Non-Commercial	180.00	8.85	5.35	7.70
	4	Irrigation	47.00	3.85	2.35	3.40
	5	Water Supply	150.00	4.55	2.75	3.95
	6	Transportation	180.00	4.70	2.95	4.15
	7	Street Light	52.00	5.70	1.90	2.85
C:	Medium Voltage (11 kV)					
	1	Industiral	190.00	6.70	4.10	5.85
	2	Commecial	216.00	8.65	5.25	7.55
	3	Non-Commercial	180.00	9.00	5.45	7.85
	4	Irrigation	47.00	3.95	2.40	3.45
	5	Water Supply	150.00	4.60	2.80	4.10
	6	Transportation	180.00	4.80	3.00	4.25
	7	Street Light	52.00	6.00	2.00	3.00

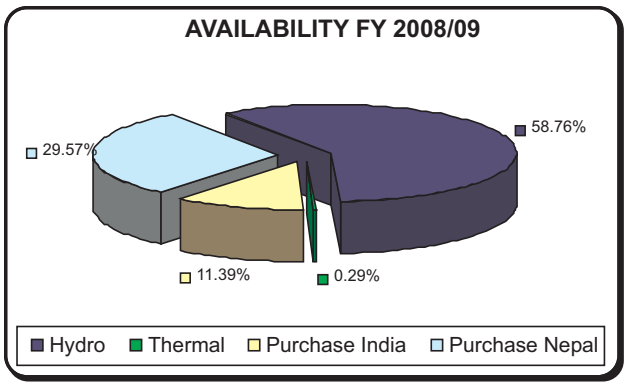
Note:

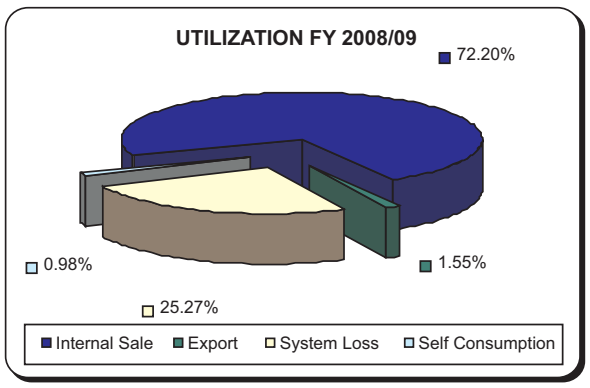
a) If demand meter reads kilowatts (kW) then kVA = kW/0.8

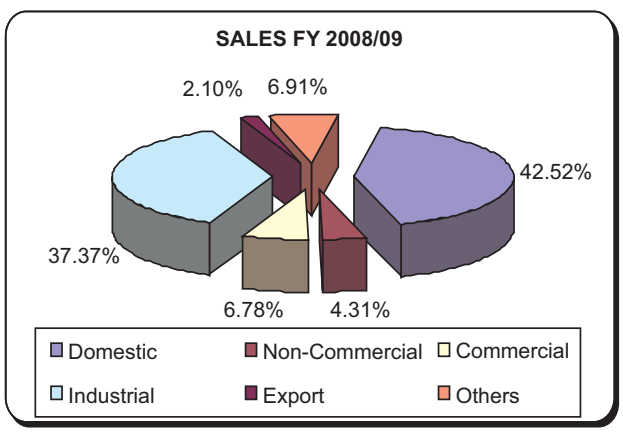
b) 10% discount in the total bill amount will be given to the Government of Nepal approved Industrial District

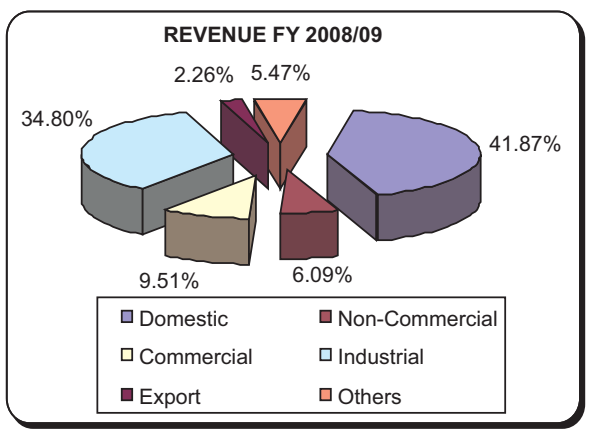
c) 25% discount in the total bill amount will be given to the Nepal Government Hospital and Health Centers (except residential complex)

