



Table of Contents

Sr. #	Particulars	Page #
1.	Foreword	IV-V
2.	Mission Statement	VI

Part I

3.	Section-I Licences Generation Licences to Small Power Producers (SPPs) Generation Licences to Isolated Generation Companies Generation Licences to Independent Power Producers (IPPs) Generation Licence to Chasnupp Generation Licences to QESCO Distribution Licences and Special Purpose Transmission Licence to KESC Workshop	1-3
4.	Section-II Tariffs Automatic Tariff Adjustment (ATA) Structural Adjustment of Tariff Ex-WAPDA Distribution Companies (DISCOs) KESC Tariff determination for Small Power Producers (SPPs) Tariff Review Motions	4-7
5.	Section-III Standards & Codes Standards Performance Standards for Generation Performance Standards for Generation Performance Standards for Distribution Procedures and Standards for Investment Programme Environmental Standards Codes Grid Code Guidelines Distribution Code Guidelines	8-10



6.	Section-IV Consumer Complaints and Privatization Complaints Privatization and Industry Structure	11-12
7.	Section-V Miscellaneous Workshop on Competitive Trading Arrangements SAFIR - Sixth Core Training Programme Administrative and Financial Matters of NEPRA Annual Audit Library Services Recruitment and Appointment Purchase of Plot for NEPRA Office Building	13-16
8.	Section-VI Anticipated Development in 2004-2005 and Future Challenges Anticipated Developments Licencing Tariffs Standards and Codes Consumer Affairs Division Miscellaneous Capacity Building Conference on Section 22 of NEPRA Act.	17-19

Part II

9.	Section-I Strengthening the Regulatory Framework	20-22
10.	Section-II Regulatory Policies	23-25
11.	Section-III Renewable Energy Support Mechanism	26-28

Annexes

12.	Electricity Statistics (Annexe-I)	29
13.	List of Small Power Producers Granted Generation Licences (Annexe-II)	30
14.	List of Independent Power Producers -IPP's (Annexe-III)	31



GLOSSARY OF ABBREVIATIONS

1.	ADB	Asian Development Bank
2.	BPC	Bulk Power Consumer
3.	DISCO	Distribution Company
4.	FESCO	Faisalabad Electric Supply Company
5.	GENCO	Generation Company
6.	GOP	Government of Pakistan
7.	GWh	Gigawatt per hour
8.	IBRD	International Bank for Reconstruction and Development
9.	ICI	Imperial Chemical Industries
10.	IEC	International Electro Technical Commission
11.	IFC	International Finance Corporation
12.	IPP	Independent Power Producer
13.	IRG	International Resources Group
14.	KESC	Karachi Electric Supply Corporation (Ltd.)
15.	kV	Kilo Volt
16.	kWh	Kilowatt per hour
17.	LAN	Local Area Network
18.	LUMS	Lahore University of Management Sciences
19.	MW	Megawatt
20.	NEPRA	National Electric Power Regulatory Authority
21.	NESPAK	National Engineering Services of Pakistan
22.	NGC	National Grid Company
23.	NTDC	National Transmission and Dispatch Company
24.	PC	Privatization Commission
25.	PEPCO	Pakistan Electric Power Company
26.	PPIB	Private Power and Infrastructure Board
27.	PSDP	Power Sector Development Project
28.	PSI	Pakistan Standards Institute
29.	SPP	Small Power Producer
30.	TOKTEN	Transfer of Knowledge Through Expatriate Nationals
31.	UAAR	University of Arid Agriculture Rawalpindi
32.	UNDP	United Nations Development Programme
33.	WAPDA	Water and Power Development Authority
34.	WB	World Bank



FOREWORD

There is no doubt that emerging electricity markets are trying to follow the experience of those countries who had taken the lead in the restructuring of the electricity industry. As a consequence, the signs of turmoil in the electric utility industry may be seen everywhere. The newspapers are full of stories about a major utility merger or a new unregulated business venture. The recent contracting of electricity generation turbines of \$ 20 billion to General Electric of USA by China is yet another example of hunger for power of the rapidly developing economies. There is no doubt that rapid changes in industry circumstances, development needs, investment and consumer interests all call for modernization of electricity policies. The issue is not whether the electricity sector should change but how to address the uncertainties of the reform process with the fewest possible major missteps. It is, therefore, imperative that the policy makers, the service providers and the regulators should move in tandem on a carefully worked out programme of action in which the functions of each entity are clearly identified not to be treaded by others. It is only by following such a course of action that the benefits of power sector reform could be shared by the stakeholders in the medium to long run.

The Authority made significant progress in the year under review in issue of licenses, determination of tariffs and setting of standards for quality of service. The procedure followed were transparent and included public participation in all important decisions of the Authority. The Government provided adequate support to the Authority in the conduct of its affairs. The World Bank was also pro active in its liberal assistance to the Authority.

The pursuit of regulatory objectives requires capacity building to meet the challenges of the reform process. It is, however, unfortunate that in spite of a transparent process of selection based on market based emoluments, the Authority has not been able to attract a talent pool who could do justice to resolve the complexity of issues arising out of the reform process. There is particular dearth of personnel having interdisciplinary education and experience. The writing skills of professionals need much to be desired. This may be an eye opener for those responsible for setting new trends in education to meet newly emerging challenges of economic governance.

The Authority in the beginning of the next year will undergo a major change as all of its Members will be retiring within a short span of a few



months. This will no doubt create issue of continuity but at the same time offer an opportunity to a new breed of professionals with a blend of experience in public and private sector in related activities to take over. I am confident that the activities of the Authority will not receive any set back on this exodus and the new Members will quickly settle in their positions ably assisted by the experienced professionals and staff.

This report gives the Council of Common Interests, Government of Pakistan, and the readers at large an overview of the NEPRA activities from 1st July 2003 to 30th June 2004, and anticipated developments in the year ahead.

