NATIONAL TRANSMISSION & DESPATCH COMPANY

Power System Statistics 44th Edition
March 2020

driven by the future

Power System Planning, NTDC

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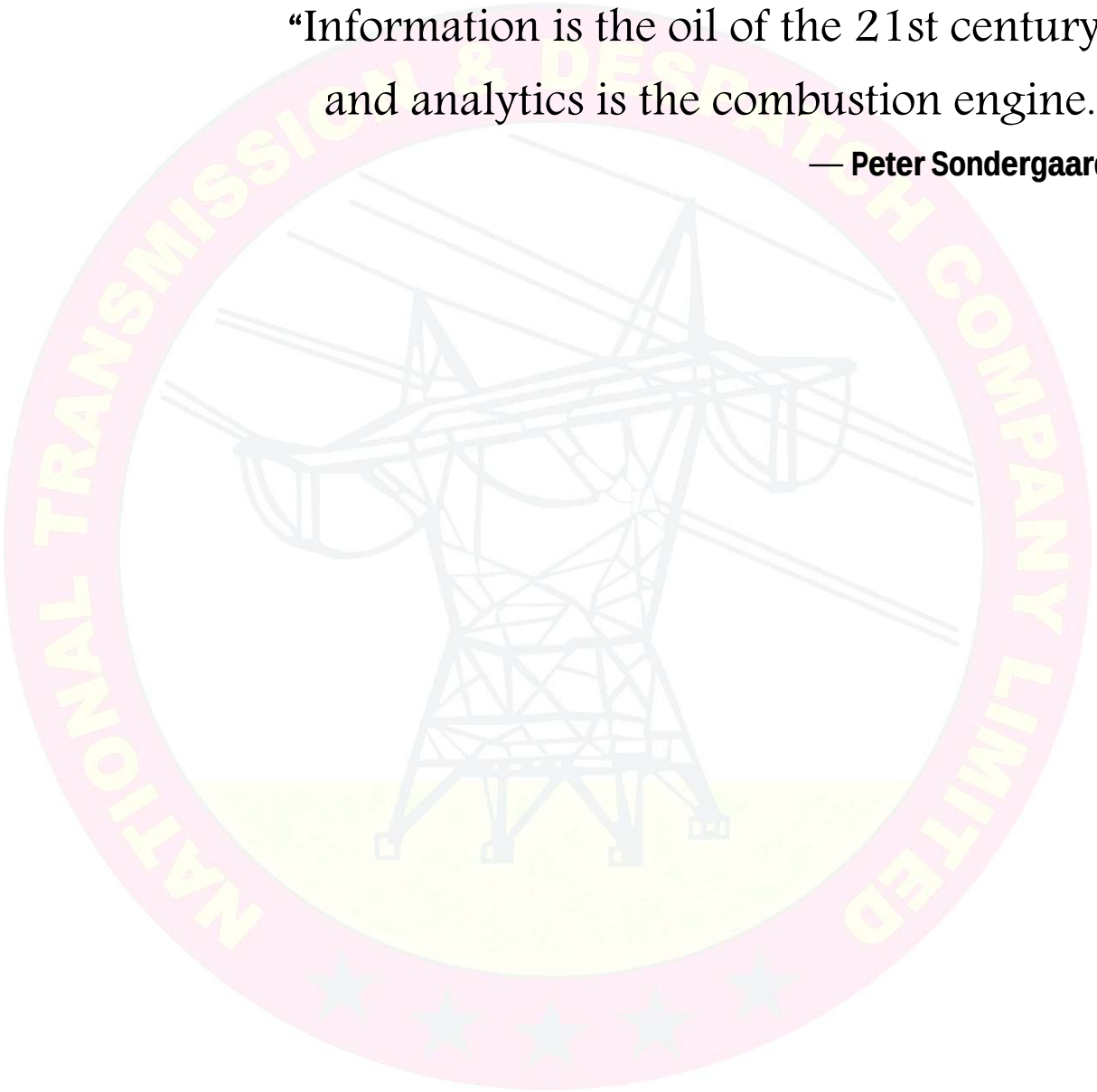
“Information is the oil of the 21st century,
and analytics is the combustion engine.”

— **Peter Sondergaard**



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Acknowledgment

Strong commitment and perseverance on the part of Load Forecasting team of Power System Planning, NTDC is a big must in view of the critical importance of availability of authentic and updated data pertaining to power system of Pakistan. The whole process of this compilation has become possible courtesy the enthusiastic and sustained cooperation of data source entities; special thanks to all DISCOs, GENCOs, WAPDA, CPPA-G and K-Electric who extended their utmost support and cooperation for compilation of the 44th edition of Power System Statistics.

The effort and its output is dedicated to all those who are delivering their best efforts in the best interest of the country.

Long Live Pakistan!

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Foreword

A reliable, precise current set of data is vital for preparing information on the power sector and making it accessible to the entire stakeholder for effective decision-making and implementation. The publication, Power System Statistics, which contains accurate statistics on the power system of Pakistan, fulfills this requirement largely. The policy makers, planners, researchers, financial analysts, and even local/foreign loan giving agencies have found it very useful; thus, this publication has always been in great demand. Power System Planning, NTDC has always been striving to ensure that accurate data is made available on a sustainable basis. For wider access, soft copy of this publication is available on the NTDC web portal http://ntdc.com.pk

The Power System Statistics (44th edition) is the updated information of the power sector in Pakistan till 30th June, 2019 including GENCOs (Generation Companies), NTDC (National Transmission and Despatch Company), DISCOs (Distribution Companies), K-Electric and other corporate entities of power sector of Pakistan. PSP, NTDC is in a continuous process to update this report, while new developments are swiftly taking place in the power sector and we have the aspiration and determination to maintain this publication as the most updated reference book in the power sector of Pakistan.

Looking forward to continue our best efforts in materializing a prosperous Pakistan.

20 March 2020

Engr. Salis Usman

General Manager
Power System Planning, NTDC

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Preface

Power System Statistics contains electric power and energy data till 30th June, 2019. The collection of data from various organizations has been a tedious job; moreover, maintaining high level of authenticity and accuracy is an add-on, which requires continuous and dedicated efforts.

As the power sector of Pakistan is in the process of transformation towards open market operation, however, still a lot of headway to go. The Power Policy was brought by the Government of Pakistan by the participation of private sector as Independent Power Producers (IPPs). As of today, the IPPs occupy major share of installed generation capacity. Further, RLNG (Re-gasified Liquefied Natural Gas) plants into the energy mix has unveiled signs of potential for innovative technologies and new sources of energy generation. The nuclear power supply is also making significant contribution and now 1,345 MW of power generation capacity has been installed and some more projects are in the pipeline. Recently, wind and solar energy have started entering into the system, which are becoming part of clean energy.

The data requirements have also undergone radical changes over the years. With the unbundling of WAPDA into GENCOs, NTDC and DISCOs, the data is being presented to highlight the performance of these entities/companies as compared to previous single integrated system. Hence, not only the investors (direct stakeholders), but also the researchers and institutions having indirect nexus to the power sector in Pakistan can have a deeper insight in to the system performance parameters. It is intimated that the data received from different stakeholders such as CPPA-G, DISCOs, NPCC, K-Electric, etc. has been used for the compilation of this book. This book provides information about existing capacity of the system and helps in assessing the adequacy of the system; in future setting further targets for the supply and demand at the system as well as at the sectoral level; hence, all stakeholders, whether direct or indirect can get benefit for their own sphere of interests.

Shahida Wazir

Mrs. Shahida Wazir
Chief Engineer
Load Forecast & Generation Planning, NTDC

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List of Acronyms

CPPA-G	Central Power Purchasing Agency - Guaranteed
DISCOs	Distribution Companies
FESCO	Faisalabad Electric Supply Company
FY	Fiscal Year
GENCOs	Generation Companies
GEPCO	Gujranwala Electric Power Company
GWh	Giga watt hour
HESCO	Hyderabad Electric Supply Company
IESCO	Islamabad Electric Supply Company
IPPs	Independent Power Producers
km	kilometre
KPI	Key Performance Indicators
kV	kilo volts
kWh	kilo watt hour
LESCO	Lahore Electric Supply Company
MEPCO	Multan Electric Power Company
MVA	Mega volt ampere
MW	Mega watt
NPCC	National Power Control Center
NTDC	National Transmission and Despatch Company
PAEC	Pakistan Atomic Energy Commission
PEPCO	Pakistan Electric Power Company
PESCO	Peshawar Electric Supply Company
PSP	Power System Planning
PSS	Power System Statistics
QESCO	Quetta Electric Supply Company
RLNG	Re-gasified Liquified Natural Gas
SEPCO	Sukhur Electric Power Company
TESCO	Tribal Area Electric Supply Company
WAPDA	Water and Power Development Authority

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Power System – A Gateway to NTDC

Pursuant to the NTDC Transmission License and Grid Code, NTDC is responsible for power system planning of the whole country. Power System Planning (PSP) department is the gateway to NTDC and is mandated to undertake power system planning of the whole country except for Karachi which is being governed by K-Electric for all facets of the power system i.e. generation, transmission and distribution.

Vision

PSP department as the spearhead component of NTDC is equipped with all it takes to confront the challenges pertaining to Pakistan power system planning; be it intellect, procedures and processes, and tools.

Mission

PSP NTDC endeavors to become and sustain as a smart utility that offers optimized solutions at the most competitive cost through a highly upbeat and competent human resource equipped with modern tools, formalized systems and above all the performing culture aiming to achieve the objectives of NTDC in the most competitive, efficient and timely manner.

Strategic Goal

PSP NTDC to be acknowledged as a trusted, professional and efficient utility owing to its competent and committed work force internationally accepted working procedures, and excellent performance standards.

Approach

PSP NTDC believes in participatory approach: seek commitment through involvement at all levels.

Core Responsibility

PSP NTDC is primarily responsible for development of power transmission investment plan that encompasses Demand Forecast, Generation Expansion and associated transmission development plan and the consolidated NTDC Investment Plan.

A Snapshot of Major Functions

Following are the core functions of the PSP mandated to manage power system planning of the NTDC network:

a. Development of Medium Term and Long Term Load Forecast and Indicative Generation Capacity Expansion Plan

b. Preparation of Transmission Development Plan

c. Development of Transmission Investment Plan

Setting the Perspective

PSP NTDC Organogram

PSP NTDC is comprised of three different sections, each one is headed by a Chief Engineer, which include i) Load Forecast and Generation Planning, ii) Transmission Planning and iii) Resource Planning. Figure 1-1 provides the organogram of the PSP:

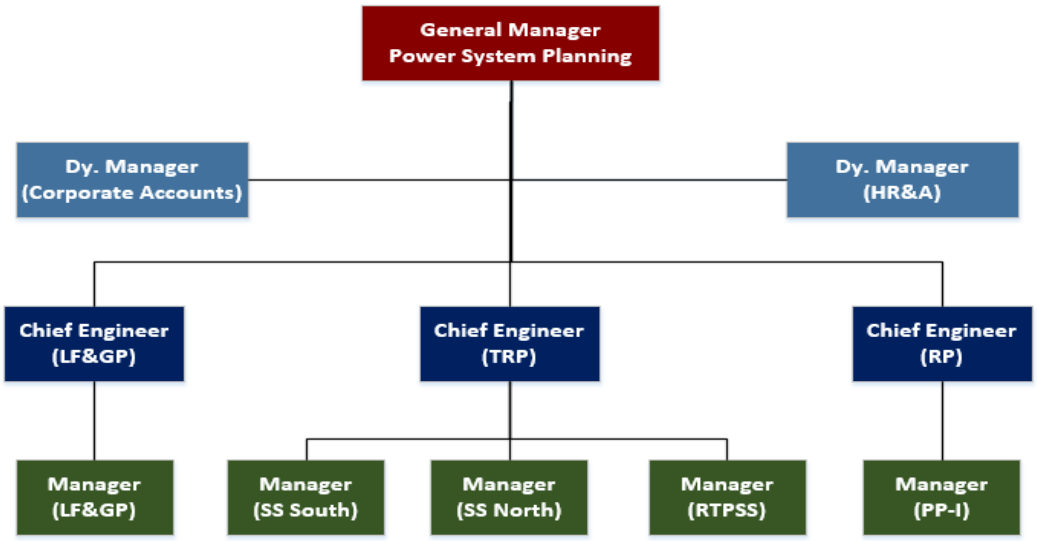


Figure 1-1: Organogram of the Power System Planning, NTDC

PSP NTDC Key Performance Indicators (KPI)

Following are the six KPIs to evaluate its success at reaching targets in the most optimal manner:

a. **Regulatory Compliance**

Regulatory obligations / submissions are managed in the most comprehensive and timely manner.

b. **Relevance**

Right person for the right job including task assignment, nominations for the trainings and to attend the meeting.

c. **Coherence**

All three sections coordinating with each other in true sense.

d. **Quality and Effectiveness**

At par with the local market and best utility practices.

e. **Sustainability**

Impact of previous investments and efforts are reflected in the knowledge creation and outcome in an optimal manner.

f. **Participation**

Following participatory approach by involving all stakeholders including internal and external, where applicable.

This section is provided to facilitate an introduction to this publication 'Power System Statistics'.

1. Power System Statistics – An Important Building Block for Power System Analysis

Power System Statistics supply basic data for medium-term and long-term load forecast. Long-term load forecast then provides primary input for generation expansion plan and medium-term load forecast is used as primary input for transmission planning. This book contains four sections; Generation Statistics, Transmission Statistics, Distribution Statistics and Statistics of K-Electric.

The first section 'Generation Statistics' offers the detailed information of the power plants which are connected with national grid such as their location, date of commissioning, installed capacity as per license, de-rated capacity, seasonal capability to produce electricity, number of generating units, fuel type and technology used. Other important information such as load factor of system over the years and station-wise plant factor is also available in this section. Recorded and computed peak demand MW are most important indicator for any power system that indicate how much a system is required to generate electricity to meet the socio-economic needs of country. Energy generated is categorized on the basis public/private projects, fuel type and energy source.

Second section 'Transmission Statistics' provides the province-wise and voltage-wise detailed information of 500kV and 220kV system including circuit length of transmission lines and their MVA capacities, number of grid stations and number of transformers with their MVA capacities.

Third section of this publication 'Distribution Statistics' comprises the data related to Distribution Companies (DISCOs) such as transmission losses, distribution losses, energy purchased by CPPA and subsequently sold to DISOCs that is classified based on economic group i.e. domestic, commercial, industrial, agriculture, bulk power consumption and public lighting. Historical data of electrification of villages have also been provided based on provinces. DISCO-wise Circuit Length of Transmission lines at 11 kV and 400 volt are also provided in this section. Historical data of DISCO-wise and Province-wise Billing/Collection, number of pending applications for connection, units purchased and sold is also provided in this section.

The last section of this publication 'K-Electric Statistics' includes installed generation capacity, energy generation by fuel type, energy import from NTDC, classification of number of consumers, energy sold to different consumers, different tariff rate charged for different consumers.

Furthermore, it is also widely used for research purposes in the power sector.

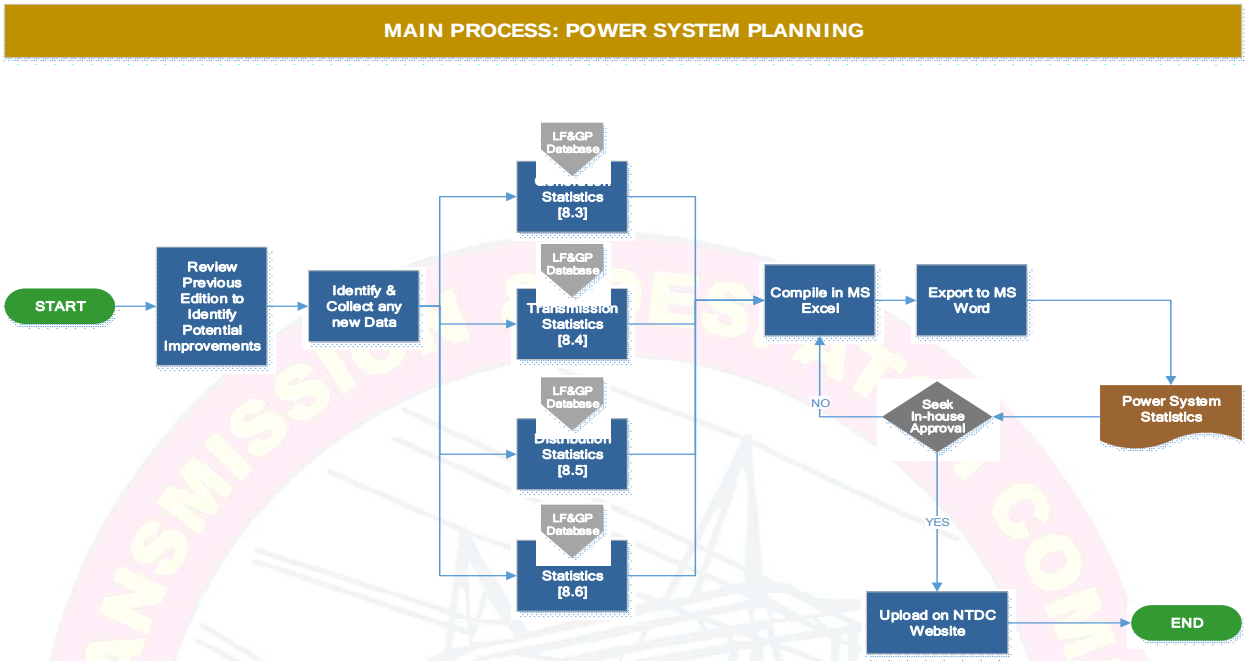
2. Objectives of the PSS (Power System Statistics)

Overall objective of the PSS is to compile and made accessible the historical data of generation and transmission as well as distribution systems **a) reference for future planning**, **b) research in power and energy sector by various entities and individuals** and **c) analyzing power sector performance indicators**.

3. Scope and Historical Horizon of PSS

The PSS covers the whole country including Karachi. K-Electric, a vertically integrated power utility, is managing all three key stages – generation, transmission and distribution – of producing and delivering electrical energy to consumers within the geographical jurisdiction of the city of Karachi. The historical data in this publication covering the period from 1981 to 2018. However, data prior to1981 is also available and can be furnished on request.

4. Preparation Process



5. PSS Development Team

Following team members have contributed towards the preparation of the PSS:

a. Engr. Tauseef ur Rehman Khan, Deputy Manager, Load Forecast

b. Mr. Shahid Abbas, Staff Economist, Load Forecast

c. Engr. Bilal Ahmad Khan, Assistant Manager, Load Forecast

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STATISTICS AT A GLANCE

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Table A
Installed Generation Capacity (MW)

DESCRIPTION	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19
Hydel						
WAPDA Hydel	6,902	6,902	6,902	6,902	8,341	9,387
IPPs Hydel	195	195	195	195	342	382
Thermal						
GENCOs	5,762	5,622	5,477	5,477	5,627	5,497
K-Electric	2,422	1,875	2,295	2,295	2,267	2,295
IPPs						
IPPs connected with PEPCO	8,408	8,426	8,411	12,322	14,883	16,911
IPPs connected with K-Electric	228	352	349	339	443	489
Nuclear						
CHANUPP (PAEC)	665	665	665	1005	1,345	1,345
KANUPP (PAEC)	137	75	75	75	137	70
Renewable						
Solar	0	100	400	400	400	400
Wind	106	256	306	736	985	1,235
Bagasse	24	70	146	281	306	364
Total						
PEPCO	22,062	22,236	22,502	27,318	32,229	35,521
K Electric	2,787	2,302	2,719	2,709	2,847	2,854
Country's Installed Capacity	24,849	24,538	25,221	30,027	35,076	38,375
Yearly Addition	1,217	-311	683	4,806	5,049	3,299

Table B
Electricity Generation (GWh)

DESCRIPTION	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19
Hydel						
WAPDA Hydel	31,640	31,941	33,450	31,084	27,424	31,145
IPPs Hydel	989	1,020	1,132	1,016	1,137	1,432
Thermal						
GENCOs	14,247	14,222	17,294	19,820	17,089	13,590
K Electric	8,709	9,318	10,323	10,147	10,338	10,727
IPPs						
IPPs connected with PEPCO	43,722	44,441	44,650	47,300	62,488	62,570
IPPs connected with K Electric	1,548	1,717	1,560	1,719	2,403	2,704
Nuclear						
CHANUPP (PAEC)	4,431	5,033	3,885	5,860	8,800	9,038
KANUPP (PAEC)	293	353	362	410	331	130
Renewable						
Solar	0	28	231	657	664	665
Wind	228	463	780	1,340	2,117	3,167
Bagasse	6	308	546	899	1,036	890
Import from Iran	419	443	463	496	555	486
Total						
PEPCO	95,189	97,457	101,969	107,976	120,755	122,497
K Electric	15,991	16,815	17,304	17,353	18,200	18,495
Country's Electricity Generation	111,180	114,272	119,273	125,329	138,955	140,992
Yearly Addition	8,755	3,092	5,001	6,056	13,626	2,037

