National Electric Power Regulatory Authority
Islamic Republic of Pakistan

2nd Floor, OPF Building G-5/2, Islamabad
Phone: 9206887, Fax: 9210215
E-Mail: office@nepra.org.pk

Vice Chairman

Case No. NEPRA/TRF-45/NTDC-2005/2338-41
Dated: 6.1.2006

Subject:- **Determination of Tariff in respect of**
M/s. National Transmission & Despatch Co. Ltd. (NTDC)
(Case No. NEPRA/TRF-45/NTDC-2005)
Intimation of determination of Tariff pursuant to Section 31(4) of the Regulation of Generation, Transmission and Distribution of Electric Power Act (XL of 1997)

My dear Secretary,

Please find enclosed the determination of the Authority along with Annexures (29 pages) in Case No. NEPRA/TRF-45/NTDC-2005.

2. The determination is being intimated to the Federal Government for the purposes of notification of the approved tariff in the official gazette pursuant to Section 31(4) of the Regulation of Generation, Transmission and Distribution of Electric Power Act (XL of 1997) and Rule 16(11) of the National Electric Power Regulatory Authority Tariff (Standards and Procedure) Rules, 1998.

3. Please note that only Order of the Authority at para 53 of the determination needs to be notified in the official gazette. The Order is reproduced for the purpose of clarity and is attached herewith.

Yours sincerely,

Nasiruddin
(Nasiruddin Ahmed)

NATIONAL ELECTRIC POWER REGULATORY AUTHORITY
NEPRA
AUTHORITY

The Secretary,
Cabinet Division,
Government of Pakistan,
Cabinet Secretariat,
Islamabad

CC:

1. Advisor to Prime Minister on Energy, Prime Minister's Secretariat, Islamabad.
2. Secretary, Ministry of Water & Power, Islamabad.
3. Secretary, Ministry of Finance, Islamabad.

NATIONAL ELECTRIC POWER REGULATORY AUTHORITY
NEPRA

Case No. NEPRA/TRF-45/NTDC-2005
January 5, 2006

NTDC's TARIFF DETERMINATION

Petitioner

National Transmission & Despatch Company Ltd. (NTDC)
414, WAPDA House, Lahore

Intervenor

Sarhad Chamber of Commerce & Industry
Sarhad Chamber House, G.T. Road, Peshawar

Authority

Nasiruddin Ahmed
Member

Abdul Rahim Khan
Member

Saeed uz Zafar
Chairman

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ORDER OF THE AUTHORITY IN CASE NO. NEPRA/TRF-45/NTDC-2005 TO BE NOTIFIED IN THE OFFICIAL GAZETTE

The National Transmission and Despatch Company (NTDC) is allowed to charge such tariff and on such terms and conditions as provided hereunder:

(1) Use of System Charges

NTDC shall charge its users for provision of transmission and allied services the following two-part tariff i.e. a fixed and variable charge:

Fixed charge (USCF) = Rs 100.15/ kW/ month

Variable charge (USCV)= Rs 0.1233 per kWh X LAL factor.

Where:

LAL Factor is a factor for Adjustment of Losses and Load imposed on the transmission system by a user. LAL Factor of unity will be applied till benchmarks are defined by NEPRA.

The fixed charges shall be applicable to the maximum demand in kilowatts (kW) recorded during a billing period and the variable charge shall be applicable to the energy in kilowatt-hours (kWh) recorded during a billing period. Recording of the maximum demand in kW and energy delivered in kWh shall be carried out at meters installed at the delivery metering points i.e. inter-connection point between:

(a) NTDC transmission system (NTDC System) and the bulk power consumer.

(b) NTDC system and the transmission system of a special purpose transmission licensee.

(c) NTDC system and the transmission system of another country connected under an arrangement approved by the Federal Government.

(d) NTDC system and a distribution company receiving power in bulk either for sale to its own consumers or on behalf of another distribution company or a BPC located in another distribution company.

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(2) Transfer Price or Transfer Charge to XWDISCOS

NTDC shall charge the DISCOS formed consequent to the unbundling of WAPDA (termed as XWDISCOs), a transfer charge for procuring power from approved generating companies (termed as CPGENCOs) and its delivery to XWDISCOs for a billing period as under:

$$XTC = XCTC + XETC$$

Where:

XTC = Transfer charge to XWDISCOS

XCTC = Capacity Transfer Charge to XWDISCOS

XETC = Energy Transfer Charge to XWDISCOS

$$XCTC = \frac{CpGenCap}{XWD} + USCF$$

Where:

(i) CPGenCap = the summation of the capacity cost in respect of all CPGencos in Rs for a billing period minus the amount of liquidated damages received during the month.

(ii) XWD = the sum of the maximum demand of the XWDISCOs in kW recorded during a billing period at all the delivery metering points at which power is received by the XWDISCOs.

(iii) USCF = the fixed charge part of the use of system charges in Rs per kW per month.

$$XETC = \frac{CpGenE\ (Rs) - Us_{KESC} \times ERt_{KESC}}{XWUs\ (kWh)}$$

Where:

(i) CPGenE = the summation of the variable charge rate (Rs per kWh) approved for each of the CPGenCOs times the energy in kWh procured from the respective CPGENCO during the billing period.

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(ii) ER_{tKESC} = The marginal generation energy charge established during the billing period.

(iii) Us_{KESC} = Units (kWh) delivered to KESC by NTDC.

(iv) XWUs = the summation of the energy units (kWh) recorded at the delivery metering point of all the XWDISCOs during a billing period.

The transfer charge is inclusive of the transmission loss charge as the same is rolled in on account of the costs divided on units delivered basis to arrive at the Transfer Charge, therefore NTDC shall, for the purpose of clarity intimate to all DISCOs the generation part of the Transfer Charge during a billing period by deducting from the Transfer Charge the Transmission Charge or Use of System Charges.

The following generation entities and extraneous sources of import of electricity stand approved as CPGENCOs who would be providing electric power to CPPA within NTDC for onward delivery to the XWDISCOs:

(i) All Hydroelectric Generating Stations owned and operated by WAPDA.

(ii) Chashma Nuclear Power Generating Station.

(iii) All IPPs selling power to WAPDA under a long-term contract for which sovereign guarantees have been provided by the Federal Government as listed in Annexure-III.

