NEPAL ELECTRICITY AUTHORITY

Fiscal Year 2007/08 - A Year in Review

Bhadra 2065 (August 2008), Durbar Marg, Kathmandu

Khimti Dhalkebar 220kV Tower Foundation

Access Road Under Construction Tamakoshi

COMPLIMENTARY COPY

Contents

Front Cover Photo

- *Middle Marsyangdi HEP Diversion Weir*

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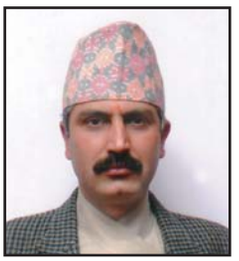

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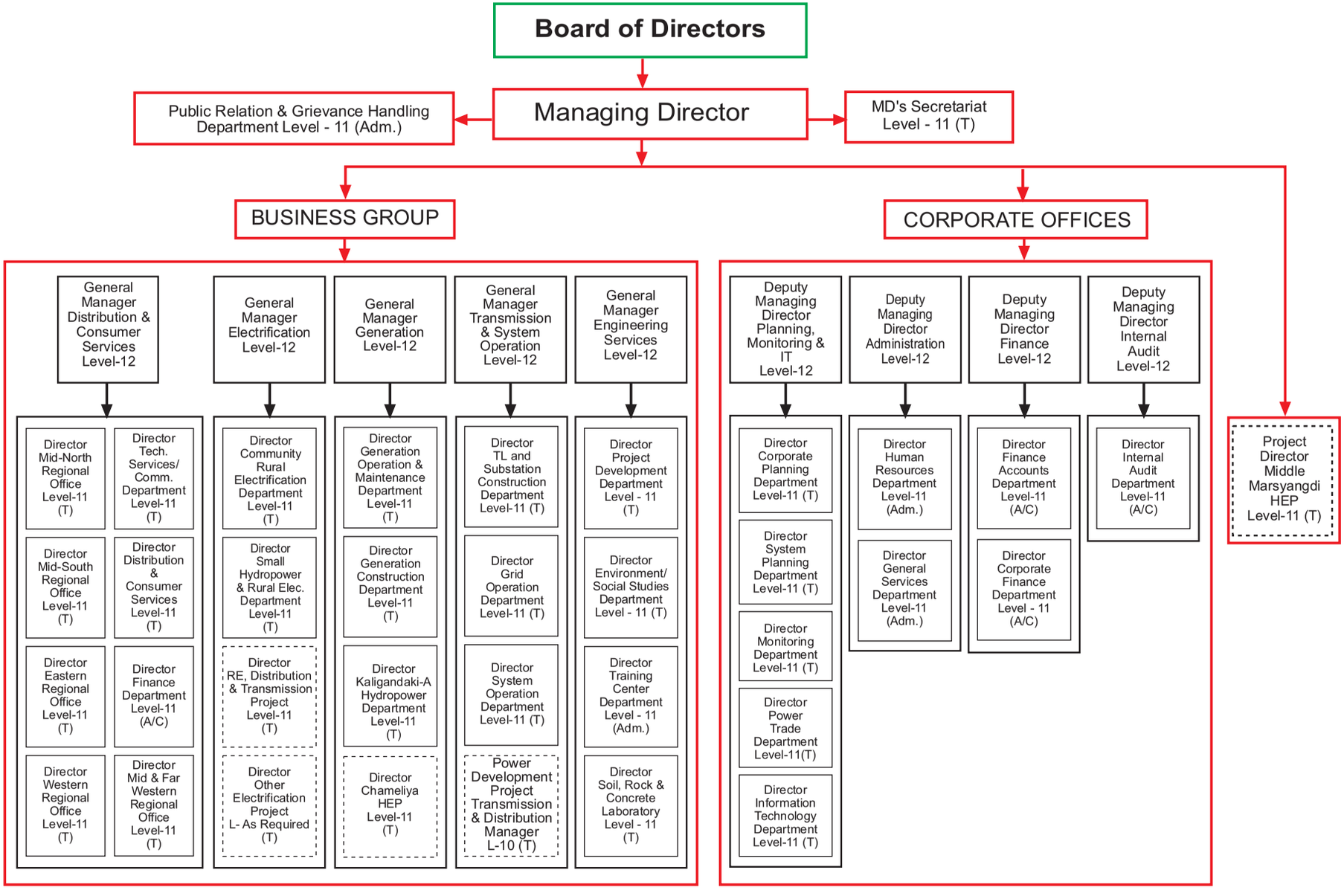
CORPORATE STRUCTURE OF NEA



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DMD, Finance

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GM, DCS

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GM, Generation

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GM, Engineering Service

Mr. Yugal Kishor Shah
GM, Transmission & SystemOperation

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Act. DMD, Internal Audit

Mr. Binod Kumar Dhakal
Act. DMD, Administration

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Director, Monitoring

Mr. Upendra Dev Bhatta
Director, Information Technology

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

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Director, TL/SS Construction

Mr. Birendra Kumar Pathak
Director, Generation Construction

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Mr. Ram Chandra Mandal
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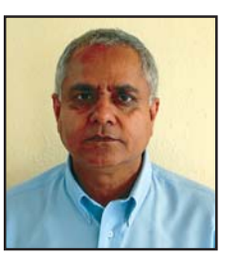

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Project Director
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Mr. Juju Kaji Ranjit
Act. Director, Kaligandaki 'A' HE

Mr. Arjun Kumar Chauhan
Act. Director, Corporate Finance

Managing Director's Report

Arjun Kumar Karki
Managing Director

I feel privileged to present this Annual Report, my third report as the Managing Director of Nepal Electricity Authority, to this Annual Anniversary gathering.

Year 2007/08 has been an exceptionally outstanding year for Nepal. Momentous events have taken place in this year changing the course of history of Nepal. This year saw end of the monarchy in Nepal and beginning of a new age of hope and dignity for the Nepalese as the proud citizen of a federal democratic republic. I salute all and our especial tribute goes to those who laid down their life for bringing this change in Nepal.

This historic year 2007/08 also marks the completion of twenty-three glorious years of operation of Nepal Electricity Authority as the foremost entity overseeing the crucial functions of providing more and more of Nepalese homes, industries and businesses with electricity. Besides the review of our achievements of the past, this is also an occasion to reaffirm our resolve to do even better in the coming years. With this note, now, I would like to present before you a brief account of the past year's activities, the achievements, the challenges and the outlook for the future.

System Operation

The year 2007/08 registered new records of power and energy demand, thereby presenting before us greater challenges in bridging the gap between supply and demand of electricity. Our endeavors to maximize the utilization of available resources including import through trading of power from Indian short term market could not offset the unbalance and we were compelled to enforce long hours of distasteful load shedding. A 11.31% growth in peak power demand and 10.76% growth in energy demand in the year further aggravated the situation. In the dry months, shrinking of snow-fed rivers further worsen the situation and we were left with no option but to impose 48 hours-a-week load curtailment for every consumers. The amount of shedded energy reached up to 2.2 million units per day. This situation could be attributed to combination of factors including our overdependence on run-of-river type of hydro projects.

Average load on the system remained at 55.2% of the peak load, which indicates that the system peak needs to be flattened by employing various measures under the Demand Side Management. Few lessons we could learn is that large volume of storage capacity is urgently required to balance the system against time of the day and seasonal variations in demand and supply, and that sustained campaign is the need of the time to motivate the consumers to use electricity efficiently by maximizing the use of energy saving lights and appliances.

Operational Performance

At the end of FY 2007/08, the number of customers availing electricity service of NEA reached 1,524,610, which is an increase of 9.07% over that of the previous year. Of the total customers, 95.66% belonged to the domestic category accounting for 40.52% of total energy sales and 40.66% of total revenue earned in the reviewed period. Industrial customers, though representing only 1.67% of the total customers, have significant contribution amounting to 38.81% of total energy sales and 35.93% of total revenue earned.

Power and energy demand grew by 11.31% and 10.76% respectively in the reviewed period. The system demand of 721.73 MW recorded on December 31, 2007, happened to the peak power demand observed in FY 2007/08. Likewise, energy demand over the FY totaled 3,490.12 GWh. As this amount of energy was not available with the system, the deficit amounting to 309.46 GWh, had to be shedded to keep the electricity service running. Of the total energy served, hydro source accounted for 86.75%, which includes a contribution of 30.2% from the IPPs. Imports accounted for 12.97% and the balance was met from thermal plants.

Major overhauling and maintenance works were carried out on number of power stations in the year under review. Turbine runners of Marsyangdi, Trishuli, Sunkoshi and Puwa Khola hydropower stations were overhauled. Repair of the damaged generator of Unit no. 1 of Kulekhani-II Hydropower Station was completed successfully under the supervision of experts from Fuji Electric Systems Co. Ltd. (Japan) and brought into operation from the last week of March, 2008. Similarly, major overhauling of Unit No. 2 of Kaligandaki, the biggest power station of Nepal, was also completed successfully by our engineering staff. Our efforts to boost generation from the existing NEA hydropower stations were reflected in the rise of generation by 2.93% over that of the preceding year.

We continued to exert diligent efforts in the upkeep of transmission system. In the reviewed period, reinforcement works were carried out in the overloaded grid substations, which have helped reduce outages of the transmission lines. The capacities of Birgunj, Damauli and Bardaghat Substations were reinforced by upgrading the transformers. Reinforcement works were also executed in Sunkosi Substation to facilitate power evacuation of IPP projects in Sindhupalchok district. It gives us immense satisfaction to report that overall availability of our transmission system remained above 99% in the reviewed period.

To do justice to the appraisal, I must admit with regret that our efforts to control system loss did not fare well in FY 2007/08. Our provisional analysis shows that NEA power system endured a loss of 25.15% in FY 2007/08. Though not a comforting news, there is no reason to despair also. In the preceding year, the final loss figure stood at 26.71% (provisioned as 24.94%). If the loss estimate is verified after final audit, we would have made headway, though small, in loss reduction mission. Given the disturbances prevailing in Terai and other parts of the country, and given the degrading effect on staff morale caused by manhandling and intimidation meted out to NEA staff involved in loss control activities, it is no less a miracle even to maintain a status quo. Having said that, we are not shirking away from our responsibility to bring the loss down to acceptable level. Let me take this opportunity to reaffirm our commitment to control system loss with support from all quarters.

Financial Performance

NEA's financial performance has not remained up to the level of expectation, largely because of the reasons beyond our control. The insecurity situation prevailing in the Terai, recurring fuel crisis, frequent strikes and work stoppages presented an atmosphere, which was hardly conducive for normal operation of the business. The transition phase of the country was exploited to the hilt by the

unscrupulous elements and goons as our properties were vandalized; our staff were subjected to physical threats, extortions and manhandling. It is rather saddening that one of our staff posted in Birgunj has to lose life because of the senseless act of violence. The atmosphere permeated with security concerns deprived us the opportunity to show better performance in the fronts like loss reduction, meter reading, cash collection and so forth. Furthermore, opportunity presented by the growth in demand could not be translated into sales due to limitation of supply sources. Apart from this, increased operating cost caused by unprecedented hike in fuel price and other commodities, increased volume of energy import and regular increase in salary also pushed the operating cost up. One significant factor that adversely affected NEA's financial position was the upward fluctuation of Japanese Yen- Nepalese Rupee exchange rate costing more Rupees for the Japanese loan. The effect of this exchange fluctuation was a loss amounting to NRs 480.61 million.

Despite the increase in price of commodities and cost of service, NEA is yet to be allowed to adjust the tariff to make up for the increased cost of operation. Analysis shows that NEA cost of service per kWh stands at NRs 7.40 against revenue rate per kWh of NRs 6.70. After adjustment of contribution of NRs 0.28 per kWh from miscellaneous incomes, NEA suffered a loss of NRs 0.42 for every kWh of energy served by it.

NEA earned NRs 15,405.03 million from sale of electricity in FY 2007/08, which is 6.61% higher than last year's figure. Similarly, NEA earned NRs 655.24 million as other incomes. Operating expenditure in the period was NRs 14,443.41 million, which is higher than that of the previous year by 9.03%. As a result, Operating Profit for the period was recorded at NRs 1,616.86 million. However, NEA incurred a net loss amounting to NRs 1,312.16 million after deducting interest, foreign exchange loss and provisions. NEA had earned a profit of NRs 314.19 million in the preceding year. Thus, accumulated loss by the end of FY 2007/08 has reached NRs 7,133.77 million. NEA's net property in terms of plant and equipment valued at historical cost reached NRs 52,294.10 million, whereas NRs 35,930.74 million is recorded as expenditure in capital works- in-progress. NEA has invested NRs 1,602.05 million as equity shares in various subsidiary companies including Chilime and Upper Tamakoshi. By the end of FY 2007/08, NEA's liability towards Government of Nepal totaled NRs 28,414.99 million as equity and NRs 52,762.18 million as long term loan.

Thus, review of customer tariff, gradual recovery of accumulated losses, loss reduction, creation of fund for hydropower development and for addressing future inflation- these have emerged as the major issues, which promptly need to addressed for sustainability of the organization.

Ongoing Projects

It is a matter of profound satisfaction to report that the projects that we have undertaken to address various needs of the power system are making steady progress and heading towards success in spite of the numerous obstacles that emerged from time to time. Construction of Middle Marsyangdi Hydroelectric Project (70 MW) had commenced on June 25, 2001 with a target to start power generation after 4 years of construction period. Progress of the project was bogged down due to numerous obstacles including contractual discords. Some of the contractual disputes have been stockpiling for 2 years thereby impeding the smooth progress of the Project. Most of the disputes have been resolved now. With 97% of civil works already completed, the Project is now nearing completion. Impounding of the dam is now scheduled to start from October 16, 2008 (Aswin 30, 2065), and subsequently the first unit will be commissioned by the end of year 2008 and the second unit by January, 2009. NEA is committed to achieve these target dates.

Chameliya Hydroelectric Project (30 MW) situated

in the Far West of Nepal is also moving on the track. Following the award of civil contract to China Gezhouba Water and Power Group Company Limited (CGGC) on December 21, 2006, the Project construction is gaining momentum. Agreement is expected to be signed soon with Government of the Republic of Korea to avail US$ 45 million as soft loan which will be used for hydro-mechanical, electro-mechanical and 132 kV transmission line construction of the Project. The Project is scheduled to be completed in year 2011. Mobilization and preparatory works for Kulekhani-III Hydroelectric Project (14 MW) have already started. The Project is schedule to be commissioned in FY 2010/11. To mobilize financial resources for funding Chameliya and Kulekhani-III projects, NEA took a maiden initiative of raising fund from the domestic capital market by floating Power Bond. In the first phase, NEA Power Bond with a value of NRs 1,500 million was issued successfully and was subscribed for the full amount by the investors. The response of the individual as well as the institutional investors has been extremely encouraging. This pioneering initiative of NEA has opened up a new model of fund raising for hydropower projects in Nepal. NEA intends to replicate this mechanism in future also.

Several transmission projects are under implementation. Khimti–Dhalkebar 220 kV Transmission Line Project, the first ever project of 220 kV voltage level in Nepal, is progressing well and is expected to be commissioned in FY 2008/09. Thankot–Chapagaon-Bhaktapur 132 kV Transmission Line Project under which a 132 ring will be completed in Kathmandu valley, is going on in full swing. This Project is scheduled to be completed by FY 2008/09. Under Hetauda-Bardghat 220 kV Transmission Line Project, construction of Hetauda–Bharatpur 220 kV Transmission Line and associated substations are under implementation for which tender has already been invited from prospective bidders. After completion, this phase of the Project will ease transmission congestion in Hetauda-Bharatpur corridor. This first phase of the Project is expected to be completed by December 2010. As this 220 kV line will not be available till year 2010, Hetauda-Bharatpur 132 kV Conductor Upgrading Project has been implemented to temporarily remedy the overloading problem existing in 132 kV Hetauda–Bharatpur line. The works under this Project will be completed by FY 2008/09. In addition to the above, several Grid Substation Reinforcement Project, Chandranigahpur System Reinforcement Project, Kawasoti 132 kV Substation Project are also under execution. These projects will not only enhance quality of supply in and around the project area but also pave way for extensive electrification in the adjoining districts.

NEA has been continuing rural electrification programs with financial support from Government of Nepal and donor agencies. In the reviewed period, Government of Nepal provided Rs 100 million to complete electrification works that have remained incomplete for past several years for lack of fund. Almost all outstanding works have been completed in the reviewed period despite adverse situation prevailing in the country. As a result, about 49,000 households would get access to electricity benefitting 267,000 consumers.

Construction work of 500 kW Heldung Small Hydropower Project in Humla has been completed and the Project has started power generation from May 27, 2008. The 400 kW Gamgad Small Hydropower Project in Mugu is nearing completion. The 33 kV sub-transmission lines and distribution lines are being continuously extended to pave way for the electrification of rural areas. Community based rural electrification programs funded with 80% financing from GoN and 20% from the local communities are given continuation although the tariff modality of the scheme itself is a matter of concern for the sustainability of NEA.

Under the Rural Electrification and Distribution System Reinforcement Project jointly funded by ADB, GoN and NEA, rural electrification works are being carried out in 277 VDCs of 22 districts. By the end of reviewed year, 92% of the Project works

have been completed. The remaining works are expected to be completed in FY 2008/09.

It is important to make a note while appraising rural electrification works. NEA is required to earn a reasonable return from its business operations and develop itself as a commercially oriented self-sustaining organization. Increased commitment of NEA's scarce resources in rural electrification activities, however, is detrimental to the sustainability of NEA. Keeping this in view, NEA has recommended to Government of Nepal to establish a separate government owned Rural Electrification Company with the sole objective of undertaking rural electrification and associated works in Nepal.

Capacity Building and Institutional Strengthening

NEA is mindful that staff are the living asset of the organization and that effective training and employee development programs would ultimately result in enhanced performance of the organization. Giving due importance to this fact, through the NEA Training Center, need based training programs were carried out in the reviewed period benefitting 1,198 trainees which included trainees from Himal Power Ltd. and Chilime hydropower Company Ltd. Apart from this, employee were also sent abroad to study, participate, interact and learn from the development taking place elsewhere in the world.

NEA has continued computerization in billing, accounting, inventory management and customer service with the aim of enhancing the quality of service and decision making, bringing automation in routine business processes and improving information management. Through its IT Department, NEA intranet system was expanded by augmenting the centralized Internet bandwidth. Different customized applications, such as no-light management system, interactive voice response system, power house maintenance system and personnel management system were developed in-house and are under various stage of implementation. NEA is committed in bringing about continuous improvement in its business operation by use of information technology and in building up its in-house capacity for the development and customization of application software.

As of FY 2007/08, NEA organizational structure comprises of 10,314 staff positions out of which 9,298 positions are filled up. By the end of FY 2007/08, a total of 743 employees were recruited for different levels. Recruitment process is going on to fill the remaining vacancies.

NEA's Subsidiary Companies and the Private Sector

With a view to facilitate speedy development of power sector, two especial purpose companies, namely, Upper Tamakoshi Hydropower Company Limited (UTHPCL) and Power Transmission Company of Nepal (PTCN), were constituted under the initiative of NEA. UTHPCL will execute the development of 309 MW Upper Tamakosi Hydroelectric Project in Dolakha district under public-private partnership model of development. PTCN is constituted with aim of building and operating cross border transmission links between Nepal and India.

With regard to Upper Tamakosi Hydroelectric Project, Memorandum of Understanding has been signed with Employee Provident Fund and Himalayan Bank Ltd. (leading the consortium of banks), for long term loans of NRs 10 billion and NRs 6 billion respectively. Employee Provident Fund has also agreed to subscribe debenture of NRS 2 billion. Discussions are underway with Rashtriya Beema Sansthan and Citizen Investment Trust to arrange remaining funds required for the Project. Detail engineering design of the Project is in progress.

It is envisioned that Nepal would be in power surplus by year 2013/14 and after meeting the internal demand could export power to India. Power

Transmission Company Nepal Limited (PTCN) was formed as a joint venture company of NEA and IL&FS Infrastructure Development Corporation (India) on September 16, 2007 for taking up the development of Cross Border Transmission links to facilitate power trading across the border. Three cross-border links have been identified: Butwal–Gorakhpur, Duhabi–Purnea, and Dhalkebar–Muzaffarpur. Out of these, Dhalkebar-Mujaffarpur 400 kV cross border link has been selected for implementation in the first phase. PTCN will be responsible for constructing the 39 km long sector within Nepal. The line will be charged initially at 220 kV. Cross Border Power Transmission Company Private Limited, a company which will have equity ownership of NEA, will take up the job of constructing the Indian portion of this Dhalkebar-Mujaffarpur line.

Chilime Hydropower Project build under Chilime Hydropower Company Limited (CHPCL), the first subsidiary company established by NEA in 1996, has been in operation since August, 2003. CHPCL is now set to take up the development of four more projects, namely, Sanjen Upper (11 MW), Sanjen (35 MW), Middle Bhotekoshi (80 MW) and Rasuwagadhi (75 MW) hydropower projects.

In the reviewed period, Power Purchase Agreements were signed for the purchase of power from Belkhu Khola (320 kW), Upper Hadi Khola (991 kW), Siuri Khola (990 kW), Hewa Khola (2,400 kW), Lower Piluwa (990 kW) and Tinau Khola (990 kW) small hydropower projects. With this, the total number of PPAs have reached 39 which amounts to a total capacity of 234.31 MW. In FY 2007/08, four projects, namely, Thoppal Khola (1,650 KW), Pheme Khola (995 KW), Sali Nadi (232 KW) and Sisne Khola (750 KW) were successfully commissioned, thus inducting a total 3,627 KW capacity in the system. With this the total number IPP projects in operation have reached 17 with a total capacity of 156.34 MW.

Outlook for the Future

Though our present is troubled with supply shortages, the prognosis for the future is not bleak. NEA has plans to undertake number of generation, transmission and distribution projects. Total cost of these projects is estimated to be about NRs 65 billion to be invested over five year period.

Upper Tamakoshi (309 MW), Chameliya (30 MW), Kulekhani-III (14 MW), Rahughat (30 MW), Upper Trishuli-3A (60 MW), Upper Trishuli-3B (40 MW) and Upper Modi-A (42 MW) hydroelectric projects are in different stages of development. These projects are expected to be commissioned within 5 years period so that by that time, 525 MW power will be inducted into the system. Moreover, our subsidiary Chilime Hydropower Company is working on Sanjen Upper (11 MW), Sanjen (35 MW), Middle Bhotekosi (80 MW) and Rasuwagadhi (75 MW). Similarly, under the private sector, Kabeli-A (30 MW), Upper Marsyangdi (50 MW) are expected to be commissioned by year 2013. Thus by FY 2013/14, we are expecting addition of 700 plus MW capacity in our system. To ensure adequacy of power supply during dry months, efforts are underway to implement 128 MW Upper Seti, 400 MW Nalsyagu Gad and 600 MW Budhigandaki storage projects under public-private partnership modality. Export oriented hydropower projects such as Arun-3, Upper Karnali and West Seti have the provision of free energy entitlement for Nepal. The commissioning of these projects will further contribute in augmenting supply capability.

NEA has already intensified efforts to develop internal transmission system with backbone at 220 kV. Elimination of existing transmission bottlenecks will be our first priority. For the future development, our strategy will be to build transmission system on corridor-wise basis prioritizing those river basin corridors for which firm commitment of hydropower development exists from the developers. A Build-Own-Transfer model has been mooted to facilitate participation of private sector in developing

transmission lines. Considering the prospects of power trading with India, cross border transmission links will eventually be build in all three corridors: Dhalkebar-Mujaffarpur, Duhabi-Purnia and Butwal-Gorakhpur.

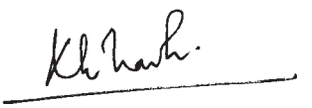
Reinforcement and expansion of distribution network will be pursued continuously. The coming years will also see more of the customer friendly approaches in the operation of distribution and consumer service. We are committed to pursue persistent efforts and employ stringent actions on the front of loss reduction.

NEA will also take leading role in producing competent and skilled technicians and engineering professionals in the field of hydropower in the country. For this, discussions are underway with South Korean Government and other donor agencies for the upgradation of NEA Training Center. The purpose of this pursuit is to ensure that shortage of trained technician and professionals do not come on the way in realizing the government's vision of hydropower development in Nepal.