Table C
Transmission and Distribution Statistics

DESCRIPTION	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19
Transmission Statistics						
Total Length of Transmission Lines 500 kV (km)	5,077	5,077	5,113	5,127	5,618	6,290
Total Length of Transmission Lines 220 kV (km)	8,547	9,624	9,632	10,063	10,478	10,928
Total Number of Grid Stations 500 kV	12	13	14	14	16	16
Total Number of Grid Stations 220 kV	31	37	36	38	42	45
Total Transformation Capacity 500 kV (MVA)	15,750	16,950	18,150	18,150	20,850	22,950
Total Transformation Capacity 220 kV (MVA)	19,174	22,854	24,040	25,610	22,500	30,970
Energy Sales (GWh)						
PEPCO	71,101	72,690	76,679	81,685	92,069	94,089
K Electric	11,453	12,295	12,865	12,981	13,860	14,318
Country	82,554	84,985	89,544	94,666	105,929	108,407
Number of Customers						
PEPCO	22,587,870	23,519,247	24,516,699	25,571,803	27,016,545	28,473,069
K Electric	2,111,336	2,156,831	2,226,677	2,424,920	2,583,435	2,808,070
Country	24,699,206	25,676,078	26,743,376	27,996,723	29,599,980	31,281,139
Electricity Consumption (kWh)						
PEPCO	3,148	3,091	3,128	3,194	3,408	3,305
K Electric	5,425	5,700	5,778	5,353	5,365	5,099
Average Sale Price (Rs./kWh)						
DISCO (s)	12.62	12.98	12.20	12.20	13.06	15.54
K Electric	12.15	12.07	12.97	12.84	12.72	12.83
Losses						
Transmission Losses (PEPCO) (GWh)	2,587	2,620	2,623	2,466	2,949	3,464
Transmission Losses (PEPCO) %	2.8	2.7	2.6	2.3	2.5	2.8
Distribution Losses (PEPCO, Including KE & IPPs)	16,326	16,744	16,762	17,834	20,607	20,199
Transmission & Distribution Losses % (KE)	25.3	23.7	22.2	21.7	20.4	19.1
Maximum Demand (MW)						
Recorded Maximum Demand (PEPCO)	16,170	16,233	17,261	19,020	20,795	21,736
Recorded Maximum Demand (K Electric)	2,929	3,056	3,195	3,270	3,257	3,530

Figure A
Installed Generation Capacity

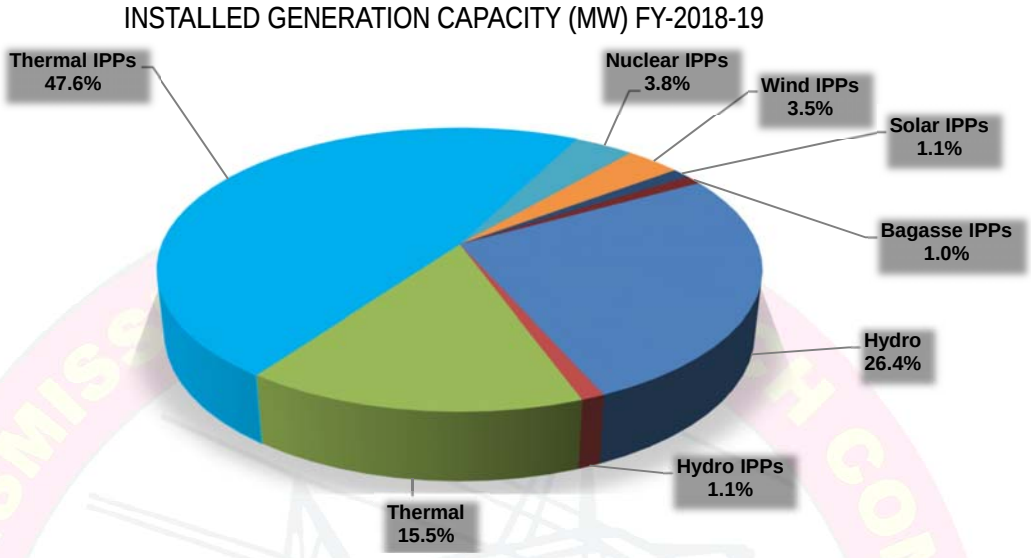
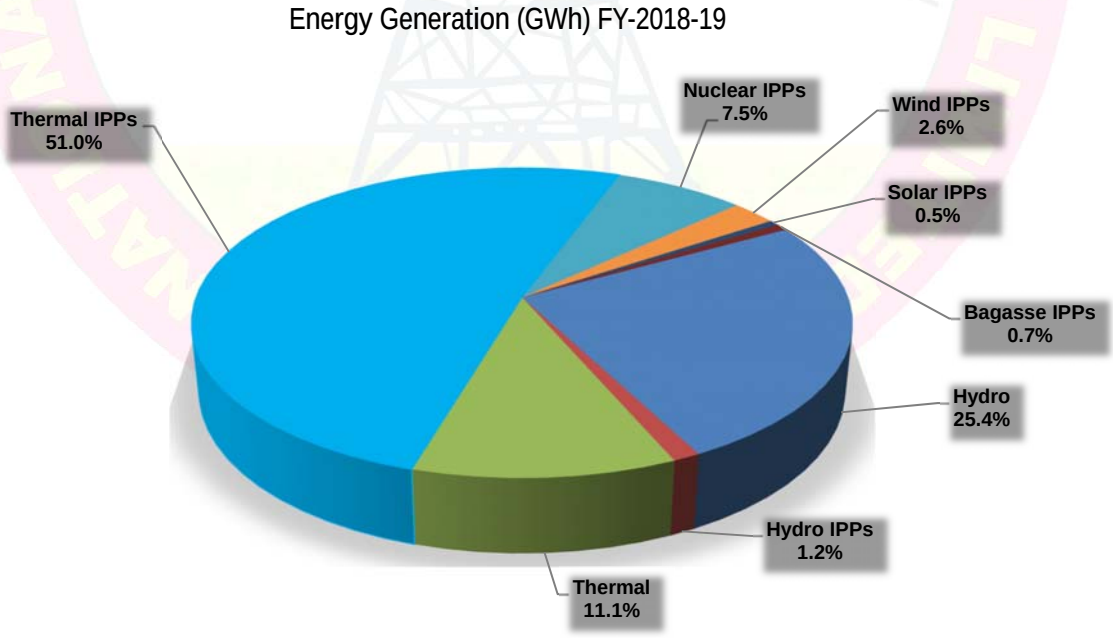


Figure B
Energy Generation



Generation Statistics

	2018-19
Total Installed Capacity	32,521 MW
WAPDA Hydel	9,387 MW
IPPs Hydro	382 MW
GENCOs Thermal	5,497 MW
IPPs Thermal	16,911 MW
Nuclear	1,345 MW
Solar	400 MW
Wind	1,235 MW
Bagasse	364 MW

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Table 1.1
Installed Capacity (WAPDA)

Installed Capacity (WAPDA)										
Sr. No.	Power Station	Location	Province	Type of Power Station	Date of Commissioning	Installed Capacity			Capability (MW)	
						Generating units	Capacity (MW)	Sub Total (MW)	Summer	Winter
	WAPDA Hydel (Major Plants)									
1	Tarbela	Tarbela	K.P.K	Reservoir	Apr 1977	2	175	350	3,702	1,874
					Jun 1977	1	175	175		
					Jul 1977	1	175	175		
					Aug 1982	1	175	175		
					Oct 1982	2	175	350		
					Dec 1982	1	175	175		
					Feb 1985	1	175	175		
					Apr 1985	1	175	175		
					May 1992	1	432	432		
					Jul 1992	1	432	432		
					Nov 1992	1	432	432		
					Feb 1993	1	432	432		
								3,478		
2	Tarbela Ext. 04	Tarbela	K.P.K	Reservoir		1	470	470		
						1	470	470		
						1	470	470		
								1,410		
3	Mangla	Mangla	A.J.K	Reservoir	Jul 1967	2	100	200	1,120	450
					Mar 1968	1	100	100		
					Jun 1969	1	100	100		
					Dec 1973	1	100	100		
					Mar 1974	1	100	100		
					Jul 1981	2	100	200		
					Sep 1993	1	100	100		
					Jul 1994	1	100	100		
								1,000		
4	Ghazi Barotha	Ghazi Barotha	Punjab		July 2003	1	290	290	1,450	1,160
					Aug 2003	1	290	290		
					Oct 2003	1	290	290		
					Dec 2003	1	290	290		
					Apr 2004	1	290	290		
								1,450		
5	Warsak	Warsak	K.P.K	Reservoir	May 1960	2	40	80	190	20

Installed Capacity (WAPDA)

Sr. No.	Power Station	Location	Province	Type of Power Station	Date of Commissioning	Installed Capacity			Capability (MW)	
						Generating units	Capacity (MW)	Sub Total (MW)	Summer	Winter
					Jun 1960	1	40	40		
					Jul 1960	1	40	40		
					Dec 1980	1	41	41		
					Mar 1981	1	41	41		
								243		
6	Chashma Hydro	Chashma	Punjab	Head Power Channel	May 2001	8	23	184	184	184
7	Jinnah Hydel	Mianwali	Punjab	Canal	Mar.2012	1	12	12	68	68
					Oct.2012	1	12	12		
					Aug.2012	1	12	12		
					Mar.2013	1	12	12		
					Mar.2014	1	12	12		
						1	12	12		
						1	12	12		
						1	12	12		
								96		
8	Allai Khwar	Shangla	K.P.K	Canal	Mar.2013	2	61	121	68	68
9	Khan Khwar	Shangla	K.P.K	Canal	Oct 2010	1	34	34	68	68
					Nov 2010	1	34	34		
					Dec-10	1	4	4		
								72		
10	Dubair Khwar	Shangla	K.P.K	Canal	Mar.2013	2	65	130	68	68
11	Neelam Jehlam	Muzaffarabad	A.J.K	Run of river	Under Commissioning	4	242	969	969	-
12	Golen Gol	Chitral	K.P.K	Run of river	-	3	35	105	-	-
(1-12)	Total WAPDA Hydel							9,258	7,887	3,960
	WAPDA Small Hydel									
13	Rasul	Rasul	Punjab	Canal	Jul 1952	2	11	22	128	41
14	Dargai	Dargai	K.P.K	Canal	Dec 1952	4	5	20		
15	Nandipur	Nandipur	Punjab	Canal	Mar 1963	3	4.6	14		
16	Shadiwal	Shadiwal	Punjab	Canal	Jan 1961	2	6.75	14		
17	Chichoki-Mallian	Chichoki-Mallian	Punjab	Canal	May 1959	1	4	4		
					21702	1	4	4		
					Aug 1959	1	4	4		
								13		
18	Kurram Garhi	Kurram Garhi	K.P.K	Canal	Feb 1958	4	1	4		
19	Renala	Renala	Punjab	Canal	Mar 1925	5	0.22	1		
20	Chitral	Chitral	K.P.K	Canal	1975	2	0.3	0.6		

Installed Capacity (WAPDA)										
Sr. No.	Power Station	Location	Province	Type of Power Station	Date of Commissioning	Installed Capacity			Capability (MW)	
						Generating units	Capacity (MW)	Sub Total (MW)	Summer	Winter
					1982	2	0.2	0.4		
								1.0		
21	Gomal Zam	North Waziristan	K.P.K	Canal	Jun 2013	2	8.6	17		
22	Malakand (Jabban)	Malakand	K.P.K	Canal	Jul 2013	1	5.6	5.6		
					Oct 2013	1	5.6	5.6		
					Nov 2013	1	5.6	5.6		
					Dec 2013	1	5.6	5.6		
								22.4		
(13-22)	Total WAPDA Small Hydel							128	128	41
(1-22)	Total WAPDA Hydel							9,387	8,015	4,001

Table 1.2
Installed Capacity MW – GENCOs

Installed Capacity MW – GENCOs											
Sr. No.	Power Station	Location	Province	Type of Power Station	Date of Commiss-ioning	Installed Capacity			De-rated Capacity (MW)	Fuel Type	
						Generating Units	Capacity (MW)	Total (MW)		Primary	Alternate
	GENCO-I										
1	Jamshoro	Jamshoro	Sindh	Steam	Jan.1990	1	250	250	200	FO	-
					Dec.1989	1	200	200	170	Gas	FO
					Jun.1990	1	200	200	170	Gas	FO
					Jan.1991	1	200	200	170	Gas	FO
	Jamshoro Total							850	710	-	-
2	Kotri	Kotri	Sindh	Gas Turbine	Dec.1969	1	15	15	0	Gas	HSD
					Jan.1970	1	15	15	0	Gas	HSD
				Gas Turbine	May.1979	2	25	50	40	Gas	HSD
					May.1981	2	25	50	40	Gas	HSD
				Combine Cycle	Oct.1994	1	44	44	40	-	-
	Kotri Total							174	120	-	-
3	Lakhra Coal 1-3	Lakhra	Sindh	Steam Turbine	Jun.1995	3	50	-	30	Coal	-
4	TPS Quetta	Quetta	Balochistan	Steam Turbine	Nov.1984	1	35	-	25	Gas	-
(1-4)	Total GENCO-I							1,024	860		
	GENCO-II										
5	SPS Guddu (1-4)	Guddu	Sindh	Steam Turbine	Mar.1974	1	110	110	-	Gas	FO
					Oct.1974	1	110	110	-		
					Nov.1980	1	210	210	150		
					Dec.1985	1	210	210	-		
	Guddu Combine Cycle (5-13)			Gas Turbine & Combine Cycle	Dec 1985	1	100	100	630		-
					Mar 1986	1	100	100			
					Apr 1986	1	100	100			
				Gas Turbine & Combine Cycle	Apr 1986	1	100	100			
					Dec.1987	1	110	110			
					Mar.1988	1	110	110			
				Gas Turbine & Combine Cycle	Sep.1992	1	136	136			
					Dec.1992	1	136	136			
					May 1994	1	143	143			
	Guddu 747			Gas Turbine & Combine Cycle	Dec .2014	1	249	249	249		HSD
						1	249	249	249		
						1	249	249	249		
	Guddu Total							2,422	1,527	-	-
(5)	Total GENCO-II							2,422	1,527	-	-

Installed Capacity MW – GENCOs

Sr. No.	Power Station	Location	Province	Type of Power Station	Date of Commiss-ioning	Installed Capacity			De-rated Capacity (MW)	Fuel Type	
						Generating Units	Capacity (MW)	Total (MW)		Primary	Alternate
	GENCO-III								-		
6	Muzaffargarh	Muzaffargarh	Punjab	Steam Turbine	Sep 1993	1	210	210	1,130	Gas	F.O
					Mar.1994	1	210	210		Gas	F.O
					Feb.1995	1	210	210		Gas	F.O
					Dec.1997	1	320	320		Gas	F.O
					Feb.1995	1	200	200		Gas	F.O
					Aug.1999	1	200	200		Gas	F.O
	Muzaffargarh Total							1,350	1,130		
7	GTPS Faisalabad	Faisalabad	Punjab	Gas Turbine[c]	Mar 1975	3	25	75	57	Gas	-
					May 1975	1	25	25	19	Gas	-
				Combine Cycle	July 1975	3	25	75	60	Gas	HSD
					Nov 1975	1	25	25	20	Gas	HSD
					Dec 1994	1	44	44	30	Gas	HSD
	GTPS Faisalabad Total							144	110		
8	SPS Faisalabad	Faisalabad	Punjab	Steam Turbine	Jun 1967	1	66	66	50	Gas	F.O
					Nov 1967	1	66	66	50	Gas	F.O
	SPS Faisalabad Total							132	100		
9	Nandipur	Gujranwala	Punjab	Combine Cycle	Jan.2015	1	95	95	95	Gas	HSD
					Mar.2015	1	95	95	95	Gas	HSD
					May.2015	1	95	95	95	Gas	HSD
					Jul.2015	1	139	139	139	Gas	HSD
	Nandipur Total							425	425		
(6-9)	Total GENCO-III							2,051	1,765		
(1-9)	Total GENCOs							5,497	4,152		

Table 1.3
Installed Capacity MW- IPPs

Sr. No.	Power Station	Province	Type of Power Station	Date of Commission-ing	Installed Capacity				Derated Capacity (MW)	Fuel Type	
					Generating Units	Installed Capacity (MW)	Sub Total (MW)	Total (MW)		Primary	Alternate
A	IPPs Thermal										
1	Kot Addu (KAPCO)	Punjab	Gas Turbine	Feb-1987	1	105	105	1601	1345	Gas	FO/HSD
				Mar-1987	1	100	100				
				May-1987	1	100	100				
				Nov-1988	1	100	100				
				Dec-1988	1	100	100				
				Jan-1989	1	100	100				
				Feb-1989	1	100	100				
			Combine Cycle	Jan-1991	1	100	100				
				Mar-1991	1	100	100				
				Oct-1994	3	107	321				
			Gas Turbine	Apr-1995	2	125	250				
				Jan-1997	1	125	125				
2	HUBCO	Balochistan	Steam Turbine	Jul-1996	1	323	323	1,292	1,207	RFO	-
				Sep-1996	1	323	323				
				Nov-1996	1	323	323				
				Mar-1997	1	323	323				
3	KEL (KOHINOOR)	Punjab	Deisel Engine	June-1997	8	16	125	131	124	RFO	-
			Steam Turbine		1	6	6				
4	AES Lalpir	Punjab	Steam Turbine	Nov-1997	1	362	362	362	350	RFO	-
5	AES Pak Gen.	Punjab	Steam Turbine	Feb-1998	1	365	365	365	350	RFO	-
6	SEPCOL (Southern Electric)	Punjab	Deisel Engine	Mar-1999	5	23	117	-	0	RFO	-
					1	18	18				
7	HCPC Quetta	Balochistan	Gas Turbine	Sep-1999	3	37	111	140	129	Gas	HSD
			Combine Cycle		1	29	29				
8	Uch Power -I	Balochistan	Gas Turbine	Oct-2000	3	130	390	586	551	Gas	HSD
			Combine Cycle		1	196	196				
9	Rousch	Punjab	Gas Turbine	Dec-1999	2	152	304	450	395	Gas	HSD
			CombineCycle		1	146	146				
10	Fauji Kabirwala (FKPCL)	Punjab	Gas Turbine	Oct.1999	2	49	98	172	151	Gas	HSD
			Combine Cycle		1	59	59				
11	Saba Power	Punjab	Steam Turbine	Dec-1999	1	136	136	136	126	RFO	-
12	Japan Power	Punjab	Deisel Engine	March. 2000	24	6	136	-	0	RFO	-
13	Liberty Power	Sindh	Gas Turbine	Sep-2001	1	156	156	225	212	Gas	HSD
			CombineCycle		1	79	79				
14	AEL (Altern Energy Ltd.)	Punjab	Gas Engine	Jun-2001	8	4	31	31	27	Gas	-

Sr. No.	Power Station	Province	Type of Power Station	Date of Commission-ing	Installed Capacity				Derated Capacity (MW)	Fuel Type	
					Generating Units	Installed Capacity (MW)	Sub Total (MW)	Total (MW)		Primary	Alternate
15	AGL (Attock Gen Ltd.)	Punjab	D.G.Sets	Mar-2009	9	17	150	163	156	RFO	HSD
			Steam Turbine		1	13	13				
16	Atlas Power	Punjab	Reci.Engine	Dec-2009	11	18	203	219	214	RFO	-
			Steam Turbine		1	16	16				
17	Engro Energy	Sindh	Gas Turbine	Mar-2010	1	132	132	226	213	Gas	HSD
			Steam Turbine		1	93	93				
18	Saif Power	Punjab	Gas Turbine	Apr-2010	2	75	150	225	204	Gas	HSD
			Steam Turbine		1	75	75				
19	Orient Power	Punjab	Gas Turbine	May-2010	2	75	150	225	204	Gas	HSD
			Steam Turbine		1	75	75				
20	Nishat Power	Punjab	Reci.Engine	June-2010	11	17	186	202	195	RFO	-
			Steam Turbine		1	14	14				
21	Nishat Chunian	Punjab	Deisel Engine	Jul-2010	11	17	186	209	196	RFO	-
			Steam Turbine		1	14	14				
22	Foundation Power	Sindh	Gas Turbine	May-2011	1	184	184	184	174	Gas	-
23	Sapphire Power	Punjab	Gas Turbine	Oct-2010	2	70	140	225	207	Gas	HSD
			Steam Turbine		1	73	73				
24	Liberty Tech.	Punjab	Deisel Engine	Jan-2011	11	17	188	202	196	RFO	-
			Steam Turbine		1	14	14				
25	Hubco Narowal	Punjab	Deisel Engine	Apr-2011	11	17	188	225	214	RFO	-
			Combine Cycle		1	17	17				
26	Halmore	Punjab	Gas Turbine	Jun-2011	2	75	150	225	207	Gas	HSD
			Steam Turbine		1	75	75				
27	Uch Power - II	Balochistan	Gas Turbine	Apr-2014	2	133	266	393	375	Gas	-
			Combine Cycle		1	134	134				
28	Davis Energon	Punjab	Gas Engine	Jul-2013	3	4	13	13	10	Gas	-
29	Bhikki (QATPL)	Punjab		Mar. 2017	1	390	390	1,230	1,156	Gas	-
			Gas Turbine		2	429	858				-
30	Sahiwal (Coal)(HRS)	Punjab	Coal	May. 2017	2	660	1,320	1,320	1,250	Coal	-
31	H.B. Shah	Punjab	GT/ST	May. 2017	3	410	1,230	1,230	1,207	RLNG	HSD
32	Reshma Power	Punjab			2	12	23	97	97	RFO	-
					11	7	74				
33	Gulf Power	Punjab			5	12	62	84	84	R.F.O	-
					2	11	22				
34	Balloki	Punjab			1	386	386	1,223	1,198	RLNG	-
					2	386	772				
35	Port Qasim Coal	Sindh	ST+CB		2	660	1,320	1,320	1,250	Coal	-
36	Engro Thar Coal		ST+CB		2	330	660	660	660	Coal	-
37	China Hubco Coal		ST+CB		2	660	1,320	1,320	1,250	Coal	-