Chairman



THE AUTHORITY



Lt Gen (R) Saeed uz Zafar
CHAIRMAN
 29-09-2003 to date



Engr. Sardar Muhammad Sharif Khan "T.St"
Member from Baluchistan
 Vice Chairman
 17-08-1998 to 16-08-1999
 &
 01-09-2002 to 02-09-2003



Abdul Rahim Khan
Member from N.W.F.P
 Vice Chairman
 03-09-2003
 to
 02-09-2004



Mansoor Elahi
Member from Punjab
 Vice Chairman
 02-09-2000
 to
 01-09-2001



Fazlullah Qureshi
Member from Sindh
 Vice Chairman
 03-09-2001
 to
 02-09-2002

Mission Statement

We shall strive to develop and pursue a Regulatory Framework which ensures the provision of safe, reliable, efficient and affordable electric power to the electricity consumers of Pakistan; we shall facilitate the transition from a protected monopoly service structure to a competitive environment where several power sector entities function in an efficiency oriented or market driven environment and shall maintain a balance between the interests of the consumers and service providers in unison with the broad economic and social policy objectives of the Government of Pakistan.



PART I

Activities of the Year in Review

SECTION I

LICENCES

A licence is a permission from the regulator to the generation, transmission and distribution entities to engage in the business for delivery and sale to consumers in accordance with specified terms and conditions. An important regulatory function performed by NEPRA is the grant of licences for generation, transmission and distribution of electricity. Licences are issued in conformity with the rules framed by the NEPRA under section 46 of NEPRA Act and notified by the Federal Government. The applications for licence broadly contain information about the financial arrangements for the implementation of the project, the nature of technology proposed to be used and the professional ability of the sponsors to implement and operate the project. The stakeholders are allowed to express their views on any aspect of the project in public hearings held prior to the issue of licences. The determinations by NEPRA for the issue of licences contain discussion of all important issues raised in public hearings or relevant to the subject.

2. The following activities were undertaken by the Authority for the issue of licences during the year:

Generation Licences to Small Power Producers (SPPs)

3. A number of small power generating units were established by the industrial units to meet their own requirements and for sale of surplus power to a few other industrial consumers in the adjoining areas as a result of incentives provided in the 1994 Power Policy. These Small Power Producers (SPPs), however, did not enter into any arrangement with WAPDA for the sale of electricity.

4. NEPRA has so far granted generation licences to 25 Small Power Producers and the cases of remaining SPPs are under process. Out of these ten licences were granted in 2003-04. A list of Small Power Producers issued licences so far is at **Annexe-II**. Out of the 25 SPPs granted generation licence, 10 have also applied for the grant of distribution licence.

Generation licence to Isolated Generation Companies

5. Those generation companies which deliver electric power to private owners who operate, manage and control the facilities or to tenants without the involvement of either transmission or distribution systems of any other service provider are called isolated generation companies. Public hearings were held on June 17, 2004 for the grant of generation licences to three isolated generation companies namely, M/s Olympia Power Generation (Ltd), M/s Engro Asahi Polymer & Chemicals (Ltd) and M/s Sapphire Energy (Ltd).

Generation Licence to Independent Power Producers (IPPs)

6. The NEPRA received licence applications from 16 Independent Power Producers (IPPs) that were established in response to the 1994 Power Policy. For the processing of application of twelve IPPs, public hearings were held in the year 2002-03. In the year under review public hearings were held on January 13, 2004 for M/s Southern Electric Power Co. (Ltd) and M/s Japan Power Generation (Ltd) and on May 18, 2004 for M/s Kot Addu Power Co. (Ltd) and M/s Altern Energy (Ltd).



Participants of NEPRA hearing

7. Generation Licences were granted to fourteen IPPs during 2003-04 (Annexe-III).

Generation Licence to Chashma Nuclear Power Plant (Chasnupp)

8. The NEPRA admitted an application for the grant of generation licence to Chasnupp. The hearing by the Authority in the case was conducted on June 26, 2003 and the generation licence was issued on



September 9, 2003.

Generation Licence to QESCO

9. The Authority held a meeting with Quetta Electric Supply Company on June 18, 2004 and provided them guidance for submission of application for grant of generation licence for the generation facilities in its jurisdiction.

Distribution Licence and Special Purpose Transmission licence to KESC

10. The Authority granted a distribution licence to M/s KESC on July 7, 2003. The application of a Special Purpose Transmission Licence for KESC is pending on the request of KESC since Privatization Commission is yet to decide on the ownership of the transmission facility.



SECTION II

TARIFFS

11. According to the NEPRA Act, the Authority is responsible for determining tariffs to be charged by the service providers. The procedure to be adopted for tariff determinations has been prescribed in the Tariff Standards and Procedure Rules 1998. The tariff determination is generally based on the principle to compensate expenses and reward investments as applicable on a case to case basis. Incentive regulation is also used in specific cases.

Atomic Tariff Adjustment (ATA)

12. According to the mechanism prescribed by the Authority the consumer-end tariff of the distribution companies is adjusted to account for quarterly variation in the price of fuel, as compared to the previous quarter. Distribution companies are required to submit an application within the first week of the month succeeding the quarter for which fuel adjustment is required. Within four working days of the receipt of request, NEPRA usually allows the proposed tariff adjustment. NEPRA is also authorized to take suo moto action in this regard in case the utility does not file quarterly application for tariff adjustment. The ATA formula enables distribution companies to meet their revenue requirement on account of increase in fuel costs on which they have no control by following the prescribed regulatory procedure.

13. In FY 2003-04, the consumer-end average tariff of ex-WAPDA Distribution Companies (DISCOs) was increased by three paisa/ kWh in July 2003 and decreased by 7.12 paisa/kWh in October, 2003 on account of quarterly fuel price adjustment. The Authority made a decision on January 26, 2004 that on account of restructuring of the power wing of WAPDA, the automatic tariff adjustment for WAPDA would subsequently be made on receipt of requests from the respective Distribution Companies.

14. Three automatic tariff adjustments were made for KESC in the FY 2003-04. These included not only variation in fuel prices but also the cost of power purchased. The first adjustment in July 2003 provided an increase of paisa 15/kWh in the tariff. The second and third adjustments in January 2004 and April 2004 provided relief to the consumers of KESC on account of reduction in tariff by paisa 8.74/kWh and paisa 2.17/kWh respectively.