Acknowledgements

I wish to thank all those contributing to NEA's activities in different ways during the year. My special appreciation goes to the NEA staff of all levels, who have been immersing themselves into their work with a missionary zeal and delivering results. I express my deep gratitude to Chairman and members of NEA Board of Directors for their guidance and support. My sincerest gratitude goes to Government of Nepal for their continued support to NEA's operation and development efforts. I also sincerely acknowledge the bilateral donors such as Germany, Japan, Norway, Denmark, Sweden, USA and India as well as the international development banks such as World Bank, Asian Development Bank, Japan Bank for International Cooperation (JBIC,) Kreditanstalt fur Wiederaufbau (kfW) and EXIM Bank of China, Korea and India that have generously supported us and contributed in our development and institutional strengthening activities. Our valued customers deserve special thanks for their understanding and patience in the face of the turbulence caused by the imperfection in electricity service. My sincere thank also goes to the NEA employee unions for their understanding, support and participation.

Thank You.



Arjun Kumar Karki
Managing Director

Generation Business Group

The Generation Business Group, headed by a General Manager, is entrusted with the responsibility of construction of new power stations, and operation and maintenance of existing power stations under NEA. Currently, sixteen hydropower stations and two major thermal power plants with total installed capacity of 398.39 MW and 53.41 MW respectively are in operation under this Business Group. There are three departments, namely, Operation and Maintenance Department, Generation Construction Department and Kaligandaki-A Hydropower Department under this Business Group. Each of the departments is headed by a Director.

At present, construction works of two hydroelectric projects, namely, Chameliya Hydroelectric Project and Kulekhani-III Hydroelectric Project, are in progress under this Business Group. Chameliya Hydroelectric Project is headed by a Project Director who reports directly to the General Manager of the Business Group, whereas, Kulekhani-III Hydroelectric Project is under Generation Construction Department. In addition to these two projects, a third project, Upper Tamakoshi Hydroelectric Project is also being implemented, but under a separate subsidiary company (Upper Tamakoshi Hydropower Limited) promoted by NEA. Performance-wise, a total of 1,795.77 GWh of energy was generated in the FY 2007/08 from NEA owned power stations, which is an increase of 2.62% over the generation of previous FY.

Operation and Maintenance Department

Operation and Maintenance Department is

Repaired Stator of Generator No. 2 of Kulekhani-II HPS

responsible for all activities related to the operation and maintenance of NEA owned power stations other than Kaligandaki-A Hydropower Station which is a separate department under Generation Business Group. In FY 2007/08, a total of 1,036.77 GWh of energy was generated from the power stations under this Department.

In the FY under review, preventive maintenance works were conducted in regular basis in all power stations in order to ensure timely detection and rectification of faults. In addition to the periodic maintenance works, major overhauling works were also performed in major power stations in the FY. Overhauling of turbine runners of Marsyangdi, Trishuli, Sunkoshi, and Puwa Khola hydropower stations were accomplished. Repair and major overhauling work of damaged generator of Unit no. 1 of Kulekhani-II Hydropower Station (KL-II) were completed successfully under the supervision of experts from Fuji Electric Systems Co. Ltd. (Japan) and brought into operation from the last week of March, 2008. Event Log Recorder for recording generator, transformer and system parameters and 66 kV SF6 circuit breakers of Kulekhani-I (KL-I) to Hetauda Double Circuit Line were installed in KL-I Hydropower Station. A contract agreement has also been signed between NEA and Fuji Electric Systems Co. Ltd. for major overhauling of both units of KL-I and the second unit of KL-II hydropower stations. Fabrication of the spare parts required for the work has already started in Japan. On April 6, 2008, a contract agreement has been signed between NEA and Bharat Heavy Electricals Limited (BHEL) for rehabilitation of Devighat Hydropower Station. The fabrication of the spare parts required for the rehabilitation work has already started. Government of India has agreed to provide IRs 150 million under grant assistance and IRs 150 million as Line of Credit for funding the Project. Balance amount will be borne by NEA.

Kaligandaki-A Hydropower Department

During FY 2007/08, a total of 759.0 GWh of energy was generated from Kaligandaki-A Hydropower Station which is an increase of 7.24% over the

Overhauling of Unit No. 2 of Kaligandaki-A Hydropower Station

preceding year's generation. Repair and maintenance works in the spillway gates, intake under-sluice gates, desander flushing gates and trash rack cleaner were carried out in the fiscal year. Similarly, inspection of Unit No. 1 and major overhauling of Unit No. 2 were completed successfully. Replacement of damaged analog input/output PLC cards, EPBAX communication cards and high voltage bushings of 13.8/132 kV, 56.5 MVA transformer of Unit No. 1 have been carried out. Repair work of 13.8/132 kV, 56.5 MVA transformer of Unit No. 3 has been successfully completed.

Generation Construction Department

At present, the Generation Construction Department is overseeing the construction of 14 MW Kulekhani-III Hydroelectric Project. The status of the Project is summarized below.

Kulekhani-III Hydroelectric Project

Kulekhani-III Hydroelectric Project is located in Makawanpur District, about 115 km south west of Kathmandu. The headwork site is located on the right bank of the Rapti River at Bhainse Village Development Committee (VDC). The powerhouse site is located at Sanutar of Bhainse VDC, about 4 km north of Hetauda. The Project site has good accessibility as it is located near the Tribhuwan Highway.

Kulekhani-III Hydroelectric Project is a cascade Project which utilizes the regulated flow from Kulekhani I and II Hydroelectric Projects. In addition, the KL-III utilizes additional water from Khani Khola. The Project is estimated to generate about 40.85 GWh of energy annually. Power generated from Kulekhani-III Hydroelectric Project will be evacuated through 0.5 km long 132 kV single circuit transmission line to Hetauda Substation. Construction work of the Project is scheduled to commence in near future. Preparatory works of the Project have already been started. This Project is categorized as a National Priority Project (P1) by National Planning Commission, Government of Nepal (GoN). The funds from Government of Nepal and NEA will be utilized for the construction of the Project. The total estimated cost of the Project is NRs 2,334 million. The Project is schedule to be commissioned in FY 2010/11.

The Environmental Impact Assessment (EIA) of the Project has been approved by the Ministry of Population and Environment (MoPE). The report indicates that the construction of the Project has minimal impact on natural and social environment of the area. Generation License for the Project has been granted by the Department of Electricity Development (DoED), Ministry of Water Resources. For the transmission line, a survey license has been issued by the DoED. Land acquisition for powerhouse, tailrace outlets and access road has been completed and land acquisition for office buildings and switch yard is in process. Construction of access road to powerhouse and forebay is in progress. Approximately, 1,200 m of track out the 2500 m of the acess road has been opened.

Construction of access bridge over Rapti River is in progress. Main civil works have been awarded to Sinohydro Corporation Ltd. of China. Presently, the contractor is building camps near the Intake site at Bhainse and is in the process of importing equipment and explosives. Initial consignment of some construction equipment has reached the project site. Management and supervision of the construction of the Project will be carried out by a Joint Venture of three consulting firms. Water Resources Consult (P.) Ltd. (WRC), SILT Consultants (P.) Ltd. and Hydro Engineering & Development Co. (P.) Ltd. (HEDCO). Currently, the Engineers/Consultants are in the process of finalizing construction drawings of the Project.

Chameliya Hydroelectric Project

Chameliya Hydroelectric Project (CHEP) is a Peaking Run-off-River (PROR) project with an installed capacity of 30 MW and 6-hour daily peaking capability. The Project is estimated to generate an average of 184.21 GWh annually. The Project lies

in the Far West 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 desander 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. Generated power will be evacuated through 131 km long 132 kV transmission line to Attariya Substation at Kailali district.

In December 2001, detailed design and tender document preparation works were completed by utilizing grant assistance from Korea International Co-operation Agency (KOICA). Construction of 18 km long access road has been completed and local transportation services are already in operation. Out of seven bridges on the access road, six have been constructed. Construction of bridge at Gandi Gad is in progress. Construction of the camp facilities is about 30 percent complete. Land acquisition for the Project has been completed. EIA study reports of the Project and the transmission line have been approved by the Ministry of Environment, Science and Technology.

On December 21, 2006, China Gezhouba Water and Power Group Company Limited (CGGC) was awarded civil contract for the construction of the civil works of the Project. The excavation work for 227.35 m long Adit No. 2, 274 m long, Adit No.3, 203 m long diversion tunnel, 116m long connecting tunnel No 2 and 182 m access tunnel to desander have been completed. Excavation works for Adit No. 1, headrace tunnel, aeration tunnel, desander and tailrace are in progress. Out of the total 6 km of tunnel works, 1,260 m of tunnel excavation and 50 % of the excavation works of power house have been completed.

Commitment has been received from the Government of the Republic of Korea to provide US$ 45 million as soft loan as per the minutes of discussion held on September 26, 2007 between GoN and EXIM Bank of Korea to finance the cost of electro-mechanical, hydro-mechanical and 132 kV transmission line. Loan agreement is expected to be signed in the near future. Selection of Korean consultants for electro-mechanical, hydro-mechanical and 132 kV transmission line is nearly complete. Preparation of the tender documents and selection of contractors are in progress. The Project is scheduled to be completed in year 2011.

Construction works of Chamelia Hydropower Project

Middle Marsyangdi Hydroelectric Project

Middle Marsyangdi Hydroelectric Project is located near Besishahar in Lamjung District, Gandaki Zone, about 170 km West of Kathmandu. This is a peaking Run-of-River Project with an installed capacity of 70 MW and average annual generation of 398 GWh. The power generated from the Project will be evacuated through a 38.6 km long 132 kV transmission line (single circuit) to Lower Marsyangdi Power Station.

Financial Status

The Project is jointly funded by Government of Germany through Kreditanstalt fur Wiederaufbau (KfW) (contributing Euro 178.26 millions as grant), the Government of Nepal (GoN) and Nepal Electricity Authority (NEA). Fichtner JV is the consultant for the Project. The Project was initially estimated to cost US$ 181.27 million (equivalent to Euro 212 millions at exchange rate US$1=Euro 1.17) in year 2000. The Project cost was revised in January 2008 to Euro 274.84 million.

KfW has also provided additional Euro 2.5 million for Neighborhood Support Program (NSP) and Euro 0.5 million for supporting projects along the transmission line corridor and drinking water supply project in Bhoteodar. The objectives of the NSP is to improve the infrastructures related to education, health, water support & sanitation and rural electrification of eleven Village Development Committees (VDCs) in the vicinity of Project area.

Progress Status

Project civil works which commenced from June 25, 2001 (Ashadh 11, 2058) is nearing completion with 97% of the work already completed. Rock-fill

Over view of MMHEP Power House Site

dam is one major component of the Project that remains to be completed. In the powerhouse, installation of the electromechanical equipment and dry commissioning is in progress. Installation of penstock steel liner has been completed. Installation of Switchyard is also nearing completion. Erection of all 115 transmission towers has been completed and stringing work is in progress with 90% of the work accomplished.

On the social front, the Project is carrying out various activities such as resettlement work, vocational training, and public health awareness program targeting the inhabitants of project affected area and local people.

As in the past, the Project continues to face challenges that threaten the timely completion of the Project. General security situation of the country, strikes, fuel crisis, disputes with the contractor -these are the major factors that tend to impede the smooth implementation of the Project. Despite numerous challenges, construction work has been speeded up to make up for the past delays. Impounding of the dam is now scheduled to start from October 16, 2008 (Aaswin 30, 2065), and subsequently the first unit will be commissioned by end of year 2008 and the second unit by January, 2009. NEA is committed to achieve these target dates.

Installation of Radial Gates at Headworks (View from Upstream)

Transmission and System Operation Business Group

Transmission and System Operation (TSO) Business Group of Nepal Electricity Authority has three key responsibilities, namely, (I) design and construction of transmission system of 66 kV and higher voltage level, (II) operation and maintenance of transmission system of 66 kV and higher voltage level and (III) scheduling and dispatching of major and medium power stations connected to the Grid. These three functions are entrusted respectively to the Transmission Line/Substation Construction Department, Grid Operation Department and System Operation Department. Each of the departments is headed by a Director.

Transmission Line/Substation Construction Department

The Department undertakes design and construction of transmission lines and substations of 66 kV and higher voltage level from the preparatory phase to final commissioning. Works at the preparatory phase include design, acquiring survey/construction licenses, field survey, environmental studies and land acquisition. Government clearance for the environmental/ social impact assessment (EIA/SIA) studies is obtained prior to start of construction works. Construction works are normally carried out on turnkey contract basis and on completion the facilities are handed over to NEA's Grid Operation Department for operation and maintenance. Presently, the Department is implementing several transmission line and substation construction projects. These Projects are summarized below.

Grid Substations Reinforcement Project

Nepal's Power Grid is increasingly subjected to transmission congestion due to rapid growth in electrification and demand. It has become a priority to reinforce and expand transmission capacity to match the planned augmentation in generation capacity. Giving due consideration to this need, NEA implemented Grid Substations Reinforcement Project with the following scope of works:

(a) Installation of one unit of new 132/33 kV, 30 MVA, 3-phase power transformer and associated facilities at Anarmani substation.

(b) Installation of one unit of new 132/11 kV, 30 MVA, 3-phase power transformer and associated equipment at Pokhara substation.

(c) Installation of one unit of new 132/66 kV, 3x12.6 MVA power transformers (bank of three single-phase transformers) and necessary facilities at Siuchatar substation.

The Project costing about US$ 3.2 million was funded jointly by Asian Development Bank (ADB), OPEC Fund for International Development (OFID), NEA and GoN,. The Project was initiated in FY 2005/06 (2062/63) and completed in January 2008 (FY 2064/65).

Thankot – Chapagaon - Bhaktapur 132 kV Transmission Line Project

A 132 kV transmission line of about 28.5 km length will be constructed under this Project to complete the 132 kV ring in Kathmandu Valley. Initially only one circuit will be strung from Thankot (Matatirtha) to Bhaktapur via Harisiddhi with ACSR (BEAR) conductor and OPGW. About 26.5 km of the line will comprise of double-circuit towers while remaining 2 km will be of four-circuit towers. The scope of the project also comprises of the construction of a new 132 kV switching station at Matatirtha; a new 132/11 kV, 22.5 MVA substation at Harisiddhi and upgrading of existing Bhaktapur and Balaju substations by replacing existing 66/11 kV, 2x10 MVA transformers with 132/11 kV, 2x22.5 MVA transformers at Bhaktapur Substation and 66/11 kV, 2x22.5 MVA transformer at Balaju Substation. The completion of this Project will not only cater for the growing power demand of Kathmandu Valley but will also reduce system losses and improve quality and

reliability of power supply in the valley.

The construction work of the transmission line is partially completed and construction of substation is in progress. Estimated cost of the Project is NRs. 1271 million which is being funded jointly by ADB, OFID, NEA and GoN. The Project is scheduled to be completed by FY 2008/09.

Khimti – Dhalkebar 220 kV Transmission Line Project

This is going to be the first 220 kV transmission line of Nepal. The objective of the Project is to facilitate power evacuation from the upcoming 309 MW Upper Tamakosi Hydroelectric Project, provide a direct route for export of power to India via Dhalkebar substation, improve the voltage-drop problem of eastern Nepal, and improve the reliability of power withdrawal from Khimti-1 Hydroelectric Project.

Under the Project, a 75 km long 220 kV transmission line will be built on double circuit towers from Khimti Hydroelectric Project to Dhalkebar Substation using single circuit ACSR BISON duplex conductor, and 132 kV line bays at both end of the line will also be extended. The line will be charged at 132 kV level initially. The cost of the Project is estimated at US$ 22 million and is funded jointly by International Development Association of World Bank, NEA and GoN and. The Project is scheduled to be completed by FY 2008/09.

Chandranigahpur System Reinforcement Project

The objective of the Project is to meet the increasing electricity demand of Rautahat and Sarlahi districts, to improve reliability and quality of power supply in project covered areas including Birgunj and to reduce system loss. The scope of this Project covers construction of new substation at Chandranigahapur consisting of 132/33 kV, 30 MVA and 33/11 kV, 8 MVA transformers with associated equipment and 74 km of 33 kV sub-transmission line to connect the new Chandranigahpur substation with existing 33 kV substations at Harsaha, Haripur, Gaur and Nijgadh. A noteworthy feature of the 33 kV sub-transmission line is that AAAC-250 conductor will be used for the first time in Nepal for this line. Construction and commissioning of 132/33/11 kV, 30 MVA Chandranigahpur substation has already been completed, whereas construction of 33 kV sub transmission line is in progress. The Project is jointly funded by WB, NEA and GoN and is estimated to cost NRs. 421 million. The project is scheduled to be completed by FY 2008/09.

132 kV Switchyard Chandranigahapur

Kawasoti 132 kV Substation Project

The main objective of the Project is to provide reliable and quality electricity supply to the consumers in and around Nawalparasi district and reduce system loss. Furthermore, this substation will cater for the increased power demand of industrial consumers, facilitate the integration of new power projects to be developed by the Independent Power Producers (IPPs), and will pave way for the expansion of 33/11kV sub-transmission/distribution network in the region.

Under this Project, a new 132/33/11 kV substation at Pragatinagar will be established by looping in and looping out the existing Bardghat-Bharatpur 132 kV transmission line. The Bharatpur – Kawasoti 33 kV line presently fed from Bharatpur substation will then be transferred to this new substation. Overhead 11 kV lines will be drawn out from this substation to feed existing 11 kV distribution network. Major components of the Project consist of construction and installation of 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.

The Project is jointly funded by Japan International Cooperation Agency (JICA), GoN, and NEA. Estimated cost of the Project is about NRs 586.42 million, which is funded with a Japanese Grant of JP¥ 847 million and contribution from NEA and GoN for the local cost component amounting to NRs 139.45 million. Civil engineering construction work such as equipment foundation and control building has been started by the Japanese Contractor. Equipment design and manufacturing work are in progress. First lot of substation equipment has arrived in site and remaining equipment are expected to be delivered by September 2008. The Project is scheduled to be completed by the FY 2008/09.

Hetauda – Bardghat 220 kV Transmission Line Project

As the first step in relieving the transmission congestion along the Hetauda-Bardaghat corridor, construction of Hetauda–Bharatpur 220 kV Transmission Line and associated substations are under implementation. The Project comprises of construction of 70 km long 220 kV double circuit transmission line using ACSR BISON duplex conductors (initially only one circuit strung and charged at 132 kV level) and OPGW. The aim of the Project is to improve the reliability of the system and ease in evacuation of full power from Kaligandaki 'A' hydropower station.

Tender has already been called for the transmission line construction work. This first part of the Project is jointly funded by IDA of World Bank, NEA and GoN. Estimated cost for Hetauda-Bharatpur transmission line component is US$ 16.8 million and for substation component is US$ 4.5 million. The Project is expected to be completed by December 2010.

Hetauda - Bharatpur 132 kV Conductor Upgrading Project

The load on Hetauda-Bharatpur 132 kV single circuit transmission line has already exceeded the capacity limit of 70 MW. A new 220 kV line is planned for construction in this section. This Project has been initiated as a provisional remedy for the period until the commissioning of Hetauda– Bharatpur 220 kV transmission line.

The Project comprises of replacement of the existing ACSR PANTHER (200 mm2) conductor by AAAC, UPAS (300 mm2) conductor. On completion, the thermal capacity of the Hetauda-Bharatpur section of the existing 132 kV transmission line will be upgraded and which will help reduce system loss. Estimated cost of this Project is NRs. 70 million and is funded entirely by NEA. The Project is scheduled to be completed by FY 2008/09.

Project Identification & Feasibility Study for Transmission System Development

It is not feasible to build separate transmission lines for connecting each of the planned medium and small hydropower projects with the national grid. This is one of the prominent constraints faced by IPPs for development of hydropower projects. It has been felt that a comprehensive transmission line identification project is required to indentify the

techno-economically feasible transmission projects for facilitating development of hydropower projects in Nepal.

System Planning Department of NEA has identified following six different transmission line corridors based on secondary information.

- Dhankuta-Titire corridor
- Marsyangdi corridor
- Modi-Butwal corridor
- Kabeli/Tamor corridor
- Sunkoshi corridor

The proposed Study Project will primarily build on initial findings of System Planning Department. The Study Project will be completed in FY 2008/09. The cost of this Study Project is about NRs. 3.5 million which will be borne by NEA.

Planned Projects

The following Projects have been planned to be taken up for execution from FY 2008/09:

(a) Middle Marshyangdi – Damauli - Marshyangdi 132 kV Transmission Line Project

(b) Kabeli – Damak 132 kV Transmission Line Project

(c) Butwal - Kohalpur 132 kV Second Circuit Transmission Line Project

(d) Pathlaiya 132 kV Substation Project

(e) Anbukhaireni 132/33 kV, 15 MVA Substation Project

(f) Matatirtha Substation Expansion Project

(g) New Marsyangdi – Matatirtha 220 kV Transmission Line Project

(h) Damak 132/33 kV, 30 MVA Substation Project

(i) Syangja 132/33 kV, 15 MVA Substation Project

(j) Chapali 132 kV Substation Project

(k) Singati -Lamasangu 132kV Transmission Line Project

Grid Operation Department

Besides the regular activities of operation and maintenance, the Department has undertaken various upgrading, reinforcement, reactive compensation and rehabilitation works of grid substations and transmission lines. Reinforcement works executed by this Department in the overloaded grid substations have helped reduce outages of the substations. The Enhance Performance Reward (EPR) was provided for the staff of the Departments, Divisions and branch offices of the Business Group from FY 2006/07. This scheme of rewarding for performance has brought about visible improvement in performance both on individual and team level, and has helped in reducing system outages. Major works undertaken by this Department in FY 2007/08 are summarized below.

Transformer upgrading and substation reinforcement works accomplished in FY 2007/08:

(a) Repair, installation, testing & commissioning of 132/33 kV, 10 MVA Power Transformer with associated bay at Damauli Substation to upgrade the substation capacity to 20 MVA;

(b) Addition of 66/11 kV, 6.3 MVA Transformer with associated bay at switchyard of Sunkoshi Power Station to evacuate power of IPP Projects connected at 11kV;

(c) Shifting and installation of 132/11 kV, 6/7.5 MVA Power Transformer from Pokhara to Bardghat Substation to upgrade substation capacity to 13.5 MVA;

(d) Replacement of 66/11 kV 7.5 MVA Transformer by 66/11 kV 15 MVA Transformer

at Birgunj Substation to upgrade substation capacity to 66/11 kV 30 MVA.

Transformer upgrading and substation reinforcement works in progress:

(a) Construction of 132/33 kV, 15 MVA bay at Lamosanghu Substation for evacuating power of IPPs projects at Sunkoshi corridor;

(b) Construction of 33/11 kV Transformer bay for 3 MVA Transformer at Damauli Substation to upgrade substation capacity;

(c) Replacement of the 33/11 kV, 8 MVA Transformer by new 16.6 MVA Transformer along with the replacement of old circuit breakers with new VCBs at Butwal Substation;

(d) Replacement of the 33/11 kV, 3 MVA Transformer by 8 MVA Transformer at Lahan Substation;

(e) Interconnection of the 132 kV and 66 kV systems with 45 MVA power transformer at Parwanipur for system reinforcement of Hetauda-Birgung sector to displace some load from 66 kV transmission line and improve voltage;

(f) Replacement of the 132/33 kV, 30 MVA Power Transformer by a new 63 MVA Transformer at Butwal Substation to upgrade substation capacity to 93 MVA;

(g) Replacement of the 132/33 kV, 30 MVA Power Transformer by a new 63 MVA Transformer at Duhabi Substation to upgrade substation capacity to 126 MVA;

(h) Shifting and installation of the 132/33 kV, 5 MVA Transformer from Kohalpur Substation to Mahendranagar Substation to upgrade substation capacity to 12.5 MVA.

(i) Construction of double bus bar system at Butwal and Chanauta Substations to facilitate import of power from India;

(j) Replacement of protection relays at Lahan Substation;

(k) Installation of 33 kV, 10 MVAr & 11 kV, 10 MVAr capacitor banks to improve system voltage at Birgunj Substation.

Other works accomplished:

(a) Re-routing of Chilime -Trishuli 66 kV Transmission Line (Tower No. 39-41);

(b) Testing of 200 relays and 80 energy meters of various grid substations and IPP Projects.

System Operation Department

As the system operator, System Operation Department is responsible for real time operation and supervision of the Integrated Nepal Power System (INPS). The Load Dispatch Center (LDC) under this Department is equipped with Supervisory Control and Data Acquisition (SCADA) system and other facilities. The Department has been able to achieve best possible combination of security, economy and quality of supply from available sources. It is worthwhile to mention that only 15 total system collapse events were recorded during FY 2007/08 compared to 21 during preceding year. This is equivalent to 28.5% reduction in system collapses. Similarly, availability of real time data and better communication system have improved the overall availability of power stations and transmission lines and has helped to minimize the time required for restoration of the power system following black-outs, thereby reducing NEA's loss of revenue.