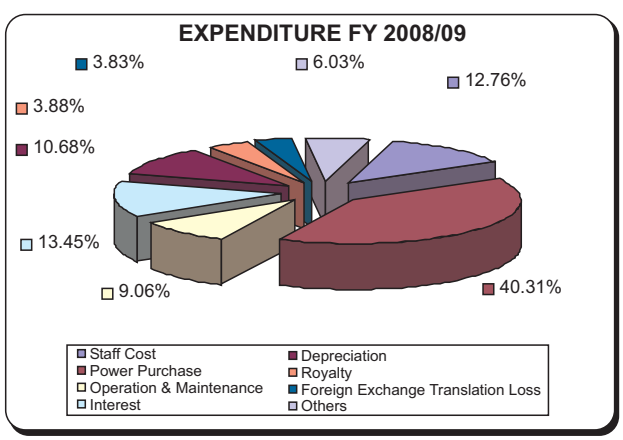
Statistics, Schematics and Maps

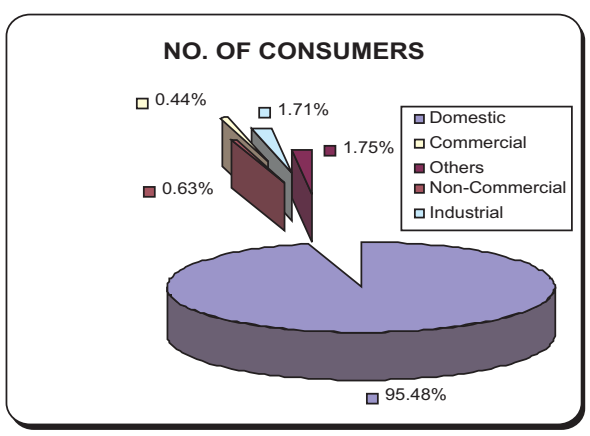




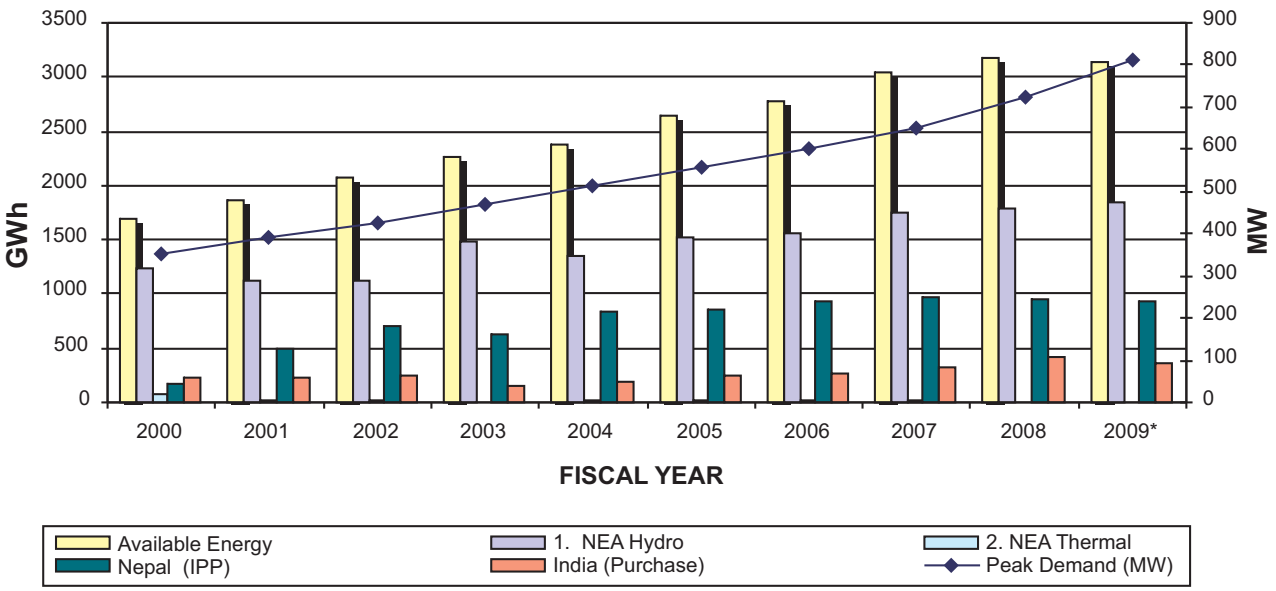








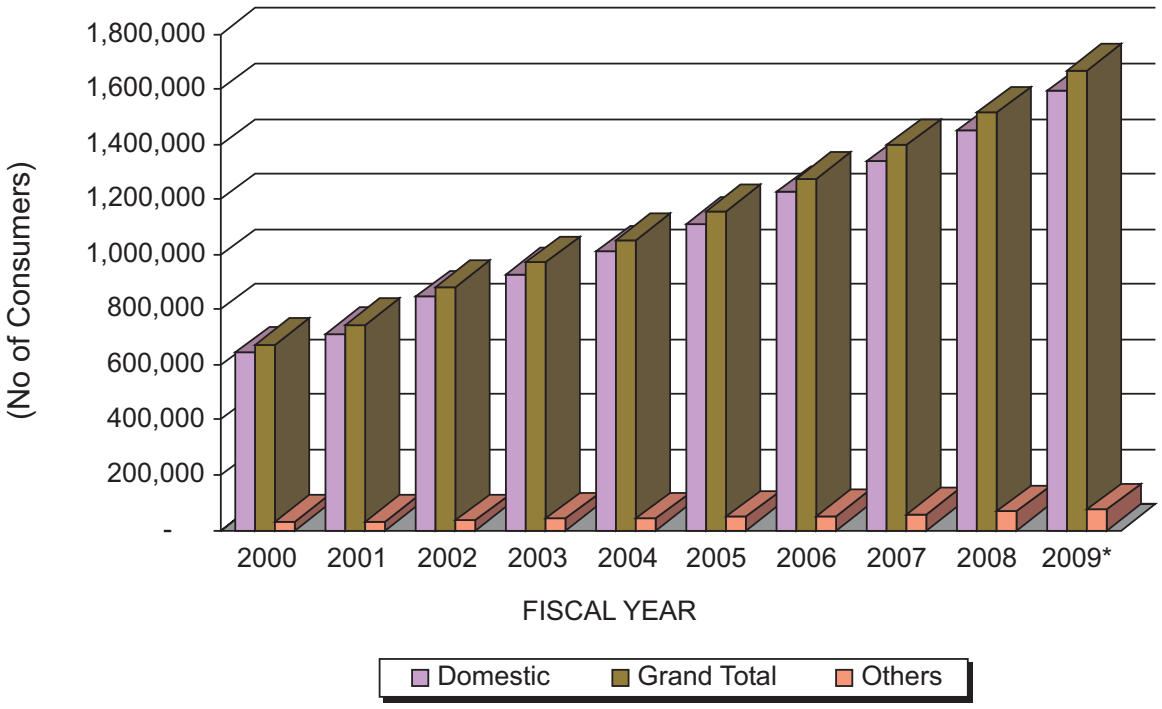
Total Energy Available & Peak Demand



Particulars	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009*
Peak Demand (MW)	351.9	391	426	470.33	515.24	557.53	603.28	648.39	721.73	812.50
Available Energy (GWh)	1701.45	1868.42	2066.45	2261.13	2380.89	2642.75	2780.92	3051.82	3185.95	3130.77
1. Hydro	1233.22	1113.36	1113.13	1478.04	1345.46	1522.9	1568.55	1747.42	1793.14	1839.52
2. Thermal	66.73	27.14	17.01	4.4	9.92	13.669	16.1	13.31	9.17	9.06
3. Purchase (Total)	401.5	727.93	936.31	778.69	1025.519	1106.184	1196.27	1291.09	1383.64	1282.19
India	232.2	226.54	238.29	149.88	186.675	241.389	266.23	328.83	425.22	356.45
Nepal	169.3	501.38	698.02	628.81	838.844	864.795	930.04	962.26	958.42	925.74

Note :- Peak demand is for all areas covered by integrated system including supply to India
* Provisional figures; Subject to final audit