Sr. No.	Power Station	Province	Type of Power Station	Date of Commission-ing	Installed Capacity				Derated Capacity (MW)	Fuel Type	
					Generating Units	Installed Capacity (MW)	Sub Total (MW)	Total (MW)		Primary	Alternate
	Total Thermal (A)							16,911	15,884		
B	Hydro										
38	Jagran (AJK)	A.J.K	Hydro	Oct-2000	5	6	30	30	30	HYD	-
40	New Bong Escape	A.J.K	Hydro	Mar-2013	4	21	84	84	84	HYD	-
39	Malakand-III	K.P.K	Hydro	Nov-2008	3	27	81	81	81	HYD	-
41	Patrind	A.J.K	Hydro	Nov-17	3	50	150	150	147	HYD	-
42	Darl Khwar	K.P.K	Run of river	-	1	6	6	6	-	HYD	-
				-	2	15	31	31		HYD	-
	Total Hydro (B)							382	342		
C	Wind										
43	FFCEL	Sindh	Wind	May-2013	33	1.5	50	50	50	Wind	-
44	ZEPL (Zorlu)	Sindh	Wind	June. 2013	47	1.2	56	56	56	Wind	-
45	TGF	Sindh	Wind	Nov. 2014	33	1.5	50	50	50	Wind	-
46	FWEL-I	Sindh	Wind	April. 2015	20	2.5	50	50	50	Wind	-
47	FWEL-II	Sindh	Wind	Dec. 2014	20	2.5	50	50	50	Wind	-
48	Sapphire Wind	Sindh	Wind	Nov. 2015	33	1.5	50	50	50	Wind	-
49	Metro Wind Power	Sindh	Wind	Aug. 2016	20	2.5	50	50	50	Wind	-
50	Younas Energy	Sindh	Wind	Aug. 2016	20	2.5	50	50	50	Wind	-
51	Act Wind (TWEPL)	Sindh	Wind	June. 2016	20	1.5	30	30	30	Wind	-
52	Master Wind Power	Sindh	Wind	Sep. 2016	33	1.5	50	50	50	Wind	-
53	Tenaga Generasi	Sindh	Wind	Sep. 2016	1	50	50	50	50	Wind	-
54	Gul Ahmed	Sindh	Wind	Oct. 2016	20	2.5	50	50	50	Wind	-
55	China Dawood Wind (HDDPL)	Sindh	Wind	Sep-2016	33	1.5	50	50	50	Wind	-
56	Sachl wind (SEDL)	Sindh	Wind	June. 2017	33	1.5	50	50	50	Wind	-
57	UEP Wind	Sindh	Wind	Sep. 2016	66	1.5	99	99	99	Wind	-
58	Artistic Wind	Sindh	Wind		29	1.7	50	50	50	Wind	-
59	Jhimpir Power	Sindh	Wind	Mar. 2018	29	1.7	50	50	50	Wind	-
60	Hawa Wind (HEPL)	Sindh	Wind	Mar. 2018	29	1.7	50	50	50	Wind	-
61	TGT Wind	Sindh	Wind	June. 2018	29	1.7	50	50	50	Wind	-
62	TGS Energy	Sindh	Wind	June. 2018	29	1.7	50	50	50	Wind	-
63	Tricon Boston (A)	Sindh	Wind	Aug. 2016	29	1.7	50	50	50	Wind	-
64	Tricon Boston (B)	Sindh	Wind	Sep. 2018	29	1.7	50	50	50	Wind	-
65	Tricon Boston (C)	Sindh	Wind	Sep. 2018	29	1.7	50	50	50	Wind	-
66	Zephyr (Ghoro Causter)	Sindh	Wind	Under Construction	25	2.0	50	50	50	Wind	-
	Total WIND (C)							1,235	1,235		

Sr. No.	Power Station	Province	Type of Power Station	Date of Commission-ing	Installed Capacity				Derated Capacity (MW)	Fuel Type	
					Generating Units	Installed Capacity (MW)	Sub Total (MW)	Total (MW)		Primary	Alternate
D	Solar										
67	Quide-e-Azam Solar	Punjab	Solar	May. 2015	1	100	100	100	100	Solar	-
68	Appolo Solar	Punjab	Solar	Mar. 2016	1	100	100	100	100	Solar	-
69	Best Green Energy	Punjab	Solar	June. 2016	1	100	100	100	100	Solar	-
70	Crest Energy Pakistan	Punjab	Solar	June. 2016	1	100	100	100	100	Solar	-
	Total Solar (D)							400	400		
E	Nuclear										
71	Chashnup-I (PAEC)	Punjab	Nuclear	Oct-2000	1	325	325	325	301	Nuclear	-
72	Chashnup-II (PAEC)	Punjab	Nuclear	May-2011	1	340	340	340	315	Nuclear	-
73	Chashnup-III (PAEC)	Punjab	Nuclear	Mar-2016	1	340	340	340	315	Nuclear	-
74	Chashnup-IV (PAEC)	Punjab	Nuclear	Under Construction	1	340	340	340	315	Nuclear	-
	Total Nuclear (E)							1,345	1,246		
F	Bagasse										
75	JDW-II (Sadiq Abad)	Punjab	Bagasse	Dec. 2014	1	26	26	26	24	Bagasse	-
76	JDW-III (Ghotki)	Sindh	Bagasse	Oct.2014	1	27	27	27	24	Bagasse	-
77	RYKML	Punjab	Bagasse	Mar.2015	2	15	30	30	24	Bagasse	-
78	Chiniot Power	Punjab	Bagasse	Dec. 2015	2	32	63	63	63	Bagasse	-
79	Fatima Energy (FEL)	Punjab	Bagasse	Feb. 2017	2	60	120	120	120	Bagasse	Coal
80	Hamza sugar	Punjab	Bagasse	Mar. 2017	1	15	15	15	15	Bagasse	-
81	Thal Power Layyah	Punjab	Bagasse	Dec.2017	1	25	25	25	25	Bagasse	-
82	Almoiz Industries Limited				1	20	20	36	20	Bagasse	-
					1	16	16		16	Bagasse	-
83	Chanar Energy Limited				1	22	22	22	22	Bagasse	-
	Total Bagasse (F)							364	353		
G						1,635	1,635				
H						20,637	19,461				
I	Total Installed Capacity*							35,522			

*Includes Wapda Hydel, GENCOs and all IPPs

Table 1.4
Source Wise Installed Capacity (MW)

Fiscal Year	Public		Independent Power Producers (IPPs)						Total
	Hydro	GENCOs	Hydro	Thermal	Solar	Wind	Nuclear	Bagasse	
1981	1,847	1,407							3,254
1982	1,847	1,407							3,254
1983	2,547	1,407							3,954
1984	2,547	1,407							3,954
1985	2,897	1,442							4,339
1986	2,897	2,052							4,949
1987	2,897	2,452							5,349
1988	2,897	2,652							5,549
1989	2,897	3,052							5,949
1990	2,897	3,512							6,409
1991	2,897	4,126							7,023
1992	3,329	4,134							7,463
1993	3,761	4,361							8,122
1994	4,725	4,926							9,651
1995	4,825	5,738							10,563
1996	4,825	6,238							11,063
1997	4,825	5,070		3,061					12,956
1998	4,825	5,070		3,788					13,683
1999	4,825	5,070		3,905					13,800
2000	4,825	4,871		4,748					14,444
2001	5,009	4,740	30	5,430			325		15,534
2002	5,009	4,740	30	5,715			325		15,819
2003	5,009	4,740	30	5,715			325		15,819
2004	6,463	4,834	30	5,715			325		17,367
2005	6,463	4,834	30	5,743			325		17,395
2006	6,463	4,834	30	5,743			325		17,395
2007	6,444	4,834	30	5,893			325		17,526
2008	6,444	4,899	111	6,048			325		17,827
2009	6,444	4,900	111	6,242			325		18,022
2010	6,444	4,829	111	7,183			325		18,892
2011	6,516	4,829	111	8,880			665		21,001
2012	6,516	4,841	111	8,381			665		20,514
2013	6,733	4,841	195	8,381		50	665		20,865
2014	6,902	5,762	195	8,408		106	665	24	22,062
2015	6,902	5,622	195	8,426	100	256	665	70	22,236
2016	6,902	5,477	195	8,411	400	306	665	146	22,502
2017	6,902	5,477	195	12,322	400	736	1,005	281	27,318
2018	8,341	5,627	342	14,883	400	985	1,345	306	32,229
2019	9,387	5,497	382	16,911	400	1,235	1,345	364	35,521

Table 1.5
Plant Wise Energy Generation (GWh)

Plant-Wise Energy Generation (GWh)							
Serial No.	Power Station	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19
A.	WAPDA HYDEL						
1	Tarbela	15,181	14,809	16,000	15,050	13,355	10,637
2	Tarbela- Extension IV						2,311
3	Mangla	5,876	6,496	6,864	5,348	4,142	3,861
4	Ghazi Barotha	7,017	6,694	6,721	6,885	6,409	6,547
5	Warsak	935	975	924	984	913	1,001
6	Chashma Hydro	1,031	987	897	890	756	768
7	Jinnah Hydel	297	191	296	293	230	225
8	Allai Khwar	471	462	568	397	276	462
9	Khan Khwar	187	253	38	199	171	237
10	Dubair Khwar	233	613	655	590	515	591
11	Neelam Jehlam	-	-	-	-	269	3,960
12	Golen Gol	-	-	-	-	-	80
13	Rasul	53	70	96	86	66	72
14	Dargai	90	107	115	105	96	112
15	Nandipur	42	35	41	43	43	37
16	Shadiwal	31	26	26	31	26	28
17	Chichoki Mallian	37	33	34	34	31	29
18	Kurrum Garhi	19	20	23	18	17	14
19	Renala	3	2	2	2	2	2
20	Chitral	4	4	4	4	3	4
21	Gomal Zam	14	44	10	0	0	30
22	Jabban (Malakand)	46	121	138	124	105	136
	Total WAPDA HYDEL (A)	31,565	31,942	33,450	31,084	27,424	31,145
B.	IPPs HYDEL						
23	Jagran (AJK)	130	123	149	128	119	125
24	Laraib (NEW BONG)	389	408	439	427	362	399
25	Malakand-III (SHYDO)	470	489	545	462	381	354
26	Patrind					275	527
27	Daral Khawr						26
	Total IPPs HYDEL (B)	989	1,020	1,132	1,016	1,137	1,432
	Total HYDEL (A+B)	32,554	32,962	34,583	32,100	28,561	32,577

Plant-Wise Energy Generation (GWh)							
Serial No.	Power Station	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19
C.	THERMAL (GENCOs)						
	GENCO-I						
27	Jamshoro	3,325	2,990	3,601	3,607	2,004	995
28	Kotri	179	319	602	352	100	40
29	Lakhra	157	145	148	125	5	0
33	Quetta	90	99	112	53	0	0
	Total GENCO-I	3,751	3,554	4,463	4,137	2,110	1,036
	GENCO-II						
30	Guddu 1-4	1,168	507	144	226	285	12
31	Guddu 5-13	3,220	2,095	2,189	3,300	4,730	4,374
32	Guddu 747	180	2,864	3,575	4,575	3,946	5,234
	Total GENCO-II	4,569	5,466	5,908	8,101	8,960	9,619
	GENCO-III						
34	Muzaffargarh	5,724	4,863	5,216	5,800	3,441	991
35	Multan						
36	GTPS Faisalabad	137	32	289	226	110	157
37	SPS Faisalabad	52	53	96	122	7	0
38	Shahdra						
39	Nandipur Power Plant	14	255	1,322	1,434	2,461	1,786
	Total GENCO-III	5,927	5,202	6,924	7,582	6,019	2,935
	Total GENCOs (C)	14,247	14,222	17,294	19,820	17,089	13,590

Plant-Wise Energy Generation (GWh)							
Serial No.	Power Station	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19
D.	IPPs Thermal						
40	KAPCO	6,480	6,932	6,582	7,340	7,437	4,967
41	HUBCO	7,092	6,811	7,550	6,791	5,206	832
42	KEL (Kohinoor Energy)	889	877	851	792	645	387
43	AES Lalpir	2,095	1,674	1,823	1,497	1,088	613
44	AES Pak Gen.	2,040	1,228	831	1,624	1,246	495
45	SEPCOL (Southern Electric)	0	0	0	0	0	0
46	HCPC (Habibullah)	672	722	548	767	884	715
47	Uch Power-I	4,312	4,135	4,219	4,413	4,448	3,898
48	Rousch	2,769	2,473	2,981	2,455	2,597	1,039
49	FKPCL (Fauji Kabirwala)	1,191	989	1,105	1,091	1,012	562
50	Saba Power	129	33	66	476	468	226
51	Japan Power	0	0	0	0	0	0
52	Liberty Power (TNB)	941	1,217	1,490	1,428	1,040	1,306
53	AEL	205	174	175	188	145	22
55	AGL (Attock Generation Ltd.)	1,244	1,210	1,180	1,136	914	0
56	Atlas Power	1,519	1,461	1,321	1,338	1,248	518
57	Engro Energy	1,442	1,429	1,222	1,731	1,669	671
58	Saif Power	724	774	1,089	905	842	1,388
59	Orient Power	541	1,038	1,156	955	842	830
60	Nishat Power	1,464	1,409	1,272	1,239	1,171	878
61	Nishat Chunian Power	1,471	1,416	1,209	1,315	1,100	675
62	Foundation Power	1,362	1,324	1,214	1,267	1,396	599
63	SAPPHIRE	762	968	1,028	961	816	1,334
64	Liberty Tech.	1,519	1,514	1,250	1,340	1,176	809
65	HUBCO Narowal	1,562	1,417	1,162	1,332	1,200	777
66	Halmore	504	724	917	553	871	636
67	Uch Power-II	762	2,422	2,335	2,736	2,600	613
54	Davis Energon	29	70	74	60	9	3,021
68	Bhikki (QATPL)				560	3,657	6,150
69	Sahiwal Coal (HSR)				869	8,439	8,219
70	Haveli Bahadar Shah				129	2,848	7,096
71	Reshma Power				8	50	15
72	Gulf Power				2	0	0
73	Balloki					2,113	5,185
74	Port Qasim Coal					3,312	7,562
75	Engro Thar Coal						272
76	China HUBCO Coal						260
	Total IPPs Fossil Fuels	43,722	44,441	44,650	47,300	62,488	62,570

Plant-Wise Energy Generation (GWh)							
Serial No.	Power Station	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19
E	BAGASSE						
75	JDW-II	6	161	158	178	182	188
76	JDW-III		125	151	166	197	181
77	RYKML		23	77	122	156	141
78	Chiniot Power			160	298	347	195
79	Fatima				113	32	0
80	Hamza sugar				24	72	61
81	Thall Power (Layyah)					51	66
82	AlMoiz Industries Limited						50
83	Chanar Energy Limited						9
	TOTAL BAGASSE	6	308	546	899	1,036	890
F	NUCLEAR						
82	CHASNUPP-I	2,212	2,477	1,504	2,143	2,448	2,140
83	CHASNUPP-II	2,219	2,556	2,381	2,329	2,316	2,278
84	CHASNUPP-III				1,388	2,264	2,498
85	CHASNUPP-IV					1,772	2,122
	Total Nuclear	4,431	5,033	3,885	5,860	8,800	9,038
G	SOLAR						
86	Quaid-e-Azam Solar		28	161	160	163	165
87	Apolo Solar			50	163	166	167
88	Best Green Solar			9	167	168	166
89	Crest Energy Solar			10	167	168	168
	Total Solar		28	231	657	664	665

Plant-Wise Energy Generation (GWh)							
Serial No.	Power Station	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19
H	WIND						
90	FFCEL	128	139	137	123	115	116
91	ZEPL (Zorlu)	100	162	166	154	143	144
92	TGF (Three Georges)		79	150	140	128	129
93	FWEL-I Wind		50	114	108	99	106
94	FWEL-II Wind		33	123	120	114	122
95	Saphire Wind			90	149	126	135
96	Metro Wind Power				85	141	139
97	Younas Wind				89	127	128
98	ACT Wind (TWEPL)				61	87	90
99	Master (MWEL) Wind				77	126	135
100	Tenaga Wind				63	91	111
101	Gul Ahmed Wind				72	127	129
102	China Dawood Wind				35	98	116
103	Sachal Wind				38	128	125
104	UEPL Wind				25	235	244
105	Artistic Wind					85	191
106	Jhimpir Wind					67	167
107	Hawa Wind (HEPL)					63	167
108	TGT Wind					16	134
109	TGS ENERGY						131
110	TRICON BOSTON (A)						134
111	TRICON BOSTON (B)						109
112	TRICON BOSTON (C)						108
113	Zephyr (Ghoro Cluster)						57
	Total Wind IPPs	228	463	780	1,340	2,117	3,167
I	Total IPPs (C to H)	48,387	50,273	50,092	56,056	75,106	76,330
	Import From K-Electric	1	13	9	3	30	44
	Total Generation (A+B+I)	95,189	97,470	101,978	107,979	120,786	122,541
	Export To K-Electric	5,448	5,430	5,077	5,203	5,147	5,127
	Import from Iran	419	443	463	496	555	486

Table 1.6
Source Wise Energy Generation (GWh)

Fiscal Year	Public		Independent Power Producers						Imports	Total
	Hydro	Thermal	Hydro	Thermal	Solar	Wind	Nuclear	Bagasse		
1981	9,046	3,675								12,721
1982	9,526	4,660								14,186
1983	11,366	4,554								15,920
1984	12,822	4,737								17,559
1985	12,245	5,907								18,152
1986	13,804	6,661								20,465
1987	15,251	7,058								22,309
1988	16,689	9,015								25,704
1989	16,196	9,555								25,751
1990	16,925	12,153								29,078
1991	18,298	13,653								31,951
1992	18,647	16,010								34,657
1993	21,111	15,157								36,268
1994	19,436	17,494								36,930
1995	22,858	17,158								40,016
1996	23,206	18,457		161						41,824
1997	20,858	17,068		10,740						48,666
1998	22,060	15,200		13,580						50,840
1999	22,448	13,769		15,326						51,543
2000	19,288	19,064		17,418			10			55,780
2001	17,196	16,798	63	22,773			1,565			58,395
2002	18,941	18,620	115	21,458			1,662			60,796
2003	22,253	19,570	97	20,658			1,386			63,964
2004	27,372	21,012	105	18,931			1,559		73	68,979
2005	25,588	22,181	83	23,233			2,295		109	73,380
2006	30,751	22,479	104	26,535			2,170		146	82,039
2007	31,846	21,587	96	32,163			1,944		171	87,636
2008	28,536	20,497	131	34,439			2,455		199	86,058
2009	27,636	19,568	547	35,340			1,058		227	84,149
2010	27,927	19,632	565	38,452			2,095		249	88,672
2011	31,685	13,044	305	42,342			2,930		269	90,306
2012	28,285	12,652	436	43,711		6	4,413		296	89,384
2013	29,586	12,871	662	40,065		38	3,641		375	86,602
2014	31,640	14,247	989	43,722		228	4,431	6	419	95,263
2015	31,941	14,222	1,020	44,441	28	463	5,033	308	443	97,456
2016	33,450	17,294	1,132	44,650	231	780	3,885	546	463	101,969
2017	31,084	19,820	1,016	47,300	657	1340	5,860	899	496	107,976
2018	27,424	17,089	1,137	62,488	664	2,117	8,800	1,036	555	120,755
2019	31,145	13,590	1,432	62,570	665	3,167	9,038	8,90	486	122,497

Table 1.7
Station Wise Plant Factor – PEPCO

STATION-WISE PLANT FACTOR (PEPCO)							
Serial No.	Fiscal Year	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19
A.	HYDEL						
1	Tarbela	49.70	48.47	52.34	49.26	43.16	34.91
2	Tarbela Extension-IV						18.71
3	Mangla	66.80	73.96	78.15	60.88	47.15	44.08
4	Ghazi Barotha	55.00	52.56	52.77	54.06	47.27	51.54
5	Warsak	43.80	45.70	43.31	46.18	42.95	47.04
6	Chashma Low Head	63.80	61.05	55.50	55.09	46.77	47.62
7	Jinnah Hydel	35.20	22.61	35.14	34.71	27.30	26.73
8	Allai Khwar	44.30	43.45	53.48	37.32	25.96	43.63
9	Khan Khwar	41.20	39.41	5.95	31.47	27.02	37.59
10	Duber Khwar		58.68	56.32	51.62	45.08	51.94
11	Neelam Jehlam					2.05	46.65
12	Golen Gol						8.66
13	Rasul	27.20	34.93	49.67	48.37	33.92	37.28
14	Dargai	51.00	61.58	65.22	59.65	54.48	64.07
15	Nandipur	34.70	28.24	33.14	35.09	37.18	30.74
16	Shadiwal	25.90	21.25	20.78	25.25	21.09	24.01
17	Chichoki Mallian	31.60	28.93	29.91	29.97	27.52	25.13
18	Kurrum Garhi	54.30	55.13	66.60	52.49	49.08	40.57
19	Renala	30.60	28.30	23.14	25.09	26.27	22.69
20	Chitral	41.90	41.97	40.96	47.86	39.30	40.05
21	Gomal Zam	17.00	29.37	7.94	4.13	0.24	19.95
22	Malakand/Jabban	38.40	63.35	71.55	60.63	54.54	69.30
B.	THERMAL						
	GENCO-I						
1	TPS Jamshoro	52.07	51.05	58.56	58.73	28.39	13.37
2	GTPS Kotri	17.13	28.94	57.23	33.42		2.65
3	Lakhra F.B.C	12.45	45.21	56.23	54.49		0.00
4	TPS Quetta	38.57	45.50	50.68	24.28	-0.17	0.00
	GENCO-II						
5	TPS Guddu (1-4)	68.70	35.45	3.98	5.72		
6	TPS Guddu (5-13)		31.96	26.28	60.24	47.23	45.34
7	Guddu 474		79.00		-		
	GENCO-III						
8	TPS Muzaffargarh	56.37	52.62	51.68	57.43		8.38
9	SPS Faisalabad	8.42	8.66	10.97	13.90		0.00
10	GTPS Faisalabad	11.70	2.56	15.19	12.24		12.46
11	Nandipur				38.51	27.67	47.97

STATION-WISE PLANT FACTOR (PEPCO)