For the smooth functioning of the INPS, it is necessary that the data acquisition from the power stations and substations be updated according to the latest changes/modifications in the respective stations. The trained manpower in the LDC has been able to keep the INPS data up-to-date in the SCADA software. Maintenance team of System Operation Department has maintained the data acquisition and communication system as well as computer hardware and software system in good

condition thereby recording above 99% availability of the SCADA system. Besides the regular maintenance work, new substations at Parwanipur and Chapur have been integrated in SCADA System. Additional spare optical fibers have also been leased to Nepal Telecom and other private companies thereby generating additional revenue for NEA.

Power Development Project NEA Transmission and Distribution

The Power Development Project (PDP) is being implemented under the loan/grant assistance of the World Bank. The initial allocation to this Project was about US$ 31 million. As part of the original scope, the following projects are being implemented:

(a) Khimti-Dhalkebar 220 kV Transmission Line Project;

(b) Distribution and Rural Electrification Project;

(c) Chandranigahpur System Reinforcement Project;

(d) Institutional Strengthening Project.

Under the Khimti-Dhalkebar 220 kV Transmission Line Project, a 75 km long of 220 kV line is being constructed. Distribution and Rural Electrification Project consists of reinforcement of distribution systems and electrification in Lalitpur, Bhakatapur, 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 in 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 Project are currently under construction. The 132/33 kV substation at Chandranigahpur has recently been charged. 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 NEA Transmission and Distribution was increased providing an additional allocation of about US$ 36 million. Under this additional scope of work the following projects are being implemented:

(a) Hetauda-Bharatpur 220 kV Transmission Line Project;

(b) Distribution System Reinforcement Project; and

(c) Institutional Strengthening Project (II).

The tender for the supply and installation of the Hetauda-Bharatpur 220 kV transmission line has recently been published. Under the Distribution System Reinforcement Project rehabilitation of 33/11 kV substations at the following ten locations are being implemented: (i) Khanar (ii) Inaruwa (iii) Rupani (iv) Janakpur (v) Haripur (vi) Chanauli (vii) Bhairahawa (viii) Ghorahi (ix) Tikapur, and (x) Gularia. The activity also includes reinforcement of the distribution networks in areas supplied by these substations.

The various projects/activities implemented under the Power Development Project fall under different business groups or corporate offices. Distribution and Rural Electrification Project is under Electrification Business Group, while Distribution System Reinforcement Project falls under Distribution and Consumer Service Business Group. The Project under the Transmission and System Operation Business Group are Khimti-Dhalkebar 220 kV Transmission Line, Chandranigahpur System Reinforcement Project, and Hetauda-Bharatpur 220 kV Transmission Line Project. The Institutional Strengthening Project is under Finance. Further details on these projects are given in sections corresponding to respective Business Groups or corporate offices. The expected completion date of this Project is June 30, 2010.

Route Alignment Survey of Dhalkebar- Bhittamod 400kV Transmission Line Project

Nepal – India Cross Boarder Transmission Line Project

Under Cross Border Transmission Line Project, three Indo-Nepal Cross border Transmission Interconnections have been identified: NEA has recently completed transmission line route alignment survey of the following transmission links.

- Duhabi-Purnia 400 kV, 90 km (Duhabi-Jogbani, 25.8 km within Nepal)
- Butwal-Gorkhapur 400 kV ,100 km (Butwal-Sunauli, 20.4 km within Nepal)
- Dhalkebar-Mujaffarpur 400 kV, 140 km (Dhalkebar- Bhittamod, 39 km within Nepal)

EIA study for the transmission lines are in progress and expected to be completed within six months. NEA and IL&FS Infrastructure Development Corporation (India) have formed two special purpose joint venture companies: "Power Transmission Company Nepal Pvt. Ltd." (PTCN) having its registered office at C/o NEA, Durbarmarg, Kathmandu, and "Cross Border Power Transmission Company Pvt. Ltd. (CPTC) having its registered office in New Delhi, India. NEA and IL&FS Infrastructure Development Corporation (India) will own 50% and 50% equity respectively in PTCN, whereas, CPTC is currently a 100% subsidiary of IL&FS. As per the arrangement, IL&FS will offload their shares to NEA and PGCIL by 26% each.

Each company is responsible for overall construction, operation and maintenance of the portion of cross border transmission line under the respective country. Dhalkebar-Muzaffarpur 400 kV line has been identified for implementation in the first phase. Major components of the Project for the first phase consists of construction of 2x100 MVA, 220/132 kV Substation at Dhalkebar and 39 km, 400 kV transmission line from Dhalkebar to Bathanaha (Bhittamod). The Transmission Line will be charged at 220 kV voltage level. Estimated cost for this work is about NRS 1,553.32 million. Tendering process is expected to be started from FY 2008/09. The Dhalkebar-Mujaffarpur portion of the project is scheduled to be completed within two years.

Distribution and Consumer Services Business Group

The Distribution and Consumer Services Business Group (DCS) was formed in FY 2003/04 as a part of internal unbundling process of Nepal Electricity Authority (NEA) to strengthen customer focus and operate NEA in line with commercial principles. This is one of the core and the largest among the five business groups of NEA in terms of number of employees and business activities. DCS accounts for about 55% of the total NEA staff providing various services to about 97% of NEA customers.

This Business Group is entrusted with the key responsibility of overall management of electricity distribution network of NEA including operation, maintenance, rehabilitation and expansion of the network up to the 33 kV voltage level, together with customer service activities like new connection, meter reading, billing, revenue collection, customer grievance handling and so forth. The Business Group is also leading a campaign of encouraging and supporting energy saving activities and Demand Side Management for the optimal use of electricity.

This Business Group is headed by a General Manager and is organized into three departments at the center and five regional offices, each of which is headed by a Director.

Performance Highlights

In FY 2007/08, total number of customers under DCS reached 1,475,975, an increase of 9.32% over the preceding fiscal year. Similarly, a total of 2,322.04 GWh of energy was sold earning a gross revenue of Rs. 15,429.67 million in this FY. Compared to the preceding FY, energy sales and gross revenue earned by this Business Group increased by 6.61% and 5% respectively. Number of customers, sales and revenue contribution from different consumer category under DCS for the period is depicted in the following table.

User Group	No. of consumer (% of total consumers)	Sales %	Revenue %
Domestic	95.64%	40.36%	40.82%
Non- Commercial	0.66%	4.60%	6.39%
Commercial	0.39%	6.64%	8.40%
Industrial	1.70%	39.21%	36.46%
Others	1.64%	9.19%	7.93%

The combined industrial and commercial consumer categories represent only 2.09 % of the total number of customers but accounts for 45.85% of total sales. Similarly, the domestic consumer category represents 95.64% of total number of customers but accounts for 40.36 % of total sales.

During the year in review, the Government of Nepal (GoN) provided Rupees 100 million to complete electrification works that have remained incomplete for past several years. Almost all the works have now been completed despite adverse situation prevailing in the country. Completion of these works will bring about addition of approximately 49,000 new customers benefiting around 267,000 people.

In FY 2007/08, a total of 998 Distribution Transformers (DTRs) were installed at different locations under this Business Group. Because of the preventive measures taken, DTR failure rate was reduced to around 7% as compared 13% of the previous year. Around 65.5 km of 33 kV; 1,137 km of 11 kV and 3,052 km of 0.4 kV lines were constructed in the FY.

The Business Group continued their drive of keeping the distribution network up to par by undertaking reinforcement and upgrading of the network at various places. The highlights of major works carried out in this FY are presented below:

(a) Substation Works

Upgrading of:

- existing 33/11 kV, 0.5 MVA transformer with 1 MVA capacity at Syangja.
- existing 33/11 kV, 0.5 MVA transformer with 1.5 MVA capacity at Bhedetar.
- existing 33/11 kV, 1.5 MVA transformers with 3 MVA capacity at Rajbiraj and Dhankuta.

Installation of:

- 33/11 kV, 3 MVA transformers at Damak and Haripur sub-station.
- 33/11 kV, 1.5 MVA transformers at Sindhuli and Guleriya.
- 33/11 kV, 3 MVA transformer at Nepalgunj old sub-station.

Extensions of 33 kV bay and breaker and control panels have been carried out at Itahari Substation.

(b) Distribution Network

Upgrading of 13 km of 33 kV line, 59 km of 11 kV line and 133 km of 0.4 kV line and distribution transformers at 297 locations have improved and strengthened the existing distribution network under this Business Group.

(c) Customer Service

DCS is rendering service to NEA customers through 34 Distribution Centers and 32 branch offices spread over 49 districts in the country.

As part of the drive to strengthen customer focus and commercial orientation in its operations, NEA had implemented the profit center concept by enacting "Distribution Center Operation Regulation-2059" in February, 2002, whereby the Distribution Centers were required to operate on commercial principle and the Center Chiefs were made accountable in achieving specified performance targets. Reduction of system losses, shortening of average collection period, improvement in stock utilization, enhancement of quality customer services, improvement of overall efficiency, increase in sales and reduction of costs were defined as the major performance areas.

With several years of experience, NEA has now sat out to bring about changes in the regulation so as to enhance its effectiveness. A committee formed to review the existing regulations and the recommendations of expatriate consultants is working on the task.

(d) Customer Service Reforms

To provide better service to the customers, DCS has introduced Queue Management System (QMS) in its cash collection operations in Nepalgunj, Mahendranagar and Dhangarhi, in FY 2007/08. With this, 14 collection centers spread over different districts now have the QMS facility.

(e) Loss Reduction Activities

Metering units and energy meters are being installed with priority in the incoming and outgoing feeders of all the distribution substations under this Business Group. This measure will help identify high loss areas and facilitate launching of loss control program focusing on those areas.

DCS has taken measures such as upgrading of overloaded conductors and replacement of defective insulators, to reinforce distribution network with a view to bring down technical losses. Use of Ariel Bundle Conductor has been encouraged in pilferage prone areas.

Stringing of single wire has been emphasized especially for street lighting purpose. In FY 2007/08, about 375 km of single wire has been strung and 150 meters and 65 photovoltaic switches have been installed at different locations.

(f) Demand Side Management

DCS has initiated Demand Side Management campaign targeting the customers to heighten their awareness on efficient use of electricity. Medias such as print, hoarding boards, TV are being used to deliver the messages to the customer effectively.

(g) Information Technology

With a view to enhance the management of information and quality of decision making, DCS continues to explore on the use of information technology in its processes. DCS Mail Club launched in FY 2006/07, continues to give desirable results on quick sharing of information and problem solving.

(h) Local Interactions

The concept of interaction program initiated in FY 2006/07 with a view to bridge the gap of perception among the stakeholders and improve the performance of DCS was continued in FY 2007/08 too. During the year in review, interactive workshops were organized at Biratnagar, Bhadrapur, Damak and Rajbiraj Distribution Centers. Though planned, the program could not be held in other regional offices due to disturbances and security concern.

(i) Human Resource Development

To enhance the technical and managerial knowledge and skill of the employees, about 175 technical and non-technical staff under DCS were deputed to participate in various training programs and seminars organized by NEA and other agencies.

Ongoing Projects

(a) Computerized Billing Project

Computerized Billing System developed under this Project has been in operation in 20 revenue collection centers. It is planned to implement this system in remaining 102 revenue collection centers by July, 2009.

From year 2009, the Project will also implement Computer Assisted Interactive Voice Response Service in major branch offices which will facilitate customers to know their payment dues and to access other service related information over the telephone.

The Project is also planning to introduce Hand Held Meter Reading Device in major branch offices in this FY. The use of this Device will help to eradicate errors in meter reading attributed to the human factor.

(b) Chitwan Madi Electrification Project

This Project designed to electrify Madi area of Chitwan is financed jointly by Government of India (GoI) and Government of Nepal (GoN). Scope of work of the Project includes the construction of:

- 33/11 kV, 3 MVA substation at Madi
- 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

GoI is providing a grant assistance of approximately US$ 1.5 million with the balance amount required for the Project being provided by GoN. In FY 2007/08, the survey license for the Project has been obtained and the EIA study is in process.

(c) Distribution System Reinforcement Project

The scope of the Project includes upgradation of distribution substations at 10 locations, construction of 64 km of new 11 kV line, rehabilitation of 96 km of existing 11 kV distribution network, 59 km of 0.4 kV new line using ABC Cable and rehabilitation of 168 km of existing 0.4 kV distribution network.

This Project will be jointly financed by World Bank (WB), GoN and NEA. The Project covers Sunsari, Saptari, Dhanusha, Chitawan, Rupandehi, Dang, Bardiya, Kailali and Sarlahi districts and is in the tendering stage.

(d) Energy and Customer Accountability Enhancement Project

This is a World Bank funded project for which expression of interest for the selection of consultant has already been invited. The Project is mainly aimed at (i) putting in place a system for regular energy audit of large customer and verification of

the accuracy of the metering system, (ii) setting up of the remote metering of large consumers via GSM or other appropriate communication network, (iii) implementation of GIS-based Distribution Network Management (DNM) and Customer Relations Management (CRM) system in five distribution centers in the Kathmandu valley, (iv) enhancement of the existing billing system and development of necessary interface.

In addition to the above activities, DCS is also working with the Energy Sector Management Project (ESMAP) of the World Bank to implement energy audit activities with a view to reduce losses in the distribution system.

(e) Rural Electrification through Indian Grant Assistance

Under the grant assistance of Government of India, rural electrification in some of the VDCs of Sarlahi, Siraha, Dhanusha, Rupandehi, Dang and Nuwakot has been proposed. The Project will be implemented by the concerned District Development Committees (DDCs) and NEA will provide technical assistance.

Proposed Projects

(a) Distribution System Reinforcement Project

This Project covers construction of new distribution substations at 9 locations, new switching stations at 3 locations and upgradation of existing substations at 3 locations covering Jhapa, Siraha, Dhanusha, Mahottari, Sarlahi, Kaski, Parbat, Syangja, Gorkha, Banke, Bardiya, Kanchanpur, Dadeldhura and Kathmandu districts. In FY 2007/08, DCS has submitted a preliminary Project Study Report to the ADB and is under review by the latter.

(b) Project for Energy Efficiency through Loss Reduction

This Project to be implemented with ADB loan is aimed at adoption of best network design and construction practices starting from 33/11 kV substation right down to the customer connection. Distribution network in Kathmandu valley and Birgunj will initially be targeted which will then serve as a model for distribution energy efficiency improvement activities across the rest of NEA's distribution network.

(c) Project for Introduction of Compact Fluorescent Lamps (CFLs)

With the loan from ADB, a financing modality for the widespread adoption of CFLs for lighting will be developed, executed and monitored. A program for creating awareness in the use of CFLs will be formulated and executed extensively.

(d) Project for Solar Powered Street Lighting

This Project is aimed at installing solar powered street lighting systems and setting up a system to ensure their proper maintenance. Under this Project, replacement work of defective solar powered street lighting systems will also be undertaken. The Project will be financed by ADB, GoN and NEA. This Project is felt necessary to prevent arising of any disputes with municipalities over payments of street light bills.

Effect of Terai Disturbance and Petroleum Product Shortages

The disturbance in Terai that started in January/February, 2007 and continued throughout the year did create numerous hurdles on the smooth functioning of distribution and customer services. Scarcity of petroleum products also further hampered the normal operation of offices with the restriction in the movement of both staff and materials throughout the year. In addition, security concern including the cases of extortions (to the extent of killing of one of the staff at Birgunj and kidnapping and manhandling of several NEA employees) resulted in lowering of the staff morale. These crisis's had adverse cascading effects on the overall performance of DCS including the loss reduction activities.

Electrification Business Group

Electrification Business Group, headed by a General Manager, is mainly responsible for rural electrification in Nepal. Besides rural electrification, the Business Group also oversees distribution and consumer service functions of 18 centers located at different districts. These centers serve 48,297 consumers in total.

S.N.	Centers	No. of Consumers	S.N.	Centers	No. of Consumers
1	Baglung	13,236	10	Terhathum	2,670
2	Tatopani	523	11	Ramechhap	3,955
3	Myagdi	5,896	12	Bajura	503
4	Kalikot	573	13	Okhaldhunga	1,187
5	Baitadi	6,149	14	Rupalgad	261
6	Khandbari	4,790	15	Helambu	413
7	Achham	1,584	16	Manang	542
8	Dolpa	716	17	Chame	198
9	Doti	4,518	18	Arughat	583
Total Number of Consumers					48,297

No. of Consumers under Electrification Business Group

Presently, several projects are being implemented under this Business Group. The ongoing donor assisted projects are: Rural Electrification, Distribution and Transmission Project with loan assistance from Asian Development Bank; Distribution and Rural Electrification Project financed by the World Bank; Kailali-Kanchanpur Rural Electrification Project funded by DANIDA and Ilam Rural Electrification Project with Non-project grant assistance from the Government of Japan. Apart from these, with financing from GoN, many rural electrification projects are under implementation through Small Hydropower and Rural Electrification Department and Community Rural Electrification Department of this Business Group. The highlights of the activities of different departments and projects under this Business Group are presented below.

Small Hydropower and Rural Electrification Department (SHPRED)

SHPRED is responsible for construction, operation and maintenance of isolated small hydropower plants, execution of rural electrification, extension of the National Grid to remote hilly regions and the establishment of distribution system to provide electricity service to rural population. Under the Department, 26 small hydropower plants, 2 solar plants and 7 distribution branch offices carry out various activities related to operation maintenance of electricity generation, distribution, customer service and so forth, covering 27 districts in 12 zones of the country. Out of 26 small hydropower plants, 7 have been leased out to private firms and 4 have been leased out to the consumer communities, which operate under the guidelines set forth by NEA. A number of 33 kV transmission lines and 33/11kV substation projects are under construction. The status of projects carried out by SHPRED in FY 2007/08 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 has started power generation from May 27, 2008

Gamgad Small Hydropower Project (Mugu District)

Construction work of this 400 kW project was commenced in FY 2001/02. Construction of most of the civil structures have been completed. Penstock pipes have been manufactured and transported to the site. The Project is scheduled to be completed within FY 2007/08.

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

Major components of the Project consist of

construction of 32 km of 33 kV transmission line, 30 km of 11 kV and 25 km of 0.4 kV 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, Okhaldhunga is expected to be completed by the mid of FY 2008/09. Altogether, 26 km of 33 kV transmission line, 3.5 km of 11 kV transmission line and 6.5 km of 0.4 kV distribution line have been completed. Construction of the 33kV transmission line is nearing completion.

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

Major components of the Project include the construction of 90 km of 33 kV transmission line and 33/11 kV, 1.5 MVA substation in Phidim and in Taplejung districts. Out of 90 km long 33 kV transmission line, 60 km line has been constucted and poles for 13 km line have been erected. Construction of 33/11 kV, 1.5 MVA Substation at Phidim is in progress and is expected to be completed soon.

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

As the major component under this Project, 50 km of 33 kV transmission line and two 33/11 kV substations of 1.5 MVA capacity one each at Sitalpati and Musikot will be constructed. Out of 50 km long transmission line, pole erection up to Musikot has been completed and stringing of conductor for 32 km line 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 2008/09.

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

The major components of this Project are: construction of 70 km of 33 kV transmission line, 45 km of 11 kV and 45 km of 0.4 kV distribution line and two 33/11 kV substations in Surkhet and Jajarkot districts. Out of 70 km long 33 kV transmission line, pole erection for a distance of 49 km and stringing of conductor for 33 km and 7 km of 11kV/0.4kV line has been completed in FY 2007/08. Construction of 33/11 kV, 750 kVA substation at Rakam is going on and is expected to be completed in FY 2008/9.

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

As the major components under this Project 45 km of 33 kV transmission line, 50 km of 11 kV and 50 km of 0.4 kV distribution lines and one 33/11 kV, 1.5 MVA substation will be constructed in Rolpa district. Construction of 33 kV transmission line from Ghorahi to Holleri has been completed and 9 km of 11 kV/0.4 kV line has been completed in FY 2007/08. Construction of 33/11 kV, 750 kVA substation at Holleri and 33 kV bay extension at Ghorahi are going on and are expected to be completed in FY 2008/09.

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

This Project includes construction of 90 km of 33 kV transmission line, 53 km of 0.4 kV distribution line, one 33/11 kV, 1.5 MVA substation at Manang and 33 kV bay extension in the existing Udipur substation. Out of 90 km, pole erection up to a distance of 45 km and stringing of conductor for a distance of 15 km have been completed for the 33 kV transmission line.

Dadeldhura-Baitadi 33 kV Transmission Line Project

Major works of this Project are: construction of 52 km of 33 kV transmission line, 15 km of 0.4 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 kV transmission line from Dadeldhura to Baitadi has been completed. Construction work of 33/11 kV, 3 MVA substation at Baitadi is in progress and is expected to be completed in FY 2008/09.

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

Major works under this Project are the construction of 40 km of 33 kV transmission line, 52 km of 11 kV line, 50 km of 0.4 kV distribution line and one 33/11 kV substation in Bhojpur district. Construction of substation at Bhojpur is in progress and is expected to be completed in FY 2008/09. Construction of 33

kV Transmission line from Hile to Bhojpur is nearing completion.

Tumlingtar-Dingla-Bhojpur 11 kV Transmission Line Project

Construction of 30 km of 11 kV transmission line, 25 km of 0.4 kV distribution line in Sankhuwasabha and Bhojpur districts are the major works under this Project. Line survey work has been completed and erection work of 18 km of 11kV/0.4 kV line has also been completed.

Rasuwaghat-Khotang 33 kV Transmission Line Project

Major works to be carried out 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 0.4 kV distribution lines in Khotang district. Out of these, 6 km of 33 kV transmission line, 11.74 km of 11 kV and 18 km of 0.4 distribution line construction have been completed. Construction of 33 kV bay extension at Jaljale substation, Gaighat is going on and is expected to be completed soon.

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

Major works of the Project are: construction of 100 km of 33 kV transmission line, 15 km of 11 kV line and 3 nos. of 33/11 kV, 630 kVA substations at Sanfebagar, Manma and Jumla. The Initial Environmental examination (IEE) and line survey have been completed. The contract for pole erection for 10 km of 33 kV transmission line has been awarded and is scheduled to be completed soon.

Dailekh Substation Project

Construction of 25 km of 33 kV transmission line, 15 km of 11 kV line and one 33/11 kV, 750 kVA substations at Dailekh are the major works to be implemented under this Project. Survey work for the 33 kV transmission line has been completed. Land acquisition for the substation construction has been completed.

Community Rural Electrification Department

In order to promote community participation in rural electrification, GoN has declared a policy, whereby 80 percent of the capital cost of electrification will be provided by the government, provided that, the community bears the balance 20% of the cost. To promote and regulate the activity, NEA has enacted "Community Distribution Regulation-2060". Following the enactment of the regulation, Community Rural Electrification Department (CRED) was established in February 2003 to carry out community based rural electrification works in an organized way. The public response to this initiative of NEA has been overwhelming. Altogether, 176,000 households are going to be added to the distribution system after completion of programs approved till F/Y 2007/08

CRED status till June 30, 2008

Details of Works accomplished under CRED from 2004/05 to 2007/08

HT Line length	1,130 km
LT Line Length	3,266 km
Distribution Transformer	745 Nos.
33/11 kV, 3 MVA Substation	3 Nos.

Description	CBRE	CBOM	CBG	Total
Applications registered	247	193	4	444
Applications approved	186	44	-	230
Agreements signed	135	53	-	188
Currently in operation	47 (30 Districts)	19 (24 Districts)	-	66

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

Rural Electrification, Distribution and Transmission Project

Rural Electrification, Distribution and Transmission Project (REDTP) is being implemented with loan assistance from Asian Development Bank (ADB) and OPEC Fund for International Development (OFID). 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 2008/09.

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

Rural Electrification and Distribution System Reinforcement Project

The Scope of this Project includes rural electrification in 22 Districts covering 277 VDCs of the Eastern, Central and Western development regions. Estimated cost of the Project is US$ 37.3 million. The Project is jointly funded by ADB, GoN and NEA. So far, nearly 92% of works under the Project have been completed and the remaining works are expected to be completed in FY 2008/09. The Project comprises of Rural Electrification (RE) and Distribution System Reinforcement (DSR) components as follows.