Structural Adjustment of Tariff

Ex-WAPDA Distribution Companies (DISCOs)

15. The restructured power wing of WAPDA comprises of five generation, one transmission and eight distribution companies. The government has declared its intention of privatizing some of these distribution and generation companies excluding WAPDA hydel electric generation facilities. The transmission part of the power wing will also be owned and controlled by the National Transmission and Despatch Company (NTDC) in the public sector.

16. Pursuant to rule 3 of Tariff Standard and Procedure Rules-1998, the generation companies, NTDC and eight distribution companies filed petitions for determination of tariff for a period of five years commencing from July 1, 2004.

17. The tariff petitions of regulated entities contained proposals for approval of cost reflective tariffs. The tariff determination not only covered prudently incurred costs but also allowed a reasonable return on the rate base of the applicants.

18. The tariff petitions of Central, Northern and Jamshoro Power Generation Companies were admitted by NEPRA on April 3, 2003 and public hearings were held on July 14, 2003. The tariff determinations were issued on December 31, 2003 for Jamshoro Power Company and on March 26, 2004 for both the Central and Northern Power Companies. The public hearing for WAPDA Hydroelectric Company tariff petition was held on October 22, 2003 and tariff determination issued on May 19, 2004. The public hearing for NTDC tariff petition was held on August 19, 2004 and tariff determination issued on April 4, 2004.

19. The tariff petitions filed by the distribution companies were issued notice for public hearings which were held on December 4, 2003 for GEPCO, MEPCO, IESCO, and FESCO. The tariff determinations were issued on June 9, 2004 for FESCO, June 24, 2004 for GEPCO and IESCO and June 29, 2004 for MEPCO. Public hearings for LESCO and PESCO were held on December 6, 2003 and tariff determinations by the Authority were issued on June 29, 2004 and July 14, 2004 respectively. For HESCO and QESCO public hearings were held on December 8, 2003 and determinations were issued on July 14, 2004.

KESC

20. KESC on May 12, 2003 filed a petition for revision of rates of Security Deposits (SD) and System Development Charges (SDC). The

Authority admitted the petition on May 14, 2003. Five communications and an equal number of intervention requests were received. A public hearing was conducted on July 7, 2003 and the determination issued on August 20, 2003.

21. KESC was directed that henceforth they would charge only such rates of security deposit as approved by the Authority and in accordance with the notified Eligibility Criteria. It was also decided that the existing consumers registered with the KESC who have already deposited the System Development Charges or Security Deposit prior to the notification of the currently approved rates would not however be allowed the reimbursement of such deposits.

Tariff Determination for Small Power Producers (SPPs)

22. A view was expressed that ex- WAPDA DISCOs did not have a level playing field vis-à-vis the Small Power Producers (SPPs) who were earning windfall profits on their investments since they were supplying electricity to industrial consumers whose tariffs were set according to their cost of service. There was no obligation on SPPs to supply to the domestic consumers whose tariff was cross subsidized by the distribution companies. To resolve the issue expeditiously, NEPRA initiated suo moto proceedings in 2002-03 for the determination of tariff for the sale of electric power by SSPs to their consumers. The hearing for the determination of tariff for SPPs was held on June 23, 2003. The tariff determination was issued on November 24, 2003.



*Hearing on Tariff Determination for Small Power Producers
held on 23-06-2003*

23. The Authority determined a uniform rate of Rs. 4.00/kWh (without any element of adjustment) as a second tier supply charge in respect of the Small Power Producers. In case any SSP and its consumers were desirous of getting its tariff revised on account of any specific ground they would have to submit a tariff revision petition in accordance with the NEPRA Tariff Standards and Procedure Rules 1998.

Tariff Review Motions

24. Tariff review motions filed by Jamshoro Power Company Limited, Central Power Company Limited, Northern Power Company Limited, WAPDA hydroelectric, NTDC and DISCOs are currently under review of the Authority.



Participants of NEPRA hearing



SECTION III

STANDARDS AND CODES

Standards

25. Performance standards are prescribed for the delivery of service in an efficient and environment friendly manner. A company is penalized if the service provider does not meet the required standards. Separate standards are developed for generation, transmission and distribution companies.

Performance Standards for Generation

26. The Generation Companies are responsible for the production of safe, efficient and reliable electric power at least cost for supply to NTDC for onward delivery and sale to Distribution Companies and Bulk Power Consumers (BPCs). As per NEPRA Act, NEPRA has to prescribe Performance Standards for Generation Companies which are expected to be finalized by August, 2005.

Performance Standards for Transmission

27. As per NEPRA Act, NTDC is responsible for the transmission and interconnection services of electric power in a safe, reliable and efficient manner. It is also required to operate on a non-discriminatory basis to the users of its bulk transmission system including Bulk Power Consumers (BPC) who get directly connected to its system. As per Sections 7(2) (c) and 34 of NEPRA Act, NEPRA has to prescribe Performance Standards for NTDC. The work on the development of Performance Standards for NTDC started in July 2000. There has been continuous discussion with the stakeholders to develop consensus document. The report is expected to be finalized by the end of June 2005.

Performance Standards for Distribution

28. As per NEPRA Act, NEPRA has to prescribe Performance Standards for Distribution Companies with respect to reliability, quality, efficiency, and safety of electric power services provided by the Distribution Companies.

29. The work on the development of standards started in 1998. The initial draft completed in the year 2000 and was circulated among all stakeholders for comments. In the light of their observations, a revised draft was developed in June 2001. Technical assistance from BPI Consultants sponsored by ADB was also obtained. The modified draft was presented to the Authority in May 2002, which directed it to be



circulated to all the stakeholders again for their comments. After taking into account the comments of all the concerned stakeholders, the revised draft document was approved by the Authority in July 2003. The approved document, along with the Authority's determination was sent to the Government for approval and notification in the form of Rules in August, 2003. However, some observations were made by the Privatization Commission on the NEPRA document. The NEPRA duly incorporated these observations in the final document to be notified by the government in the official gazette shortly.

Procedures and Standards for Investment Programme

30. Under NEPRA Act, the Authority is required to prescribe procedures and standards for the Transmission and Distribution Companies for their investment programmes. The purpose of prescribing the standards is to lay down sound criteria according to which the investment plan of various electric power network companies can be approved by the Authority. The Authority has decided to outsource this work to a reputable consulting firm specialized in the area of electric power utility investment planning. The process of selection of consultants is underway at this stage. The final report is expected to be circulated to the stakeholders for comments by March, 2005.