(iv) The thermal generation companies formed out of unbundling of WAPDA for a period upto 01.07.2009 or till the Competitive Market Operation Date determined by the Authority (whichever is later).

(v) Other generation entities (in the public sector, private sector or under public-private partnership, initiated, sponsored or developed by the Federal Government or any Provincial Government) approved by NEPRA to provide power to NTDC for onward delivery to the XWDISCOs for a specific period.

(vi) Sources of electricity imported from another country or the territory of Azad Jammu and Kashmir under an approval of the Federal Government for provision of power to meet the demand of any or all of the XWDISCOS as approved by NEPRA.

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Note: The UOSC shall remain effective till such time the tariff for NTDC is revised by the Authority subsequent to the petition filed by NTDC and notified by Federal Government in the official gazette.

Terms and Conditions:

(a) Definitions:

1. Bulk Power Consumer (BPC) means a Bulk Power Consumer as defined in NEPRA Act.

2. Billing Period means a period determined by NEPRA for the purpose of charging the transfer charge to XWDISCOs in respect of power delivered. The billing period for the purpose of applying a transfer charge shall be on a one month basis (starting 24:00 of the 1st day of the month and ending 12:00 hrs on the last day of the month) till a shorter billing period is specified by NEPRA through a Competitive Trading Arrangement Transitional Order.

3. Competitive Market Operation Date = The date as defined under article 7(2) of the Licence granted to NTDC.

4. CPPA = Central Power Purchase Agency as required under Article 8(a) of the Licence granted to NTDC.

5. Delivery metering point means the interconnection point at the grid stations where power is delivered by NTDC to XWDISCOs, BPCs connected directly to the transmission system or other users of the transmission system and where relevant meters are installed to measure such power delivered.

6. IPPs = Independent Power Producers established under the Federal Government's Power Policy of 1994 or earlier (listed as Annexure-III).

7. Maximum Demand = The highest demand recorded during a billing period measured over successive periods of 30 minute interval at the receiving metering point of the XWDISCO or user of the transmission system. Maximum demand measuring apparatus used for recording the maximum demand during a billing period shall be based on a [30] minutes interval reset basis.

8. Month means a calendar month according to the Gregorian Calendar.

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9. Power Factor: the rate expressed as a percentage of the kilowatt-hours to the kilovolt hours consumed during a billing period.

10. Use of System Charge means any charge (fixed or variable) payable by a Distribution Company, BPC or any other user of the transmission system for Transportation of Power from Generator to Delivery Metering Point and delivery to a distribution company, BPC or any other user and as required under Article 13 and 14 of the NTDC Licence.

(b) <u>Other Terms and Conditions</u>

11. Power Factor Penalty: The XWDISCOs shall maintain an average power factor during a billing period at the delivery metering point of at least 85 percent lagging. In the event of the said Power Factor falling below 85% in a billing period the concerned XWDISCO shall pay to NTDC a penalty as determined by the Authority for general applicability on the recommendation of NTDC and after consultation with the generation and distribution licensees.

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BACKGROUND

National Transmission & Despatch Company (NTDC), 414 WAPDA House Lahore Pakistan, one of the successor companies of WAPDA, was incorporated on August 3, 1998 and commenced commercial operation on March 1, 1999. The company has a status of public (unquoted) limited liability company under the Companies Ordinance 1984. NTDC was granted Transmission License No. TL/01/2002 on 31st December, 2002 to engage in the exclusive transmission business for a term of thirty (30) years, pursuant to Section 17 of the Regulation of Generation, Transmission and Distribution of Electric Power Act, 1997.

2. NTDC filed a petition for revision of tariff on May 24, 2005, which was admitted by the Authority on May 30, 2005. Accordingly all interested persons and the stakeholders in the power sector were given notice on June 11, 2005 through publication of salient features of the petition in the newspapers pursuant to Tariff Standards and Procedure Rules – 1998.

3. In response to the notice three comments and one intervention request were received. On July 25, 2005 the Authority decided to hold a hearing in the matter which was held on August 11, 2005 at NEPRA's main office.

PETITIONER'S SUBMISSION

GROUNDS FOR FILING THE PETITION

Main Reasons/Grounds

4. According to NTDC the main reasons/grounds for filing the petition were as follows:

- Increase in general establishment expenditure,

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- to cater for the impact of increase in pay of NTDC employees and inflation,
- Increase in maintenance expenditure to ensure the desired reliability, security and adequacy of the transmission network,
- Increase in financial charges due to increase in borrowings for capacity expansion programs,
- The amount of Rs. 820 million deducted as other income from total revenue requirement of NTDC by NEPRA for the year 2004-05 is more than the expected results of 2004-05,

5. NTDC has compared actual revenue of the year 2004-05 with the revenue requirement projection for the next three years'. The comparison is indicated in the following table:

Description	2004-05 Determined by NEPRA	2004-05 Estimates as per NTDC	2005-06 Estimates as per NTDC	2006-07 Estimates as per NTDC	2007-08 Estimates as per NTDC
General Establishment	1,248	1,247	1,621	1,783	1,961
Repair & Maintenance	583	583	759	854	951
Insurance	164	164	153	163	185
Transmission Licence Fees	6	6	7	8	8
Depreciation	2,828	2,583	2,776	3,095	3,424
Financial Charges	2,358	2,560	2,960	3,868	4,342
Return on Equity	4,317	3,795	5,277	6,208	7,304
Total Costs Including: Return on Equity	**11,504**	**10,938**	**13,553**	**15,979**	**18,177**
Less Other Income	820	211	222	233	245
Revenue Requirement	**10,684**	**10,727**	**13,331**	**15,746**	**17,932**

6. Based upon the estimated maximum demand NTDC has worked out Use of System Charge (UOSC) in the following table:

Description	2004-05 Determined by NEPRA	2004-05 Estimates as per NTDC	2005-06 Estimates as per NTDC	2006-07 Estimates as per NTDC	2007-08 Estimates as per NTDC
Estimated monthly coincidence Peak Demand Including KESC (MW)	10,920				
Estimated Monthly non-coincidence Peak Demand Including KESC (MW)	12,133	12,179	12,910	13,749	14,712
Tariff Rs./kW/Month	73.4	73.4	86.1	95.4	101.6
Total Tariff Revenue Mln. Rs.	**10,687**	**10,727**	**13,331**	**15,746**	**17,932**

7. For estimation of revenue requirement NTDC has based its petition on the following major assumptions:

MW Demand of DISCOs

8. The average annual growth in peak demand of DISCOs and KESC has been taken as 6% in FY 2005-06 over FY 2004-05, 6.5% in FY 2006-07 over 2005-06 and 7% in FY 2007-08 over 2006-07.