Rural Electrification Component

Description	Quantity
No. of districts (Terai-13, Hill-9)	22
VDCs to be electrified, nos.	277
Households to be benefited, nos.	123,382
New area 33/11 kV Substations, nos.	8
Distribution transformers (11/0.4 kV), nos.	553
Total increase in distribution transformers capacity in MVA	34.55
33 kV line, km	45
11 kV line, km	807
Composite line, km	495
Low voltage line, km	1,425

Distribution System Reinforcement Component:

Description	Quantity
No. of districts	27
33/11 kV Substations	6 New, 9 Upgrading, 12 Rehabilitation
Distribution transformers (11/0.4 kV), nos.	566
Total increase in distribution transformers capacity in MVA	71.32
33 kV line (new), km	57
11 kV line (new, u gradation), km	867
Low voltage line (new, upgradation), km	583

Distribution and Rural Electrification Project

The Distribution and Rural Electrification Project is being implemented in five districts, namely, Dhading, Nuwakot, Lalitpur, Bhaktapur, and Kavrepalanchok with funding from International Development

Association (IDA) of the World Bank under the Power Development Project. Power Development Project was formulated to help realize the government's objective of increasing the population coverage of electricity service by extending the distribution network to the nook and corner of the country. Total estimated cost of the Project is NRs. 859 million. Physical progress up to FY 2007/08 was 85.36%. The Project is scheduled to be completed by FY 2008/09.

Rural Electrification Schemes

Rural Electrification schemes cover the extension of the sub-transmission and distribution systems to the rural areas yet to be 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

This Project covers the reinforcement and replacement of the existing system in Laltipur, 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

Ilam Rural Electrification Project

The Project plans to provide electricity to 10,659 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 was started on July 17, 2006 with NRs. 70 million Non Project Grant (NPG) of Government of Japan for electrification of 11 VDCs only. Later NRs. 45 million was 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 316 km of 11 kV line, and 284 km of 400/230 volt line and installation of 71 nos. of distribution transformers. The Project is scheduled for completion in FY 2007/08.

Rural Electrification in Ilam

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 and NEA. The Project works are now nearing completion. The original design of the Project was found insufficient to cater the future load of the area and therefore, redesigning was carried out in May 2006 which required construction of additional four new substations (10.5 MVA) through extension of 70 km of 33 kV line, upgrading of distribution transformers and conversion of two phase distribution system to three phase in the load centers. The Project will supply electricity to around 70,000 new consumers of 33 VDCs and one municipality in Kailali and Kanchanpur districts.

So far, 33/11 kV, 3 MVA substations at Lamki, Attariya, Lalpur, Joshipur, Choumala and Jhalari; and 33/11 kV, 1.5 MVA substation at Shripur have been completed. Similarly, construction of 82 kV of 33 kV, 419 km of 11 kV and 1,970 km of 400/230 V lines also have been completed. The first three substations are already in operation and have resulted in improvement of the voltage and supply situation in the districts while other four are at the last stage of testing, charging and commissioning. Around 52,000 new consumers are already supplied with electricity from the completed lines. The Project requires that the substation and high voltage lines shall remain as property of NEA while the low voltage distribution line and distribution transformers shall be handed over to load centre based electricity user's cooperatives which will be responsible for owning, operating and maintaining distribution systems.

Altogether, 216 cooperatives have been registered at district cooperative offices. Umbrella organization of cooperatives covering both the districts has been established and it will provide technical, management and administrative support to load centre based cooperatives. The cooperatives will get a subsidy of NRs. 7,200 per household while the balance of investment in low voltage distribution line, transformer and service connections will be 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. Distribution lines have been handed over to 143 cooperatives supplying power to 32,000 consumers.

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 and Makaibari have been completed. Likewise, constructions of 18 km of 11 kV and 12 km of 400 volts lines have been completed. Construction of Singati Substation is scheduled to be completed by FY 2008/2009. The Project is expected to be completed by FY 2009/10.

Engineering Services Business Group

Engineering Services Business Group comprising of four departments, namely, Project Development Department, Environmental and Social Studies Department, Soil Rock and Concrete Laboratory and NEA Training Center Department is one of the five business groups of NEA. The Business Group also oversees the management of Electromechanical Design Division, Concrete Pole Plants and Central Workshop. With over two decades of experience in the field of hydropower development, this Business Group has been providing services to clients inside and outside of NEA on all technical works related to study and implementation of hydropower projects. Various activities carried out during FY 2007/08 by different departments and wings under this Business Group are summarized below.

Project Development Department

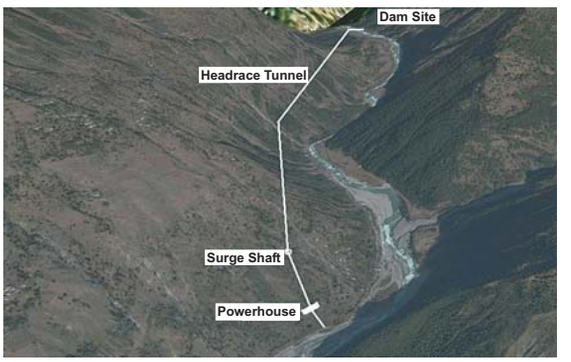
Project Development Department performs activities related to project studies, consulting services and construction supervision of hydroelectric projects. The Department is involved in the development of various hydroelectric projects under NEA. A brief description of such projects and their status are given below:

Upper Trishuli 3-A Hydroelectric Project

Upper Trishuli 3-A Hydroelectric Project is a run-of-river project with 4 km long headrace tunnel and an underground powerhouse. The Project is located in Rasuwa and Nuwakot districts, about 80 km northwest of Kathmandu. With installed capacity of 60 MW, the Project will generate about 460 GWh of energy annually. Headwork lies nearly 15 km north of existing Trishuli Hydropower Station Diversion Weir. Powerhouse is about 5 km south of the proposed headwork site. For evacuation of the power, a 48 km long 220 kV transmission line, connecting the Project to the upcoming Matatirtha Substation in Kathmandu is being planned.

The Detailed Project Report (DPR) of Upper Trishuli 3-A was completed in FY 2006/07. Project Development Department is currently preparing contract document for construction of the Project under Engineering, Procurement and Construction (EPC) model. Environmental Impact Assessment Study of the Project including transmission line is in progress.

The Project is estimated to cost US$ 109 million. This Project will be implemented through soft loan from the Government of China. Construction work is planned to commence in 2008/09 as a part of fast track program to augment the generation capacity of NEA. The Project is scheduled to be commissioned by year 2011.



Schematic Layout of structures of Upper Trishuli 3- A Hydroelectric Project.

Upper Trishuli 3-B Hydroelectric Project

Upper Trishuli 3-B Hydroelectric Project, located in Nuwakot district, about 75 km northwest of Kathmandu, is a cascade development of Upper Trishuli 3-A Hydroelectric Project. So the Project shares most of the infrastructures, such as access road, transmission line, headwork, and desanding basin of Upper Trishuli 3-A Hydroelectric Project. The intake site is located at Simle near the tailrace outlet of Upper Trishuli 3-A Hydroelectric Project. Powerhouse site is located about 3 km south of intake site. The Project comprises of a head-pond, 3 km long headrace tunnel, surge tank, inclined shaft, pressure tunnel and a surface powerhouse as major structures. Powerhouse is equipped with

two units of Francis turbines. With 40 MW as the installed capacity, the Project will generate about 296 GWh of energy annually. The Department has recently accomplished preparation of the Detailed Project Draft Report for this Project. The Project is estimated to cost US$ 68 million. NEA plans to raise the required fund for the Project through local resources. The Project is expected to be commissioned in year 2013.

Powerhouse area of Upper Trishuli 3-B Hydroelectric Project.

Rahughat Hydroelectric Project

Rahughat Hydroelectric Project is a run-of-river scheme with 6 km long headrace tunnel and a surface powerhouse. The Project is located in Myagdi district, about 83 km west of Pokhara. With installed capacity of 30 MW, the Project will generate about 186 GWh of energy annually. Beni-Jomson road passes through the powerhouse site and about 12 km of additional road is required to be built to access the headwork site. For evacuation of the power, a 28 km long 132 kV transmission line, connecting the Project to the Modi Khola Hydroelectric Project switchyard is being planned. The Department has completed the upgraded feasibility study of the Project. Cost of the Project is estimated at US$ 66 million. The Line of Credit facility provided by the Government of India through Export Import (EXIM) Bank of India will be utilized to implement the Project. The Project is expected to be commissioned in year 2013.

Proposed Headwork site of Rahughat Hydroelectric Project.

Upper Seti Storage Project

Upper Seti Storage Project will have an installed capacity of 128 MW and average annual energy generation of 476 GWh. The Project comprises of a 140 m high concrete dam in Seti river near Damauli, 195 m long penstock, an underground powerhouse and ancillary structures. Power evacuation will be effected through a 40 km long 220 kV transmission line to the upcoming New Bharatpur Substation. With construction period of 5 years, the Project is estimated to cost US $ 328 million.

NEA is currently undertaking Environmental Impact Assessment study for the transmission line and hydrological and sediment study. NEA has completed the Upgrading Feasibility Study of Upper Seti (Damauli) Storage Project under the Technical Assistance from Japanese Government through JICA in 2006/07. NEA is considering various options for financing the Project.

Cross Border Transmission Line Survey

During the year in review, Project Development Department carried out detailed survey for Dhalkebar- Bhittamod (39 km) section of Dhalkebar-Mujaffarpur 400 kV Cross Border Transmission Lines which is one of the three cross border transmission lines proposed to be built under special purpose companies to facilitate the power trading between Nepal and India. Detailed topographical survey of 25.80 km long Duhabi – Jogbani and 20.40 km long Butwal – Sunauli 400 kV Transmission Lines were completed in the FY 2006/07.

Feasibility Study of Nalsyagu Gad Storage Project

The feasibility study of Nalsyagu Gad Storage Project (400 MW) is being carried out by this Department from FY 2007/08. The Project is located in Jajarkot District in the Mid-western Development Region. An access road of approximately 30 km length is required to reach the powerhouse site from the district head quarter. Additional 20 km long road is required to be built to access other components of the Project.

As per the pre-feasibility study, the Project comprises of a 189 m high rockfill dam, 7 km long concrete lined head-race tunnel, surge tank, inclined shaft and a surface powerhouse as major project components. The Project will be connected to the National Grid through a 105 km long 220 kV double circuit transmission line to Kohalpur Substation. Total Project is estimated to cost US$ 539 million. As the first part of feasibility study, hydrological study and topographic survey works are initiated in FY 2007/08. The study is scheduled to be completed by the end of FY 2009/10.

Nalsyagu Gad Storage Project : Reservoir area as seen upstream of proposed dam site.

Project Identification Study

Project Identification study is aimed at producing an updated project inventory for future development purpose. Two medium scale hydroelectric projects, namely Upper Tamakoshi-A and Upper Rahughat, were identified and their preliminary studies were completed in FY 2007/08.

Upper Tamakoshi-A Hydroelectric Project is located at the northern part of Dolakha district. Nine km of road will be required to be built to access this Project from the headwork site of Upper Tamakoshi Hydroelectric Project. This will be a conventional run-of-river type of project with installed capacity 45 MW. Average annual generation is estimated at 227 GWh. Power evacuation will be effected through a 9 km long single circuit 132 KV transmission line, linking this Project with the Upper Takamoshi Hydroelectric Project. Estimated cost of Project is US$ 63 million.

Upper Rahughat Hydroelectric Project is located in Myagdi district, about 92 km Northwest of Pokhara. About 9 km of road is required for accessing the Project from the dam site of Rahughat Hydroelectric Project. This will be a run-of-river type of project with installed capacity 32 MW. The Project will generate about 201 GWh annually. For power evacuation, a 10 km long single circuit 132 KV Transmission Line connecting this Project with Rahughat Hydroelectric Project switchyard will be required to be built. The Project is estimated to cost US$ 52 million.

Other Activities

Other activities carried out in FY 2007/08 by Project Development Department are:

- Construction supervision of the Chameliya Hydroelectric project in association with J/V of local consulting firms: Shah, SILT and ICON.
- Detailed topographical survey of 82 km long Kabeli-Damak 132 kV Transmission Line.
- Construction drawing preparation for Kulekhani III Hydroelectric Project.
- Sediment Survey at Kulekhani reservoir.
- Design of staff quarters at Nuwakot, Dhading and Lalitpur for Distribution and Rural Electrification Project.
- Design Review and preparation of tender document for Galwa Gad Small Hydroelectric Project.

Environmental and Social Studies Department

Environmental and Social Studies Department executes activities related to the environmental aspects of all projects undertaken by NEA. Environmental studies were pioneered in Nepal by NEA in 1987 by establishing Environmental Unit. This cell has now developed into a full-fledged commercial Department and is working in close association with national and international consulting companies in undertaking Environmental Impact Assessment (EIA), Initial Environmental Examination (IEE), monitoring and implementing mitigation measures and environmental auditing of hydroelectric, transmission line and distribution line projects.

In FY 2007/08, the Department obtained EIA approval for Hetauda–Bardaghat 220 kV Transmission Line project, prepared Scoping Document and Terms of Reference of the prioritised cross-border 400 kV Duhabi–Jogbani and Butwal–Sunauli Transmission Line and Dumre–Damauli 132 kV Transmission Line Projects. The Department has recently started implementation of environmental monitoring and mitigation program of Chameliya Hydroelectric Project and Khimti–Dalkebar 220 kV Transmission Line Project. Furthermore, the Department has undertaken the following assignments in FY 2007/08:

- Environmental Impact Assessment study of Upper Trishuli 3-A, Upper Trishuli 3-B and Rahughat Hydroelectric Projects.
- Quarterly monitoring of air, noise and water quality of Middle Marsyandi Hydroelectric Project.
- Environmental Impact Assessment study of Dhalkebar-Bhittamod, Duhabi-Jogbani, and Butwal-Sunauli 400 kV Cross-Border Transmission Line projects.
- Environmental Impact Assessment study of Upper Trishuli 3-A – Thankot 220 kV, Bharatpur–Damauli 220 kV and Dumre–Damauli 132 kV Transmission Line projects.
- Initial Environmental Examination of Anbu Khairani 132 kV and Kulekhani III 132 kV Transmission Line projects.

Monitoring Air and Noise quality in Middle Marsyangdi Hydroelectric Project.

Soil, Rock and Concrete Laboratory

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

The Laboratory provides the services like geological mapping, geophysical exploration, core drilling and seismic refraction survey. In the field of soil and rock engineering, it provides services like construction material investigation, in-situ test, determination of index properties, tri-axial test, consolidation test, point load test, direct shear, uniaxial compressive strength on regular basis for NEA and for the clients outside NEA. The Laboratory also provides geotechnical design including rock support pattern for underground and surface structures. Concrete quality test, mix design and topographic survey are few other services provided to NEA and private sector at different levels.

In this fiscal year, Soil, Rock and Concrete Laboratory has procured CS10 Drill Rig capable of drilling up to 550 m, the only laboratory able to provide this deep drilling service in Nepal. The following works were undertaken by this Laboratory in FY 2007/08:

- Surface geological mapping and core Drilling of Rahughat Hydroelectric Project in Myagdi.
- Deep core drilling for Upper Tamakoshi Hydroelectric Project.
- Seismic Refraction survey and topographic survey for Upper Tamakoshi Hydroelectric Project.
- Core drilling at Sunkoshi storage cum diversion scheme in Okhaldhunga for Sapta Koshi Multipurpose Project.
- Concrete mix design and various tests on rock, soil and concrete for various private parties.
- Seismic refraction survey and Core Drilling at Tamakoshi 2 Hydroelectric Project and Tamakoshi 3 Hydroelectric Project for SN Power Holdings Singapore Pte. Ltd.

NEA Training Center

NEA Training Center (NEA–TC), established in FY 1988/89 (2045/46) with World Bank assistance, has been providing need-based short term training to the staff of the NEA and IPPs. In FY 2007/08, NEA–TC conducted 58 different training programs participated by a total of 1,198 trainees, including trainees from Himal Power Ltd. and Chilime Hydropower Company Ltd.

Shortage of qualified and competent manpower could present itself as a serious obstacle in the realization of the government's commitment to develop hydropower potential of Nepal. Giving due consideration to this fact, NEA has proposed to upgrade and further develop the NEA Training Center and transform it into a center of excellence for enhancing the capability of technicians and professionals in the field of hydropower engineering and management. For this purpose a request has been made to the Government of Republic of Korea through GoN for assistance.

Discussions are also being held with Provincial Electricity Authority (PEA) of Thailand, Japan International Cooperation Agency (JICA) and German Technical Cooperation (GTZ) to explore the possibility of their participation in NEA-TC's training programs.

Electromechanical Design Division

Electromechanical Design Division provides inputs on electromechanical components for various hydropower project studies conducted by Engineering Services. Besides this regular task, this Division has completed preliminary design and preparation of tender documents for 131 km long Chameliya– Attariya 132 kV transmission line for Chameliya Hydroelectric Project in FY 2007/08. The Division is currently conducting project identification and feasibility study for transmission system development and a techno feasibility study for electrification of 13 VDCs in Nawalparasi district. The Division is also undertaking power evacuation studies for IPP projects.

Central Workshop

Central Workshop at Hetauda undertakes maintenance work of power transformers and distribution transformers for NEA and other institutions. It also rents out heavy construction equipment to different parties. In FY 2007/08, this Workshop has carried out maintenance work of about 200 transformers ranging from 15 kVA to 12,000 kVA ratings.

Concrete Pole Plants

Concrete Pole Plants at Amlekhgunj and Kotre (near Pokhara) produce pre-stressed concrete (PSC) poles of different length for NEA and other customers. In FY 2007/08, the Amlekhgunj plant produced about 10,600 units of PSC poles of 8 m, 9 m and 11 m length. In the same FY, the Kotre plant produced 1,492 units of PSC poles of 8 m and 10.4 m length.

NEA's Subsidiary Companies

Chilime Hydropower Company Limited

Chilime Hydropower Company Limited (CHPCL) was promoted in 1996 by NEA as its first subsidiary company. NEA is the major shareholder of the Company with NRs. 489.6 million which amounts to 51% of total equity capital. The staff of NEA and CHPCL has 25% stake and the remaining 24% of the equity is allotted for the general public. CHPCL successfully implemented Chilime Hydroelectric Project by mobilizing the financial and technical resources from within the country in 2003 (BS 2060). This Project has been acclaimed as an exemplary model of development for hydropower in Nepal.

Project Features

Chilime Hydroelectric Project (CHEP), with an installed capacity of 22.1 MW, is located in Rasuwa district about 134 km north of Kathmandu, and is a peaking run-of-river type of scheme. The Project started commercial operation on August 24, 2003 (Bhadra 8, 2060). Till FY 2007/08, the Project has delivered a total of 670,817.90 MWh, whereas the total contract energy for the same period was 647,128.36 MWh. The Company has been successful in awarding its shareholders a dividend of 10%, 20% and 35% in FY 2003/04, 2004/05 and 2005/06 respectively. For FY 2006/07, a dividend of 30% has been proposed.

Projects in Pipeline

Backed by the rich experience of design, construction, operation and management of CHEP, the Company is now poised to undertake development of four more hydropower projects, namely, Sanjen Upper Hydroelectric Project, Sanjen Hydroelectric Project, Middle Bhotekoshi Hydroelectric Project and Rasuwagadhi Hydroelectric Project. Feasibility studies of Sanjen Upper Hydroelectric Project (11 MW) and Sanjen Hydroelectric Project (35MW) have been completed and detailed engineering design is in progress. Both of these projects are located upstream of the existing Chilime Hydroelectric Project. Feasibility study of Middle Bhotekoshi Hydroelectric Project (80 MW), located in Sindhupalchowk district, in Central Nepal, also is in progress. Feasibility study of Rasuwagadhi Hydroelectric Project (75 MW) located in Rasuwa district shall be carried out in FY 2008/09. Local people of the districts have shown great interest in investing and participating in the development of these hydropower projects being planned by the Company. CHPCL plans to start construction of both Sanjen Upper and Sanjen Hydroelectric Projects in the FY 2008/09.

Upper Tamakoshi Hydropower Limited

Upper Tamakoshi Hydropower Limited (UTKHPL) was formed as a subsidiary company of NEA in March 9, 2007 (Falgun 25, 2063) with the primary aim of developing and managing 309 MW Upper Tamakoshi Hydroelectric Project (UTKHEP) utilizing the financial and the 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 the debt for the Project (3%). The Company also has plans to develop other hydropower projects in Nepal.

NEA Board has constituted a five-member Board of Directors for the Company on March 12, 2008 (Falgun 29, 2064) comprising of Mr.Arjun Kumar Karki (Managing Director, NEA), Mr. Sashi Bikram Rana (Administrator, Employee Provident Fund), Mr. Uttar Kumar Shrestha (Deputy Managing Director, NEA), Dr. Jibendra Jha (General Manager, Generation, NEA), and Mr. Bhoj Raj Regmi (General Manager, Engineering Services, NEA). The first meeting of the Company Board of Directors held

on March 20,2008 (Chaitra 07, 2064) has unanimously elected Mr. Arjun Kumar Karki, Managing Director of NEA, as the Chairman of the Company.

Project Features

Upper Tamakoshi Hydro Electric 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 and design discharge of 44 m3/s. The Project will be generating about 1,737.7 GWh of energy annually. The major components of this Project are: an intake, a 22.5 m high concrete dam, twin desanding basins, 7.2 km long headrace tunnel, 2.0 km long pressure shaft, underground powerhouse, 2.5 km long tailrace tunnel and 47 km long 220 kV transmission line. Before the formation of UTKHPL, the Project was managed by NEA.

Project Status

A MoU was signed between NEA and EPF on January 29, 2008 (Magh 15, 2064) where the latter pledged to provide NRs. 12 billion for the project; NRs. 10 billion will be as debt and NRs. 2 billion as debenture. 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. Discussions are underway with Rastriya Beema Sansthan and Citizen Investment Trust to arrange remaining funds required for the Project. The Project is estimated to cost NRs 27.4 billion, 70% of which is structured as debt and the rest as equity.

Responding to the Company's call of proposals for prequalification, 16 international construction companies have tendered their proposals for Project civil work. Evaluation of the proposals is underway. Detailed engineering design of the Project is in progress and is expected to be completed by November, 2008 (Mangsir, 2065). On the field side, the last 28.5 km stretch of the 68 km long access road is under construction, and upgrading of 35 km long Dolakha-Singati section of access road will be commenced by September, 2008 (Ashwin, 2065).

The Company has already invited applications for the Chief Executive Officer (CEO) from competent candidates.

Power Transmission Company Nepal Limited

The initiatives taken by Government of Nepal for hydropower development have given rise to launching of more and more numbers of hydropower projects in Nepal. It is envisioned that Nepal would be in power surplus by year 2013-14 and after meeting the internal demand could export power to India, which is perpetually power deficit. Hence there is an urgent requirement for Nepal to develop transmission capability to transfer Nepal's power across the border and reap the benefits of huge Indian power market. Development of transmission network within Nepal is also equally important to evacuate the power of future power projects aimed at meeting internal demand.

Considering this urgent requirement, NEA and IL&FS IDC 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 Indo–Nepal transmission line links would be implemented by two Special Purpose Companies: JVC India and JVC Nepal. The JVC–India would be responsible for implementation of the Indian portion of the transmission line. The JVC–Nepal would be responsible for implementation of the Nepal portion of the transmission line. Power trade in India would be routed through PTC, the nodal agency in India nominated by Ministry of Power, for the purpose.

In India side, "Cross Border Power Transmission Company Private Limited” (CPTC) has been incorporated on December 19, 2006 in India and is presently 100% subsidiary of IL&FS. As per the arrangement, IL&FS will offload their shares to NEA and PGCIL by 26% each.

Central Activities

NEA Board Matters

Mr. Gyanendra Bahadur Karki, Honorable Minister, Ministry of Water Resources (MoWR) is the Chairman of NEA Board since June 12, 2006 (Jestha 29, 2063).

Mr. Shankar Prasad Koirala, Secretary, Ministry of Water Resources, GoN has been in NEA Board as an ex-officio member since December 9, 2007 (Mangsir 23, 2064).

This is beginning of the third year for Mr. Arjun Kumar Karki as Managing Director and Member Secretary of the NEA Board. He was appointed to the post in June 17, 2006 (Shrawan 1, 2063) by the Government of Nepal (GoN). With regards to the other board members, no changes have been made over the year.

During the year in review, twenty-four board meetings were convened to deliberate and decide on various agenda. Scores of important and far reaching decisions were made. Approval of the Memorandum of Understanding (MoU) between Nepal Electricity Authority and Employees Provident Fund for financing the development of Upper Tamakoshi Hydroelectric Project, and issuance of Power Bond to the institutional and individual investors to finance ongoing hydropower and transmission lines projects were some of the significant decisions taken by the Board. Furthermore, various by-laws relating to personnel and financial management were amended to impart greater degree of efficiency and effectiveness on the functioning of NEA.

Public Relation and Grievances Management Department

This department is entrusted with the responsibility of managing public relations functions, to handle all promotional and publicity related matters of NEA including issuing periodic press releases and organizing press conferences.