Environmental Standards

31. No separate standards have been prescribed by NEPRA for environment. The Authority has endorsed the standards prescribed by the Federal Government, Environmental Protection Agency for the electricity service providers.

Codes

32. Codes are developed for the smooth and effective functioning of the system and to provide a framework for high quality industry practice and technical standards.

Grid Code Guidelines

33. Under NEPRA Act and NTDC Transmission Licence, NTDC is responsible for developing a Grid Code for smooth and effective functioning of its own system and for other licensees/users that will be connected to its bulk power transmission system.

34. The work on the Grid Code started in April 1999, and Grid Code Guidelines were given by NEPRA to NTDC/PEPCO in March 2000. PEPCO submitted its first draft to NEPRA in December 2000 for approval. NEPRA suggested several improvements and modifications.



PEPCO re-submitted the amended document to NEPRA in September 2002. The BPI consultants provided to NEPRA by ADB were also consulted to suggest improvements on PEPCO's draft of Grid Code.

35. PEPCO draft along with the BPI comments have been thoroughly discussed with PEPCO, NTDC, NPCC, KESC, and DISCOs and the final draft document was submitted to the Authority for approval in April, 2004. The document is expected to be completed shortly.

Distribution Code Guidelines

36. As per NEPRA Act and Licencing (Distribution) Rules-1999 and provisions of distribution licenses, DISCOs/KESC are responsible to prepare a Distribution Code, covering all operational planning functions of their individual distribution and sub-transmission systems, and interface relationship with NTDC, other DISCOs and BPCs.

37. Distribution Code Guidelines were provided to PEPCO by NEPRA in April 2000. PEPCO submitted its first draft in December 2000 which was thoroughly reviewed by NEPRA as well as BPI consultants. PEPCO re-submitted the revised draft document in September 2002 for consideration of NEPRA.

38. The draft document, alongwith BPI comments, has been thoroughly discussed with PEPCO, DISCOs, KESC and NTDC. A final draft document incorporating considered changes was presented to the Authority for approval in June, 2004. The Distribution Code is expected to be approved by the Authority by the end of December, 2004.



SECTION IV

CONSUMER COMPLAINTS AND PRIVATIZATION

Complaints

39. The Consumer Affairs Division was created in pursuance of the obligation of NEPRA under section 39 of the NEPRA Act to protect stakeholders against violation of NEPRA Act. During the year under review, hearings were held in case of Attock Cement Vs. KESC, PTCL Vs. MEPCO, CNG Association vs. IESCO and Pak PWD Housing Society Vs. IESCO. Determinations have been made in these cases. NEPRA is also assisting the Provincial Governments to prescribe rules for the redressal of complaints through the Provincial Offices of Inspection established under section 38 of NEPRA Act. Draft procedure was circulated to the Provincial Governments and the Governments of Sindh, N.W.F.P and Balochistan have notified their procedures.

40. In due course, the Consumer Affairs Division would also monitor the Industry Performance Standards prescribed by NEPRA and redress any complaints in this regard. Appropriate steps have been taken to record all the consumers' complaints, the action taken on it and any follow up required.

41. In the Reporting Year 2003-04, two hundred and thirty eight (238) complaints were received by NEPRA from consumers all over the country. This was a significant increase in the number of complaints over previous years which could be attributed to increasing awareness among the public of the role of NEPRA in the handling of complaints. Most of the complaints filed with NEPRA come under the purview of the Provincial Offices of Inspection (POI) or the utility itself. NEPRA refers such complaints to the concerned offices and pursues them until the issues are resolved.

Complaints/Court Cases Handled During the Year

42. Details of the complaints dealt with in the reporting year 2003-04 are as under:

Area	Complaints Received	Complaints Disposed Off
Lahore	24	24
Multan	2	2
Faisalabad	5	5



Area	Complaints Received	Complaints Disposed Off
Gujranwala	4	4
Islamabad/ Rawalpindi	47	47
Karachi	50	50
Hyderabad	92	92
Peshawar	12	12
Quetta	2	2
Total	238	238

43. The NEPRA dealt with the court case of Punjab Oil Products Vs. Sitara Energy Limited. The case is being dealt with in the Court of Civil Judge, Faisalabad and is in process.

44. In addition hearings in the following matters were also held and determinations/ decisions issued subsequently.

- i) Civilian Cooperative Housing Society
- ii) Charging of System Development Charges

45. NEPRA is in the final stages of prescribing the Consumer Services Manual. This manual shall enclose all relevant information/documents required for any consumer connected to or planning to get the services of a utility company.

Privatization and Industry Structure

46. During the FY 2003-04, the Privatization Commission continued the process of privatization of the Karachi Electric Supply Corporation (KESC), Jamshoro Power Company (JPC) Ltd. and Faisalabad Electric Supply Company (FESCO) Ltd. The privatization of KESC and FESCO is being facilitated by NEPRA and a number of meetings were held both with the prospective bidders and their financial advisors to explain the regulatory framework. Another distribution company namely Peshawar Electric Supply Company (PESCO) Ltd. was also added to the list of state owned electric utilities put up for privatization.



SECTION V

MISCELLANEOUS

Workshop on Competitive Trading Arrangements

48. The NEPRA is planning to devise an appropriate structure for a competitive wholesale power market in the country. In this connection a workshop regarding Competitive Trading Arrangements (Transitional Agreement) was held in Islamabad on June 14, 2004.

South Asia Forum for Infrastructure Regulation (SAFIR)

49. The 7th SAFIR Steering Committee meeting was held in Jaipur, Rajasthan, India on February 23-24, 2004. Mr. Fazlullah Qureshi, Member (Sindh) attended the meeting. Chairman, NEPRA was invited to be the next Chairman of SAFIR for the period from April 1, 2004 to March 31, 2005. He replaced Mr. T L B Hurulle, Director General Telecommunication Regulatory Commission of Sri Lanka.