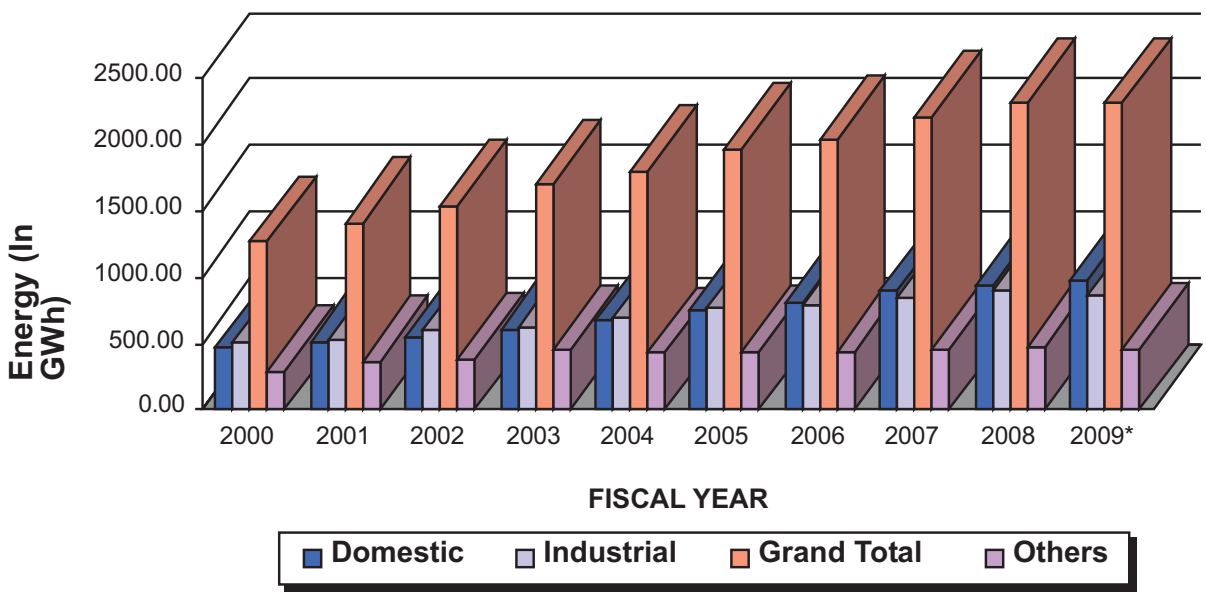
Growth Of Consumers



Particulars	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009*
Domestic	643,314	713,307	848,540	930,554	1,010,719	1,113,740	1,227,295	1,339,253	1,450,254	1,595,015
Non-Commercial	7,815	7,643	8,629	9,722	9,865	9,950	10,010	10,215	10,556	10,518
Commercial	3,096	3,386	3,898	5,317	5,454	6,000	6,170	6,000	6,052	7,305
Industrial	16,179	17,701	18,789	19,833	21,374	22,500	23,020	24,089	25,548	28,559
Water Supply	232	236	251	305	352	370	380	414	434	584
Irrigation	967	1,083	1,353	1,721	2,557	3,400	6,450	13,183	18,614	22,335
Street Light	932	1,012	1,048	1,229	1,437	1,500	1,550	1,608	1,961	2,339
Temporary Supply	144	141	172	138	150	155	165	210	300	403
Transport	47	37	49	48	48	50	54	39	38	42
Temple	1,248	1,441	1,800	1,738	1,959	2,150	2,290	2,628	2,746	2,911
Community Sales	-	-	1	1	15	35	58	169	375	594
Total (Internal Sales)	673,974	745,987	884,530	970,606	1,053,930	1,159,850	1,277,442	1,397,808	1,516,878	1,670,605
Bulk Supply (India)	5	5	5	5	5	5	5	5	5	5
Grand Total	**673,979**	**745,992**	**884,535**	**970,611**	**1,053,935**	**1,159,855**	1,277,447	1,397,813	1,516,883	1,670,610

Note : * Provisional figures; subject to final audit.

Electricity Sales

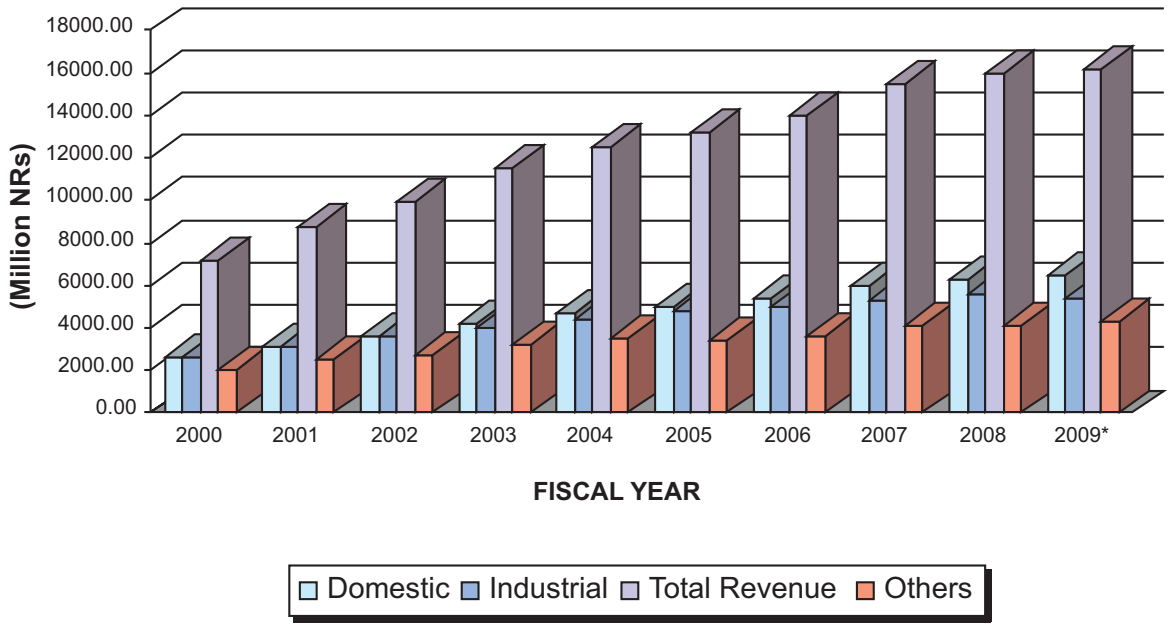


(in GWh)

Category	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009*
Domestic	467.05	518.36	557.94	617.11	676.37	758.19	805.72	893.27	931.35	981.74
Non-Commercial	63.59	73.16	78.22	80.74	83.01	100.54	95.29	100.52	109.93	99.58
Commercial	81.82	94.17	90.43	92.74	108.12	109.31	120.30	141.69	154.38	156.48
Industrial	508.36	520.63	596.68	629.51	689.80	764.00	785.55	849.13	901.09	862.95
Water Supply & Irrigation	15.74	28.60	29.28	29.98	31.67	49.98	45.50	47.96	46.86	48.26
Street Light	31.74	36.98	39.52	45.80	55.20	54.86	63.24	66.90	70.26	68.71
Temporary Supply	0.93	0.83	0.28	0.35	0.25	0.39	0.87	1.26	0.70	1.01
Transport	2.68	5.89	5.64	5.53	5.47	5.80	5.65	6.31	5.88	5.36
Temple	2.37	2.51	2.48	2.81	4.11	4.58	4.77	4.78	5.12	4.81
Community Sales	-	-	5.72	4.74	5.58	6.03	9.18	15.51	24.65	31.42
Total (Internal Sales)	1174.27	1281.13	1400.46	1504.57	1654.00	1853.69	1936.07	2127.33	2250.22	2260.32
Bulk Supply (India)	95.00	126.00	133.86	192.25	141.23	110.70	96.55	76.87	60.10	48.59
Grand Total	**1269.27**	**1407.13**	**1534.32**	**1696.82**	**1795.23**	**1964.39**	**2032.62**	**2204.20**	**2310.32**	**2308.91**

Note : * Provisional figures; subject to final audit.