Serial No.	Fiscal Year	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19
C.	IPPs THERMAL						
1	KAPCO	55.10	64.70	55.80	62.67	63.12	35.42
2	HUBCO	67.40	58.80	71.50	64.62	49.43	7.35
3	KEL	81.90	80.60	78.10	72.93	59.42	33.65
4	AES Lalpir	67.70	54.20	59.10	49.14	35.52	19.34
5	AES Pak Gen.	65.90	39.50	27.00	52.91	40.35	15.47
6	SEPCOL	0.00	0.00	0.00	0.00	0.00	0.00
7	Habibullah (HCPC)	58.90	63.60	48.10	67.41	77.81	58.32
8	Uch Power-I	89.40	85.90	87.50	91.25	92.34	75.94
9	Rousch	79.60	71.30	85.50	71.09	74.90	26.37
10	Fauji Kabirwala (FKPCL)	89.80	74.80	83.40	82.64	76.80	37.31
11	Saba Power	11.60	2.90	6.00	43.13	42.36	19.00
12	Japan Power	0.00	0.00	0.00	0.00	0.00	0.00
13	Libert TNB	50.70	65.70	79.50	77.08	55.82	66.25
14	A.E.L (Altern)	86.10	73.10	72.20	77.44	62.75	8.05
15	Attock Generation	90.85	88.00		82.99	66.69	0.00
16	Atlas Power	81.08	78.00		71.36	66.53	26.96
17	Engro Energy	77.01	74.00		90.91	86.00	33.88
18	Saif Power	40.21	43.00		49.75	47.17	70.40
19	Orient Power	29.01	56.00		50.69	47.32	42.09
20	Nishat Power	85.57	82.00		72.46	68.46	49.63
21	Nishat Chunian Power	85.82	83.00		76.75	64.14	36.85
22	Foundation Power	90.49	90.00		81.57	93.84	37.19
23	Saphire						67.67
24	Liberty Tech.	88.44	88.00		77.97	68.42	45.73
25	HUBCO Narowal	83.41	76.00		71.23	76.19	39.42
26	Halmore	28.88	41.00		30.49	49.33	32.26
27	Uch Power-II	22.71	72.00		83.03	80.24	17.80
28	Davis Energon	57.20	77.40	81.50	67.97	9.80	-
29	Bhikki Power Plant (QATPL)				14.55	35.88	57.08
30	Sahiwal Coal fire Power				45.18	77.68	71.08
31	Haveli Bahadur Shah				8.61	26.84	65.88
32	Reshma Power					7.16	1.78
33	Gulf Powergen					0.51	0.00
34	Balloki power Plant					19.43	48.41
35	Port Qasim					30.48	65.40
36	ENGRO Thar Coal						4.71
37	China HUBCO Coal						2.25

STATION-WISE PLANT FACTOR (PEPCO)

Serial No.	Fiscal Year	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19
	HYDRO						
1	Jagran (AJK)	39.94	35.00		35.48	33.07	47.42
2	Laraib (NEW BONG)	63.91	66.00		57.68	52.95	54.24
3	Malakand-III (SHYDO)	54.51	57.00		59.75	51.03	49.96
4	Patrind					20.90	40.14
5	Daral Khawr						7.98
	WIND						
1	FFCEL (Wind)	29.83	32.00		28.40	28.64	26.68
2	Zorlu (ZEPL)	27.04	32.00		31.05	28.00	29.18
3	TGF (Three Georees)				31.85	29.91	29.78
4	Foundation Power-I	90.49	90.00		81.57	29.91	24.19
5	Foundation Power-II				27.46	26.13	27.96
6	Sapphire Energy	41.69	53.00		51.62	45.75	31.07
7	Metro Wind Power				21.47	31.73	31.64
8	Younas Energy Ltd.				27.96	30.37	29.29
9	Tapal Wind				43.84	32.73	34.09
10	Master Wind Power				22.87	30.47	31.10
11	Tenaga Generasi				20.01	21.29	25.43
12	Gul Ahmed				22.71	29.37	29.37
13	China Dawood Wind				7.92	22.55	26.56
14	SEDL Wind				31.05	30.32	28.75
15	UEPL Wind*				24.70	26.01	28.12
16	Artistic Wind					19.32	43.40
17	Jhimpir Wind					15.28	37.88
18	Hawa Wind (HEPL)					9.82	37.92
19	TGT Wind					6.33	30.41
20	TGS ENERGY						29.78
21	TRICON BOSTON (A)						30.38
22	TRICON BOSTON (B)						24.72
23	TRICON BOSTON (C)						24.42
24	Zephyr (Ghoro Cluster)						13.11
	SOLAR						
1	Quaid-e-Azam Solar Park				18.03	18.48	18.84
2	Apolo Solar Park				16.51	19.05	19.03
3	Best Green Energy				18.93	19.10	18.94
4	Crest Energy Pakistan					19.26	19.13
	NUCLEAR						
1	CHASNUPP-I (PAEC)	83.60	93.50	56.60	80.60	92.23	75.17
2	CHASNUPP-II (PAEC)	84.00	96.80	89.90	83.89	87.31	76.47
3	CHASNUPP-III (PAEC)				82.96	81.63	83.87
4	CHASNUPP-IV (PAEC)					63.96	71.25

STATION-WISE PLANT FACTOR (PEPCO)

Serial No.	Fiscal Year	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19
	BAGASSE						
1	JDW-II	6.33	71.00		77.00	78.40	81.35
2	JDW-III		39.00		71.79	85.17	77.20
3	RYKML				46.54	59.21	53.69
4	Chiniot Power				54.32	63.30	35.34
5	Fatima				33.45	2.00	0.00
6	Hamza sugar				17.12	55.36	46.44
7	Thall Power (Layyah)					24.24	30.07
8	AlMoiz Industries Limited						15.72
9	Chanar Energy Limited						4.57

Table 1.8
Average Cost Of Generation (Rs /GWh)

Sr. No.	Fiscal Year	2012	2013	2014	2015	2016	2017	2018	2019
A.	HYDRO								
1	Allai Khwar			1.28	2.88	2.00	2.52	5.06	
2	Chashma Low Head	1.62	1.70	1.77	2.00	2.42	2.42	3.33	
3	Chichoki Mallian	1.65	1.47	1.75	2.26	2.49	3.01	4.07	
4	Chitral	11.61	7.95	11.04	10.85	10.69	9.42	12.26	
5	Dargai	1.12	1.17	1.37	1.13	0.99	1.26	2.01	
6	Duber Khwar				1.51	1.50	1.22	2.24	
7	Ghazi Brotha	1.09	1.07	1.03	1.07	1.39	1.46	2.17	
8	Gomal Zam	N/A	N/A	9.55	6.28	44.33	40.58	N/A	
9	Jinnah	1.20	1.90	1.47	7.91	3.74	3.20	7.46	
10	Khan Khwar	1.90	2.76	2.36	3.52	21.67	2.81	5.22	
11	Kurrum Garhi	3.21	2.52	2.44	2.56	1.76	2.27	3.88	
12	Malakand/Jabban	N/A	N/A	N/A	5.98	4.37	3.46	6.20	
13	Mangla	0.95	0.96	0.64	0.62	0.71	1.12	1.57	
14	Nandipur	1.40	1.49	2.04	2.93	2.11	2.36	8.18	
15	Rasul	1.04	1.69	1.79	1.56	1.64	1.24	3.72	
16	Renala	4.92	6.17	9.17	12.39	11.88	12.97	13.57	
17	Shadiwal	1.37	1.52	1.75	2.88	2.38	2.80	5.55	
18	Tarbela	1.13	1.02	0.96	1.14	0.82	1.13	1.62	
19	Warsak	0.81	1.26	1.35	0.95	1.11	1.18	1.94	
B.	THERMAL								
	GENCO-1								
20	TPS Jamshoro	18.39	17.04	19.80	13.56	9.24	9.84	10.28	
21	GTPS Kotri	5.17	7.42	7.99	6.99	8.25	8.42	6.00	
	GENCO-2								
22	TPS Guddu (1-4)	6.75	6.87	6.71	7.58	8.16	19.92	6.33	
23	TPS Guddu (5-13)	4.43	5.24	5.18	4.95	5.78	5.97	5.20	
24	TPS Quetta	7.73	9.18	9.30	8.66	11.70	12.25	8.65	
	GENCO-3								
25	TPS Muzaffargarh	18.40	18.11	18.98	15.00	8.89	11.08	12.36	
26	SPS Faisalabad	22.41	-	16.45	19.57	9.05	10.60	7.72	
27	GTPS Faisalabad	5.81	6.22	7.24	5.26	8.18	7.69	12.00	
28	NGPS Multan	23.18	-	-	-	-	-	8.26	
29	GTPS Shahdara	0.00	0.00	-	-	-	-	-	
30	Nandipur	0.00	0.00		0.00	7.65	13.66	7.99	
	GENCO-4								
31	Lakhra F.B.C	10.56	5.43	11.66	5.84	11.72	5.59	4.82	

Table 1.9
Maximum Demand & Load Factor (PEPCO)

Fiscal Year	Maximum Demand (MW)				Energy Purchased by CPPA-G (GWh)	Load Factor (%)
	Recorded	Computed Peak with Export to K Electric				
	Including export to K Electric	Total	PEPCO	K Electric		
1997	8,505	8,772	8,552	220	49,564	66.53
1998	9,033	9,209	8,877	332	52,192	65.96
1999	9,074	9,351	9,191	160	52,752	66.36
2000	9,556	9,609	9,289	320	54,672	65.31
2001	10,033	10,128	9,628	500	57,282	65.18
2002	10,358	10,459	10,099	360	59,545	65.62
2003	11,000	11,044	10,484	560	62,694	65.06
2004	11,527	11,598	11,078	520	67,697	67.04
2005	12,385	12,595	12,035	560	71,670	66.06
2006	13,066	13,847	13,212	635	80,404	70.25
2007	13,645	15,838	15,138	700	85,987	71.94
2008	14,151	17,398	16,838	560	84,584	68.23
2009	14,055	17,852	17,325	527	82,702	67.17
2010	14,309	18,467	17,847	620	87,115	69.50
2011	14,468	18,521	17,901	620	89,775	70.83
2012	15,062	18,940	18,280	660	88,987	67.44
2013	14,756	18,827	18,227	600	87,080	67.37
2014	16,170	20,576	19,966	610	93,777	66.20
2015	16,233	21,701	21,031	670	96,463	67.84
2016	17,261	23,199	22,559	640	100,871	66.71
2017	19,020	25,717	25,117	600	106,796	64.10
2018	20,795	26,741	26,031	710	120,062	65.91
2019	21,736	26,267	25,627	640	122,302	64.23

TRANSMISSION STATISTICS

2018-19

Length of 500 kV Transmission Lines	6,290 km
Length of 220 kV Transmission Lines	10,928 km
Number of Grid Stations 500 kV	16
Number of Grid Stations 220 kV	45
MVA Capacity 500 kV	22,950
MVA capacity 220 kV	30,970
Transmission losses	2.8%

NATIONAL TRANSMISSION & DESPATCH COMPANY LIMITED

Table 2.1
Length of Transmission Lines (km)

Fiscal Year	Total Circuit Length (km)					
	500 kV	220 kV	132 kV	66 kV	33 kV	Total
1981	524	2,101	9,790	4,231		16,646
1982	834	2,106	10,237	4,426		17,603
1983	834	2,262	12,489	5,159		20,744
1984	1,239	2,262	14,071	5,285		22,857
1985	1,239	2,422	14,306	5,486		23,453
1986	1,545	2,432	15,284	6,108		25,369
1987	1,545	2,642	16,446	6,316		26,949
1988	1,545	2,840	16,803	6,466		27,654
1989	1,545	2,840	17,094	6,608		28,087
1990	1,863	2,922	17,494	6,728		29,007
1991	2,175	3,124	18,290	6,830		30,419
1992	2,175	3,150	18,676	6,839		30,840
1993	2,175	3,210	19,117	6,873		31,375
1994	2,623	3,504	19,662	7,047		32,836
1995	3,315	3,848	23,954	7,176		38,293
1996	3,902	4,422	24,325	7,214		39,863
1997	4,074	4,782	24,634	7,214		40,704
1998	4,079	5,340	24,709	7,262		41,390
1999	4,079	5,378	25,322	7,262		42,041
2000	4,094	5,498	25,661	7,291		42,544
2001	4,094	5,544	25,881	7,376		42,895
2002	4,094	5,544	26,068	7,376		43,082
2003	4,175	5,544	27,337	7,454		44,510
2004	4,344	5,822	27,731	7,551		45,449
2005	4,344	6,993	28,196	7,552		47,085
2006	4,453	6,993	29,240	7,617		48,303
2007	4,712	7,318	31,779	7,617		51,425
2008	4,748	7,318	22,497	9,587		44,149
2009	5,078	7,325	23,440	9,116		44,958
2010	5,078	7,367	23,995	9,069		45,509
2011	5,078	7,427	25,359	7,777	1,450	47,090
2012	5,078	7,948	25,646	7,822	1,450	47,943
2013	5,024	8,230	26,161	7,730	1,450	48,594
2014	5,077	8,547	27,108	7,586	1,450	49,768
2015	5,077	9,624	27,272	7,566	1,450	50,989
2016	5,113	9,632	28,726	7,365	1,456	52,291
2017	5,127	10,063	25,691	7,025	2,362	50,268
2018	5,618	10,478	26,844	6,182	2,362	51,484
2019	6,290	10,928	27,775	5,994	2,362	53,349

Table 2.2
Length of Transmission Lines (km) - Punjab

Fiscal Year	Punjab					
	500 kV	220 kV	132 kV	66 kV	33 kV	Total
1981	524	1,406	6,975	3,269		12,174
1982	824	1,411	7,237	3,408		12,880
1983	824	1,431	9,134	3,986		15,375
1984	824	1,431	9,733	4,112		16,100
1985	824	1,431	9,956	4,131		16,342
1986	1,130	1,431	10,717	4,603		17,881
1987	1,130	1,641	11,637	4,699		19,107
1988	1,130	1,839	11,834	4,774		19,577
1989	1,130	1,839	11,940	4,794		19,703
1990	1,448	1,893	12,042	4,794		20,177
1991	1,750	2,095	12,376	4,896		21,117
1992	1,750	2,121	12,700	4,905		21,476
1993	1,750	2,181	12,840	4,939		21,710
1994	2,177	2,475	13,138	5,113		22,903
1995	2,702	2,817	17,119	5,190		27,828
1996	2,702	3,111	17,440	5,222		28,475
1997	2,702	3,471	17,665	5,222		29,060
1998	2,707	3,737	17,699	5,226		29,369
1999	2,707	3,737	17,961	5,226		29,631
2000	2,722	3,857	18,063	5,255		29,897
2001	2,722	3,903	18,195	5,256		30,076
2002	2,722	3,903	18,356	5,256		30,237
2003	2,803	3,903	18,845	5,256		30,807
2004	2,972	4,181	18,941	5,280		31,374
2005	2,972	4,813	19,065	5,280		32,130
2006	3,072	4,813	19,502	5,280		32,668
2007	3,331	4,800	21,357	5,280		34,768
2008	3,367	4,800	13,026	4,629		25,822
2009	3,660	5,047	13,078	4,631		26,416
2010	3,660	5,054	13,525	4,584		26,823
2011	3,660	5,054	13,829	4,313	153	27,009
2012	3,660	5,147	14,119	4,359	153	27,438
2013	3,605	5,450	14,483	4,260	153	27,951
2014	3,658	5,645	15,159	4,116	153	28,731
2015	3,658	5,782	15,159	4,116	153	28,868
2016	3,662	5,782	16,313	3,934	159	29,850
2017	3,677	5,958	13,561	3,698	69	26,963
2018	4,048	6,022	14,311	3,279	69	27,729
2019	4,170	6,094	14,531	3,216	69	28,081

Table 2.3
Length of Transmission Lines (km) - Sindh

Fiscal year	Sindh					
	500 kV	220 kV	132 kV	66 kV	33 kV	Total
1981	0	110	1,086	511		1,707
1982	10	110	1,086	531		1,737
1983	10	110	1,209	632		1,961
1984	415	110	1,275	632		2,432
1985	415	270	1,287	672		2,644
1986	415	280	1,293	822		2,810
1987	415	280	1,293	860		2,848
1988	415	280	1,293	935		2,923
1989	415	280	1,333	977		3,005
1990	415	308	1,573	1,022		3,318
1991	425	308	1,646	1,022		3,401
1992	425	308	1,646	1,022		3,401
1993	425	308	1,663	1,022		3,418
1994	425	308	1,663	1,022		3,418
1995	592	308	1,715	1,022		3,637
1996	1,062	308	1,739	1,022		4,131
1997	1,216	308	1,739	1,022		4,285
1998	1,216	482	1,744	1,066		4,508
1999	1,216	482	1,763	1,066		4,527
2000	1,216	482	1,779	1,066		4,543
2001	1,216	482	1,793	1,148		4,639
2002	1,216	482	1,799	1,148		4,645
2003	1,216	482	2,105	1,196		4,999
2004	1,216	482	2,198	1,222		5,119
2005	1,216	695	2,198	1,223		5,332
2006	1,216	695	2,400	1,288		5,599
2007	1,216	787	2,541	1,288		5,832
2008	1,216	787	3,508	1,802		7,312
2009	1,216	760	3,676	1,802		7,454
2010	1,216	795	3,736	1,802		7,549
2011	1,216	855	3,876	1,725		7,672
2012	1,216	915	3,761	1,702		7,594
2013	1,216	917	3,826	1,729		7,688
2014	1,216	977	3,967	1,729		7,890
2015	1,216	1,325	4,113	1,709		8,364
2016	1,248	1,446	4,138	1,690		8,522
2017	1,248	1,446	4,580	1,632		8,905
2018	1,368	1,626	4,633	1,420		9,047
2019	1,918	1,300	4,846	1,420		9,484

Table 2.4
Length of Transmission Lines (km) - Khyber Pakhtunkhwa

Fiscal Year	Khyber Pakhtunkhwa					
	500 kV	220 kV	132 kV	66 kV	33 kV	Total
1981		423	1,223	297		1,943
1982		423	1,256	333		2,012
1983		559	1,339	387		2,285
1984		559	1,524	387		2,470
1985		559	1,524	529		2,612
1986		559	1,611	529		2,699
1987		559	1,839	603		3,001
1988		559	1,937	603		3,099
1989		559	2,009	683		3,251
1990		559	2,044	683		3,286
1991		559	2,225	683		3,467
1992		559	2,269	683		3,511
1993		559	2,393	683		3,635
1994	21	559	2,393	683		3,656
1995	21	561	2,652	723		3,957
1996	138	741	2,678	729		4,286
1997	138	741	2,678	729		4,286
1998	138	741	2,678	729		4,286
1999	138	741	2,799	729		4,407
2000	138	741	2,799	729		4,407
2001	138	741	2,805	731		4,415
2002	138	741	2,825	731		4,435
2003	138	741	2,829	731		4,439
2004	138	741	3,034	756		4,669
2005	138	741	3,350	756		4,984
2006	138	741	3,537	756		5,172
2007	138	987	3,677	756		5,558
2008	138	987	2,616	1,360		5,101
2009	175	750	2,692	1,187		4,804
2010	175	750	2,739	1,187		4,851
2011	175	750	3,142	1,259	312	5,637
2012	175	1,118	3,254	1,259	312	6,117
2013	175	1,095	3,340	1,239	312	6,161
2014	175	1,157	3,470	1,239	312	6,353
2015	175	1,157	3,404	1,239	312	6,287
2016	175	1,157	3,679	1,239	312	6,562
2017	175	1,413	2,587	1,223	312	5,710
2018	175	1,236	2,700	1,223	312	5,646
2019	175	1,532	2,977	1,097	312	6,093

Table 2.5
Length of Transmission Lines (km) - Balochistan

Fiscal year	Balochistan					
	500 kV	220 kV	132 kV	66 kV	33 kV	Total
1981		162	506	154		822
1982		162	658	154		974
1983		162	807	154		1,123
1984		162	1,539	154		1,855
1985		162	1,539	154		1,855
1986		162	1,663	154		1,979
1987		162	1,677	154		1,993
1988		162	1,739	154		2,055
1989		162	1,812	154		2,128
1990		162	1,835	229		2,226
1991		162	2,043	229		2,434
1992		162	2,061	229		2,452
1993		162	2,221	229		2,612
1994		162	2,468	229		2,859
1995		162	2,468	241		2,871
1996		262	2,468	241		2,971
1997	18	262	2,552	241		3,073
1998	18	380	2,588	241		3,227
1999	18	418	2,799	241		3,476
2000	18	418	3,020	241		3,697
2001	18	418	3,088	241		3,765
2002	18	418	3,088	241		3,765
2003	18	418	3,558	271		4,265
2004	18	418	3,558	293		4,287
2005	18	744	3,583	293		4,638
2006	27	744	3,801	293		4,865
2007	27	744	4,203	293		5,267
2008	27	744	3,347	1,796		5,914
2009	27	768	3,993	1,496		6,284
2010	27	768	3,995	1,496		6,286
2011	27	768	4,512	480	985	6,772
2012	27	768	4,512	502	985	6,794
2013	27	768	4,512	502	985	6,794
2014	27	768	4,512	502	985	6,794
2015	27	1,360	4,596	502	985	7,470
2016	27	1,247	4,596	502	985	7,357
2017	27	1,247	4,963	472	1,981	8,690
2018	27	1,595	5,200	260	1,981	9,063
2019	27	2,002	5,420	260	1,981	9,690

Table 2.6
Length of 500 kV Transmission Lines

Sr. No.	Name	Date of Commissioning	Route Length (km)		Total Circuit Length (km)
			Single Circuit	Double Circuit	
	Lahore Region				
1	Tarbela-Barotha 1	April-03	73	0	73
2	Tarbela-Barotha 2	May-03	77	0	77
3	Barotha-Gatti 1	April-03	309	0	309
4	Barotha-Gatti 2	November-03	308	0	308
5	Gatti-QATPL	October-16	83	0	83
6	QATPL-Lahore(Skp)	October-16	16	0	16
7	H.B.Shah-Gatti 2	August-18	165	0	165
8	H.B.Shah-Multan	August-18	162	0	162
9	Gatti-Rousch	February-98	150	0	150
10	Rousch-Multan	February-98	62	0	62
11	Muzafargarh-H.B.Shah	March-17	174	0	174
12	H.B.Shah-Gatti 1	March-17	111	0	111
13	Multan-Yousafwala	May-92	161	0	161
14	Yousafwala-CFPP	January-17	12	15	27
15	CFPP-New Lahore	April-19	80	15	95
16	New Lahore-Lahore (SKP) II	April-19	52	15	67
17	Balloki-New Lahore-I	October-18	0	31	31
18	Balloki-New Lahore-II	October-18	0	31	31
19	New Lahore-Lahore (SKP) I	July-18	3	54	57
20	New Lahore-New Ghakkar	July-18	0	54	54
	Total Lahore		1,998	216	2,214
	Islamabad Region				
1	Tarbela- Sheikh Muhammadi Peshawar	December-95	117	0	117
2	Tarbela- New Rawat	February-97	111	0	111
3	Ghazi Brotha - New Rawat- I	November-05	107	0	107
4	Ghazi Brotha - New Rawat- II	July-04	108	0	108
5	New Rawat - New Ghakkar-I	October-09	180	0	180
6	Rawat Neelum Jehlum	April-18	214	0	214
7	Neelum Jehlum Ghakkhar	April-18	285	0	285
8	Ghakkar-Lahore-I (Tower # 1 to 150)	October-09	56	0	56
9	Ghakkar-Lahore-II (SKL)	October-09	64	0	64
	Total Islamabad Region		1,244	0	1,244