50. The Chairman, NEPRA in his position as Chairman, SAFIR will provide policy guidance and strategic direction to SAFIR and will undertake the following activities:

- i) Create awareness about SAFIR at various forums and elicit interest in its activities.
- ii) Encourage participation in the annual core courses from his country.
- iii) Participate actively in SAFIR activities and events. The Energy and Resources Institute (TERI) as the host entity will interact regularly with SAFIR.

51. The Chairman will regularly provide suggestions and guidance on various activities undertaken by SAFIR. SAFIR will be provided local organizational support from NEPRA, especially for events that will be organized in Pakistan.

HIGHLIGHTS OF COMPETITIVE TRADING ARRANGEMENTS WORKSHOP



The Authority



Participants of the Workshop



Sixth SAFIR Core Training Programme

52. According to the decision taken in the 7th SAFIR Steering Committee Meeting in Jaipur (India), the Sixth Core Training Programme on Infrastructure Regulation and Reform would be held in Pakistan in September/October 2004. The programme is fee-based, thus an adequate number of participants (80) are required to make it viable. In this regard, NEPRA has already introduced the SAFIR to the infrastructure regulatory community of Pakistan and other organizations dealing with infrastructure. In addition significant support is being sought from Pakistan Telecommunications Authority (PTA) and Oil and Gas Regulatory Authority (OGRA). TERI is working with NEPRA and other local partners to ensure an adequate level of funding and participation. The training course is designed for a select group of about 80 participants from government departments, regulatory agencies and private institutions concerned with the infrastructure sector in the South Asia region. Participants from other regions can also apply. All participants will receive a certificate on completion of the course.

53. The core training course comprises of 10-12 days of lectures, sector-specific case studies, practical exercises, and panel discussion with utility experts. The major conceptual issues are presented in plenary lectures, which use case studies from within and outside the South Asian region. Sectoral breakout sessions will be examination of sector specific applications of regulatory policies, and are presented by sector experts who have hands-on experience of regulating and restructuring the sector.

54. The 8th meeting of the SAFIR Steering Committee was held through a video conference at the World Bank Offices in New Delhi, Islamabad and Dhaka on June 29, 2004. Lieutenant General (Retd) Saeed uz Zafar, in the capacity of Chairman SAFIR, chaired the meeting and Mr. Ian Alexander of the World Bank moderated the discussions. The meeting was attended, among others, by Mr. Munir Ahmed, Chairman OGRA and Mr. Abdul Rahim Khan, Member NEPRA. The agenda of the meeting focused on the SAFIR Sixth Core Training Programme on Infrastructure Regulation and Reform. Meetings of NEPRA staff to formalize logistical arrangements with TERI, the designated Secretariat of SAFIR, were proposed at Delhi. The meeting also formally decided on the venue of the training program at Pearl Continental Hotel, Bhurban Pakistan from October 3-11, 2004 with the opening session to be held at Islamabad on October 2, 2004.



Administration and Financial Matters of NEPRA

Annual Audit

55. The Authority is required to maintain complete and accurate books of accounts of its expenses and receipts. The accounts of the Authority are audited annually by the Auditor General of Pakistan. The Authority for the period under consideration has provided satisfactory explanations to the auditors on the points raised by them during the examination of books of accounts.

Library Services

56. NEPRA library has acquired books for specialized needs of the regulators. The library has about 2600 books and subscribes 7 journals and 5 magazines. It has also obtained reference books such as International Electro- Technical Commission (IEC) Standards, Pakistan Standard Institute (PSI), Pakistan Law references, and other legal documents.

Recruitment and Appointment

57. The Authority continues to face shortage of professional manpower particularly in aspects relating to inter-disciplinary regulation. Efforts are under-way to utilize international and regional facilities for capacity building. The system of selection is quite transparent since posts are advertised with specific job descriptions and qualifications of the posts.

Purchase of Plot for NEPRA Office Building

58. The venue of the plot for NEPRA office building is likely to be in sector G-5 in Islamabad. Payment amounting to Rs. 17,655,682 has already been made to CDA.



SECTION VI

Anticipated Developments in 2004-2005

Licences

59. Generation Licences to two IPPs namely M/s Kot Addu Power Company Limited and M/s Altern Energy Limited and Karachi Nuclear Power Plant (KANUPP) are expected to be granted 2004-05. Besides, application of generation licence to M/s Lakhra Power Generation Company is under process and is expected to be finalized in the next financial year. Some more applications, particularly for grant of generation licence, are also expected to be processed by the Authority.

60. In addition, applications for modification of licences already granted are being processed for consideration of the Authority.

61. Applications for distribution licences by ten Small Power Producers are under consideration and are expected to be granted in 2004-05. These are Mahmood Power Generation Limited, Sapphire Power Generation Limited, Gulistan Power Generation Limited, Ellahi Electric Power Company, Sitara Energy limited, Quetta Textile Mills, Kohinoor Generteck Limited, Bhanero Energy Limited, Monno Energy Limited, and Genertech Pakistan Limited.

Tariffs

62. The tariff review petitions of various electric power companies would be examined and decided during 2004-05. Besides, the quarterly tariff adjustments under the automatic tariff adjustment mechanism would be carried out for the electric power distribution companies.

Standards and Codes

63. The report on the Performance Standards for Transmission Companies would be finalized in the year 2004-05. The Grid Code and Distribution Code guidelines are also expected to be finalized in the next year. Besides, the final report on the procedures for investment programme would be circulated among stakeholders for comments and is expected to be approved by March, 2005.

Consumer Affairs Division

64. The Consumer Affairs Division would continue to entertain and redress the complaints brought forward. The monitoring of the proscribed Industry Performance Standards by the Consumer Affairs Division is also anticipated.



Miscellaneous

Capacity Building

65. The 6th SAFIR Core Training Programme on Infrastructure Regulation and Reform would be held at the Pearl Continental Hotel, Bhurban on October 3-21, 2004 with the opening session to be held at Islamabad on October 2, 2004. Lot of interest has already been generated among the participants for this regional capacity building programme.

Conference on Section 22 of NEPRA Act

66. A conference on section 22 of NEPRA Act pertaining to sale of power to bulk power consumers by the service providers is scheduled for August 24, 2004 in Islamabad.