Revenue

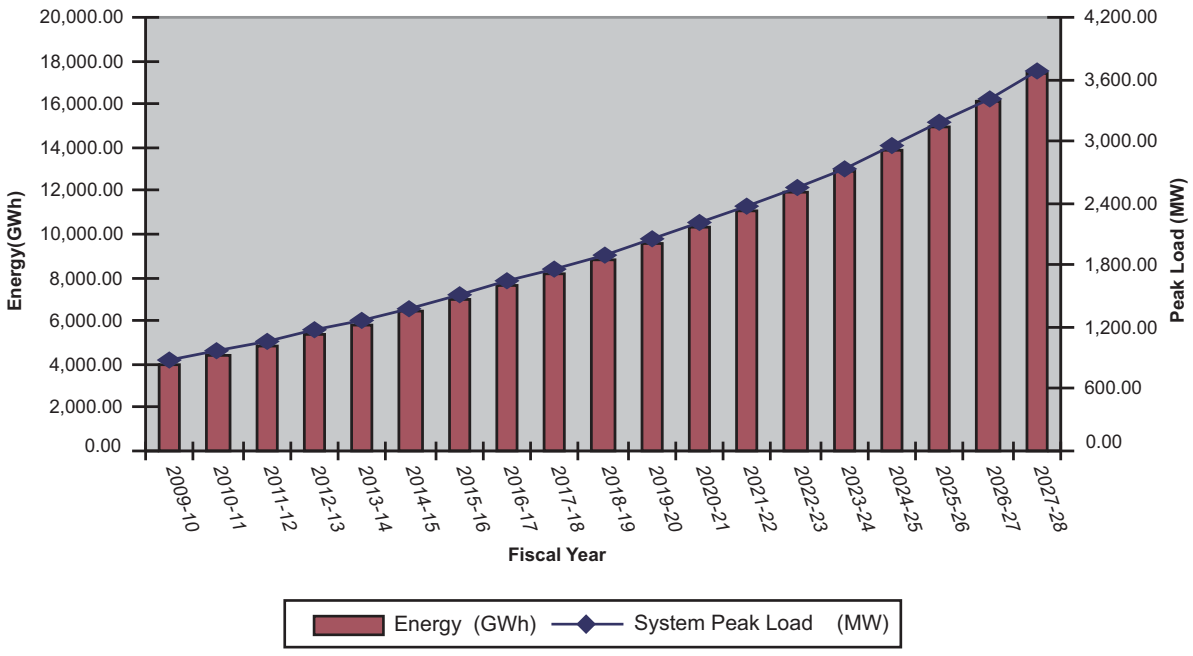


(in million NRs)

Category	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009*
Domestic	2622.03	3161.38	3641.43	4249.81	4701.07	4987.04	5405.12	6021.40	6297.65	6489.29
Non-Commercial	527.40	835.78	722.12	783.99	816.03	862.37	881.73	940.20	982.08	944.02
Commercial	661.58	555.62	818.75	894.91	986.32	1012.66	1081.26	1288.05	1399.51	1474.00
Industrial	2599.34	3086.10	3608.13	4039.65	4380.89	4799.74	4978.69	5300.91	5544.80	5393.43
Water Supply & Irrigation	95.65	120.90	138.68	148.53	154.91	171.57	197.96	214.18	204.67	218.30
Street Light	149.95	176.05	200.74	246.79	329.31	354.10	422.35	454.85	467.31	452.84
Temporary Supply	13.39	6.77	3.63	4.74	3.46	5.06	11.18	17.36	10.51	13.88
Transport	18.31	27.73	27.90	29.29	28.92	30.72	29.78	31.65	33.70	27.73
Temple	9.70	11.45	12.16	14.24	26.38	29.17	24.42	26.03	26.38	24.53
Community Sales	-	-	-	16.59	20.09	24.03	23.94	53.70	64.22	110.90
Total (Internal Sales)	6697.35	7981.78	9173.53	10428.53	11447.39	12276.46	13056.43	14348.33	15030.83	15148.92
Bulk Supply (India)	327.80	396.06	514.12	808.96	673.93	609.51	579.33	428.93	361.14	350.45
Gross Revenue	**7025.16**	**8377.83**	**9687.65**	**11237.49**	**12121.32**	**12885.97**	**13635.76**	**14777.26**	**15391.97**	**15499.37**
Net Income from Other Services	187.33	376.09	248.17	287.64	424.75	336.70	336.09	689.08	584.18	713.28
Total Revenue	**7212.49**	**8753.92**	**9935.82**	**11525.13**	**12546.07**	**13222.67**	**13971.85**	**15466.34**	**15976.15**	**16212.65**

Note : * Provisional figures; subject to final audit.