Sr. No.	Name	Date of Commissioning	Route Length (km)		Total Circuit Length (km)
			Single Circuit	Double Circuit	
	Hyderabad Region				
1	Dadu - Jamshoro - I	July-87	152	0	152
2	Port Qasim-Dadu	April-19	230	55	285
3	Port Qasim- Jamshoro	November-17	77	55	132
4	Guddu-Shikarpur-I	May-16	123	0	123
5	Shikarpur- Dadu -I	February-87	195	0	195
6	Guddu - Shikarpur - II	March-18	124	0	124
7	Shikarpur - Dadu - II	March-18	194	0	194
8	HUBCO - NKI	April-06	27	0	27
9	NKI- Jamshoro	April-06	156	0	156
10	CPHGC - Jamshoro	September-18	181	0	181
11	CPHGC-HUBCO	September-18	1	0	1
12	Engro thar- Jamshoro	March-19	288	0	288
13	Jamshoro- Moro	March-19	202	0	202
14	Dadu - Moro		45	0	45
	Total Hyderabad		1,993	110	2,103
	Multan Region				
1	Muzaffargarh – Guddu	March-00	254	2	256
2	Guddu 747 - R.Y Khan	February-18	95	8	102
3	R.Y Khan – Multan	February-18	252	6	258
4	Guddu 747 - Guddu Old	February-14	1	1	2
5	Guddu - D.G.Khan	August-14	204	11	216
6	D.G.Khan – Multan	August-14	116	11	128
7	Multan - Muzaffargarh	March-00	60	2	62
	Total Multan		981	41	1,022

Table 2.7
Summary - Length of 500 kV Transmission Lines

Sr. No.	Region	Total Route Length (km)		Total Circuits Length (km)
		Single Circuit	Double Circuit	
1	Lahore	1,998	216	2,214
2	Islamabad	1,244	0	1,244
3	Hyderabad	1,993	110	2,103
4	Multan	981	41	1,022

Table 2.8
Length of 220 kV Transmission Lines (km)

Sr. No.	Name	Date of Commissioning	Route Length (km)		Total Circuit Length (km)
			Single Circuit	Double Circuit	
	Lahore Region				
1	Bandala-Gatti 1 & 2	June-14	0	31	62
2	Gatti-Nishatabad 1 & 2	July-79	0	2	4
3	Gatti JWR 1 & 2	October-91	0	16	32
4	Gatti-Y/Wala 1 & 2	July-87	0	96	192
5	Gatti-L/Wala 1 & 2	May-05	0	99	198
6	Chashma-L/Wala 1 & 2	April-11	0	125	250
7	Multan-T.T. Singh 1 & 2	March-60	0	82	164
8	T.T.Singh-SRD 1 & 2	March-60	0	52	105
9	SRD-Nishatabad 1 & 2	March-60	0	23	46
10	220 KV GKR - Mangla	June-82	37	0	37
11	220 KV KSK - Mangla 3	May-05	96	0	96
12	220 KV GKR - SKT	August-99	36	0	36
13	220KV KSK - SKT	August-99	97	0	97
14	220 KV GKR - Gujrat	April-17	32	0	32
15	220 KV New GKR - Gujrat	April-17	63	0	63
16	220 KV New GKR - Gakkhar	December-10	44	0	44
17	220 KV Gujrat-Mangla 1 & 2	April-17	0	4	8
18	220 KV Kala Shah Kaku - Bund Road 1 & 2	June-71	0	27	54
19	220 KV Kala Shah Kaku - Mangla 1 & 2	March-78	0	97	194
20	220KV New Kot Lakhpat - Bund Road 1 & 2	June-88	0	18	36
21	220KV New Kot Lakhpat - Sarfraz Nagar	April-95	47	0	47
22	220KV New Kot Lakhpat - New LHR 2	April-18	52	0	52
23	220KV Sarfraz Nagar - New LHR	March-18	86	0	86
24	220KV Sarfraz Nagar - New Okara 1 & 2	December-17	0	80	159
25	220KV New Okara - Yousafwala 1 & 2	December-17	0	39	78
26	220KV Yousafwala - Kassowal 1 & 2	July-15	0	100	200
27	220KV Bund Road - Sheikhupura 1 & 2	May-94	0	26	52
28	220KV Bund Road - Sheikhupura 3 & 4	December-92	0	28	56
29	220KV New Kot Lakhpat - Sheikhupura	September-93	53	0	53
30	220KV New Kot Lakhpat - New LHR 1	April-19	51	0	51
31	220KV New Lahore - Wapda Town	April-19	40	0	40
32	220KV Wapda Town - Sheikhupura	June-11	42	0	42
33	220KV Ravi - Sheikhupura	March-14	38	0	38
34	220KV Altas P/H - Sheikhupura	October-10	8	0	8
35	220KV Altas P/H - Ravi	October-10	36	0	36
36	220KV Kala Shah Kaku - Ravi	September-00	24	0	24
37	220KV Kala Shah Kaku - Ghazi	October-17	50	0	50
38	220KV Ghazi - Shalamar	October-17	29	0	29
39	220KV Ravi - Shalamar	May-14	12	0	12
40	KSK-Bandala 1 & 2	June-14	0	101	202
41	PTPL 1&2		0	47	94
42	PTPL 3&4		0	46	92
	Sub Total Lahore		971	1,139	3,250
	Total Route Length Lahore				3,250
	Hyderabad/Quetta Region				

Sr. No.	Name	Date of Commissioning	Route Length (km)		Total Circuit Length (km)
			Single Circuit	Double Circuit	
1	Dadu - Jamshoro - I	July-87	152	0	152
2	Port Qasim-Dadu	April-19	230	55	285
3	Port Qasim- Jamshoro	November-17	77	55	132
4	Guddu-Shikarpur-I	May-16	123	0	123
5	Shikarpur- Dadu -I	February-87	195	0	195
6	Guddu - Shikarpur - II	March-18	124	0	124
7	Shikarpur - Dadu - II	March-18	194	0	194
8	HUBCO - NKI	April-06	27	0	27
9	NKI- Jamshoro	April-06	156	0	156
10	CPHGC - Jamshoro	September-18	181	0	181
11	CPHGC-HUBCO	September-18	1	0	1
12	Engro thar- Jamshoro	March-19	288	0	288
13	Jamshoro- Moro	March-19	202	0	202
14	Dadu - Moro	November-18	45	0	45
	Sub Total Hyderabad		1,993	110	2,103
	Total Length Hyderabad				2,103
	Islamabad Region				
1	Tarbela - Mardan CCT-I & II	November-75	0	67	134
2	Sheikh Muhammadi Peshawar - Mari Daudkhel Cct I & II	September-95	0	123	246
3	Mari Daudkhel - Chashnupp Cct I & II	April-98	0	70	139
4	Mari Daudkhel - Domale Bannu Cct I & II	August-04	0	110	220
5	Sheikh Muhammadi Peshawar - Shahibagh	December-05	38	0	38
6	Ghazi Brotha - Nowshera Cct I & II	April-19	0	45	90
7	Nowshera - Mardan	April-19	46	0	46
8	Peshawar - Nowshera	April-19	50	0	50
9	Mardan - Chakdara	September-18	70	0	70
10	Chakdara-ShahiBagh	August-19	105	0	105
11	Chashnupp - Domale Bannu Cct I & II	October-16	0	126	252
12	Chashnupp - D.I Khan Cct I & II	February-19	0	84	169
13	Allai Khawar - New Mansehra Cct I & II	April-12	0	83	166
14	Tarbela - Burhan Cct I & II	June-77	0	35	70
15	Tarbela - Burhan Cct III (RT-2)	June-77	35	0	35
16	Burhan - Sangjani (ISPR) Cct 4 (RT-2)	December-98	27	0	27
17	Terbela - Sangjani (ISPR)	December-98	63	0	63
18	New Rawat - Sangjani (ISPR)	June-77	43	0	43
19	New Rawat - Bahria Town	December-98	10	0	10
20	Bahria Town - Sangjani (ISPR)	December-98	33	0	33
21	New Rawat - Islamabad University Cct I & II	September-04	0	50	100
22	Mangla - New Rawat Cct I & II	June-77	0	80	160
23	Mangla - New Ghakkar - Kala Shah Kaku (KSK) Cct I	July-67	76	0	76
24	Mangla - New Ghakkar - Kala Shah Kaku (KSK) Cct III	July-68	76	0	76
25	Mangla - Gujrat Cct I & II	July-93	0	78	155
26	Mangla - Kala Shah Kaku (KSK) Cct I & II	July-67	0	74	147
27	Sangjani (ISPR) - New Mansehra Cct I & II	August-11	0	100	201
	Sub- Total Islamabad		671	1,125	2,921
	Total Route Length Islamabad				2,921
	Multan Region				

Sr. No.	Name	Date of Commissioning	Route Length (km)		Total Circuit Length (km)
			Single Circuit	Double Circuit	
1	Multan - N.G.P.S 1&2	July-95	0	14	28
2	Multan - T.T singh. 1&2	July-95	0	65	130
3	TPS-M/Garh-Multan CCT 1&4	March-94	0	58	116
4	TPS-M/Garh-Multan CCT 3	Jan-1995	56	0	56
5	TPS-M/Garh-Multan CCT 2	January-95	55	0	55
6	TPS-M/Garh-M/Garh G/S	June-08	1	0	1
7	M/Garh - Lalpir CCT 1&2	August-97	0	18	36
8	M/garh - Pak Gen CCT 1	August-97	18	0	18
9	M/garh - PARCO CCT 1	February-00	32	0	32
10	M/garh - PARCO CCT 2	February-00	24	0	24
11	TPS-M/garh-Bahawalpur CCT 1&2	February-05	0	109	218
12	KAPCO - Multan CCT 3&4	August-89	0	100	200
13	KAPCO - Multan CCT 5&6	January-10	0	79	158
14	KAPCO - M/garh CCT 1	July-93	49	0	49
15	KAPCO - Pak Gen CCT 2	August-97	67	0	67
16	Vehari-Multan CCT 1&2	January-10	0	79	158
17	Vehari - Kassowal CCT 1&2	July-15	0	75	150
18	Vehari - Chishtian CCT 1&2	October-16	0	88	176
19	Bahawalpur-Laal Sohanra	October-17	0	37	73
Sub Total Multan			302	722	1,745
Total Route Length Multan					1,745

Table 2.9
Summary - Length of 220 kV Transmission Lines

Serial No.	Region	Total Route Length (km)		Total Circuit Length (km)
		Single Circuit	Double Circuit	
1	Lahore	971	1,139	3,250
2	Islamabad	671	1,125	2,921
3	Hyderabad	1,993	110	2,213
4	Multan	302	722	1,745

Table 2.10
Voltage-wise Grid Stations & MVA Capacities

Fiscal Year	500 kV		220 kV		132 kV		66 kV		33 kV		Total	
	No of Grid Stations	Capacity (MVA)	No of Grid Stations	Capacity (MVA)	No of Grid Stations	Capacity (MVA)	No of Grid Stations	Capacity (MVA)	No of Grid Stations	Capacity (MVA)	No of Grid Stations	Capacity (MVA)
1981	0	0	5	1,563	170	5,393					175	6,956
1982	1	900	7	1,983	184	5,650					192	8,533
1983	1	900	10	2,523	203	6,308					214	9,731
1984	2	1,350	10	3,106	219	6,777					231	11,233
1985	2	1,350	10	3,106	240	7,379					252	11,835
1986	2	1,350	11	3,106	261	8,197					274	12,653
1987	4	3,600	12	3,851	276	8,980					292	16,431
1988	4	3,600	13	4,296	283	9,409					300	17,305
1989	6	4,974	14	4,282	296	9,755					316	19,011
1990	6	4,974	14	4,402	309	10,725					329	20,101
1991	6	4,974	14	4,982	326	11,572					346	21,528
1992	6	4,974	15	5,462	334	12,776					355	23,212
1993	7	6,774	16	5,942	342	13,067					365	25,783
1994	7	6,774	18	6,210	352	13,655					377	26,639
1995	7	6,774	18	6,210	363	14,064					388	27,048
1996	7	6,774	21	6,850	374	15,312	190	2,375			592	31,311
1997	8	7,674	20	6,530	381	15,810	188	2,331			597	32,345
1998	8	7,674	20	6,863	387	16,364	185	2,322			600	33,223
1999	8	7,674	20	7,343	392	16,745	185	2,401			605	34,163
2000	9	8,274	24	8,636	401	17,349	185	2,414			619	36,673
2001	9	8,274	24	8,996	410	17,911	186	2,428			629	37,609
2002	9	8,274	24	8,996	421	18,082	187	2,491			641	37,843
2003	9	8,274	24	8,996	433	18,330	190	2,523			656	38,123
2004	9	8,274	26	9,528	440	18,473	194	2,549			669	38,824
2005	9	8,274	27	9,688	456	18,726	195	2,562			687	39,250
2006	9	9,150	27	11,802	464	19,274	186	2,629			686	42,855
2007	11	12,000	27	13,562	470	19,430	185	2,618	2	8	695	47,618
2008	11	12,000	26	13,659	484	22,202	183	2,631	2	8	706	50,500
2009	12	13,800	26	14,829	490	24,688	169	2,665	6	32	703	56,013
2010	12	14,850	26	15,014	501	26,257	161	2,553	6	72	706	58,745
2011	12	14,850	27	16,494	519	29,773	161	2,723	7	48	726	63,887
2012	12	14,850	29	17,884	601	27,865	154	2,487	5	44	801	63,130
2013	12	15,300	29	18,070	557	31,239	148	2,471	5	41	751	67,121
2014	12	15,750	31	19,174	586	33,818	131	2,335	5	44	765	71,120
2015	13	16,950	37	22,854	591	35,551	134	2,361	5	44	780	77,759
2016	14	18,150	36	24,040	624	38,940	136	2,474	6	52	816	83,656
2017	14	18,150	38	25,610	650	42,116	111	2,071	40	215	853	88,162
2018	16	20,850	42	22,500	689	46,828	86	1,674	40	212	873	92,065
2019	16	22,950	45	30,970	722	50,278	79	1,561	40	216	902	105,975

Table 2.11
Voltage-wise Grid Stations & MVA Capacities - Punjab

Fiscal Year	500 kV		220 kV		132KV		66kV		33kV		Total	
	No. of Grid Stations	Capacity (MVA)	No. of Grid Stations	Capacity (MVA)	No. of Grid Stations	Capacity (MVA)	No. of Grid Stations	Capacity (MVA)	No. of Grid Stations	Capacity (MVA)	No. of Grid Stations	Capacity (MVA)
1981	0	0	5	1,563	104	3,880					109	5,443
1982	1	900	6	1,823	112	4,075					119	6,798
1983	1	900	8	2,043	125	4,595					134	7,538
1984	1	900	7	2,466	136	4,864					144	8,230
1985	1	900	7	2,466	148	5,211					156	8,577
1986	1	900	8	2,466	167	5,686					176	9,052
1987	2	2,250	9	3,211	168	6,575					179	12,036
1988	2	2,250	10	3,656	170	6,913					182	12,819
1989	2	2,250	11	3,642	177	7,200					190	13,092
1990	2	2,250	11	3,602	183	7,794					196	13,646
1991	2	2,250	11	4,182	197	8,504					210	14,936
1992	2	2,250	12	4,662	203	9,407					217	16,319
1993	3	4,050	12	4,662	207	9,608					222	18,320
1994	3	4,050	14	4,930	212	10,083					229	19,063
1995	3	4,050	14	4,930	217	10,394					234	19,374
1996	3	4,050	17	5,410	231	11,238	113	1,472			364	22,170
1997	4	4,950	16	5,090	234	11,536	111	1,450			365	23,026
1998	4	4,950	16	5,250	238	11,953	110	1,410			368	23,563
1999	4	4,950	16	5,570	241	12,109	108	1,431			369	24,060
2000	5	5,550	19	6,543	246	12,415	108	1,431			378	25,939
2001	5	5,550	19	6,903	250	12,626	108	1,431			382	26,510
2002	5	5,550	19	6,903	258	12,758	109	1,494			391	26,705
2003	5	5,550	19	6,903	265	12,914	109	1,494			398	26,861
2004	5	5,550	21	7,435	269	12,992	109	1,494			404	27,471
2005	5	5,550	22	7,595	278	13,161	109	1,494			414	27,800
2006	5	5,550	19	8,442	278	13,161	98	1,486			400	28,639
2007	6	7,200	19	9,242	280	13,187	97	1,473			402	31,102
2008	6	7,200	18	9,499	286	15,273	94	1,451			404	33,423
2009	7	9,000	18	10,669	296	17,182	92	1,490	1	10	414	38,352
2010	7	10,050	18	10,694	304	18,367	83	1,407	1	10	413	40,527
2011	7	10,050	18	12,014	311	21,153	82	1,522	2	22	420	44,761
2012	7	10,050	19	12,584	355	19,147	79	1,421	2	22	462	43,224
2013	7	10,050	19	12,610	339	21,784	74	1,364	2	22	441	45,830
2014	7	10,050	21	13,214	361	23,426	59	1,216	2	22	450	47,927
2015	8	11,250	25	16,074	366	24,620	65	1,275	2	22	466	53,240
2016	8	11,250	25	16,740	386	27,019	66	1,325	2	26	487	56,360
2017	8	11,250	27	18,220	400	29,238	51	1,074	3	33	489	59,815
2018	10	13,950	28	15,890	427	32,470	32	770	2	20	499	63,100
2019	10	16,050	28	22,610	446	35,385	29	671	2	24	515	74,740

Table 2.12
Voltage-wise Grid Stations & MVA Capacity - Sindh

Fiscal Year	500 kV		220 kV		132 kV		66 kV		33 kV		Total	
	No. of Grid Stations	Capacity (MVA)	No. of Grid Stations	Capacity (MVA)	No. of Grid Stations	Capacity (MVA)	No. of Grid Stations	Capacity (MVA)	No. of Grid Stations	Capacity (MVA)	No. of Grid Stations	Capacity (MVA)
1980					26	528					26	528
1981					37	747					37	747
1982					40	786					40	786
1983					43	851					43	851
1984	1	450	1	160	47	1,013					49	1,623
1985	1	450	1	160	48	1,092					50	1,702
1986	1	450	1	160	48	1,254					50	1,864
1987	2	1,350	1	160	54	1,193					57	2,703
1988	2	1,350	1	160	56	1,219					59	2,729
1989	3	2,250	1	160	58	1,229					62	3,639
1990	3	2,250	1	160	61	1,265					65	3,675
1991	3	2,250	1	160	63	1,285					67	3,695
1992	3	2,250	1	160	65	1,357					69	3,767
1993	3	2,250	1	160	66	1,389					70	3,799
1994	3	2,250	1	160	69	1,457					73	3,867
1995	3	2,250	1	160	71	1,491					75	3,901
1996	3	2,250	1	320	64	1,606	35	342			103	4,518
1997	3	2,250	1	320	66	1,690	36	348			106	4,608
1998	3	2,250	1	320	66	1,690	36	361			106	4,621
1999	3	2,250	1	320	66	1,690	37	390			107	4,650
2000	3	2,250	2	640	67	1,716	37	390			109	4,996
2001	3	2,250	2	640	68	1,762	38	398			111	5,050
2002	3	2,250	2	640	68	1,762	38	398			111	5,050
2003	3	2,250	2	640	71	1,828	38	398			114	5,116
2004	3	2,250	2	640	72	1,841	39	404			116	5,135
2005	3	2,250	2	640	73	1,854	40	417			118	5,161
2006	3	2,700	3	1,440	79	2,248	38	407			123	6,795
2007	4	3,900	3	1,600	80	2,261	39	415			126	8,176
2008	4	3,900	3	1,600	82	2,600	37	418			126	8,518
2009	4	3,900	3	1,600	83	2,763	36	444			126	8,707
2010	4	3,900	3	1,760	84	2,920	36	433			127	9,013
2011	4	3,900	4	1,920	90	3,208	37	477			135	9,505
2012	4	3,900	5	2,490	103	3,152	35	429			147	9,971
2013	4	3,900	5	2,490	93	3,338	37	487			139	10,215
2014	4	4,350	5	2,900	97	3,550	37	493			143	11,293
2015	4	4,350	5	2,900	98	3,771	34	454			141	11,475
2016	5	5,550	4	2,990	106	3,977	34	462			149	12,979
2017	5	5,550	4	2,990	108	4,349	26	358			143	13,247
2018	5	5,550	5	2,300	111	4,971	24	323			145	13,144
2019	5	5,550	5	4,010	116	5,140	24	349	0	0	150	15,048