Receivables

9. Recovery of billing against Use of System Charges from CPPA has been assumed 100%.

Payables

10. 100% payment has been assumed to the creditors. The creditors are offset against debtors for the sale and purchase of energy with the understanding that the sale and purchase of energy function are proposed to be handled by the newly established independent entity called CPPA.

Debt Services

11. The Debt Service (interest + repayment) of the loans has been established on the basis of actual terms and conditions attached to

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each loan obtained by WAPDA. The interest charges on new loans have been assumed @12%. Any increase in the floating rate of interest over 12% may be allowed to be recovered through indexation in NTDC system charge.

General Establishment and Administrative Cost

12. These costs have been escalated by 30% in the year 2005-06 and 10% continuous increase for next following years projected in the petition.

Maintenance & Overhauling

13. For the year 2004-05, NEPRA allowed NTDC maintenance expenses of 0.75% of the average gross fixed assets. NTDC requested NEPRA for the maintenance expenses of 1% of average gross fixed assets for the NTDC system in order to provide the quality and reliable energy to DISCOs but NEPRA did not accept the NTDC request. From now onward the 2004-05 Maintenance costs have been assumed as 1% of average gross fixed assets to maintain the very huge transmission system of NTDC which requires heavy maintenance.

Transmission License Renewal Fee (NEPRA)

14. The transmission license renewal fee has been increased by 15% p.a. in FY 2005-06 and 10% onward to cover inflationary impact.

Insurance

15. The assets of the Company are covered under WAPDA Equipment Protection Scheme (WEPS) at 0.35% of net value of transmission lines and grid stations. Insurance cost has been established on the same methodology.

Corporate Taxation

16. It is assumed that company will remain exempt from corporate taxation therefore no tax has been assumed. Any tax levied will be

treated as a pass-through item and will not affect the financial results of the company.

Employees' Retirement Obligations

17. It has been assumed that payments to retired employees shall be equal to the provisions for the period; therefore, Employees' Retirement Obligations have been kept unchanged during the projection period.

Dividend payout

18. No dividend payment has been assumed during the projections period. Cash surplus would be utilized towards the expansion/ strengthening the transmission system through capital investment of NTDC.

Return on Equity

19. 15% return on equity has been taken to calculate tariff requirement from 2005-06 to 2007-08 on the basis of rising trend of discount rate.

Determination Sought

20. Approval from NEPRA for Use of System Charge is requested as under:

a) For Ex-WAPDA Distribution Companies termed as XWDISCOs

S/No.	Description	2004-05	2005-06	2006-07	2007-08
		Current	Proposed		
1.	*Use of System Charge (Rs/kW/Month)*	*73.4*	*86.1*	*95.4*	*101.6*

b) For Bulk Power Consumer (BPCs)

S/No.	Description	2004-05	2005-06	2006-07	2007-08
		Current	Proposed		
1.	*Use of System Charge (Rs/kW/Month)-Fixed*	*73.4*	*86.1*	*95.4*	*101.6*
2.	*Use of System Charge (Rs/kWh)-Variable*	*0.07* x *LAL factor*	*0.09* x *LAL factor*	*0.10* x *LAL factor*	*0.11* x *LAL factor*

Intervenor

Sarhad Chamber of Commerce & Industry

21. Sarhad Chamber of Commerce & Industry opposed the tariff petition for FY 2005-06 to FY 2007-08 filed by NTDC on the following grounds:

- Tariff petition is not supported by reasons and grounds sustainable qua the attending circumstances and law applicable in the matter,
- The petition is deficient in material particulars,
- The treatment accorded to the consumer in the petition is outrageously harsh and meant at the annihilation of a number of commercial and industrial concerns,
- The demand for tariff enhancement is not justifiable as it is owed to the petitioners inefficiency, non-willingness for implementing modern methods to make the petitioner viable, non-professional attitude, non-business like handling of transmission, etc.
- Even a fraction of the tariff increase requested by petitioner would have a great impact on the intervenor.

Petitioner's Response

22. NTDC's response to Sarhad Chamber of Commerce & Industry queries is as follows:

- The tariff petition filed by NTDC is based on the facts based on its actual financial statements for the year ended June 30, 2003 and 2004. The projections are based on the actual data for these years and keeping in view the escalation and inflation factors. The petition supports all working and is prepared showing the trends of future increase in revenue and tariff rates.

- Again, the tariff petition is based on its audited financial statements for the years ended June 30, 2003 and 2004 and all projections are made using the figures of these years as a base and all escalations and increases are properly explained on the face of Balance Sheet, Income statement and Cash Flow Statements. So there is no deficiency in respect of material particulars and all material items are fully explained and backed by proper reasoning and evidence.
- NTDC doesn't have any intention of annihilation and has prepared its tariff petition having regard to prevailing and expected inflation rates in the country. The petition explains the future projections on ground realities and application of financial forecasting techniques and such projections are not against any particular type of consumer either commercial or industrial. So it should not be taken as a matter of annihilation of any particular consumer.
- The ground realities are explained before and tariff petitions is filed before Authority for taking proper notice of the ground realities. Further, tariff enhancement is justified because of many reasons including increased interest rates in the country, inflation rate increasing continuously and BMR considerations etc.
- The management of NTDC is assumed by intervener as inefficient and having a non professional attitude and non business like handling of transmission. It is known to everyone that the present management is highly skilled and professional in all respects. The words used by intervener are purely based on assumptions and if the intervener would have studied the petition minutely, it would have revealed that the company is in the phase of implementation of a major investment plan.
- There are factors like increase in oil prices world over that has mainly hit the electricity prices. NTDC is involved just in

transmitting energy to distribution networks. It has to cover its development and operational costs that are also affected by increase in oil prices and national inflation level. So nothing in this petition is projected to earn supernormal profits for the company but just to maintain a balance between operating revenue and cost to the company.