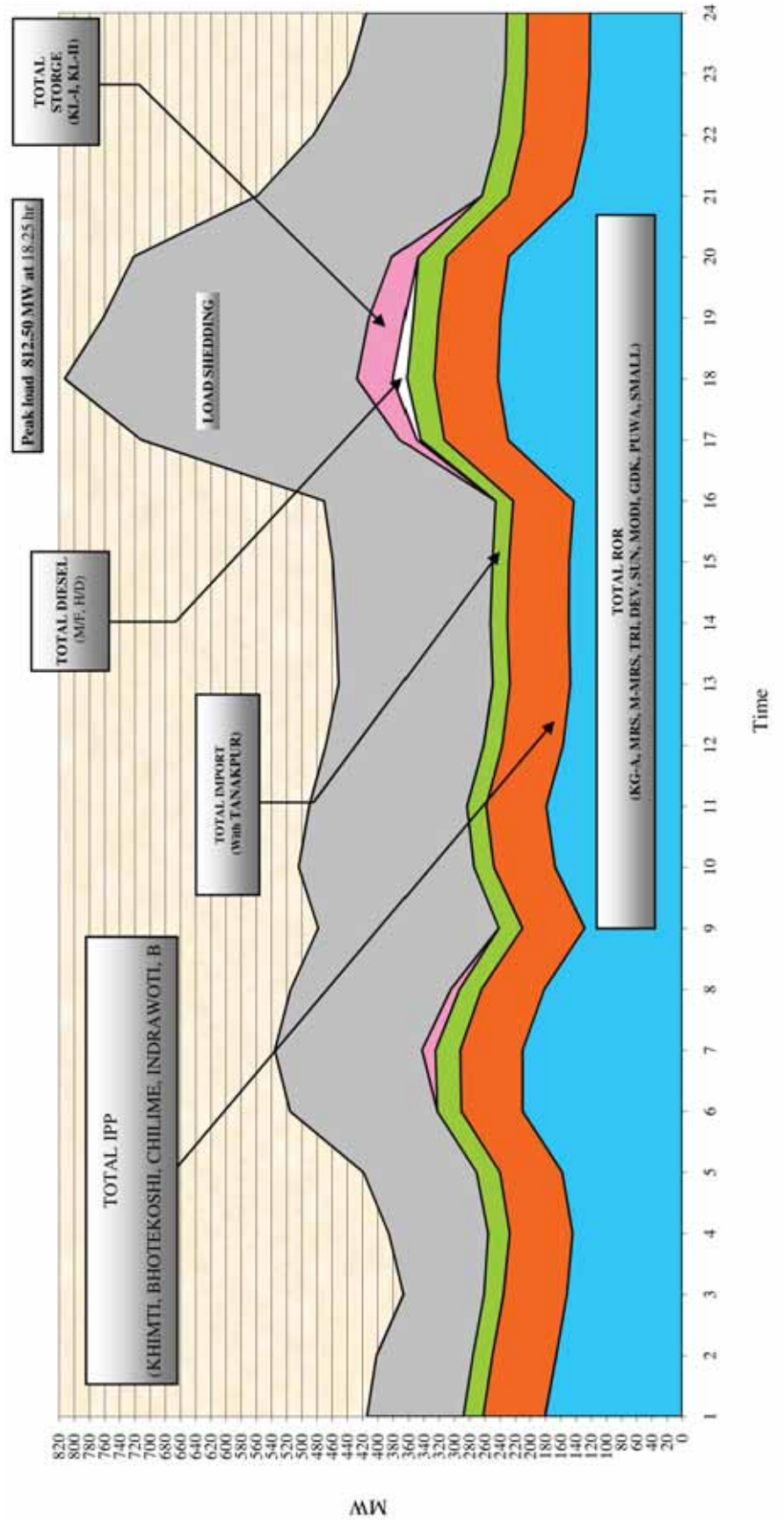
Load Forecast



Year	Energy (GWh)	Peak Load (MW)
2009-10	4018.4	878.8
2010-11	4430.7	967.1
2011-12	4851.3	1056.9
2012-13	5349.6	1163.2
2013-14	5859.9	1271.7
2014-15	6403.8	1387.2
2015-16	6984.1	1510.0
2016-17	7603.7	1640.8
2017-18	8218.8	1770.2
2018-19	8870.2	1906.9
2019-20	9562.9	2052.0
2020-21	10300.1	2206.0
2021-22	11053.6	2363.0
2022-23	11929.1	2545.4
2023-24	12870.2	2741.1
2024-25	13882.4	2951.1
2025-26	14971.2	3176.7
2026-27	16142.7	3418.9
2027-28	17403.6	3679.1

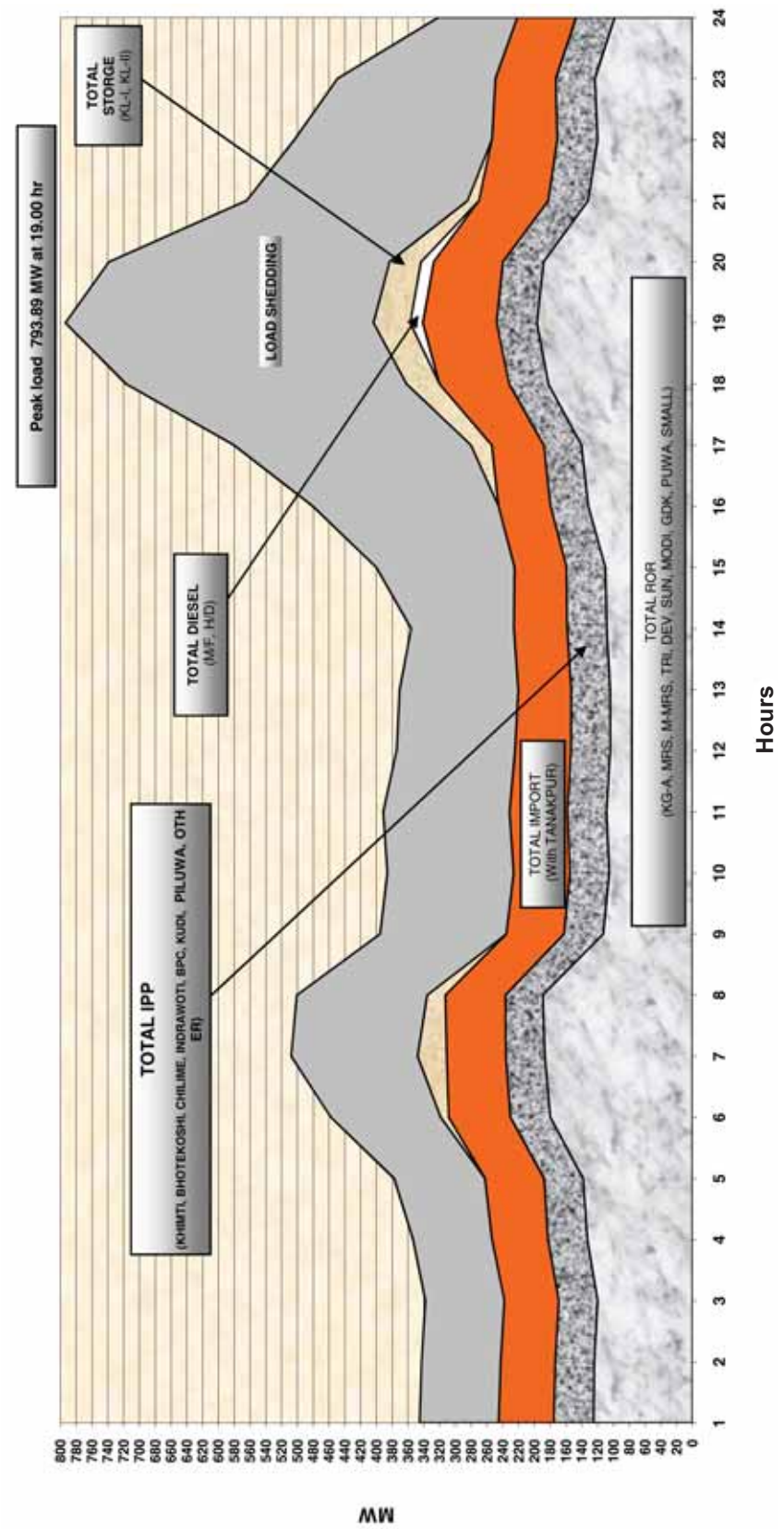
System Load Curve of Peak Day of the Year

Jan. 20, 2009 (Magh 7, 2065), Tuesday



System Load Curve of Typical Dry Season

March 8, 2009 (Falgun 25, 2065), Sunday



Power Development of Nepal

POWER PROJECTS

EXISTING

Major Hydropower Stations

1 Middle Marsyangdi	70,000	kW
2 KaliGandaki "A"	144,000	kW
3 Marsyangdi	69,000	kW
4 Kulekhani No. 1	60,000	kW
5 Kulekhani No. 2	32,000	kW
6 Trisuli	24,000	kW
7 Gandak	15,000	kW
8 Modi Khola	14,800	kW
9 Devighat	14,100	kW
10 Sunkosi	10,050	kW
11 Puwakhola	6,200	kW
	459,150	

Small Hydropower Stations

12 Chatara	3,200	kW
13 Panauti	2,400	kW
14 Tatopani/Myagdi(i) & (II)	2,000	kW
15 Seti (Pokhara)	1,500	kW
16 Phewa (Pokhara)	1,000	kW
17 Tinau (Butwal)	1,024	kW
18 Sundarijal	640	kW
19 Pharping***	500	kW
20 Jomsom**	240	kW
21 Baglung	200	kW
22 Khandbari**	250	kW
23 Phidim**	240	kW
24 Sunnaiyagad (Baitadi)	200	kW
25 Doti	200	kW
26 Ramechhap	150	kW
27 Terhathum**	100	kW
	13,844	kW
Total	472,994	kW

Small Hydropower Stations Existing (Isolated)

1 Dhankuta***	240	kW
2 Jhupra (Surkhet)***	345	kW
3 Gorkhe (Ilam)***	64	kW
4 Jumla **	200	kW
5 Dhading***	32	kW
6 Syangja***	80	kW
7 Helambu	50	kW
8 Darchula (I) & (II)**	300	kW
9 Chame**	45	kW
10 TapleJung**	125	kW
11 Manang**	80	kW
12 Chaurjhari (Rukum)**	150	kW
13 Syarpudaha (Rukum)**	200	kW
14 Bhojpur**	250	kW
15 Bajura	200	kW
16 Bajhang**	200	kW
17 Arughat Gorkha	150	kW
18 Okhaldhunga**	125	kW
19 Rupalgad (Dadeldhura)	100	kW
20 Achham	400	kW
21 Dolpa	200	kW
22 Kalikot	500	kW
23 Heldung (Humla)	500	kW
Total	4,536	kW