In FY 2007/08, the department conducted several press conferences for disseminating information about the activities of NEA. On 29 January, 2008 it conducted a press conference on signing of a Memorandum of Understanding (MoU) between NEA and Employees' Provident Fund to finance NRs. 12 billion and on 16 July, 2008 on signing of a MoU between NEA and Himalayan Bank Ltd. (as the lead bank) to finance NRs. 6 billion for the construction of Upper Tamakoshi HEP. The Department also played an important role in promoting the sales of NEA's Power Bond amounting to NRs. 1.5 billion.

The department is also responsible for collecting public grievances and complaints and forwarding them to concerned units for necessary action.

Mr. Arjun Kumar Karki, MD of NEA and Mr. Ashok SJB Rana, CEO of HBL signing the 'Memorandum of Understanding' to finance the construction of Upper Tamakoshi HEP.

Planning, Monitoring and Information Technology

The Planning, Monitoring and Information Technology, a corporate level wing headed by a Deputy Managing Director, is entrusted with the key responsibility of preparing short and long term Generation, Transmission and Distribution Expansion Plans to cater to the nation's growing demand for electricity. In addition, the wing also periodically evaluates and monitors the progress of the development projects undertaken by NEA and provides feedback needed for their successful completion. It also plays coordinating role in power exchange and power trading activities. Concluding Power Purchase Agreement (PPA) with Independent Power Producers (IPPs) and facilitating PPA administration is another important area of the wing's responsibility. This wing is organized into five departments, namely, System Planning Department, Power Trade Department, Information Technology Department, Monitoring Department, and Corporate Planning Department, each headed by a Director.

System Planning Department

System Planning Department is responsible for formulating NEA's generation and transmission expansion plans. During the year under review, the Department accomplished various studies on Load Forecast, Generation Expansion Plan and Transmission Expansion Plan.

The Department also carried out Grid Impact Studies on interconnection\integration of number of planned hydropower projects under NEA and private sector, and for addition of bulk load customers to the National Grid. Major activities carried out by this Department during FY 2007/08 also included the Evacuation Study for Rahughat hydropower project and the Study to identify possible transmission line corridors to accommodate hydropower projects to be developed under private sector.

Power Trade Department

Power Trade Department is primarily responsible for processing of the applications for Power Purchase Agreements (PPAs) filed by Independent Power Producers (IPPs) and execution of the PPAs for technically and financially viable power projects. The process involves verifying the documents submitted by the IPP, detail review of the technical and financial aspects of the project, execution of Connection Agreement between the IPP and concerned department of NEA, negotiation, and finally, conclusion of the PPA. The Department is also involved in the monitoring and assisting in the administration of PPAs including processing of the invoices. Coordinating the activities related to power exchange and power trading with India is another key area of responsibility of this Department.

During Fiscal Year (FY) 2007/08, the Department has concluded 6 PPAs, and is ready to sign 6 PPAs with the draft agreements prepared. In spite of the draft agreements being ready, some IPPs have not been forthcoming in concluding the PPAs, probably in expectation of increased power purchase price. The total number of PPAs concluded with IPPs has now reached 39 with a total installed capacity of 234.31 MW. In FY 2007/08, four IPP projects, namely, Thoppal Khola (1,650 kW), Sisne Khola (750 kW), Pheme Khola (995 kW) and Sali Nadi (232 kW) were successfully commissioned. With this, the total number of IPP projects in operation has reached 17 with a total installed capacity of 156.34 MW. NEA has signed a Memorandum of Understanding (MoU) with the promoters for the purchase of power from Upper Marsyangdi-A Hydroelectric Project with an installed capacity of 50 MW. Six IPP projects with a total capacity of 12.97 MW are under construction. The following chart summarizes the PPA related activities of this

Department in FY 2007/08.

PPA Concluded in the FY 2007/08

IPP Projects	kW
1. Belkhu Khola	320
2. Upper Hadi Khola	991
3. Siuri Khola	990
4. Hewa Khola	2,400
5. Lower Piluwa	990
6. Tinau Khola	990
Total	**6,681**

Draft PPA Prepared	6 IPPs	6,350
Connection Agreements Requested	7 IPPs	34,935
Projects under Detail Technical Review	10 IPPs	66,453
Projects under General Technical Review	7 IPPs	72,860

To alleviate the power shortage in Nepal, additional 25 MW of power was imported round the clock on commercial trading arrangement from PTC through Duhabi-Kataiya 132 kV transmission link for a limited period of 2 weeks in May, 2008. This first ever arrangement to trade power across the border on commercial principles, made possible by the agreement in Indo-Nepal Power Exchange Committee meeting held in Kathmandu (June 7-8, 2007), is a noteworthy development heralding an era of power trading between Nepal and India.

Information Technology Department

During the year under review, Information Technology Department carried out a number of IT related activities such as development and implementation of application software, extension of the NEA Intranet system, augmentation of the centralized Internet bandwidth, and value addition through the utilization of IT infrastructure. In this FY 2007/08, this Department has also conducted a total of 8 training programs participated by 96 NEA staff on use of the software applications developed by the Department.

Other noteworthy achievement of this Department is the development of Power House Maintenance software and its implementation in Trishuli, Panauti and Sundarijal Power Stations. Inventory Management System was also upgraded this year by accommodating the feedbacks of the users. The Department is also implementing Customized Accounting and Inventory System (CAIS) in more and more units. So far, CAIS has been implemented in 119 locations of NEA. The Department continued the implementation of utility software like No-light Management System and Interactive Voice Response System (IVR) with a view to respond promptly to customer calls.

To enhance and expand NEA intranet into a country-wide data network, the Department has started to use the fiber optics cable provided by Load Dispatch Center. Three locations, namely, Lagankhel, Bhaktapur, Balaju grid offices and Load Dispatch Center have been connected so far and the Department aims to connect most of the distribution offices within Katmandu by the end of next fiscal year. The Internet bandwidth in the corporate office complex was upgraded to 512 kbps using the optical fiber link.

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

Monitoring Department

The Department monitors the progress of projects implemented under NEA, prepares four-monthly and annual progress reports for internal evaluation and for review by the Ministry of Water Resources (MoWR). During FY 2007/08, this Department has reviewed the progress of a total of 63 projects being implemented under various business groups of NEA. The Department also furnishes required data and reports to MoWR, National Planning Commission & Peace Secretariat. Another task of this Department is to provide technical support to the Petition Committee of NEA constituted for hearing petitions on electricity pilferage cases.

Corporate Planning Department

Corporate Planning Department undertakes various tasks involving plans and programs at corporate level. The Department assists the National Planning Commission in the preparation of national budget by providing data related to NEA projects. Besides, the Department also provides data input for studies undertaken by various organizations on topics related to NEA. The Department was involved in preparing the country's three year Interim Plan (2007/08-2009/10) for electricity sector.

During the year under review, NEA obtained 5 new licenses from GoN. Out of these new licenses, two are the survey licenses: one for Chitwan-Madi distribution network and the other for Kulekhani III - Hetauda 132 kV transmission line. Generation License for Kulekhani-III Hydroelectric Project and Construction Licenses for Chandranigahpur 33 kV Sub-transmission Line and Kawasoti 132 kV Substation are the other licenses.

The Department also plays coordinating role in the development of hydropower projects under Public-Private Partnership program. Recently, NEA has decided to develop 42 MW Upper Modi-A Project under Joint Venture arrangement with Korean Electric Power Corporation (KEPCO), a South Korean Government undertaking. Initiation has been made to develop 128 MW Upper Seti Hydroelectric Project under bilateral funding. However, NEA has also taken step to develop this Project through other mode of funding.

Signing of JDA between NEA and KEPCO for Upper Modi 'A' HEP

Administration

The Office of Administration, headed by Deputy Managing Director is responsible for formulating and implementing administrative rules and regulations of NEA in order to manage its human resources. This office is also responsible for providing logistic support, legal advice, property management, security arrangement of central office as well as for promoting public relations. The office is supported by two departments namely, Human Resources Department and General Services Department.

Human Resources Department

The Human Resources Department is entrusted with the responsibility of managing the human resources of NEA which consists of a total of 9298 staff. In the year under review; 181 staff retired, 24 took voluntary retirement, 24 resigned and 39 passed away.

Promotion of employees is being carried out on a regular basis with 5 officers and 26 assistants being promoted based on 12 years automatic promotion scheme. Similarly, 15 officers and 14 assistants were promoted based on performance in different levels, and 35 officers and 25 assistants were promoted on the basis of internal competition.

Under disciplinary actions, 9 staff have been cautioned, 4 staff have been denied promotion, 2 had their salary grade increment suspended, 2 have been suspended, 9 have been dismissed from service and 4 have been dismissed from service with ineligibility for future NEA service of which 3 were on charges of possessing fake academic certificates.

The recruitment of new personnels in different positions, under both open and internal competitions, is in process. Under open completion, 652 technical and non-technical candidates for level 1, 2 and 3 were appointed. Likewise, under internal competition, 91 technical and non-technical candidates for level 4 and 5 were appointed. In addition, interviews for non-technical Level 3 positions are under process.

Curriculums for open and internal competitions written examinations for level 3 to level 7 (Technical/Nontechnical) have been developed/updated.

A new Personnel Management Software has been developed for efficient record keeping of employees and enhancing the existing Personnel Data Bank (PDB).

Personnel Services Regulation, 2062 6th amendment has been implemented from 2065/2/27.

To strengthen the Core Business and for improvement of quality of service, a performance based incentive system was implemented and approved positions considering existing staff of Generation, Transmission and System Operation were revised. In near future, approved positions for other businesses will also be revised.

For enhancing the skill and knowledge of the employees, NEA is providing training in different field. A total of 154 staff participated in trainings, seminars, workshops, conferences, higher studies and field visits abroad and similarly 111 staff participated in trainings, seminars, workshops and higher studies in Nepal. This fiscal year, 174 officers and 306 assistants received training from NEA Training Center. Induction Training was also provided to 738 newly recruited employees by the Training Center.

During FY 2007/08, financial support was provided to 10 employees under staff welfare program, for the treatment of serious illnesses like Cancer, Kidney Transplant and Cardiac Surgery.

Similarly, 535 staff received house/land purchase and construction loan, 76 received house maintenance loan, 117 received social activities loan, 110 received 3 months' salary loan and 1 received natural disaster loan.

During the year 44 staff were injured and 4 passed away in different accidents.

General Services Department

General Services Department has the responsibility of repair and maintenance of NEA buildings, managing all vehicles owned by NEA, providing logistic support, disseminating decisions made by NEA management and for matters relating to trade unions of NEA. The department also has the responsibility of managing NEA's property including payment of taxes and insurance premium. All religious and social functions to be observed by NEA are also the responsibility of this Department.

In FY 2007/08, NEA auctioned 24 damaged vehicles, and procured 19 pick ups for Distribution Centers. The Department works for keeping records of the land owned by NEA and protecting it from encroachment.

Legal and Arbitration Division

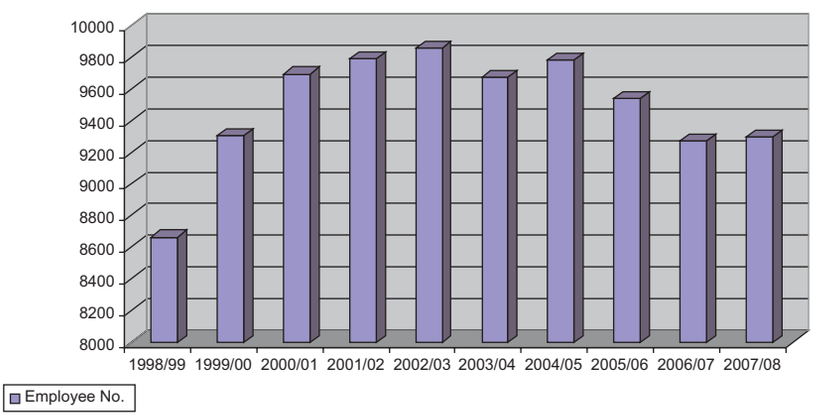
Legal and Arbitration Division of General Services Department deals with legal matters of NEA. In FY 2007/08, 118 cases were registered in different courts and arbitrational trribunals out of which the courts have given their verdict in favor of NEA in 18 cases and in 8 cases against. At present, 92 cases are being defended by NEA in different courts. Contractor of LOT 4 of Kaligandaki "A" Hydroelectric Project, Noell Stahl-und Maschinenbau GmbH, Germany has withdrawn its claims filed in International Court of Justice. A case in Kathmandu District Court between Nepal Bank Ltd. and NEA regarding bank guarantee issue amounting Rs.7,59,30,027/49 has been reconciled on a mutually agreed basis.

STAFFING STATUS- Fiscal Year 2007-2008 (Last Ashad 2065)

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	7	0	0	7
Officer Level	Technical	1043	2	1045	821	8	1	830
(Level 6 - 11)	Non Tech.	484	1	485	410	1	0	411
	Total	**1537**	**3**	**1540**	**1239**	**9**	**1**	**1249**
Assistant Level	Technical	5215	172	5387	4439	350	361	5150
(Level 1-5)	Non Tech.	3096	291	3387	2356	223	320	2899
	Total	**8311**	**463**	**8774**	**6795**	**573**	**681**	**8049**
	Grand Total	**9848**	**466**	**10314**	**8034**	**582**	**682**	**9298**

EMPLOYEE SITUATION (FISCAL YEAR 2054/055-2064/065)

Fiscal Year	1998/99	1999/00	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08
Employee No.	8666	9303	9694	9790	9860	9673	9779	9540	9272	9298



Internal Audit

The Office of the Deputy Managing Director (DMD) Internal Audit, which is responsible for internal audit of financial management, energy and technical activities within NEA, carried out 205 audits in FY 2007/08. During the course of these audits, the department faced various challenges and even obstacles, and was not able to meet its target. Disturbances in some parts of Nepal and cases of security concern to the auditors themselves impeded work of this Office.

The Office of the DMD Internal Audit also conducted various skill enhancement programs including trainings, observation, interactions etc. As many as.48 staff took part in various training programs conducted abroad on risk analysis, risk based audit, internal audit for effective management etc. A number of auditors were also given opportunity to participate in various trainings organised by NEA Training Center.

Likewise, a number of interaction programs were conducted to discuss various aspects of internal audit process in FY 2007/08. Apart from this, the office of the DMD Internal Audit started a whistle blowing campaign, which proved to be effective in assessment of internal control mechanism and efficient management of various fields in NEA.

In FY 2007/08, a total of 189 financial audits were carried out compared to 253 the previous year. These audits were conducted to ensure compliance, effectiveness, reliability, efficiency, and integrity of internal control mechanism. The auditors were provided full cooperation from all core business units in the course of audit, follow-ups and presentation of reports etc. The department also carried out 7 energy audits in FY 2007/08 and provided various suggestions regarding NEA's system loss assessment process. Technical audits were also conducted in 7 offices of various core business offices. In addition to field visits and site observations, the auditors were involved in finding lapses, discrepancies and deviations by studying various management information reports and providing proper suggestions to concerned offices/personnel for timely corrective actions. Furthermore, unscheduled/casual visits for specific audit issues were made during FY 2007/08 and suggestions were made available to the concerned officials for corrective action.

In FY 2007/08, the DMD Internal Audit submitted the annual report as well as the trimester wise reports on internal audit to the Managing Director, NEA.

NEA participants in Risk Based Audit in Utility Company Training Program Organised by ICWAI in New Delhi

Finance

The corporate level Finance, headed by the Deputy Managing Director, is responsible for overall corporate financial activities of NEA. It has two departments, namely, Corporate Finance and Finance & Accounts Department, each headed by a Director.

Corporate Finance Department

Fiscal Year 2007/08 is marked as a successful year for NEA in bringing out its new debt instrument, NEA Power Bond, in the capital market. This is the first of its kind in Nepalese capital market and was overwhelmingly subscribed by the public as well as institutional investors. This has essentially provided comfort to NEA in managing its budget deficit. At the same time, it opened up new horizon for mobilizing much needed financial resources from domestic market for funding power projects.

This is yet another year in succession that NEA faced a daunting task of managing a huge deficit budget. The approved budget for FY 2007/08 had projected a cash deficit of NRs.1,081.12 million. Similarly, NEA faced a financial loss of NRs.1,312.16 million, less than the estimated loss of NRs. 1,777.92 million in FY 2007/08. Strikes and unrest in mid south Terai aggravated the financial health of NEA to a large extent. Financial performance remained satisfactory in some cases whereas there are achievements below expectation in many areas of activities, suggesting mixed results.

In FY 2007/08, NEA registered a total of 2,348.91 GWh as sales, which is equivalent to 97.02 % of the target and a growth of 6.57 % in comparison to sales of 2,204.20 GWh in FY 2006/07. In the reviewed period (FY 2007/08) total internal sales grew by 7.52 %, whereas export to India decreased by 19.99 % over last year's export. Total internal sales and export stood at 2,287.41 GWh and 61.50 GWh respectively in FY 2007/08.

Revenue from internal sales (net) and from export amounted to NRs. 15,034.80 million and NRs. 370.23 million respectively in FY 2007/08. A modest increment of 7.05 % in internal sales over previous year's internal sales was recorded whereas export revenue declined by 13.69 % in the same period. Strikes, bandhs and unrest in Terai restricted mobility leading to lapses in theft control, meter reading and maintenance etc. which substantially hampered NEA's efforts of controlling losses. In export side, India's curtailment in drawing power from Nepal in Thakurganj and Ramnagar are main causes of reduction in export sales revenue. As a result, overall sales income amounted to NRs. 15,405.03 million as against the target of NRs.15,890.94 million in FY 2007/08. This is an increase of only 6.61 % in comparison to sales of NRs. 14,449.73 million in FY 2006/07.

Rebate provided to consumers for early payment of bills amounted to NRs. 326.28 million which is approximately equal to previous fiscal year's rebate amount.

NEA's income from other services such as surcharge dividend, lease rent, interest, sales of goods etc. amounted to NRs. 655.24 million, a decrease of 35.55 % from FY 2006/07.This decrease is primarily due to dividends being not paid by Chilime Hydro Power Co. Ltd (CHPCL), a subsidiary of NEA. However, CHPCL has recently declared 30 % dividend for FY 2006/07. In FY 2006/07, NRs. 171.36 million was received as dividend for FY 2005/06 from CHPCL. Income from other services contributed 4.08 % to total income in FY 2007/08.

Total revenue for FY 2007/08 amounted to NRs. 16,060.27 million, an increase of 3.84 % over preceding year's income. The average revenue rate of NRs. 6.70 per kWh in FY 2006/07 remained unchanged in FY 2007/08. Cost of service for providing electricity to consumers increased by 4.37% to reach NRs. 7.40 per kWh, the primary reason for financial losses to NEA. If the tariff is not adjusted in the near future, the losses are bound to increase. The last tariff adjustment with an effect of 11 % increase was made in FY 2001/02.

NEA's total expenditure in FY 2007/08 in comparison to that of FY 2006/07 increased by NRs.1,739.45 million to reach a figure of NRs. 17,372.42 million. NEA spent NRs. 2,125.98 million in staff cost in FY 2007/08 which is equivalent to 12.24% of the total cost and 13.23 % of the total income. The same was 11.31 % of the total cost and 11.43% of total income in FY 2006/07. Reason behind this increase in staff cost by NRs. 356.94 million is attributable to a raise in staff salary in FY 2007/08. Operation and maintenance expenses also increased by 36.76% over the previous year's operation and maintenance expenses and stood at NRs. 1,323.84 million in FY 2007/08. Major reason behind this steep increase in operation and maintenance cost is due to overhaul including runner replacement in large power generating stations such as Kulekhani and Marsyangdi.

Depreciation expense increased by 3.42% over previous year's (FY 2006/07) figure and stood at NRs. 1,920 million in FY 2007/08. Interest on long term loan was NRs. 2,368.41 million in FY 2007/08, a marginal increase of 0.71 % over last year's figure. Royalty, previous years' adjustment and deferred revenue expenditure and provision etc. amounted to NRs. 839.18 million, NRs. 50 million and NRs. 190 million respectively. NEA incurred a loss of NRs. 480.61 million due to depreciation of Nepalese Rupees vis-à-vis the Japanese Yen from loan in Japanese Yen for the Kulekhani Disaster Prevention Project.

The revenue collection in FY 2007/08 was only about 88 % of the total sales whereas it used to be around 95 % in previous years. The collection was impeded by strikes and unrest in different parts of the country. The public sector and the street light dues still remain serious problems in revenue collection. The receivable balances from municipalities, government offices and public institutions stood at approximately NRs.2,527.88 million at the end of FY 2007/08. This is about 37.30 % of total receivables. Total receivable in FY 2007/08 was NRs.6,776.70 million, equivalent to 5.35 months of sales.

Additional fund requirement for various projects including Middle Marsyangdi HEP further worsened NEA's already difficult cash position. In order to overcome this problem of cash shortage, NEA issued Power Bond carrying an interest rate of 7.75 % to raise NRs. 1,500 million from the general public and financial institutions. The raised money was utilized in Middle Marsyangdi HEP, Chameliya HEP and Kulekhani-III HEP. In addition to this, NEA borrowed short term loan of NRs. 1,740 million from different commercial banks with an average interest rate of 7 % per annum.

In FY 2007/08, NEA requested GoN for revision of re- lending interest rate, royalty calculation procedures, capitalization of projects constructed under foreign grants and formation of a separate Rural Electrification Company to undertake all rural electrification works as per GoN policies. GoN 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.

In spite of the difficult situation, NEA has been investing in generation, transmission and distribution projects with a view of improving the supply situation, providing quality service as well as for catering electricity services to a larger population. For improving the supply situation, NEA is also encouraging the private sector by entering into power purchase agreements and by taking initiatives to develop projects in other modalities. Considering the effectiveness of Public Private Partnership (PPP) for project development in lowering the cost of supply, NEA is going forward with firm commitment to develop Upper Tamakoshi Hydroelectric project with a capacity of 309 MW under PPP. Tamakoshi Hydropower Limited (UTKHPL) has been incorporated for this purpose, with NEA as a sole promoter of the company holding 51 % of the equity share. Rest of the shares will be distributed to employees of NEA and UTKHPL, lenders, regular contributors of Employees' Provident Fund, locals of Dolakha district and the general public. For the financing of the project, NEA has signed Memorandum of Understandings (MoUs) with Employees' Provident Fund (EPF) and with Himalayan Bank as the lead bank of consortium of commercial banks. In the mean time, funding for Rahughat Khola (30 MW) and Upper Trisuli3-A (60

MW) has been mobilized from India and Exim Bank of China respectively. Similarly, a MoU and a subsequent Joint Development Agreement is signed between NEA and Korean Electric Power Company (KEPCO) for developing Upper Modi "A" Hydropower Project (42 MW) in a joint venture modality.

NEA is required to meet a number of covenants as per the loan agreements with the donor agencies. Major financial covenants are: Rate of Return (ROR) of 6 %, Self Financing Ratio (SFR) of 23 %, Debt Service Coverage Ratio (DSCR) of 1.2 times and Average Collection Period (ACP) of 3 months. Due to the high cost of services and the financial losses it has been facing, NEA has not been able to honor these covenants. As these covenants are not attainable for NEA in near future, it has become necessary to revise them with the consent of the donor agencies. Consequently, a discussion was held in FY 2007/08 with the mission of World Bank and the Bank has agreed in principle to revise it. In F/Y 2007/08, NEA achieved a ROR of 2.10 %, SFR of 10.88 %, DSCR of 1.01 times and ACP of 5.35 months. However, these covenants have been removed by the Bank as mandatory covenants for the time being.

To enhance the capabilities and to bring efficiency in financial management and accounting practices of NEA, a Technical Assistance (TA) has been approved by the World Bank. This TA will also implement the recommendations provided in the first phase of the 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 with this TA.

Finance and Accounts Department

Statutory audit for FY 2006/07 was completed during the FY 2007/08 and final audit report from Office of the Auditor General has been issued. Similarly, Tax Audit for the above income year was also completed in FY 2007/08.

Before completion of accounts for FY 2006/07, discussions on the observations in the audit report were held in all regional office under Distribution and Consumer Service in the presence of statutory auditors. NEA Board formed a committee with the Secretary, Ministry Of Water Resource as the Coordinator, for furnishing replies to the preliminary auditor's report. The committee acquired explanations on the observations mentioned in the audit report from various departments/projects and recommended a number of instructions to be implemented immediately for improving the overall performance of NEA.

Even though efforts were made to improve the deteriorating financial health of NEA, the financial results for the FY 2007/08 were not up to the level of expectation. The total income was lower by NRs. 733.28 (4.36%) million than previously estimated. However, compared to the budgeted figure, the total operation & maintenance expenditure and regular capital expenditure was less by 8.30% and 22.71% respectively.