- So far exports are concerned, it is again reminded that increased cost of production has resulted due to hyper increase in world oil prices and inflation factors. There are several other factors besides electricity that contribute to the increased cost of production for exports. NTDC has done nothing wrong by asking for an increase in its prices to keep in line with the inflation.
- This objection is also related to exports for which answer had been given earlier. Moreover, and subsidy to export oriented industry is subject to the approval of Authority and Government of Pakistan. NTDC has no role in the issue.
- This is a request from Authority rather than a query. Furthermore, all export related objections are taken in the preceding discussion.
- Total operating expenses for the years 2006, 2007 and 2008 are projected at Rs. 5,317, 5,903 and 6,530 millions respectively that shows 16%, 11% and 9% increase respectively which is in line with the projected inflation factor, recent increase in salaries and wages of the employees directed by the government and routine increments of the staff.
- Company is not directly involved in the matter raised by the intervener and therefore unable to place any comments in this regard.
- Again this objection is not directly linked with the tariff petition filed by NTDC and it relates to the harmonization among

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provinces and as such a matter of national integrity and interest. Therefore company is unable to place any comments on the matter.

- Intervener must understand that there are some issues which government alone cannot control like international oil prices and international inflation and interest rates. The effects of these are so significant that government is left with no other option but to shift their effect to the consumers.
- So far as the surplus electricity is concerned, in our opinion there is no such situation at the moment in the country nor it is projected in the near future unless heavy development work is undertaken whereas demand has risen many a time that it sometimes leads towards the load management. If there is surplus electricity then there is no need to produce electricity by using expensive thermal means instead of cheaper hydel means of production.

Karachl Electric Supply Company (KESC)

23. Following points were raised by the Karachi Electric Supply Company (KESC):

- There is a difference in financial charges and other income between the petition filed by NTDC and the petition published in newspapers.
- The month wise details of maximum demand of each DISCO assuming 6%, 6.5% and 7% average growth. Increase in demand of each DISCO by same %age is only to show the volume of the petition is large. No basis of ascertaining the growth rate is given. Increase in Peak Demand @ 6%, 6.5% and 7% is on higher side, no provision for reduction of technical losses.
- Costs are escalated abruptly and the required tariff increase is based on all cost, without any restriction and efficiency

improvement. CPPA and Insurance expenses were nil in FY 2003-04 and no basis is given for these expenses. Moreover, Retained Earnings which was minus 11.4 billion as on June 2004 has become plus 11.2 billion in 2007-08, in four years.

- Return on equity is on a higher side and it should be based on previous year's equity.
- More than 50% interest pertains to foreign relent loans and CDL loans. Government policy to provide subsidy has not been accounted for. Interest on new loans @ 12% under the current scenarios is not justified.
- Expenditure in 3 years amounting to Rs. 40,592 million (2005-08) is not justified if compared with existing gross fixed assets of Rs. 76,694 million as on June 30, 2005.

Petitioner's Response

24. NTDC's response to KESC queries is as follows:

- It was a printing mistake on the part of NEPRA and corrigendum was published accordingly when the matter was highlighted by NTDC.
- It is expected that demand will increase during the period and is in line with the past experience and industrial development pace of the country. There is a consistent growth in demand and these are prudent projections based on underlying assumptions which are made keeping in view the general demand growth in electricity. So far as the technical losses are concerned, these will reduce after the implementation of investment plan of the company when new transmission lines will be in place.
- This expense was Nil in the year 2003-2004. As there is a new functional setup in NTDC in which NTDC will charge Use of System Charge (UoSC) only and all purchase and sale of

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electricity will be performed by CPPA. In the year 2003-04, CPPA was not formed and therefore no cost is being allocated to that head. The costs for FY 2005-06 onward represent the budget allocation to CPPA.

- There is an increase of 30% in Pay and Allowances. This is estimated to cater the recent increase in pay and allowances announced by Government of Pakistan. This increase will lead to the increase in their emoluments and fringe benefits also. It is pertinent to note that 30% increase is assumed in FY 2005-06 only and then onwards 10% increase is assumed for FY 2007-08 each that is quite normal if normal inflation and interest rate factors are considered.
- These expenses are assumed to increase about 30% in FY 2005-06 by taking into account the inflation and interest rate factors discussed before.
- Most of the existing fixed assets comprising of transmission lines, grid stations and vehicles have completed their useful life or about to complete it so they require continuous maintenance cost. The company is in the phase of implementation of a comprehensive investment plan that will execute in FY 2006-07 onwards so it should be noted that maintenance cost from FY 2006-07 onward is taken around 11% to 12% as compared to 30% in FY 2005-06 which is quite normal if analyzed with current inflation factor and hourly labour rate.
- Depreciation cost is increasing from FY 2005-06 to 2007-08. The reason for such increase is the placement of new fixed assets as per our investment plan.
- This cost in FY 2003-04 comprises of license fee only whereas the cost of FY 2004-05 includes both petition and license fee. In future years there is a normal increase in annual license fee considering the inflation factors of the country.

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- Intervener has raised a question that retained earning which were minus 11.4 billion as on June 2004 has become plus 11.2 billion in 2007-08 in four years. This reflects the integrity and commitment of the management to convert its negative equity into positive through efficient management techniques. As all projections are based on prudent estimates and effective utilization of resources, it is expected that all projections will be met and company would succeed in converting its negative retained earnings into positive within the span of four years.
- Company had filed its tariff petition before the finance bill 2005 was announced. In the said finance bill, a new clause has been introduced in Income Tax Ordinance 2001 to bring such electricity companies into the tax net whose tariff has been notified as is the case with NTDC. In the projections provided to NEPRA, no tax effect has been taken into account. Now company may be required to pay tax on its profits before taxation or to pay turnover tax on its sales revenue. In either case, the tax levy is a must that may cause increase in rate of return on equity leading towards the increase in tariff. Company is not paying dividends to the shareholders and it is necessary to provide a reasonable return on equity. Moreover, interest rates in the country have been increased considerably that call for increase in rate of return on equity.
- NTDC had been transferred all loans at the time of its formation under the WAPDA unbundling program. These loans were taken by WAPDA and transferred to NTDC. Under current investment plan of NTDC, each loan is categorized into local and foreign cost component. Company believes that local cost component will be financed by own resources using return on equity and rest of the cost will be financed through local or foreign banks depending upon the rate of interest by these banks.