PART II REGULATORY ISSUES

SECTION I

STRENGTHENING THE REGULATORY FRAMEWORK

Pakistan, like many other countries of the world, is moving towards a transformation in the electricity industry. The sector is moving from a monopoly structure to a competitive arrangement. Similar developments are taking place in other sectors. Important structural changes have also recently been witnessed in the telecommunication sector. In the electricity sector, the main ingredient of the power sector reform is to split the integrated utility into generation, transmission and distribution activities. The generation activity (to the extent possible) is subjected to competition while the transmission and distribution activities are to be regulated as natural monopolies. In developed countries distribution wires have been separated from retail supply. The former continue to be regulated as natural monopoly while the latter provide an option to retail or bulk consumers to opt from different sellers at competitive rates.

2. There are a number of forces which are driving electricity sector restructuring:

- (i) Latest generation technology, such as combined-cycle gas turbines has reduced the efficient size of these power plants between 150 and 300 MW at an investment cost of \$ US 500/KW. The old concept of bigger is-cheaper is no longer valid. The technological change has made smaller units as efficient as the larger ones. This has made competition in generation easier.
- (ii) The competitive global economy requires input cost reduction. This is important for electricity which is a primary input for export oriented industries. The developing countries that have embarked on export led growth must adopt policies which promote investment and efficiency in the development of infrastructure. The cost of electricity as a primary input needs to be rationalized to meet the competitive needs of the export industry.
- (iii) Infrastructure development is a costly affair. Reliance on public funds makes its development at a slow pace since funds have to compete with other development needs. The



governments are constrained to mobilize resources from private sector for the development of infrastructure. The introduction of private sector in the electricity sector not only adds resources to the development of the sector but also makes possible introduction of technological changes more quickly than in the public sector. The use of information technologies and communication systems has made possible exchange of huge volumes of information needed to manage electricity markets.

3. An important aspect of power sector reform is to establish a regulatory framework to protect the interest of all stakeholders. In particular, it has to encourage investment to meet consumer demand and to compensate investors with a reasonable rate of return. Investment in electricity sector is characterized by assets with long lives. Before the investor commits funds, he must be convinced that he will be allowed to recover stranded costs, if any, on account of let's say change in government policies influencing their expected rate of return on investment. The credibility of regulatory commitment is extremely important in protecting the investor in recovering his costs and a reasonable rate of return on investment over a period of time. This, however, does not imply that the interest of the consumer is relegated to that of the investor. The point to note is that the consumer interest is best served by encouraging investment and promoting competition. The regulator has to promote competition wherever it is possible i.e. generation activity and to mimic competition in activities where conditions of natural monopoly prevail such as high and low voltage wires.

4. There is no doubt that the compulsions of power sector reform have been adequately met by establishing the regulatory framework which has been granted financial autonomy and operational independence through an Act of Parliament. The establishment of regulatory authority is no doubt an important first step but the establishment of regulatory legitimacy is another matter. This requires a commitment to reform by the core stakeholders. The objectives of the regulatory legislation may, however, be in direct conflict with the vision of the political government as well as the higher echelons of bureaucracy. The basic issue relates to the degree of autonomy of the regulatory bodies. The government, by virtue of political compulsions, may be susceptible to be influenced by interests which may gain from lack of or ineffective implementation of regulatory decisions. Such a situation is likely to keep the regulatory authority on a tight leash and may hamper its development as a



recognized professional body which is capable of creating a track record of establishing the trust of the stakeholders.

5. The important issue in the initial stages of power sector reform is to clearly delineate the role of the government as a policy maker. The government is required to make a medium to long term energy plan which clearly defines the role of different energy components in meeting the economic and social needs of the country. In the electricity sector appropriate policies have to be devised to mobilize investment to bridge the supply and demand gap for power in the medium and long run. The most immediate step in that direction will be to implement the power sector reform through unbundling of vertically integrated public utilities. This will make possible privatization of distribution companies as well as encourage investment in new generation facilities. Other policy issues are provision of fiscal incentives, maintaining security of supplies through fuel diversity, establishing priority and incentives for the use of technologies such as renewables which may have implications for utilization of indigenous resources, impact on environment and on poverty alleviation.

6. The policy maker and regulator need to move in tandem in meeting power policy objectives. NEPRA Act empowers the government to issue policy guidelines to the regulator not inconsistent with the Act. The policy guidelines should however be based on the principle of legitimate expectations. There should be no confusion over the issue of economic pricing which is the domain of the regulator. The government, however, needs to have a clear-cut policy on the issue of subsidy relating to a consumer category or a geographical location or on the use of renewable technologies or on the allocation of financial burdens associated with stranded costs, etc. A clearly defined power policy by the government and adherence to the objectives of the regulatory framework as defined in the NEPRA Act will certainly go a long way in promoting environment for power sector development. Needless to say that the regulatory framework in developing countries comes under immediate pressure because the market is imperfect which needs to be corrected over a period of time. In the developed countries the task of the regulator is much easier since the market is far more competitive and optimum pricing is already prevalent in the market. It is for this reason that the regulator needs to be encouraged to perform its functions with competence and independence. Otherwise, the power sector reform as a whole is likely to subvert instead of encouraging the development of energy sector.



SECTION II

REGULATORY POLICIES

7. The purpose of economic regulation, in the beginning of its inception, is often misunderstood by the stakeholders. This may be attributed to the power sector reform (of which an autonomous regulatory institution is an integral part) being introduced by the small group of experts from the Bretton Wood institutions to the bureaucratic set up in the developing countries. The urgency of the reform process is set, inter alia, by constant fiscal hemorrhaging to support the revenue gap and investment needs of the public sector utilities. Irrespective of the merit of the power sector reform the implications of such an action having widespread public interest are not explained to the stakeholders. This lack of awareness creates confusion among stakeholders (who otherwise may be desperately seeking improved quality of electricity service at affordable prices) creating impediments in the efficient functioning of the regulatory institutions. It is, therefore, imperative that the broad policy variables of the power sector reform are highlighted on whatever forum available to create an awareness of the issues for all concerned. The broad policy variables are:

- Tariff determination to be cost reflective which not only covers prudently incurred costs but also allows a reasonable return on rate base (allowed investment) of generation, transmission and distribution activities.
- Entry in the electricity market without any discrimination of private sector in generation and distribution activities. The distribution activity is protected by 'exclusivity' of a well defined geographical area with obligation to serve. There is also access to transmission network on a non discriminatory basis.
- Quality of service to the consumers as well as ensuring network efficiency including reliability and voltage disturbances.