Total operating expenses under generation, transmission, distribution and administration in FY 2007/08 stood at NRs. 9,625.57, NRs. 304.28, NRs. 1,947.42 and NRs. 576.14 million respectively. As compared to last fiscal year's figures, the expenses under the above headings increased by 9.46%, 26.32%, 6.16% and 20.13% respectively, whereas the total expenses increased by 11.12%.

Operating surplus of NRs 2,218.77 million in FY 2006/07 decreased to NRs 1,616.86 million in FY 2007/08. In spite of an operating surplus in FY2007/08, NEA suffered a net loss of NRs. 1,312.16 million against previous year's profit of NRs. 314.19 million. The reasons for incurring losses are mainly attributed to high interest and appreciation of Japanese Yen vis-à-vis Nepalese Rupees, regarding loan repayment in Japanese Yen for Kulekhani Disaster Prevention Project.

In FY 2007/08, NRs. 2,497.34 million worth of property, plant & equipment was capitalized. At the end of the FY 2007/08, property plant & equipment valued at historical cost reached NRs. 52,294.10 million as compared to NRs. 51,781.76 million in the beginning of the fiscal year. Similarly, the project

work in progress was NRs. 35,930.74 million and NEA invested NRs. 9,894.58 million in capital works and projects of which NRs. 2,032.79 million comprised of government equity, NRs. 3,830.32 million through government loan and NRs.4,031.47 million was borne from NEA´s internal source.

NEA has invested NRs 1,602.05 million in subsidiaries and other companies till FY2007/08 of which NRs 489.60 million was for equity share in Chilime Hydro Power Co. Ltd. (CHPCL). In FY 2007/08, Upper Tamakoshi Hydropower Limited (UTKHPL) was incorporated as a subsidiary company of NEA and all assets and liabilities of Upper Tamakoshi Hydroelectric Project were transferred from the NEA's books of accounts to UTKHPL. Accordingly, an amount of NRs. 670 million was recorded as investment in UTKHPL. Other investments of NEA include equity investment in Nepal Engineering Consultancy (NRs 2.28 million), Khumbu Bijuli Company (NRs 20.65 million), Salleri Chaylsa Hydro Electric Company (NRs 11.63 million) and Butwal Power Company (NRs 8.86 million) . NEA has not received any dividends from the above companies except Butwal Power Company In FY 2007/08, NEA received NRs 3.84 million as dividend from BPC. In addition to this, as of FY2007/08 end, NRs 399.00 million has been invested in Citizen Investment Trust (CIT) towards gratuity and pension liabilities.

NEA´s total borrowing stood at NRs. 52,762.18 million as of end of FY 2007/08. In FY 2007/08, NEA paid NRs. 552.56 million for interest, NRs.780.96 million for royalty and NRs. 668.24 million for repayment of loan to government. Likewise, NRs.3,154.98 million was provided from NEA's internal source for financing in various projects.

NEA was adopting a policy of revaluation of its majority of property, plant & equipment by applying revaluation factor provided by the World Bank every year. However, from FY 2007/08, NEA decided to discontinue the accounting policy of revaluation of assets. Accordingly, the entire property, plant & equipment were stated at historical cost and revaluation reserves, effect of revaluation on provision for depreciation and value of property, plant & equipment were adjusted and prior years' figures rearranged.

NEA is importing/exporting power under Indo- Nepal power exchange agreement with Bihar Electricity Board (BSEB). The annual escalation rate for the power import/export was revised in FY 2007/08 with effect from January 2004. Accordingly, necessary adjustments and reconciliation of receivables and payables as per revised rate were made in the books of NEA account before finalization of accounts for the FY 2006/07.

For proper management of gratuity fund, a draft of "Gratuity Fund Management and Operation Procedure 2064" has been prepared which is presently under the purview of the NEA Board.

A remarkable achievement has been made in terms of clearance of pending audit remarks. During FY 2007/08, out of the total outstanding NRs. 145.97 million of pending audit remarks for the period FY 1973/74 to FY1993/94, NRs. 109.70 million has been settled and the remaining are in progress.

NEA has initiated conversion of its manual accounting system by computerized system in a phased manner. Oracle based Customized Accounting and Inventory System (CAIS) was introduced and to date 100 budget centers are using financial accounting module. Out of 110 budget centers, inventory module is used only in 75 budget centers. NEA is planning to go into full automation in all its budget centers including small hydro and project offices. This will facilitate to consolidate the accounts and complete the financial and tax audit at stipulated time as well as to help integrate data into a new IT based financial accounting system to be implemented in the near future.

Nepal Electricity Authority

Highlights of FY 2007/08

(NRs. in million)

DESCRIPTION	2008*	2007	INCREASE/DECREASE	
			Amount	Percent
Revenue:				
Net Sale of Electricity (M.NRs.)	15,405.03	14,449.73	955.30	6.61
Income from Other Services (M.NRs.)	655.24	1,016.61	(361.37)	(35.55)
Total Revenue (M.NRs.)	**16,060.27**	**15,466.34**	**593.93**	**3.84**
Operating Expenses:				
Generation Exps. (incl. Power Purchase) (M.NRs.)	9,625.57	8,793.68	852.20	9.46
Transmission Expenses (M.NRs.)	304.28	240.88	63.40	26.32
Distribution Expenses (M.NRs.)	1,947.42	1,834.39	246.03	6.16
Administration Expenses (M.NRs.)	576.14	479.59	114.32	20.13
Depreciation Expenses (M.NRs.)	1,920.00	1,856.47	63.53	3.42
Deferred Revenue Expenditure (M.NRs.)	70.00	42.56	27.44	64.47
Total Operating Expenses (M.NRs.)	**14,443.41**	**13,247.57**	**1,366.92**	**9.03**
Operating Surplus (M.NRs.)	**1,616.86**	**2,218.77**	**(772.99)**	**(27.13)**
Interest on Long-Term Loans (M.NRs.)	(2,368.41)	(2,385.41)	17.00	(0.71)
Other (Exps.) income incl. prior year's Adj. (M.NRs.)	(560.61)	480.83	(1,080.66)	(216.59)
Net Income/(Loss) (M.NRs.)	**(1,312.16)**	**314.19**	**(1,836.65)**	**(517.63)**
Longterm Loans (M.NRs.)	52,762.18	47,616.15	5,146.03	10.81
Net Property, Plant & Equipment (M.NRs.)	52,294.10	51,781.76	512.34	0.99
Number of Consumers	1,524,610	1,397,813	126,797	9.07
Total Sales of Electricity (GWh)	2,348.91	2,204.20	144.71	6.57
Internal Sale (GWh)	2,287.41	2,127.33	160.08	7.52
Annual Average Consumer's Consumption (kWh)+	1,500.32	1,521.90	(21.57)	(1.42)
Average Revenue Rate (NRs./kWh)	6.70	6.70	-	-
Peak Load Interconnected System (MW)	721.73	648.39	73.34	11.31
Total Available Electric Energy (GWh)	3,180.66	3,051.82	128.84	4.22
Hydro Generation (GWh)	1,798.61	1,747.42	51.19	2.93
Purchased Energy (GWh)-India	412.41	328.83	83.58	25.42
-Nepal(Internal) (GWh)	960.47	962.26	(1.79)	(0.19)
Average Power Purchase Rate(NRs./kWh)++	5.31	5.40	(0.07)	(1.67)
Exported Energy (GWh)	61.50	76.87	(15.37)	(19.99)
Thermal Generation (GWh)	9.17	13.31	(4.14)	(31.10)
Self Consumption (GWh)	31.81	32.53	(0.72)	(2.21)
Net System Losses (Percentage)	**25.15**	**26.71**	**(1.56)**	**(5.84)**

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

Nepal Electricity Authority

Balance Sheet as of July 15, 2008

(NRs. in million)

Particular	*2008	2007	2006	2005	2004	2003	2002	2001	2000	1999
Capital and Liabilities										
Capital and Reserve										
Share Capital	28,414.99	26,382.18	23,113.10	20,161.80	18,215.85	16,976.87	16,601.30	15,360.30	14,634.00	13,365.80
Reserve and Accumulated Profit	(6,114.88)	(4,802.72)	(5,545.32)	(4,294.14)	(2,997.69)	(1,269.87)	696.51	1,626.96	1,600.09	1,402.96
Secured Long Term Loan	52,762.18	47,616.15	46,487.91	44,537.51	41,103.14	39,637.11	37,325.61	36,707.50	30,155.70	23,824.30
Grand Total	**75,062.29**	**69,195.61**	**64,055.69**	**60,405.17**	**56,321.30**	**55,344.11**	**54,623.42**	**53,694.76**	**46,389.79**	**38,593.06**
Asset										
Property, Plant & Equipment	52,294.10	51,781.76	51,743.38	52,166.56	51,415.14	50,094.75	51,080.91	28,238.26	25,106.49	20,585.66
Capital Work in Progess	35,930.74	29,145.19	21,991.50	16,060.40	10,619.55	8,655.48	4,837.80	23,640.00	18,947.00	16,542.70
Investment	1,602.05	882.05	819.90	777.00	713.01	613.01	553.00	517.10	521.10	326.10
Sub Total	**89,826.89**	**81,809.00**	**74,554.78**	**69,003.96**	**62,747.70**	**59,363.24**	**56,471.71**	**52,395.36**	**44,574.59**	**37,454.46**
Current Asset										
Inventories	1,518.45	1,498.45	1,354.80	1,372.70	1,048.01	1,017.22	1,058.10	960.90	982.30	740.00
Sundry Debtors and Other Receivable	6,776.70	5,151.41	4,088.00	3,697.70	3,735.71	3,380.20	2,284.90	1,678.50	1,525.50	1,530.90
Cash and Bank Balance	820.84	1,447.58	1,258.60	1,322.60	1,036.42	1,076.15	664.60	1,039.30	1,321.30	1,148.10
Prepaid, Advance, Loan and Deposits	2,275.47	2,225.53	2,293.90	2,098.60	2,063.27	2,216.91	3,314.40	2,634.90	1,932.00	1,634.20
Total Currents Asset	**11,391.46**	**10,322.97**	**8,995.30**	**8,491.60**	**7,883.41**	**7,690.48**	**7,322.00**	**6,313.60**	**5,761.10**	**5,053.20**
Less: Current Liabilities and Provision										
Sundry Creditors and Payables	25,617.71	22,119.00	19,144.39	16,768.69	13,856.61	11,593.69	8,852.79	5,070.80	4,488.50	4,349.70
Provision	813.13	693.13	709.80	697.70	681.48	753.31	1,244.20	1,042.90	988.90	436.80
Total Currrent Liabilities and Provision	**26,430.84**	**22,812.13**	**19,854.19**	**17,466.39**	**14,538.09**	**12,347.00**	**10,096.99**	**6,113.70**	**5,477.40**	**4,786.50**
Net Currents Assets	**(15,039.38)**	**(12,489.16)**	**(10,858.89)**	**(8,974.79)**	**(6,654.68)**	**(4,656.52)**	**(2,774.99)**	**199.90**	**283.70**	**266.70**
Deferred Expenditures (To be Written Off)	60.00	130.94	32.40	126.70	250.01	506.82	916.50	978.60	1,302.80	615.00
Inter Unit Balance (Net)	214.78	(255.17)	327.40	249.30	(21.73)	130.57	10.20	120.90	228.70	256.90
Total Def. Exp.& Inter.	**274.78**	**(124.23)**	**359.80**	**376.00**	**228.28**	**637.39**	**926.70**	**1,099.50**	**1,531.50**	**871.90**
Grand Total	**75,062.29**	**69,195.61**	**64,055.69**	**60,405.17**	**56,321.30**	**55,344.11**	**54,623.42**	**53,694.76**	**46,389.79**	**38,593.06**

* Provisional

Note: (1) NEA has dropped the practice of revaluation of property,plant & equipment and entire assets are presented at historical cost.

(2) Interest During the Construction (IDC) period amounting to NRs 4,148.89 million has been adjusted from long term loan to current liabilities.

Nepal Electricity Authority

Income Statement for the FY ending July 15, 2008

(NRs. in million)

Particulars	*2008	2007	2006	2005	2004	2003	2002	2001	2000	1999
Sales	15,405.03	14,449.73	13,331.90	12,605.20	11,874.70	11,012.60	9,476.20	8,160.80	6,856.00	5,396.70
Cost of sales	**9,929.85**	**9,034.56**	**8,332.70**	**7,462.40**	**6,765.40**	**5,348.00**	**5,886.70**	**4,480.70**	**2,190.30**	**1,950.50**
Generation (Incl. Power Purchase)	9,625.57	8,793.68	8,100.60	7,246.50	6,565.90	5,169.40	5,728.70	4,343.40	2,068.53	1,849.32
Transmission	304.28	240.88	232.10	215.90	199.50	178.60	158.00	137.30	121.73	101.18
Gross profit	**5,475.18**	**5,415.17**	**4,999.20**	**5,142.80**	**5,109.30**	**5,664.60**	**3,589.50**	**3,680.10**	**4,665.70**	**3,446.20**
Other income	655.24	1,016.61	639.90	617.50	671.40	512.50	459.60	593.10	356.40	384.70
Distribution Expenses	1,947.42	1,834.39	1,703.70	1,484.20	1,376.10	1,308.60	1,174.40	982.22	711.53	600.26
Administrative Expenses	576.14	479.59	419.50	622.40	489.10	536.10	447.40	850.08	703.47	629.24
Profit from operation	**3,606.86**	**4,117.80**	**3,515.90**	**3,653.70**	**3,915.50**	**4,332.40**	**2,427.30**	**2,440.90**	**3,607.10**	**2,601.40**
Interest	2,368.41	2,385.41	3,050.90	3,079.80	2,991.50	2,973.40	1,395.50	1,188.20	1,244.30	1,141.20
Depreciation	1,920.00	1,856.47	1,816.90	1,733.50	1,686.00	1,656.70	1,420.10	1,119.30	948.80	976.40
(Profit) loss on foreign Exchange	480.61	(493.39)	42.70	(230.00)	59.10	-	271.60	-		-
Provision for losses on property, plant & equipment	30.00	60.00	65.00	40.00		191.50	37.00	-		-
Deferred revenue expenditure writen off	70.00	42.56	105.40	123.30	320.10	411.10	512.50	426.90	440.80	236.80
Sub total	**4,869.02**	**3,851.05**	**5,080.90**	**4,746.60**	**5,056.70**	**5,232.70**	**3,636.70**	**2,734.40**	**2,633.90**	**2,354.40**
Profit (loss) from operation in the current year	***(1,262.16)***	***266.75***	***(1,565.00)***	***(1,092.90)***	***(1,141.20)***	***(900.30)***	***(1,209.40)***	***(293.50)***	***973.20***	***247.00***
Prior years (Income) Expenses	50.00	(47.44)	(297.20)	219.90	344.90	444.40	492.00	291.60	(216.70)	(79.40)
Net profit (loss) before tax	**(1,312.16)**	**314.19**	**(1,267.80)**	**(1,312.80)**	**(1,486.10)**	**(455.90)**	**(717.40)**	**(1.90)**	**756.50**	**167.60**
Provision for Tax	-	-	-	-	(274.20)	1,497.80	143.30	49.10	571.40	263.60
Net profit (loss) after tax	**(1,312.16)**	**314.19**	**(1,267.80)**	**(1,312.80)**	**(1,760.30)**	**(1,953.70)**	**(860.70)**	**(51.00)**	**185.10**	**(96.00)**
Balance of profit as per last account	(5,801.61)	(6,095.80)	(4,808.00)	(3,475.20)	(1,694.90)	278.90	1,159.60	1,230.60	1,065.30	1,181.50
Total profit Available for appropriation	(7,113.77)	(5,781.61)	(6,075.80)	(4,788.00)	(3,455.20)	(1,674.90)	298.90	1,179.60	1,250.60	1,085.50
Insurance fund	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.20
Profit (loss) transferred to balance sheet	**(7,133.77)**	**(5,801.61)**	**(6,095.80)**	**(4,808.00)**	**(3,475.20)**	**(1,694.90)**	**278.90**	**1,159.60**	**1,230.60**	**1,065.30**

* 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 is 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 Septermber 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

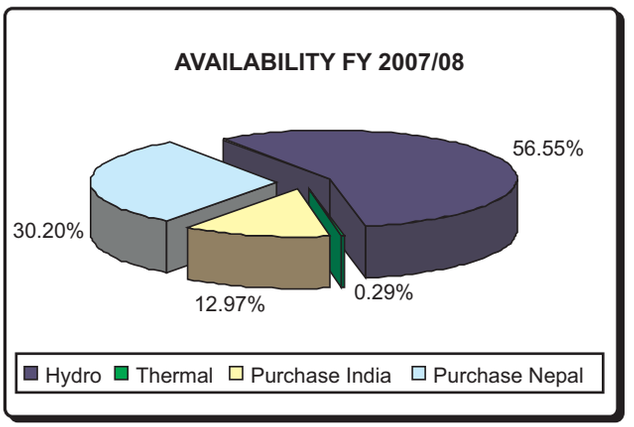
Note:

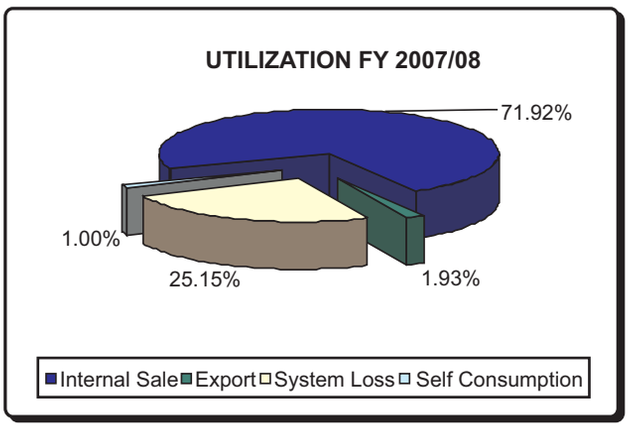
a) If demand meter reads kilowatts (kW) then kVA = kW/0.8

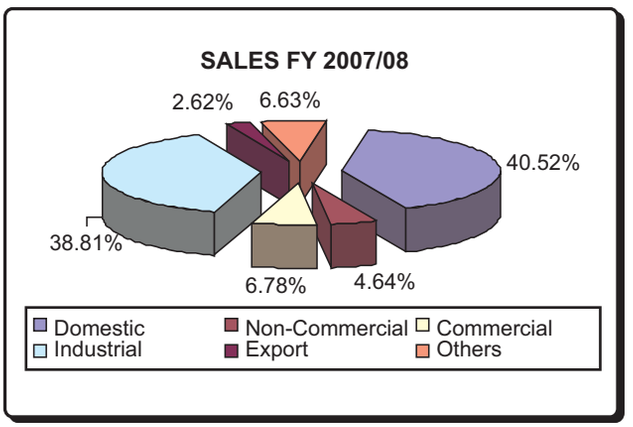
b) 10% discount in the total bill amount will be given to the Government of Nepal approved Industrial District

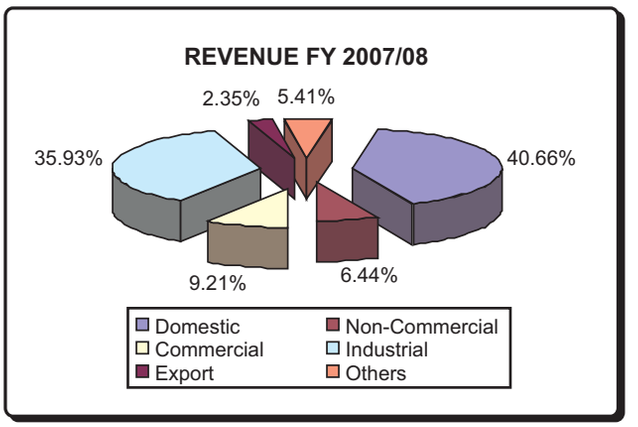
c) 25% discount in the total bill amount will be given to the Nepal Government Hospital and Health Centers (except residential complex)

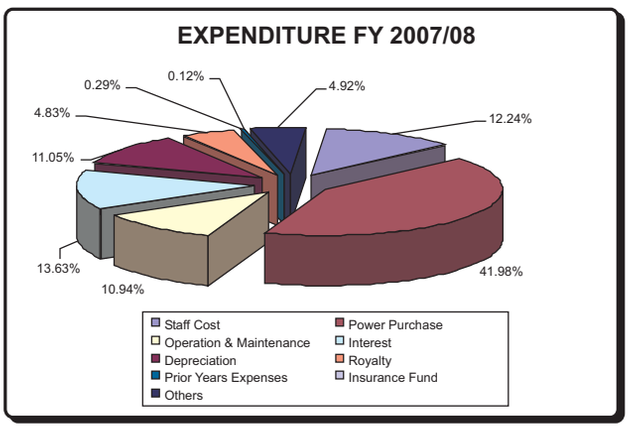
Statistics, Schematics and Maps

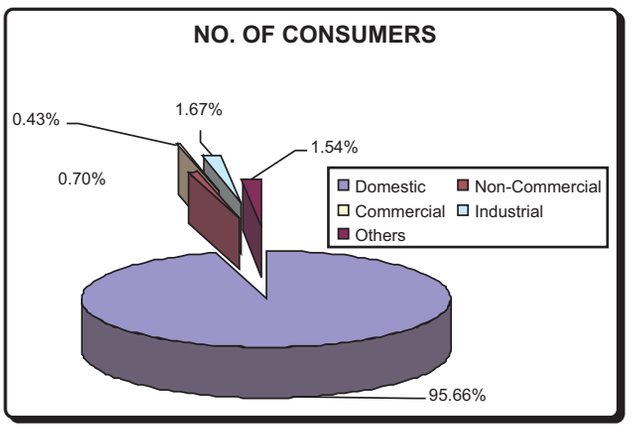




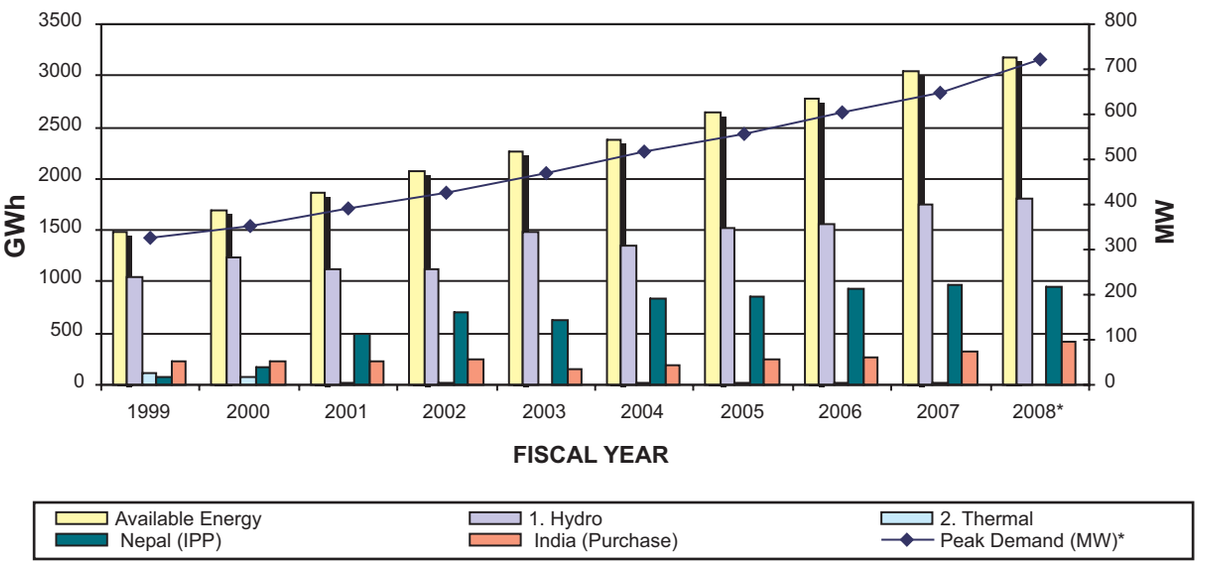








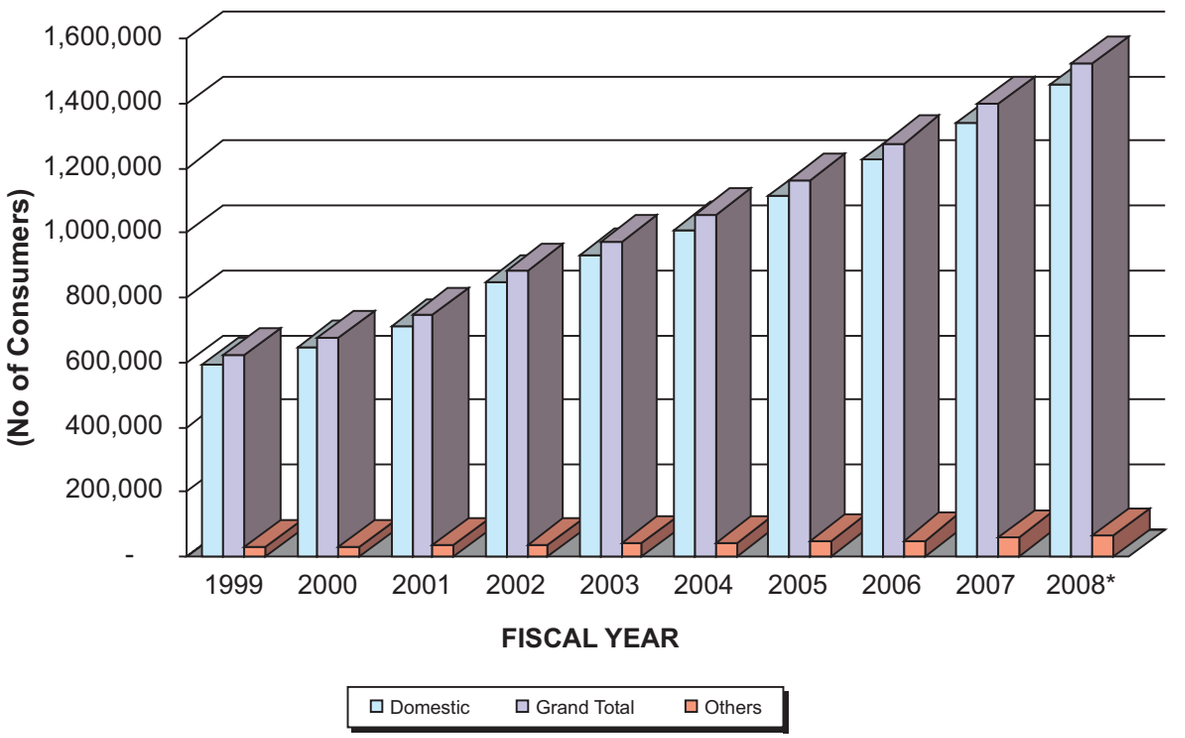
Total Energy Available & Peak Demand



Particulars	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008*
Peak Demand (MW)	326.4	351.9	391	426	470.33	515.24	557.53	603.28	648.39	721.73
Available Energy (GWh)	1475	1701.45	1868.42	2066.45	2261.13	2380.89	2642.75	2780.92	3051.82	3180.66
1. Hydro	1046.51	1233.22	1113.36	1113.13	1478.04	1345.46	1522.9	1568.55	1747.42	1798.61
2. Thermal	118.82	66.73	27.14	17.01	4.4	9.92	13.669	16.1	13.31	9.17
3. Purchase (Total)	309.67	401.5	727.93	936.31	778.69	1025.519	1106.184	1196.27	1291.09	1372.88
India	232.39	232.2	226.54	238.29	149.88	186.675	241.389	266.23	328.83	412.41
Nepal	77.28	169.3	501.38	698.02	628.81	838.844	864.795	930.04	962.26	960.47