Table 2.13
Voltage-wise Grid Stations & MVA Capacities - Khyber Pakhtunkhwa

Fiscal Year	500 kV		220 kV		132 kV		66 kV		33 kV		Total	
	No. of Grid Stations	Capacity (MVA)	No. of Grid Stations	Capacity (MVA)	No. of Grid Stations	Capacity (MVA)	No. of Grid Stations	Capacity (MVA)	No. of Grid Stations	Capacity (MVA)	No. of Grid Stations	Capacity (MVA)
1981					21	625					21	625
1982					23	638					23	638
1983			1	320	25	659					26	979
1984			1	320	23	633					24	953
1985			1	320	27	751					28	1,071
1986			1	320	27	874					28	1,194
1987			1	320	30	797					31	1,117
1988			1	320	30	797					31	1,117
1989	1	474	1	320	33	836					35	1,630
1990	1	474	1	320	36	1,162					38	1,956
1991	1	474	1	320	37	1,279					39	2,073
1992	1	474	1	320	37	1,463					39	2,257
1993	1	474	2	800	37	1,503					40	2,777
1994	1	474	2	800	39	1,542					42	2,816
1995	1	474	2	800	42	1,600					45	2,874
1996	1	474	1	480	48	1,828	33	451			83	3,233
1997	1	474	1	480	49	1,906	32	423			83	3,283
1998	1	474	1	653	49	2,010	32	468			83	3,605
1999	1	474	1	653	49	2,114	32	474			83	3,715
2000	1	474	1	653	49	2,249	32	487			83	3,863
2001	1	474	1	653	50	2,470	32	487			84	4,084
2002	1	474	1	653	52	2,496	32	487			86	4,110
2003	1	474	1	653	53	2,509	34	506			89	4,142
2004	1	474	1	653	55	2,561	35	513			92	4,201
2005	1	474	1	653	60	2,626	35	513			97	4,266
2006	1	900	3	1,120	63	2,800	39	575			106	5,395
2007	1	900	3	1,920	64	2,878	38	569			106	6,267
2008	1	900	3	1,760	70	3,225	40	604			114	6,489
2009	1	900	3	1,760	65	3,150	30	548	3	14	102	6,372
2010	1	900	3	1,760	65	3,294	31	543	3	54	103	6,551
2011	1	900	3	1,760	66	3,516	31	544	3	18	104	6,737
2012	1	900	3	2,010	81	3,515	30	476	3	22	118	6,923
2013	1	1,350	3	2,170	70	3,900	27	471	3	19	104	7,910
2014	1	1,350	3	2,260	72	4,462	25	465	3	22	104	8,559
2015	1	1,350	3	2,260	70	4,700	25	471	3	22	102	8,802
2016	1	1,350	3	2,690	72	5,251	26	499	4	26	106	9,815
2017	1	1,350	3	2,780	77	5,899	25	517	7	38	113	10,583
2018	1	1,350	4	2,370	82	6,296	25	504	6	32	118	10,552
2019	1	1,350	7	2,320	88	6,570	23	509	6	32	125	10,780

Table 2.14
Voltage-wise Grid Stations & MVA Capacities - Baluchistan

Fiscal Year	500 kV		220 kV		132 kV		66 kV		33 kV		Total	
	No. of Grid Stations	Capacity (MVA)	No. of Grid Stations	Capacity (MVA)	No. of Grid Stations	Capacity (MVA)	No. of Grid Stations	Capacity (MVA)	No. of Grid Stations	Capacity (MVA)	No. of Grid Stations	Capacity (MVA)
1981			0	0	8	141					8	141
1982			1	160	9	151					10	311
1983			1	160	10	203					11	363
1984			1	160	13	267					14	427
1985			1	160	17	325					18	485
1986			1	160	19	383					20	543
1987			1	160	24	415					25	575
1988			1	160	27	480					28	640
1989			1	160	28	490					29	650
1990			1	320	29	504					30	824
1991			1	320	29	504					30	824
1992			1	320	29	549					30	869
1993			1	320	32	567					33	887
1994			1	320	32	573					33	893
1995			1	320	33	579					34	899
1996			2	640	31	640	9	110			42	1,390
1997			2	640	32	678	9	110			43	1,428
1998			2	640	34	711	7	83			43	1,434
1999			2	800	36	832	8	106			46	1,738
2000			2	800	39	969	8	106			49	1,875
2001			2	800	42	1,053	8	112			52	1,965
2002			2	800	43	1,066	8	112			53	1,978
2003			2	800	44	1,079	9	125			55	2,004
2004			2	800	44	1,079	11	138			57	2,017
2005			2	800	45	1,085	11	138			58	2,023
2006			2	800	44	1,065	11	161			57	2,026
2007			2	800	46	1,104	11	161	2	8	61	2,073
2008			2	800	46	1,104	12	157	2	8	62	2,070
2009			2	800	46	1,593	11	183	2	8	61	2,583
2010			2	800	48	1,677	11	169	2	8	63	2,654
2011			2	800	52	1,896	11	181	2	8	67	2,884
2012			2	800	62	2,051	10	161			74	3,012
2013			2	800	55	2,218	10	149			67	3,166
2014			2	800	56	2,380	10	162			68	3,342
2015			4	1,620	57	2,460	10	162			71	4,242
2016			4	1,620	60	2,694	10	188			74	4,501
2017			4	1,620	65	2,631	9	122	30	144	108	4,517
2018			5	1,940	69	3,092	5	78	32	160	111	5,270
2019			5	2,030	72	3,183	3	33	32	160	112	5,406

Table 2.15
Summary of Grid Stations & MVA Capacities

Province	500 kV		220 kV		132 kV		66 kV		33 kV		Total	
	No. of grid Stations	Capacity (MVA)	No. of grid Stations	Capacity (MVA)	No. of grid Stations	Capacity (MVA)	No. of grid Stations	Capacity (MVA)	No. of grid Stations	Capacity (MVA)	No. of grid Stations	Capacity (MVA)
Punjab	10	16,050	28	22,610	446	35,385	29	671	2	24	515	74,740
Sindh	5	5,550	5	4,010	116	5,140	24	349	0	0	150	15,048
Khyber Pakhtunkhwa	1	1,350	7	2,320	88	6,570	23	509	6	32	125	10,780
Balochistan	0	0	5	2,030	72	3,183	3	33	32	160	112	5,406
Total	**16**	**22,950**	**45**	**30,970**	**722**	**50,278**	**79**	**1,561**	**40**	**216**	**902**	**105,975**

Table 2.16
NTDC Grid Stations - 500 kV

Sr. No.	Name	DISCO	Province	Trans-formers	Capacity (MVA)	Trans-formers	Capacity (MVA)	Trans-formers	Capacity (MVA)	Total Capacity (MVA)
	Lahore Region									
1	Gatti Faisalabad	FESCO	Punjab	4	450	1	600	0	0	2,400
2	Sheikhupura	LESCO	Punjab	4	600	0	0	0	0	2,400
3	Yousafwala-Sahiwal	MEPCO	Punjab	2	600	0	0	0	0	1,200
4	New Lahore	LESCO	Punjab	3	750	0	0	0	0	2,250
5	Nokhar	GEPCO	Punjab	2	600	0	0	0	0	1,200
	Islamabad Region									
6	Rawat	IESCO	/Punjab	1	750	3	450	0	0	2,100
7	Sheikh Muhammadi	PESCO/ TESCO	KPK	0	0	3	450	0	0	1,350
	Multan Region									
8	Multan	MEPCO	Punjab	2	450	0	0	0	0	900
9	Muzaffar Garh	MEPCO	Punjab	2	600	0	0	0	0	1,200
10	Dera Ghazi Khan	MEPCO	Punjab	2	600	0	0	0	0	1,200
11	Rahim Yar Khan	MEPCO	Punjab	2	600	0	0	0	0	1,200
	Hyderabad Region									
12	Dadu	HESCO/ SEPCO	Sindh	2	450	2	160	1	250	1,470
13	Guddu	SEPCO/ MEPCO	Sindh	3	450	0	0	0	0	1,350
14	Jamshoro	HESCO	Sindh	2	450	2	160	0	0	1,220
15	North Karachi Industrial (NKI)	K Electric	Sindh	2	600	0	0	0	0	1,200
16	Shikarpur	SEPCO	Sindh	2	600	2	160	1	250	1,770
	Total									24,410

Table 2.17
NTDC Grid Stations - 220 kV

Sr. No.	Name	DISCO	Province	No. of Transformers	Capacity (MVA)	No. of Transformers	Capacity (MVA)	Total No. of Transformers	Total Capacity (MVA)
	Lahore Region								
1	Samundari Road FSD	FESCO	Punjab	3	160	0	0	3	480
2	Jaranwala Road FSD	FESCO	Punjab	4	160	0	0	4	640
3	Nishatabad FSD	FESCO	Punjab	4	160	0	0	4	640
4	Bandala FSD	FESCO	Punjab	1	160	1	250	2	410
5	T.T Singh	FESCO	Punjab	2	160	2	250	4	820
6	Ludewala Sargodha	FESCO	Punjab	2	160	1	250	3	570
7	Sailkot	GEPCO	Punjab	3	160	0	0	3	480
8	Gujrat	GEPCO	Punjab	0	0	3	250	3	750
9	Ghakhar	GEPCO	Punjab	4	160	0	0	4	640
10	Kala Shah Kaku Lahore	LESCO	Punjab	4	160	0	0	4	640
11	Ravi Lahore	LESCO	Punjab	0	0	3	250	3	750
12	Bund Road Lahore	LESCO	Punjab	0	0	4	250	4	1,000
13	New Shalamar Lahore	LESCO	Punjab	3	160	0	0	3	480
14	New KotLakhPat Lahore	LESCO	Punjab	0	0	3	250	3	750
15	Ghazi Lahore (New GIS)	LESCO	Punjab	0	0	2	250	2	500
16	Sarfaraz Nagar Lahore	LESCO	Punjab	4	160	0	0	4	640
17	Okara	LESCO	Punjab	0	0	2	250	2	500
18	Wapda Town Lahore	LESCO	Punjab	3	160	0	0	3	480
19	Kassowal	MEPCO	Punjab	2	160	0	0	2	320
	Islamabad Region								
1	Bannu	PESCO/TESCO	KPK	2	160	1	250	3	570
2	Burhan	IESCO/ PESCO	Punjab	0	0	4	250	4	1,000
3	Daudkhel	FESCO/ PESCO	Punjab	2	160	0	0	2	320
4	Islamabad University	IESCO	Islamabad	0	0	2	250	2	500
5	Mardan	PESCO/ TESCO	KPK	0	0	3	250	3	750
6	Sangjani	IESCO	Islamabad	4	160	0	0	4	640
7	Shahibagh	PESCO/ TESCO	KPK	4	160	0	0	4	640

Sr. No.	Name	DISCO	Province	No. of Transformers	Capacity (MVA)	No. of Transformers	Capacity (MVA)	Total No. of Transformers	Total Capacity (MVA)
8	Mansehra	PESCO	KPK	0	0	2	250	2	500
9	Chakdara	PESCO/ TESCO	KPK	0	0	2	250	2	500
10	DI-Khan	PESCO	KPK	0	0	2	250	2	500
11	Nowshera	PESCO	KPK	0	0	2	250	2	500
	Hyedrabad Region								
1	Hala Road	HESCO	Sindh	2	160	1	250	3	570
2	Jhampir	HESCO	Sindh	0	0	3	250	3	750
3	T.M.Khan	HESCO	Sindh	2	160	0	0	2	320
4	Rohri	SEPCO	Sindh	0	0	2	250	2	500
5	Daharki	SEPCO	Sindh	1	160	1	250	2	410
	Quetta Region								
1	Sibbi	QESCO	Balochistan	2	160	0	0	2	320
2	Quetta	QESCO	Balochistan	2	160	1	250	3	570
3	Khuzdar	QESCO	Balochistan	2	160	0	0	2	320
4	Loralai	QESCO	Balochistan	0	0	2	250	2	500
5	Dera Murad Jamali	QESCO	Balochistan	2	160	0	0	2	320
	Multan Region								
1	Muzaffar Garh	MEPCO	Punjab	2	160	0	0	2	320
2	Bahawal Pur	MEPCO	Punjab	1	160	2	250	3	660
3	Vehari	MEPCO	Punjab	2	320	1	250	3	890
4	Chishtian	MEPCO	Punjab	2	160	0	0	2	320
5	Lal Sohanra	MEPCO	Punjab	0	0	1	250	1	250
	Sub Total (A)								24930

NATIONAL TRANSMISSION & DESPATCH COMPANY LIMITED

DISTRIBUTION STATISTICS

	2018-19
Energy Sales	94,089 GWh
Number of Consumers	28,473,069
Maximum Demand recorded	21,736 MW
Maximum Demand Computed	25,627 MW
DISCOs Distribution Losses 132/11 kV	17 %

NATIONAL TRANSMISSION & DESPATCH COMPANY LIMITED

Table 3.1
System Energy, Energy Billed, Consumed and Losses - PEPCO

Fiscal Year	Energy Purchased by CPPA	Transmission Losses		Units Supplied to DISCOs by CPPA	Units Purchased Directly by DISCOs	Distribution Losses		Units Sold by DISCOs to Consumers (Incl. K Electric & IPPs)	Transmission & Distribution Losses	
		Total	Percentage			Total	Percentage		Total	Percentage
	(GWh)	(GWh)	(%)	(GWh)	(GWh)	(GWh)	(%)	(GWh)	(GWh)	(%)
1981	12,862							9,068	3,794	29.5
1982	14,378							10,288	4,090	28.4
1983	16,093							11,587	4,506	28.0
1984	17,655							12,762	4,893	27.7
1985	18,376							13,756	4,620	25.1
1986	20,656							15,504	5,152	24.9
1987	23,228							17,745	5,483	23.6
1988	27,002							20,702	6,300	23.3
1989	28,410							21,982	6,428	22.6
1990	30,809							24,121	6,688	21.7
1991	33,580							26,585	6,995	20.8
1992	37,143							29,267	7,876	21.2
1993	39,854							31,272	8,582	21.5
1994	41,289							32,131	9,158	22.2
1995	44,932	3,522	7.8	41,410		6,378	15.40	35,032	9,900	23.2
1996	47,434	3,692	7.8	43,742		6,817	15.58	36,925	10,509	23.4
1997	49,564	4,169	8.4	45,395		6,866	15.13	38,529	11,035	23.5
1998	52,192	4,470	8.6	47,722		8,300	17.39	39,422	12,770	26.0
1999	52,752	4,181	7.9	48,571		9,671	19.91	38,900	13,852	27.8
2000	54,672	4,017	7.3	50,655		9,745	19.24	40,910	13,762	26.6
2001	57,282	4,594	8.0	52,688		9,304	17.66	43,384	13,898	25.7
2002	59,545	4,600	7.7	54,945		9,741	17.73	45,204	14,341	25.5
2003	62,694	4,908	7.8	57,786		10,365	17.94	47,421	15,273	25.8
2004	67,697	5,054	7.5	62,643		11,151	17.80	51,492	16,205	25.3
2005	71,670	5,467	7.6	66,203		10,925	16.50	55,278	16,392	24.1
2006	80,404	5,839	7.3	74,565		12,160	16.31	62,405	17,999	23.6
2007	85,987	3,268	3.8	82,719		15,239	18.42	67,480	18,507	22.2
2008	84,584	2,948	3.5	81,636		15,097	18.49	66,539	18,044	22.0
2009	82,702	2,959	3.6	79,743		14,457	18.13	65,286	17,416	21.7
2010	87,115	2,740	3.1	84,375		15,497	18.37	68,878	18,237	21.5
2011	89,775	2,740	3.1	87,035	686	16,163	18.57	71,672	18,903	21.6
2012	88,987	2,508	2.8	86,479	736	15,847	18.32	71,368	18,355	21.1
2013	87,080	2,656	3.1	84,424	1,190	15,106	17.89	70,508	17,762	20.9
2014	93,777	2,587	2.8	91,190	1,367	16,326	17.90	76,543	18,913	20.7
2015	96,463	2,620	2.7	93,843	1,498	16,744	17.84	78,113	19,364	20.6
2016	100,871	2,623	2.6	98,248	251	16,762	17.06	81,737	19,385	19.7
2017	106,796	2,466	2.3	104,330	272	17,834	17.09	86,763	20,300	19.4
2018	120,062	2,923	2.4	117,139	665	20,607	17.59	97,197	23,530	20.0
2019	122,302	3,464	2.8	118,838	407	20,199	17.00	99,046	23,663	19.8

Table 3.2
Number of Consumers Category wise - PEPCO

Fiscal Year	Domestic	Commercial	Industrial	Agricultural	Public Lighting	Bulk Supply, & Others	Total
1981	2,479,453	571,800	111,484	104,108	2,090	1,010	3,269,945
1982	2,732,903	624,900	115,890	111,278	2,161	1,118	3,588,250
1983	2,989,397	674,600	119,417	114,390	2,390	1,225	3,901,419
1984	3,261,362	724,462	123,508	118,265	2,511	1,428	4,231,536
1985	3,500,171	770,465	128,441	120,905	2,447	1,541	4,523,970
1986	3,779,838	834,127	133,573	124,918	2,647	1,684	4,876,787
1987	4,106,424	898,118	139,537	130,034	2,801	1,772	5,278,686
1988	4,525,987	964,377	147,439	136,860	3,017	1,943	5,779,623
1989	5,077,686	1,039,033	153,042	143,869	3,462	2,075	6,419,167
1990	5,467,690	1,088,932	158,800	149,554	3,453	2,250	6,870,679
1991	5,805,382	1,134,754	162,624	152,169	3,531	2,261	7,260,721
1992	6,219,656	1,185,723	169,436	155,305	3,759	2,362	7,736,241
1993	6,622,977	1,221,223	172,145	153,088	3,829	2,488	8,175,750
1994	6,995,561	1,257,887	174,577	157,710	3,730	2,577	8,592,042
1995	7,376,032	1,342,946	179,392	162,303	3,954	2,649	9,067,276
1996	7,783,832	1,344,975	181,092	165,114	3,990	2,728	9,481,731
1997	8,154,894	1,354,940	184,301	167,245	4,064	3,168	9,868,612
1998	8,455,442	1,396,973	186,539	170,562	4,645	2,911	10,217,072
1999	8,911,587	1,517,199	190,084	173,078	4,708	2,979	10,799,635
2000	9,553,828	1,653,870	194,566	174,456	4,892	3,045	11,584,657
2001	10,045,035	1,737,199	195,511	180,411	4,993	3,195	12,166,344
2002	10,482,804	1,803,132	199,839	184,032	4,854	3,361	12,678,022
2003	11,043,530	1,867,226	206,336	191,961	5,441	3,739	13,318,233
2004	11,737,078	1,935,462	210,296	198,829	5,800	3,873	14,091,338
2005	12,490,189	1,983,216	212,233	200,756	6,171	3,677	14,896,242
2006	13,389,762	2,068,312	222,283	220,501	6,550	3,753	15,911,161
2007	14,354,365	2,151,971	233,162	236,255	6,990	3,811	16,986,554
2008	15,226,711	2,229,403	242,401	245,640	7,337	3,874	17,955,366
2009	15,859,373	2,291,628	253,089	258,368	7,680	3,976	18,674,114
2010	16,673,015	2,362,312	263,507	271,268	8,034	4,088	19,582,224
2011	17,322,140	2,421,221	273,067	280,603	8,386	4,066	20,309,483
2012	17,978,395	2,482,702	286,401	286,287	8,698	4,128	21,046,611
2013	18,713,537	2,550,808	296,849	301,115	9,107	4,184	21,875,600
2014	19,323,307	2,635,086	305,294	310,578	9,369	4,236	22,587,870
2015	20,148,495	2,723,708	315,116	318,081	9,554	4,293	23,519,247
2016	21,040,707	2,814,234	325,816	321,055	9,857	5,030	24,516,699
2017	21,991,479	2,905,517	336,045	323,524	10,124	5,114	25,571,803
2018	23,173,856	3,028,054	339,853	315,021	10,426	149,335	27,016,545
2019	24,465,300	3,144,247	342,949	326,656	10,567	183,350	28,473,069

Table 3.3
Number of Consumers DISCO wise

Number of Consumers Company wise

Discos & Category		2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19
LESCO	Domestic	2,702,503	2,808,748	2,936,951	3,052,697	3,228,510	3,403,443	3,556,800	3,848,417	4,108,067
	Commercial	488,264	498,334	510,604	524,702	542,738	561,030	576,691	602,268	623,529
	Industrial	67,895	70,342	72,699	75,006	77,277	79,588	81,640	84,183	84,703
	Bulk Supply	482	488	489	491	490	490	496	499	494
	Agricultural	52,025	53,750	56,140	57,313	58,382	59,136	59,664	60,621	61,547
	Public Lighting	1,853	1,909	2,076	2,154	2,227	2,338	2,424	2,547	2,554
	Others	211	211	219	223	237	241	246	249	8,968
	Total	3,313,233	3,433,782	3,579,178	3,712,586	3,909,861	4,106,266	4,277,961	4,598,784	4,889,862
GEPCO	Domestic	2,181,694	2,258,940	2,341,686	2,419,346	2,506,136	2,621,619	2,726,893	2,860,915	3,021,760
	Commercial	279,974	287,249	294,733	304,496	313,573	324,937	334,915	349,789	366,047
	Industrial	52,516	54,767	56,838	57,965	60,542	63,705	66,845	70,063	73,133
	Bulk Supply	131	135	139	141	149	153	157	164	165
	Agricultural	35,415	37,277	40,645	41,583	42,563	43,055	43,594	44,749	46,887
	Public Lighting	459	477	496	507	514	532	549	578	580
	Others	14	15	15	15	16	16	16	20,017	20,380
	Total	2,550,203	2,638,860	2,734,552	2,824,053	2,923,493	3,054,017	3,172,969	3,346,275	3,528,952
FESCO	Domestic	2,611,050	2,712,234	2,806,555	2,870,418	3,012,756	3,141,713	3,280,658	3,457,159	3,651,710
	Commercial	308,637	316,577	324,089	332,675	344,642	356,032	368,321	383,451	399,688
	Industrial	40,591	42,099	43,836	45,120	46,602	47,909	49,350	49,314	50,027
	Bulk Supply	196	204	209	215	218	227	229	232	223
	Agricultural	34,581	36,692	38,048	38,921	39,522	39,995	40,580	40,772	42,763
	Public Lighting	1,380	1,410	1,432	1,470	1,500	1,566	1,640	1,719	1,782
	Others	101	103	104	111	117	123	128	20,485	25,216
	Total	2,996,536	3,109,319	3,214,273	3,288,930	3,445,357	3,587,565	3,740,906	3,953,132	4,171,409
IESCO	Domestic	1,809,525	1,882,619	1,952,892	2,013,135	2,085,256	2,174,389	2,270,874	2,405,253	2,528,865
	Commercial	308,519	318,700	329,161	340,920	350,988	362,837	374,610	394,381	411,219
	Industrial	12,797	13,337	13,967	14,534	15,048	15,480	15,979	16,053	16,272
	Bulk Supply	912	934	951	962	969	984	1,000	996	960
	Agricultural	7,466	7,729	7,933	8,052	8,192	8,293	8,436	7,182	7,087
	Public Lighting	1,470	1,506	1,607	1,659	1,674	1,713	1,742	1,761	1,829
	Others	39	40	40	40	40	41	41	11,612	13,758
	Total	2,140,728	2,224,865	2,306,551	2,379,302	2,462,167	2,563,737	2,672,682	2,837,238	2,979,990
MEPCO	Domestic	3,707,866	3,888,629	4,116,231	4,278,223	4,508,987	4,746,997	5,050,877	5,371,111	5,748,493
	Commercial	403,769	416,928	433,736	455,088	476,683	494,523	514,327	536,876	559,213
	Industrial	45,020	46,210	48,190	49,599	51,135	52,845	54,176	54,772	56,121
	Bulk Supply	402	407	411	420	429	437	452	460	454
	Agricultural	67,958	70,438	74,077	75,484	77,317	78,399	79,965	79,965	85,977
	Public Lighting	1,266	1,299	1,338	1,365	1,402	1,448	1,470	1,494	1,501
	Others	108	110	112	117	120	124	125	28,105	33,673
	Total	4,226,389	4,424,021	4,674,095	4,860,296	5,116,073	5,374,773	5,701,392	6,072,783	6,485,432