8. The primary short run focus of the regulator is to set a tariff structure that provides the utility with sufficient resources to compensate expenses and investment. The long run focus of the electricity regulator is to encourage the electricity supplier to develop sufficient generation, transmission and distribution capacities to meet



the existing needs and growing demand. It is, therefore, imperative that the regulator encourages new investment to build new capacity. If, however, the supplier is earning a rate of return more than the cost of capital then it has an incentive to build more capacity than is necessary. The regulator will be interested to control the development of more capacity than is necessary by providing some form of licensing arrangements to be approved by the Authority. The issuance of such license not only involves due diligence about the financial strength of the sponsors but also their professional ability to execute the project. The licensing process would involve a public hearing to decide whether the new capacity was required. The regulator will assess whether the technology being proposed will result in the lowest revenue required. Integrated planning would ordinarily result in lowest cost electricity infrastructure expansion plans. In other words there should be the balanced mix of generating units and integrated development of transmission and distribution facilities at least possible cost.

9. The traditional electricity structure led to the development of rate of return (ROR) or cost of service (COS) regulation which determine not only the rate level (to meet the overall revenue requirement of the utility) but also the rate structure (setting tariffs for different customer classes). The utility in petitions of tariff determination often argues that the current tariffs are too low because the expenses allowed or the rate of return approved is too low. The regulator following a transparent procedure determines the appropriate level of expenses and sets the allowed rate of return. Tariffs are adjusted to the new determination by the regulator. The important point to note is that after the rate cases, and until the next rate case, required revenues (for MWh) remain fixed. This provides an incentive for the utility to reduce cost. The utility earns higher rate of return by incurring lower cost than the cost allowed in the rate case. The utility, therefore, benefits from the existence of a regulatory lag.

10. The regulatory practice has, however, moved into providing incentives for cost reduction through increasing the regulatory lag between rate cases. This form of incentive regulation not only reduces the cost of regulation incurred by the petitioners, but provides financial incentives to lower costs. The link between the regulated tariff and related cost is weakened. The regulator during a regulatory period of several years (usually five to seven years) establishes a formula that determines utility's tariff. These adjustment factors may allow fuel prices as a pass through item or in case of distribution companies the cost of power purchase. The variations in macro economic indices relating to



O&M expenses are also usually allowed to be adjusted in the cost estimates. After the end of the regulatory period, a complete revision of costs and investments takes place, and a new tariff formula is established for the next regulatory period.

11. A widely prevalent regulatory feature of electricity distribution has been to provide exclusivity to the distribution facilities. The economic rationale for exclusivity relates directly to the idea of natural monopoly i.e. one firm can serve a given area more cheaply on account of declining average cost by exploiting the economy of scale available to a natural monopoly. The regulator, however, controls its prices and services to keep costs at the low level. The important point to note is that in the developed countries each distribution company is provided a licence by the regulator only if it has sufficient capacity on hand to serve all customer needs, now and in the future. The distribution companies in the developing countries are however often handicapped to meet the requirements of universal obligation to serve' for lack of resources mainly on account of their tariffs not being set on the basis of the cost of service to different consumer categories. There is also lack of clear-cut policy of the government to provide electricity to the uncovered population of the country. There is need to mobilize public and private resources to be used in an innovative fashion by the distribution companies to increase electricity network in the country.



SECTION III

RENEWABLE ENERGY SUPPORT MECHANISM

12. There are several technological alternatives for electricity generation. While the product electricity supplied to the end consumer - is uniform, different production techniques do make a difference on the basis of final costs, reliability of supply and quantity of polluting emissions. There are different primary energy sources such as thermal, nuclear or renewable energy sources which make use of different installations and transformation processes. Their impact on investment decisions is critical since it requires substantial commitment of resources for the long term, and are virtually irreversible.

13. The issue is of development of renewable energy. The green activism has influenced energy policy makers all over the world with the expectation that an era of a new energy revolution is at hand. The government has also lately started taking interest in the development of renewable energy with the establishment of Alternative Energy Development Board (AEDB).

14. The global trend for electricity from renewable sources like wind, solar, and bio-mass has been to remain 'off-grid' or stand alone projects delivering electricity to households, buildings, isolated communities and industry for captive use. There are certain advantages in having a decentralized structure when electricity is to be provided to far flung areas where generation has proximity to consumers.

15. The implications of renewable energy technology supplying electricity on a large scale has important technological and cost related problems as compared to fossil fuels. Renewables, particularly wind energy, have shown low levels of power generation of its installed capacity. While fossil fuel plants deliver capacity utilization ranging from seventy to ninety per cent, the best available renewable energy sources can deliver up to thirty percent only. This also implies that renewable plants cannot reap economies of scale, making per unit cost of output relatively high. In addition to low capacity of renewable energy, there is the problem of intermittent supplies to the national grid. This characteristic will not allow renewable sources to supply base load and peak levels of demand of electricity. There has always to be back up supplies of fossil fuels.

16. In the present state of renewable energy technology, the delivery cost of electricity is at a rate which is higher than fossil fuels. The price at which an electric power plant can supply electricity depends on the



capital cost of the plant (land, machinery, civil works) and running or operational cost (salaries, raw material costs etc). It has been repeatedly worked out that renewable sources do not compare favourably with 'traditional' sources of energy. This may obviously dampen the interest in the benefits offered by the availability of renewable energy sources.

17. The advocates of renewable technology maintain that traditional cost and investment calculation methods employed by the energy analysts favour traditional generators as against renewable energies on account of their relatively high up-front investment cost while neglecting their benefits such as diversity of supplies, low fuel cost, use of indigenous resources, clean environmental impact, benefits of distributed generation (lower T&D loss) and impact on poverty alleviation. The economic advantages of renewable technologies are not appropriately reflected in the traditional methods of cost comparisons among competing technologies.