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

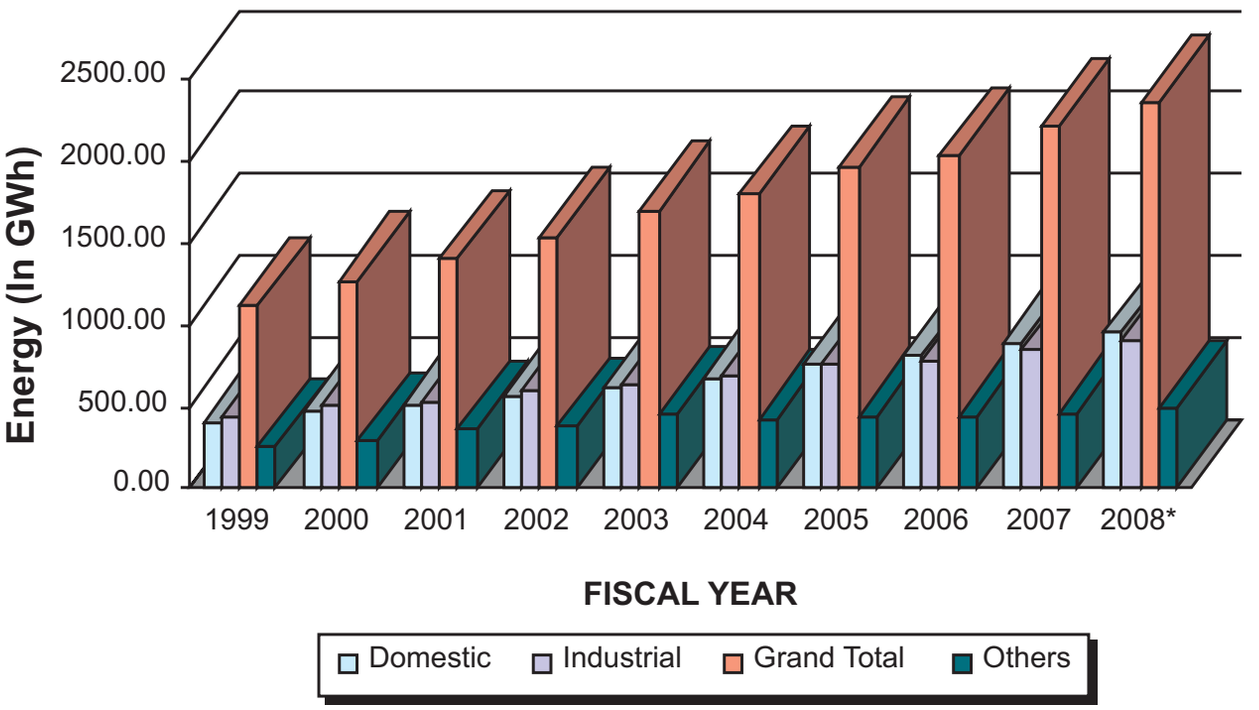
Growth Of Consumers



Particulars	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008*
Domestic	593,468	643,314	713,307	848,540	930,554	1,010,719	1,113,740	1,227,295	1,339,253	1,458,419
Non-Commercial	7,654	7,815	7,643	8,629	9,722	9,865	9,950	10,010	10,215	10,639
Commercial	2,948	3,096	3,386	3,898	5,317	5,454	6,000	6,170	6,000	6,597
Industrial	14,996	16,179	17,701	18,789	19,833	21,374	22,500	23,020	24,089	25,498
Water Supply	215	232	236	251	305	352	370	380	414	444
Irrigation	876	967	1,083	1,353	1,721	2,557	3,400	6,450	13,183	17,654
Street Light	842	932	1,012	1,048	1,229	1,437	1,500	1,550	1,608	1,952
Temporary Supply	207	144	141	172	138	150	155	165	210	298
Transport	21	47	37	49	48	48	50	54	39	37
Temple	1,131	1,248	1,441	1,800	1,738	1,959	2,150	2,290	2,628	2,752
Community Sales	-	-	-	1	1	15	35	58	169	315
Total (Internal Sales)	622,358	673,974	745,987	884,530	970,606	1,053,930	1,159,850	1,277,442	1,397,808	1,524,605
Bulk Supply (India)	5	5	5	5	5	5	5	5	5	5
Grand Total	**622,363**	**673,979**	**745,992**	**884,535**	**970,611**	**1,053,935**	**1,159,855**	1,277,447	1,397,813	1,524,610

Note : * Provisional figures; subject to final audit.

Electricity Sales

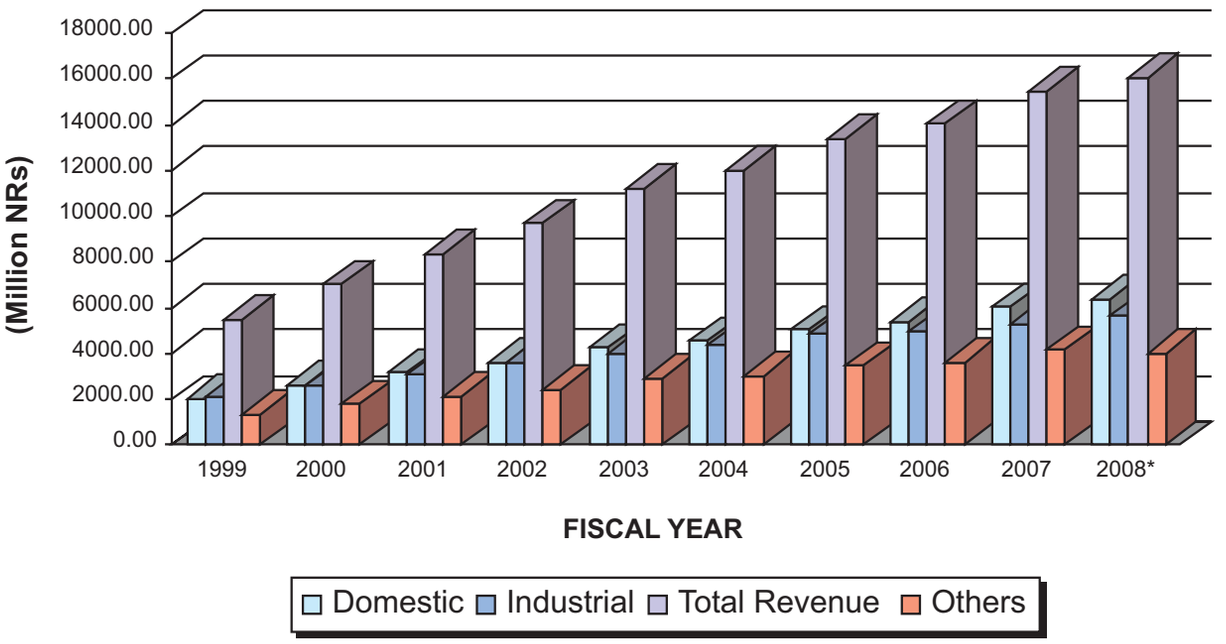


(in GWh)

Category	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008*
Domestic	410.57	467.05	518.36	557.94	617.11	676.37	758.19	805.72	893.27	951.84
Non-Commercial	62.93	63.59	73.16	78.22	80.74	83.01	100.54	95.29	100.52	108.90
Commercial	77.34	81.82	94.17	90.43	92.74	108.12	109.31	120.30	141.69	159.37
Industrial	441.00	508.36	520.63	596.68	629.51	689.80	764.00	785.55	849.13	911.67
Water Supply & Irrigation	22.83	15.74	28.60	29.28	29.98	31.67	49.98	45.50	47.96	47.50
Street Light	29.41	31.74	36.98	39.52	45.80	55.20	54.86	63.24	66.90	72.58
Temporary Supply	0.77	0.93	0.83	0.28	0.35	0.25	0.39	0.87	1.26	0.70
Transport	2.60	2.68	5.89	5.64	5.53	5.47	5.80	5.65	6.31	6.03
Temple	1.98	2.37	2.51	2.48	2.81	4.11	4.58	4.77	4.78	5.37
Community Sales	-	-	-	5.72	4.74	5.58	6.03	9.18	15.51	23.45
Total (Internal Sales)	1049.42	1174.27	1281.13	1400.46	1504.57	1654.00	1853.69	1936.07	2127.33	2287.41
Bulk Supply (India)	64.16	95.00	126.00	133.86	192.25	141.23	110.70	96.55	76.87	61.50
Grand Total	**1113.58**	**1269.27**	**1407.13**	**1534.32**	**1696.82**	**1795.23**	**1964.39**	**2032.62**	**2204.20**	**2348.91**

Note : * Provisional figures; subject to final audit.

Revenue

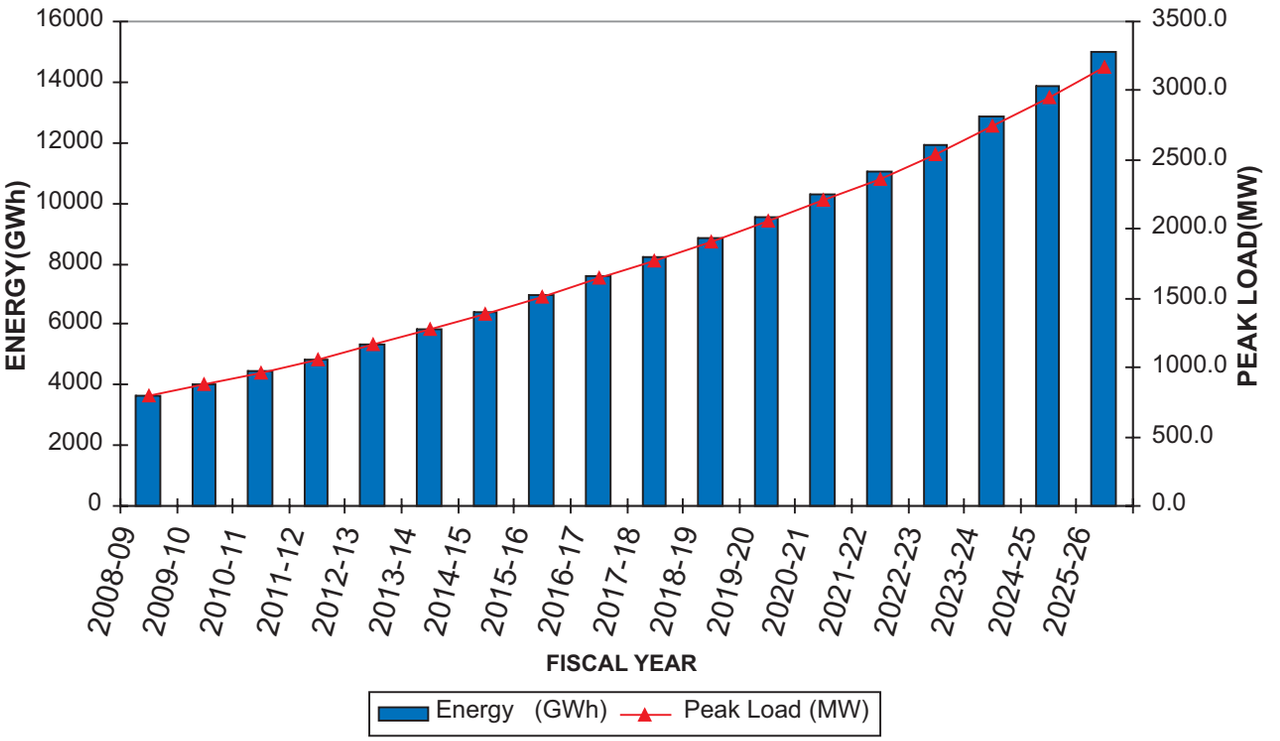


(in million NRs)

Category	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008*
Domestic	2056.05	2622.03	3161.38	3641.43	4249.81	4578.99	5079.87	5405.12	6021.40	6396.37
Non-Commercial	419.58	527.40	835.78	722.12	783.99	816.01	947.12	881.73	940.20	1012.74
Commercial	515.72	661.58	555.62	818.75	894.91	986.07	1015.47	1118.21	1288.05	1448.16
Industrial	2093.88	2599.34	3086.10	3608.13	4039.65	4380.22	4851.40	4978.69	5300.91	5652.36
Water Supply & Irrigation	78.14	95.65	120.90	138.68	148.53	154.80	239.97	197.96	214.18	212.98
Street Light	111.37	149.95	176.05	200.74	246.79	329.52	315.45	422.35	454.85	487.00
Temporary Supply	7.06	13.39	6.77	3.63	4.74	3.46	5.50	11.18	17.36	9.42
Transport	9.46	18.31	27.73	27.90	29.29	28.94	30.47	29.78	31.65	30.55
Temple	7.42	9.70	11.45	12.16	14.24	20.80	23.08	24.42	26.03	27.78
Community Sales	-	-	-	-	16.59	20.09	21.42	23.94	53.70	83.72
Total (Internal Sales)	5298.67	6697.35	7981.78	9173.53	10428.53	11318.93	12529.75	13093.38	14348.33	15361.08
Bulk Supply (India)	198.15	327.80	396.06	514.12	808.96	673.69	573.44	579.33	428.93	370.23
Gross Revenue	**5496.82**	**7025.16**	**8377.83**	**9687.65**	**11237.49**	**11992.61**	**13103.18**	**13672.71**	**14777.26**	**15731.31**
Net Income from Other Services	-	-	-	-	-	-	285.86	336.09	689.08	328.96
Total Revenue	**5496.82**	**7025.16**	**8377.83**	**9687.65**	**11237.49**	**11992.61**	**13389.04**	**14008.80**	**15466.34**	**16060.27**

Note : * Provisional figures; subject to final audit.

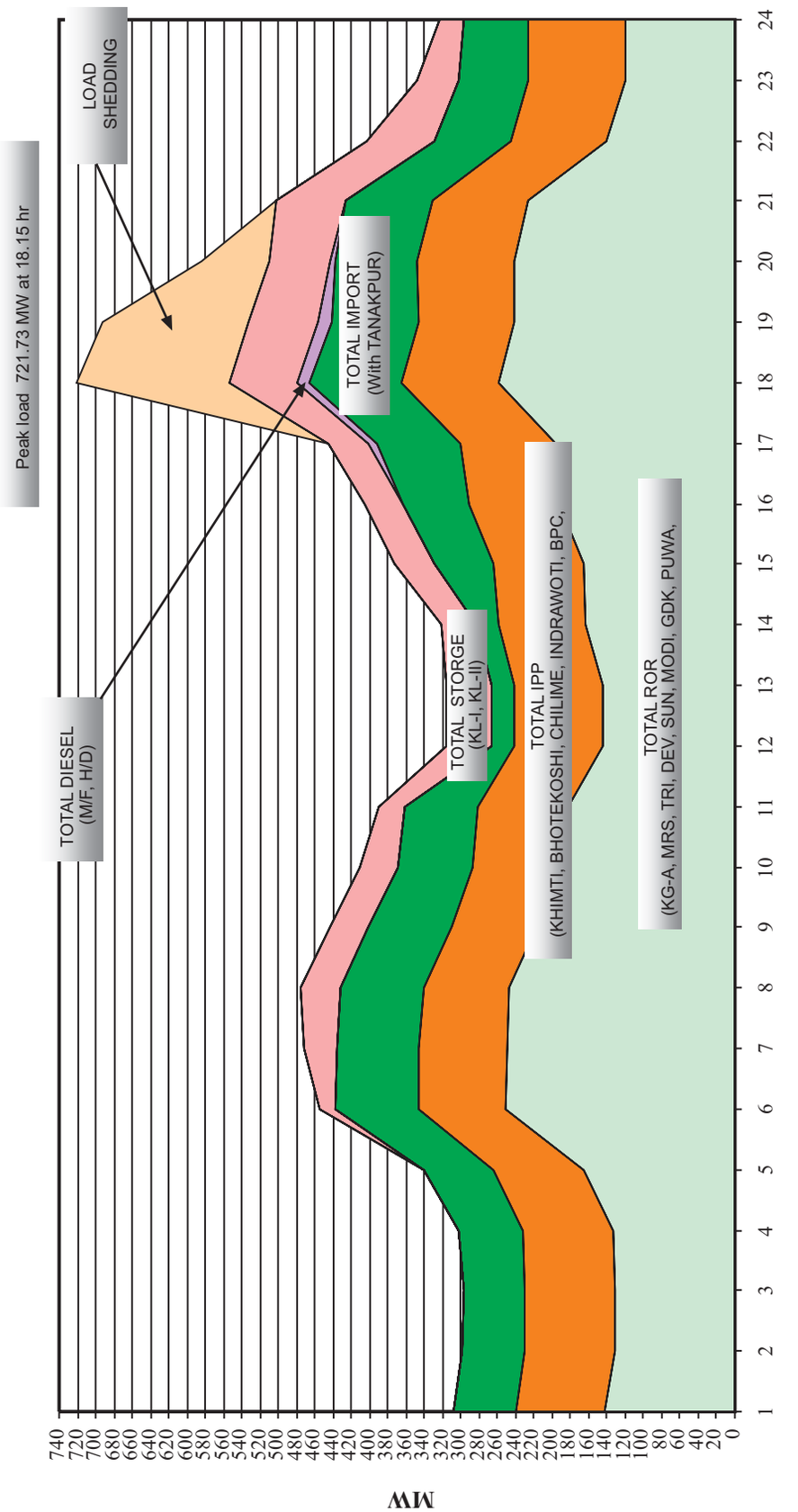
Load Forecast



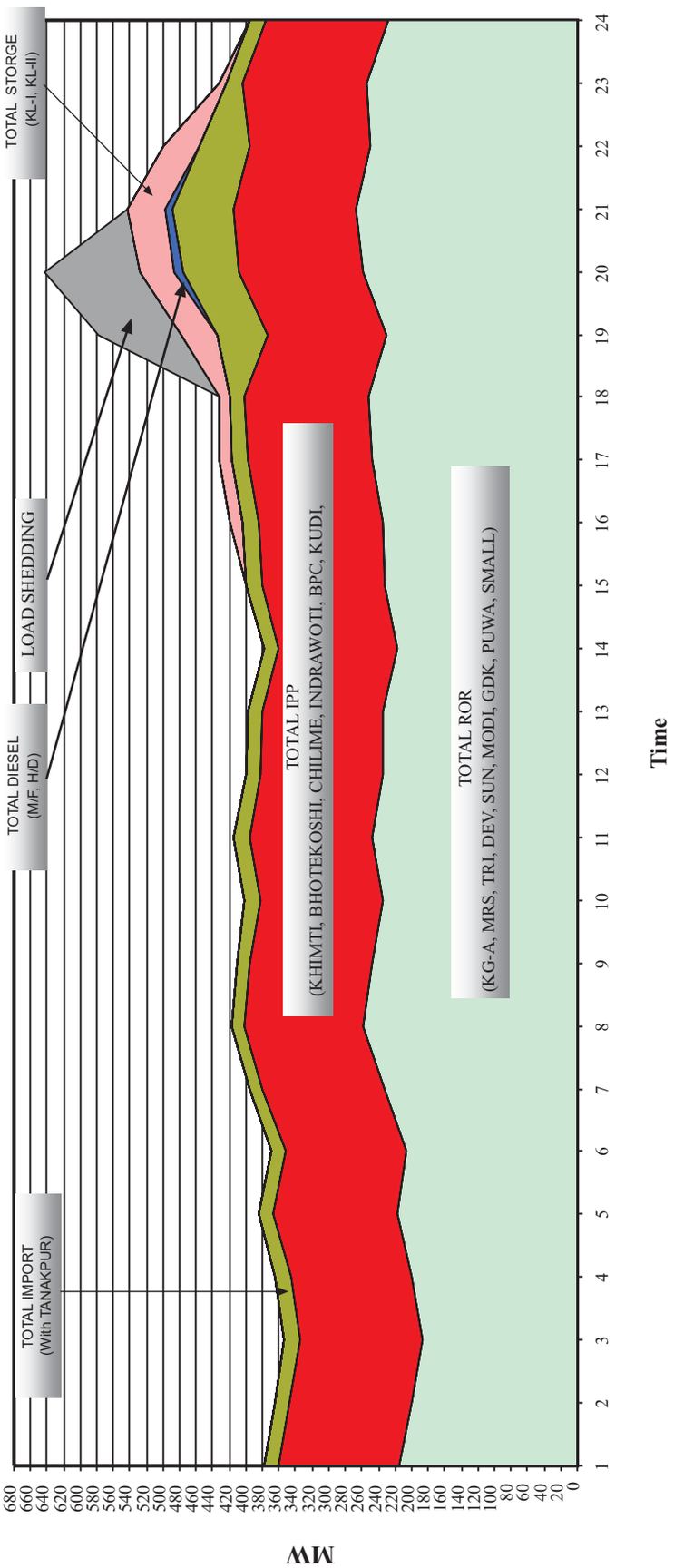
Year	Energy (GWh)	Peak Load (MW)
2008-09	3620.4	793.3
2009-10	4018.4	878.8
2010-11	4430.7	967.1
2011-12	4851.3	1056.9
2012-13	5349.6	1163.2
2013-14	5859.9	1271.7
2014-15	6403.8	1387.2
2015-16	6984.1	1510.0
2016-17	7603.7	1640.8
2017-18	8218.8	1770.2
2018-19	8870.2	1906.9
2019-20	9562.9	2052.0
2020-21	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