Diesel Power Stations

Existing

1 Duhabi Multifuel	39,000	kW
2 Hetauda	14,410	kW
Total	53,410	kW

Solar Power Stations

Existing

1 Simikot	50	kW
2 Gamgadhi	50	kW
Total	100	

Total Major Hydro (NEA) - Grid Connected	472,994	kW
Total Small Hydro (NEA) - Isolated	4,536	kW
Total Hydro (NEA)	477,530	kW
Total Hydro (IPP)	158,315	kW
Total Hydro (Nepal)	635,845	kW
Total Thermal (NEA)	53,410	kW
Total Solar (NEA)	100	kW
Total Installed Capacity (Including Private & Others)	689,355	kW

Under Construction

1 Upper Tamakoshi	456,000	kW
2 Chamelia	30,000	kW
3 Kulekhani III	14,000	kW
4 Gamgad	400	kW
Total	500,400	kW

Planned & Proposed

1 Upper Trishuli-3'A'	60,000	kW
2 Upper Trishuli-3'B'	37,000	kW
3 Budhi Gandaki	600,000	kW
4 Rahughat	27,000	kW
5 Upper Seti (Storage)	128,000	kW
6 Seti Trishuli (Storage)	128,000	kW
7 Upper Modi 'A'	42,000	kW
8 Nalsyagu Gad (storage project)	400,000	kW
Total	1,422,000	kW

NOTE
* Line length within Nepal portion
** Leased to the Private sector
*** Not in normal operation

TRANSMISSION LINES

EXISTING

132 kV Transmission Line

	Length (KM)	Type of Ckts
1 Anarmani-Duhabi	85	Single
2 Kusha-Katiya(India)	19	Single
3 Duhabi-Hetauda	282	Double
4 Hetauda-KL2 P/S	8	Single
5 Bharatpur-Marsyangdi P/S	25	Single
6 Marsyangdi P/S-Suichatar	84	Single
7 Suichatar-KL2 P/S	34	Single
8 Suichatar-New Bhaktapur	26.9	Single
9 New Bhaktapur-Lamosangu	48	Double
10 Lamosangu-Khimti P/S	46	Single
11 Hetauda-Gandak P/S	154	Single
12 Bharatpur-Pokhara	97	Single
13 Bardghat-Butwal	43	Double
14 Butwal-KGA P/S	58	Double
15 KGA P/S-Lekhnath	48	Single
16 Pokhara-Modikhola P/S	37	Single
17 Butwal-Tanakpur P/S	407	Single
18 Pathalaiya-New Parwanipur	17	Double
19 Marsyangdi -M. Marsyangdi	44	Single
Total	1,562.9	

66 kV Transmission Line

1 Chilime P/S-Devighat P/S	43.56	Single
2 Trisuli P/S-Balaju	29	Double
3 Devighat P/S-Balaju	30	Single
4 Devighat P/S-New Chabel	33	Single
5 Balaju-Lainchor	2.3	Single
6 Balaju-KL1 P/S	36	Double
7 KL 1 P/S-Birgunj	72	Double
8 Suichatar-Teku	4.1	Single
9 Suichatar-New Patan	4	Double
10 Teku-K3 (underground)	3.5	Singlecore
11 Suichatar-K3	6.9	Single
12 New Patan-New Baneswor	2.8	Single
13 Bhaktapur-New Chabel	12	Single
14 New Baneswor-Sunkoshi P/S	61	Single
15 Devighat-Trishuli	4.56	Single
16 Indrawati- Panchkhal	10	Single
Total	354.72	

Under Construction

220 kV Transmission Line

1 220 kV Khimti-Dhalkebar	75	Single
2 220 kV Hetauda-Bharatpur	72	Double
Total	147	

132 kV Transmission Line

1 132 kV Thankot-Chapagaon	28.5	Double
2 132 kV Chameliya-Attaria	129	Single
Total	157.5	

Planned & Proposed

	Length (KM)	Type of Ckts
1 220 kV New Marshyangdi-Matatirtha	85	Double
2 132 kV Singati-Lamosangu	40	Double
3 132 kV Kabeli-Damak	90	Double
4 132 kV Middle Marshyangdi-Dumre- Marshyangdi	44	Double
5 133 kV Dumree-Damauli	18	Single
6 132 kV Butwal-Kohalpur Second Circuit	208	D/C Tower
7 220 kV Bharatpur-Bardghat	73	Double
8 132 kV Hetauda-Kulekhani-II-Siuchatar Second Circu	44	D/C Tower
9 220 kV New Hetauda-Dhalkebar-Duhabi	283	Double
10 220 kV New Hetauda-Matatirtha	45	Double
11 220 kV Bardghat-New Butwal	30	Double
12 220 kV Trishuli-Thankot	54	Double
13 132 kV Kohalpur-Attariya Second Circuit	200	D/C Tower
Total	1,214	

NEA Joint Venture under Public Private Partnership Program

Under Construction

1 400 kV Dhalkebar-Muzzaffarpur Cross Border Line*	45	Double

Planned & Proposed

1 400 kV Duhabi-Purnia Cross Border Line*	22	Double
2 400 kV New Butwal- Gorakhpur Cross Border Line*	25	Double
3 66 kV Sanjen-Chilime	12	Double
Total	59	

Sub-Station Capacity Existing

1 132/11 kV	186.00	MVA
2 132/33 kV	470.50	MVA
3 132/66 kV	248.40	MVA
4 66/33 kV	25.00	MVA
5 66/11 kV	485.20	MVA
Total	1415.10	MVA