Number of Consumers Company wise

Discos & Category		2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19
PESCO	Domestic	2,281,849	2,361,837	2,447,438	2,523,470	2,602,181	2,703,406	2,805,422	2,908,414	3,029,784
	Commercial	264,582	271,688	279,479	289,155	298,739	309,919	321,802	337,386	349,985
	Industrial	23,460	28,156	28,965	29,760	30,344	31,204	32,023	29,872	26,582
	Bulk Supply	873	875	877	878	888	891	904	925	887
	Agricultural	26,911	23,190	23,228	23,441	23,328	23,371	23,289	23,083	22,896
	Public Lighting	843	972	1,013	1,028	1,040	1,057	1,088	1,096	1,083
	Others	46	46	46	46	47	48	48	30,131	41,228
	Total	2,598,564	2,686,764	2,781,046	2,867,778	2,956,567	3,069,896	3,184,576	3,330,907	3,472,445
TESCO	Domestic	399,342	399,395	400,598	400,600	400,608	401,229	402,521	402,209	402,027
	Commercial	28,115	28,123	28,132	28,202	28,217	28,277	28,382	28,625	28,688
	Industrial	4,119	4,050	4,035	4,081	4,101	4,142	4,236	4,268	4,243
	Bulk Supply	54	55	55	55	55	55	56	57	65
	Agricultural	8,388	8,477	8,548	8,548	8,576	8,031	6,741	6,118	6,187
	Public Lighting	0	0	0	0	5	5	5	5	5
	Others	0	0	0	0	0	0	0	1,119	1,371
	Total	440,018	440,100	441,368	441,486	441,562	441,739	441,941	442,401	442,586
HESCO	Domestic	696,633	718,422	745,501	777,599	798,206	825,409	861,184	877,262	907,377
	Commercial	135,867	138,049	140,193	143,687	146,833	150,789	156,200	159,627	163,791
	Industrial	12,534	12,960	13,407	13,834	14,311	14,784	15,313	14,924	15,250
	Bulk Supply	308	310	314	322	332	334	335	337	342
	Agricultural	14,722	15,175	15,718	16,198	16,578	16,768	17,286	13,730	14,434
	Public Lighting	483	490	494	533	533	533	540	540	540
	Others	87	87	88	90	95	96	98	14,293	13,926
	Total	860,634	885,493	915,715	952,263	976,888	1,008,713	1,050,956	1,080,713	1,115,660
SEPCO	Domestic	546,937	552,115	561,212	572,945	581,305	590,240	593,355	589,884	603,885
	Commercial	110,317	111,224	112,390	114,072	115,574	117,093	117,824	119,384	121,776
	Industrial	10,881	11,159	11,489	11,846	12,094	12,405	12,606	12,674	12,930
	Bulk Supply	476	479	489	497	504	503	507	519	527
	Agricultural	12,001	12,169	12,295	12,408	12,484	12,503	12,145	9,221	9,270
	Public Lighting	393	393	409	410	412	414	412	421	425
	Others	17	18	18	18	19	19	19	13,205	13,319
	Total	681,022	687,557	698,302	712,196	722,392	733,177	736,868	745,308	762,132
QESCO	Domestic	384,136	394,843	403,848	414,231	423,876	432,262	442,895	453,232	463,332
	Commercial	93,177	95,830	98,291	102,089	105,721	108,797	112,445	116,267	120,311
	Industrial	3,254	3,321	3,423	3,549	3,662	3,754	3,877	3,730	3,688
	Bulk Supply	210	220	229	234	238	244	253	261	266
	Agricultural	21,136	21,390	24,483	28,630	31,139	31,504	31,824	29,580	29,608
	Public Lighting	239	242	242	243	247	251	254	265	268
	Others	4	4	4	4	4	4	4	5,669	7,128
	Total	502,156	515,850	530,520	548,980	564,887	576,816	591,552	609,004	624,601

Table 3.4
Number of Consumers Province wise

Number of Consumers Province wise

Province & Category		2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19
PUNJAB	Domestic	13,012,638	13,551,170	14,154,315	14,633,819	15,341,645	16,088,161	16,886,102	17,942,855	19,058,895
	Commercial	1,789,163	1,837,788	1,892,323	1,957,881	2,028,624	2,099,359	2,168,864	2,266,765	2,359,696
	Industrial	218,819	226,755	235,530	242,224	250,604	259,527	267,990	274,385	280,256
	Bulk Supply	2,123	2,168	2,199	2,229	2,255	2,291	2,334	2,351	2,296
	Agricultural	197,445	205,886	216,843	221,353	225,976	228,878	232,239	233,289	244,261
	Public Lighting	6,428	6,601	6,949	7,155	7,317	7,597	7,825	8,099	8,246
	Others	473	479	490	506	530	545	556	80,468	101,995
	Total	15,227,089	15,830,847	16,508,649	17,065,167	17,856,951	18,686,358	19,565,910	20,808,212	22,055,645
Khyber Pakhrunkhwa	Domestic	2,681,191	2,761,232	2,848,036	2,924,070	3,002,789	3,104,635	3,207,943	3,310,623	3,431,811
	Commercial	292,697	299,811	307,611	317,357	326,956	338,196	350,184	366,011	378,673
	Industrial	27,579	32,206	33,000	33,841	34,445	35,346	36,259	34,140	30,825
	Bulk Supply	927	930	932	933	943	946	960	982	952
	Agricultural	35,299	31,667	31,776	31,989	31,904	31,402	30,030	29,201	29,083
	Public Lighting	843	972	1,013	1,028	1,045	1,062	1,093	1,101	1,088
	Others	46	46	46	46	47	48	48	31,250	42,599
	Total	3,038,582	3,126,864	3,222,414	3,309,264	3,398,129	3,511,635	3,626,517	3,773,308	3,915,031
SINDH	Domestic	1,243,570	1,270,537	1,306,713	1,350,544	1,379,511	1,415,649	1,454,539	1,467,146	1,511,262
	Commercial	246,184	249,273	252,583	257,759	262,407	267,882	274,024	279,011	285,567
	Industrial	23,415	24,119	24,896	25,680	26,405	27,189	27,919	27,598	28,180
	Bulk Supply	784	789	803	819	836	837	842	856	869
	Agricultural	26,723	27,344	28,013	28,606	29,062	29,271	29,431	22,951	23,704
	Public Lighting	876	883	903	943	945	947	952	961	965
	Others	104	105	106	108	114	115	117	27,498	27,245
	Total	1,541,656	1,573,050	1,614,017	1,664,459	1,699,280	1,741,890	1,787,824	1,826,021	1,877,792
BALOCHISTAN	Domestic	384,136	394,843	403,848	414,231	423,876	432,262	442,895	453,232	463,332
	Commercial	93,177	95,830	98,291	102,089	105,721	108,797	112,445	116,267	120,311
	Industrial	3,254	3,321	3,423	3,549	3,662	3,754	3,877	3,730	3,688
	Bulk Supply	210	220	229	234	238	244	253	261	266
	Agricultural	21,136	21,390	24,483	28,630	31,139	31,504	31,824	29,580	29,608
	Public Lighting	239	242	242	243	247	251	254	265	268
	Others	4	4	4	4	4	4	4	5,669	7,128
	Total	502,156	515,850	530,520	548,980	564,887	576,816	591,552	609,004	624,601
TOTAL	Domestic	17,321,535	17,977,782	18,712,912	19,322,664	20,147,821	21,040,707	21,991,479	23,173,856	24,465,300
	Commercial	2,421,221	2,482,702	2,550,808	2,635,086	2,723,708	2,814,234	2,905,517	3,028,054	3,144,247
	Industrial	273,067	286,401	296,849	305,294	315,116	325,816	336,045	339,853	342,949
	Bulk Supply	4,044	4,107	4,163	4,215	4,272	4,318	4,389	4,450	4,383
	Agricultural	280,603	286,287	301,115	310,578	318,081	321,055	323,524	315,021	326,656
	Public Lighting	8,386	8,698	9,107	9,369	9,554	9,857	10,124	10,426	10,567
	Others	627	634	646	664	695	712	725	144,885	178,967
	Total	20,309,483	21,046,611	21,875,600	22,587,870	23,519,247	24,516,699	25,571,803	27,016,545	28,473,069

Table 3.5
Consumption of Energy (GWh) by Economic Group

Fiscal Year	Domestic	Commercial	Industrial	Agricultural	Public Lighting	Bulk Supply, IPPs & Others	Traction	Supply to KE	Total
1981	1,858	445	3,482	2,125	58	1,056	44	0	9,068
1982	2,408	574	3,960	2,357	74	873	42	0	10,288
1983	2,866	634	4,427	2,546	78	992	44	0	11,587
1984	3,470	739	4,708	2,663	75	1,069	38	0	12,762
1985	3,887	796	5,061	2,783	77	1,115	37	0	13,756
1986	4,513	875	5,894	2,880	90	1,215	36	0	15,504
1987	5,357	991	6,436	3,452	110	1,361	38	0	17,745
1988	6,290	1,054	7,236	4,394	117	1,571	40	0	20,702
1989	6,939	1,068	7,578	4,356	127	1,795	35	82	21,982
1990	7,647	1,106	8,360	5,004	148	1,646	38	171	24,121
1991	8,617	1,152	9,115	5,596	178	1,700	33	194	26,585
1992	9,691	1,192	10,213	5,823	229	1,799	29	292	29,267
1993	11,220	1,303	10,913	5,595	195	1,925	27	94	31,272
1994	11,963	1,318	10,532	5,743	216	1,964	27	368	32,131
1995	13,448	1,490	10,604	6,220	252	2,112	22	884	35,032
1996	14,792	1,648	10,335	6,657	301	2,377	20	795	36,925
1997	15,594	1,757	10,115	7,018	308	2,485	19	1,233	38,529
1998	16,367	1,768	10,238	6,888	307	2,694	16	1,145	39,422
1999	16,927	1,825	9,945	5,575	159	2,646	15	1,808	38,900
2000	18,942	2,003	10,773	4,512	150	2,676	15	1,840	40,910
2001	20,019	2,120	11,744	4,896	146	2,634	14	1,811	43,384
2002	20,549	2,285	12,637	5,582	149	2,662	12	1,329	45,204
2003	20,855	2,516	13,462	5,986	166	2,626	10	1,801	47,421
2004	22,668	2,884	14,476	6,624	192	2,796	9	1,843	51,492
2005	24,049	3,192	15,568	6,921	227	2,892	12	2,416	55,278
2006	27,009	3,768	16,596	7,873	279	3,031	13	3,836	62,405
2007	28,990	4,290	17,603	8,097	316	3,267	12	4,905	67,480
2008	28,751	4,358	17,299	8,380	340	3,332	8	4,072	66,539
2009	27,787	4,203	16,035	8,695	347	3,198	5	5,014	65,286
2010	29,507	4,466	16,371	9,585	372	3,367	2	5,208	68,878
2011	30,973	4,683	17,700	8,847	374	3,644	2	5,449	71,672
2012	30,391	4,563	18,402	8,414	360	3,553	1	5,684	71,368
2013	30,356	4,435	18,636	7,548	351	3,719	0	5,463	70,508
2014	33,357	4,795	20,549	8,130	352	3,919	0	5,441	76,543
2015	34,600	4,853	21,085	7,866	330	3,951	0	5,427	78,113
2016	37,123	5,417	21,150	8,364	295	4,329	0	5,059	81,737
2017	41,412	6,114	20,067	9,063	298	4,732	0	5,077	86,763
2018	46,114	6,753	23,274	9,978	319	5,631	0	5,128	97,197
2019	45,590	6,629	24,285	9,676	291	7,619	0	4,957	99,046

Table 3.6
Electricity Consumption per Consumer

Fiscal Year	Domestic	Commercial	Industrial	Agricultural	Total
1981	749	779	31,234	20,408	2,773
1982	881	918	34,174	21,177	2,867
1983	959	940	37,069	22,257	2,970
1984	1,064	1,020	38,119	22,520	3,016
1985	1,111	1,033	39,406	23,018	3,041
1986	1,194	1,049	44,129	23,056	3,179
1987	1,304	1,103	46,122	26,551	3,362
1988	1,390	1,093	49,077	32,109	3,582
1989	1,367	1,028	49,519	30,280	3,424
1990	1,399	1,016	52,642	33,461	3,511
1991	1,484	1,015	56,047	36,773	3,662
1992	1,558	1,005	60,277	37,491	3,784
1993	1,694	1,067	63,392	36,548	3,825
1994	1,710	1,048	60,328	36,412	3,740
1995	1,823	1,110	59,108	38,323	3,864
1996	1,900	1,225	57,070	40,320	3,894
1997	1,912	1,297	54,883	41,962	3,904
1998	1,936	1,265	54,884	40,383	3,858
1999	1,899	1,203	52,317	32,213	3,602
2000	1,983	1,211	55,368	25,861	3,531
2001	1,993	1,220	60,068	27,137	3,566
2002	1,960	1,267	63,235	30,329	3,566
2003	1,888	1,347	65,244	31,181	3,561
2004	1,931	1,490	68,837	33,317	3,654
2005	1,925	1,609	73,354	34,476	3,711
2006	2,017	1,822	74,663	35,705	3,922
2007	2,020	1,993	75,498	34,274	3,973
2008	1,886	1,955	71,365	34,114	3,706
2009	1,750	1,835	63,358	33,649	3,496
2010	1,768	1,890	62,130	35,332	3,517
2011	1,788	1,934	64,804	31,529	3,529
2012	1,689	1,838	64,250	29,391	3,391
2013	1,621	1,738	62,775	25,067	3,223
2014	1,726	1,820	67,305	26,182	3,389
2015	1,716	1,782	66,913	24,731	3,321
2016	1,764	1,925	64,913	26,050	3,334
2017	1,883	2,105	59,712	28,016	3,393
2018	1,990	2,230	68,485	31,677	3,598
2019	1,863	2,108	70,813	29,621	3,479

Table 3.7
Province wise Number of Villages Electrified

Fiscal Year	Punjab	Khyber Paktunkhwa	Sindh	Balochistan	Total	Progressive Total
1981	550	186	247	40	1,023	10,554
1982	925	226	297	64	1,512	12,066
1983	1,399	243	303	41	1,986	14,052
1984	1,355	240	408	182	2,185	16,237
1985	681	212	280	227	1,400	17,637
1986	1,170	363	518	281	2,332	19,969
1987	1,536	600	745	312	3,193	23,162
1988	896	304	740	176	2,116	25,278
1989	1,090	387	593	41	2,111	27,389
1990	1,769	310	720	129	2,928	30,317
1991	2,570	511	666	104	3,851	34,168
1992	2,050	582	741	157	3,530	37,698
1993	2,753	892	933	205	4,783	42,481
1994	2,853	1,080	1,118	213	5,264	47,745
1995	3,223	1,000	1,728	262	6,213	53,958
1996	2,845	600	1,288	203	4,936	58,894
1997	1,518	361	405	133	2,417	61,311
1998	859	253	176	85	1,373	62,684
1999	890	143	175	9	1,217	63,901
2000	827	270	3	0	1,100	65,001
2001	823	431	233	106	1,593	66,594
2002	738	515	327	102	1,682	68,276
2003	1,653	134	283	166	2,236	70,512
2004	4,066	1,216	1,232	675	7,189	77,701
2005	4,896	2,158	1,455	919	9,428	87,129
2006	8,484	2,266	1,082	768	12,600	99,729
2007	9,740	1,966	1,681	816	14,203	113,932
2008	6,533	1,411	1,492	1,005	10,441	124,373
2009	5,033	1,327	1,874	1,634	9,868	134,241
2010	7,554	2,438	3,215	1,855	15,062	149,303
2011	6,015	2,364	1,990	1,336	11,705	161,008
2012	5,311	759	2,464	1,734	10,268	171,276
2013	6,375	576	2,800	1,097	10,848	182,124
2014	1,015	427	887	1,041	3,370	185,494
2015	2,475	1,856	866	827	6,024	191,518
2016	3,467	2,566	1,068	1,164	8,265	199,783
2017	2,610	3,228	920	2,027	8,785	208,568
2018	8,426	4,277	1,109	2,953	16,765	225,333
2019	3,139	3,294	625	1,336	8,394	233,727
Total	**124,973**	**44,151**	**39,905**	**24,698**	**233,727**	-

Table 3.8
DISCO-wise Length of Transmission Lines (km)

DISCOs	11 kV High Voltage Distribution System							
	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19
LESCO	25,918	26,297	26,657	27,093	27,921	28,079	28,201	29,309
GEPCO	20,990	21,971	22,216	22,468	22,604	22,718	22,861	23,234
FESCO	36,900	37,640	38,093	38,613	39,200	39,668	39,911	41,262
IESCO	23,012	23,409	23,596	24,268	24,603	24,791	24,927	25,458
MEPCO	67,221	68,647	69,453	71,102	71,971	73,430	73,132	76,057
Punjab	174,041	177,964	180,015	183,544	186,299	188,686	189,033	195,320
PESCO	32,432	33,006	33,337	33,464	34,094	34,609	34,569	36,678
TESCO	7,347	7,363	7,363	7,746	7,765	7,768	8,023	10,212
K.P.K	39,779	40,369	40,700	41,210	41,859	42,377	42,593	46,890
HESCO	25,414	26,196	26,612	26,914	27,849	28,045	27,949	28,305
SEPCO	23,339	23,814	24,277	24,197	24,419	24,614	24,765	24,618
Sindh	48,753	50,010	50,889	51,111	52,268	52,659	52,714	52,923
QESCO	31,139	32,153	33,425	34,280	35,130	35,996	36,821	39,712
Balochistan	31,139	32,153	33,425	34,280	35,130	35,996	36,821	39,712
Total	293,712	300,496	305,029	310,145	315,556	319,718	321,160	334,845
DISCOs	440 V Low Voltage Distribution System							
	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19
LESCO	14,568	14,647	14,730	14,806	14,815	14,845	14,900	15001
GEPCO	17,380	17,955	18,087	18,227	18,320	18,446	18,410	18541
FESCO	24,880	25,429	25,770	25,965	26,366	26,519	26,789	27154
IESCO	25,477	25,800	26,009	26,143	26,285	26,487	26,561	27041
MEPCO	45,121	45,970	46,251	46,866	47,204	48113	48040	49992
Punjab	127,426	129,801	130,847	132,007	132,990	134,410	107,912	137,729
PESCO	43,316	43,560	43,801	43,999	44,365	44,470	44,724	45121
TESCO	6,378	6,378	6,378	6,532	6,532	6,532	6,590	6278
K.P.K	49,694	49,938	50,179	50,531	50,897	51,002	51,314	51,399
HESCO	13,745	14,132	14,392	14,690	14,838	14,883	14,905	15005
SEPCO	12,991	13,272	13,471	13,336	13,426	13485	13510	13340
Sindh	26,736	27,404	27,863	28,026	28,264	28,368	28,415	28,345
QESCO	13,629	14,042	14,373	14,656	14,941	15,361	15,520	15803
Balochistan	13,629	14,042	14,373	14,656	14,941	15,361	15,520	15,803
Total	217,485	221,185	223,262	225,220	227,092	229,141	203,160	233,276