System Load Curve of Peak Day of the Year

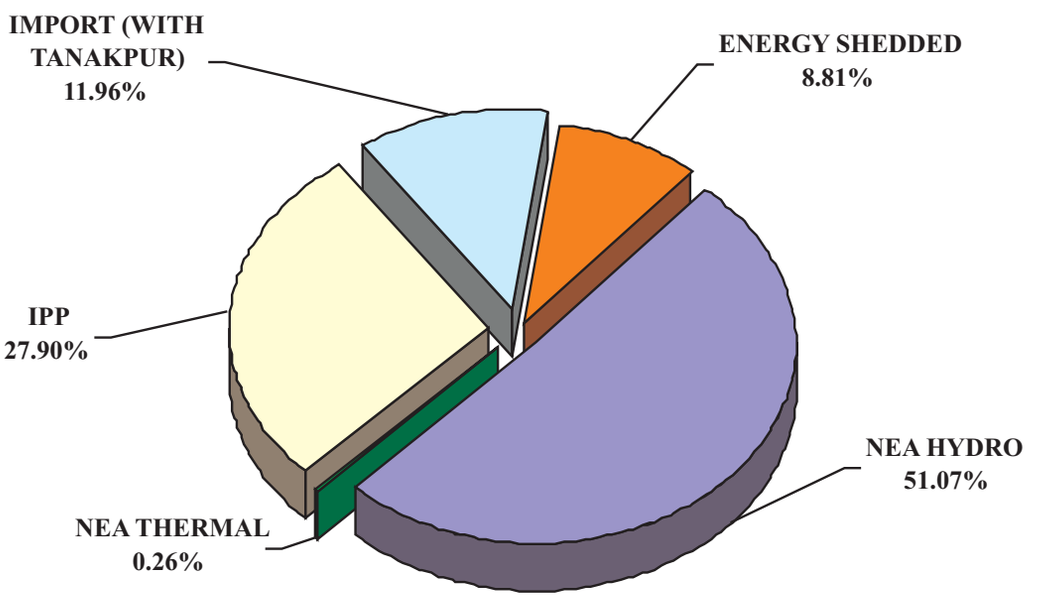
Poush 16, 2064 (Dec 31, 2007) Monday



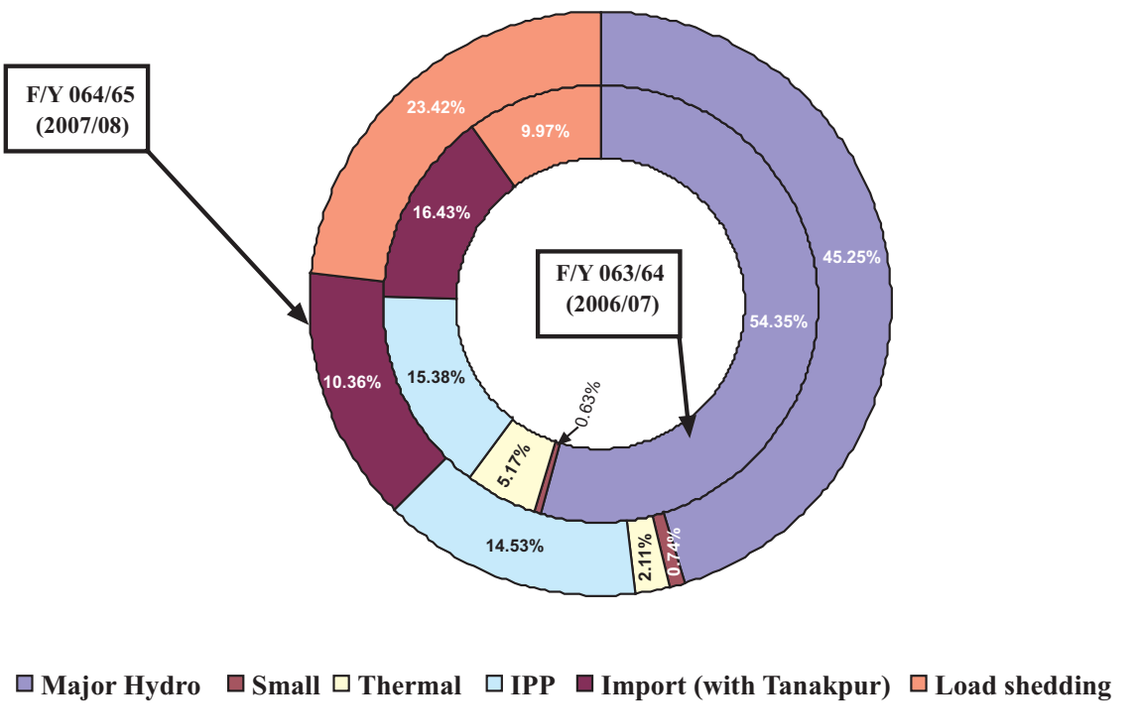
System Load Curve of Typical Wet Season Day



Energy Management: Percentage Contribution of Group Sources
F/Y - 2064/65 (2007/08)



Comparison of Group Sources in Peak Demand Supply
2063/064 (2006/07) Vs. 2064/065 (2007/08)



Power Development of Nepal

POWER PROJECTS

EXISTING

Major Hydropower Projects

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

Small Hydropower Stations

11	Chatara	3,200 kW
12	Panauti	2,400 kW
13	Tatopani/Myagdi(i) & (II)	2,000 kW
14	Seti (Pokhara)	1,500 kW
15	Fewa (Pokhara)	1,000 kW
16	Tinau (Butwal)	1,024 kW
17	Sundarijal	640 kW
18	Pharping***	500 kW
19	Jomsom**	240 kW
20	Baglung	200 kW
	TOTAL	401,854 kW

Small Hydropower Stations
Existing (Isolated)

1	Dhankuta***	240 kW
2	Jhupra (Surkhet)***	345 kW
3	Doti	200 kW
4	Phidim**	240 kW
5	Gorkhe (Ilam)***	64 kW
6	Jumla **	200 kW
7	Dhading	32 kW
8	Syangja***	80 kW
9	Helambu	50 kW
10	Darchula (I) & (II)**	300 kW
11	Chame	45 kW
12	TapleJung**	125 kW
13	Manang	80 kW
14	Chaurjhari (Rukum)**	150 kW
15	Syarpudaha (Rukum)**	200 kW
16	Khandbari**	250 kW
17	Terhathum**	100 kW
18	Bhojpur**	250 kW
19	Ramechhap	150 kW
20	Bajura	200 kW
21	Bajhang**	200 kW
22	Arughat Gorkha	150 kW
23	Okhaldhunga**	125 kW
24	Rupalgad (Dadeldhura)	100 kW
25	Surnaiyagad (Baitadi)	200 kW
26	Achham	400 kW
27	Dolpa	200 kW
28	Kalikot	500 kW
29	Heldung (Humla)	500 kW
	TOTAL	5,676 kW

Diesel Power Stations
Existing

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

Solar Power Stations

1	Simikot	50 kW
2	Gamgadhi	50 kW
	TOTAL	100 kW

Total Major Hydro (NEA) - Grid Connected	401,854 kW
Total Small Hydro (NEA) - Isolated	5,676 kW
Total Hydro (NEA)	407,530 kW
Total Hydro (IPP)	156,340 kW
Total Hydro (Nepal)	563,870 kW
Total Thermal (NEA)	53,410 kW
Total Solar (NEA)	100 kW
Total Installed Capacity (Including Private & Others)	617,380 kW

Under Construction

1	Upper Tamakoshi	309,000 kW
2	Middle Marsyangdi	70,000 kW
3	Chamelia	30,000 kW
4	Kulekhani No. 3	14,000 kW
5	Gamgadhi	400 kW
	TOTAL	423,400 kW

Planned and 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	30,000 kW
5	Upper Seti (Storage)	128,000 kW
6	Seti Trishuli (Storage)	128,000 kW
7	Upper Modi 'A'	42,000 kW
	TOTAL	1.025,000 kW

NEA Joint Venture under Public Private Partnership Program
Preliminary Works in Progress

1	Upper Karnali	300,000 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	85.00	Single
2	Kusha-Katiya(India)	19.00	Single
3	Duhabi-Hetauda	282.00	Double
4	Hetauda-KL2 P/S	8.00	Single
5	Bharatpur-Marsyangdi P/S	25.00	Single
6	Marsyangdi P/S-Suichatar	84.00	Single
7	Suichatar-KL2 P/S	34.00	Single
8	Suichatar-New Bhaktapur	26.90	Single
9	New Bhaktapur-Lamosangu	48.00	Double
10	Lamosangu-Khimti P/S	46.00	Single
11	Hetauda-Gandak P/S	154.00	Single
12	Bharatpur-Pokhara	97.00	Single
13	Bardghat-Butwal	43.00	Double
14	Butwal-KGA P/S	58.00	Double
15	KGA P/S-Lekhnath	48.00	Single
16	Pokhara-Modikhola P/S	37.00	Single
17	Butwal-Tanakpur P/S	407.00	Single
18	Pathalaiya-New Parwanipur	17.00	Double
19	Marsyangdi -M. Marsyangdi	44.00	Single
	TOTAL	1,562.90	

66 kV Transmission Line

1	Chilime P/S-Devighat P/S	43.56	Single
2	Trisuli P/S-Balaju	29.00	Double
3	Devighat P/S-Balaju	30.00	Single
4	Devighat P/S-New Chabel	33.00	Single
5	Balaju-Lainchor	2.30	Single
6	Balaju-KL1 P/S	36.00	Double
7	KL 1 P/S-Birgunj	72.00	Double
8	Suichatar-Teku	4.10	Single
9	Suichatar-New Patan	4.00	Double
10	Teku-K3 (underground)	3.50	Singlecore
11	Suichatar-K3	6.90	Single
12	New Patan-New Baneswor	2.80	Single
13	Bhaktapur-New Chabel	12.00	Single
14	New Baneswor-Sunkoshi P/S	61.00	Single
15	Devighat-Trishuli	4.56	Single
16	Indrawati- Panchkhal	10.00	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	129.0	Single
	TOTAL	157.5	

Planned and 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 Circuit	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	153	D/C Tower
	TOTAL	1,167	

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 CrossBorder 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	141.00	MVA
2	132/33 kV	435.50	MVA
3	132/66 kV	248.40	MVA
4	66/33 kV	25.00	MVA
5	66/11 kV	460.20	MVA
	Total	1310.10	MVA

Under Construction

1	132/33 kV Kawasoti Substation	30.0	MVA
2	132/11 kV Harisidhi	22.5	MVA
	Total	52.5	MVA

Planned & Proposed Sub-Stations

1	132/33 kV Syangja	15.0	MVA
2	132/33 kV Anbukhaireni	15.0	MVA
3	132/33 kV Damak	30.0	MVA
4	132/11 Chapali	30.0	MVA
5	a)132/11kV Matatirtha	22.5	MVA
	b)132/33 Kv Matatirtha	32.0	MVA
	Total	144.5	MVA

Switching Stations

1	New Hetauda Switching Station
2	New Butwal Switching Station
3	New Bharatpur Switching Station
4	Pathlaiya Switching Station

Power Development in Nepal (Private Sector)

Private Sector Hydropower Stations

Existing (Isolated)

1	Namche (KBC)	600	kW
2	Salleri (Sceco)	400	kW
	Total	**1,000**	**kW**

IPP Projects Connected to INPS

1	KhimtiKhola (HPL)	60,000	kW
2	Bhotekosi (BKPC)	36,000	kW
3	Chilime (CPC)	20,000	kW
4	Jhimruk (BPC)	12,000	kW
5	Indrawati-III(NHPC)	7,500	kW
6	Andhi Khola (BPC)	5,100	kW
7	Khudi (KhudiHP)	3,450	kW
8	Piluwa Khola (AVHP)	3,000	kW
9	Sunkoshi Small (SanimaHP)	2,500	kW
10	Thoppalkhola (ThoppalkholaHP)	1,650	kW
11	Chakukhola (APN)	1,500	kW
12	Phemekhola (KhorangaHP)	995	kW
13	Baramchi (Unique Hydel)	980	kW
14	Sisnekhola (Gautam Buddha HP)	750	kW
15	Rairang (RairangHPD)	500	kW
16	Salinadi (Kathmandu Small HP)	232	kW
17	Sangekhola (Sange Bidyut Company)	183	kW
	Total	**156,340**	**kW**

IPP Projects Under construction

1	Mardikhola (GandakiHP)	3,100	kW
2	Lower Indrawati (SunkoshiHP)	4,500	kW
3	Ridikhola (Ridi HPD)	2,400	kW
4	Patikhola (Unified HP)	996	kW
5	Upper Hadikhola (CPDS)	991	kW
6	Seti-II (Task HP)	979	kW
	Total	**12,966**	**kW**

PPA Concluded and Preliminary Works in Progress

1	Upper Modi	14,000	kW
2	Madi-1 (Annapurna Group Pvt.Ltd.)	10,000	kW
3	Mailung (MailungHP)	5,000	kW
4	Daramkhola (Gorkha HP)	5,000	kW
5	Lower Nyadi (Baverian HP Nepal)	4,500	kW
6	Upper Maikhola (East Nepal Dev.)	3,100	kW
7	Maikhola (Himal Dolakha HP)	2,400	kW
8	Hewakhola (Barun HPD)	2,400	kW
9	Phawakhola (Shivani HP)	2,079	kW
10	Lower Chakukhola (Laughing Buddha)	1,765	kW
11	Siurikhola (Nyadi Group)	990	kW
12	Lower Piluwa (Baneshwar HP)	990	kW
13	Tinaukhola Small (Namabuddha HP)	990	kW
14	Tadikhola (Adishakti Power)	970	kW
15	Narayani Shankar Biomass (TMB)	500	kW
16	Belkhu (Multipurpose Food Ind.)	320	kW
	Total	**55,004**	**kW**

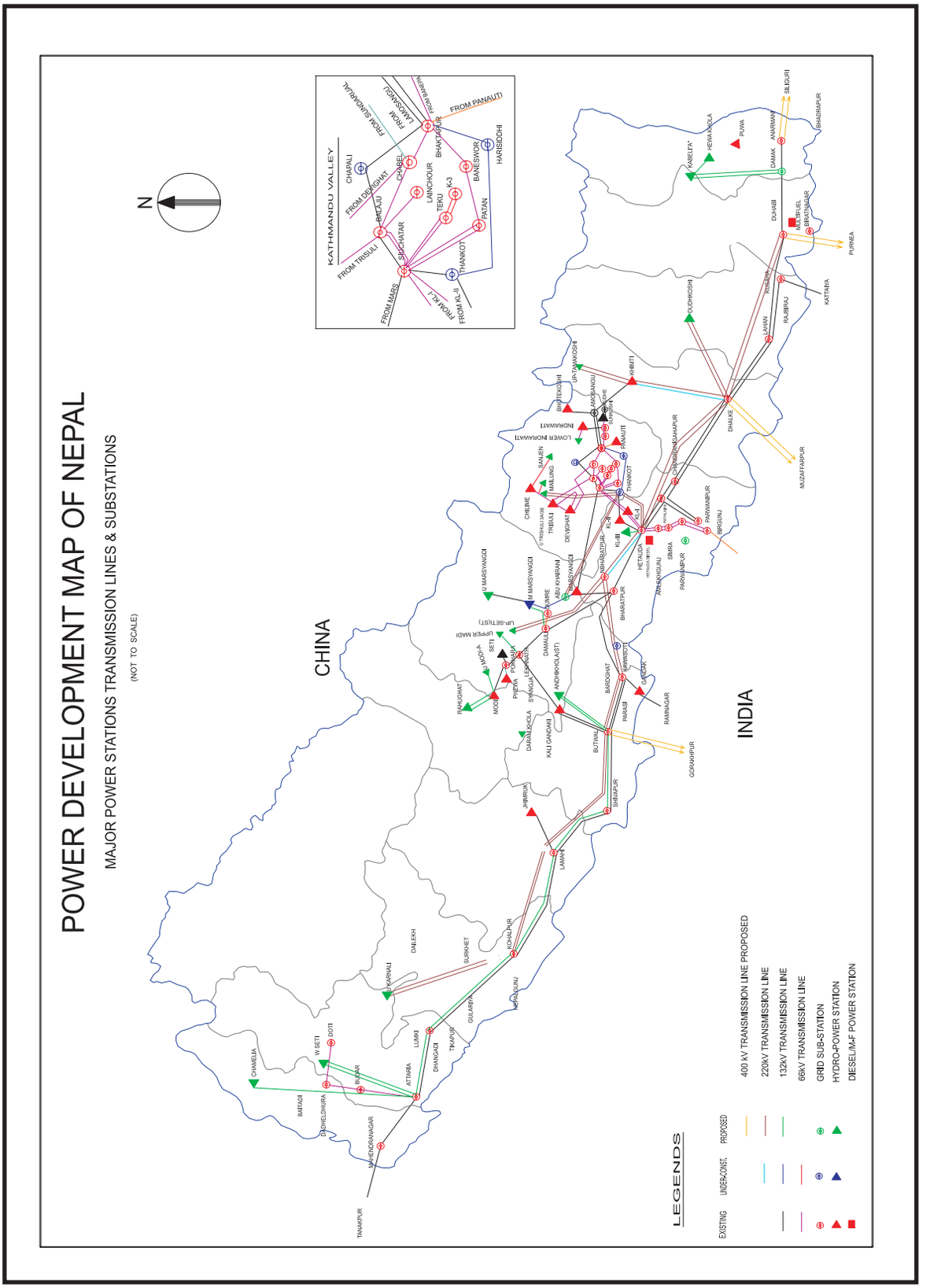
Planned & Proposed from Private Sector

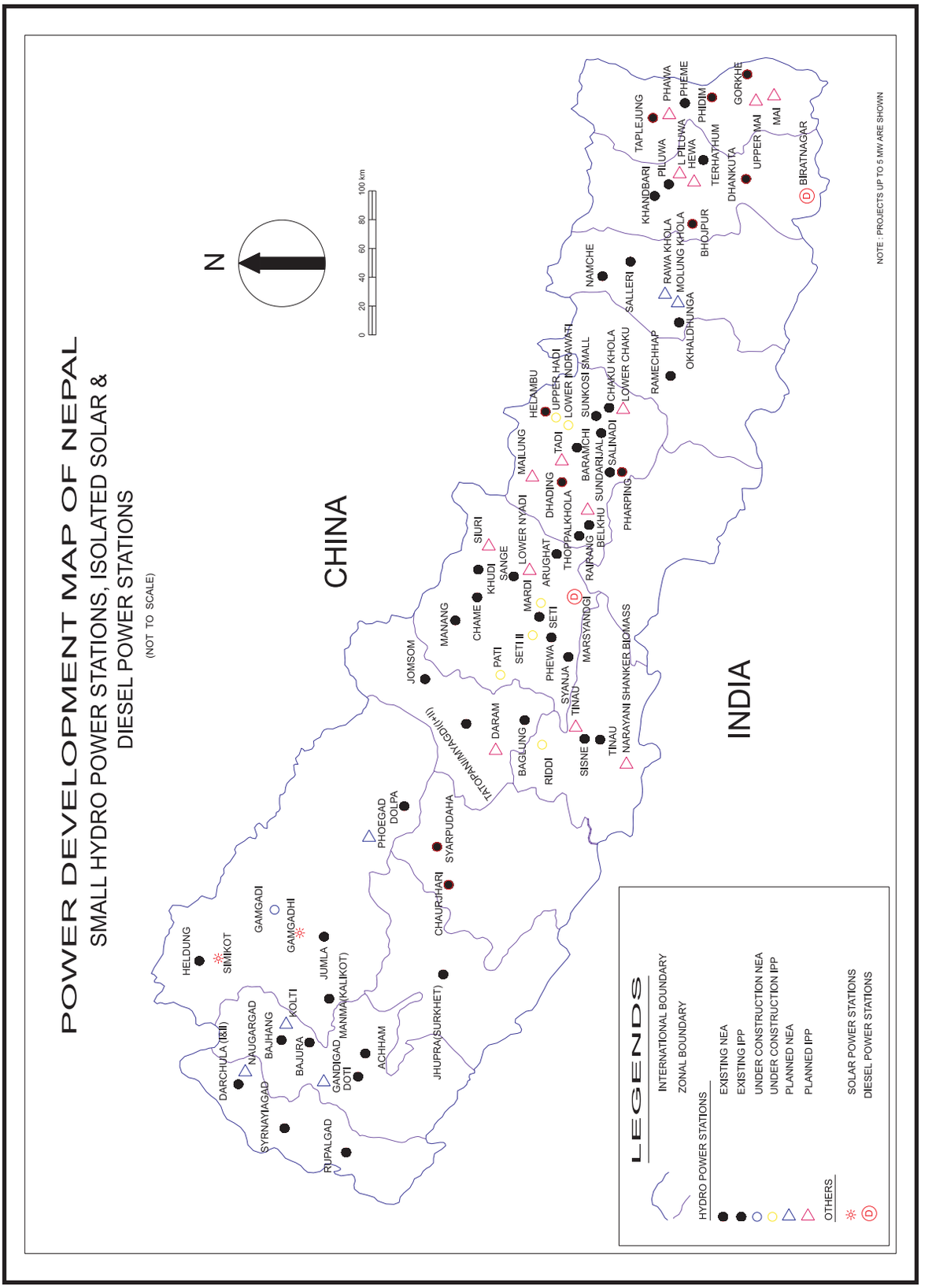
1	Seti (West)	750,000	kW
2	Arun 3	402,000	kW
3	Upper Marsyangdi'A'	121,000	kW
4	Likhu - 4	120,000	kW
5	Kabeli "A"	30,000	kW
6	Khimti - II	27,000	kW
7	Mailung	5,000	kW
8	Lower Indrawati	4,500	kW
9	Upper Modi	14,000	kW
10	Daram Khola	5,000	kW
11	Lower Nyadi	4,500	kW
12	Madi 1	10,000	kW
13	Fawa Khola	2,079	kW
14	Balefi	20,000	kW
	Total	**1,515,079**	**kW**

Transmission Line Length Private Sector

Existing

1	Jhimruk-Lamhi 132 kV (Single Circuit)	50.0	KM
2	Bhotekosi-Lamosangu 132 kV (Single Circuit)	25.7	KM
3	Indrawati-Panchkhal 66 kV (Single Circuit)	31.0	KM
	Total	**106.7**	**KM**


POWER DEVELOPMENT MAP OF NEPAL
MAJOR POWER STATIONS TRANSMISSION LINES & SUBSTATIONS
(NOT TO SCALE)
N
CHINA
INDIA
KATHMANDU VALLEY
CHAPALI
FROM DHADHING
BHAKTAPUR
FROM PANAUTI
FROM SUNDARIJAL
FROM LAMOSANGU
FROM TRISULI
SHOBHAKHAR
CHABEL
LAINCHOUR
BANESWOR
HARISIDDHI
BALAJU
TEKU
K-3
PATAN
FROM MARSY
FROM KL-I
FROM KL-II
THANKOT
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)
N
0 20 40 60 80 100 km
CHINA
INDIA
HELDUNG
SIMIKOT
GAMGADI
GAMGADHI
JUMLA
KOLTI
NAUGARGAD
BAJHANG
BAJURA
DARCHULA (tkl)
SYRNAYAGAD
RUPALGAD
GANDIGAD
DOTI
ACHHAM
MANMA(KALIKOT)
JHUPRA(SURKHET)
CHAURJHARI
SYARPUDAHA
PHOEGAD
DOLPA
TATOPANI(MYAGDI(HJ)
DARAM
BAGLUNG
RIDDI
JOMSOM
MANANG
CHAME
PATI
KHUDI
SIURI
SANGE
LOWER NYADI
MARDI
SETI II
PHEWA
SETI
SYANJA
TINAU
MARSYANGDI
SISNE
TINAU
NARAYANI SHANKER BIOMASS
ARUGHAT
THOPPALKHOLA
RAINANG
BELKHU
SUNDARJAL
SALINADI
BARAMCHI
TADI
DHADING
MAILUNG
HELAMBU
UPPER HADI
LOWER INDRAWATI
SUNKOSI SMALL
CHAKU KHOLA
LOWER CHAKU
PHARPING
RAMECHHAP
OKHALDHUNGA
SALLERI
NAMCHE
RAWA KHOLA
MOLUNG KHOLA
BHOJPUR
KHANDBARI
PILUWA
LPILUWA
HEWA
TERHATHUM
DHANKUTA
TAPLEJUNG
PHAWA
PHEME
PHIDIM
UPPER MAI
MAI
GORKHE
BIRATNAGAR
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

Construction work of Aeration Tunnel of Chameliya HEP

MMHEP Powerhouse

Signing of MoU between NEA and EPF

Aqueduct no 1 Trishuli Hydropower Station 2007