- Government of Pakistan is offering no subsidy to the company and all financial charges are borne by company itself. So far as the rate of 12% is concerned, all rates are now directly linked with KIBOR plus basis points. KIBOR has moved from 2.5% to 9% within this fiscal year. So 12% interest is very reasonable and company expects a higher rate in coming years analyzing the trend of KIBOR.
- This very point was taken by Chairman WAPDA during the hearing of NTDC petition and was responded accordingly. Meanwhile to record our submission, it is to note that current investment plan is prepared keeping in view the future electricity requirement and therefore this program is a dire need of the transmission system to avoid power shortages in the country.

Representative of Govt. of Punjab (Irrigation Department Punjab)

25. Irrigation and Power Department does not support the petition to increase the tariff annually due to the following reasons:

a) NTDC is buying power from each IPP at different determined bus-bar/sale price. The same policy may be followed in buying power from WAPDA. There are no grounds to lump-up all Hydro Power Stations with widely different characteristics and bus-bar prices/firm power – into one basket. The provision of constitution (Article 161(2)) and accepted financial, accounting and administrative procedure do not support any such methodology. Any adhoc costs added may not be allowed and tariffs reduced accordingly.

b) NTDC is a National/Public Company rendering service in the vital power sector. The primary objective may be to have minimum sale price of electricity to reduce costs. Profits may not be targeted and retained.

c) Electricity tariff is presently very high as compared to other developing nations and our industrial products would not be able to compete in the world market due to coming into force of World Trade Organization w.e.f. 1-1-2005.

d) Electricity tariff may be reduced as purchase price from IPPs have been reduced due to levelized tariff.

e) O&M charges looks to be on higher side which may be reduced by adopting modern management as well as technological techniques.

Pakistan Cotton Ginner's Association

26. NTDC is charging wheeling charges from DISCOs as Rs. 86.10/kW/month and Rs. 0.09/kWh for bulk power consumer. In turn MEPCO is charging Rs. 474.38/kW/month including fixed charges, seasonal charges and GST from industrial consumers B-2/F.

27. The association requests following changes in determination of tariff for NTDC and DISCOs:

1) NTDC should charge Rs. 0.09 / kWh from DISCOs.
2) DISCOs should also charge single part tariff from industrial consumers. However if fixed charges are necessary DISCOs should be asked to charge only NTDC rate adjusted for line losses i.e. 100.63 in case of MEPCO.

28. The present electricity tariff is based on cross subsidized structure which means that certain classes of consumer are paying less than the cost of service while other classes of consumer are paying higher prices. The Government of Pakistan wants to rationalize the tariff over the period of time, so that cross subsidy is eliminated.

29. Tariff petition is against the policy of Government of Pakistan which is committed to reduce the tariff with the passage of time due to

expected relief in the levelized tariff of IPPs. There is thus need to prescribe the methodology for reduction of retail tariff in case Power Purchase Price from IPPs is reduced subsequently in the coming years.

ISSUES

30. The main issues arising out of the proceedings as well as those considered relevant to the determination are discussed in the following paragraphs;

1. <u>Revenue Requirement (Rr)</u>

31. The petitioner has estimated its Revenue Requirement (Rr) as Rs. 14,787 million for FY 06 to cover general establishment and administrative expenses, insurance, repair & maintenance, CPPA cost, NEPRA license fee, depreciation, debt servicing and self-financing for its capacity expansion program, corporate income taxes and return on equity. This includes the requirement related to the role of CPPA. The final accounts for FY 04 and FY 05 were examined to assess the Rr for FY 06. The elements of Rr are discussed in the succeeding paragraphs.

<u>Operating & Maintenance (O&M) Cost</u>

32. O&M cost comprises of (i) general establishment and administration (GE&A) expenses; (ii) repair and maintenance (iii), insurance (iv) transmission license fee and (v) depreciation. NTDC has proposed Rs. 5,317 million for operating and maintenance expense (including depreciation) during the FY 06. Each sub-element of O&M cost is assessed as under:

i) <u>General Establishment & Administrative (GE&A) Expenses</u>

33. The audited accounts for FY 05 revealed that out of Rs. 1,620 million of total operating expense (excluding depreciation) Rs. 1,292 million (or 80%) related to GE&A expenses. The petitioner has

demanded an amount of Rs. 1,621 million as GE&A expenses for FY 06 which is 25% higher than actual for the FY 05. According to the petitioner the main reason for such an increase is the need to cater for the increase in pay of the employees by 20% announced by the Federal Government, enhancement of house acquisition ceiling and traveling allowance, and an allowance for establishing additional organizational requirements to comply with the terms of the license.

ii). <u>Repair & Maintenance</u>

34. The petitioner estimated maintenance cost of Rs. 759 million for FY 06 on the basis of 1% of average gross fixed assets in operation. The audited accounts for the FY 05 indicate the actual maintenance expense of Rs. 259 million.

35. In its earlier determination of April 13, 2004, the Authority had allowed an amount of Rs. 583 million as Repair & Maintenance expenses for the FY 05 on the basis of 0.75% of average gross fixed assets. NTDC was able to spend only 44% of the allowed amount of Rs. 583 million in the FY 05 despite the fact that company had sufficient cash available for carrying out its maintenance activity. On the basis of past trend, Authority considers the previously allowed 0.75% of average gross fixed assets for repair & maintenance as more than the requirement of NTDC and need to be revised for FY 06. Accordingly, the Authority considers 0.60% of average gross fixed assets by Rs. 480 million as a reasonable estimate for assessing repair & maintenance expense for FY 06. This amount would be sufficient to cater for the increased demand of maintenance required to ensure a secure and reliable transmission system.

iii). <u>Insurance</u>

36. The petitioner had estimated an expense of Rs.153 million for FY 06 on account of insurance. In its determination dated April 13,

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2004, the Authority allowed an amount of Rs. 164 million. According to the information provided by NTDC an amount of Rs. 69 million was spent on insurance expense in the FY 05. The amount indicated is not justified, therefore the petitioner's demand of insurance premium is being assessed on the basis of 0.35% of the net assets of transmission and grid stations equipment. The Authority therefore decides to allow Rs. 153 million as insurance expense for the FY 06.