18. The promotion of renewable energy can either be done by the Government by directly providing subsidy from its budgetary sources or passing on the cost to the consumers. Different mechanisms have been employed in different parts of the world to encourage renewable technologies. Most prevalent of these are as follows:

- i) Tariff Mechanisms
- ii) Quota Mechanisms, also known as a Renewable Portfolio Standard (RPS), according to which the government places an obligation on either the distribution company or on consumers to take a specified amount of their electricity from renewable energy.
- iii) Production tax credits support the introduction of renewables by allowing companies which invest in renewables to write off this investment against investment in other businesses which they might undertake.

19. The introduction of renewables in the energy mix no doubt requires innovative approaches from the government as well as the regulator. It would be appropriate for the government or AEDB to outsource a study on true cost of generation which takes into consideration the cost of social and environmental benefits associated with renewable energy. The government, on the basis of such a study, may issue guidelines for the development and pricing arrangements of the development of



renewables.

20. To conclude, the encouragement of renewables will either require direct subsidy to the distribution companies from the government (federal or provincial) receiving a payment to cover the difference between the unitary cost of generation and the unitary sale price of electricity generated by a mix of other generation sources. Such an arrangement will make renewable energy profitable as a productive process. In case the burden of cost of production of renewables is to be passed on to the consumers then the regulator may have to fix generation tariff to cover costs and a reasonable return on investment. The additional cost of network operation has to be taken into consideration in the wheeling charges on NTDC. All these costs are a pass through by the distribution companies to the consumers.

Annexe-I

Electricity Statistics

	1998-99	1999-00	2000-01	2001-02	2002-03
Installed Capacity (MW)	15934	16578	17668	17953	17953
Public Hydel	4825	4825	5009	5009	5009
Public Thermal	6805	6606	6475	6475	6475
Private Hydel	0	0	30	30	30
Private Thermal	4167	5010	5692	5977	5977
Nuclear	137	137	462	462	462
Electricity Generation (Gwh)*	64303	67319	70132	72975	76155
Public Hydel	22448	19288	17196	18941	22253
Public Thermal	26529	30603	28535	30799	31761
Private Hydel	0	0	63	115	97
Private Thermal	15326	17428	24338	23120	22044
Electricity Sales (Gwh)	43207	45518	48480	50322	52598
Electricity Consumption (Gwh)	45030	47341	50307	51922	54397
Domestic	19267	21400	22701	23171	23581
Industrial	12199	13203	14348	15141	16181
Commercial	2381	2544	2774	2950	3218
Agriculture	5619	4540	4924	5606	6017
Public Lighting	225	239	213	211	244
Bulk Supply, Traction & Others	5339	5415	5347	4843	5156
Maximum Demand (MW)	10922	11144	11578	11993	12929
Average Sale Price (Paisa/kWh)	279.81	289.96	298.91	373	395
WAPDA	372.91	397.85	406.1	445.14	459.8
KESC					

* Including Nuclear

Source: Power System Statistics



Annexe-II

List of Small Power Producers Granted Generation Licenses

S.#	Name of Company	Date of Grant of License
1.	M/s. Maple Leaf Electric Co. Ltd	28-07-2001
2.	M/s. Sapphire Power Generation Ltd.	27-08-2001
3.	M/s. ICI Pakistan Power Generation Ltd.	27-10-2001
4.	M/s. Mahmood Power Generation Ltd.	22-10-2001
5.	M/s. Crescent Power tech Ltd.	22-10-2001
6.	M/s. Ellahi Electric Company Ltd.	22-10-2001
7.	M/s. Gulistan Power Generation Ltd.	16-11-2001
8.	M/s. Kohinoor Genertek Ltd.	08-12-2001
9.	M/s. D.S Power Ltd.	08-12-2001
10.	M/s Monnoo Energy Ltd.	08-12-2001
11.	M/s. Century Power Generation Ltd.	02-01-2002
12.	M/s. Sitara Energy Ltd.	02-01-2002
13.	M/s. Bhanero Energy Ltd.	31-01-2002
14.	M/s. Quetta Textile Mills Ltd.	31-01-2002
15.	M/s. Ideal Energy Ltd.	04-04-2002
16.	M/s. Genertech Pakistan Ltd.	27-01-2004
17.	M/s. Kohinoor Power Company Ltd.	27-01-2004
18.	M/s. Ghazi Power Company Ltd.	27-01-2004
19.	M/s Nishat Mills Ltd.	27-01-2004
20.	M/s. Kohinoor Textile Mills Ltd.	27-01-2004
21.	M/s. Zeshan Energy Ltd.	21-04-2004
22.	M/s Nimir Industrial Chemicals Ltd.	21-04-2004
23.	M/s Zaman Energy Company Ltd.	21-04-2004
24.	M/s Crescent Bahuman Energy Ltd.	21-04-2004
25.	M/s Crescent Energy Ltd.	21-04-2004



Annex-III

List of Independent Power Producers (IPPs)

S.#	Name of Company	Conference Held on	Date of Grant of Licence
1.	Fauji Kabirwala Power Co. Ltd.	04.02.2003	30-08-2003
2.	AES Lal Pir Ltd.	27-02-2003	30-08-2003
3.	AES Pak Generation Company	27-02-2003	30-08-2003
4.	Gul Ahmed Energy Ltd.	07-04-2003	30-08-2003
5.	Tapal Energy Ltd.	07-04-2003	30-08-2003
6.	Saba Power Company Ltd.	07-04-2003	30-08-2003
7.	TNB Liberty Power Ltd.	06-05-2003	30-08-2003
8.	Habibullah Coastal Power Co.	06-05-2003	30-08-2003
9.	Uch Power Company Ltd.	24-05-2003	30-08-2003
10.	The Hub Power Co. Ltd.	24-05-2003	30-08-2003
11.	Rousch (Pakistan) Power Ltd.	05-06-2003	02-09-2003
12.	Kohinoor Energy Ltd.	05-06-2003	02-09-2003
13.	Southern Electric Power Co. Ltd.	13-01-2004	11-05-2004
14.	Japan Power Generation Ltd.	13-01-2004	11-05-2004
15.	Altern Energy Ltd.	18-05-2004	To be granted
16.	Kot Addu Power Co. Ltd.	18-05-2004	To be granted