Under Construction

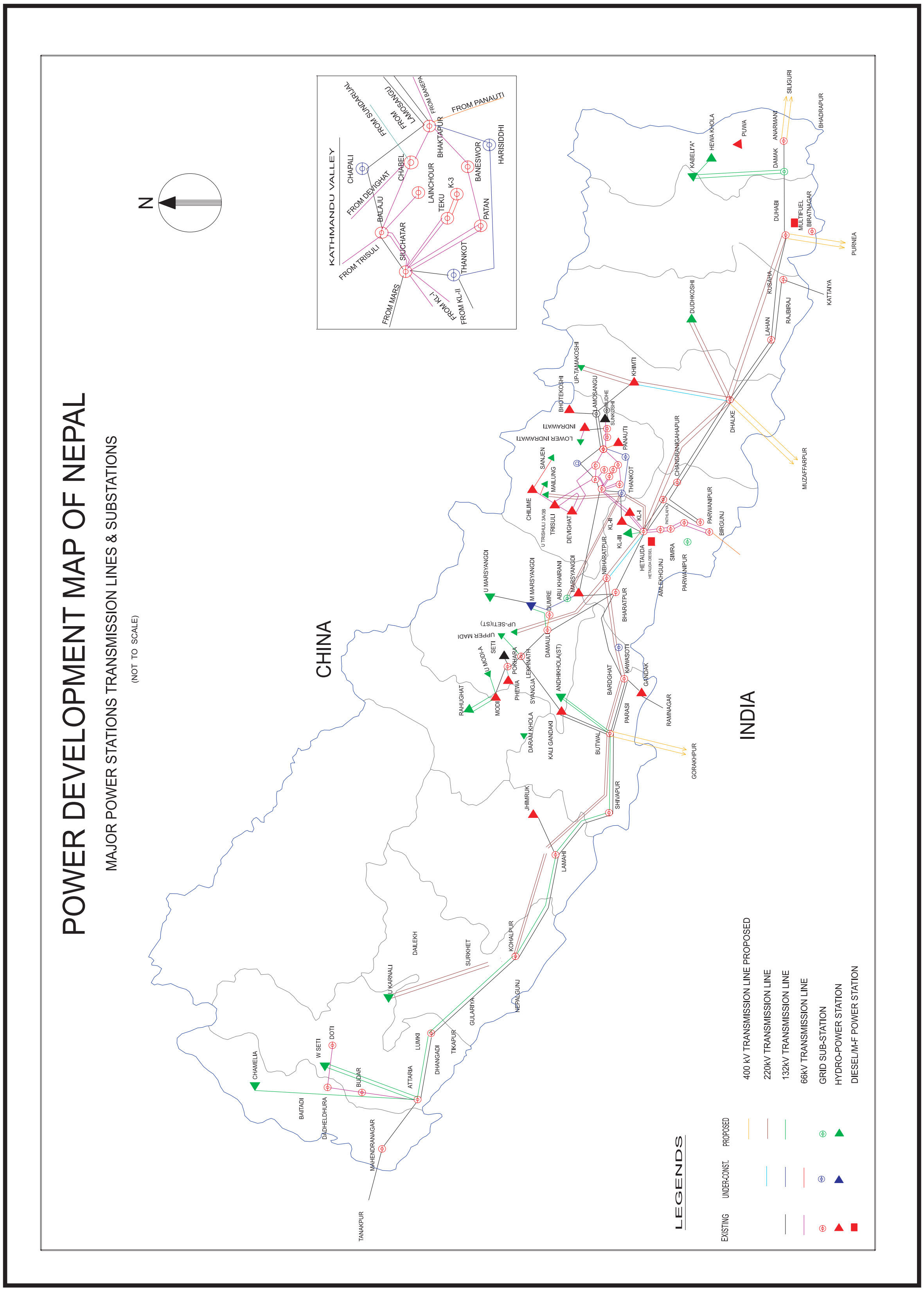
1 132/11 kV Matatirtha	22.5	MVA
Total	22.5	MVA

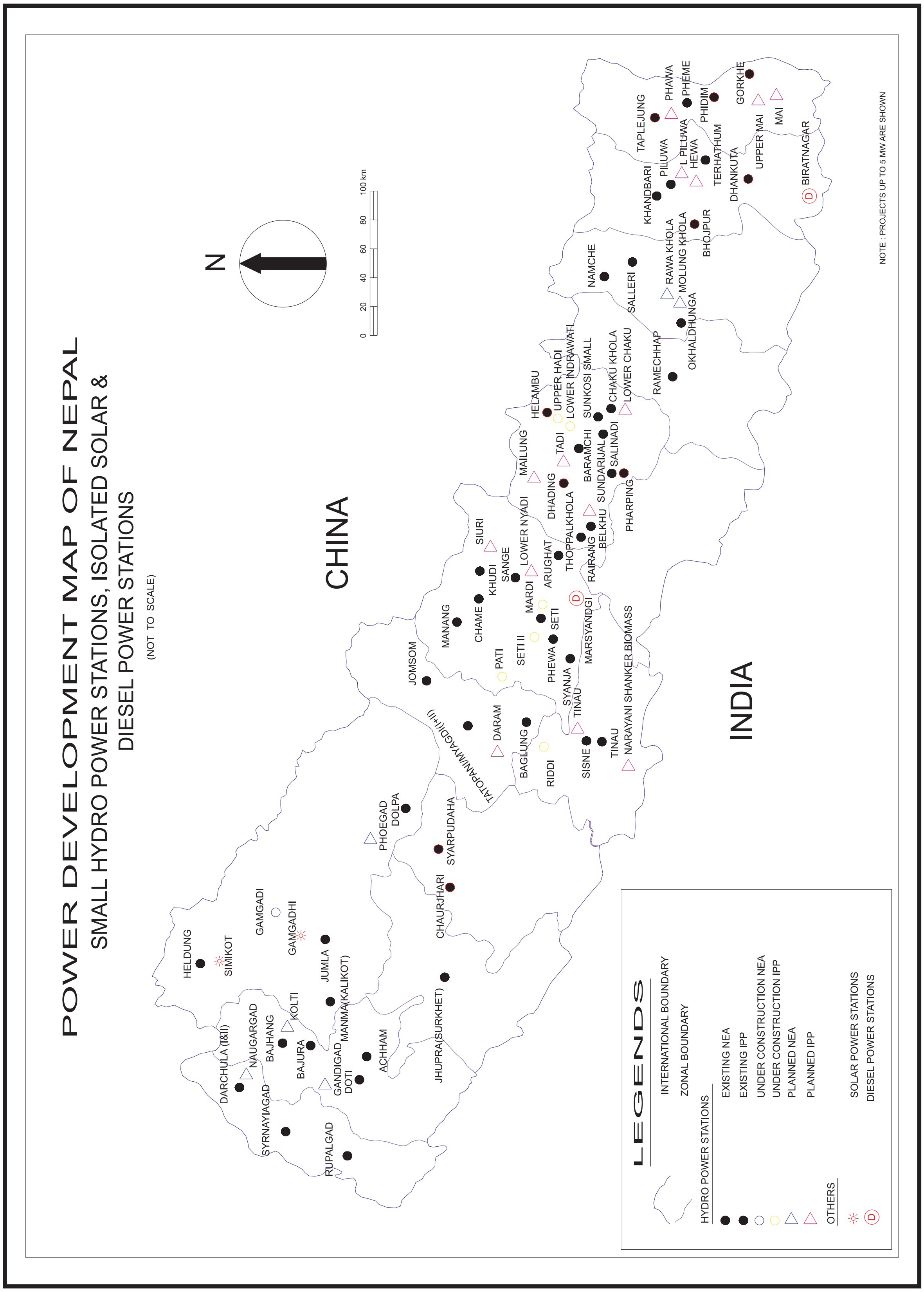
Planned & Proposed Sub-Stations

1 132/33 kV Syangja	15	MVA
2 132/33 kV Anbukhaireni	15	MVA
3 132/33 kV Damak	30	MVA
4 132/11 kV Chapali	30	MVA
5 132/33 kV Matatirtha	32	MVA
6 132/33 kV Kusum	30	MVA
7 132 kV Hapure	30	MVA
8 132 kV Hetauda (Kamane)	30	MVA
9 132 kV Pathlaiya	22.5	MVA
10 New Butwal Switching Station	30	MVA
11 New Bharatpur Switching Station	30	MVA
	294.5	

Power Development in Nepal (Private Sector)