iv). Transmission License Fee

37. The transmission licence fee has been allowed on the expected rates for FY 06 as Rs. 6.9 million for the year.

v). Depreciation

38. The annual accounts for the FY 04 and FY 05 indicate a depreciation of Rs. Rs.2,508 million and Rs. 2,365 million respectively. In terms of percentage of average gross fixed assets this translates into 3.7% and 3.1% for FY 04 and FY 05 respectively and an average of 3.4% for the last two years. The Authority considers a rate of 3.5% of average gross fixed assets as reasonable and on the basis of this rate a depreciation allowance of Rs. 2,706 million is allowed for FY 06.

b. Other Income

39. As per the financial information provided by NTDC an amount of Rs. 68 million net of KESC late payment surcharge was identified as other income. Keeping in view the past trend the Authority has assessed Rs. 80 million as the expected other income for FY 06.

c. Corporate Income Tax @ 35%

40. As per the Finance Act 2005, income tax will be applicable on earning after tax @ 35% on unbundled Ex-WAPDA corporate entities with effect from the date of notification of tariff by GOP. The estimated additional liability for FY 06 is expected to be Rs. 2,551 million.

17

d. Capacity Expansion Programme

41. The petitioner has proposed a development program of Rs.15,794 million for FY 06. Based upon the analysis and the assessment of individual cost items the estimated internal cash generation would be around Rs. 4,738 million. In order to finance its investment programme the petitioner will have to borrow from foreign as well as local lenders. The source wise estimated financing plan is indicated as under:

Foreign Banks	Rs. 9,545 million
Local Banks	Rs. 1,511 million
Internal cash generation	Rs. 4,738 million
Total Financing	**Rs. 15,794 million**

e. Financial Charges (Cost of debt)

42. Cost of debt part is allowed in the shape of allowing interest charges at the actual rate respective to each part of the debt. The interest charges for the FY 06 are assessed as Rs. 2,640 million (excluding capitalised interest cost of Rs. 522 million) and the weighted average cost of debt comes to 11.71%.

f. Return on Equity

43. The Authority had allowed a level of 12.75% nominal post tax return on equity in the last determination for FY 05. The Authority considers the allowed level of return on equity is reasonable and decides to maintain the same level for FY 06. The ROE translates in Rupee terms as Rs.4,738 million.

Equity Base

44. The Equity Base (EB) on which a return can be allowed is considered to be equal to the following:

(NFAIO+CWIP+S&S+TD+C&BB)-(LTB+OLTL+SDC+ERB+CA&OCL)

Where:

NFAIO	=	Net Fixed Assets in Operation
CWIP	=	Capital Work in Progress
S&S	=	Stores & Spares subject to a maximum of 3% of Gross Fixed Assets in Operation.
TD	=	Trade Debts subject to a maximum of 30 number of days of outstanding billing.
C&BB	=	Cash & Bank Balances subject to maximum of 1/6th of annual operating expenses other than non-cash items.
LTB	=	Long Term Borrowing
OLTL	=	Other Long Terms Liabilities including inter-company payables.
SDC	=	Security Deposits by Consumers
ERB	=	Employees Retirement Benefits
CA & OCL	=	Current, Accrued and Other Current Liabilities (maximum of 2/3rd of current assets)

Where:

Current Assets = S&S+TD+C&BB

45. According to the balance sheet as on June 30, 2005 the net fixed assets in operation of NTDC were Rs. 56,902 million, stores and spares Rs. 4,580 million (including stores held for capital expenditure that could not be identified separately). The trade debts were to the tune of Rs. 67,447 million, cash and bank balances Rs. 2,252 million and capital works in progress Rs. 1,767 million. The long-term liabilities were Rs. 30,542 million, employees' retirement benefits Rs. 4,944 million and creditors, accrued and other liabilities Rs. 83,218 million. Incorporating the corresponding estimated figures as discussed in earlier paragraphs the EB for FY 06 is assessed as Rs. 37,160 million (detailed working indicated as Annexure I & II).

46. The Authority assessed revenue requirement for FY 05 on the basis of investment level of Rs. 7,660 million. The information provided by NTDC revealed that the net investment during FY 05 was Rs. 6,112 million which is less by about Rs. 1,548 million. The return

thus allowed on this amount is required to be adjusted against the revenue requirement of FY 06. Accordingly the revenue requirement for FY 06 is being adjusted by Rs. 29 million

47. Based upon the analysis in the preceding paras the revenue requirement for FY 06 is estimated as follows:

Revenue Requirement

	Rs.Million
GE&A (including CPPA)	1,621
Repair & Maintenance	480
Insurance	153
Transmission Licence Fee	7
Depreciation	2,706
Financial Charges	2,640
Return on Equity	4,738
Income Tax	2,551
	14,896
Less: Other Income	80
Previous Year Adjustment for Excess RR	29
Revenue Requirement	**14,787**

48. This Revenue Requirement does not include the requirement to cater for transmission losses. The transmission loss cost is assessed separately for the purpose of determining the transmission charge or the use of system charge whereas in case of transfer price to be charged to XWDISCOs the loss charge is rolled into the charge applied to the XWDISCOs.

Transmission Charge/Use of System Charges

49. The maximum non-coincidence demand estimated by the petitioner, for FY 06 (including KESC demand of 606 MW) was 12,910 MW. NTDC has calculated this demand assuming 6% growth in the peak demand of XWDISCOs and KESC over FY 05. Based upon the non-coincidence demand of 12,304 (excluding KESC demand of 606 MW) the transmission fixed charge for FY 06 has been assessed as Rs. 100.15/kW/month.

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Transmission and Transformation Losses (T&T)

50. The Authority in its last determination dated April 13, 2004 allowed 2.5% transmission and transformation losses for 500 kV and 220kV system for the purpose of assessment of cost due to transmission losses. Accordingly the cost of units lost in transportation to be recovered from Bulk Power Consumers was determined as Rs. 0.07 per kWh assuming Rs. 2.80 as energy charge part of power purchase price. Due to exorbitant increase in fuel oil prices, the energy part charge of power purchase price has increased to about Rs. 4.93 per kWh. Therefore the cost previously determined needs to be revised. The Authority has accordingly decided to revised the cost on account of units lost during transportation as Rs. 0.1233 per kWh.