Table 3.9
Energy Generation, Sold & Per Capita Consumption

Fiscal Year	Population of PEPCO	Number of Customers	Computed Peak Demand PEPCO	System Input Energy (Purchased by CPPA-G)	Energy Sale (Consumption)	Per Capita System Input Energy	Per Capita Consumption	Units Per Consumer	
								System Input Energy (kWh)	Sale (kWh)
	(In Million)		(MW)	(GWh)	(GWh)	(kWh)	(kWh)		
1981	79.04	3,269,945	2,473	12,862	9,068	163	115	3,933	2,773
1982	87.54	3,588,250	2,846	14,378	10,288	164	118	4,007	2,867
1983	90.30	3,901,419	3,163	16,093	11,587	178	128	4,125	2,970
1984	92.96	4,231,536	3,295	17,655	12,762	190	137	4,172	3,016
1985	95.67	4,523,970	3,791	18,376	13,756	192	144	4,062	3,041
1986	98.41	4,876,787	3,933	20,656	15,504	210	158	4,236	3,179
1987	101.18	5,278,686	4,325	23,228	17,745	230	175	4,400	3,362
1988	103.99	5,779,623	5,031	27,002	20,702	260	199	4,672	3,582
1989	106.84	6,419,167	5,440	28,410	21,982	266	206	4,426	3,424
1990	109.71	6,870,679	5,680	30,809	24,121	281	220	4,484	3,511
1991	112.61	7,260,721	6,090	33,580	26,585	298	236	4,625	3,662
1992	115.54	7,736,241	6,532	37,143	29,267	321	253	4,801	3,783
1993	118.50	8,175,750	7,522	39,854	31,272	336	264	4,875	3,825
1994	121.48	8,592,042	8,067	41,289	32,131	340	264	4,805	3,740
1995	124.49	9,067,276	8,252	44,932	35,032	361	281	4,955	3,864
1996	127.51	9,481,731	8,278	47,434	36,925	372	290	5,003	3,894
1997	130.56	9,868,612	8,552	49,564	38,529	380	295	5,022	3,904
1998	124.14	10,217,072	8,877	52,192	39,422	420	318	5,108	3,858
1999	125.59	10,799,635	9,191	52,752	38,900	420	310	4,885	3,602
2000	128.55	11,584,657	9,289	54,672	40,910	425	318	4,719	3,531
2001	131.58	12,166,344	9,628	57,282	43,384	435	330	4,708	3,566
2002	134.65	12,678,022	10,099	59,545	45,204	442	336	4,697	3,566
2003	137.75	13,318,233	10,484	62,694	47,421	455	344	4,707	3,561
2004	140.89	14,091,338	11,078	67,697	51,492	480	365	4,804	3,654
2005	144.07	14,896,242	12,035	71,670	55,278	497	384	4,811	3,711
2006	147.29	15,911,161	13,212	80,404	62,405	546	424	5,053	3,922
2007	150.53	16,986,554	15,138	85,987	67,480	571	448	5,062	3,973
2008	153.82	17,955,366	16,838	84,584	66,539	550	433	4,711	3,706
2009	157.14	18,674,114	17,325	82,702	65,286	526	415	4,429	3,496
2010	160.49	19,582,224	17,847	87,115	68,878	543	429	4,449	3,517
2011	163.86	20,309,483	17,901	89,775	71,672	548	437	4,420	3,529
2012	167.24	21,046,611	18,280	88,987	71,368	532	427	4,228	3,391
2013	170.65	21,875,600	18,227	87,080	70,508	510	413	3,981	3,223
2014	174.09	22,587,870	19,966	93,777	76,543	539	440	4,152	3,389
2015	177.54	23,519,247	21,031	96,463	78,113	543	440	4,101	3,321
2016	180.99	24,516,699	22,559	100,871	81,737	557	452	4,114	3,334
2017	184.44	25,571,803	25,117	106,796	86,763	579	470	4,176	3,393
2018	186.05	27,016,545	26,031	120,062	97,197	645	522	4,444	3,598
2019	189.00	28,473,069	25,627	122,302	99,046	647	524	4,295	3,479

Table 3.10
DISCO-Wise Units Purchased & Sold

Company	2015-16			2016-17			2017-18			2018-19		
	Units Purchased	Units Sold	Losses	Units Purchased	Units Sold	Losses	Units Purchased	Units Sold	Losses	Units Purchased	Units Sold	Losses
	GWh	GWh	%	GWh	GWh	%	GWh	GWh	%	GWh	GWh	%
LESCO	20,152	17,342	13.9	20,622	17,783	13.8	23,731	20,449	13.8	24,338	21,132	13.2
GEPCO	9,045	8,089	10.6	9,779	8,778	10.2	10,987	9,887	10.0	11,100	10,004	9.9
FESCO	11,920	10,700	10.2	12,858	11,499	10.6	14,446	12,925	10.5	14,974	13,500	9.8
IESCO	9,650	8,774	9.1	10,583	9,628	9.0	11,672	10,606	9.1	11,838	10,789	8.9
MEPCO	14,770	12,341	16.4	15,951	13,253	16.9	19,006	15,853	16.6	19,363	16,310	15.8
PUNJAB	65,538	57,245	12.65	69,792	60,940	12.68	79,843	69,719	12.68	81,613	71,735	12.10
PESCO	11,750	7,783	33.76	12,511	8,432	32.60	14,213	8,796	38.12	14,427	9,074	37.1
TESCO	1,269	1,028	18.96	1,451	1,227	15.40	1,693	1,482	12.47	1,821	1,603	12.0
K.P.K	13,019	8,811	32.32	13,962	9,659	30.82	15,906	10,277	35.39	16,248	10,677	34.29
HESCO	5,085	3,739	26.46	5,360	3,718	30.63	5,743	4,027	29.88	5,557	3,916	29.5
SESCO	4,197	2,608	37.87	4,489	2,788	37.90	4,679	2,963	36.68	4,412	2,781	37.0
Export (K Electric)	5,059	5,059	0.00	5,077	5,077	0.00	5,128	5,128	0.00	4,957	4,957	0.0
SINDH	14,341	11,406	20.46	14,926	11,583	22.40	15,550	12,118	22.07	14,926	11,654	21.92
QESCO	5,547	4,220	23.92	5,789	4,453	23.08	6,338	4,916	22.44	6,257	4,779	23.6
BALOCHISTAN	5547	4220	24	5789	4453	23.08	6338	4916	22.44	6,257	4,779	23.62
IPPs	54	54	0.00	134	134	0.00	167	167	0.00	202.00	202.00	0.00
Total	98,499	81,737	17.06	104,602	86,763	17.09	117,804	97,197	17.59	119,246	99,047	16.94

Table 3.11
Number of Pending Applications As on 30-6-2019

Province/ Company	Domestic	Commercial	Industrial	Agriculture	Others	Total
LESCO	70,721	5,684	1,055	1,458	0	78,918
GEPCO	33,149	3,359	557	2,022	0	39,087
FESCO	67,391	5,605	745	2,336	45	76,122
IESCO	17,345	2,203	47	45	35	19,675
MEPCO	115,075	7,424	1,062	5,042	13	128,616
PUNJAB	**303,681**	**24,275**	**3,466**	**10,903**	**93**	**342,418**
PESCO	24,773	2,568	110	110	13	27,574
TESCO	139	758	20	102	2	1,021
K.P.K	**24,912**	**3,326**	**130**	**212**	**15**	**28,595**
HESCO	5,451	760	117	106	3	6,437
SEPCO	2,169	280	80	15	3	2,547
SIND	**7,620**	**1,040**	**197**	**121**	**6**	**8,984**
QESCO	1,231	382	26	253	21	1,913
Balochistan	**1,231**	**382**	**26**	**253**	**21**	**1,913**
TOTAL	**337,444**	**29,023**	**3,819**	**11,489**	**135**	**381,910**

STATISTICS OF K-ELECTRIC

2018-19

Number of K.E Consumers	25,83,435
Peak Demand Recorded	3,527 MW
Generation Capacity	2,847 MW
System Loses	34.4 %
Energy Consumption	13,860 GWh

NATIONAL TRANSMISSION & DESPATCH COMPANY LIMITED

Table 4.1
K Electric Energy Data

Fiscal Year	Generation Capacity (MW)				System Energy (GWh)		Peak Demand (MW)	Number of Consumers	Energy Sale (GWh)	System Losses (GWh)	System Losses (%)	Average Sale Price Rs. /kWh
	K-E Own	IPPs	Nuclear	Total	Total (Own + Purchased)	Purchases/ Imports						
1981	673				2,764		540	519,448	2,134			0.63
1982	673				2,787		588	568,905	2,485			0.78
1983	673				3,001		618	610,546	2,579			0.99
1984	928		137	1,065	3,556		732	649,766	3,015	880	24.76	0.97
1985	1,138		137	1,275	4,528		797	701,451	3,852	1,007	22.23	0.91
1986	1,138		137	1,275	4,582		872	765,151	4,043	1,002	21.87	0.94
1987	1,108		137	1,245	4,772		945	823,376	4,130	1,126	23.59	0.93
1988	1,108		137	1,245	5,527		965	879,286	4,558	1,298	23.48	1.05
1989	1,108		137	1,245	5,721		1,060	926,456	4,765	1,386	24.23	1.14
1990	1,318		137	1,455	6,218		1,123	986,698	5,074	1,593	25.62	1.25
1991	1,723		137	1,860	6,292		1,220	1,054,704	4,969	1,323	21.03	1.44
1992	1,738		137	1,875	7,419	/	1,273	1,108,863	5,492	1,927	25.97	1.56
1993	1,738		137	1,875	7,889		1,338	1,166,238	5,880	2,009	25.47	1.66
1994	1,738		137	1,875	8,632	535	1,422	1,259,163	6,087	2,545	29.48	1.90
1995	1,738		137	1,875	8,760	1,462	1,445	1,259,163	5,632	3,128	35.71	2.21
1996	1,738		137	1,875	9,386	1,329	1,513	1,286,534	6,021	3,298	35.14	2.06
1997	1,525		137	1,662	9,327	1,869	1,529	1,337,333	5,640	3,696	39.63	2.80
1998	1,756	262	137	2,155	7,318	3,030	1,729	1,388,223	6,385	3,007	41.09	3.42
1999	1,756	262	137	2,155	10,620	3,701	1,730	1,448,505	6,131	4,858	45.74	3.73
2000	1,756	262	137	2,155	11,446	4,007	1,855	1,608,719	6,430	5,235	45.74	3.98
2001	1,756	262	137	2,155	11,677	3,688	1,860	1,669,720	6,923	5,341	45.74	4.06
2002	1,756	262	137	2,155	12,115	3,406	1,885	1,682,649	6,718	5,541	45.74	4.45
2003	1,756	262	137	2,155	12,616	3,809	1,885	1,685,043	6,976	5,979	47.39	4.60
2004	1,756	262	137	2,155	13,392	3,664	2,073	1,749,473	7,818	5,983	44.67	4.78
2005	1,756	262	137	2,155	13,593	4,289	2,197	1,818,236	8,416	5,085	37.41	4.59
2006	1,756	262	137	2,155	14,500	5,370	2,223	1,881,969	9,060	4,992	34.43	4.59
2007	1,756	262	137	2,155	14,238	6,707	2,354	1,945,074	9,367	4,874	34.23	4.74
2008	1,690	512	137	2,339	15,189	6,527	2,443	1,977,106	10,052	5,182	34.12	5.14
2009	1,955	512	137	2,604	15,268	7,006	2,462	1,993,746	9,396	5,474	35.85	6.18
2010	1,955	273	137	2,365	15,806	7,842	2,562	2,052,283	9,905	5,515	34.89	7.11
2011	1,821	223	137	2,181	15,431	7,606	2,565	2,109,623	10,071	5,361	34.74	8.29
2012	2,381	285	137	2,803	15,259	7,230	2,596	2,139,869	10,277	4,982	32.65	9.01
2013	2,341	289	137	2,767	15,823	7,257	2,778	2,136,609	10,942	4,881	30.85	11.02
2014	2,422	228	137	2,787	15,991	7,282	2,929	2,111,336	11,453	4,538	28.38	12.15
2015	1,875	352	75	2,302	16,815	7,497	3,056	2,156,831	12,295	5,258	31.27	12.07
2016	2,295	349	75	2,719	17,304	6,981	3,195	2,226,677	12,865	5,122	29.60	12.97
2017	2,295	339	75	2,709	17,353	7,206	3,270	2,424,920	12,981	5,090	29.33	12.84
2018	2,267	443	137	2,847	18,200	7,862	3,527	2,583,435	13,860	5,092	27.98	12.72
2019	2,295	489	70	2,854	18,495	7,768	3,530	2,808,070	14,318	3,533	19.10	12.83

Table 4.2
Number of Consumers by Economic Group

Fiscal Year	Domestic	Commercial	Industrial	Agriculture	Public Lighting	Bulk Supply & Others	General Services	Total
1976	267,129	73,959	10,788	609	46	396		352,927
1977	293,910	79,125	11,524	611	47	397		385,614
1978	318,129	84,587	12,155	620	49	396		415,936
1979	325,859	86,553	12,243	627	49	396		425,727
1980	358,758	64,143	12,585	630	51	396		436,563
1981	403,307	102,037	13,021	637	50	396		519,448
1982	442,230	112,059	13,543	626	51	396		568,905
1983	472,698	122,322	14,335	742	53	396		610,546
1984	502,563	130,985	14,986	783	53	396		649,766
1985	541,671	142,575	15,964	792	53	396		701,451
1986	586,918	160,016	16,835	931	53	398		765,151
1987	627,154	176,865	17,927	972	56	402		823,376
1988	664,730	193,912	19,185	1,001	56	402		879,286
1989	699,564	205,199	20,180	1,051	60	402		926,456
1990	745,375	219,052	20,731	1,066	68	406		986,698
1991	794,998	236,342	21,825	1,062	70	407		1,054,704
1992	834,177	250,196	22,849	1,156	78	407		1,108,863
1993	875,827	263,807	24,404	1,212	80	908		1,166,238
1994	948,107	282,524	26,268	1,253	80	931		1,259,163
1995	948,107	282,524	26,268	1,253	80	931		1,259,163
1996	972,105	286,154	26,221	1,251	137	666		1,286,534
1997	1,010,123	297,544	27,272	1,276	153	965		1,337,333
1998	1,046,423	311,284	28,046	1,341	153	976		1,388,223
1999	1,093,765	323,135	29,041	1,398	152	1,014		1,448,505
2000	1,229,532	346,648	29,777	1,548	159	1,055		1,608,719
2001	1,269,912	366,611	30,339	1,594	157	1,107		1,669,720
2002	1,294,002	355,080	30,623	1,650	157	1,137		1,682,649
2003	1,306,748	355,581	20,071	1,526	158	959		1,685,043
2004	1,349,375	377,235	20,112	1,589	163	999		1,749,473
2005	1,398,576	395,719	21,220	1,775	123	823		1,818,236
2006	1,447,728	409,452	21,871	1,893	138	887		1,881,969
2007	1,494,669	425,001	21,920	2,007	69	1,408		1,945,074
2008	1,518,644	433,416	21,453	2,038	140	1,415		1,977,106
2009	1,531,971	437,463	20,751	2,073	112	1,376		1,993,746
2010	1,582,426	445,442	20,703	2,157	71	1,484		2,052,283
2011	1,632,604	452,667	20,595	2,233	57	1,467		2,109,623
2012	1,659,766	456,537	20,537	2,536	67	426		2,139,869
2013	1,660,768	452,329	20,462	2,616	66	368		2,136,609
2014	1,650,034	438,150	20,464	2,410	74	204		2,111,336
2015	1,694,779	438,683	20,609	2,484	77	199		2,156,831
2016	1,758,467	444,687	20,625	2,623	72	203		2,226,677
2017	1,945,091	456,087	20,852	2,615	74	201		2,424,920
2018	2,096,451	463,670	20,647	2,398	74	195		2,583,435
2019	2,298,647	474,598	20,840	2,329	93	189	11,374	2,808,070

Table 4.3
Consumption of Energy by Economic Group

Fiscal Year	Domestic	Commercial	Industrial	Agricultural	Public Lighting	Bulk Supply +Others	General Services	Total
1976	413	325	809	9	23	35		1,614
1977	498	367	727	10	36	43		1,681
1978	612	390	784	10	36	25		1,857
1979	314	206	439	5	15	13		992
1980	448	206	902	11	29	43		1,639
1981	748	416	932	9	18	11		2,134
1982	881	460	1,042	10	28	63		2,485
1983	929	501	1,036	13	30	70		2,579
1984	1,096	559	1,190	13	28	129		3,015
1985	1,204	579	1,256	13	31	770		3,852
1986	1,361	651	1,402	20	41	569		4,043
1987	1,482	723	1,560	19	36	310		4,130
1988	1,649	816	1,718	21	51	303		4,558
1989	1,743	853	1,863	22	60	225		4,765
1990	1,755	858	1,973	23	71	394		5,074
1991	1,782	914	2,002	24	84	163		4,969
1992	1,768	407	2,075	25	82	1,136		5,492
1993	1,985	419	2,118	26	92	1,240		5,880
1994	2,170	482	2,096	29	82	1,228		6,087
1995	2,135	451	1,924	32	73	1,016		5,632
1996	2,324	522	1,854	38	77	1,206		6,021
1997	2,145	484	1,863	67	82	998		5,640
1998	2,357	566	2,059	48	81	1,273		6,385
1999	2,311	556	2,254	43	66	901		6,131
2000	2,457	541	2,431	28	89	885		6,430
2001	2,683	653	2,604	28	66	889		6,923
2002	2,623	665	2,504	26	62	839		6,718
2003	2,726	702	2,719	30	78	720		6,976
2004	3,135	804	2,890	44	70	874		7,818
2005	3,508	888	3,023	66	78	853		8,416
2006	3,760	962	3,206	76	74	982		9,060
2007	3,864	986	3,544	79	65	829		9,367
2008	4,263	1,153	3,398	95	74	1,069		10,052
2009	3,989	1,004	3,226	100	83	994		9,396
2010	4,168	1,091	3,387	104	87	1,068		9,905
2011	4,257	1,043	3,447	125	82	1,117		10,071
2012	4,564	1,128	3,342	134	118	991		10,277
2013	5,083	1,507	3,445	149	111	647		10,942
2014	5,488	1,507	3,568	160	106	624		11,453
2015	6,161	1,589	3,843	166	110	426		12,295
2016	6,596	1,685	3,830	163	163	428		12,865
2017	6,643	1,655	3,885	159	187	452		12,981
2018	7,173	1,755	4,124	151	157	500		13,860
2019	7,299	1,781	4,402	134	160	540	1	14,318

Table 4.4
Average Sale Price - Rs. /kWh by Economic Group

Fiscal Year	Domestic	Commercial	Industrial	Agricultural	Public Lighting	Bulk Supply & Others	Total
1976	0.17	0.30	0.31	0.15	0.22	0.15	0.26
1977	0.18	0.36	0.32	0.14	0.17	0.14	0.28
1978	0.24	0.45	0.34	0.17	0.22	0.12	0.33
1979	0.28	0.52	0.40	0.23	0.20	0.13	0.38
1980	0.34	0.75	0.55	0.27	0.30	0.19	0.51
1981	0.39	0.96	0.69	0.46	0.79	0.28	0.63
1982	0.44	1.21	0.96	0.74	0.96	0.42	0.78
1983	0.44	1.48	1.27	0.68	1.32	0.44	0.99
1984	0.45	1.47	1.25	0.67	1.59	0.46	0.97
1985	0.44	1.45	1.24	0.68	1.52	0.68	0.91
1986	0.48	1.48	1.22	0.65	1.63	0.72	0.94
1987	0.48	1.42	1.18	0.64	1.36	0.66	0.93
1988	0.57	1.58	1.36	0.59	1.05	0.73	1.05
1989	0.73	2.19	1.36	0.71	1.02	1.03	1.14
1990	0.82	2.46	1.50	0.80	1.08	1.07	1.25
1991	0.92	2.82	1.69	0.95	1.27	1.17	1.44
1992	1.00	3.12	1.88	1.05	1.38	1.28	1.56
1993	1.01	3.09	1.88	1.06	1.22	1.28	1.66
1994	1.33	3.56	2.30	1.25	1.39	1.51	1.90
1995	1.36	4.21	2.78	1.36	1.97	2.04	2.21
1996	1.25	3.66	2.88	1.13	1.86	1.70	2.06
1997	1.78	5.10	3.42	0.95	2.79	2.86	2.80
1998	2.45	6.22	3.82	1.59	3.65	3.59	3.42
1999	2.87	6.44	4.23	2.05	4.32	3.51	3.73
2000	2.97	7.15	4.26	2.73	5.39	3.97	3.98
2001	3.13	7.36	4.35	3.12	6.46	4.65	4.06
2002	3.44	7.44	4.52	3.47	5.41	5.43	4.45
2003	3.58	7.47	4.69	3.76	7.03	5.69	4.60
2004	3.76	7.60	4.95	2.54	6.98	6.08	4.78
2005	3.62	7.21	4.76	1.73	6.74	5.77	4.59
2006	3.66	7.21	4.72	1.37	6.75	5.70	4.59
2007	3.81	7.52	4.77	1.26	6.99	5.98	4.74
2008	4.22	7.79	5.14	1.24	7.17	5.38	5.14
2009	4.94	9.74	6.31	1.33	7.35	7.82	6.18
2010	5.79	11.07	7.11	1.15	12.75	8.70	7.11
2011	6.97	13.10	8.21	0.37	12.16	9.87	8.29
2012	7.65	13.24	10.29	0.73	12.33	10.22	9.01
2013	8.93	16.82	11.78	1.78	12.12	13.33	11.02
2014	8.95	17.22	14.84	8.00	12.12	12.57	12.15
2015	8.81	17.59	14.75	10.74	13.33	11.55	12.07
2016	11.59	17.86	13.49	1.83	14.79	11.97	12.97
2017	11.99	17.88	12.02	6.19	14.92	15.30	12.84
2018	11.96	17.98	11.69	5.63	15.01	15.10	12.72
2019	11.80	18.07	12.18	4.64	15.46	15.47	12.83

Table 4.5
K Electric Data during 2018-19

A. Installed Generation Capacity

K Electric Own Plants			IPPs & Other Plants	
Description	Installed Capacity (MW)	Available Capacity (MW) as at June 2019	Description	Installed capacity (MW)
Bin Qasim Power Statition-I	1,260	1,061	Tapal Energy Ltd.	124
Bin Qasim Power Statition-II	573	526	Gul Ahmed	128
Korangi Combine Cycle Power Plant	248	229	KANNUP	70
KGTPS-II	107	96	Pak Steel	-
SGTPS-II	107	96	Anoud Power	12
Total Installed Capacity (MW)	2,295	2,008	ISL (19MW)	19
*As per Generation Lisence Moification - VIII dated March 13, 2019			IIL(4MW)	4
			FPCL	52
			NTDC	650
			SNPC	101
			Oursun	50
			CPPA-G	150
			Total Capacity (MW)	1359

B. Energy Purchased (GWh) during 2018-19 (Prov.)

KANNUP	Tapal	Gul Ahmed	NTDC	Anoud Power	IIL Power	FFBL	SNPC	Oursun	CPPA-G (WPPs)	Total
130	645	676	4937	52	59	414	781	57	20	7768

C. System Energy Generated Break up by Type of Fuel during 2018-19 (GWh)

Gas	Furnace	HSD Oil	RLNG	LD Oil	Total KE
4704	3362	-	2660	-	10727

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