IPP Projects Connected to INPS				PPA Concluded			
S.N.	Name of Company	Name of Project	Capacity (KW)	S.N.	Name of Company	Name of Project	Capacity (KW)
1	Himal Power Ltd.	Khimti Khola	60,000	1	Annapurna Group Pvt. Ltd.	Madi-1 Khola	10,000
2	Bhotekoshi Power Company Ltd.	Bhotekoshi Khola	36,000	2	United Modi Hydropwer Pvt. Ltd.	Lower Modi I	9,900
3	Chilime Hydro Power Company Ltd.	Chilime	20,000	3	Synergy Power Development (P.) Ltd.	Sipring Khola	9,658
4	Butwal Power Company Ltd.	Jhimruk Khola	12,000	4	Ankhu Khola Jalbidhut Co. Pvt. Ltd.	Ankhu-1	6,930
5	National Hydro Power Company Ltd.	Indrawati - III	7,500	5	The Gorkha Hydro Power Pvt.Ltd.	Daram Khola	5,000
6	Butwal Power Company Ltd.	Andhi Khola	5,100	6	Mailung Khola HydroPower Company (P.) Ltd.	Mailung Khola	5,000
7	Khudi Hydro Power Ltd.	Khudi Khola	3,450	7	L. K. Power (P.) Ltd.	Dapcha-Roshi	5,000
8	Arun Valley Hydro Power Company Ltd.	Piluwa Khola	3,000	8	Shivani Hydropower Company (P.) Ltd.	Phawa Khola	4,950
9	Sanima Hydro Power Company Ltd.	Sunkoshi Khola	2,500	9	Nyadi Group (P.) Ltd.	Siuri Khola	4,950
10	Thoppal Khola Hydro Power Co. Pvt. Ltd.	Thoppal Khola	1,650	10	Bavarian Hydopower Nepal(Pvt.) Ltd.	Lower Nyadi	4,500
11	Alliance Power Nepal Pvt.Ltd.	Chaku Khola	1,500	11	Bhagawati Hydropower Dev. Co. Pvt. Ltd.	Bijayapur-1	4,500
12	Unified Hydropower (P) Ltd.	Pati Khola	996	12	East Nepal Development Endeavour (P) Ltd	Upper Mai Khola	3,100
13	Khoranga Khola Hydro Power Co. Ltd.	Pheme Khola	995	13	Barun Hydropower Development Co. (P.) Ltd.	Hewa Khola	2,400
14	Unique Hydel Co. Pvt.Ltd.	Baramchi Khola	980	14	Nikhil Jalshakti (P.) Ltd.	Bhairab Kunda	1,850
15	Task Hydropower Company (P.) Ltd.	Seti-II	979	15	Laughing Buddha Power Nepal (P.) Ltd.	Lower Chaku	1,765
16	Gautam Buddha Hydropower (Pvt) Ltd	Sisne Khola	750	16	Nama Buddha Hydropower (P) Ltd	Tinau Khola	990
17	Rairang Hydro Power Development Co. (P) Ltd.	Rairang Khola	500	17	Bojini Company Private Limited	Jiri Khola	990
18	Kathmandu Small Hydropower Systems Pvt. Ltd.	Sali Nadi	232	18	Garjang Upatyaka Hydropower (P.) Ltd.	Chake Khola	990
19	Syange Bidyut Company Limited	Syange Khola	183	19	Joshi Hydropower Development Company P.Ltd.	Upper Puwa-1	985
		Total =	**158,315**	20	Gayatri Hydro Power (P.) Ltd.	Charanawati	980
Under Construction				21	Aadishakti Power Dev. Company (P.) Ltd.	Tadi Khola	970
1	Sunkoshi Hydro Power Co. Pvt. Ltd.	Lower Indrawati Khola	4,500	22	Universal Power Co. Pvt. Ltd.	Ladku Khola	700
2	Himal Dolkha Hydropower Company Ltd.	Mai Khola	4,455	23	Mansarowar Powers (P.) Ltd.	Golmagad	580
3	Gandaki Hydro Power Co. Pvt. Ltd.	Mardi Khola	3,100	24	TMB Energietechnik	Narayani Shankar	500
4	Ridi Hydropower Development Co. (P.) Ltd.	Ridi Khola	2,400	25	Multipurpose Food Industry Co. (P) Ltd.	Belkhu	320
5	Centre for Power Dev. And Services (P.) Ltd.	Upper Hadi Khola	991			**Total =**	**87,508**
6	Baneshor Hydropower Pvt. Ltd.	Lower Piluwa	990	**Under Termination Process**			
	Total =		**16,436**	1	Gitec Nepal Pvt. Ltd.	Upper Modi Khola	14,000


POWER DEVELOPMENT MAP OF NEPAL
MAJOR POWER STATIONS TRANSMISSION LINES & SUBSTATIONS
(NOT TO SCALE)
CHINA
INDIA
KATHMANDU VALLEY
LEGENDS
EXISTING
UNDER-CONST.
PROPOSED
400 kV TRANSMISSION LINE PROPOSED
220kV TRANSMISSION LINE
132kV TRANSMISSION LINE
66kV TRANSMISSION LINE
GRID SUB-STATION
HYDRO-POWER STATION
DIESEL/M-F POWER STATION


POWER DEVELOPMENT MAP OF NEPAL
SMALL HYDRO POWER STATIONS, ISOLATED SOLAR &
DIESEL POWER STATIONS
(NOT TO SCALE)
CHINA
INDIA
N
0 20 40 60 80 100 km
LEGENDS
INTERNATIONAL BOUNDARY
ZONAL BOUNDARY
HYDRO POWER STATIONS
EXISTING NEA
EXISTING IPP
UNDER CONSTRUCTION NEA
UNDER CONSTRUCTION IPP
PLANNED NEA
PLANNED IPP
OTHERS
SOLAR POWER STATIONS
DIESEL POWER STATIONS
NOTE : PROJECTS UP TO 5 MW ARE SHOWN
HELDUNG
SIMIKOT
GAMGADI
GAMGADHI
JUMLA
DARCHULA (I&II)
NAUGARGAD
BAJHANG
KOLTI
BAJURA
MANMA(KALIKOT)
GANDIGAD
DOTI
ACHHAM
SYRNAYIAGAD
RUPALGAD
JHUPRA(SURKHET)
CHAURJHARI
SYARPUDAHA
PHOEGAD
DOLPA
TATOPANI/MYAGDI(I+II)
JOMSOM
DARAM
BAGLUNG
RIDDI
MANANG
CHAME
PATI
SETI II
KHUDI
SIURI
SANGE
LOWER NYADI
MARDI
SETI
PHEWA
SYANJA
TINAU
SISNE
MARSYANDGI
NARAYANI SHANKER BIOMASS
ARUGHAT
THOPPALKHOLA
RAIRANG
BELKHU
DHADING
MAILUNG
TADI
HELAMBU
UPPER HADI
LOWER INDRAWATI
BARAMCHI
SUNDARIJAL
SUNKOSI SMALL
SALINADI
CHAKU KHOLA
LOWER CHAKU
PHARPING
RAMECHHAP
OKHALDHUNGA
RAWA KHOLA
MOLUNG KHOLA
NAMCHE
SALLERI
BHOJPUR
KHANDBARI
PILUWA
L PILUWA
HEWA
TAPLEJUNG
PHAWA
PHEME
PHIDIM
TERHATHUM
DHANKUTA
UPPER MAI
MAI
GORKHE
BIRATNAGAR