Use of System Charges

51. The Use Of System Charges (UOSC) allowed to NTDC for charging Bulk Power Consumers or Distribution Companies (other than XWDISCOs) purchasing from a Generating Company through NTDC for FY 06 are as under:

UOSC = USCF + USCV

Where:

USCF = Fixed portion of use of system charge (USCF for FY 06 is Rs. 100.15/kW/month)

USCV = Variable portion for use of system charge (USCV for FY 06 is Rs. 0.1233/kWh)

Explanation:

Fixed (KW) charge will be applied on the basis of the maximum load usage during the billing month and variable (kWh) charges

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will be applied on the basis of units (kWh) consumed by the bulk purchaser as recorded during the billing month, both recorded at the delivery metering point (DPM) i.e. meters installed at the inter connection point between NTDC and XWDISCO.

Authority's Direction

52. The Authority has noticed that NTDC has not yet complied with the Direction given by the Authority's in its earlier determination dated April 13, 2004 vide para 74 wherein NTDC was directed to recommend to the Authority "the range of normal operation and the rates for compensation in respect of each type of ancillary service within 3 months of the notification of the NTDC tariff or within three months of a grant of a licence to a generating company which is connected to the transmission system of NTDC". The Authority once again directs NTDC to undertake the required study and submit to the Authority for approval.

ORDER

53. The National Transmission and Despatch Company (NTDC) is allowed to charge such tariff and on such terms and conditions as provided hereunder:

(1) Use of System Charges

NTDC shall charge its users for provision of transmission and allied services the following two-part tariff i.e. a fixed and variable charge:

Fixed charge (USCF) = Rs 100.15/ kW/ month

Variable charge (USCV)= Rs 0.1233 per kWh X LAL factor.

Where:

LAL Factor is a factor for Adjustment of Losses and Load imposed on the transmission system by a user. LAL Factor of unity will be applied till benchmarks are defined by NEPRA.

The fixed charges shall be applicable to the maximum demand in kilowatts (kW) recorded during a billing period and the variable charge shall be applicable to the energy in kilowatt-hours (kWh) recorded during a billing period.

Recording of the maximum demand in kW and energy delivered in kWh shall be carried out at meters installed at the delivery metering points i.e. inter-connection point between:

(a) NTDC transmission system (NTDC System) and the bulk power consumer.

(b) NTDC system and the transmission system of a special purpose transmission licensee.

(c) NTDC system and the transmission system of another country connected under an arrangement approved by the Federal Government.

(d) NTDC system and a distribution company receiving power in bulk either for sale to its own consumers or on behalf of another distribution company or a BPC located in another distribution company.

(2) Transfer Price or Transfer Charge to XWDISCOS

NTDC shall charge the DISCOS formed consequent to the unbundling of WAPDA (termed as XWDISCOs), a transfer charge for procuring power from approved generating companies (termed as CPGENCOs) and its delivery to XWDISCOs for a billing period as under:

XTC = XCTC + XETC

Where:

XTC = Transfer charge to XWDISCOS
XCTC = Capacity Transfer Charge to XWDISCOS
XETC = Energy Transfer Charge to XWDISCOS

$$XCTC = \frac{CpGenCap}{XWD} + USCF$$

Where:

(i) CPGenCap = the summation of the capacity cost in respect of all CPGencos in Rs for a billing period minus the amount of liquidated damages received during the month.

(ii) XWD = the sum of the maximum demand of the XWDISCOs in kW recorded during a billing period at all the delivery metering points at which power is received by the XWDISCOs.

(iii) USCF = the fixed charge part of the use of system charges in Rs per kW per month.

$$XETC = \frac{CpGenE\ (Rs) - Us_{KESC} \times ERt_{KESC}}{XWUs\ (kWh)}$$

Where:

(i) CPGenE = the summation of the variable charge rate (Rs per kWh) approved for each of the CPGenCOs times the energy in kWh procured from the respective CPGENCO during the billing period.

(ii) ERt_{KESC} = The marginal generation energy charge established during the billing period.

(iii) Us_{KESC} = Units (kWh) delivered to KESC by NTDC.

(iv) XWUs = the summation of the energy units (kWh) recorded at the delivery metering point of all the XWDISCOs during a billing period.

The transfer charge is inclusive of the transmission loss charge as the same is rolled in on account of the costs divided on units delivered basis to arrive at the Transfer Charge, therefore NTDC shall, for the purpose of clarity intimate to all DISCOs the generation part of the Transfer Charge during a billing period by deducting from the Transfer Charge the Transmission Charge or Use of System Charges.

The following generation entities and extraneous sources of import of electricity stand approved as CPGENCOs who would be providing electric power to CPPA within NTDC for onward delivery to the XWDISCOs:

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(i) All Hydroelectric Generating Stations owned and operated by WAPDA.

(ii) Chashma Nuclear Power Generating Station.

(iii) All IPPs selling power to WAPDA under a long-term contract for which sovereign guarantees have been provided by the Federal Government as listed in Annexure-III.

(iv) The thermal generation companies formed out of unbundling of WAPDA for a period upto 01.07.2009 or till the Competitive Market Operation Date determined by the Authority (whichever is later).

(v) Other generation entities (in the public sector, private sector or under public-private partnership, initiated, sponsored or developed by the Federal Government or any Provincial Government) approved by NEPRA to provide power to NTDC for onward delivery to the XWDISCOs for a specific period.

(vi) Sources of electricity imported from another country or the territory of Azad Jammu and Kashmir under an approval of the Federal Government for provision of power to meet the demand of any or all of the XWDISCOS as approved by NEPRA.

Note: The UOSC shall remain effective till such time the tariff for NTDC is revised by the Authority subsequent to the petition filed by NTDC and notified by Federal Government in the official gazette.

Terms and Conditions:

(a) Definitions:

1. Bulk Power Consumer (BPC) means a Bulk Power Consumer as defined in NEPRA Act.

2. Billing Period means a period determined by NEPRA for the purpose of charging the transfer charge to XWDISCOs in respect of power delivered. The billing period for the purpose of applying a transfer charge shall be on a one month basis (starting 24:00 of the 1st day of the month and ending 12:00 hrs on the last day of the month) till a shorter billing period is specified by NEPRA through a Competitive Trading Arrangement Transitional Order.

3. Competitive Market Operation Date = The date as defined under article 7(2) of the Licence granted to NTDC.

4. CPPA = Central Power Purchase Agency as required under Article 8(a) of the Licence granted to NTDC.

5. Delivery metering point means the interconnection point at the grid stations where power is delivered by NTDC to XWDISCOs, BPCs connected directly to the transmission system or other users of the transmission system and where relevant meters are installed to measure such power delivered.

6. IPPs = Independent Power Producers established under the Federal Government's Power Policy of 1994 or earlier (listed as Annexure-III).

7. Maximum Demand = The highest demand recorded during a billing period measured over successive periods of 30 minute interval at the receiving metering point of the XWDISCO or user of the transmission system. Maximum demand measuring apparatus used for recording the maximum demand during a billing period shall be based on a [30] minutes interval reset basis.

8. Month means a calendar month according to the Gregorian Calendar.

9. Power Factor: the rate expressed as a percentage of the kilowatt-hours to the kilovolt hours consumed during a billing period.

10. Use of System Charge means any charge (fixed or variable) payable by a Distribution Company, BPC or any other user of the transmission system for Transportation of Power from Generator to Delivery Metering Point and delivery to a distribution company, BPC or any other user and as required under Article 13 and 14 of the NTDC Licence.

(b) <u>Other Terms and Conditions</u>

11. Power Factor Penalty: The XWDISCOs shall maintain an average power factor during a billing period at the delivery metering point of at least 85 percent lagging. In the event of the said Power Factor falling below 85% in a billing period the concerned XWDISCO shall pay to NTDC a penalty as determined by the Authority for general applicability on the recommendation of NTDC and after consultation with the generation and distribution licensees.

NATIONAL TRANSMISSION AND DISPATCH COMPANY
ESTIMATION OF EQUITY BASE AND ALLOWABLE RETURN

		Desciption	Actual FY 03	Actual FY 04	Actual FY 05	Estimated FY 06
A		**Fixed Assets**				
	a)	Original Cost of Fixed Assets in Operation	60,576	75,132	79,503	80,505
		Less: Consumers' Capital Contribution	-	74	72	72
		Accumulated Depreciation	17,635	20,140	22,530	25,236
		Assets Written/Disposed Off	-	-	-	
		Net Fixed Assets in Operation	**42,941**	**54,917**	**56,902**	**55,197**
	b)	Capital Work in Progress	17,717	0	1,767	16,560
		Total - A	**60,658**	**54,917**	**58,669**	**71,757**
B		**Current Assets**				
	a)	Stores & Spares (3% of the gross fixed assets in operation)	4,230	3,888	4,580	2,415
	b)	Accounts Receivables (equal to 30 no. of days outstanding of annual billing)	27,290	42,083	67,447	1,327
	c)	Cash & Bank Balance (1/6th of annual operating expenses other than non-cash items)	236	365	2,252	377
		Total - B	**31,756**	**46,336**	**74,280**	**4,119**
C		**Total A+B**	**92,414**	**101,253**	**132,949**	**75,876**
D		**Less:**				
	a)	Foreign Loans - Direct	6,396	5,265	4,146	12,888
	b)	Foreign Loans - Relent	12,684	14,406	13,916	12,560
	c)	Federal Government Loan	2,392	2,191	1,959	1,737
	d)	Borrowing from Government's approved Organisations/Institutions			0	
	e)	Government's approved Bonds/Instruments etc. issued by the Licensee	5,379	4,235	3,214	1,600
	f)	Other Long Term Liabilities	140	0	235	1,746
	g)	Employees Retirement Benefit	3,555	3,580	4,944	5,439
	h)	Creditors, accurued and other current liabilities (equal 2/3rd of current assets)	40,016	56,812	83,218	2,746
		Total D	**70,562**	**86,490**	**111,633**	**38,716**
E		**Equity Base (C-D)**	**21,852**	**14,763**	**21,316**	**37,160**
F		**Rate of Return**	**12.75%**	**12.75%**	**12.75%**	**12.75%**
G		**Return on Equity (E * F)**	**2,786**	**1,882**	**2,718**	**4,738**

NATIONAL TRANSMISSION AND DISPATCH COMPANY
ESTIMATION OF TRANSMISSION COSTS

Rs.Million

		Description	Base Year FY 03	Actual for FY 04	Actual for FY 05	Estimated for FY 06
1	**Transmission Costs**					
	a)	General Establishment & Admin (Incl. CPPA)	842	874	1,292	1,621
	b)	Repair & Maintenance	238	222	259	480
	c)	Insurance	37	70	69	153
	d)	Transmission Licence Fee		-	-	7
	e)	Depreciation	2,296	2,508	2,365	2,706
		Total Transmission Costs	**3,413**	**3,674**	**3,985**	**4,967**
2	**Financial Charges**					
	a)	Foreign Direct Loan	351	280	210	381
	b)	Foreign Relent Loan	1,420	1,918	2,257	2,110
	c)	Federal Government Loan	398	375	347	309
	d)	Bonds	600	653	389	252
		Other loans	-	-	-	99
	e)	Currency Fluctuation	-	44	228	-
	f)	Short Term Loans	15	11	7	10
	g)	Bank Charges	0	1		1
		Total Financial Charges	**2,784**	**3,282**	**3,438**	**3,162**
		Allocated to capital work in progress	**467**	**301**	**801**	**522**
		Net Financial Charges	**2,317**	**2,981**	**2,637**	**2,640**
3	**Special appropriation to cover**					
	a)	Previous year's adjustment	-			
	b)	Contribution to contingency Reserve	-			
	c)	Any other appropriation permitted by the Federal Govt.	-			
		Total Appropriation	-	-	-	
		Total Costs (1+2+3)	**5,730**	**6,655**	**6,623**	**7,607**
4	**Less: Other Income**		**35**	**55**	**68**	**80**
		Net Costs (3 - 4)	**5,694**	**6,601**	**6,555**	**7,527**

List of Independent Power Producers (IPPs)

1. Liberty Power Limited
2. Habibullah Coastal Power (Pvt.) Company
3. Fauji Kabirwala Power Company Limited
4. Uch Power Limited
5. Kot Addu Power Company
6. Rousch (Pakistan) Power Limited
7. The Hub Power Company Limited
8. Kohinoor Energy Limited
9. Southern Electric Power Company Limited
10. Japan Power Generation Company
11. Saba Power Company Limited
12. AES Lalpir Limited
13. AES Pak Gen (Pvt.) Company
14. Altern Energy Limited

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